

Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	Α	Page 1 of 271

Company: CNOOC IRAQ LIMITED

Project: FQN NEW DEGASSING STATION UPGRADING PROJECT

Unit: FQN DEGASSING STATION

Contract No.: CMIT-PRT-10.53-240048

Discipline: PIP

Prepared by: Liw X.Y.

Checked by: Ma X.R.

Approved by: Cui Qi

Α	ISSUED FOR REVIEW	LIUXINYU	MAXIANGRONG	CUIQI	20250624
Rev.	Description	PRED.	CHKD.	APPR.	Date



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	А	Page 2 of 271

DOCUMENT REVISION HISTORY SHEET

REV	DATE	REVISION DETAILS
A	24/06/2025	First issue



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 3 of 271	

TABLE OF CONTENTS

1. GENERAL	4
2. CODES, REGULATIONS, STANDARDS	6
3. GENERAL	10
4. DESIGN	11
5. INSTALLATION	15
6. VALVE SELECTION	16
7. PAINTING	16
8. INSPECTION AND TESTING	16
9. MARKING	16
10. PACKING AND SHIPPING	17
11. VENDOR DOCUMENTATION	18
APPENDIX A	20
APPENDIX B	23
APPENDIX C	32



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 4 of 271	

1. GENERAL

MISSAN Oil Field is located in the SE of Iraq, close to Iran's border, about 175 km N-NW of BASRA City, and 350 km SE of Baghdad – the capital of Iraq.

MISSAN Oil Field includes three producing fields namely Abu GHIRAB, BUZURGAN and FAUQI. Abu GHIRAB and FAUQI fields extend beyond the Iranian border.

Since MISSAN Oil Field was built in 1976, it has suffered from the Iran-Iraq War and the Iraq War, so a lot of facilities needs to be upgraded and revamped.

The intended project is mainly concerned for New Degassing Station Upgrade in FQN.

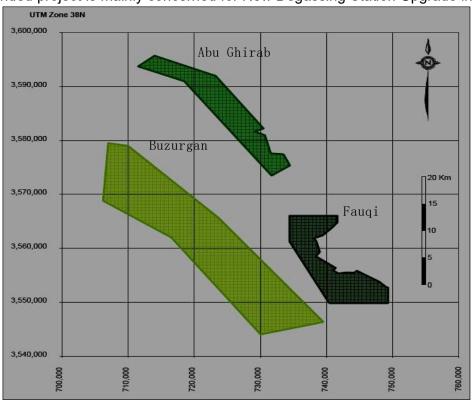


Figure 1.1-1 The overall MISSAN Oil Field

General Field Layout is shown in below figure:



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	А	Page 5 of 271

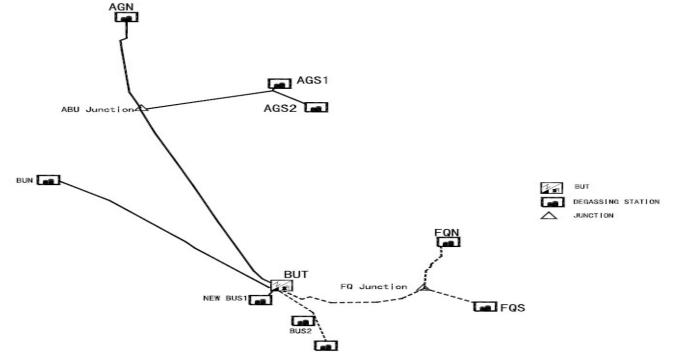


Figure 1.1-2 General Field Layout

1.1. Degassing Station (DS):

The FQN degassing station was built in 1976, the crude oil with gas and water was sent to the DS, the main target for DS is to separate the gas and water from crude oil, and to entirely test/meter each individual well from well pad. Separated Liquid and Gas are exported via individual Trunkline(s) to the BUT CPF located in Buzurgan Area for further processing and treatment.

Due to the increase of liquid form the well, the existing facilities of FQN can not meet the requirement, so two Crude Processing Trains (50 Kbbl/d plus 20% (each)) will be added in FQN degassing station, and other Utilities and Auxiliary Supporting Systems will be added too.

1.2. Abbreviation and Acronyms

The following definitions shall apply to this document:

COMPANY: CNOOC IRAQ LIMITED

PMC:Project Management Consultant

CONTRACTOR: CNOOC Petrochemical Engineering Co.,Ltd (COPCL or CNOOCPEC).



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	А	Page 6 of 271

DGS or **DS**: Degassing Station

VENDOR: Party(ies), which manufactures and/or supplies material, equipment and service to perform the duties as specified by Contractor in the scope of supply

1.3. Scope

This specification covers the minimum requirements for manual valves used in the FQN degassing station and facilities, whether field or shop installed.

The intent of this specification is to serve as a guideline for valve selection, but not to limit the choice of valves required for special service conditions and use of new or unique valve technology. The design of wellheads and flowlines is not included in the scope of work.

2. CODES, REGULATIONS, STANDARDS

2.1. Codes and Standards

The following Section contains lists of International, and project specifications which have been reviewed for extracts or referred to within this specification document.

VENDOR shall meet or exceed the requirements of the latest edition of all applicable Codes, Regulations and Standards, except as superseded herein. In cases where more than one code, regulation or standard apply to the same condition, the most stringent shall be followed. In the event of a conflict between this specification and other specifications or correspondence, the COMPANY shall be consulted and a ruling, in writing, shall be obtained before any work is started.

ASME Standards

ASME Boiler and Pressure Vessel Code, all applicable sections		
ASME B16.34	Valves - Flanged, Threaded, and Welding End	
ASME B31.3	Process Piping	
ASME B16.5	Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard	
ASME B16.47	Large Diameter Steel Flanges NPS 26 Through NPS 60 Metric/Inch Standard	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	А	Page 7 of 271

ASME B16.10	Face-to-Face and End-to-End Dimensions of Valves
ASME B16.11	Forged Fittings, Socket-Welding and Threaded
ASME B1.20.1	Pipe Threads, General Purpose (Inch)

ASTM Standards

ASTM A105/ A105M	Standard Specification for Carbon Steel Forgings for Piping Applications
ASTM A182/ A182M	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High- Temperature Service
ASTM A193/ A193M	Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
ASTM A194/ A194M	Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM A216/ A216M	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
ASTM A320/ A320M	Standard Specification for Alloy-Steel and Stainless Steel Bolting for Low-Temperature Service
ASTM A890/ A890M	Standard Specification for Castings, Iron-Chromium-Nickel- Molybdenum Corrosion Resistant, Duplex (Austenitic/Ferritic) for General Application

API Standards

API STD 594	Check Valves: Flanged, Lug, Wafer, Butt-welding
API STD 598	Valve Inspection and Testing
API STD 600	Steel Gate Valves - Flanged and Butt-welding ends, Bolted Bonnets
API STD 602	Gate, Globe, and Check Valves for Sizes NPS 4 (DN 100) and



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	Α	Page 8 of 271

	Smaller for the Petroleum and Natural Gas Industries
API STD 607	Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats
API STD 608	Metal Ball Valves - Flanged, Threaded, and Welding Ends
API STD 609	Butterfly Valves: Double-Flanged, Lug-and Wafer-type
API STD 623	Steel Globe Valves-Flanged and Buttwelding Ends, Bolted Bonnets
API SPEC 6FA	Specification for Fire Test for Valves
API SPEC 6D	Specification for Valves

MSS-SP Standards

MSS SP-25	Standard Marking System for Valves, Fittings, Flanges and Unions
MSS SP-45	Bypass and Drain Connections
MSS SP-55	Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components - Visual Method for Evaluation of Surface Irregularities
MSS SP-67	Butterfly Valves
MSS SP-68	High Pressure Butterfly Valves with Offset Design
MSS SP-117	Bellows Seals for Globe and Gate Valves

NACE Standards

NACE MR0175 / ISO 15156	Petroleum and Natural Gas Industries - Materials for Use in H ₂ S-containing Environments in Oil and Gas Production
NACE MR0103 / ISO 17945	Petroleum, Petrochemical and Natural Gas Industries - Metallic Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments
NACE TM0177	Laboratory Testing of Metals for Resistance to Sulfide Stress Cracking and Stress Corrosion Cracking in H ₂ S Environments
NACE TM0284	Evaluation of Pipeline and Pressure Vessel Steels for Resistance to Hydrogen-Induced Cracking



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 9 of 271	

ISO Standards

ISO 10497	Testing of Valves - Fire Type-Testing Requirements
ISO 17292	Metal Ball Valves for Petroleum, Petrochemical and Allied Industries

BS Standards

BS EN 10204	Metallic Products - Types of Inspection Documents
BS EN 12266	Industrial Valves - Testing of Metallic Valves

Note: This list covers the majority of references, but it is not exhaustive.

2.2. Reference Documents

The following General Specifications shall be used in conjunction with this specification where applicable:

CMIT-240048-728-PCS-15.69-0001	DESIGN BASIS
CMIT-240048-728-PIP-15.03-3001	SPECIFICATION FOR PROCESS PIPING MATERIALS
CMIT-240048-728-PAI-15.03-3001	SPECIFICATION FOR PAINTING
CMIT-240048-728-PAI-15.03-3002	SPECIFICATION FOR COLOUR OF EXTERNAL PAINTING
CMIT-240048-728-PIP-15.70-3001	MATERIAL SELECTION REPORT

Some requirements in this specification may be modified by specific requirements in the Purchase Specification. In case of conflict, the specific requirements supersede this specification.

Any deviation from this specification must be approved, in writing, by COMPANY. Such written approval must be obtained prior to the commencement of any work which would constitute such a deviation.

2.3. Order of Precedence

All conflicts between the requirements of this specification, related contract documents national/ international documents, codes, engineering practices and the requisition shall be



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 10 of 271	

referred to COMPANY/CONTRACTOR for clarification. Should any conflict occur in the application of these specifications, the order of precedence shall be as follows:

- 1) Iraqi Laws and Regulations;
- 2) PURCHASE Order (including attachments) and variations thereon;
- 3) Data sheets and drawings;
- 4) This Technical Specification;
- 5) Project Specification in conjunction with native standard;
- 6) International codes and standards.

3. GENERAL

3.1. General

All materials and installation shall be in accordance with code requirements and industry standards for good workmanship.

All materials used in sour service shall meet the requirements of NACE MR0175 /ISO15156 and relevant project specification. All materials chemical composition and treatment, testing shall be carried out according to the related section of the standard NACE MR0175 /ISO 15156.

No Valves of Brass, Aluminium, Cast Iron, Malleable Iron, Steel Iron or Semi Steel shall be used in the Hydrocarbon service.

3.2. Valve Identification

Each valve in a facility shall be designated by a descriptive valve identification number consisting of the following identifiers:

Nominal Valve Size (inches NPS)

Valve Type

Piping Class Code

Valve Style

S (NACE TAGGED)



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002	
Job's Doc. No.	253001D0728MP00S02	
Phase	Detailed Design	
Rev.	А	Page 11 of 271

E.G. 10"-BA-1D3-1S, specifies:

10" ----Nominal valve size.

BA -----Valve Type (Ball Valve).

1A1 -----Piping Class Code (See APPENDIX A)

1 ----- Valve Sequence Number

S ----NACE Tagged.

Valve Type:

BA - Ball BT - Butterfly CK - Check GA - Gate GL - Globe PL-Plug

3.3. Valve Tagging

Each valve shall be supplied with a metal tag permanently attached to the valve, and stamped with the valve code number. Other special information, such as type of internal coating, shall also be identified on the metal tag.

4. DESIGN

- 4.1 Flanged Gate valves 2" and larger shall meet the requirements of ASME B16.34 and API 600. Screwed valves smaller than 2" shall meet the requirements of API 602.
- 4.2 Valves may be cast or forged steel depending upon the operating conditions. In critical service forged valves are preferred.
- 4.3 Materials shall be selected based on the specific service and the requirements on relevant datasheets unless otherwise specified by COMPANY. For sour services Material shall be selected based on CMIT-240048-728-PIP-15.03-3001_Specification for Piping Material and NACE MR0175 /ISO 15156 latest edition.
- 4.4 Globe and gate valves shall have outside stem and yoke with bolted bonnets. Bonnets on check valves shall be bolted. Screwed bonnets or union bonnets shall not be used. Bonnet bolts shall be ASTM A193-B7M or higher subject to sour service. On all check and globe valves, the direction of flow shall be cast, stamped or forged on the valve body. For Trim Material of respective tags refer individual valve tag data sheets.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 12 of 271	

- 4.5 Trim materials shall conform to API 600, Table 8 and be suitable for the proposed service. For valves specified under API 602, other trim materials may be used subject to written approval of COMPANY. Trim materials, particularly stainless steels, should be selected to prevent galling. Low melting point alloys shall not be used.
- 4.6 Valves deemed critical to the facility shutdown and blow down shall have fireproof design according to API 607 /ISO 10497 or API 6FA /ISO 10497.
- 4.7 Ball valves are preferred for block valves. Ball valves for hydrocarbon liquid or vapour services shall be fire safe.
- 4.8 In higher temperature services, steel gate valves are recommended. Plug valves are not recommended in services exceeding 175°C and may not be used without COMPANY specific approval.

For heating medium oil system, the design temperature is 300°C. Based on the property of heating medium oil, bellow type globe valve was chosen in this condition and asbestos shall not be as sealing material.

For steam line, material choosing shall be suitable for the high temperature condition.

For the high temperature sour gas piping system, the working temperature is 330°C, material choosing shall be suitable for the high temperature and anti-sulphur material shall be selected based on the working condition according to the standard NACE MR0175 /ISO 15156 (latest edition).

- 4.9 Cast iron, semi-steel or ductile iron valves may not be used without COMPANY specific approval.
- 4.10 Sour service valves shall meet the requirements of NACE MR0175 /ISO 15156 (latest edition). For Cast or wrought alloys UNS S41000 (A182 F6a) shall have a maximum hardness of 22HRC and shall be:
 - 1) Austenitized and quenched or air-cooled;
 - 2) Tempered at 621°C (1150°F) minimum, then cooled to ambient temperature;
 - 3) Tempered at 621°C (1150°F) minimum, but lower than the first tempering temperature, then cooled to ambient temperature.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 13 of 271		

- 4.11 The type of coating for internally coated valves shall be specified for each project and service by the project engineer and shown on the P&ID.
- 4.12 Ball Valves in Hydro Carbon Service shall be of Fire Safe Design with secondary metal to metal seat in addition to the primary resilient seat.
- 4.13 Gear operators shall be provided as required by the Specification for valves.
- 4.14 Unless otherwise specified in the Valve design code, Valves with mass 250kg and above shall be provided with lifting lugs. Tapped holes and eye bolts shall not be used for lifting lugs.
- 4.15 Uni-directional valves or valves with a preferred direction of flow shall have a flow direction arrow cast or stamped on the body.
- 4.16 All Valves having external threads on the Gear Operator, Gland, etc shall be provided with a suitable Sand Protection device.
- 4.17 The minimum wall thickness of the valve body and other pressure containing parts and the valve pressure-temperature rating shall be in accordance with ASME B16.34 taking into account the corrosion allowance.
- 4.18 Forged bodies shall be forged close to final shape. Rolled bar are not acceptable.
- 4.19 All soft seated valves shall be provided with anti-static design for electrical continuity between the main valve parts (ball/disc) and body and shall be equipped with a spring or spring loaded pin to provide earthing.
- 4.20 Unless noted otherwise, seat/ seat insert shall be renewable for flanged valves.
- 4.21 All valves shall be long/ regular pattern type; short pattern valves are not acceptable.
- 4.22 Face to face dimensions shall conform to ASME B16.10 or applicable valve design code.
- 4.23 All soft seated valves shall be 100% leak tight.
- 4.24 End flanges up to 24 inch shall be as per ASME B16.5, flanges 26 inch and above shall be in accordance with ASME B16.47 Series "A" Flanges & MSS SP 44.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 14 of 271		

Threaded connections shall comply with ASME B1.20.1, NPT, and socket weld connection shall comply with ASME B16.11. Small steel threaded and socket weld end valves that are accessories to the main valve shall have a minimum body rating equivalent to API 602.

- 4.25 All socket weld valves shall have high temperature packing designed to resist heat generation during welding.
- 4.26 Forged bodies, end adapters, extended bonnets and other forged components shall be forged close to their final shape. Repair of forged valve body by welding or weld overlays are not acceptable.
- 4.27 The end connections of valves shall be in accordance with the applicable valve datasheet. The end flanges shall be integrally cast or forged with the valve body.
- 4.28 Stem shall be one piece solid construction and anti-blow out design, either cast or forged. Welded construction is not acceptable. The stem weakest point shall be outside the valve body cavity. Stem fabricated from bar stock is not acceptable. Screwed connection between stem and closure member is not acceptable.
- 4.29 Valves shall be provided with bolted glands unless noted otherwise.
- 4.30 Soft seat and seal materials shall be validated for suitability against the maximum class rated differential pressure across the valve seats in closed position.
- 4.31 Metallic body gaskets shall have corrosion resistance equal to the body and bonnet and shall be suitable for the process design conditions.
- 4.32 The valve operators shall be capable to produce 1.25 times the maximum torque required to operate the valve under the worst design condition. The maximum design operating force shall not exceed 350 N.
- 4.33 Valve hand wheels, including gear operators shall be permanently marked with the word "OPEN" or "CLOSE" with a permanent arrow indicating the direction of rotation. The hand wheel diameter shall not exceed the valve face-to-face dimension, the direction of operation of the hand wheel shall be in a clock-wise direction for closing the Valves.
- 4.34 The gear operator shall be of a self-locking type. The gearbox shall have the same fire safe rating as the valve. The gearbox shall be provided with a closure member position indicator.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 15 of 271		

- 4.35 Mounting brackets for gearboxes shall be fabricated from carbon steel or ductile iron. All valve actuators mechanisms (including hand-wheel, level, gear and power) shall be sized for full rated differential pressure.
- 4.36 Bolting for valves shall be in accordance with the project Piping Material Specification as applicable.

Nuts shall be double chamfered and heavy hexagonal type. The head of machine head bolts shall be heavy hexagonal type.

Studs shall be threaded full length. The length of thread engagement between each bolts (or stud) and the body shall be at least equal to the nominal diameter of the bolt.

Material of Bonnet bolts and nuts shall be ASTM A193-B7/ A194-2H for carbon steel, A320-B8M/ A194-8M for austenitic stainless steel, A193-B7M/ A194-2HM for carbon steel and duplex stainless steel in sour service.

All bolts and nuts shall be coated as per piping material specification.

5. INSTALLATION

- 5.1 Wherever possible, valves should be installed in a position easily to be operated.
- 5.2 Hand wheels and stems shall be kept out of operating aisles, where practical, otherwise elevated to 2100 mm from grade to bottom of hand wheel.
- 5.3 Valves shall not be installed with stems below a horizontal position.
- 5.4 Block valves, when required, shall be installed at nozzles of pressure vessels or in lines connected to nozzles to permit operating valves from grade or a platform. Equipment shall be capable of being isolated if:
 - Operations can continue without it.
 - Depressurizing associated facilities will delay maintenance on the equipment.
- 5.5 All valves shall have sufficient clearance to facilitate removal of the bonnets, plugs and internals.
- 5.6 Ball valves shall not be used for throttling service.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 16 of 271		

6. VALVE SELECTION

Valves shall be selected in accordance with the application and service conditions in which the valve is placed.

The selection for valve used for high sour services and high temperature shall be paid more attention by manufacture.

7. PAINTING

Valves shall be painted in accordance with CMIT-240048-728-PAI-15.03-3001_ SPECIFICATION FOR PAINTING & CMIT-240048-728-PAI-15.03-3002_SPECIFICATION FOR COLOUR OF EXTERNAL PAINTING.

8. INSPECTION AND TESTING

- 8.1 The valve manufacturer shall examine each valve to assure compliance to ISO 17292, API 6D, API 602, API 600, API 623, API 594, API 609, ASME B16.34.
- 8.2 Each valve shall be subject to size inspection, and the end size and deviation shall meet the requirements of ASME B16.5, B16.25, B16.11, and B16.10.
- 8.3 Unless otherwise specified, all valves shall be inspected by manufacturer in accordance with API 598.
- 8.4 The shell test and closure test are required for all valves in terms of requirements of API598. Moreover, the backseat test is required for valves with backseat.
- 8.5 The hydraulic test shall be performed by manufacturer after valve assembling, and all parts and accessories shall contain pressure. In the hydraulic test, the closure torque shall be acquired by hand for manually actuated valves and gear actuated valves.
- 8.6 For austenitic stainless steel valves, the chlorine content of water used in the test shall be less than 25ppm. Valves must drain off after the hydraulic test and shall be dried by dry air or nitrogen.

9. MARKING

9.1 The marking shall conform to MSS SP-25 & ASME B16.34 unless otherwise specified, and shall include marking of Nominal Size, Wall Thickness/Schedule Number (for butt welding



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 17 of 271		

valve), material & standard, pressure rating, charge/heat No., manufacturer or trademark and commodity code or model number in purchase order of valves.

- 9.2 Valves installed according to the flow direction should have arrows cast or stamped on the valve body to indicate the flow direction. Painted arrows are not allowed.
- 9.3 When it is necessary to mark the pressure-bearing parts of the valve, the same "low-stress" impression should be used as the material to be marked, and the impression should not exceed the minimum wall thickness nor produce sharp discontinuities.

10. PACKING AND SHIPPING

- 10.1 All valves should be packaged in accordance with the requirements of shipping export packaging standards.
- 10.2 Gate and global valves should be transported in the closed position. Plug and ball valves should be transported in the open position.
- 10.3 When the valve is transported, the correct stem packing should be installed and the gland should be tightened to prevent leakage during use.
- 10.4 After inspection and testing, the water that may be trapped in the valve cavity should be removed, kept dry and ready for shipping.
- 10.5 Austenitic stainless steel valves shall avoid chlorine corrosion (such as sea water) in shipping.
- 10.6 Blind flanges shall be used at both ends of the valve to protect the flange sealing surface, the welding end or the threaded end and the inside of the valve. The blind flanges should be made of wood, wood fiberboard, plastic, metal, etc., and fixed with bolts, steel clips or locking devices, and should be easy to assemble and disassemble.
- 10.7 Stainless steel valves and carbon steel valves shall be packed separately.
- 10.8 The appropriate protection measures shall be taken against mechanical damage and atmospheric corrosion in transportation.
- 10.9 When packing valves, they should be packed according to Tag Number or Project regulations.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 18 of 271	

10.10 Rust prevention treatment shall be performed for exposed parts, such as machined surfaces, bolts and inner metal surface.

11. VENDOR DOCUMENTATION

11.1. General

All VENDOR documents shall be submitted in English.

VENDOR shall submit VENDOR Document Schedule listing all the drawings and documents to be submitted for COMPANY's review and approval with anticipated dates for submission.

VENDOR shall include in the VENDOR Document Schedule additional drawings/ documents not specifically listed, but deemed to be of value.

VENDOR shall submit the Manufacturers Data Book, comprising of all drawings and documents submitted throughout the Project in electronic format.

COMPANY's approval of VENDOR drawings/ documents does not free the VENDOR from his responsibility to produce a working system complying with the intent of the requisition, specification and attached documentation.

COMPANY agreed VENDOR list shall be followed for procurement purpose.

11.2. Material certificates

Mechanical properties as yield strength, material composition, impact test etc. shall be confirmed by acceptance test certificate 3.1 in accordance with BS EN 10204.

Results of non-destructive inspections shall be documented at least by means of an acceptance test certificate 3.1 in accordance with BS EN 10204.

Dimension check shall be recorded in the report and certified at least by means of an acceptance test certificate 3.1 in accordance with BS EN 10204.

The pressure test shall be certified on acceptance certificate 3.1 in accordance with BS EN 10204.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 19 of 271		

11.3. Test Certificates and Test Documentation

The test certificates for each mechanical and / or performance test shall be furnished including hydrostatic test certificates.

VENDOR shall supply test documentation in accordance with the specifications covering all the tests which are to be performed.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 20 of 271	

APPENDIX A

PIPING CLASSES SPECIFICATIONS



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 21 of 271	

	APPENDIX A PIPING CLASSES SPECIFICATIONS					
Class	Service	Rating	Material	C.A. (mm)	Design Pressure	Design Temperature Limits
	Utility Air					
	Fuel Gas					-20 ~ 85°C
1A1	Nitrogen Gas	150#	ASTM A106 Gr.B	1	1.2MPa	
	Natural Gas					
	Diesel					
1A4	Waste Water	150#	ASTM A106 Gr.B	4	1.0MPa	-20 ~ 99°C
1C0	Chemical	150#	ASTM A312 TP316L	0	0.6MPa	-20 ~ 100°C
	Closed Drain					
	Sour Gas/Sour Water		ASTM A106 Gr.B	3	0.6MPa	-20 ~ 100°C
	Atmospheric Vent					
	High Pressure Flare					
1D3	Low Pressure Flare	150#	(SSC&HIC)			
	Hydrocarbon Liquid (Sour)		,			
	Fuel Gas					
	Off-spec Oil					
450	Crude Oil (Sour)		ASTM A106 Gr.B	0	4 OMD	-20 ~ 100°C
1D6	Sour Gas	150#	(SSC&HIC)	6	1.6MPa	-20 % 100 C
1G0	Instrument Air	150#	ASTM A106 Gr.B +GALV	0	1.0MPa	-20 ~ 80°C
1G3	Fire Water	150#	ASTM A106 Gr.B +GALV	3	1.1MPa	-20 ~ 40°C
1L0	Oily Water	150#	ASTM A790 S32760/ A928 S32760	0	1.2MPa	-20 ~ 125°C



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 22 of 271	

	APPENDIX A PIPING CLASSES SPECIFICATIONS					
Class	Service	Rating	Material	C.A. (mm)	Design Pressure	Design Temperature Limits
1N0	Oily Water	150#	ASTM A790 S31803/ A928 S31803	0	1.8MPa	-20 ~ 65°C
1P0	Oily Water	150#	GRE Epoxy Resins API SPEC 15LR	0	1.8MPa	0 ~ 65°C
	RO Water		PE 4710,		1.2MPa	0 ~ 65°C
1V0	Other Chemical injection	150#	# ASTM D3350 SDR7.0	0		
3C0	Chemical	300#	ASTM A312 TP316L	0	2.2MPa	-20 ~ 100°C
3D3	Sour Gas Hydrocarbon Liquid	300#	ASTM A106 Gr.B (SSC&HIC)	3	2.2MPa	-20 ~ 100°C
3D6	Crude Oil(Sour) Sour Gas	300#	ASTM A106 Gr.B (SSC&HIC)	6	4MPa	-20 ~ 125°C
3L0	Oily Water	300#	ASTM A790 S32760/ A928 S32760	0	2.2MPa	-20 ~ 100°C
3N0	Oily Water	300#	ASTM A790 S31803/ A928 S31803	0	4MPa	-20 ~ 65°C
300	Water Injection	2004	GRE Epoxy Resins			0 ~ 65°C
3P0	Oily Water	300#	API SPEC 15LR	0	4MPa	0 ~ 00 C

Notes:

- 1. Piping Classes listed in Appendix A is for related system based on the design conditions supplied by process.
- 2. The Service & Design Pressure & Design Temperature will be updated according to Line List.



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed De	esign	
Rev.	А	Page 23 of 271	

APPENDIX B

VALVE'S TAG NO



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 24 of 271	

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
1A1	1/2"-1 ½"	SW/FB	BA-1A11
	1/2"-1 ½"	RF/FB	BA-1A12
	2"-4"	RF/FB	BA-1A13
	6"-18"	RF/FB	BA-1A14
	2"-4"	RF/RB	BA-1A15
	6"-18"	RF/RB	BA-1A16
	1/2"-1 ½"	SW/Wedge	GA-1A11
	1/2"-1 ½"	RF/Wedge	GA-1A12
	2"-8"	RF/Wedge	GA-1A13
	2"-8"	RF/Flat	GA-1A14
	10"-18"	RF/Wedge	GA-1A15
	10"-18"	RF/Flat	GA-1A16
	1/2"-1 ½"	RF	GL-1A11
	2"-6"	RF	GL-1A12
	8"-16"	RF	GL-1A13
	1/2"-1 ½"	RF/Lift	CK-1A11
	2"-18"	RF/Wafer	CK-1A12
	6"	RF	BT-1A11
	8"-18"	RF	BT-1A12
1A4	1/2"-1 ½"	RF/FB	BA-1A41
	2"-4"	RF/FB	BA-1A42
	6"-18"	RF/FB	BA-1A43
	2"-4"	RF/RB	BA-1A44
	6"-18"	RF/RB	BA-1A45
	1/2"-1 ½"	RF/Wedge	GA-1A41
	2"-8"	RF/Wedge	GA-1A42
	2"-8"	RF/Flat	GA-1A43
	10"-18"	RF/Wedge	GA-1A44
	10"-18"	RF/Flat	GA-1A45



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 25 of 271	

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
	1/2"-1 ½"	RF	GL-1A41
	2"-6"	RF	GL-1A42
	8"-16"	RF	GL-1A43
	1/2"-1 ½"	RF/Lift	CK-1A41
	2"-18"	RF/Wafer	CK-1A42
1C0	1/2"-1 ½"	RF/FB	BA-1C01
	2"-4"	RF/FB	BA-1C02
	6"	RF/FB	BA-1C03
	2"-4"	RF/RB	BA-1C04
	6"	RF/RB	BA-1C05
	1/2"-1 ½"	RF/Wedge	GA-1C01
	2"-6"	RF/Wedge	GA-1C02
	1/2"-1 ½"	RF	GL-1C01
	2"-6"	RF	GL-1C02
	1/2"-1 ½"	RF/Lift	CK-1C01
	2"-6"	RF/Wafer	CK-1C02
1D3	1/2"-1 ½"	RF/FB	BA-1D31S
	2"-4"	RF/FB	BA-1D32S
	6"-18"	RF/FB	BA-1D33S
	2"-4"	RF/RB	BA-1D34S
	6"-18"	RF/RB	BA-1D35S
	1/2"-1 ½"	RF/Wedge	GA-1D31S
	2"-8"	RF/Wedge	GA-1D32S
	2"-8"	RF/Flat	GA-1D33S
	10"-18"	RF/Wedge	GA-1D34S
	10"-18"	RF/Flat	GA-1D35S
	1/2"-1 ½"	RF	GL-1D31S
	2"-6"	RF	GL-1D32S
	8"-16"	RF	GL-1D33S
	1/2"-1 ½"	RF/Lift	CK-1D31S



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 26 of 271	

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
	2"-18"	RF/Wafer	CK-1D32S
1D6	1/2"-1 ½"	RF/FB	BA-1D61S
	2"-4"	RF/FB	BA-1D62S
	6"-18"	RF/FB	BA-1D63S
	2"-4"	RF/RB	BA-1D64S
	6"-18"	RF/RB	BA-1D65S
	1/2"-1 ½"	RF/Wedge	GA-1D61S
	2"-8"	RF/Wedge	GA-1D62S
	2"-8"	RF/Flat	GA-1D63S
	10"-18"	RF/Wedge	GA-1D64S
	10"-18"	RF/Flat	GA-1D65S
	1/2"-1 ½"	RF	GL-1D61S
	2"-6"	RF	GL-1D62S
	8"-16"	RF	GL-1D63S
	1/2"-1 ½"	RF/Lift	CK-1D61S
	2"-18"	RF/Wafer	CK-1D62S
1G0	1/2"-1 ½"	RF/FB	BA-1G01
	2"-4"	RF/FB	BA-1G02
	2"-4"	RF/RB	BA-1G03
	1/2"-1 ½"	RF/Wedge	GA-1G01
	2"-4"	RF/Wedge	GA-1G02
	1/2"-1 ½"	RF	GL-1G01
	2"-4"	RF	GL-1G02
	1/2"-1 ½"	RF/Lift	CK-1G01
	2"-4"	RF/Wafer	CK-1G02
1G3	1/2"-1 ½"	RF/FB	BA-1G31
	2"-4"	RF/FB	BA-1G32
	6"-12"	RF/FB	BA-1G33
	2"-4"	RF/RB	BA-1G34
	6"-12"	RF/RB	BA-1G35



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	A Page 27 of 271		

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
	1/2"-1 ½"	RF/Wedge	GA-1G31
	2"-8"	RF/Wedge	GA-1G32
	10"-12"	RF/Wedge	GA-1G33
	1/2"-1 ½"	RF	GL-1G31
	2"-6"	RF	GL-1G32
	8"-12"	RF	GL-1G33
	1/2"-1 ½"	RF/Lift	CK-1G31
	2"-12"	RF/Wafer	CK-1G32
1L0	1/2"-1 ½"	RF/FB	BA-1L01
	2"-4"	RF/FB	BA-1L02
	6"-18"	RF/FB	BA-1L03
	2"-4"	RF/RB	BA-1L04
	6"-18"	RF/RB	BA-1L05
	1/2"-1 ½"	RF/Wedge	GA-1L01
	2"-8"	RF/Wedge	GA-1L02
	2"-8"	RF/Flat	GA-1L03
	10"-18"	RF/Wedge	GA-1L04
	10"-18"	RF/Flat	GA-1L05
	1/2"-1 ½"	RF	GL-1L01
	2"-6"	RF	GL-1L02
	8"-16"	RF	GL-1L03
	1/2"-1 ½"	RF/Lift	CK-1L01
	2"-18"	RF/Wafer	CK-1L02
1N0	1/2"-1 ½"	RF/FB	BA-1N01
	2"-4"	RF/FB	BA-1N02
	6"-24"	RF/FB	BA-1N03
	2"-4"	RF/RB	BA-1N04
	6"-24"	RF/RB	BA-1N05
	1/2"-1 ½"	RF/Wedge	GA-1N01
	2"-8"	RF/Wedge	GA-1N02



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	A Page 28 of 271		

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
	2"-8"	RF/Flat	GA-1N03
	10"-24"	RF/Wedge	GA-1N04
	10"-24"	RF/Flat	GA-1N05
	1/2"-1 ½"	RF	GL-1N01
	2"-6"	RF	GL-1N02
	8"-16"	RF	GL-1N03
	1/2"-1 ½"	RF/Lift	CK-1N01
	2"-24"	RF/Wafer	CK-1N02
	6"	RF	BT-1N01
	8"-24"	RF	BT-1N02
1P0	1/2"-1 ½"	FF/FB	BA-1P01
	2"-4"	FF/FB	BA-1P02
	6"-18"	FF/FB	BA-1P03
	2"-4"	FF/RB	BA-1P04
	6"-18"	FF/RB	BA-1P05
	1/2"-1 ½"	FF/Wedge	GA-1P01
	2"-8"	FF/Wedge	GA-1P02
	2"-8"	FF/Flat	GA-1P03
	10"-18"	FF/Wedge	GA-1P04
	10"-18"	FF/Flat	GA-1P05
	1/2"-1 ½"	FF	GL-1P01
	2"-6"	FF	GL-1P02
	8"-16"	FF	GL-1P03
	1/2"-1 ½"	FF/Lift	CK-1P01
	2"-18"	FF/Wafer	CK-1P02
1V0	1/2"-1 ½"	FF/FB	BA-1V01
	2"-4"	FF/FB	BA-1V02
	2"-4"	FF/RB	BA-1V03
	1/2"-1 ½"	FF/Wedge	GA-1V01
	2"-4"	FF/Wedge	GA-1V02



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 29 of 271	

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
	1/2"-1 ½"	FF	GL-1V01
	2"-4"	FF	GL-1V02
	1/2"-1 ½"	FF/Lift	CK-1V01
	2"-4"	FF/Wafer	CK-1V02
3C0	1/2"-1 ½"	RF/FB	BA-3C01
	2"-4"	RF/FB	BA-3C02
	6"	RF/FB	BA-3C03
	2"-4"	RF/RB	BA-3C04
	6"	RF/RB	BA-3C05
	1/2"-1 ½"	RF/Wedge	GA-3C01
	2"-6"	RF/Wedge	GA-3C02
	1/2"-1 ½"	RF	GL-3C01
	2"-6"	RF	GL-3C02
	1/2"-1 ½"	RF/Lift	CK-3C01
	2"-6"	RF/Wafer	CK-3C02
3D3	1/2"-1 ½"	RF/FB	BA-3D31S
	2"-4"	RF/FB	BA-3D32S
	6"-18"	RF/FB	BA-3D33S
	2"-4"	RF/RB	BA-3D34S
	6"-18"	RF/RB	BA-3D35S
	1/2"-1 ½"	RF/Wedge	GA-3D31S
	2"-8"	RF/Wedge	GA-3D32S
	2"-8"	RF/Flat	GA-3D33S
	10"-18"	RF/Wedge	GA-3D34S
	10"-18"	RF/Flat	GA-3D35S
	1/2"-1 ½"	RF	GL-3D31S
	2"-6"	RF	GL-3D32S
	8"-16"	RF	GL-3D33S
	1/2"-1 ½"	RF/Lift	CK-3D31S
	2"-18"	RF/Wafer	CK-3D32S



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 30 of 271	

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
3D6	1/2"-1 ½"	RF/FB	BA-3D61S
	2"-4"	RF/FB	BA-3D62S
	6"-20"	RF/FB	BA-3D63S
	2"-4"	RF/RB	BA-3D64S
	6"-20"	RF/RB	BA-3D65S
	1/2"-1 ½"	RF/Wedge	GA-3D61S
	2"-8"	RF/Wedge	GA-3D62S
	2"-8"	RF/Flat	GA-3D63S
	10"-20"	RF/Wedge	GA-3D64S
	10"-20"	RF/Flat	GA-3D65S
	1/2"-1 ½"	RF	GL-3D61S
	2"-6"	RF	GL-3D62S
	8"-16"	RF	GL-3D63S
	1/2"-1 ½"	RF/Lift	CK-3D61S
	2"-20"	RF/Wafer	CK-3D62S
3L0	1/2"-1 ½"	RF/FB	BA-3L01
	2"-4"	RF/FB	BA-3L02
	6"-18"	RF/FB	BA-3L03
	2"-4"	RF/RB	BA-3L04
	6"-18"	RF/RB	BA-3L05
	1/2"-1 ½"	RF/Wedge	GA-3L01
	2"-8"	RF/Wedge	GA-3L02
	2"-8"	RF/Flat	GA-3L03
	10"-18"	RF/Wedge	GA-3L04
	10"-18"	RF/Flat	GA-3L05
	1/2"-1 ½"	RF	GL-3L01
	2"-6"	RF	GL-3L02
	8"-16"	RF	GL-3L03
	1/2"-1 ½"	RF/Lift	CK-3L01
	2"-18"	RF/Wafer	CK-3L02



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 31 of 271	

PIPING CLASS	VALVE SIZE RANGE	END CONNECTION/ CONSTRUCTION	TAG NO.
3N0	1/2"-1 ½"	RF/FB	BA-3N01
	2"-4"	RF/FB	BA-3N02
	6"-20"	RF/FB	BA-3N03
	2"-4"	RF/RB	BA-3N04
	6"-20"	RF/RB	BA-3N05
	1/2"-1 ½"	RF/Wedge	GA-3N01
	2"-8"	RF/Wedge	GA-3N02
	2"-8"	RF/Flat	GA-3N03
	10"-20"	RF/Wedge	GA-3N04
	10"-20"	RF/Flat	GA-3N05
	1/2"-1 ½"	RF	GL-3N01
	2"-6"	RF	GL-3N02
	8"-16"	RF	GL-3N03
	1/2"-1 ½"	RF/Lift	CK-3N01
	2"-20"	RF/Wafer	CK-3N02
3P0	1/2"-1 ½"	FF/FB	BA-3P01
	2"-4"	FF/FB	BA-3P02
	6"-18"	FF/FB	BA-3P03
	2"-4"	FF/RB	BA-3P04
	6"-18"	FF/RB	BA-3P05
	1/2"-1 ½"	FF/Wedge	GA-3P01
	2"-8"	FF/Wedge	GA-3P02
	2"-8"	FF/Flat	GA-3P03
	10"-18"	FF/Wedge	GA-3P04
	10"-18"	FF/Flat	GA-3P05
	1/2"-1 ½"	FF	GL-3P01
	2"-6"	FF	GL-3P02
	8"-16"	FF	GL-3P03
	1/2"-1 ½"	FF/Lift	CK-3P01
	2"-18"	FF/Wafer	CK-3P02



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 32 of 271	

APPENDIX C

VALVE CLASSES SPECIFICATION



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 33 of 271	

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size	in ASME B	36.10		
Pressure		Test Pre	<u>'</u>	(ASME B1	
Temperature Rating	800lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34	1	1	1	
Body Material	Carbon Steel ASTM A105				
Trim Material	Ball: A105+75µENP,Stem: ASTM A +RPTFE	182 F6a,S∈	eat And Seal:	A105+75µ	ENP
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	ΓM A194 2ŀ	H; Hot Dipped	Galvanize	d To ASTM
End Connection	800 Lb SW To Connect Pipe				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, One Piece, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A				
Notes:	0007111211211777		Packing Mat	erial:	
	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbestos Free.		Gasket Material			
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	More Than
4. Hydraulic Test According To API 598 / ASME B16.34.			The Gasket	Material Of	The
5. Valves Shall Have Position Indicator Showing Open And Close		Close	Corresponding Class In CMIT-		
Positions.			240048-728-	PIP-15.03-	3001
	cage Is Not Acceptable.		Additional Requirements:		
	on: EN 10204 Type3.1.		See Specification		
	s of Valves Should Take 1mm Corrosi	on			
Allowance Into Consid					
9. Valve Design Life is	s 25 Years.				
	Valve Check I	iet			
1		_131	Nominal Size	e Range	
Approved Manufactur	er Manufacturer Figure N	umber		- rango	
			1/2"-1 ½"		
Valva Type Del	1		Tag Number		
Valve Type Bal	ı			BA-1A11	
Piping Class 1A ²	1		Specification	Number	
I ping Oldoo IA	•		CMIT-2400	48-728-PIP	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 34 of 271	

Draggura		Test Pre	ssure Mpa	(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34				
Body Material	Carbon Steel ASTM A105				
Trim Material	Ball: A105+75µENP,Stem: ASTM A ² +RPTFE			·	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo				· emperature
Service	See APPENDIX A				<u> </u>
Notes:			Packing Mat	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe	stos Free.		Gasket Mate	rial	
3. Seals To Be Resista	ant To Explosive Decompression.		Manufacture	r Standard	/More Thar
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		The Gasket Material Of The		
5. Valves Shall Have I	Position Indicator Showing Open And	Close	Corresponding Class In CMIT-		
Positions.			240048-728-PIP-15.03-3001		
	kage Is Not Acceptable.		Additional Requirements:		
7. Material Certificatio			See Specific	ation	
	of Valves Should Take 1mm Corrosic	n			
Allowance Into Consid					
9. Valve Design Life is	s 25 Years.				
	Valve Check L				
Approved Manufacture	er Manufacturer Figure No	ımber	Nominal Size	e Range	
		,	1/2"-1 ½"		
			Tag Number	•	
Valve Type Ball			rag Mullibel	BA-1A12	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 35 of 271	

Dragouro		Test Pre	ME B36.10 est Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Ball: A105+75µENP,Stem: ASTM A182 F6a,Seat And Seal: A105+75µENP +RPTFE					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To ASTM F2329/ASTM A153					
End Connection	150 Lb RF Flange To ASME B16.5	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating					
Trim Construction	Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature					
Service	See APPENDIX A				'	
Notes:			Packing Mat	erial:		
Face To Face Dimensions To ASME B16.10.			Emission Free Material			
2. Valves To Be Asbestos Free.			Gasket Material			
3. Seals To Be Resistant To Explosive Decompression.			Manufacturer Standard/More Thar			
4. Hydraulic Test According To API 598 / ASME B16.34.			The Gasket Material Of The			
5. Valves Shall Have Position Indicator Showing Open And Close			Corresponding Class In CMIT-			
Positions.			240048-728-PIP-15.03-3001			
	akage Is Not Acceptable.		Additional Requirements:			
	on: EN 10204 Type3.1.		See Specification			
	ss of Valves Should Take 1mm Corrosion					
Allowance Into Cons						
9. Valve Design Life	is ∠o rears.					
Valve Check List						
Approved Manufactu	er Manufacturer Figure Number		Nominal Size Range			
			2"-4"			
Valve Type Ball			Tag Number			
				BA-1A13		
Piping Class 1A1			Specification		45.00.000:	
. .			CMIT-240048-728-PIP-15.03-3001			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 36 of 271		

Valve Specification							
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in						
Pressure	150lb ASME B16.34	Test Pres	Test Pressure Mpa (ASME B16.34)				
Temperature Rating		Body	By Vendor	Seat	By Vendor		
Design Code	API 6D / ASME B16.34						
Body Material	Carbon Steel						
	ASTM A216 WCB						
Trim Material	Ball: A105+75µENP,Stem: ASTM A182 F6a,Seat And Seal: A105+75µENP						
	+RPTFE						
Bolting	Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To ASTM						
_	F2329/ASTM A153						
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Gear Operator						
Body Construction	Full Bore, Split Body, Trunnion Mounted						
Trim Construction	Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate)						
	Anti-Static, Anti Blowout Stem						
	Sealing To Meet Requirements For Medium At Rated Pressure And Temperature						
Service	See APPENDIX A						
Notes:			Packing Material:				
1. Face To Face Dimensions To ASME B16.10.			Emission Free Material				
2. Valves To Be Double Block And Bleed ones, With Any End			Gasket Material				
Capable Of Bearing Full Differential Pressure.			Manufacturer Standard/More Than				
3. Valves To Be Asbestos Free.			The Gasket Material Of The				
 Seals To Be Resistant To Explosive Decompression. Hydraulic Test According To API 598 / ASME B16.34. 			Corresponding Class In CMIT- 240048-728-PIP-15.03-3001				
6. Valves Shall Have Position Indicator Showing Open And Close			Additional Requirements:				
Positions.			See Specification				
	kage Is Not Acceptable.	<u> </u>	occ opcomo	20011			
8. Material Certification	•						
	of Valves Should Take 1mm Corrosion	n					
Allowance Into Consideration.							
10. Valve Design Life	is 25 Years.						
Valve Check List							
Approved Manufacture	er Manufacturer Figure Nu	mber I	nber Nominal Size Range				
		(6"-18"				
Mahaa Turas D. II		-	Tag Number				
Valve Type Ball				BA-1A14			
Dining Class 444		;	Specification	Number			
Piping Class 1A1			CMIT-240048-728-PIP-15.03-3001				



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 37 of 271				

Specified Valve Size	Shall Be Equal To Nominal Pipe Size	in ASME B		(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Ball: A105+75µENP,Stem: ASTM A +RPTFE	182 F6a,Se	eat And Seal:	A105+75µ	ENP
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	ΓM A194 2I	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	- emperature
Service	See APPENDIX A				
 Valves To Be Asbe Seals To Be Resist Hydraulic Test Acc Valves Shall Have Positions. Inner Or Outer Lea Material Certification The Wall Thickness Allowance Into Consider Valve Design Life in 	tant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And kage Is Not Acceptable. on: EN 10204 Type3.1. s of Valves Should Take 1mm Corrosi deration. s 25 Years. Valve Check I	on _ist	Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Res See Specific	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement ation	/More Than The CMIT- 3001
Approved Manufactur	er Manufacturer Figure N	umber	Nominal Size	_	
Valve Type Bal	I		Tag Number	BA-1A15	
Piping Class 1A	1		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 38 of 271			

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size			/ACME D4	(C 24)
Pressure Temperature Rating	150lb ASME B16.34	Test Pre Body	By Vendor	(ASME B1	By Vendor
Design Code	API 6D / ASME B16.34		Veriuoi		Vendoi
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Ball: A105+75µENP,Stem: ASTM A	182 F6a,Se	eat And Seal:	A105+75µl	ENP
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	ΓM A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnior	Mounted			
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements			,	emperature
Service	See APPENDIX A				
2. Valves To Be Doub Capable Of Bearing F 3. Valves To Be Asbe 4. Seals To Be Resist 5. Hydraulic Test Acco 6. Valves Shall Have Positions. 7. Inner Or Outer Lea 8. Material Certification	cant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And kage Is Not Acceptable. on: EN 10204 Type3.1. s of Valves Should Take 1mm Corrosi deration. is 25 Years.	Close	Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Ree See Specific	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur	Valve Check I er Manufacturer Figure N		Nominal Size	e Range	
Valve Type Bal	I		Tag Number	BA-1A16	
Piping Class 1A	1		Specification CMIT-2400	Number 48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 39 of 271			

D		Test Pre	ssure Mna	(ASME B1	6.34)	
Pressure Temperature Rating	800lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34			-		
Body Material	Carbon Steel					
	ASTM A105					
Trim Material	Seats And Gate And Stem:410			0 1 .	LT 40T14	
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	1 A194 2F	H; Hot Dipped	Galvanize	d IO ASIM	
End Connection	800 Lb SW To Connect Pipe					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A			, , , , , , , , , , , , , , , , , , ,		
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suital	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbes	stos Free.		Manufacture	r Standard	/More Than	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		The Gasket	Material Of	The	
Inner Or Outer Leak	kage Is Not Acceptable.		Corresponding Class In CMIT-			
Material Certification	n: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
7. The Wall Thickness	of Valves Should Take 1mm Corrosion	ı	Additional Requirements:			
Allowance Into Consid			See Specific	ation		
8. Valve Design Life is						
	Valve Check Lis					
Approved Manufacture	er Manufacturer Figure Nur	nber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type (Gate		Tag Number	GA-1A11		
			Specification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 40 of 271			

Specified valve Size	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6 34)	
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105					
Trim Material	Seats And Gate And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2H	l; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita			Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
	s of Valves Should Take 1mm Corrosion		Additional Requirements:			
Allowance Into Consi			See Specific	ation		
8. Valve Design Life i						
A	Valve Check List	='	Noneta 101	Б		
Approved Manufactur	rer Manufacturer Figure Num	iber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type	Gate		Tag Number	GA-1A12		
Piping Class	1A1		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 41 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	ASME B3		/ACME D1	6.24)	
Pressure	150lb ASME B16.34	restrie	By By	(ASME B1	By	
Temperature Rating	TOOLS THE BTO.OT	Body	Vendor	Seat	Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel					
	ASTM A216 WCB					
Trim Material	Seats And Gate And Stem:410		=			
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2F	l; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
	Flexible Wedge Type					
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	nd API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Suita			Gasket Mate			
3. Valves To Be Asbe			Manufacture			
-	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1. s of Valves Should Take 1mm Corrosic	_	240048-728-PIP-15.03-3001			
Allowance Into Consider		"	Additional Requirements:			
8. Valve Design Life is			See Specific	ation		
o. varve beeign Ene i						
A	Valve Check L		Noneta 101	Б		
Approved Manufactur	er Manufacturer Figure Nu	ımber	Nominal Size	e Kange		
			2"-8"			
Valve Type	Gate		Tag Number			
				GA-1A13		
Piping Class	1A1		Specification		45.00.0004	
. .			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 42 of 271				

Opcomed varve eize	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASMF B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Seats And Gate And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2F	l; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita			Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
	s of Valves Should Take 1mm Corrosion		Additional Requirements:			
Allowance Into Consider			See Specification			
8. Valve Design Life i						
	Valve Check List			_		
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	e Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-1A14		
Piping Class	1A1		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 43 of 271	

opcomou varro cizo	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Seats And Gate And Stem:410				
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2h	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
	able For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe			Manufacture	r Standard	/More Than
•	cording To API 598 / ASME B16.34.		The Gasket		
	akage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
	s of Valves Should Take 1mm Corrosion		Additional Re	•	s:
Allowance Into Consi			See Specific	ation	
8. Valve Design Life i					
	Valve Check List		N	5	
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	e Range	
			10"-18"		
Valve Type	Gate		Tag Number	GA-1A15	
Piping Class	1A1		Specification		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 44 of 271		

	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Seats And Gate And Stem:410				
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2F	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
	able For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe			Manufacture	r Standard	/More Than
•	ording To API 598 / ASME B16.34.		The Gasket		
	skage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
	s of Valves Should Take 1mm Corrosion		Additional Re	•	s:
Allowance Into Consi			See Specific	ation	
8. Valve Design Life i					
American LBA	Valve Check List		Name to all Of	- D	
Approved Manufactur	rer Manufacturer Figure Num	iber	Nominal Size	e Range	
			10"-18"		
Valve Type	Gate		Tag Number	GA-1A16	
Piping Class	1A1		Specification	Number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	A Page 45 of 271		

Specified valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B3 Test Pre		(ASME B1	16 34)
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34			-	
Body Material	Carbon Steel				
body Material	ASTM A105				
Trim Material	Seat And Plug And Stem:410				
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2H	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	Are Not Acceptable		Gasket Mate	rial	
2. Valves To Be Suita			Manufacture	r Standard	/More Than
3. Valves To Be Asbe			The Gasket		
	kage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
	s of Valves Should Take 1mm Corrosion		Additional Re	•	is:
Allowance Into Consideration 7. Valve Design Life is			See Specific	ation	
7. Valve Besign Elle I					
A	Valve Check List		Noneta 101	Б	
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Glo	bbe		Tag Number	GL-1A11	
			Specification		
Piping Class 1A			opecification	NUMBE	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 46 of 271	

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size			/A ON 4E D4	0.04)
Pressure	150lb ASME D16 24	Test Pre		(ASME B1	·
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34				
Body Material	Carbon Steel				
	ASTM A216 WCB				
Trim Material	Seat And Plug And Stem:410				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	ΓM A194 2ŀ	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
	Swivel Type Plug, Renewable Seat				
Trim Construction	Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A		·	,	
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	Are Not Acceptable.	İ	Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	More Than
3. Valves To Be Asbe			The Gasket	Material Of	The
	ikage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
_	s of Valves Should Take 1mm Corrosi	on	Additional Re	•	s:
Allowance Into Consi			See Specific	ation	
7. Valve Design Life i					
	Valve Check I				
Approved Manufactur	rer Manufacturer Figure N	umber	Nominal Size	e Range	
			2"-6"		
Valve Type Glo	bbe		Tag Number		
vaive rype Git				GL-1A12	
Piping Class 1A	 1		Specification		
i iping Oldoo IA			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	А	Page 47 of 271	

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size i	n ASME B3		/ACME D1	6 24)
Pressure	150lb ASME B16.34	rest Pre	By By	(ASME B1	By
Temperature Rating	130ID AOME D10.54	Body	Vendor	Seat	Vendor
Design Code	API 623 / ASME B16.34				
Body Material	Carbon Steel				
	ASTM A216 WCB				
Trim Material	Seat And Plug And Stem:410				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	TM A194 2H	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Tuine Constitution	Swivel Type Plug, Renewable Seat				
Trim Construction	Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	•		Gasket Mate		
2. Valves To Be Suita			Manufacture	r Standard	More Than
3. Valves To Be Asbe			The Gasket		
	kage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
	s of Valves Should Take 1mm Corrosid	on	Additional Re	•	s:
Allowance Into Consider			See Specific	ation	
7. Valve Design Life i					
	Valve Check I			_	
Approved Manufactur	rer Manufacturer Figure N	umber	Nominal Size	e Range	
			8"-16"		
Valve Type Glo	ohe		Tag Number		
valve Type GIC	DDG			GL-1A13	
Piping Class 1A ²	1		Specification	Number	
i ipilig Class - IA	1		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 48 of 271	

	API 602 / ASME B16.34 Carbon Steel ASTM A105 Seat And Disc:410 Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153 150 Lb RF Flange To ASME B16.5 See APPENDIX A Lift Piston	Test Pres	By Vendor	Seat Galvanize	By Vendor
Body Material Trim Material Bolting End Connection Temperature Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim	Carbon Steel ASTM A105 Seat And Disc:410 Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153 150 Lb RF Flange To ASME B16.5 See APPENDIX A	/I A194 2H	l; Hot Dipped	Galvanize	d To ACTA
Trim Material Bolting End Connection Temperature Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim	ASTM A105 Seat And Disc:410 Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153 150 Lb RF Flange To ASME B16.5 See APPENDIX A	1 A194 2H	I; Hot Dipped	Galvanize	d To ACT14
Trim Material Bolting End Connection Temperature Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim	Seat And Disc:410 Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153 150 Lb RF Flange To ASME B16.5 See APPENDIX A	1 A194 2H	I; Hot Dipped	Galvanize	4 To ACT!
Bolting End Connection Temperature Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153 150 Lb RF Flange To ASME B16.5 See APPENDIX A	/I A194 2H	l; Hot Dipped	Galvanize	d To ^OT'
End Connection Temperature Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim	F2329/ASTM A153 150 Lb RF Flange To ASME B16.5 See APPENDIX A	1 A194 2H	I; Hot Dipped	Galvanize	4 T4 A 0 T M
Temperature Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim	See APPENDIX A				u TO ASTM
Limitations Valve Operation Body Construction Trim Construction Service Notes: 1. Face To Face Dim					
Body Construction Trim Construction Service Notes: 1. Face To Face Dim					
Trim Construction Service Notes: 1. Face To Face Dim	Lift Piston				
Service Notes: 1. Face To Face Dim					
Notes: 1. Face To Face Dim	Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
1. Face To Face Dim	See APPENDIX A				
			Packing Mat	erial:	
Short Pattern Valves A	ensions To ASME B16.10.		Emission Fre	ee Material	
SHOIL FALLETTI VAIVES A	re Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suitab	ole For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbes	stos Free.		The Gasket	Material Of	The
4. Hydraulic Test Acco	rding To API 598 / ASME B16.34.		Correspondi	ng Class In	ı CMIT-
5. Inner Or Outer Leak	age Is Not Acceptable.		240048-728-	PIP-15.03-	-3001
6. Material Certification	n: EN 10204 Type3.1.		Additional Re	equirement	is:
7. The Wall Thickness	of Valves Should Take 1mm Corrosion	ı	See Specific	ation	
Allowance Into Conside	eration.				
8. Valve Design Life is	25 Years.				
	Valve Check Lis				
Approved Manufacture	er Manufacturer Figure Nur	nber	Nominal Size	e Range	
			1/2"-1 ½"		
Valve Type Che	ck, Lift Piston		Tag Number	CK-1A11	
Piping Class 1A1			Specification		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 49 of 271			

Specified Valve Size		Test Pro		(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34			-	
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Seat And Disc:410				
Bolting	Bolt To ASTM A193 B7, Nut To AS F2329/ASTM A153		•		
End Connection	150 Lb To Be Connected With RF Connection.	Flanges Ac	cording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Patt				
Trim Construction	Fire Tested To BS EN ISO 10497	And API 6F	A(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
	ensions To Dual-Plate Lug Type Che		Emission Fre		
• •	Short Pattern Valves Are Not Accepta	ble.	Gasket Mate		
	able For Full Vacuum.		Manufacture		
3. Valves To Be Asbe			The Gasket		
•	cording To API 598 / ASME B16.34.		Correspondi	-	
	akage Is Not Acceptable.		240048-728-		
	on: EN 10204 Type3.1.		Additional Re	•	ts:
	s of Valves Should Take 1mm Corros	SION	See Specific	ation	
Allowance Into Consi 8. Valve Design Life i					
o. valve besign Life i					
	Valve Check				
Approved Manufactu	rer Manufacturer Figure I	Number	Nominal Size	e Range	
			2"-18"		
Valve Type Wa	afer Check Valve		Tag Number	CK-1A12	
Piping Class 1A	1		Specification	Number	
5 0.0.00	· -		CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 50 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36 Test Press		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 609 CATEGORY-B				-
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Trim: AISI 410,Stem: ASTM A182 F6	a,Seat and	Seal: Cr13 v	vith Surface	e quenching
Bolting	Bolt To ASTM A193 B7, Nut To ASTI F2329/ASTM A153	M A194 2H;	Hot Dipped	Galvanized	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Three-Eccentricity Lug Type, Metal-S	Seat			
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dime	ensions To API 609 CATEGORY-B Lug	type. E	Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Sasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.	N	/lanufacturer	r Standard/	More Than
3. Valves To Be Asbe	stos Free.	Т	he Gasket N	Material Of	The
4. Inner Or Outer Lea	kage Is Not Acceptable.	C	Correspondin	ng Class In	CMIT-
5. Material Certification	n: EN 10204 Type3.1.	2	240048-728-	PIP-15.03-	3001
6. The Wall Thickness	s of Valves Should Take 1mm Corrosion	n 🗡	Additional Re	equirements	S:
Allowance Into Consid	deration.	S	See Specifica	ation	
7. Valve Design Life is	s 25 Years.				
	Valve Check Li			_	
Approved Manufactur	er Manufacturer Figure Nu	mber N	Nominal Size	Range	
)"		
Valve Type But	terfly		ag Number	BT-1A11	
Dining Olever	•	5	Specification		
Piping Class 1A ²	1		•	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 51 of 271			

Valve Specification		:			
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 609 CATEGORY-B			1	
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Trim: AISI 410,Stem: ASTM A182 F6	Sa,Seat and	Seal: Cr13 v	vith Surfac	e quenching
Bolting	Bolt To ASTM A193 B7, Nut To ASTI F2329/ASTM A153	M A194 2H;	Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Three-Eccentricity Lug Type, Metal-S	Seat			
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1.Face To Face Dime	nsions To API 609 CATEGORY-B Lug	type.	Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.	(Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	Standard/	More Than
3. Valves To Be Asbe	stos Free.	-	The Gasket N	Material Of	The
4. Inner Or Outer Leal	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-
5. Material Certificatio	n: EN 10204 Type3.1.	:	240048-728-	PIP-15.03-	3001
6. The Wall Thickness	s of Valves Should Take 1mm Corrosion	n ,	Additional Re	equirement	s:
Allowance Into Consid	deration.	;	See Specifica	ation	
7. Valve Design Life is	s 25 Years.				
	Valve Check Li	st			
Approved Manufactur	er Manufacturer Figure Nu	ımber l	Nominal Size	Range	
			8"-18"		
Valve Type But	terfly		Tag Number	BT-1A12	
Piping Class 1A1	ı		Specification CMIT-2400	Number	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 52 of 271		

Valve Specification	01 11 2 5 1 7 11 1 12 12 12 13	4 ON 4 E 1904					
	Shall Be Equal To Nominal Pipe Size in	Test Pres		(ASME B1	6.34)		
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	ISO 17292 / ASME B16.34	ISO 17292 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A182 F51						
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,	Seat and Sea	al: A182-F	51+Stellite		
Bolting	Bolt To ASTM A193 B7, Nut To ASTI F2329/ASTM A153	M A194 2H;	Hot Dipped	Galvanize	d To ASTM		
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Lever						
Body Construction	Full Bore, Split Body, Floating						
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For	`	J	,	emperature		
Service	See APPENDIX A						
 Valves To Be Asbe Seals To Be Resist Hydraulic Test Acc Valves Shall Have Positions. Inner Or Outer Lea 	tant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And C kage Is Not Acceptable. on: EN 10204 Type3.1. s 25 Years. Valve Check Li	Close (2)	Packing Mate Emission Fre Gasket Mate Manufacture The Gasket I Correspondir 240048-728- Additional Re See Specification	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement ation	The CMIT- 3001		
Valve Type Bal			1/2"-1 ½" Tag Number	DA 4444			
Piping Class 1A	4		Specification CMIT-2400		15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 53 of 271		

Valve Specification					
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	6.10		
Pressure		Test Press	sure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51.S	Seat and Sea	al: A182-F5	51+Stellite
Bolting	Bolt To ASTM A193 B7, Nut To ASTN F2329/ASTM A153				
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem	d API 607(F	Providing Ce	rtificate)	
	Sealing To Meet Requirements For	Medium At	Rated Press	sure And T	emperature
Service	See APPENDIX A				
Notes:	,	F	Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Asbe	stos Free.	(Gasket Mate	rial	
	ant To Explosive Decompression.	1	Manufacture:	r Standard/	More Than
_	ording To API 598 / ASME B16.34.		The Gasket N	Material Of	The
	Position Indicator Showing Open And C		Correspondir	-	
Positions.	rana la Nat Assantable		240048-728-		
	kage Is Not Acceptable.		Additional Re		S:
	n: EN 10204 Type3.1.	8	See Specifica	ation	
8. Valve Design Life is	3 25 Years.				
	Valve Check Li	st			
Approved Manufactur	er Manufacturer Figure Nu	mber N	Nominal Size	Range	
			2"-4"		
Valve Type Ball		7	Tag Number	_ , ,	
, ,				BA-1A42	
Piping Class 1A4			Specification CMIT-2400		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 54 of 271		

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A				
Pressure	L	Test Press		(ASME B16	· · · · · · · · · · · · · · · · · · ·
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			1	•
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERLA	Y CLAD (TH	HK≥3 mm)	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	.182-F51,S	eat and Sea	al: A182-F5	1+Stellite
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2H;	Hot Dipped	Galvanized	To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Full Bore, Split Body, Trunnion Mounte	ed			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For N	•	-	·	mperature
Service	See APPENDIX A				<u>'</u>
Notes:	ensions To ASME B16.10.		acking Mate		
2. Valves To Be Doub	ole Block And Bleed ones, With Any End	G	Sasket Mate	rial	
Capable Of Bearing F	Full Differential Pressure.	N	Manufacturer Standard/More Than		
3. Valves To Be Asbe	estos Free.	Т	The Gasket Material Of The		
4. Seals To Be Resist	tant To Explosive Decompression.	C	Corresponding Class In CMIT-		
•	ording To API 598 / ASME B16.34.	II.	240048-728-PIP-15.03-3001		
	Position Indicator Showing Open And Clo	ose A	Additional Requirements:		
Positions.		S	ee Specifica	ation	
	kage Is Not Acceptable.				
	on: EN 10204 Type3.1.				
9. Valve Design Life i	s 25 Years.				
	V-l Ob . 1.1.1				
Approved Manufactur	Valve Check List rer Manufacturer Figure Num		Iominal Size	Range	
		6	"-18"		
Valve Type Bal		T	ag Number		
varve rype Dai				BA-1A43	
Piping Class 1A	4	S	pecification		F 00 000 /
. .			CMIT-24004	48-728-PIP-1	5.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 55 of 271		

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in			(4.01.45.5.	10.04)	
Pressure	4501- ACME D40 24	Test Pressure Mpa (ASME B16.34				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34			•		
Body Material	Duplex Stainless Steel					
	ASTM A890 Gr.4A					
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM	Л А194 2H	H; Hot Dipped	Galvanize	d To ASTM	
	F2329/ASTM A153					
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Reduced Bore, Split Body, Floating					
	Fire Tested To BS EN ISO 10497 And	d API 607	(Providing Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For	Medium A	At Rated Pres	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	nensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Asb			Gasket Mate	rial		
	stant To Explosive Decompression.		Manufacture	r Standard	/More Than	
•	cording To API 598 / ASME B16.34.		The Gasket			
	Position Indicator Showing Open And C	lose	Correspondi	•		
Positions.			240048-728-			
	akage Is Not Acceptable.		Additional Re	•	is:	
	on: EN 10204 Type3.1.		See Specific	ation		
8. Valve Design Life	is 25 Years.					
	Valve Check Lis			_		
Approved Manufactu	rer Manufacturer Figure Nui	mber	Nominal Size	e Range		
			2"-4"			
Valve Type Ba	<u></u>		Tag Number			
				BA-1A44		
Piping Class 1A	.4		Specification			
	· ·		CMIT-2400	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 56 of 271		

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	5.10		
Pressure		Test Press		(ASME B16	5.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		1		'
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN	G OVERLA	Y CLAD (TH	HK≥3 mm)	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,S	Seat and Sea	al: A182-F5	1+Stellite
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	И A194 2H;	Hot Dipped	Galvanized	To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion I	Mounted			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For	·		•	emperature
Service	See APPENDIX A				
 Valves To Be Doub Capable Of Bearing F Valves To Be Asbed Seals To Be Resist Hydraulic Test Accod Valves Shall Have In Positions. Inner Or Outer Leaf 	ant To Explosive Decompression. Ording To API 598 / ASME B16.34. Position Indicator Showing Open And Cocage Is Not Acceptable. In: EN 10204 Type3.1. S 25 Years. Valve Check Lis	E Company of the comp	Packing Mater Emission Free Gasket Mater Manufacturer The Gasket M Corresponding 240048-728-1 Additional Ree See Specification	rial r Standard/l Material Of ng Class In PIP-15.03-3 equirements ation	The CMIT- 3001
			5"-18"		
Valve Type Ball			ag Number	BA-1A45	
Piping Class 1A4		S	Specification CMIT-2400	Number 48-728-PIP-1	5.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 57 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B		/ACME D	IG 24)
Pressure	150lb ASME B16.34	rest Pre	By	· ` `	
Temperature Rating	TOOID ACIVIL D10.54	Body	Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Duplex Stainless Steel				
	ASTM A182 F51				
Trim Material	Seats And Gate: ASTM A182 F51+S				
Bolting	Bolt To ASTM A193 B7, Nut To AST	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
	F2329/ASTM A153				
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Rody Construction	Bolted Bonnet, Rising Stem				
Body Construction	Outside Screw And Yoke				
Trim Construction	Solid Wedge Type				
Tim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Suita	able For Full Vacuum.	Ī	Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	/More Than
•	cording To API 598 / ASME B16.34.		The Gasket	Material Of	The
	akage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-	PIP-15.03	-3001
7. Valve Design Life	is 25 Years.		Additional Re	equirement	is:
			See Specific	ation	
	Valve Check L				
Approved Manufactu	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			1/2"-1 ½"		
Valve Type	Gate		Tag Number		
varvo Type				GA-1A41	
Piping Class	1A4		Specification	Number	
i iping Olass	17.77		CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 58 of 271		

Valve Specification	Shall Be Equal To Nominal Pipe Size i	ASME B	36.10		
	Shall be Equal to Northhal Fipe Size II	Test Pre		(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seats And Gate: ASTM A182 F51+S	tellite, Ste	m: ASTM A18	32 F51	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes: 1. Face To Face Dim	ensions To ASME B16.10.		Packing Mat Emission Fre		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	/More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket	Material Of	The
5. Inner Or Outer Lea	akage Is Not Acceptable.		Correspondi	ng Class Ir	CMIT-
6. Material Certification	on: EN 10204 Type3.1.		240048-728-	PIP-15.03	-3001
7. Valve Design Life	s 25 Years.		Additional Re	equirement	is:
			See Specific	ation	
	Valve Check L				
Approved Manufactu	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			2"-8"		
Valve Type	Gate		Tag Number	GA-1A42	
Piping Class	1A4		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 59 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in			/ACME D	16.24)
Pressure	150lb ASME B16.34	Test Pre	By By	Mpa (ASME B16.34)	
Temperature Rating	TOOID ASIVE D10.34	Body	Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Duplex Stainless Steel				
	ASTM A890 Gr.4A				
Trim Material	Seats And Gate: ASTM A182 F51+S				
Bolting	Bolt To ASTM A193 B7, Nut To AST	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
	F2329/ASTM A153				
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Pady Capatruction	Bolted Bonnet, Rising Stem				
Body Construction	Outside Screw And Yoke				
Trim Construction	Flat Gate				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	/More Than
•	cording To API 598 / ASME B16.34.		The Gasket	Material Of	The
	akage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-	PIP-15.03	-3001
7. Valve Design Life	is 25 Years.		Additional Re	equirement	is:
			See Specific	ation	
	Valve Check L	st			
Approved Manufactu	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			2"-8"		
Valve Type	Gate		Tag Number		
valve Type				GA-1A43	
Piping Class	1A4		Specification	Number	
i iping Olass	17.77		CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 60 of 271		

Valve Specification	Shall Be Equal To Nominal Pipe Size i	n ASME R	86 10		
<u> </u>	Shall be Equal to Northhal Fipe Size I	Test Pre		(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDII	NG OVERL	AY CLAD (TI	HK≥3 mm)
Trim Material	Seats And Gate: ASTM A182 F51+5	Stellite, Ster	m: ASTM A18	2 F51	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	/More Than
•	cording To API 598 / ASME B16.34.		The Gasket	Material Of	The
	ikage Is Not Acceptable.		Correspondi	ng Class Ir	CMIT-
Material Certification	on: EN 10204 Type3.1.		240048-728-	PIP-15.03-	-3001
7. Valve Design Life i	s 25 Years.		Additional Re	equirement	is:
			See Specific	ation	
	Valve Check L			_	
Approved Manufactur	rer Manufacturer Figure N	umber	Nominal Size	e Range	
			10"-18"		
Valve Type	Gate		Tag Number	GA-1A44	
Piping Class	1A4		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 61 of 271		

Valve Specification	Shall Be Equal To Nominal Pipe Size ir	ASME B36	S 10		
<u> </u>	Silan Be Equal to Herrinian tipe eize ii	Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		1		
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN		,)
Trim Material	Seats And Gate: ASTM A182 F51+S	tellite, Stem	: ASTM A18	32 F51	
Bolting	Bolt To ASTM A193 B7, Nut To ASTI F2329/ASTM A153	M A194 2H;	Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 An	d API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	ee Material	
2. Valves To Be Suita	able For Full Vacuum.	(Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.	1	Manufacture	r Standard	More Than
•	cording To API 598 / ASME B16.34.	-	The Gasket I	Material Of	The
5. Inner Or Outer Lea	ikage Is Not Acceptable.	(Correspondir	ng Class In	CMIT-
Material Certification	on: EN 10204 Type3.1.	2	240048-728-	PIP-15.03-	3001
7. Valve Design Life i	s 25 Years.	1	Additional Re	equirement	s:
			See Specific	ation	
	Valve Check Li				
Approved Manufactu	rer Manufacturer Figure Nu	mber i	Nominal Size	e Range	
			10"-18"		
Valve Type	Gate	-	Гад Number		
vaive Type	Gale			GA-1A45	
Pining Class	1A4		Specification	Number	
Piping Class	IA4		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 62 of 271		

Pressure		Test Pres	ssure Mpa	(ASME B1	16.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34			l	
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Seat And Plug: ASTM A182 F51+Stelli	ite, Stem	: ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2H	I; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes: 1. Face To Face Dime	ensions To ASME B16.10.		Packing Mat Emission Fre		
Short Pattern Valves	Are Not Acceptable		Gasket Mate	rial	
2. Valves To Be Suita	ible For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe			The Gasket	Material Of	The
	kage Is Not Acceptable.		Correspondi	ng Class Ir	n CMIT-
Material Certification	on: EN 10204 Type3.1.		240048-728-	PIP-15.03	-3001
6. Valve Design Life is	s 25 Years.		Additional Re	equirement	ts:
			See Specific	ation	
	Valve Check List				
Approved Manufactur	er Manufacturer Figure Num	nber	Nominal Size	e Range	
			1/2"-1 ½"		
Valva Type Cla	sho		Tag Number		
Valve Type Glo	oue .			GL-1A41	
Piping Class 1A	1		Specification	Number	
i ipilig Olass IA	т		CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 63 of 271			

Valve Specification	OL II D. E I T. N I D O	1 ON 1 F DO	2.40		
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	Test Pres		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34			1	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Plug: ASTM A182 F51+Ste	ellite, Stem:	ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 Ar	nd API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A				
	ensions To ASME B16.10.		Packing Mate Emission Fre	ee Material	
Short Pattern Valves 2. Valves To Be Suita 3. Valves To Be Asbe 4. Inner Or Outer Lea	able For Full Vacuum.		Gasket Mate Manufacture The Gasket I Correspondii	r Standard <i>i</i> Material Of	The
	on: EN 10204 Type3.1.		240048-728-	•	
6. Valve Design Life i	s 25 Years.		Additional Re See Specific	-	s:
	Valve Check L				
Approved Manufactu	rer Manufacturer Figure Nu	ımber	Nominal Size	e Range	
			2"-6"		
Valve Type Glo	bbe		Tag Number	GL-1A42	
Piping Class 1A	4	;	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 64 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size i	n ASME B3	6.10		
		Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34	'	·	<u>'</u>	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Plug: ASTM A182 F51+Ste	ellite, Stem:	ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 Ar	nd API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat		
	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	•		Gasket Mate		
2. Valves To Be Suita			Manufacture		
3. Valves To Be Asbe			The Gasket		
	kage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
6. Valve Design Life i	s 25 Years.		Additional Re See Specific	•	S:
	Valve Check L				
Approved Manufactur	rer Manufacturer Figure Nu	ımber	Nominal Size	e Range	
			8"-16"		
Valve Type Glo	bbe		Tag Number		
J1 = 0.0				GL-1A43	
Piping Class 1A	4		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 65 of 271		

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B3				
Pressure		Test Pre	t Pressure Mpa (ASME B16.34)			
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34		'	•	•	
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seat And Disc: ASTM A182 F51+Ste	llite				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2F	l; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Lift Piston					
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes: 2. Face To Face Dir	mensions To ASME B16.10.		Packing Mate Emission Fre			
Short Pattern Valves	Are Not Acceptable.		Gasket Material			
2. Valves To Be Suita	able For Full Vacuum.		Manufacturer Standard/More Than			
3. Valves To Be Asbe	estos Free.		The Gasket	Material O	f The	
•	ording To API 598 / ASME B16.34. kage Is Not Acceptable.		Corresponding Class In CMIT- 240048-728-PIP-15.03-3001			
 6. Material Certification 7. Valve Design Life in 	on: EN 10204 Type3.1. s 25 Years.		Additional Re See Specific	•	ts:	
	Valve Check L	st				
Approved Manufactur	rer Manufacturer Figure Nu	mber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type Ch	eck, Lift Piston		Tag Number	CK-1A41		
Piping Class 1A4			Specification CMIT-2400		-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 66 of 271		

Dragatina		Test Pres	ssure Mpa	(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34			-	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Disc: ASTM A182 F51+Stel	lite			
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153				
End Connection	150 Lb To Be Connected With RF Fla Connection.	inges Acc	ording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Pattern				
Trim Construction	Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat		
1. Face To Face Dim	ensions To Dual-Plate Lug Type Check	Valve	Emission Fre	ee Material	
Of API 594 Type A. S	Short Pattern Valves Are Not Acceptable		Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe			The Gasket I	Material Of	The
	cording To API 598 / ASME B16.34.		Correspondi	-	
	ikage Is Not Acceptable.		240048-728-	PIP-15.03-	-3001
	on: EN 10204 Type3.1.		Additional Re	equirement	is:
7. Valve Design Life	s 25 Years.		See Specific	ation	
	Valve Check Lis				
Approved Manufactu	rer Manufacturer Figure Nur	mber	Nominal Size	e Range	
			2"-18"		
Valve Type Wa	afer Check Valve		Tag Number		
71				CK-1A42	
Piping Class 1A	4		Specification		
. 3			CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 67 of 2			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size	e in ASME B			
Pressure		Test Pre	ssure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34		'	I.	l .
Body Material	Stainless Steel ASTM A182 F316L				
Trim Material	Ball: ASTM A182 F316L+Stellite,S A182 F316L+RPTFE			Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2,	Nut To AST	M A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5	5			
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 Anti-Static, Anti Blowout Stem Sealing To Meet Requirements			,	emperature
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial	
3. Seals To Be Resis	tant To Explosive Decompression.		Manufacture	r Standard	More Than
4. Inner Or Outer Lea	akage Is Not Acceptable.		The Gasket	Material Of	The
5. Hydraulic Test Acc	cording To API 598 / ASME B16.34.		Correspondi	ng Class In	CMIT-
6. Valves Shall Have	Position Indicator Showing Open And	d Close	240048-728-	PIP-15.03-	3001
Positions.			Additional R	equirement	s:
7.Material Certification	n: EN 10204 Type3.1.		See Specific	-	
8. Valve Design Life	is 25 Years.				
	Valve Check	List			
Approved Manufactu	rer Manufacturer Figure	Number	Nominal Size	e Range	
			1/2"-1 ½"		
Valva Type De			Tag Number		
Valve Type Ba	II			BA-1C01	
Dining Class 40	0		Specification	Number	
Piping Class 1C	U		•	48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 68 of 271			

Pressure	hall Be Equal To Nominal Pipe Size in	ASME B3	6 10		
		Test Pres		(ASME B16	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			•	•
Body Material	Stainless Steel				
	ASTM A351 CF3M	A OTN 4 A	400 50401 0) t I O .	I AOTNA
Trim Material	Ball: ASTM A182 F316L+Stellite,Sten A182 F316L+RPTFE	n: ASTM A	(182 F316L,S	eat and Se	al: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2, Nu	ıt To ASTN	/ A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For	·	-	,	emperature
Service	See APPENDIX A				
Notes:			Packing Mate		
	nsions To ASME B16.10.	_	Emission Fre		
2. Valves To Be Asbest			Gasket Mate		
4. Inner Or Outer Leak	nt To Explosive Decompression.		Manufacture		
5.Material Certification:	•		The Gasket I		
6. Valve Design Life is	<u> </u>		Correspondir 240048-728-	•	
o. valve Boolgii Elle le	20 T Gal. 6.	_	Additional Re		
			See Specifica	-	··
	Valve Check Lis			_	
Approved Manufacture	r Manufacturer Figure Nur	mber	Nominal Size	Range	
			2"-4"		
Valve Type Ball			Tag Number		
			0 '6' ''	BA-1C02	
Piping Class 1C0			Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 69 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size				
Pressure		Test Pre	<u>.</u>	(ASME B1	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34	'		1	•
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Ball: ASTM A182 F316L+Stellite,Stellite	em: ASTM	A182 F316L,S	Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2, N	lut To AST	M A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Full Bore, Split Body, Trunnion Mou	nted			
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem	nd API 607	(Providing Ce	ertificate)	
	Sealing To Meet Requirements Fo	or Medium A	At Rated Pres	sure And T	emperature
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Doul	ble Block And Bleed ones, With Any E	nd	Gasket Mate	rial	
Capable Of Bearing F	Full Differential Pressure.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe	estos Free.		The Gasket	Material Of	The
4. Seals To Be Resis	tant To Explosive Decompression.		Correspondi	ng Class Ir	CMIT-
5. Inner Or Outer Lea	akage Is Not Acceptable.		240048-728-	PIP-15.03-	3001
6.Material Certification	n: EN 10204 Type3.1.		Additional Re	equirement	s:
7. Valve Design Life i	s 25 Years.		See Specific	ation	
	Valve Check I				
Approved Manufactu	rer Manufacturer Figure N	umber	Nominal Size	e Range	
			6"		
Valve Type Ba			Tag Number		
				BA-1C03	
C03 1C	0		Specification		
	-		CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 70 of 271			

Design Code	Valve Specification					
Pressure Temperature Rating Design Code API 6D / ASME B16.34 Body Material ASTM A351 CF3M Trim Material Ball: ASTM A182 F316L+Stellite,Stem: ASTM A182 F316L,Seat and Seal: ASTM A182 F316L+RPTFE Bolting Bolt To ASTM A320 B8M Class 2, Nut To ASTM A194 8M End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations Valve Operation Lever Body Construction Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: Alimer Or Outer Leakage Is Not Acceptable. Shaterial Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Manufacturer Standard/More Thar The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Manufacturer Nominal Size Range 2"-4" Valve Type Ball	Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in				
Temperature Rating Design Code API 6D / ASME B16.34 Body Material Stainless Steel ASTM A351 CF3M Trim Material Ball: ASTM A182 F316L+Stellite, Stem: ASTM A182 F316L, Seat and Seal: ASTM A182 F316L+RPTFE Bolting Bolt To ASTM A320 B8M Class 2, Nut To ASTM A194 8M End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations Valve Operation Body Construction Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Otter Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Check List Approved Manufacturer Valve Type Ball APS MAIS2 F316L, Seat and Seal: ASTM A182 F316L, Seat and Seal: ASTM A194 8M Franch A194 8M	Pressure		Test Pre		(ASME B1	
Stainless Steel		150lb ASME B16.34	Body	-	Seat	By Vendor
Body Material ASTM A351 CF3M Ball: ASTM A182 F316L+Stellite, Stem: ASTM A182 F316L, Seat and Seal: ASTM A182 F316L+RPTFE Bolting Bolt To ASTM A320 B8M Class 2, Nut To ASTM A194 8M End Connection 150 Lb RF Flange To ASME B16.5	Design Code	API 6D / ASME B16.34				
Trim Material Ball: ASTM A182 F316L+Stellite,Stem: ASTM A182 F316L,Seat and Seal: ASTM A182 F316L+RPTFE Bolting Bolt To ASTM A320 B8M Class 2, Nut To ASTM A194 8M End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Valve Operation Lever Body Construction Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607 (Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range Valve Type Ball Tag Number BA-1C04	Body Material					
A182 F316L+RPTFE Bolting Bolt To ASTM A320 B8M Class 2, Nut To ASTM A194 8M End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations Valve Operation Body Construction Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Ani Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Check List Mominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04	,					
Bolting Bolt To ASTM A320 B8M Class 2, Nut To ASTM A194 8M End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Valve Operation Lever Body Construction Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range Valve Type Ball Valve Type Ball Tag Number BA-1C04	Trim Material		m: ASTM A	\182 F316L,S	Seat and Se	eal: ASTM
End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Valve Operation Lever Body Construction Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607 (Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Valve Type Ball Tag Number Fire Tested To ASME B16.5 Fire Tested To BS EN ISO 10497 And API 607 (Providing Certificate) And API 607 (Providing Certificate) Aproviding Certificate Emission Free Material Gasket Material: Emission Free Material Gasket Material Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification	Bolting		ut To ASTI	Л A194 8M		
Temperature Limitations Valve Operation Valve Operation Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607 (Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Check List Valve Type Ball Valve Type Ball See APPENDIX A Packing Material: Emission Free Material Gasket Material Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ba-1C04			ut 107t011	VI 7 (10 1 0IVI		
Reduced Bore, Split Body, Floating Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A	Temperature					
Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Valve Check List Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate) Anti-Static, Anti Blowout Stem See Medical Temperature For Medium At Rated Pressure And Temperature For Medium At Rated Pressure And Temperature For Medium At Rated Pressure And Temperature For Medium At Rated Pressure And Temperature For Medium At Rated Pressure And Temperature Emission Free Material Gasket Material Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Approved Manufacturer Nominal Size Range 2"-4" Tag Number BA-1C04	Valve Operation	Lever				
Trim Construction Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Approved Manufacturer Manufacturer Figure Number Valve Type Ball Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature End Sealing Manufactial: Emission Free Material Emission Free Material Gasket Material Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-4" Tag Number BA-1C04	Body Construction	Reduced Bore, Split Body, Floating				
Trim Construction Sealing To Meet Requirements For Medium At Rated Pressure And Temperature Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Approved Manufacturer Manufacturer Figure Number Valve Type Ball Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Medium At Rated Pressure And Temperature End Sealing Manufactial: Emission Free Material Emission Free Material Gasket Material Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-4" Tag Number BA-1C04	-		d API 607	(Providing Ce	rtificate)	
Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Ball Packing Material: Emission Free Material Gasket Material Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04	Trim Construction	Anti-Static, Anti Blowout Stem			,	
Notes: 1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Ball Packing Material: Emission Free Material Gasket Material Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04		Sealing To Meet Requirements For	Medium A	t Rated Pres	sure And T	emperature
1. Face To Face Dimensions To ASME B16.10. 2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04	Service	See APPENDIX A				
2. Valves To Be Asbestos Free. 3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04	Notes:			Packing Mate	erial:	
3. Seals To Be Resistant To Explosive Decompression. 4. Inner Or Outer Leakage Is Not Acceptable. 5.Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04	1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material	
4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Ball The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04	2. Valves To Be Asbe	stos Free.		Gasket Mate	rial	
5.Material Certification: EN 10204 Type 3.1. 6. Valve Design Life is 25 Years. Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Ball Tag Number BA-1C04	Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	More Than
6. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Ball Valve Type Valve Type Valve Type Ball Valve Type Valve Type Ball Valve Type Additional Requirements: See Specification Nominal Size Range 2"-4" Tag Number BA-1C04				The Gasket I	Material Of	The
Additional Requirements: See Specification Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04				Correspondir	ng Class In	CMIT-
Approved Manufacturer Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Ball Nominal Size Range 2"-4" Tag Number BA-1C04	6. Valve Design Life is	s 25 Years.		240048-728-	PIP-15.03-	3001
Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04				Additional Re	equirement	s:
Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04				See Specific	ation	
Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-4" Valve Type Ball Tag Number BA-1C04						
Valve Type Ball Tag Number BA-1C04		Valve Check L	ist			
Valve Type Ball Tag Number BA-1C04	Approved Manufactur	er Manufacturer Figure Nu	ımber	Nominal Size	e Range	
Valve Type Ball BA-1C04				2"-4"		
BA-1C04	Valve Type Ball			Tag Number		
	-,			0		
Piping Class 1C0 Specification Number CMIT-240048-728-PIP-15.03-3001	Piping Class 1C0			•		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 71 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size				
Pressure Temperature Rating	150lb ASME B16.34	Test Pre Body	ssure Mpa By Vendor	(ASME B1	By Vendor
Design Code	API 6D / ASME B16.34		1 7 5 2 5		1 511.251
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Ball: ASTM A182 F316L+Stellite,Stellite			Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2, I	Nut To ASTI	M A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion	n Mounted			
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A				
Notes:			Packing Mat		
	ensions To ASME B16.10.		Emission Fre	ee Material	
	ble Block And Bleed ones, With Any E	nd	Gasket Mate		
	full Differential Pressure.		Manufacture		
3. Valves To Be Asbe			The Gasket		
5. Inner Or Outer Lea	tant To Explosive Decompression. kage Is Not Acceptable.		Correspondion 240048-728-	•	
6.Material Certificatio	n: EN 10204 Type3.1.		Additional Re	equirement	s:
7. Valve Design Life i	s 25 Years.		See Specific	ation	
	Valve Check			_	
Approved Manufactur	er Manufacturer Figure N	lumber	Nominal Size	e Range	
			6"		
Valve Type Bal			Tag Number		<u> </u>
varve rype Dai	1			BA-1C05	
C03 1C	n		Specification	Number	
10	<u>U</u>		CMIT-2400	48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 72 of 271				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A			<u> </u>	0.04)
Pressure Temperature Rating	150lb ASMF B16 34	Test Press Body	By Vendor	(ASME B1 Seat	By Vendor
Design Code	API 602 / ASME B16.34			1	
Body Material	Stainless Steel ASTM A182 F316L				
Trim Material	Seats And Gate: ASTM A182 F316L+5	Stellite, Ste	m: ASTM A	182 F316L	
Bolting	Bolt To ASTM A320 B8M Class 2, Nut	To ASTM	A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:		F	acking Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Suita	able For Full Vacuum.	G	Sasket Mater	rial	
3. Valves To Be Asbe	estos Free.	l N	/lanufacturer	Standard	More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	T	he Gasket N	//aterial Of	The
5. Inner Or Outer Lea	kage Is Not Acceptable.	C	Correspondin	ıg Class In	CMIT-
6.Material Certificatio	n: EN 10204 Type3.1.	2	40048-728-1	PIP-15.03-	3001
7. Valve Design Life i	s 25 Years.	Α	dditional Re	quirement	s:
		S	See Specifica	ation	
	Valve Check List				
Approved Manufactu	rer Manufacturer Figure Num	iber N	lominal Size	Range	
		1	/2"-1 ½"		
Valva Type	Cata	T	ag Number		
Valve Type	Gate			GA-1C01	
Dining Class	100	S	Specification	Number	
Piping Class	1C0		CMIT-24004		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 73 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in				
Pressure		Test Press		(ASME B1	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Seats And Gate: ASTM A182 F316L+	-Stellite, Ste	em: ASTM A	182 F316L	-
Bolting	Bolt To ASTM A320 B8M Class 2, Nu	ıt To ASTM	A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	d API 6FA(I	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	ee Material	
2. Valves To Be Suita	ible For Full Vacuum.	(Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.	N	Manufacture	r Standard	More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	7	The Gasket I	Material Of	The
5. Inner Or Outer Lea	kage Is Not Acceptable.	(Correspondir	ng Class In	CMIT-
	n: EN 10204 Type3.1.	2	240048-728-	PIP-15.03-	3001
7. Valve Design Life i	s 25 Years.	A	Additional Re	equirement	s:
		8	See Specific	ation	
	Valve Check Lis	st			
Approved Manufactur	er Manufacturer Figure Nui	mber N	Nominal Size	e Range	
			2"-6"		
Valve Type	Gate	7	Tag Number		
				GA-1C02	
Piping Class	1C0	8	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 74 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in A	Test Press		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34			I		
Body Material	Stainless Steel ASTM A182 F316L					
Trim Material	Seat And Plug: ASTM A182 F316L+Ste	ellite, Sten	n: ASTM A18	82 F316L		
Bolting	Bolt To ASTM A320 B8M Class 2, Nut	To ASTM	A194 8M			
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:		P	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material		
Short Pattern Valves	Are Not Acceptable.	G	asket Mate	rial		
2. Valves To Be Suita	able For Full Vacuum.	l N	/lanufacturer	Standard/	More Than	
3. Valves To Be Asbe		T	he Gasket N	Material Of	The	
	ıkage Is Not Acceptable.		Correspondin	•		
	n: EN 10204 Type3.1.	2	40048-728-1	PIP-15.03-	3001	
6. Valve Design Life i	s 25 Years.	A	Additional Requirements:			
		S	See Specifica	ation		
	Valve Check List	I				
Approved Manufactu	rer Manufacturer Figure Num	ber N	Iominal Size	Range		
			/2"-1 ½"			
Valve Type Glo	bbe	T	ag Number			
				GL-1C01		
Piping Class 1C	0	S	specification			
,	-		CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 75 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in A	Test Press		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34			I	
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Seat And Plug: ASTM A182 F316L+Ste	ellite, Sten	n: ASTM A18	82 F316L	
Bolting	Bolt To ASTM A320 B8M Class 2, Nut	To ASTM	A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:		P	acking Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.	G	asket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.	l M	/lanufacturer	Standard/	More Than
3. Valves To Be Asbe		T	he Gasket N	Material Of	The
	ikage Is Not Acceptable.	I	Correspondin	•	
	n: EN 10204 Type3.1.		40048-728-1		
6. Valve Design Life	s 25 Years.	A	dditional Re	equirement	s:
		S	See Specifica	ation	
	Valve Check List				
Approved Manufactu	rer Manufacturer Figure Num	ber N	Iominal Size	Range	
			"-6"		
Valve Type Glo	be	T	ag Number		
7,5 - 0.0				GL-1C02	
Piping Class 1C0		S	specification		
, 5			CMIT-24004	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 76 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	ASME B36	5.10			
Pressure		Test Press	sure Mpa	(ASME B1	6.34)	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34	1		'		
Body Material	Stainless Steel ASTM A182 F316L					
Trim Material	Seat And Disc: ASTM A182 F316L+S	Stellite				
Bolting	Bolt To ASTM A320 B8M Class 2, Nu	ut To ASTM	A194 8M			
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Lift Piston Bolted Cover					
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(F	Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	ee Material		
Short Pattern Valves	Are Not Acceptable.		Sasket Mate	rial		
2. Valves To Be Suita		N	Manufacture	r Standard/	More Than	
3. Valves To Be Asbe		T	The Gasket I	Material Of	The	
•	ording To API 598 / ASME B16.34.	C	Correspondir	ng Class In	CMIT-	
	kage Is Not Acceptable.	2	240048-728-	PIP-15.03-	3001	
	n: EN 10204 Type3.1.	A	Additional Requirements:			
7. Valve Design Life is	s 25 Years.	8	See Specific	ation		
	Valve Check Li					
Approved Manufactur	er Manufacturer Figure Nu	ımber N	Nominal Size	e Range		
		1	/2"-1 ½"			
Valve Type Che	ck, Lift Piston	T	ag Number			
	ON, ERT 101011			CK-1C01		
Piping Class 1C0		5	Specification			
Tiping Oldoo 100			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 77 of 271				

Valve Specification	Shall Be Equal To Nominal Pipe Size in	A SME D20	§ 10		
·	Shall be Equal to Northhal Pipe Size II	Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34	•	'	•	
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Seat And Disc: ASTM A182 F316L+	Stellite			
Bolting	Bolt To ASTM A320 B8M Class 2, N	ut To ASTM	I A194 8M		
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Patter	n			
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA(Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes: 1. Face To Face Dimensions To Dual-Plate Lug Type Check Valve Of API 594 Type A. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Hydraulic Test According To API 598 / ASME B16.34. 5. Inner Or Outer Leakage Is Not Acceptable. 6. Material Certification: EN 10204 Type3.1. 7. Valve Design Life is 25 Years.		Valve	Packing Mate Emission Fre Gasket Mater Manufacturer The Gasket N Correspondir 240048-728-I Additional Re See Specifica	e Material rial Standard/l Material Of ng Class In PIP-15.03-3	The CMIT- 3001
Approved Manufactur	Valve Check L er Manufacturer Figure Nu	ımber :	Nominal Size	Range	
Valve Type Wa	fer Check Valve		Tag Number	CK-1C02	
Piping Class 1C0)	;	Specification CMIT-24004		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 78 of 271				

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in A	SME B3		(ASME B1	6 24)	
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	ISO 17292 / ASME B16.34					
Body Material	Carbon Steel					
-	ASTM A105N(HIC&SSC)					
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Mo			,	emperature	
Service	See APPENDIX A				<u> </u>	
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Asbe	stos Free.	t	Gasket Mate	rial		
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	More Than	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
5. Valves Shall Have I	Position Indicator Showing Open And Clos	se	Corresponding	ng Class In	CMIT-	
Positions.			240048-728-	PIP-15.03-	3001	
	kage Is Not Acceptable.		Additional Re	equirement	s:	
• •	Is Used In Sour Service. Vendor Shall Ha	I	See Specification			
	The Valve Tag That The Valves They Sup	plied	All Material U	Jsed In Sou	ur Service	
Are Sulphur Resisting			Shall Meet T	he Require	ments Of	
8. Valve Design Life is			NACE MR 0	175/ISO15	156	
	s of Valves Should Take 3mm Corrosion					
Allowance Into Consid						
TO.IVIALEFIAI CERTIFICATIO	on: EN 10204 Type3.1. Valve Check List					
Approved Manufactur		oor	Naminal Siza	Dange		
Approved Manufacture	ei ivianulaciulei rigule Nullik	Jei	Nominal Size	range		
			1/2"-1 ½"			
Valva Type Dell			Tag Number			
Valve Type Ball				BA-1D31S		
Piping Class 1D3	3		Specification	Number		
Piping Class 1D3)		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 79 of 271				

Valve Specification		0145 50			
	Shall Be Equal To Nominal Pipe Size in A	est Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel				
-	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
	Fire Tested To BS EN ISO 10497 And A	API 607(Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Me	edium At	t Rated Pres	sure And T	emperature
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.	_	Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	tant To Explosive Decompression.		Manufacture		
•	ording To API 598 / ASME B16.34.		The Gasket I		
Positions.	Position Indicator Showing Open And Clos		Corresponding Class In CMIT- 240048-728-PIP-15.03-3001		
	kage Is Not Acceptable.	_			
	e Is Used In Sour Service. Vendor Shall Ha		Additional Requirements:		
	The Valve Tag That The Valves They Sup	L	See Specification		
Are Sulphur Resisting	-		,		
8. Valve Design Life i			Shall Meet The Requirements Of NACE MR 0175/ISO15156		
_	s of Valves Should Take 3mm Corrosion		INACE IVII O	173/10013	100
Allowance Into Consid					
10.Material Certificati	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur	er Manufacturer Figure Numb	er	Nominal Size	Range	
			2"-4"		
Valva Type Del	ı	'	Tag Number		
Valve Type Bal	I			BA-1D32S	
Piping Class 1D	3		Specification	Number	
Piping Class 1D3	J		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 80 of 271			

Pressure	Te	est Pres	ssure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		1		
Body Material	Carbon Steel				
	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S20				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	A194 2	2HM; Hot Dip	ped Galvaı	nized To
	ASTM F2329/ASTM A153				
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Full Bore, Split Body, Trunnion Mounted.				
	Fire Tested To BS EN ISO 10497 And Al	PI 607(Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Medium At Rated Pressure And Temperature				emperatur
Service	See APPENDIX A				
Notes:			Packing Mat		
	ensions To ASME B16.10.		Emission Fre	ee Material	
	ole Block And Bleed ones, With Any End		Gasket Mate	rial	
•	full Differential Pressure.		Manufacture		
3. Valves To Be Asbe			The Gasket I		
	ant To Explosive Decompression.		Correspondi	-	
•	ording To API 598 / ASME B16.34.	_	240048-728-		
	Position Indicator Showing Open And Close		Additional Requirements:		
Positions.	kawa la Nat Assautable		See Specific		
	kage Is Not Acceptable.		All Material L		
- · · · · · · · · · · · · · · · · · · ·	ls Used In Sour Service. Vendor Shall Hav The Valve Tag That The Valves They Supp		Shall Meet T	•	
Are Sulphur Resisting	• • • • • • • • • • • • • • • • • • • •	JIIGU	NACE MR 0	1/5/ISO15	156
9. Valve Design Life is					
•	s of Valves Should Take 3mm Corrosion				
Allowance Into Consider					
_	on: EN 10204 Type3.1.				
watanai oorunoati	Valve Check List				
Approved Manufactur		er.	Nominal Size	e Range	
- App. 2. 34 manaradan			6"-18"		
			Tag Number		
Valve Type Bal	I		•	BA-1D33S	
			Specification		
Piping Class 1D3					



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 81 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel				
Dody Waterial	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2	20910,S	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating				
	Fire Tested To BS EN ISO 10497 And A	API 607(Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Me	edium A	t Rated Pres	sure And T	emperature
Service	See APPENDIX A				
Notes:		I .	Packing Mate		
	ensions To ASME B16.10.	_	Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	ant To Explosive Decompression.		Manufacture		
-	ording To API 598 / ASME B16.34.		The Gasket I		
	Position Indicator Showing Open And Clos	se	Corresponding Class In CMIT- 240048-728-PIP-15.03-3001		
Positions.	kana la Nat Assautable				
	kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha	I .	Additional Requirements:		
• •	The Valve Tag That The Valves They Sup		See Specification		
Are Sulphur Resisting	•	·	7 til Material Occur in Coal Col Mee		
8. Valve Design Life is		I .	Shall Meet T	•	
•	s of Valves Should Take 3mm Corrosion		NACE MR 0	175/15015	156
Allowance Into Consid					
	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur		er	Nominal Size	e Range	
1 1		•			
			2"-4"		
			Tag Number		
Valve Type Bal	I		-	BA-1D34S	
			Specification		
Piping Class 1D3					



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 82 of 271			

Pressure		Test Pres	ssure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTI ASTM F2329/ASTM A153	M A194 2	2HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion M	ounted.			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M			,	emperatur
Service	See APPENDIX A				
2. Valves To Be Doub Capable Of Bearing F 3. Valves To Be Asbe 4. Seals To Be Resist 5. Hydraulic Test Acco 6. Valves Shall Have Positions. 7. Inner Or Outer Leal 8. This Type Of Valve Clear Information On Are Sulphur Resisting 9. Valve Design Life is 10. The Wall Thicknes Allowance Into Consider	cant To Explosive Decompression. ording To API 598 / ASME B16.34 Position Indicator Showing Open And Clo kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall H The Valve Tag That The Valves They Su s 25 Years. ss of Valves Should Take 3mm Corrosion	lave ipplied	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Corresponding 240048-728- Additional Ref See Specifican All Material L Shall Meet T NACE MR 0	ee Material rial r Standard/ Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	/More Than The CMIT- 3001 s: ur Service
Approved Manufactur	Valve Check List		Nominal Size	e Range	
Valve Type Ball	I			BA-1D35S	
Piping Class 1D3	3		Specification CMIT-2400	Number 48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 83 of 271				

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6 34)	
Pressure Temperature Rating	150lb ASMF B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34		1			
Pody Motorial	Carbon Steel					
Body Material	ASTM A105N(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Stell					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Constitution	Outside Screw And Yoke					
Trim Construction	Solid Wedge Type					
	Fire Tested To BS EN ISO 10497 And A	PI 6FA(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.	L	Emission Fre			
2. Valves To Be Suita			Gasket Mate		<i>.</i>	
3. Valves To Be Asbe			Manufacture			
•	ording To API 598 / ASME B16.34. kage Is Not Acceptable.		The Gasket I			
	rage is Not Acceptable. I Sour Service Shall Meet The Requiremen		Corresponding Class In CMIT-			
NACE MR 0175/ISO1	•					
	Is Used In Sour Service. Vendor Shall Ha		Additional Requirements: See Specification			
• • •	The Valve Tag That The Valves They Sup		All Material U		ır Service	
Are Sulphur Resisting						
8. Valve Design Life is			Shall Meet The Requirements Of NACE MR 0175/ISO15156			
_	s of Valves Should Take 3mm Corrosion		TO TOLIMITO	170/10010	100	
Allowance Into Consid	deration.					
10.Material Certification	on: EN 10204 Type3.1.					
	Valve Check List	1				
Approved Manufactur	er Manufacturer Figure Numb	er	Nominal Size	e Range		
			1/2"-1 ½"			
Valva Type	Cata		Tag Number			
Valve Type	Gate			GA-1D31S	;	
Pining Class	1D3		Specification	Number		
Piping Class	103		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 84 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste	llite,Ste	m: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	PHM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
 Valves To Be Suita Valves To Be Asbe Hydraulic Test Acc Inner Or Outer Lea 			Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Correspondir	ee Material rial r Standard Material Of ng Class In	The CMIT-
NACE MR 0175/ISO1 7. This Type Of Valve	5156. Is Used In Sour Service. Vendor Shall Ha	ve	Additional Requirements: See Specification		
Are Sulphur Resisting 8. Valve Design Life is 9. The Wall Thickness Allowance Into Consid	s 25 Years. s of Valves Should Take 3mm Corrosion deration. on: EN 10204 Type3.1.		All Material L Shall Meet T NACE MR 0 ⁷	he Require	ements Of
	Valve Check List			_	
Approved Manufactur	er Manufacturer Figure Numb		Nominal Size	e Range	
Valve Type	Gate		Tag Number	GA-1D32S	
Piping Class	1D3		Specification CMIT-2400		.15 03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 85 of 271				

Valve Specification			20.40		
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	Test Pre		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+S	Stellite,Ste	em: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	ΓM A194	2HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
	ensions To ASME B16.10.		Emission Fre	e Material	
2. Valves To Be Suita	ible For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe			Manufacture	r Standard/	More Than
•	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The
	kage Is Not Acceptable.		Correspondir	•	
• •	e Is Used In Sour Service. Vendor Shall I	I	240048-728-	PIP-15.03-	3001
	The Valve Tag That The Valves They S	upplied	Additional Re	•	s:
Are Sulphur Resisting			See Specifica		
7. Valve Design Life i			All Material L		
	s of Valves Should Take 3mm Corrosion	1	Shall Meet The Requirements Of		
Allowance Into Consider			NACE MR 0	175/ISO15 ⁻	156
9. Material Certification	on: EN 10204 Type3.1.				
	Valve Check Lis	<u> </u>			
Approved Manufactur			Nominal Size	Range	
			2"-8"		
Valve Type	Gate		Tag Number	GA-1D33S	
Piping Class	1D3		Specification CMIT-2400		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 86 of 271				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in ⊤	ASME B		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34		Vollagi		Volladi
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+	Stellite,Ste	em: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	TM A194	2HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 An	d API 6F <i>A</i>	\(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
	ensions To ASME B16.10.		Emission Fre	e Material	
2. Valves To Be Suita			Gasket Mate	rial	
3. Valves To Be Asbe			Manufacture	r Standard	More Than
<u>-</u>	ording To API 598 / ASME B16.34.		The Gasket I		
	kage Is Not Acceptable.		Correspondir	•	
- -	Is Used In Sour Service. Vendor Shall		240048-728-		
	The Valve Tag That The Valves They S	Supplied	Additional Re		s:
Are Sulphur Resisting			See Specification		
7. Valve Design Life is			All Material L		
	s of Valves Should Take 3mm Corrosion	า	Shall Meet T	•	
Allowance Into Consider			NACE MR 0	175/ISO15	156
9. Material Certification	on: EN 10204 Type3.1.				
	Valve Check Li	et			
Approved Manufactur			Nominal Size	Range	
			10"-18"		
Valve Type	Gate		Tag Number	GA-1D34S	
Piping Class	1D3		Specification CMIT-2400	Number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 87 of 271			

_	T	SME B3	ssure Mpa	(ASME B1	6.34)
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			-1	
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste	ellite,Ste	m: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip _l	oed Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material	
Valves To Be Suita			Gasket Mate	rial	
3. Valves To Be Asbe			Manufacture	Standard	More Than
-	ording To API 598 / ASME B16.34.		The Gasket N		
	kage Is Not Acceptable.	I .	Correspondir	_	
• •	e Is Used In Sour Service. Vendor Shall Ha	⊢	240048-728-		
	The Valve Tag That The Valves They Sup	·	Additional Re	•	s:
Are Sulphur Resisting		I .	See Specifica		
7. Valve Design Life is			All Material Used In Sour Service		
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Consider			NACE MR 01	175/ISO15 ⁻	156
e. Material Certification	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur		per	Nominal Size	Range	
			10"-18"		
Valve Type	Gate		Tag Number	OA 4D050	
				GA-1D35S	1
Piping Class	1D3		Specification	Number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 88 of 271				

-	Shall Be Equal To Nominal Pipe Size in AS	est Pres		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105N(HIC&SSC)					
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	ite,Stem	n: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material		
Short Pattern Valves	•		Gasket Mate	rial		
	able For Full Vacuum.		Manufacture			
3. Valves To Be Asbe			The Gasket I			
	akage Is Not Acceptable.		Correspondir	•		
• •	e Is Used In Sour Service. Vendor Shall Ha	I	240048-728-			
	The Valve Tag That The Valves They Sup	plied	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '			
Are Sulphur Resisting			See Specification			
7. Valve Design Life			All Material Used In Sour Service			
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of			
Allowance Into Consi	on: EN 10204 Type3.1.		NACE MR 0	1/5/ISO15	156	
3. Material Certification	ы. ыч 1020 4 тур с о.т.					
	Valve Check List					
Approved Manufactu		er	Nominal Size	Range		
			1/2"-1 ½"			
Valve Type Glo	bbe		Tag Number			
vaive Type Git				GL-1D31S		
Piping Class 1D	3		Specification			
ping Ciaco			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 89 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16 34	ody	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34				
Body Material	Carbon Steel				
	ASTM A216 WCB(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Stelli				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip	ped Galvaı	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
	Swivel Type Plug, Renewable Seat				
Trim Construction	Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A		, 5	,	
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre		
Short Pattern Valves	Are Not Acceptable.	T I	Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	More Than
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	The
4. Inner Or Outer Lea	ikage Is Not Acceptable.		Correspondir	ng Class In	CMIT-
6. This Type Of Valve	e Is Used In Sour Service. Vendor Shall Ha	ıve	240048-728-	PIP-15.03-	3001
Clear Information On	The Valve Tag That The Valves They Sup	plied	Additional Requirements:		
Are Sulphur Resisting			See Specifica	ation	
7. Valve Design Life i	s 25 Years.		All Material L	Jsed In So	ur Service
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Consi			NACE MR 0175/ISO15156		
Material Certification	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactu		er	Nominal Size	e Range	
T p. c. c. a manarada					
			2"-6"		
Valve Type Glo	obe		Tag Number		
				GL-1D32S	<u> </u>
Piping Class 1D	3		Specification		
. •			CMIT-2400	48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 90 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASMF B16 34	ody	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34				
Rody Material	Carbon Steel				
Body Material	ASTM A216 WCB(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	te,Sten	n: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	2HM; Hot Dip	ped Galvaı	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem				
	Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat				
	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.		Emission Fre		
Short Pattern Valves	•		Gasket Mate		
2. Valves To Be Suita			Manufacture		
3. Valves To Be Asbe			The Gasket		
	kage Is Not Acceptable.		Correspondi	_	
• •	Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup	I	240048-728-		
Are Sulphur Resisting	, ,	pileu	Additional Re	•	S:
7. Valve Design Life is			See Specific		ın Camilaa
_	s of Valves Should Take 3mm Corrosion				
Allowance Into Consid			Shall Meet The Requirements Of NACE MR 0175/ISO15156		
	n: EN 10204 Type3.1.		NACE WIN U	173/13013	130
	Valve Check List				
Approved Manufacture		er	Nominal Size	Range	
1 12 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		-			
			8"-16"		
:			Tag Number		
Valve Type Glo	be		•	GL-1D33S	
Dining Olever			Specification		
Piping Class 1D3	3		•	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 91 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B		/ACME D1	(6.24)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	(ASME B1	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Seat And Disc: ASTM A182-F347+St	ellite			
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	TM A194	2HM; Hot Dip	ped Galvai	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	ıble For Full Vacuum.		Manufacture	r Standard	More Than
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	The
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-
5. Inner Or Outer Lea	kage Is Not Acceptable.		240048-728-	•	
6. This Type Of Valve	e Is Used In Sour Service. Vendor Shall	Have	Additional Re	equirement	s:
Clear Information On	The Valve Tag That The Valves They S	Supplied	See Specifica	•	
Are Sulphur Resisting	J.		All Material L	Jsed In So	ur Service
7. Valve Design Life is	s 25 Years.		Shall Meet T	he Require	ements Of
8. The Wall Thickness	s of Valves Should Take 3mm Corrosion	า	NACE MR 0		
Allowance Into Consid	deration.				
9. Material Certification	on: EN 10204 Type3.1.				
	Valve Check Li				
Approved Manufactur	rer Manufacturer Figure Nu	mber	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Che	eck, Lift Piston		Tag Number	CK-1D31S	
Piping Class 1D3	3		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 92 of 271		

Valve Specification	Shall Be Equal To Nominal Pipe Size ii	a ASME B	36 10			
·		Test Pressure Mpa (ASME B16.34)				
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 594 / ASME B16.34					
Body Material	Carbon Steel					
body Waterial	ASTM A216 WCB(HIC&SSC)					
Trim Material	Seat And Disc: ASTM A182-F347+S	tellite				
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	STM A194	2HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb To Be Connected With RF Fl Connection.	anges Acc	cording To AS	ME B16.5.	Wafer Type	
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Wafer Type, Dual Plate, Long Patter	n				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	A(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To Dual-Plate Lug Type Check	Valve	Emission Fre	ee Material		
Of API 594 Type A. S	hort Pattern Valves Are Not Acceptable	€.	Gasket Mate	rial		
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard <i>i</i>	More Than	
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-	
5. Inner Or Outer Leal	kage Is Not Acceptable.		240048-728-	PIP-15.03-	3001	
• •	Is Used In Sour Service. Vendor Shal		Additional Re	equirement	s:	
	The Valve Tag That The Valves They	Supplied	See Specific	ation		
Are Sulphur Resisting			All Material U	Jsed In Sou	ur Service	
7. Valve Design Life is			Shall Meet T	he Require	ments Of	
	s of Valves Should Take 3mm Corrosic	n	NACE MR 0	175/ISO15	156	
Allowance Into Consid						
Material Certificatio	n: EN 10204 Type3.1.					
	Valve Check L					
Approved Manufacture	er Manufacturer Figure Nu	ımber	Nominal Size	e Range		
			2"-18"			
Valve Type Wa	fer Check Valve		Tag Number	CK-1D32S		
Piping Class 1D3	3		Specification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 93 of 271			

Valve Specification							
-		hall Be Equal To Nominal Pipe Size in ASME B36.10 Test Pressure Mpa (ASME B16.34)					
Pressure Temperature Rating	150lb ASME B16 34	Body	By Vendor	Seat	By Vendor		
Design Code	ISO 17292 / ASME B16.34	ISO 17292 / ASME B16.34					
Body Material	Carbon Steel ASTM A105N(HIC&SSC)						
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S						
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	/I A194 2	HM; Hot Dip	ped Galvar	nized To		
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Lever						
Body Construction	Full Bore, Split Body, Floating						
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M		-	ŕ	emperature		
Service	See APPENDIX A				<u> </u>		
Notes:			Packing Mate	erial:			
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre				
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial			
3. Seals To Be Resist	tant To Explosive Decompression.	l l	Manufacture	r Standard/	More Than		
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	-	The Gasket I	Material Of	The		
5. Valves Shall Have	Position Indicator Showing Open And Clo	se (Correspondir	ng Class In	CMIT-		
Positions.		:	240048-728-	PIP-15.03-	3001		
6. Inner Or Outer Lea	kage Is Not Acceptable.	7	Additional Re	equirement	s:		
• • •	e Is Used In Sour Service. Vendor Shall Ha		See Specification				
	The Valve Tag That The Valves They Sup	pplied	All Material L	Jsed In Sou	ır Service		
Are Sulphur Resisting		;	Shall Meet T	he Require	ments Of		
8. Valve Design Life is			NACE MR 0	175/ISO15 ⁻	156		
	s of Valves Should Take 6mm Corrosion						
Allowance Into Consider							
10.Material Certification	on: EN 10204 Type3.1.						
Amman and Manager	Valve Check List	'	Manain - LOi-	. Dan			
Approved Manufactur	rer Manufacturer Figure Numb	ber l	Nominal Size	Range			
			1/2"-1 ½"				
Valve Type Bal			Tag Number	<u></u>			
valve lype Dal	1			BA-1D61S			
Piping Class 1D0	6	;	Specification				
i iping Olass TD			CMIT-2400	48-728-PIP-	15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 94 of 271			

Valve Specification		<u> </u>				
	Shall Be Equal To Nominal Pipe Size in A	SME B30		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel					
Trim Material	ASTM A216 WCB (HIC&SSC) Ball: ASTM A182-F347+Stellite,Stem:S2	20010 8	and Saal	· E2/7+DD	TEE	
Trim Material	Bolt To ASTM A193 B7M, Nut To ASTM					
Bolting	ASTM F2329/ASTM A153	/I A 194 Z	німі; ної Бір	ped Galvar	iized 10	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating					
	Fire Tested To BS EN ISO 10497 And A	API 607(I	Providing Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For Mo	edium At	Rated Pres	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Asbe		(Gasket Mate	rial		
	ant To Explosive Decompression.		Manufacture	r Standard/	More Than	
<u>-</u>	ording To API 598 / ASME B16.34.	I .	The Gasket I	Material Of	The	
	Position Indicator Showing Open And Clos		Correspondir	-		
Positions.		_ :	240048-728-	PIP-15.03-	3001	
	kage Is Not Acceptable.		Additional Requirements:			
- · · · · · · · · · · · · · · · · · · ·	Is Used In Sour Service. Vendor Shall Ha	L	See Specification			
	The Valve Tag That The Valves They Sup		All Material U			
Are Sulphur Resisting			Shall Meet T	•		
8. Valve Design Life is			NACE MR 0	175/ISO15 ²	156	
	s of Valves Should Take 6mm Corrosion					
Allowance Into Consideration Continuation						
TO.IVIALEFIAI CERTIFICATION	on: EN 10204 Type3.1.					
Approved Manufacture	Valve Check List		Naminal Ci-	Donas		
Approved Manufactur	er Manufacturer Figure Numb	Jei	Nominal Size	: range		
		:	2"-4"			
Value Type D-1	1	<u> </u>	Tag Number			
Valve Type Bal	I			BA-1D62S		
Dining Class 4D4	6		Specification	Number		
Piping Class 1D6	0		•	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 95 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in A						
Pressure	_	Test Pres					
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 6D / ASME B16.34						
Body Material	Carbon Steel						
	ASTM A216 WCB (HIC&SSC)						
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:						
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2	HM; Hot Dipp	ped Galvar	nized To		
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Gear Operator						
Body Construction	Full Bore, Split Body, Trunnion Mounte	ed.					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem	API 607(F	Providing Ce	rtificate)			
Timi Concudent	Sealing To Meet Requirements For N	∕ledium At	Rated Press	sure And T	emperature		
Service	See APPENDIX A						
Notes:	1	F	Packing Mate	erial:			
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre				
2. Valves To Be Doub	le Block And Bleed ones, With Any End	(Gasket Mate	rial			
Capable Of Bearing F	ull Differential Pressure.	ı	Manufacturer	r Standard/	More Than		
3. Valves To Be Asbe	stos Free.	7	The Gasket N	Material Of	The		
	ant To Explosive Decompression.	(Correspondir	ng Class In	CMIT-		
-	ording To API 598 / ASME B16.34.		240048-728-	PIP-15.03-	3001		
Valves Shall Have I Positions.	Position Indicator Showing Open And Cl		Additional Re See Specifica	•	S:		
8. This Type Of Valve Clear Information On Are Sulphur Resisting 9. Valve Design Life is 10. The Wall Thicknes Allowance Into Consideration	s 25 Years. ss of Valves Should Take 6mm Corrosior deration. on: EN 10204 Type3.1.	Have supplied p	All Material U Shall Meet TI NACE MR 01	Jsed In Sou he Require	ments Of		
Approved Manufacture	Valve Check List er Manufacturer Figure Num		Nominal Size	Range			
			6"-18"				
Valve Type Ball			Гад Number	BA-1D63S			
Piping Class 1D6	3		Specification CMIT-24004		15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 96 of 271			

Valve Specification						
	Shall Be Equal To Nominal Pipe Size in AS	SME B36		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB (HIC&SSC)					
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	I A194 2	HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Reduced Bore, Split Body, Floating					
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	,	J	,	emperature	
Service	See APPENDIX A				<u> </u>	
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Asbe		(Gasket Mate	rial		
3. Seals To Be Resist	tant To Explosive Decompression.		Manufacture	r Standard/	More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	-	The Gasket I	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And Clos	se (Corresponding Class In CMIT-			
Positions.		2	240048-728-	PIP-15.03-	3001	
6. Inner Or Outer Lea	kage Is Not Acceptable.	/	Additional Re	equirement	s:	
• •	e Is Used In Sour Service. Vendor Shall Ha		See Specification			
Clear Information On	The Valve Tag That The Valves They Sup	plied	All Material L	Jsed In Sou	ır Service	
Are Sulphur Resisting			Shall Meet T	he Require	ments Of	
8. Valve Design Life is		1	NACE MR 0	175/ISO15 ²	156	
	s of Valves Should Take 6mm Corrosion					
Allowance Into Consid						
10.Material Certification	on: EN 10204 Type3.1.					
	Valve Check List	-		_		
Approved Manufactur	er Manufacturer Figure Numb	er i	Nominal Size	Range		
		2	2"-4"			
Valve Type Bal	1		Tag Number			
vaive Type Dai	ı			BA-1D64S		
Piping Class 1D0	6		Specification	Number		
i iping Ciass IDI	O .		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 97 of 271			

Pressure	Т	est Pres	sure Mpa	(ASME B1	16.34)
Temperature Rating	150lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				1
Body Material	Carbon Steel				
•	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2	20910,S	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	PHM; Hot Dip	ped Galvai	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion Mo	unted.			
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	,	· ·	,	- emperatur
Service	See APPENDIX A				'
Notes:	1 2 2 1 2 1 2 1 2 1 1 1		Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre		
	le Block And Bleed ones, With Any End		Gasket Mate		
	ull Differential Pressure.		Manufacture	r Standard	/More Tha
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The
4. Seals To Be Resist	ant To Explosive Decompression.		Correspondir	ng Class Ir	n CMIT-
5. Hydraulic Test Acco	ording To API 598 / ASME B16.34		240048-728-	PIP-15.03-	-3001
	Position Indicator Showing Open And Clos	se	Additional Re	equirement	ts:
Positions.			See Specifica	ation	
	kage Is Not Acceptable.	I	All Material L	Jsed In So	ur Service
• •	Is Used In Sour Service. Vendor Shall Ha	I .	Shall Meet T	he Require	ements Of
	The Valve Tag That The Valves They Sup	plied	NACE MR 0°	175/ISO15	156
Are Sulphur Resisting					
9. Valve Design Life is					
Allowance Into Consid	ss of Valves Should Take 6mm Corrosion				
	peration. on: EN 10204 Type3.1.				
1 1.Material Certification	Valve Check List				
Approved Manufacture			Nominal Size 6"-18"	Range	
Valve Type Ball			Tag Number	BA-1D65S	3
Piping Class 1D6	à		Specification CMIT-2400		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 98 of 271			

Valve Specification	OL II D. E I T. N I D O				
	Shall Be Equal To Nominal Pipe Size in As	est Press		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASMF B16 34	ody	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	l A194 2l	HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And A	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acc 5. Inner Or Outer Lea 6. All Material Used Ir NACE MR 0175/ISO1 7. This Type Of Valve Clear Information On Are Sulphur Resisting 8. Valve Design Life is 9. The Wall Thickness Allowance Into Consid	estos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. In Sour Service Shall Meet The Requirement 15156. Is Is Used In Sour Service. Vendor Shall Had The Valve Tag That The Valves They Supples 25 Years. Is of Valves Should Take 6mm Corrosion deration. In Sour Service. Vendor Shall Had The Valves They Supples 25 Years. Is of Valves Should Take 6mm Corrosion deration. In Sour Service Name Corrosion Content on Content In State Check List Valve Check List	nts Of 2 Ave splied A	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Corresponding 240048-728- Additional Res See Specifica All Material U Shall Meet T NACE MR 07	rial r Standard/ Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou he Require	The CMIT-3001 s:
Approved Manufactur	er Manufacturer Figure Numb		Nominal Size	e Range	
Valve Type	Gate	Т	ag Number	GA-1D61S	
Piping Class	1D6	S	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 99 of 271			

Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16.34	ody	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34			1		
Pady Material	Carbon Steel					
Body Material	ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Stel	llite,Ste	m: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Constitution	Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type					
	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Suita			Gasket Mate			
3. Valves To Be Asbe			Manufacture			
•	ording To API 598 / ASME B16.34.		The Gasket I			
	kage Is Not Acceptable.	. 01	Correspondir	•		
	Sour Service Shall Meet The Requiremen	its Of	240048-728-			
NACE MR 0175/ISO1			Additional Requirements:			
• •	Is Used In Sour Service. Vendor Shall Ha		See Specification			
Are Sulphur Resisting	The Valve Tag That The Valves They Sup	piled	All Material L			
8. Valve Design Life is			Shall Meet T	•		
	s of Valves Should Take 6mm Corrosion		NACE MR 0	1/5/18015	156	
Allowance Into Consid						
_	on: EN 10204 Type3.1.					
To:Matorial Cortilload	Valve Check List					
Approved Manufacture		er	Nominal Size	e Range		
1		-				
			2"-8"			
	_		Tag Number			
Valve Type	Gate		•	GA-1D62S	;	
District Ci	400		Specification			
Piping Class	1D6		CMIT-2400		.15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 100 of 27			

	Shall Be Equal To Nominal Pipe Size in As	est Pres		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34			1		
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Ste	llite,Ste	m: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip∣	oed Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material		
	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	Standard	More Than	
•	ording To API 598 / ASME B16.34.		The Gasket I			
	skage Is Not Acceptable.		Correspondir	_		
• •	e Is Used In Sour Service. Vendor Shall Ha		240048-728-			
	The Valve Tag That The Valves They Sup	·	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '			
Are Sulphur Resisting			See Specification			
7. Valve Design Life i			All Material Used In Sour Service			
	s of Valves Should Take 6mm Corrosion		Shall Meet The Requirements Of			
Allowance Into Consi			NACE MR 0	1/5/ISO15	156	
e. iviateriai Certificatio	on: EN 10204 Type3.1.					
	Valve Check List					
Approved Manufactu		er	Nominal Size	Range		
			2"-8"			
Valve Type	Gate		Tag Number			
vaive Type	- Calc			GA-1D63S		
Piping Class	1D6		Specification			
ping Oldoo	.50		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02				
JOD'S DOC. NO.	253001D0728MP00502				
Phase	Detailed De	esign			
Rev.	A Page 101 of 271				
Nev.	A Fage 101 01 27 1				

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ir ⊤	Test Pre		(ASME B1	6 34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+	Stellite,Ste	em: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	TM A194	2HM; Hot Dip	ped Galvar	nized To	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 An	d API 6F <i>F</i>	A(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
	ensions To ASME B16.10.		Emission Fre	e Material		
2. Valves To Be Suita	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard/	More Than	
•	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
	kage Is Not Acceptable.		Correspondir	•		
• •	Is Used In Sour Service. Vendor Shall		240048-728-	PIP-15.03-	3001	
	The Valve Tag That The Valves They S	Supplied	Additional Requirements:			
Are Sulphur Resisting			See Specification			
7. Valve Design Life is			All Material L			
	s of Valves Should Take 6mm Corrosio	n	Shall Meet The Requirements Of			
Allowance Into Consid			NACE MR 0	175/ISO15 ⁻	156	
9. Material Certificatio	n: EN 10204 Type3.1.					
	Valve Check Li	ct				
Approved Manufacture			Nominal Size	Range		
			10"-18"			
Valve Type	Gate	_	Tag Number	GA-1D64S		
Piping Class	1D6		Specification CMIT-2400	Number		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 102 of 271		

Valve Specification	0	10115 0	20.40		
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	Test Pre		(ASME B1	6 34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+S	Stellite,Ste	em: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTASTM F2329/ASTM A153	TM A194	2HM; Hot Dip _l	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
	ensions To ASME B16.10.		Emission Fre	e Material	
2. Valves To Be Suita	ible For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe			Manufacture	r Standard	More Than
	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The
	kage Is Not Acceptable.		Correspondir	•	
• •	e Is Used In Sour Service. Vendor Shall		240048-728-	PIP-15.03-	3001
	The Valve Tag That The Valves They S	upplied	Additional Re	-	s:
Are Sulphur Resisting			See Specifica		
7. Valve Design Life i			All Material L		
	s of Valves Should Take 6mm Corrosior	1	Shall Meet The Requirements Of		
Allowance Into Consider			NACE MR 0	175/ISO15	156
9. Material Certification	on: EN 10204 Type3.1.				
	Valve Check Lis				
Approved Manufactur			Nominal Size	Range	
			10"-18"		
Valve Type	Gate		Tag Number	GA-1D65S	;
Piping Class	1D6		Specification CMIT-2400		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 103 of 271				

Pressure		est Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34			•	l
Body Material	Carbon Steel				
Body Material	ASTM A105N(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	te,Stem	: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	I A194 2	PHM; Hot Dipp	oed Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
<u> </u>	Bolted Bonnet, Rising Stem				
Body Construction	Outside Screw And Yoke				
Trim Construction	Swivel Type Plug				
Tim Construction	Fire Tested To BS EN ISO 10497 And A	PI 6FA	Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacturer	Standard/	More Than
3. Valves To Be Asbe	stos Free.		The Gasket N	//aterial Of	The
	kage Is Not Acceptable.	I	Correspondin	ıg Class In	CMIT-
• •	Is Used In Sour Service. Vendor Shall Ha	I	240048-728-1	PIP-15.03-	3001
	The Valve Tag That The Valves They Sup	plied	Additional Re	quirement	s:
Are Sulphur Resisting			See Specifica	ation	
7. Valve Design Life is			All Material U	sed In Sou	ur Service
	s of Valves Should Take 6mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Consid			NACE MR 01	75/ISO15	156
9. Material Certification	n: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur		er	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Glo			Tag Number		
- Glo	~~			GL-1D61S	
Piping Class 1D6			Specification		
. Iping Oldss TDC	•		CMIT-24004	18 728 DID	15 02 2001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 104 of 271			

Valve Specification							
	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6.34)		
Pressure Temperature Rating	150lb ASMF B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 623 / ASME B16.34	API 623 / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)						
Trim Material	Seat And Plug: ASTM A182-F347+Ste						
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2	2HM; Hot Dip	ped Galvar	nized To		
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Handwheel with Lock Device						
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke						
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)			
Service	See APPENDIX A						
Short Pattern Valves 2. Valves To Be Suita 3. Valves To Be Asbe 4. Inner Or Outer Lea 6. This Type Of Valve Clear Information On Are Sulphur Resisting 7. Valve Design Life is 8. The Wall Thickness Allowance Into Considerations of the Sulphur Resisting 7. Valve Design Life is 8. The Wall Thickness Allowance Into Considerations of the Sulphur Resistance Into Considerations of the Sulphur R	ble For Full Vacuum. stos Free. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall F The Valve Tag That The Valves They Su J. S 25 Years. S of Valves Should Take 6mm Corrosion	ipplied _	Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Ree See Specific All Material U Shall Meet T NACE MR 0	ee Material rial r Standard/ Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:		
Approved Manufactur			Nominal Size	e Range			
Valve Type Glo	be		Tag Number	GL-1D62S			
Piping Class 1D6	6		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 105 of 271			

Valve Specification					
	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASMF B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Ste				
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2	2HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Short Pattern Valves 2. Valves To Be Suita 3. Valves To Be Asbe 4. Inner Or Outer Lea 6. This Type Of Valve Clear Information On Are Sulphur Resisting 7. Valve Design Life is 8. The Wall Thickness Allowance Into Considerations of the Sulphur Resisting 7. Valve Design Life is 8. The Wall Thickness Allowance Into Considerations in the Sulphur Resistance Into Consideration Into Consid	able For Full Vacuum. estos Free. kage Is Not Acceptable. e Is Used In Sour Service. Vendor Shall H The Valve Tag That The Valves They Su g. s 25 Years. s of Valves Should Take 6mm Corrosion	pplied	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Correspondin 240048-728- Additional Ree See Specific All Material U Shall Meet T NACE MR 0	ee Material rial r Standard/ Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:
Approved Manufactur			Nominal Size	e Range	
Valve Type Glo	bbe		Tag Number	GL-1D63S	
Piping Class 1D0	6		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



	i e e e e e e e e e e e e e e e e e e e				
Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02				
JOD'S DOC. NO.	253001D0726WP00502				
DI	D-4-11- 1 D				
Phase	Detailed Design				
_	A D 400 (074				
Rev.	A Page 106 of 271				

D		Test Pre	ssure Mpa	(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Seat And Disc: ASTM A182-F347+Stell	llite			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTI ASTM F2329/ASTM A153	M A194 2	2HM; Hot Dip	ped Galvar	nized To
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A			<u> </u>	
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-
5. Inner Or Outer Leal	kage Is Not Acceptable.		240048-728-	PIP-15.03-	-3001
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall H	lave	Additional Re	equirement	s:
Clear Information On	The Valve Tag That The Valves They Su	pplied	See Specifica	ation	
Are Sulphur Resisting			All Material L	Jsed In Sou	ur Service
7. Valve Design Life is	s 25 Years.		Shall Meet T	he Require	ements Of
8. The Wall Thickness	s of Valves Should Take 6mm Corrosion		NACE MR 0	175/ISO15	156
Allowance Into Consid	deration.				
9. Material Certificatio	n: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur	er Manufacturer Figure Num	ber	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Che	eck, Lift Piston		Tag Number	CK-1D61S	
Piping Class 1D6	3		Specification CMIT-2400		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 107 of 271				

_		Test Pres	ssure Mpa	(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34			1	
Body Material	Carbon Steel				
	ASTM A216 WCB(HIC&SSC)				
Trim Material	Seat And Disc: ASTM A182-F347+St				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTASTM F2329/ASTM A153		•		
End Connection	150 Lb To Be Connected With RF Flat Connection.	anges Acc	ording To AS	ME B16.5.	Wafer Typ
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Pattern	1			
Trim Construction	Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
	ensions To Dual-Plate Lug Type Check		Emission Fre		
• •	hort Pattern Valves Are Not Acceptable	. [Gasket Mate	rial	
2. Valves To Be Suita			Manufacture		
3. Valves To Be Asbe			The Gasket		
•	ording To API 598 / ASME B16.34.		Correspondi	•	
	kage Is Not Acceptable.		240048-728-		
- -	s Is Used In Sour Service. Vendor Shall		Additional Re	•	S:
	The Valve Tag That The Valves They S	upplied	See Specific		
Are Sulphur Resisting 7. Valve Design Life is			All Material L		
_	ร 25	,	Shall Meet T NACE MR 0	-	
Allowance Into Consider		'	NACE WIK U	173/130 15	130
	on: EN 10204 Type3.1.				
2	, , , , , , , , , , , ,				
	Valve Check Lis				
Approved Manufactur	er Manufacturer Figure Nu	mber	Nominal Size	Range	
		ı	2"-18"		
Valve Type Wa	fer Check Valve		Tag Number		
7,				CK-1D62S	
Piping Class 1D0	6		Specification		: :
. .			CMH-2400	48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 108 of 271			

Valve Specification	Shall Be Fauel Te Neminal Dine Size in	ACME DO	2.40		
	Shall Be Equal To Nominal Pipe Size in	Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34			-	
Body Material	Stainless Steel ASTM A182 F316				
Trim Material	Ball: ASTM A182 F316, Stem: ASTM	A182 F316	6, Seat And S	Seal: RPTF	E
Bolting	Bolt To ASTM A193 B7, Nut To ASTI F2329/ASTM A153	M A194 2H	; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	-20 ~ 80°C				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M			•	mperature
Service	See APPENDIX A	To didili 7 tt 1			porataro
 Valves To Be Asbe Seals To Be Resis Hydraulic Test Acc Valves Shall Have Positions. Inner Or Outer Lea Valve Design Life i 	tant To Explosive Decompression. Fording To API 598 / ASME B16.34. Position Indicator Showing Open And Cookage Is Not Acceptable. S 25 Years. On: EN 10204 Type3.1. Valve Check Li	Close	Packing Mate RPTFE Gasket Mate Manufacture The Gasket I Correspondir 240048-728-Additional Resee Specifications Nominal Size	rial r Standard Material Of ng Class In PIP-15.03- equirement ation	The CMIT- 3001
	<u> </u>		1/2"-1 ½"		
Valve Type Ba	II		Tag Number	BA-1G01	
Piping Class 1G	0	,	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 109 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Stainless Steel ASTM A351 CF8M				
Trim Material	Ball: ASTM A182 F316, Stem: AST F316+ RPTFE	M A182 F3	16, Seat And	Seal: ASTN	Л A182
Bolting	Bolt To ASTM A193 B7, Nut To AS F2329/ASTM A153	TM A194 2	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements				emperature
Service	See APPENDIX A				<u>'</u>
 Valves To Be Doub Capable Of Bearing F Valves To Be Asbed Seals To Be Resist Hydraulic Test Accolo Valves Shall Have Positions. Inner Or Outer Lead Valve Design Life in 	tant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And kage Is Not Acceptable.		Packing Mat RPTFE Gasket Manufacture The Gasket Correspondii 240048-728- Additional Ro See Specific	erial r Standard Material Of ng Class Ir -PIP-15.03- equirement	The CMIT- 3001
9. Material Certification	on. EN 10204 Type3.1.				
Approved Manufactur	Valve Check rer Manufacturer Figure N		Nominal Size	e Range	
Valve Type Bal	I		Tag Number	BA-1G02	
Piping Class 1G	0		Specification CMIT-2400		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 110 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Stainless Steel ASTM A351 CF8M				
Trim Material	Ball: ASTM A182 F316, Stem: AST F316+ RPTFE	M A182 F3	16, Seat And	Seal: ASTN	Л A182
Bolting	Bolt To ASTM A193 B7, Nut To AS F2329/ASTM A153	TM A194 2	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements			ŕ	emperature
Service	See APPENDIX A				<u>'</u>
 Valves To Be Doub Capable Of Bearing F Valves To Be Asbed Seals To Be Resist Hydraulic Test Accolo Valves Shall Have Positions. Inner Or Outer Lead Valve Design Life in 	tant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And kage Is Not Acceptable.		Packing Mat RPTFE Gasket Mate Manufacture The Gasket Correspondi 240048-728- Additional Ro See Specific	rial r Standard Material Of ng Class Ir PIP-15.03- equirement	The CMIT- 3001
Approved Manufactur	Valve Check er Manufacturer Figure N		Nominal Size	e Range	
			2"-4"		
Valve Type Bal	I		Tag Number	BA-1G03	
Piping Class 1G	0		Specification CMIT-2400		45.00.0004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 111 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36	.10			
Pressure		Test Press	Pressure Mpa (ASME B16.34)			
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34		ı			
Body Material	Stainless Steel ASTM A182 F316					
Trim Material	Seats And Gate: ASTM A182 F316+S	Stellite, Ster	n: ASTM A1	82 F316		
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	/I A194 2H;	Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	d API 6FA(F	Providing Ce	ertificate)		
Service	See APPENDIX A					
	ensions To ASME B16.10. able For Full Vacuum.	F	Packing Mate RPTFE Gasket Mate			
	cording To API 598 / ASME B16.34. akage Is Not Acceptable.	T	Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001			
7. Material Certification	on: EN 10204 Type3.1.		Additional Requirements: See Specification			
Approved Manufactu	Valve Check Lis rer Manufacturer Figure Nur		lominal Size	e Range		
		1	/2"-1 ½"			
Valve Type	Gate		ag Number	GA-1G01		
Piping Class	1G0	S	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 112 of 271		

Valve Specification	Obell De Francis I Direction	. A ONAE DO	20.40		
	Shall Be Equal To Nominal Pipe Size	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34		l	-1	
Body Material	Stainless Steel ASTM A351 CF8M				
Trim Material	Seats And Gate: ASTM A182 F316	+Stellite, St	em: ASTM A1	182 F316	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	TM A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
 Valves To Be Suita Valves To Be Asbe Hydraulic Test Acc Inner Or Outer Lea Valve Design Life 	cording To API 598 / ASME B16.34. akage Is Not Acceptable.		Packing Mate RPTFE Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Re See Specific	erial r Standard, Material Of ng Class Ir -PIP-15.03- equirement	The CMIT- 3001
Approved Manufactu	Valve Check I rer Manufacturer Figure N		Nominal Size	e Range	
Valve Type	Gate		Tag Number	GA-1G02	
Piping Class	1G0		Specification CMIT-2400	Number 48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 113 of 271			

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in			/A CN 45 5 /	0.04)
Pressure	45015 ACME D40 24	Test Pres		(ASME B1	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Stainless Steel				
body Waterial	ASTM A182 F316				
Trim Material	Seat And Plug: ASTM A182 F316+St	ellite, Sten	n: ASTM A18	2 F316	
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	M A194 2H	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Pady Canatariation	Bolted Bonnet, Rising Stem				
Body Construction	Outside Screw And Yoke				
T-i O	Swivel Type Plug				
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		RPTFE		
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard/	More Than
3. Valves To Be Asbe			The Gasket I	Material Of	The
	akage Is Not Acceptable.		Correspondir	ng Class In	CMIT-
5. Valve Design Life			240048-728-	PIP-15.03-	3001
6. Material Certification	on: EN 10204 Type3.1.		Additional Re	•	s:
			See Specific	ation	
	Valve Check Li		N	_	
Approved Manufactu	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
		·	1/2"-1 ½"		
Valve Type Glo	obe		Tag Number		
				GL-1G01	
Piping Class 1G	60		Specification		
	<u> </u>		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 114 of 271		

Dracesure	Test		Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34			1		
Body Material	Stainless Steel ASTM A351 CF8M					
Trim Material	Seat And Plug: ASTM A182 F316+Ste	Ilite, Ster	m: ASTM A18	2 F316		
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2H	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
	ensions To ASME B16.10.		Packing Mate			
Short Pattern Valves 2. Valves To Be Suita 3. Valves To Be Asbe	ble For Full Vacuum.		Gasket Mate Manufacture The Gasket I	r Standard Material Ot	f The	
5. Valve Design Life is	s 25 Years.		Correspondir 240048-728-	•		
6. Material Certification	on: EN 10204 Type3.1.		Additional Re See Specific	•	ts:	
	Valve Check List					
Approved Manufactur	er Manufacturer Figure Num	nber	Nominal Size	e Range		
			2"-4"			
Valve Type Glo	bbe		Tag Number	GL-1G02		
			Specification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 115 of 271			

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	ASME E	36.10		
Pressure		Test Pr	essure Mpa	(ASME B	16.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Stainless Steel ASTM A182 F316				
Trim Material	Seat And Disc: ASTM A182 F316+St	ellite			
Bolting	Bolt To ASTM A193 B7, Nut To ASTI F2329/ASTM A153	M A194 2	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6F	A(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	The
•	ording To API 598 / ASME B16.34. kage Is Not Acceptable.		Correspondir 240048-728-	•	
Valve Design Life i Material Certification	s 25 Years. on: EN 10204 Type3.1.		Additional Re See Specifica	•	s:
	Valve Check Li	st			
Approved Manufactur	rer Manufacturer Figure Nu	mber	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Ch	eck, Lift Piston		Tag Number	CK-1G01	
Piping Class 1G	0		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 116 of 27			

D		Test Pre	ssure Mpa	(ASME B	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34	l			I
Body Material	Stainless Steel ASTM A351 CF8M				
Trim Material	Seat And Disc: ASTM A182 F316+St	ellite			
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	M A194 2H	l; Hot Dipped	Galvanize	d To ASTN
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Patterr				
Trim Construction	Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Of API 594 Type A. S 2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acc 5. Inner Or Outer Lea 6. Valve Design Life i	estos Free. Fording To API 598 / ASME B16.34. Ekage Is Not Acceptable. Is 25 Years. In: EN 10204 Type3.1.		Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Res See Specific	ee Material rial r Standard Material Of ng Class Ir PIP-15.03 equiremen	/More Thar f The n CMIT- -3001
Approved Manufactu	Valve Check Lis rer Manufacturer Figure Nu		Nominal Size	e Range	
Valve Type Wa	afer Check Valve		Tag Number	CK-1G02	
Piping Class 1G	0		Specification		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 117 of 271		

Valve Specification	0	10115.00	20.40		
	Shall Be Equal To Nominal Pipe Size in	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34	1			
Body Material	Carbon Steel ASTM A105				
Trim Material	Ball: A105+75µENP,Stem: ASTM A1 +RPTFE			•	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For			•	emperature
Service	See APPENDIX A				<u> </u>
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial	
3. Seals To Be Resis	tant To Explosive Decompression.		Manufacture	r Standard	More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The
5. Valves Shall Have	Position Indicator Showing Open And O	Close	Correspondi	ng Class In	CMIT-
Positions.			240048-728-	PIP-15.03-	3001
	ikage Is Not Acceptable.		Additional Re	equirement	s:
	on: EN 10204 Type3.1.		See Specification		
	s of Valves Should Take 3mm Corrosio	n [
Allowance Into Consi					
9. Valve Design Life i	s 25 Years.				
	Valve Check L	st			
Approved Manufactur	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			1/2"-1 ½"		
Valve Type Bal	<u></u>		Tag Number		
,,			<u> </u>	BA-1G31	
Piping Class 1G	3		Specification	Number 48-728-PIP-	15 03-3001
			CIVII 1-2400	70-1 20-F IF-	10.00-0001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 118 of 27			

		Test Pre	ssure Mpa	(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		l		
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Ball: A105+75µENP,Stem: ASTM A18 +RPTFE	2 F6a,Se	eat And Seal:	A105+75µ	ENP
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	l A194 2l	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For I		(Providing Ce	ŕ	- emperature
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe	stos Free.		Gasket Mate	rial	
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	/More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket	Material Of	The
5. Valves Shall Have	Position Indicator Showing Open And Cl	ose	Corresponding Class In CMIT-		
Positions.			240048-728-	PIP-15.03	-3001
	kage Is Not Acceptable.		Additional Re	equirement	s:
	on: EN 10204 Type3.1.		See Specification		
	s of Valves Should Take 3mm Corrosion				
Allowance Into Consid					
9. Valve Design Life is	s zo reals.				
	Valve Check Lis				
Approved Manufactur	er Manufacturer Figure Nun	nber	Nominal Size	e Range	
			2"-4"		
Valve Type Bal	l		Tag Number	BA-1G32	
Piping Class 1G3	3		Specification CMIT-2400		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 119 of 27				

Pressure		Test Pre	est Pressure Mpa (ASME B16.34)			
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34			1	<u>'</u>	
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Ball: A105+75µENP,Stem: ASTM A18 +RPTFE	-		·		
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	1 A194 2H	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator				<u> </u>	
Body Construction	Full Bore, Split Body, Trunnion Mount					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For		,	,	emperatur	
Service	See APPENDIX A				· ·	
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Doub	ole Block And Bleed ones, With Any End		Gasket Mate	rial		
	Full Differential Pressure.		Manufacture	r Standard	/More Thar	
3. Valves To Be Asbe			The Gasket			
	tant To Explosive Decompression.		Correspondi	•		
•	ording To API 598 / ASME B16.34.		240048-728-			
o. valves Shall Have Positions.	Position Indicator Showing Open And C	iose	Additional Re	•	is:	
	kage Is Not Acceptable.	-	See Specific	ation		
	on: EN 10204 Type3.1.					
	s of Valves Should Take 3mm Corrosion					
Allowance Into Consi		-				
10. Valve Design Life						
Ŭ						
	Valve Check Lis	st				
Approved Manufactur	er Manufacturer Figure Nur	nber	Nominal Size	e Range		
			6"-12"			
Valve Type Bal	1		Tag Number			
Valve Type Bal	П			BA-1G33		
Piping Class 1G	৭		Specification	Number		
i iping class 10	U		CMIT-2400	40 700 DID	45 00 0004	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 120 of 27			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size i			/A 01 / E D /	2.24)	
Pressure	150lb ASME B16.34	Test Pre				
Temperature Rating	150ID ASME B10.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34			•	•	
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Ball: A105+75µENP,Stem: ASTM A +RPTFE	182 F6a,S€	eat And Seal:	A105+75µI	ENP	
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2I	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Reduced Bore, Split Body, Floating					
·	Fire Tested To BS EN ISO 10497 A	nd API 607	(Providing Ce	ertificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements Fo	r Medium /	At Rated Pres	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mat			
	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Asbe			Gasket Mate	rial		
	tant To Explosive Decompression.		Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket Material Of The			
	Position Indicator Showing Open And	Close	Corresponding Class In CMIT-			
Positions.			240048-728-			
	kage Is Not Acceptable.		Additional Requirements:			
	on: EN 10204 Type3.1.		See Specific	ation		
	s of Valves Should Take 3mm Corrosid	n				
Allowance Into Consider						
9. Valve Design Life i	s 25 Years.					
	Valve Check L	ist				
Approved Manufactur	er Manufacturer Figure N	umber	Nominal Size	e Range		
			2"-4"			
Valvo Type Bal			Tag Number			
Valve Type Bal	II.			BA-1G34		
Piping Class 1G	3		Specification	Number		
i iping ciass 16	0		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 121 of 271		

Valve Specification					
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size i			/ACME D4	C 24)
Pressure Temperature Rating	150lb ASME B16.34	Test Pre Body	By Vendor	(ASME B1	By Vendor
Design Code	API 6D / ASME B16.34		VCHGOI		Veridei
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Ball: A105+75µENP,Stem: ASTM A +RPTFE				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A				
2. Valves To Be Doub Capable Of Bearing F 3. Valves To Be Asbe 4. Seals To Be Resist 5. Hydraulic Test Acco 6. Valves Shall Have Positions. 7. Inner Or Outer Leal 8. Material Certification	ant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And kage Is Not Acceptable. n: EN 10204 Type3.1. s of Valves Should Take 3mm Corrosic deration. is 25 Years.	Close .	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Corresponding 240048-728- Additional Ree See Specific	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur	Valve Check L er Manufacturer Figure N		Nominal Size	e Range	
Valve Type Ball			Tag Number	BA-1G35	
Piping Class 1G3	3		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	A Page 122 of 27		

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B		(ASME D	16 24)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	(ASME B1	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105					
Trim Material	Seats And Gate And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	1 A194 2H	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	/More Than	
•	cording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
	akage Is Not Acceptable.		Correspondir	•		
	on: EN 10204 Type3.1.		240048-728-	PIP-15.03	-3001	
	s of Valves Should Take 3mm Corrosion	1	Additional Re	equirement	s:	
Allowance Into Consi			See Specification			
8. Valve Design Life	is 25 Years.					
	Valve Check Lis					
Approved Manufactu	rer Manufacturer Figure Nur	mber	Nominal Size	Range		
			1/2"-1 ½"			
Valva Tura	Cata		Tag Number			
Valve Type	Gate			GA-1G31		
Piping Class	1G3		Specification	Number		
i ipiliy Ciass	100		CMIT-2400	48-728-PIP	-15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 123 of 271		

Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B3 Test Pre		(ASME B1	6 34)	
Pressure Temperature Rating	150lb ASMF B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Seats And Gate And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2F	l; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1.		240048-728-			
	s of Valves Should Take 3mm Corrosion		Additional Requirements:			
Allowance Into Consi			See Specification			
8. Valve Design Life i						
	Valve Check List			_		
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	e Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-1G32		
Piping Class	1G3		Specification CMIT-2400		45.00.0004	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 124 of 271			

Specified valve Size	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6 34)	
Pressure Temperature Rating	150lb ASMF B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Seats And Gate And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2h	l; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1.		240048-728-			
	s of Valves Should Take 3mm Corrosion		Additional Requirements:			
Allowance Into Consi			See Specification			
8. Valve Design Life i						
	Valve Check List		N	-		
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	e Range		
			10"-12"			
Valve Type	Gate		Tag Number	GA-1G33		
Piping Class	1G3		Specification CMIT-2400		15.02.2001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02		
Phase	Detailed Design		
Rev.	Α	Page 125 of 271	

<u> </u>	Shall Be Equal To Nominal Pipe Size in	Test Pre		(ASME B	16.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105					
Trim Material	Seat And Plug And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	/I A194 2I	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
Short Pattern Valves	•		Gasket Mate	rial		
2. Valves To Be Suita			Manufacture	r Standard	/More Than	
3. Valves To Be Asbe			The Gasket			
	kage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1.		240048-728-			
	s of Valves Should Take 3mm Corrosior)	Additional Requirements:			
Allowance Into Consid 7. Valve Design Life is			See Specification			
7. Valve Beergii Elie ii						
Approved Menufer-turn	Valve Check Lis		Naminal Ci-	Danza		
Approved Manufactur	er Manufacturer Figure Nui	nper	Nominal Size	e Kange		
			1/2"-1 ½"			
Valve Type Glo	be		Tag Number	GL-1G31		
Piping Class 1G	3		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 126 of 271		

Design Code API 623 / ASME B16.34 Body Material Carbon Steel ASTM A216 WCB Trim Material Seat And Plug And Stem:410 Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Valve Operation Handwheel with Lock Device Body Construction Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Suitable For Full Vacuum. 4. Inner Or Outer Leakage Is Not Acceptable. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-6" Valve Type Globe Specification Number Specification Number of Language Specification Number Specification Number of Language Sp	Valve Specification						
Temperature Rating Design Code API 623 / ASME B16.34 Body Material Carbon Steel ASTM A216 WCB Trim Material Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection Iso Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A See APPENDIX A Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Packing Material Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection Iso Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A See APPENDIX A See APPENDIX A Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Abbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-6" Valve Type Globe Tag Number GL-1G32 Specification Number	Specified Valve Size	Shall Be Equal To Nominal Pipe Size in			/A 01 45 D 4	0.04)	
Design Code API 623 / ASME B16.34 Body Material Carbon Steel ASTM A216 WCB Trim Material Seat And Plug And Stem:410 Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Served And Yoke Trim Construction See APPENDIX A Notes: Packing Material 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Suitable For Full Vacuum. 4. University To Asme Corresion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Manufacturer Figure Number Vendor Vendor Vendor Vendor Vendor Vendor Vendor Vendor Vendor Vend	Pressure	4FOIL ACME DAG 24	Test Pre		(ASME B1		
Carbon Steel ASTM A216 WCB	Temperature Rating	150ID ASME B16.34	Body	•	Seat	Vendor	
ASTM A216 WCB Trim Material Seat And Plug And Stem:410 Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Valve Operation Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Seve APPENDIX A Notes: See APPENDIX A N	Design Code	API 623 / ASME B16.34					
ASIM A216 WCB Bolting Seat And Plug And Stem:410 Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection 150 Lb RF Flange To ASME B16.5 Temperature See APPENDIX A Valve Operation Handwheel with Lock Device Body Construction Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range Valve Type Globe Tag Number GL-1G32 Specification Number	Body Material						
Bolting Bolt To ASTM A193 B7, Nut To ASTM A194 2H; Hot Dipped Galvanized To AST F2329/ASTM A153 End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Walve Operation Handwheel with Lock Device Body Construction Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Abbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Check List Approved Manufacturer Approved Manufacturer Valve Type Globe Tag Number Specification Number Speci		ASTM A216 WCB					
End Connection 150 Lb RF Flange To ASME B16.5 Temperature Limitations See APPENDIX A Valve Operation Handwheel with Lock Device Body Construction Outside Screw And Yoke Trim Construction See APPENDIX A Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range Valve Type Globe Tag Number Tag Number Specification Number Specification Number	Trim Material						
Temperature Limitations Valve Operation Body Construction Body Construction Bolted Bonnet, Rising Stem Outside Screw And Yoke Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Valve Type Globe Read PPENDIX A Packing Material: Emission Free Material Gasket Material Manufacturer Standard/More That The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Manufacturer Figure Number Nominal Size Range 2"-6" Valve Type Globe Tag Number GL-1G32	Bolting	· ·	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM	
Limitations Valve Operation Handwheel with Lock Device Body Construction Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Check List Manufacturer Figure Number Valve Type Globe See APPENDIX A Packing Material: Emission Free Material Gasket Material Manufacturer Standard/More That The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Approved Manufacturer Nominal Size Range 2"-6" Valve Type Gl-1G32	End Connection	150 Lb RF Flange To ASME B16.5					
Bolted Bonnet, Rising Stem Outside Screw And Yoke Trim Construction Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Bolted Bonnet, Rising Stem Outside Screw And Yoke Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Emission Free Material Gasket Material Gasket Material Gasket Material Gasket Material Manufacturer Standard/More That The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Mominal Size Range 2"-6" Valve Type Globe Tag Number GL-1G32	•	See APPENDIX A					
Trim Construction Outside Screw And Yoke Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Tag Number GL-1G32 Specification Number	Valve Operation	Handwheel with Lock Device					
Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Service See APPENDIX A Notes: 1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) Packing Material: Emission Free Material Gasket Material Manufacturer Standard/More That The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number	Body Construction						
Service See APPENDIX A	Trim Construction		nd API 6FA	(Providing Ce	ertificate)		
1. Face To Face Dimensions To ASME B16.10. Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Valve Check List Approved Manufacturer Valve Type Globe Emission Free Material Gasket Material Manufacturer Standard/More That The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number	Service			·	,		
Short Pattern Valves Are Not Acceptable. 2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Gasket Material Manufacturer Standard/More Thath The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number	Notes:			Packing Mat	erial:		
2. Valves To Be Suitable For Full Vacuum. 3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Wanufacturer Standard/More That The Gasket Material Of The Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Valve Check List Manufacturer Figure Number Nominal Size Range 2"-6" Valve Type Globe Tag Number GL-1G32 Specification Number	1. Face To Face Dime	ensions To ASME B16.10.		•			
3. Valves To Be Asbestos Free. 4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number	Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial		
4. Inner Or Outer Leakage Is Not Acceptable. 5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Corresponding Class In CMIT-240048-728-PIP-15.03-3001 Additional Requirements: See Specification Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number	2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	More Than	
5. Material Certification: EN 10204 Type3.1. 6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Valve Type Globe 240048-728-PIP-15.03-3001 Additional Requirements: See Specification Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number	3. Valves To Be Asbe	estos Free.		The Gasket	Material Of	The	
6. The Wall Thickness of Valves Should Take 3mm Corrosion Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Additional Requirements: See Specification Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number		•		Correspondi	ng Class In	CMIT-	
Allowance Into Consideration. 7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Valve Type Valve Type Valve Type Globe Valve Type Specification Valve Check List Nominal Size Range 2"-6" Tag Number GL-1G32 Specification Number		• •		240048-728-	PIP-15.03-	3001	
7. Valve Design Life is 25 Years. Valve Check List Approved Manufacturer Manufacturer Figure Number Valve Type Globe Valve Type Globe Specification Number Specification Number			n	·			
Valve Check List Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-6" Valve Type Globe Tag Number GL-1G32 Specification Number				See Specification			
Approved Manufacturer Manufacturer Figure Number Nominal Size Range 2"-6" Valve Type Globe Tag Number GL-1G32 Specification Number	7. Valve Design Life is						
Valve Type Globe Tag Number GL-1G32 Specification Number		· · - · · -		N	5		
Valve Type Globe Tag Number GL-1G32 Specification Number	Approved Manufactur	rer Manutacturer Figure Nu	ımber	Nominal Size	e Range		
Valve Type Globe GL-1G32 Specification Number				2"-6"			
Specification Number	Valve Type Glo	be		Tag Number			
Piping Class 1G3 CMIT-240048-728-PIP-15.03-300	Piping Class 1G	3		•	Number	15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 127 of 271			

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size i			/ACME D4	0.04)
Pressure	150lb ASME B16.34	Test Pre		(ASME B1	
Temperature Rating	150ID ASIME B10.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34	•		•	
Body Material	Carbon Steel				
	ASTM A216 WCB				
Trim Material	Seat And Plug And Stem:410				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A		·	,	
Notes:			Packing Mat	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	ible For Full Vacuum.		Manufacture	r Standard	More Than
3. Valves To Be Asbe			The Gasket	Material Of	The
	kage Is Not Acceptable.		Correspondi	•	
	on: EN 10204 Type3.1.		240048-728-		
_	s of Valves Should Take 3mm Corrosid	on	Additional Requirements:		
Allowance Into Consider			See Specific	ation	
7. Valve Design Life i					
	Valve Check L			_	
Approved Manufactur	rer Manufacturer Figure N	umber	Nominal Size	e Range	
			8"-12"		
Valve Type Glo	she		Tag Number		
varve rype Gic				GL-1G33	
Piping Class 1G	3		Specification		45.00.000
· •			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 128 of 271		

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ir			/AOME DA	10.04)
Pressure Temperature Rating	150lb ASME B16.34	Test Pre Body	By Vendor	(ASME B1	By Vendor
Design Code	API 602 / ASME B16.34	1		-	
Body Material	Carbon Steel ASTM A105				
Trim Material	Seat And Disc:410				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Short Pattern Valves A 2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acco 5. Inner Or Outer Lead 6. Material Certification	ble For Full Vacuum. stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. on: EN 10204 Type3.1. s of Valves Should Take 3mm Corrosio deration.	n	Packing Mate Emission Fre Gasket Mate Manufacture The Gasket I Correspondir 240048-728- Additional Re See Specifica	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur	Valve Check L er Manufacturer Figure Nu		Nominal Size	e Range	
Valve Type Che	eck, Lift Piston		Tag Number	CK-1G31	
Piping Class 1G3	3		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 129 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in	Test Pr		(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Seat And Disc:410				
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153		,		
End Connection	150 Lb To Be Connected With RF Flatonnection.	nges Ac	cording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Pattern				
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6F	A(Providing Ce	ertificate)	
Service	See APPENDIX A				
Of API 594 Type A. S 2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acc 5. Inner Or Outer Lea 6. Material Certification	ording To API 598 / ASME B16.34. kage Is Not Acceptable. on: EN 10204 Type3.1. s of Valves Should Take 3mm Corrosior deration. s 25 Years.		Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Ree See Specific	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur	Valve Check Lis er Manufacturer Figure Nui		Nominal Size	e Range	
Valve Type Wa	fer Check Valve		Tag Number	CK-1G32	
Piping Class 1G	3		Specification CMIT-2400		45.00.0004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 130 of 271			

Pressure	Т	Test Pressure Mpa (ASME B16.34)				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	ISO 17292 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A182 F55					
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A1					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	1 A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal Sea					
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	·	-	,	- emperature	
Service	See APPENDIX A					
 Valves To Be Asbe Seals To Be Resist Hydraulic Test According Valves Shall Have Positions. Inner Or Outer Leal This Type Of Valve 	ant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And Clos kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup s 25 Years.	se ave pplied	Packing Mate Emission Free Gasket Mate Manufacturer The Gasket M Correspondir 240048-728-Additional Research See Specificated II Material U Shall Meet TI NACE MR 01	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement ation Jsed In Sor	/More Than The CMIT- 3001 SS: ur Service	
Approved Manufacture	Valve Check List er Manufacturer Figure Numb		Nominal Size	Range		
Valve Type Ball			Tag Number	BA-1L01		
Piping Class 1L0			Specification CMIT-2400		-15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
0000 D00. No.	200001B0720WI 00002				
Dhaaa	D (11 1 D)				
Phase	Detailed Design				
Б	A D 404 (074				
Rev.	A Page 131 of 271				

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in A	SME B36		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A					
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A7	182-F55,S	eat and Sea	al: A182-F5	5+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	Л А194 2H	IM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal Se	ats				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M	•	J	,	emperature	
Service	See APPENDIX A					
Notes:		Р	acking Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Free Material			
2. Valves To Be Asbe	estos Free.	G	Gasket Material			
3. Seals To Be Resist	ant To Explosive Decompression.	N	lanufacturer	Standard/	More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	Т	he Gasket N	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And Clo	se C	orrespondir	ng Class In	CMIT-	
Positions.		2	40048-728-	PIP-15.03-	3001	
6. Inner Or Outer Lea	kage Is Not Acceptable.	Α	dditional Re	quirement	S:	
7. This Type Of Valve	ls Used In Sour Service. Vendor Shall H	ave S	See Specification			
Clear Information On	The Valve Tag That The Valves They Su	pplied A				
Are Sulphur Resisting		s	hall Meet Ti	ne Require	ments Of	
8. Valve Design Life is	s 25 Years.	N	NACE MR 0175/ISO15156			
9.Material Certification	n: EN 10204 Type3.1.					
	Valve Check List					
Approved Manufactur	er Manufacturer Figure Numl	ber N	lominal Size	Range		
		2	"-4"			
Valva Tura	1	T	ag Number			
Valve Type Bal	I			BA-1L02		
Piping Class 1L0	1	S	pecification	Number		
Piping Class 1L0	,		CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 132 of 271				

Valve Specification	Shall Da Fayral Ta Naminal Dina Cina in	A CME DO	16.10		
<u> </u>	Shall Be Equal To Nominal Pipe Size in	Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34	ı		1	
Body Material	Carbon Steel ASTM A216 WCB+ S32760 WELDIN	G OVERL	AY CLAD (TH	łK≥3 mm)
Trim Material	Ball: ASTM A182-F55+Stellite,Stem:	A182-F55	Seat and Sea	al: A182-F	55+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Full Bore, Split Body, Trunnion Moun	ted Metal S	Seats		
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For			•	emperature
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material	
2. Valves To Be Doubl	le Block And Bleed ones, With Any End	d	Gasket Mate	rial	
Capable Of Bearing Fu	ull Differential Pressure.		Manufacturer	Standard	More Than
3. Valves To Be Asbes	stos Free.		The Gasket N	Material Of	The
4. Seals To Be Resista	ant To Explosive Decompression.		Correspondir	ng Class In	CMIT-
5. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		240048-728-	PIP-15.03-	3001
6. Valves Shall Have F	Position Indicator Showing Open And C	lose	Additional Re	quirement	s:
Positions.			See Specifica	ation	
7. Inner Or Outer Leak	age Is Not Acceptable.		All Material U	Ised In Sou	ır Service
8. This Type Of Valve	Is Used In Sour Service. Vendor Shall	Have	Shall Meet TI	he Require	ments Of
Clear Information On 7	Γhe Valve Tag That The Valves They S	Supplied	NACE MR 01	175/ISO15 ⁻	156
Are Sulphur Resisting.					
9. Valve Design Life is					
10.Material Certification					
	Valve Check Li				
Approved Manufacture	er Manufacturer Figure Nu	mber	Nominal Size	Range	
			6"-18"		
Valve Type Ball			Tag Number	BA-1L03	
Piping Class 1L0			Specification		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 133 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in <i>i</i>	ASME B36	3.10		
Pressure		Test Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A				
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A	182-F55,	Seat and Sea	al: A182-F5	5+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2I	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating Me	etal Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M	•		·	omporaturo
Service	See APPENDIX A	/ieuluiii Al	Nateu Fies	Sule Allu I	emperature
	See APPENDIX A	1.	Da aleira er Mada	! 1-	
Notes: 1. Face To Face Dime	ensions To ASME B16.10.		Packing Mate Emission Fre		
2. Valves To Be Asbe	stos Free.	(Gasket Mate	rial	
3. Seals To Be Resist	ant To Explosive Decompression.	1	Manufacture:	r Standard/	More Than
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.	7	The Gasket N	Material Of	The
5. Valves Shall Have I Positions.	Position Indicator Showing Open And Cl	I .	Correspondir 240048-728-	•	
6. Inner Or Outer Leal	rage Is Not Acceptable.	1	Additional Re	equirement	 S:
7. This Type Of Valve	Is Used In Sour Service. Vendor Shall F	.	See Specifica	•	
Clear Information On	The Valve Tag That The Valves They Sเ	ıpplied 7	All Material L	Jsed In Sou	ır Service
Are Sulphur Resisting		5	Shall Meet T	he Require	ments Of
8. Valve Design Life is9.Material Certification		1	NACE MR 01	175/ISO15 ²	156
	Valve Check Lis	<u> </u>			
Approved Manufacture	er Manufacturer Figure Num	nber 1	Nominal Size	Range	
			2"-4"		
Valve Type Ball		[7	Гад Number		
				BA-1L04	
Piping Class 1L0		- 5	Specification		
i ipilig Oldoo ILO			CMIT-24004	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 134 of 271			

Valve Specification	Shall Be Equal To Nominal Pipe Size in A	SME B36	3 10		
·	· · · · · · · · · · · · · · · · · · ·	est Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel				
Dody Material	ASTM A216 WCB+ S32760 WELDING		•		
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A1				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	1 A194 2I	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion Mo	unted Me	etal Seats		
	Fire Tested To BS EN ISO 10497 And A	API 607(F	Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Me	edium At	Rated Press	sure And T	emperature
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.		Emission Fre		
	le Block And Bleed ones, With Any End		Gasket Mate		
	ull Differential Pressure.		Manufacture		
3. Valves To Be Asbe			The Gasket N		
	ant To Explosive Decompression.		Correspondir	•	
•	ording To API 598 / ASME B16.34.		240048-728-		
	Position Indicator Showing Open And Clo		Additional Re	•	S:
Positions.	kaga la Nat Assantable		See Specifica		
	kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha		All Material U		
• •	The Valve Tag That The Valves They Sup	`	Shall Meet T	•	
Are Sulphur Resisting	•	philed h	NACE MR 01	175/15015	156
9. Valve Design Life is					
_	on: EN 10204 Type3.1.				
To the state of th					
	Valve Check List				
Approved Manufactur		oer N	Nominal Size	Range	
	3			J	
		6	6"-18"		
		7	Гад Number		
Valve Type Bal			-	BA-1L05	
Distance Obs.			Specification		
Piping Class 1L0			CMIT-24004		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 135 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ir	ASME B	36.10		
Pressure		Test Pre	ssure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34	1	1		
Body Material	Duplex Stainless Steel ASTM A182 F55				
Trim Material	Seats And Gate: ASTM A182 F55+S	tellite, Ste	m: ASTM A18	2 F55	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem				
Body Construction	Outside Screw And Yoke				
Trim Construction	Solid Wedge Type				
Thin Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	A(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:	-		Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material	
2. Valves To Be Suita	ble For Full Vacuum.		Gasket Mate	rial	
3. Valves To Be Asbe	stos Free.		Manufacture	r Standard/	More Than
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The
	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall	Have	240048-728-	PIP-15.03-	3001
Clear Information On	The Valve Tag That The Valves They S	Supplied	Additional Re	equirement	s:
Are Sulphur Resisting			See Specifica	ation	
7. Material Certificatio	n: EN 10204 Type3.1.		All Material L	Jsed In Sou	ır Service
8. Valve Design Life is	s 25 Years.		Shall Meet T	he Require	ments Of
			NACE MR 0 ²	175/ISO151	156
Approved Manufactur	Valve Check Li er Manufacturer Figure Nu		Nominal Size	Range	
			1/2"-1 ½"		
Valve Type	Gate		Tag Number	GA-1L01	
Piping Class	1L0		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 136 of 271				

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	3.10			
Pressure		Test Pressure Mpa (ASME E				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34		'	1	•	
Body Material	Duplex Stainless Steel					
	ASTM A995 Gr.6A					
Trim Material	Seats And Gate: ASTM A182 F55+Ste	llite, Stem	: ASTM A18	2 F55		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2I	HM; XYLAN	Fluoropolyr	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Rody Construction	Bolted Bonnet, Rising Stem					
Body Construction	Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type					
Tilli Collati detion	Fire Tested To BS EN ISO 10497 And	API 6FA(I	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Free Material			
2. Valves To Be Suita	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe	stos Free.	1	Manufacturer	Standard/l	More Than	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.	7	Γhe Gasket Ν	Material Of	The	
5. Inner Or Outer Leal	kage Is Not Acceptable.	(Corresponding Class In CMIT-			
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall H	lave 2	240048-728-	PIP-15.03-3	3001	
Clear Information On	The Valve Tag That The Valves They Sเ	ıpplied 🖟	Additional Requirements:			
Are Sulphur Resisting		5	See Specifica	ation		
7. Material Certificatio	n: EN 10204 Type3.1.	1	All Material U	Ised In Sou	r Service	
8. Valve Design Life is	s 25 Years.	5	Shall Meet The Requirements Of			
		1	NACE MR 01	175/ISO151	56	
	Valve Check Lis	t				
Approved Manufacture	er Manufacturer Figure Nun	nber N	Nominal Size	Range		
			2"-8"			
Valve Type	Gate	7	Гад Number			
71 .				GA-1L02		
Piping Class	1L0	5	Specification			
1 0 2			CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 137 of 271			

Valve Specification	Shall Be Equal To Nominal Pipe Size in	ASME B	36 10		
	Shall be Equal to Norhillal Fipe Size III	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		1		
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A				
Trim Material	Seats And Gate: ASTM A182 F55+St	ellite, Ste	m: ASTM A18	2 F55	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	d API 6F/	۱(Providing Ce	ertificate)	
Service	See APPENDIX A				
2. Valves To Be Suita3. Valves To Be Asbe4. Hydraulic Test Acc5. Inner Or Outer Lea6. This Type Of ValveClear Information OnAre Sulphur Resisting	estos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall The Valve Tag That The Valves They Son: EN 10204 Type3.1.	upplied	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Correspondin 240048-728- Additional Res See Specifica All Material L Shall Meet T NACE MR 07	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement ation Jsed In Sor	/More Than The CMIT- 3001 S: ur Service
Approved Manufactur			Nominal Size	e Range	
Valve Type	Gate		Tag Number	GA-1L03	
Piping Class	1L0		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 138 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Press		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34 B6	ody	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34			I	
Body Material	Carbon Steel ASTM A216 WCB+ S32760 WELDING		•		
Trim Material	Seats And Gate: ASTM A182 F55+Stelli				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	A194 2H	lm; XYLAN	Fluoropolyr	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And A	PI 6FA(P	Providing Ce	rtificate)	
Service	See APPENDIX A				
 2. Valves To Be Suital 3. Valves To Be Asbes 4. Hydraulic Test Accord 5. Inner Or Outer Leak 6. This Type Of Valve Clear Information On Are Sulphur Resisting 	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup . n: EN 10204 Type3.1.	Ve plied A S	acking Mater mission Frestasket Mater danufacturer he Gasket Material 40048-728-1 dditional Resee Specifical Il Material Uhall Meet The ACE MR 01	e Material rial Standard/l Material Of g Class In PIP-15.03-3 quirements ation lsed In Sou ne Require	The CMIT-3001 s: r Service ments Of
Approved Manufacture	Valve Check List er Manufacturer Figure Numb		lominal Size	Range	
Valve Type	Gate	Т	ag Number	GA-1L04	
Piping Class	1L0	S	pecification CMIT-24004	Number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 139 of 271				

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Press		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34 B6	ody	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		I		
Body Material	Carbon Steel ASTM A216 WCB+ S32760 WELDING (OVERLA'	Y CLAD (TH	łK ≥ 3 mm)	
Trim Material	Seats And Gate: ASTM A182 F55+Stelli	te, Stem:	ASTM A18	2 F55	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	A194 2H	IM; XYLAN	Fluoropolyr	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	PI 6FA(P	roviding Ce	rtificate)	
Service	See APPENDIX A				
 2. Valves To Be Suital 3. Valves To Be Asbes 4. Hydraulic Test Accord 5. Inner Or Outer Leak 6. This Type Of Valve Clear Information On Are Sulphur Resisting 	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup . n: EN 10204 Type3.1.	Ve plied A S	acking Mater mission Frestasket Mater lanufacturer he Gasket Morrespondin 40048-728-1 dditional Resee Specificate Il Material Uhall Meet Thall	e Material rial Standard/l Material Of g Class In PIP-15.03-3 quirements ation lsed In Sou ne Require	The CMIT-3001 s: r Service ments Of
Approved Manufacture	Valve Check List er Manufacturer Figure Numb		ominal Size	Range	
Valve Type (Gate	T	ag Number	GA-1L05	
Piping Class	1L0	S	pecification CMIT-24004		15.00.0004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 140 of 271			

Valve Specification Specified Valve Size 9	Shall Be Equal To Nominal Pipe Size in A			/4.01.4E D./	
Pressure Temperature Rating	150lb ASME B16 34	Test Press Body	By Vendor	(ASME B1	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A182 F55				
Trim Material	Seat And Plug: ASTM A182 F55+Stellit	e, Stem: /	ASTM A182	F55	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	/I A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Short Pattern Valves A 2. Valves To Be Suita 3. Valves To Be Asbe 4. Inner Or Outer Lea 5. This Type Of Valve Clear Information On Are Sulphur Resisting	ble For Full Vacuum. stos Free. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup I. In: EN 10204 Type3.1. Is 25 Years.	ave 2 pplied A S	Packing Mate Emission Free Basket Mate Manufacturer The Gasket M Corresponding 40048-728- Additional Res See Specifica All Material L Bhall Meet T NACE MR 02	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:
Approved Manufactur	Valve Check List er Manufacturer Figure Numb		Nominal Size	e Range	
Valve Type Glo	be	Т	ag Number	GL-1L01	
Piping Class 1L0)	S	Specification CMIT-2400	Number	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 141 of 271			

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in					
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34				•	
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A					
Trim Material	Seat And Plug: ASTM A182 F55+Ste	llite. Stem	: ASTM A182	F55		
Bolting	Bolt To ASTM A193 B7M, Nut To AS				mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5	110171101	211101, 7(12/114	Тиотороту	mor oddiod	
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
·	Bolted Bonnet, Rising Stem					
Body Construction	Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat					
Tilli Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Free Material			
Short Pattern Valves A	Are Not Acceptable.		Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard/	More Than	
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
4. Inner Or Outer Leal	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-	
• •	Is Used In Sour Service. Vendor Shall		240048-728-	PIP-15.03-	3001	
	The Valve Tag That The Valves They S	Supplied	Additional Requirements:			
Are Sulphur Resisting			See Specifica	ation		
	n: EN 10204 Type3.1.		All Material Used In Sour Service			
7. Valve Design Life is	s 25 Years.		Shall Meet The Requirements Of			
			NACE MR 07	175/ISO151	156	
	Valve Check Li					
Approved Manufacture	er Manufacturer Figure Nu	mber	Nominal Size	Range		
			2"-6"			
Makes Town	L.		Tag Number			
Valve Type Glo	pe		-	GL-1L02		
Dining Class 41.0	1		Specification	Number		
Piping Class 1L0			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 142 of 271			

Valve Specification							
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B					
Pressure		Test Pre	Test Pressure Mpa (ASME B16.34)				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 623 / ASME B16.34						
Body Material	Duplex Stainless Steel						
-	ASTM A995 Gr.6A						
Trim Material	Seat And Plug: ASTM A182 F55+Ste						
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated		
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Gear Operator						
Pody Construction	Bolted Bonnet, Rising Stem						
Body Construction	Outside Screw And Yoke						
Trim Construction	Swivel Type Plug, Renewable Seat						
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	(Providing Ce	ertificate)			
Service	See APPENDIX A						
Notes:			Packing Mate	erial:			
1. Face To Face Dime	ensions To ASME B16.10.		Emission Free Material				
Short Pattern Valves A	Are Not Acceptable.		Gasket Material				
2. Valves To Be Suital	ble For Full Vacuum.		Manufacturer Standard/More Than				
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The		
4. Inner Or Outer Leal	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-		
5. This Type Of Valve	Is Used In Sour Service. Vendor Shall	Have	240048-728-	PIP-15.03-	3001		
Clear Information On	The Valve Tag That The Valves They S	Supplied	Additional Requirements:				
Are Sulphur Resisting			See Specification				
6. Material Certificatio	n: EN 10204 Type3.1.		All Material L		ır Service		
7. Valve Design Life is	s 25 Years.		Shall Meet The Requirements Of				
			NACE MR 0175/ISO15156				
				3 13	- -		
	Valve Check Li	st					
Approved Manufacture	er Manufacturer Figure Nu	mber	Nominal Size	Range			
			8"-16"				
Value Tues	h -		Tag Number				
Valve Type Glo	De			GL-1L03			
Dining Class 41.0			Specification	Number			
Piping Class 1L0			•	48-728-PIP-	15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 143 of 271				

<u> </u>	Shall Be Equal To Nominal Pipe Size i	Test Pre		(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34		Į.		
Body Material	Duplex Stainless Steel ASTM A182 F55				
Trim Material	Seat And Disc: ASTM A182 F55+St	ellite			
Bolting	Bolt To ASTM A193 B7M, Nut To A	STM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Co	ertificate)	
Service	See APPENDIX A				
Short Pattern Valves A 2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acco 5. Inner Or Outer Leal 6. This Type Of Valve Clear Information On Are Sulphur Resisting	ble For Full Vacuum. stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Sha The Valve Tag That The Valves They . n: EN 10204 Type3.1.		Packing Mat Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Rea See Specifica All Material U Shall Meet T NACE MR 0	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement ation Jsed In So The Require	/More Than The CMIT- 3001 S: ur Service
Approved Manufactur	Valve Check L er Manufacturer Figure N		Nominal Size	e Range	
Valve Type Che	eck, Lift Piston		Tag Number	CK-1L01	
Piping Class 1L0			Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 144 of 271			

D	Shall Be Equal To Nominal Pipe Size in A		st Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 594 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A					
Trim Material	Seat And Disc: ASTM A182 F55+Stellit	te				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTI	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb To Be Connected With RF Flan Connection.	iges Acc	ording To ASI	ME B16.5.	Wafer Type	
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Wafer Type, Dual Plate, Long Pattern					
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:	1		Packing Mate	erial:		
1. Face To Face Dime	ensions To Dual-Plate Lug Type Check V	'alve	Emission Free Material			
Of API 594 Type A. Short Pattern Valves Are Not Acceptable.		Ī	Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacturer Standard/More Than			
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-	
5. Inner Or Outer Lea	kage Is Not Acceptable.		240048-728-	PIP-15.03-	3001	
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall H	lave	Additional Requirements:			
Clear Information On	The Valve Tag That The Valves They Su	pplied	See Specification			
Are Sulphur Resisting	l .	-			ır Convice	
7. Material Certification	n: EN 10204 Type3.1.		All Material Used In Sour Service Shall Meet The Requirements Of			
8. Valve Design Life is	s 25 Years.		NACE MR 0	•		
			TVAGE WITTO			
Approved Manufactur	Valve Check List er Manufacturer Figure Num		Nominal Size	Range		
			2"-18"			
Valvo Typo	fer Check Valve		Tag Number			
Valve Type Wa	iei Check valve			CK-1L02		
Dining Class 41.0	1		Specification	Number		
Piping Class 1L0	J		CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 145 of 271			

Equal To Nominal Pipe Size in ASME B16.34 7292 / ASME B16.34 x Stainless Steel A182 F51 STM A182-F51+Stellite,Stem: D ASTM A193 B7M, Nut To ASD D RF Flange To ASME B16.5 PPENDIX A Dre, Split Body, Floating Metal Steeted To BS EN ISO 10497 And	Test Press Body A182-F51,S	sure Mpa By Vendor Seat and Sea		By Vendor 51+Stellite
7292 / ASME B16.34 x Stainless Steel A182 F51 STM A182-F51+Stellite,Stem: D ASTM A193 B7M, Nut To ASD RF Flange To ASME B16.5 PPENDIX A Dre, Split Body, Floating Metal Steel	A182-F51,S	Vendor Seat and Sea	al: A182-F5	Vendor 51+Stellite
x Stainless Steel A182 F51 STM A182-F51+Stellite,Stem: ASTM A193 B7M, Nut To AS ASTM A193 TO ASME B16.5 ASTM ASME B16.5 ASTM ASME B16.5				
A182 F51 STM A182-F51+Stellite,Stem: ASTM A193 B7M, Nut To AS RF Flange To ASME B16.5 PPENDIX A ore, Split Body, Floating Metal S				
o ASTM A193 B7M, Nut To AS o RF Flange To ASME B16.5 PPENDIX A ore, Split Body, Floating Metal S				
PPENDIX A ore, Split Body, Floating Metal S	TM A194 21	HM; XYLAN	Fluoropoly	mer Coated
PPENDIX A ore, Split Body, Floating Metal \$				
ore, Split Body, Floating Metal \$				
ested To BS EN ISO 10497 And				
tatic, Anti Blowout Stem g To Meet Requirements For	•	J	,	emperature
PPENDIX A				
	F	Packing Mate	erial:	
To ASME B16.10.	E	Emission Fre	ee Material	
e.		Gasket Mate	rial	
xplosive Decompression.	N	Manufacture	r Standard/	More Than
o API 598 / ASME B16.34.		Γhe Gasket I	Material Of	The
Indicator Showing Open And C		•	•	
Not Acceptable.	A	Additional Re	equirement	s:
• • • • • • • • • • • • • • • • • • • •	5	See Specifica	ation	
Manufacturer Figure Nu	mber N	Nominal Size	e Range	
	1	1/2"-1 ½"		
		Га <mark>д Numbe</mark> r		
			BA-1N01	
	5	•		15 03-3001
	Not Acceptable. 0204 Type3.1. ars. Valve Check Li	Not Acceptable. 2204 Type3.1. Irs. Valve Check List Manufacturer Figure Number	Not Acceptable. O204 Type3.1. Valve Check List Manufacturer Figure Number Nominal Size 1/2"-1 ½" Tag Number Specification	Not Acceptable. 240048-728-PIP-15.03- Additional Requirement See Specification Valve Check List Manufacturer Figure Number Nominal Size Range 1/2"-1 ½" Tag Number



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02			
JOD'S DOC. NO.	25300 ID0726WP00302			
Dhaaa	D (11 1D)			
Phase	Detailed Design			
Б	A D 440 1074			
Rev.	A Page 146 of 271			

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	5.10			
Pressure		Test Press	sure Mpa	(ASME B1	6.34)	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34				-	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,S	Seat and Sea	al: A182-F5	1+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2H	HM; XYLAN	Fluoropolyr	ner Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal	Seats				
	Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate)					
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For	Medium At	Rated Press	sure And Te	emperature	
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	e Material		
2. Valves To Be Asbe	stos Free.		Sasket Mate	rial		
	ant To Explosive Decompression.	l N	/lanufacture	r Standard/l	More Than	
1	ording To API 598 / ASME B16.34.		he Gasket N	Material Of	The	
	Position Indicator Showing Open And C	Close	Corresponding Class In CMIT-			
Positions.		2	240048-728-	PIP-15.03-3	3001	
	kage Is Not Acceptable.	P	Additional Re	equirements	3:	
7. Material Certificatio		S	See Specifica	ation		
8. Valve Design Life is	s 25 Years.					
	Valve Check Li	st				
Approved Manufacture	er Manufacturer Figure Nu	mber N	Nominal Size	Range		
		2	2"-4"			
Valvo Typo Ball		T	ag Number			
Valve Type Ball				BA-1N02		
Piping Class 1N0	1	S	Specification	Number		
Tiping Glass TNC	,		CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 147 of 271			

Pressure		Test Pres	ssure Mpa	(ASME B1	16.34)	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34		-			
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING		•		•	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	4182-F51,	Seat and Sea	al: A182-F	51+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	ΓM A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Full Bore, Split Body, Trunnion Mounte					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For I	·		,	emperature	
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Doul	ble Block And Bleed ones, With Any End		Gasket Mate	rial		
	Full Differential Pressure.		Manufacture	r Standard	/More Than	
3. Valves To Be Asbe			The Gasket I			
	tant To Explosive Decompression.		Corresponding Class In CMIT-			
-	cording To API 598 / ASME B16.34.	_	240048-728-PIP-15.03-3001			
	Position Indicator Showing Open And Cl		Additional Requirements:			
Positions.	Jean la Nat Assantable		See Specific	ation		
	akage Is Not Acceptable. on: EN 10204 Type3.1.					
9. Valve Design Life i						
	Valve Check Lis	st				
Approved Manufactu	rer Manufacturer Figure Nun	nber	Nominal Size	e Range		
			6"-24"			
Valve Type Ba	II		Tag Number			
				BA-1N03		
Piping Class 1N	0		Specification			
. 3			CMIT-2400	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 148 of 271		

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	5.10		
Pressure	man Bo Equal to Homman tipo Gizo in	Test Press		(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		•		
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,S	Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating M	letal Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For	,	· ·	,	emperature
Service	See APPENDIX A				•
Notes:	I.	☐ F	Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbes	stos Free.		Sasket Mate	rial	
3. Seals To Be Resista	ant To Explosive Decompression.	N	/lanufacture	r Standard	More Than
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.	Т.	he Gasket I	Material Of	The
5. Valves Shall Have F	Position Indicator Showing Open And C	Close	Correspondir	ng Class In	CMIT-
Positions.			240048-728-	-	
6. Inner Or Outer Leak	age Is Not Acceptable.	A	Additional Re	equirement	s:
7. Material Certification	n: EN 10204 Type3.1.		See Specification		
8. Valve Design Life is	25 Years.		•		
	Valve Check Lis				
Approved Manufacture	er Manufacturer Figure Nu	mber N	Nominal Size	Range	
		2	2"-4"		
Valve Type Ball		T	ag Number		
,,				BA-1N04	
Piping Class 1N0		8	Specification CMIT-2400		45.00.0004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 149 of 271			

Pressure	Shall Be Equal To Nominal Pipe Size in	Test Pres		(ASME B1	16.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		ı	1	
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING		•		•
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	4182-F51,	Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AST	ΓM A194 2	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion M				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For I		_	·	- emperature
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Doul	ble Block And Bleed ones, With Any End		Gasket Mate	rial	
Capable Of Bearing F	Full Differential Pressure.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe			The Gasket I	Material Of	The
	tant To Explosive Decompression.		Correspondir	-	
•	cording To API 598 / ASME B16.34.	_	240048-728-PIP-15.03-3001		
	Position Indicator Showing Open And Cl		Additional Requirements:		
Positions.	In the Indiana American		See Specification		
	akage Is Not Acceptable.				
Valve Design Life i	on: EN 10204 Type3.1. s 25 Years.				
	Valve Check Lis	st			
Approved Manufactu	rer Manufacturer Figure Nun	nber	Nominal Size	e Range	
			6"-24"		
Valve Type Ba	II		Tag Number		
				BA-1N05	
Piping Class 1N	0		Specification		
. 3			CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 150 of 271			

Valve Specification							
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36 Test Press		(ASME B1	6 34)		
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 602 / ASME B16.34	API 602 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A182 F51						
Trim Material	Seats And Gate: ASTM A182 F51+Ste	ellite, Stem	: ASTM A18	2 F51			
Bolting	Bolt To ASTM A193 B7M, Nut To AST	TM A194 2H	HM; XYLAN	Fluoropoly	mer Coated		
End Connection	150 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Handwheel with Lock Device						
Body Construction	Bolted Bonnet, Rising Stem						
Body Constituction	Outside Screw And Yoke						
Trim Construction	Solid Wedge Type						
Tilli Constituction	Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate)						
Service	See APPENDIX A						
Notes:			Packing Mate				
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Free Material				
2. Valves To Be Suita	able For Full Vacuum.		Sasket Mate	rial			
3. Valves To Be Asbe		l N	/lanufacturer	r Standard	More Than		
-	ording To API 598 / ASME B16.34.		he Gasket N				
	akage Is Not Acceptable.		Corresponding Class In CMIT-				
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001				
7. Valve Design Life i	s 25 Years.		Additional Requirements:				
		8	See Specifica	ation			
	Valve Check Lis						
Approved Manufactu	rer Manufacturer Figure Nun	nber N	Nominal Size	Range			
		1	/2"-1 ½"				
Valve Type	Gate	1	ag Number	GA-1N01			
Piping Class	1N0	5	Specification	Number			
pg Oldoo			CMIT-24004	48-728-PIP-	-15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 151 of 271				

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size i	n ASME B36	6.10		
Pressure		Test Pres		(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seats And Gate: ASTM A182 F51+S	stellite, Stem	: ASTM A18	2 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	STM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Rody Construction	Bolted Bonnet, Rising Stem				
Dody Construction	Sody Construction Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 Ar	nd API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A			<u> </u>	
 Valves To Be Suita Valves To Be Asbe Hydraulic Test Acco Inner Or Outer Leal 	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. n: EN 10204 Type3.1.	F (((((((((Packing Mate Emission Fre Gasket Mate Manufacturer The Gasket M Correspondir 240048-728- Additional Re See Specifica	rial r Standard/ Material Of ng Class In PIP-15.03-	The CMIT- 3001
Approved Manufacture	Valve Check L er Manufacturer Figure Nu	ımber i	Nominal Size	e Range	
Valve Type	Gate	-	Гад Number	GA-1N02	
Piping Class	1N0		Specification CMIT-2400		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 152 of 271			

Pressure	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	16.34)	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Seats And Gate: ASTM A182 F51+Ste	llite, Ster	m: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	-		
	on: EN 10204 Type3.1.		240048-728-			
7. Valve Design Life is	s 25 Years.		Additional Requirements:			
			See Specific	ation		
	Valve Check List	<u> </u>				
Approved Manufactur			Nominal Size	e Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-1N03		
Piping Class	1N0		Specification CMIT-2400		-15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 153 of 271			

Pressure		Test Pres	ssure Mpa	(ASME B	16.34)	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERL	AY CLAD (TI	HK≥3 mm)	
Trim Material	Seats And Gate: ASTM A182 F51+Ste	llite, Ster	m: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	cording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
7. Valve Design Life i	s 25 Years.		Additional Requirements:			
			See Specific	ation		
	Valve Check List					
Approved Manufactur	rer Manufacturer Figure Num	nber	Nominal Size	e Range		
			10"-24"			
Valve Type	Gate		Tag Number	GA-1N04		
Dining Class	1NO		Specification			
Piping Class	1N0		CMIT-2400		15 03 3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 154 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A			/A ON 45 D	10.04)	
Pressure Temperature Rating	150lb ASMF B16.34	Test Press Body	By Vendor	(ASME B1	By Vendor	
Design Code	API 6D / ASME B16.34		1	1		
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERLA	Y CLAD (TH	HK≥3 mm)	
Trim Material	Seats And Gate: ASTM A182 F51+Ste	llite, Stem:	: ASTM A18	2 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTI	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:		P	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material		
2. Valves To Be Suita	able For Full Vacuum.	G	Sasket Mater	rial		
3. Valves To Be Asbe	estos Free.	l M	/lanufacturer	Standard	/More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	Т	he Gasket N	Material Of	The	
5. Inner Or Outer Lea	kage Is Not Acceptable.	C	Correspondin	ng Class Ir	CMIT-	
6. Material Certification	on: EN 10204 Type3.1.	2	40048-728-1	PIP-15.03	-3001	
7. Valve Design Life i	s 25 Years.	Α	Additional Requirements:			
		S	See Specifica	ation		
	Valve Check List					
Approved Manufactur	rer Manufacturer Figure Num	ber N	lominal Size	Range		
		1	0"-24"			
Valve Type	Gate	T	ag Number			
				GA-1N05		
Piping Class	1N0	S	Specification			
i ipiliy Olass	1110		CMIT-24004	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 155 of 271			

Drocouro	Т	est Press	ure Mpa	(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34			'	1	
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seat And Plug: ASTM A182 F51+Stellite	e, Stem: A	ASTM A182	F51		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	/I A194 2H	IM; XYLAN	Fluoropoly	mer Coate	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA(P	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:		Р	acking Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	E	mission Fre	e Material		
Short Pattern Valves A	Are Not Acceptable	G	asket Mater	rial		
2. Valves To Be Suital	ble For Full Vacuum.	M	lanufacturer	Standard/	More Than	
3. Valves To Be Asbe	stos Free.	T	he Gasket N	/laterial Of	The	
	kage Is Not Acceptable.	C	Corresponding Class In CMIT-			
5. Material Certificatio	n: EN 10204 Type3.1.	2	240048-728-PIP-15.03-3001			
6. Valve Design Life is	s 25 Years.	А	Additional Requirements:			
		s	See Specification			
	Valve Check List					
Approved Manufacture	er Manufacturer Figure Numb	per N	lominal Size	Range		
		1,	/2"-1 ½"			
Valve Type Glo	be	T	ag Number	GL-1N01		
			pecification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 156 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36. Test Press		/ACME D16	: 24\	
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	(ASME B16 Seat	By Vendor	
Design Code	API 623 / ASME B16.34		l			
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Seat And Plug: ASTM A182 F51+Stelli	ite, Stem: A	ASTM A182	F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	lM; XYLAN	Fluoropolyn	ner Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Outside Screw And Yoke						
Trim Construction	Swivel Type Plug, Renewable Seat					
Tilli Constituction	Fire Tested To BS EN ISO 10497 And	API 6FA(P	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:		Р	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material		
Short Pattern Valves	•	G	asket Mater	rial		
	able For Full Vacuum.	l M	lanufacturer	Standard/N	lore Than	
3. Valves To Be Asbe		T	he Gasket N	/laterial Of ⊓	「he	
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
6. Valve Design Life	s 25 Years.	A	Additional Requirements:			
		S	ee Specifica	ation		
	Valve Check List					
Approved Manufactu	rer Manufacturer Figure Num	nber N	lominal Size	Range		
		2'	"-6"			
Valve Type Glo	bbe	Т	ag Number	GL-1N02		
Dining Class 4N	0	S	pecification			
Piping Class 1N	U		•	18-728-PIP-1	5.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 157 of 271				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36 Test Press		(ASME B1	16 34)
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34		I.		
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Plug: ASTM A182 F51+Stell	ite, Stem: A	ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem				
body Constituction	Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat				
	Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			acking Mate		
	ensions To ASME B16.10.	E	mission Fre	e Material	
Short Pattern Valves	•	G	Sasket Mate	rial	
	able For Full Vacuum.		/lanufacturer		
3. Valves To Be Asbe			he Gasket N		
	kage Is Not Acceptable.		Correspondir	•	
	on: EN 10204 Type3.1.		40048-728-		
6. Valve Design Life i	s 25 Years.		dditional Re	•	is:
		S	See Specifica	ation	
	Valve Check List				
Approved Manufactur	rer Manufacturer Figure Num	iber N	Iominal Size	Range	
			"-16"		
Valve Type Glo		T	ag Number		
				GL-1N03	
Piping Class 1N	0	S	Specification		
	<u> </u>		CMIT-24004	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 158 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	ASME B36	6.10			
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34	•	'	1		
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seat And Disc: ASTM A182 F51+Ste	llite				
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Lift Piston					
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(I	Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
2. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	ee Material		
Short Pattern Valves	Are Not Acceptable.	(Gasket Mate	rial		
2. Valves To Be Suita	ble For Full Vacuum.	N	Manufacture 4 8 1	r Standard	More Than	
3. Valves To Be Asbe	estos Free.	7	Γhe Gasket I	Material Of	The	
•	ording To API 598 / ASME B16.34.	(Correspondir	ng Class In	CMIT-	
	kage Is Not Acceptable.	2	240048-728-	PIP-15.03-	3001	
6. Material Certification 7. Valve Design Life is	on: EN 10204 Type3.1. s 25 Years.		Additional Re See Specific	•	S:	
	Valve Check Li	st				
Approved Manufactur			Nominal Size	e Range		
			I/2"-1 ½"			
Valve Type Che	eck, Lift Piston	7	Гад Number	CK-1N01		
	_	ć	Specification			
Piping Class 1N0	<u> </u>			48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 159 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir			(ASME B	10.04)
Pressure	150lb ASME B16.34	Test Pre			
Temperature Rating		Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Disc: ASTM A182 F51+Ste	llite			
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb To Be Connected With RF FI Connection.	anges Acc	ording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Patter	า			
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To Dual-Plate Lug Type Chec <mark>k</mark>	Valve	Emission Fre	ee Material	
Of API 594 Type A. S	Short Pattern Valves Are Not Acceptable	e. T	Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe	estos Free.		The Gasket	Material Of	The
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		Correspondi	ng Class Ir	n CMIT-
	kage Is Not Acceptable.		240048-728-	PIP-15.03	-3001
	on: EN 10204 Type3.1.		Additional Re	equirement	ts:
7. Valve Design Life i	s 25 Years.		See Specific	ation	
	Valve Check L	st			
Approved Manufactur	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			2"-24"		
Valve Type Wa	rfer Check Valve		Tag Number	CK-1N02	
Piping Class 1N	0		Specification		
i iping Oldoo IIV			CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 160 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	n ASME B36	6.10		
<u> </u>	· ·	Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 609 CATEGORY-B	•	•	•	1
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Trim: ASTM A182 F51, Stem: ASTM	A182 F51,	Seat and Sea	al: A182 F5	1+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Three-Eccentricity Lug Type, Metal-	Seat			
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA(Providing Ce	rtificate)	
Service	See APPENDIX A				
Short Pattern Valves 2. Valves To Be Suita 3. Valves To Be Asbe 4. Inner Or Outer Lea	ble For Full Vacuum. estos Free. kage Is Not Acceptable. on: EN 10204 Type3.1.	y type. E	Packing Mater Emission Free Gasket Mater Manufacturer The Gasket M Correspondin 240048-728-I Additional Re See Specifica	e Material rial Standard/ Material Of g Class In PIP-15.03-	The CMIT- 3001
Approved Manufactur		ımber i	Nominal Size	Range	
			-		
Valve Type But	terfly		Гад Number	BT-1N01	
Piping Class 1N0	0		Specification CMIT-24004		15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 161 of 271				

Pressure		Test Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 609 CATEGORY-B			1	•
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Trim: ASTM A182 F51, Stem: ASTM A				
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coate
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Three-Eccentricity Lug Type, Metal-Se	at			
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6FA((Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1.Face To Face Dime	nsions To API 609 CATEGORY-B Lug ty	γpe.	Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mater	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacturer	Standard	/More Thar
3. Valves To Be Asbe	stos Free.		The Gasket N	Material Of	The
4. Inner Or Outer Lea	kage Is Not Acceptable.		Correspondin	ng Class In	CMIT-
5. Material Certification	n: EN 10204 Type3.1.		240048-728-I	PIP-15.03-	3001
6. Valve Design Life is	s 25 Years.		Additional Re See Specifica	•	s:
Approved Manufacture	Valve Check List		Nominal Ciza	Dongo	
Approved Manufactur	er Manufacturer Figure Num	iber	Nominal Size	Range	
			8"-24"		
Valve Type But	terfly		Tag Number	BT-1N02	
			Specification		
Piping Class 1N0	J		CMIT-24004		45 00 0004



	ONUT 040040 700 DID 45 00 0000			
Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 162 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir				
Pressure		Test Pres	ssure Mpa	(ASME B1	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34		-	'	
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,	Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating Metal	Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem			,	'amparatura
Service	Sealing To Meet Requirements For See APPENDIX A	iviedium A	i Raled Press	sure And I	emperature
Notes:	See AFFEINDIA A		Packing Mate	orial:	
	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	ant To Explosive Decompression.		Manufacture		/More Than
	ording To API 598 / ASME B16.34.		The Gasket I		
•	Position Indicator Showing Open And (Close	Correspondir		
Positions.	3 1		240048-728-	•	
6. Inner Or Outer Lea	kage Is Not Acceptable.		Additional Re		
7. Material Certification	n: EN 10204 Type3.1.		See Specific	-	
8. Valve Design Life i					
	Valve Check Li				
Approved Manufactur	er Manufacturer Figure Nu	mber	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Bal			Tag Number		
- Dai	•			BA-1P01	
Piping Class 1P0)		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 163 of 271		

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	5.10			
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,8	Seat and Sea	al: A182-F5	1+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2I	HM; XYLAN	Fluoropolyr	ner Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal	Seats				
	Fire Tested To BS EN ISO 10497 An	d API 607(F	Providing Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For	Medium At	Rated Press	sure And Te	emperature	
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dime	nsions To ASME B16.10.	E	Emission Fre	e Material		
2. Valves To Be Asbes	stos Free.		Sasket Mate	rial		
3. Seals To Be Resista	ant To Explosive Decompression.	1	//////////////////////////////////////	r Standard/I	More Than	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.	7	The Gasket N	Material Of	The	
5. Valves Shall Have F	Position Indicator Showing Open And C	Close	Correspondir	ng Class In	CMIT-	
Positions.		2	240048-728-	PIP-15.03-3	3001	
6. Inner Or Outer Leak	age Is Not Acceptable.	A	Additional Re	equirements	3:	
7. Material Certification	n: EN 10204 Type3.1.	8	See Specification			
8. Valve Design Life is	25 Years.					
	Valve Check Li	st				
Approved Manufacture	er Manufacturer Figure Nu	mber N	Nominal Size	Range		
		2	2"-4"			
Malua Turas D. II		1	ag Number			
Valve Type Ball				BA-1P02		
Dining Class 4D0			Specification	Number		
Piping Class 1P0			•	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 164 of 271		

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36	3.10			
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34		1	<u>'</u>	1	
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN	G OVERLA	AY CLAD (TI	HK≥3 mm)	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,	Seat and Sea	al: A182-F	51+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Full Bore, Split Body, Trunnion Mount	ted Metal S	eats			
	Fire Tested To BS EN ISO 10497 And	d API 607(I	Providing Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For	Medium At	Rated Pres	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mat			
1. Face To Face Dim	ensions To ASME B16.10.	I	Emission Fre	ee Material		
2. Valves To Be Dou	ble Block And Bleed ones, With Any End	d (Gasket Mate	rial		
	Full Differential Pressure.	1	Manufacture	r Standard	More Than	
3. Valves To Be Asbe		-	The Gasket l	Material Of	The	
	tant To Explosive Decompression.		Correspondii	-		
•	cording To API 598 / ASME B16.34.		240048-728-PIP-15.03-3001			
	Position Indicator Showing Open And C	lose	Additional Requirements:			
Positions.			See Specific	ation		
	akage Is Not Acceptable.					
	on: EN 10204 Type3.1.					
9. Valve Design Life	is 25 Years.					
	Valve Check Lis					
Approved Manufactu	rer Manufacturer Figure Nui	mber I	Nominal Size	e Range		
		(6"-18"			
Valve Type Ba		-	Tag Number			
waive Type Da				BA-1P03		
Piping Class 1P	0	- ;	Specification			
i iping Oldoo II			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 165 of 271		

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36	5.10					
Pressure		Test Press		(ASME B1	6.34)			
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor			
Design Code	API 6D / ASME B16.34	API 6D / ASME B16.34						
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A							
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	\182-F51,S	Seat and Sea	al: A182-F	51+Stellite			
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated			
End Connection	150 Lb FF Flange To ASME B16.5							
Temperature Limitations	See APPENDIX A							
Valve Operation	Lever							
Body Construction	Reduced Bore, Split Body, Floating Me	etal Seats						
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For N	·		,	emperature			
Service	See APPENDIX A				•			
Notes:		F	Packing Mate	erial:				
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre					
2. Valves To Be Asbe	estos Free.		Sasket Mate	rial				
3. Seals To Be Resis	tant To Explosive Decompression.	l N	/lanufacture	r Standard	/More Than			
4. Hydraulic Test Acc	cording To API 598 / ASME B16.34.	Т	he Gasket I	Material Of	The			
5. Valves Shall Have	Position Indicator Showing Open And Cl	ose	Correspondir	ng Class Ir	CMIT-			
Positions.		2	40048-728-	PIP-15.03-	3001			
6. Inner Or Outer Lea	akage Is Not Acceptable.	A	Additional Re	equirement	s:			
7. Material Certification	on: EN 10204 Type3.1.		See Specific					
8. Valve Design Life	is 25 Years.		<u> </u>					
1								
	Valve Check Lis	t						
Approved Manufactu	rer Manufacturer Figure Nun	nber N	lominal Size	e Range				
			."-4"					
Valve Type Ba	II	T	ag Number					
				BA-1P04				
Piping Class 1P	0	8	Specification					
			CMIT-2400	48-728-PIP	-15.03-3001			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 166 of 271		

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in <i>i</i>	ASME B36	.10			
<u> </u>		Test Press		(ASME B1	6.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34			1		
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERLA	Y CLAD (TH	łK≥3 mm)	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	182-F51,S	eat and Sea	al: A182-F	51+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2F	lM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Reduced Bore, Split Body, Trunnion M	lounted Me	tal Seats			
	Fire Tested To BS EN ISO 10497 And	API 607(P	roviding Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For M	Sealing To Meet Requirements For Medium At Rated Pressure And Temperat				
Service	See APPENDIX A					
Notes:		P	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material		
2. Valves To Be Doub	ole Block And Bleed ones, With Any End	G	asket Mate	rial		
Capable Of Bearing F	Full Differential Pressure.	N	lanufacturer	Standard	More Than	
3. Valves To Be Asbe	estos Free.	T	he Gasket N	Material Of	The	
4. Seals To Be Resis	tant To Explosive Decompression.	C	orrespondir	ng Class In	CMIT-	
5. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	2	240048-728-PIP-15.03-3001			
6. Valves Shall Have	Position Indicator Showing Open And Cle	ose A	dditional Re	equirement	s:	
Positions.		S	ee Specifica	ation		
	kage Is Not Acceptable.					
8. Material Certification	on: EN 10204 Type3.1.					
9. Valve Design Life i	s 25 Years.					
	Valve Check List			_		
Approved Manufactur	rer Manufacturer Figure Num	nber N	lominal Size	Range		
			"-18"			
Valve Type Bal	II	T	ag Number			
	•			BA-1P05		
Piping Class 1P	 N	S	pecification			
			CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 167 of 271		

Pressure		Test Pressure Mpa (ASME B16.34				
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34			1		
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seats And Gate: ASTM A182 F51+Ste	Ilite, Sten	n: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTI	M A194 2	2HM; XYLAN	Fluoropoly	mer Coate	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket I	Material O	f The	
	kage Is Not Acceptable.	I .	Correspondir	-		
	on: EN 10204 Type3.1.		240048-728-			
7. Valve Design Life i	s 25 Years.		Additional Re	-	ts:	
			See Specific	ation		
	Valve Check List					
Approved Manufactur	er Manufacturer Figure Num	ber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type	Gate		Tag Number	GA-1P01		
Piping Class	1P0		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 168 of 271		

Valve Specification					
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in			/A ON 45 D4	0.04\
Pressure	AFOIL ASME DAG 24	Test Pres	· · · · · ·	(ASME B1	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				•
Body Material	Duplex Stainless Steel				
Body Material	ASTM A890 Gr.4A				
Trim Material	Seats And Gate: ASTM A182 F51+S	tellite, Stem	: ASTM A18	2 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2I	HM; XYLAN	Fluoropoly	mer Coated
End Connection	150 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem				
Body Constituction	Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type				
Tilli Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(I	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Suital	ble For Full Vacuum.	(Gasket Mate	rial	
3. Valves To Be Asbes	stos Free.	N	Manufacture	r Standard/	More Than
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.	7	Γhe Gasket I	Material Of	The
5. Inner Or Outer Leak	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-
6. Material Certification	n: EN 10204 Type3.1.	2	240048-728-	PIP-15.03-	3001
7. Valve Design Life is	s 25 Years.	1	Additional Re	equirements	s:
		5	See Specifica	ation	
	Valve Check Li	st			
Approved Manufacture	er Manufacturer Figure Nu	mber 1	Nominal Size	Range	
			2"-8"		
Valve Type (Gate	٦	Гад Number		
				GA-1P02	
Piping Class	1P0		Specification	Number 48-728-PIP-	15 02 2004
			CIVII 1-24004	40-120-117-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 169 of 27				

Pressure		Test Pre	ssure Mpa	(ASME B	16.34)	
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34				-	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Seats And Gate: ASTM A182 F51+Ste	llite, Ster	n: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Free Material			
2. Valves To Be Suita	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	-		
	on: EN 10204 Type3.1.		240048-728-			
7. Valve Design Life is	s 25 Years.		Additional Requirements:			
			See Specific	ation		
	Valve Check List	<u> </u> :				
Approved Manufactur			Nominal Size	e Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-1P03		
Piping Class	1P0		Specification CMIT-2400		-15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 170 of 271			

Draggura		Test Pres	ssure Mpa	(ASME B1	16.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34		·			
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERL	AY CLAD (TI	HK≥3 mm)	
Trim Material	Seats And Gate: ASTM A182 F51+Ste	Ilite, Ster	n: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.		Emission Free Material			
2. Valves To Be Suita			Gasket Material			
3. Valves To Be Asbe			Manufacture			
-	ording To API 598 / ASME B16.34.		The Gasket I			
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
7. Valve Design Life is	S 20 Teals.		Additional Requirements:			
			See Specific	auon		
Approved Manufactur	Valve Check List er Manufacturer Figure Num		Nominal Size	Pango		
Approved Manufactur	ei ivianulactulei rigule Null	INCI	NUTHINAL SIZE	range		
			10"-18"			
Valve Type	Gate		Tag Number			
••				GA-1P04		
			Specification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	Α	Page 171 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in A	Test Press	ssure Mpa (ASME B16.34)			
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34		I			
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERLA	Y CLAD (TH	HK≥3 mm)	
Trim Material	Seats And Gate: ASTM A182 F51+Stel	lite, Stem	: ASTM A18	2 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	И А194 2H	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material		
2. Valves To Be Suita	able For Full Vacuum.		Sasket Mate	rial		
3. Valves To Be Asbe		N	/lanufacture	r Standard	/More Than	
-	ording To API 598 / ASME B16.34.	T	he Gasket N	Material Of	The	
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	on: EN 10204 Type3.1.		40048-728-			
7. Valve Design Life i	s 25 Years.	P	Additional Re	equirement	ts:	
		8	See Specifica	ation		
	Valve Check List					
Approved Manufactu	rer Manufacturer Figure Num	ber N	Nominal Size	Range		
			0"-18"			
Valve Type	Gate	Τ	ag Number			
				GA-1P05		
Piping Class	1P0	5	Specification			
. 5			CMIT-2400	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 172 of 271				

nall Be Equal To Nominal Pipe Size in A 150lb ASME B16.34 API 602 / ASME B16.34 Duplex Stainless Steel ASTM A182 F51 Seat And Plug: ASTM A182 F51+Stell Bolt To ASTM A193 B7M, Nut To AST 150 Lb FF Flange To ASME B16.5	Test Press Body ite, Stem: A	By Vendor ASTM A182	(ASME B1	6.34) By Vendor	
API 602 / ASME B16.34 Duplex Stainless Steel ASTM A182 F51 Seat And Plug: ASTM A182 F51+Stell Bolt To ASTM A193 B7M, Nut To AST	Body ite, Stem: A	By Vendor ASTM A182	Seat	Ву	
API 602 / ASME B16.34 Duplex Stainless Steel ASTM A182 F51 Seat And Plug: ASTM A182 F51+Stell Bolt To ASTM A193 B7M, Nut To AST	ite, Stem: A	Vendor ASTM A182		-	
Duplex Stainless Steel ASTM A182 F51 Seat And Plug: ASTM A182 F51+Stell Bolt To ASTM A193 B7M, Nut To AST					
ASTM A182 F51 Seat And Plug: ASTM A182 F51+Stell Bolt To ASTM A193 B7M, Nut To AST					
Bolt To ASTM A193 B7M, Nut To AST					
<u> </u>	M A194 2H	IA A . \/\/I A & I	F51		
150 Lb FF Flange To ASME B16.5		IIVI; XYLAN	Fluoropoly	mer Coated	
See APPENDIX A					
Handwheel with Lock Device					
Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Swivel Type Plug Fire Tested To BS EN ISO 10497 And	API 6FA(P	Providing Ce	rtificate)		
See APPENDIX A					
	Р	acking Mate	erial:		
sions To ASME B16.10.	E	Emission Free Material			
e Not Acceptable	G	Gasket Material			
e For Full Vacuum.	M	lanufacturer	Standard/	More Than	
	Т	he Gasket N	Material Of	The	
•		Corresponding Class In CMIT-			
• •		240048-728-PIP-15.03-3001			
25 Years.	A	dditional Re	quirement	S:	
	S	ee Specifica	ation		
Valve Check Lis	<u> </u>				
		lominal Size	Range		
е	T	ag Number	_		
	_				
	S	•		15 03-3001	
	Bolted Bonnet, Rising Stem Outside Screw And Yoke Swivel Type Plug Fire Tested To BS EN ISO 10497 And See APPENDIX A sions To ASME B16.10. The Not Acceptable The For Full Vacuum. Toos Free. The Side of the Stephant Ste	Bolted Bonnet, Rising Stem Outside Screw And Yoke Swivel Type Plug Fire Tested To BS EN ISO 10497 And API 6FA(F See APPENDIX A sions To ASME B16.10. The Not Acceptable of the For Full Vacuum. To Free. To age Is Not Acceptable. To EN 10204 Type3.1. To Valve Check List Manufacturer Figure Number Manufacturer Figure Number To Enter Street Stree	Bolted Bonnet, Rising Stem Outside Screw And Yoke Swivel Type Plug Fire Tested To BS EN ISO 10497 And API 6FA(Providing Ce See APPENDIX A Packing Mate Emission Free Gasket Mate Manufacturer The Gasket M See Is Not Acceptable EN 10204 Type3.1. Valve Check List Manufacturer Figure Number Valve Check List Manufacturer Tag Number Specification	Bolted Bonnet, Rising Stem Outside Screw And Yoke Swivel Type Plug Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) See APPENDIX A Packing Material: Emission Free Material Gasket Material Manufacturer Standard/ The Gasket Material Of Corresponding Class In 240048-728-PIP-15.03- Additional Requirements See Specification Valve Check List Manufacturer Figure Number Nominal Size Range 1/2"-1 ½" Tag Number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 173 of 271		

Dragoura	Shall Be Equal To Nominal Pipe Size in A	Test Pres		(ASME B1	16.34)	
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34		1		1	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Seat And Plug: ASTM A182 F51+Stellit	e, Stem:	ASTM A182	F51		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	Л A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Body Construction	Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat					
	Fire Tested To BS EN ISO 10497 And A	API 6FA(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:		I	Packing Mate			
	ensions To ASME B16.10.		Emission Free Material			
Short Pattern Valves	•		Gasket Mate			
2. Valves To Be Suita			Manufacture			
3. Valves To Be Asbe			Γhe Gasket I			
	kage Is Not Acceptable.		Corresponding Class In CMIT- 240048-728-PIP-15.03-3001			
	on: EN 10204 Type3.1.					
6. Valve Design Life is	S 20 feats.		Additional Requirements:			
			See Specific	auon		
	Valve Check List					
Approved Manufactur		ber i	Nominal Size	Range		
		2	2"-6"			
Valva Type Ol-	ho	-	Tag Number			
Valve Type Glo	nue			GL-1P02		
Piping Class 1P0	1		Specification	Number		
Piping Class 1P0	J		CMIT-2400	48-728-PIP	-15 03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 174 of 271			

Valve Specification		40145 500					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36 Test Press		(ASME B	16 34)		
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 623 / ASME B16.34	API 623 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A						
Trim Material	Seat And Plug: ASTM A182 F51+Stell	lite, Stem: /	ASTM A182	F51			
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated		
End Connection	150 Lb FF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Gear Operator						
Body Construction	Bolted Bonnet, Rising Stem						
body Constituction	Outside Screw And Yoke						
Trim Construction	Swivel Type Plug, Renewable Seat						
	Fire Tested To BS EN ISO 10497 And	I API 6FA(F	Providing Ce	ertificate)			
Service	See APPENDIX A						
Notes:			Packing Mate				
	ensions To ASME B16.10.	E	mission Fre	e Material			
Short Pattern Valves	•	(Sasket Mate	rial			
	able For Full Vacuum.		/lanufacture				
3. Valves To Be Asbe			he Gasket N				
	akage Is Not Acceptable.		Corresponding Class In CMIT-				
	on: EN 10204 Type3.1.		40048-728-				
6. Valve Design Life i	s 25 Years.		Additional Re	-	ts:		
		S	See Specifica	ation			
	Valve Check Lis						
Approved Manufactu	rer Manufacturer Figure Nun	nber N	lominal Size	Range			
			5"-16"				
Valve Type Glo	bbe	T	ag Number				
				GL-1P03			
Piping Class 1P	0	S	Specification				
pg Oldoo 11			CMIT-24004	48-728-PIP	-15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 175 of 271		

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ir	ASME B36	6.10			
Pressure		Test Pres	est Pressure Mpa (ASME B16.34)			
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34			•		
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seat And Disc: ASTM A182 F51+Ste	llite				
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Lift Piston					
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
4. Face To Face Din	nensions To ASME B16.10.	I	Emission Fre	ee Material		
Short Pattern Valves A	•		Gasket Mate	rial		
2. Valves To Be Suita		1	Manufacture	r Standard	/More Than	
3. Valves To Be Asbe		-	The Gasket I	Material Of	The	
•	ording To API 598 / ASME B16.34.	(Correspondii	ng Class In	CMIT-	
	kage Is Not Acceptable.		240048-728-	PIP-15.03-	3001	
Material Certificatio	• •		Additional Re	•	s:	
7. Valve Design Life is	s 25 Years.		See Specific	ation		
	Valve Check Li			_		
Approved Manufacture	er Manufacturer Figure Nu	mber I	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type Che	eck, Lift Piston		Tag Number	<u></u>	<u> </u>	
Taito 13po One				CK-1P01		
Piping Class 1P0)		Specification			
	•		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 176 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir			/ACME D	10.04)	
Pressure	150lb ASME B16.34	Test Pre		(ASME B		
Temperature Rating		Body	By Vendor	Seat	By Vendor	
Design Code	API 594 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Seat And Disc: ASTM A182 F51+Ste	ellite				
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	150 Lb To Be Connected With FF FI. Connection.	anges Acc	ording To ASI	ME B16.5.	Wafer Type	
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Wafer Type, Dual Plate, Long Patter	า				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dimensions To Dual-Plate Lug Type Check Valve		Valve	Emission Free Material			
Of API 594 Type A. S	hort Pattern Valves Are Not Acceptable	э.	Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	/More Than	
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	f The	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		Corresponding Class In CMIT-			
	kage Is Not Acceptable.		240048-728-	PIP-15.03	-3001	
	on: EN 10204 Type3.1.		Additional Re	equiremen	ts:	
7. Valve Design Life i	s 25 Years.		See Specific	ation		
	Valve Check L	st				
Approved Manufactur			Nominal Size	e Range		
			2"-18"			
Valve Type Wa	fer Check Valve		Tag Number	CK-1P02		
Piping Class 1P0			Specification		<u> </u>	
			CMIT-2400	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 177 of 271			

		Test Pre	ME B36.10 st Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	ISO 17292 / ASME B16.34					
Body Material	Carbon Steel ASTM A105					
Trim Material	Ball: A105+75µENP,Stem: ASTM A18 +RPTFE	32 F6a,Se	eat And Seal:	A105+75µ	ENP	
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	/I A194 2I	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For		(Providing Ce	ŕ	- emperature	
Service	See APPENDIX A	····ouiuiii /	tt Hatou i 100		omporatare	
Notes:	1		Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial		
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	/More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And C	lose	Corresponding Class In CMIT-			
Positions.			240048-728-PIP-15.03-3001			
	kage Is Not Acceptable.		Additional Re	equirement	is:	
	on: EN 10204 Type3.1.		See Specific	ation		
	s of Valves Should Take 3mm Corrosior	۱				
Allowance Into Consider						
9. Valve Design Life is	s 25 Years.					
	Valve Check Lis	st				
Approved Manufactur	er Manufacturer Figure Nur	mber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type Bal	I		Tag Number	BA-1V01		
Piping Class 1V0)		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 178 of 271		

		Test Pre	Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB					
Trim Material	Ball: A105+75µENP,Stem: ASTM A18 +RPTFE	32 F6a,S€	eat And Seal:	A105+75µ	ENP	
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	1 A194 2I	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For		(Providing Ce	ŕ	- emperature	
Service	See APPENDIX A					
Notes:	1		Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial		
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	/More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket	Material Ot	The	
5. Valves Shall Have	Position Indicator Showing Open And C	lose	Corresponding Class In CMIT-			
Positions.			240048-728-PIP-15.03-3001			
	kage Is Not Acceptable.		Additional Requirements:			
	on: EN 10204 Type3.1.		See Specific	ation		
	s of Valves Should Take 3mm Corrosion	1				
Allowance Into Consider						
9. Valve Design Life is	s 25 years.					
	Valve Check Lis					
Approved Manufactur	er Manufacturer Figure Nur	nber	Nominal Size	e Range		
			2"-4"			
Valve Type Bal	l		Tag Number	BA-1V02		
Piping Class 1V0)		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	Α	Page 179 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size i	n ASME B	36.10		
<u> </u>		Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Ball: A105+75µENP,Stem: ASTM A +RPTFE	182 F6a,Se	eat And Seal:	A105+75µ	ENP
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A	i woalam i	W Trated 1 100		Cimporaturo
 Valves To Be Asbe Seals To Be Resist Hydraulic Test Acco Valves Shall Have Positions. Inner Or Outer Leal Material Certification 	ant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And kage Is Not Acceptable. n: EN 10204 Type3.1. s of Valves Should Take 3mm Corrosideration.	on	Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Res See Specific	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur			Nominal Size	e Range	
Valve Type Ball			Tag Number	BA-1V03	
Piping Class 1V0)		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 180 of 271			

Opecined valve oize	Shall Be Equal To Nominal Pipe Size in A	Test Pre		(ASME B1	6 34)	
Pressure Temperature Rating	150lb ASMF B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105					
Trim Material	Seats And Gate And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To ASTM F2329/ASTM A153	A194 2H	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
	ording To API 598 / ASME B16.34.		The Gasket I			
	kage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
	s of Valves Should Take 3mm Corrosion		Additional Requirements:			
Allowance Into Consider			See Specification			
8. Valve Design Life i						
A	Valve Check List	=	Manada 101	Б		
Approved Manufactur	rer Manufacturer Figure Num	iber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type	Gate		Tag Number	GA-1V01		
Piping Class	1V0		Specification	Number 48-728-PIP		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 181 of 271			

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size i			/ACME D4	0.04)	
Pressure	150lb ASME B16.34	Test Pre	Pressure Mpa (ASME B16.34)			
Temperature Rating	TOOLD ASIVIE D10.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel					
Trim Material	ASTM A216 WCB Seats And Gate And Stem:410					
Tilli Waterial	Bolt To ASTM A193 B7, Nut To AST	M A194 2F	Hot Dipped	Galvanize	d To ASTM	
Bolting	F2329/ASTM A153	W 7 (10 + 21	i, riot bippou	Gaivanizo	u 107.01111	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 Ar	nd API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suital			Gasket Mate	rial		
3. Valves To Be Asbes			Manufacture	r Standard	More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	•		
6. Material Certification			240048-728-			
	of Valves Should Take 3mm Corrosic	n	Additional Re	•	s:	
Allowance Into Consid			See Specific	ation		
8. Valve Design Life is						
Approved Manufacture	Valve Check L er Manufacturer Figure No		Nominal Size	e Range		
			2"-4"			
Valve Type (Gate		Tag Number			
Piping Class 1			Specification	GA-1V02 Number		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 182 of 27			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size					
Pressure	45011 40145 840.04	Test Pre	Pressure Mpa (ASME B16.34)			
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34	•		-		
Body Material	Carbon Steel					
body Material	ASTM A105					
Trim Material	Seat And Plug And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	TM A194 2H	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
Short Pattern Valves	•		Gasket Mate	rial		
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	More Than	
3. Valves To Be Asbe			The Gasket			
	akage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1.		240048-728-			
_	s of Valves Should Take 3mm Corrosi	on	Additional Re	•	S:	
Allowance Into Consi			See Specification			
7. Valve Design Life i						
	Valve Check			_		
Approved Manufactu	rer Manufacturer Figure N	umber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type Glo	bbe		Tag Number	GL-1V01		
Piping Class 1V	0		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 183 of 27			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size i			/ACME D4	C 24)	
Pressure	150lb ASME B16.34	Test Pre	By	(ASME B1	By	
Temperature Rating	1001B 7101WE B10.04	Body	Vendor	Seat	Vendor	
Design Code	API 623 / ASME B16.34			•		
Body Material	Carbon Steel					
	ASTM A216 WCB					
Trim Material	Seat And Plug And Stem:410					
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	ГМ А194 2I	H; Hot Dipped	Galvanize	d To ASTM	
End Connection	150 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Rody Construction	Bolted Bonnet, Rising Stem					
Body Construction	Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat					
Tilli Constituction	Fire Tested To BS EN ISO 10497 A	nd API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat			
	ensions To ASME B16.10.		Emission Fre			
Short Pattern Valves	•		Gasket Mate			
	able For Full Vacuum.		Manufacture			
3. Valves To Be Asbe			The Gasket			
	kage Is Not Acceptable.		Correspondi	•		
	on: EN 10204 Type3.1. s of Valves Should Take 3mm Corrosid		240048-728-			
Allowance Into Consi		JII	Additional Requirements:			
7. Valve Design Life i			See Specific	ation		
7. Valve Besign Lile I						
	Valve Check I					
Approved Manufactur	rer Manufacturer Figure N	umber	Nominal Size	e Range		
			2"-4"			
Valve Type Glo	bbe		Tag Number			
waive Type Git				GL-1V02		
Piping Class 1V	0		Specification			
			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 184 of 27				

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	n ASME B3	36.10		
Pressure		Test Pre	ssure Mpa	(ASME B	6.34)
Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34	•	-	1	1
Body Material	Carbon Steel ASTM A105				
Trim Material	Seat And Disc:410				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	M A194 2H	l; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
5. Face To Face Dir	mensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe			The Gasket I	Material Of	The
•	ording To API 598 / ASME B16.34.		Corresponding	ng Class Ir	CMIT-
	kage Is Not Acceptable.		240048-728-	PIP-15.03	3001
	on: EN 10204 Type3.1.		Additional Re	equirement	s:
	s of Valves Should Take 3mm Corrosio	n	See Specific	ation	
Allowance Into Consider					
8. Valve Design Life is	s 25 Years.				
	V. 1. 0				
Ammuni ad 114	Valve Check L		Name in -1 O'-	- Dan	
Approved Manufactur	rer Manufacturer Figure Nu	iiiber	Nominal Size	e Kange	
			1/2"-1 ½"		
Valve Type Cho	eck, Lift Piston		Tag Number		<u> </u>
varvo rype On	ook, Ent i istori			CK-1V01	
Piping Class 1V0	 1		Specification	Number	
			CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 185 of 271			

Dragouro		Test Pre	36.10 essure Mpa	(ASME B1	16.34)
Pressure Temperature Rating	150lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB				
Trim Material	Seat And Disc:410				
Bolting	Bolt To ASTM A193 B7, Nut To AST F2329/ASTM A153	ΓM A194 2I	H; Hot Dipped	Galvanize	d To ASTM
End Connection	150 Lb To Be Connected With RF F Connection.	langes Acc	ording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Patte				
Trim Construction	Fire Tested To BS EN ISO 10497 A	nd API 6FA	A(Providing Co	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dime	ensions To Dual-Plate Lug Type Chec	k Valve	Emission Fre	ee Material	
Of API 594 Type A. S	hort Pattern Valves Are Not Acceptab	le.	Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	/More Thar
3. Valves To Be Asbe	estos Free.		The Gasket	Material Of	The
•	ording To API 598 / ASME B16.34.		Correspondi	ng Class Ir	CMIT-
	kage Is Not Acceptable.		240048-728-	PIP-15.03-	-3001
	on: EN 10204 Type3.1.		Additional Re	equirement	is:
	s of Valves Should Take 3mm Corrosi	on	See Specific	ation	
Allowance Into Consid					
8. Valve Design Life is					
	Valve Check				
Approved Manufactur	er Manufacturer Figure N	umber	Nominal Size	e Range	
			2"-4"		
Valve Type Wa	fer Check Valve		Tag Number	CK-1V02	
Piping Class 1V0)		Specification	Number 48-728-PIP	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 186 of 27				

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size	e in ASME B	36.10		
Pressure		Test Pre	ssure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34		<u> </u>	I.	l .
Body Material	Stainless Steel ASTM A182 F316L				
Trim Material	Ball: ASTM A182 F316L+Stellite,S A182 F316L+RPTFE			Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2,	Nut To AST	M A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5	5			
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 Anti-Static, Anti Blowout Stem Sealing To Meet Requirements F		,	,	emperature
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial	
3. Seals To Be Resis	tant To Explosive Decompression.		Manufacture	r Standard	More Than
4. Inner Or Outer Lea	akage Is Not Acceptable.		The Gasket	Material Of	The
5. Hydraulic Test Acc	cording To API 598 / ASME B16.34.		Correspondi	ng Class In	CMIT-
6. Valves Shall Have	Position Indicator Showing Open And	d Close	240048-728-	PIP-15.03-	3001
Positions.			Additional R	equirement	s:
7.Material Certification	n: EN 10204 Type3.1.		See Specific	ation	
8. Valve Design Life					
	Valve Check				
Approved Manufactu	rer Manufacturer Figure	Number	Nominal Size	e Range	
			1/2"-1 ½"		
Valve Type Ba			Tag Number		
valve Type Da	ш			BA-3C01	
Piping Class 3C	0		Specification	Number	
riping Class 3C	O .		CMIT-2400	48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 187 of 271				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size	in ASME B3		(ASME B1	6 24)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Ball: ASTM A182 F316L+Stellite,St A182 F316L+RPTFE	em: ASTM /	4182 F316L,S	Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2, I	Nut To ASTI	M A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	tant To Explosive Decompression.		Manufacture		
	skage Is Not Acceptable.		The Gasket I		
	n: EN 10204 Type3.1.		Correspondir	-	
6. Valve Design Life i	s 25 Years.		240048-728-		
			Additional Re	•	s:
			See Specific	ation	
	Valve Check	List			
Approved Manufactur	rer Manufacturer Figure N	lumber	Nominal Size	e Range	
			2"-4"		
Valve Type Ball			Tag Number		
vaive Type Dall				BA-3C02	
Piping Class 3C0			Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 188 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size i					
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34	1	1	1	•	
Body Material	Stainless Steel ASTM A351 CF3M					
Trim Material	Ball: ASTM A182 F316L+Stellite,Ste A182 F316L+RPTFE	m: ASTM	A182 F316L,S	Seat and Se	eal: ASTM	
Bolting	Bolt To ASTM A320 B8M Class 2, N	ut To AST	M A194 8M			
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Full Bore, Split Body, Trunnion Mou					
-	Fire Tested To BS EN ISO 10497 A	nd API 607	(Providing Ce	ertificate)		
Trim Construction	Anti-Static, Anti Blowout Stem	N.A. 12			. ,	
	Sealing To Meet Requirements Fo	r Medium <i>i</i>	At Rated Pres	sure And I	emperature	
Service	See APPENDIX A		D 1: 14 (
Notes:	T. AOME DAG 40		Packing Mat			
	ensions To ASME B16.10.	ا	Emission Fre			
	ble Block And Bleed ones, With Any Er	ıa	Gasket Mate		/s.a	
3. Valves To Be Asbe	Full Differential Pressure.		Manufacture			
	tant To Explosive Decompression.		The Gasket			
	kage Is Not Acceptable.		Correspondii 240048-728-	-		
	n: EN 10204 Type3.1.					
7. Valve Design Life i			Additional Re	•	S.	
7. valve Design Lile i	3 20 Tours.		See Specific	<u>auon</u>		
Ammunica d Marrie Control	Valve Check L		Name in 10	- D		
Approved Manufactur	rer Manufacturer Figure No	ımber	Nominal Size	e Range		
			6"			
Valve Type Bal			Tag Number			
				BA-3C03		
C03 3C	0		Specification		45.00.0004	
			CMI1-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 189 of 27			

Valve Specification	Shall Be Equal To Nominal Pipe Size	in ASME R	36 10		
<u> </u>	Onali De Equal 10 Nominal Fipe Size	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		I		
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Ball: ASTM A182 F316L+Stellite,St A182 F316L+RPTFE	em: ASTM /	4182 F316L,S	Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2, I	Nut To ASTI	M A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Asbe	estos Free.		Gasket Mate	rial	
3. Seals To Be Resist	tant To Explosive Decompression.		Manufacture	r Standard	More Than
4. Inner Or Outer Lea	kage Is Not Acceptable.		The Gasket	Material Of	The
5.Material Certificatio	n: EN 10204 Type3.1.		Correspondi	ng Class In	CMIT-
6. Valve Design Life i	s 25 Years.		240048-728-	PIP-15.03-	3001
			Additional Re	equirement	s:
			See Specific	ation	
	Valve Check				
Approved Manufactur	rer Manufacturer Figure N	lumber	Nominal Size	e Range	
			2"-4"		
Valve Type Ball			Tag Number	BA-3C04	
Piping Class 3C0			Specification		
i ipiliy ciass 300			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 190 of 27			

Valve Specification	Shall Be Equal To Nominal Pipe Size i	n ASME B3	R6 10		
	Chair Be Equal to Norminar Tipe Cize I	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		I		
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Ball: ASTM A182 F316L+Stellite,Ste			Seat and Se	eal: ASTM
Bolting	Bolt To ASTM A320 B8M Class 2, N	lut To ASTI	M A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion				
Trim Construction	Fire Tested To BS EN ISO 10497 A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			•	emperature
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Doul	ble Block And Bleed ones, With Any Er	nd	Gasket Mate	rial	
Capable Of Bearing F	Full Differential Pressure.		Manufacture	r Standard/	More Than
3. Valves To Be Asbe	estos Free.		The Gasket	Material Of	The
	tant To Explosive Decompression.		Correspondi	ng Class In	CMIT-
	akage Is Not Acceptable.		240048-728-	PIP-15.03-	3001
	n: EN 10204 Type3.1.		Additional Re	equirement	s:
7. Valve Design Life i	s 25 Years.		See Specific	ation	
Approved Manufactu	Valve Check L rer Manufacturer Figure N		Nominal Size	e Range	
			6"		
Valve Type Ba	II		Tag Number	BA-3C05	
C03 3C	0		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 191 of 27				

Specified Valve Size Shall Be Equal To Nominal Pipe Size in ASME B36.10 Test Pressure Mpa (ASME B16.34)					6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34		1		
Body Material	Stainless Steel ASTM A182 F316L				
Trim Material	Seats And Gate: ASTM A182 F316L+S	tellite, Ste	m: ASTM A	182 F316L	
Bolting	Bolt To ASTM A320 B8M Class 2, Nut	To ASTM	A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:		P	acking Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material	
2. Valves To Be Suita	able For Full Vacuum.	G	Sasket Mater	rial	
3. Valves To Be Asbe		l N	1anufacturer	Standard/	More Than
-	ording To API 598 / ASME B16.34.	T	he Gasket N	Material Of	The
	ıkage Is Not Acceptable.		Correspondin	-	
	n: EN 10204 Type3.1.		40048-728-I		
7. Valve Design Life i	s 25 Years.	A	dditional Re	quirement	s:
		S	see Specifica	ation	
	Valve Check List				
Approved Manufactu			lominal Size	Range	
			/2"-1 ½"		
Valve Type	Gate	T	ag Number		
				GA-3C01	
Piping Class	3C0	S	pecification		
1 9			CMIT-24004	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 192 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir				
Pressure		Test Pres	· · · · ·	(ASME B1	
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Seats And Gate: ASTM A182 F316L-	+Stellite, Ste	em: ASTM A	182 F316L	-
Bolting	Bolt To ASTM A320 B8M Class 2, No	ut To ASTM	A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 An	d API 6FA(I	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	ee Material	
2. Valves To Be Suita	ble For Full Vacuum.	(Gasket Mate	rial	
3. Valves To Be Asbe	stos Free.	N	Manufacture	r Standard	/More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	7	Γhe Gasket I	Material Of	The
5. Inner Or Outer Lea	kage Is Not Acceptable.	(Correspondir	ng Class Ir	CMIT-
	n: EN 10204 Type3.1.	2	240048-728-	PIP-15.03-	3001
7. Valve Design Life is	s 25 Years.	A	Additional Re	equirement	s:
		5	See Specific	ation	
	Valve Check Li	st			
Approved Manufactur	er Manufacturer Figure Nu	mber 1	Nominal Size	e Range	
			2"-6"		
Valve Type	Gate	7	Гад Number	GA-3C02	
Piping Class	3C0	5	Specification CMIT-2400	Number	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 193 of 27			

Pressure		Test Press	st Pressure Mpa (ASME B16.34)			
Temperature Rating 30	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Stainless Steel ASTM A182 F316L					
Trim Material	Seat And Plug: ASTM A182 F316L+Ste	ellite, Stem	n: ASTM A18	32 F316L		
Bolting	Bolt To ASTM A320 B8M Class 2, Nut	To ASTM .	A194 8M			
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And	API 6FA(P	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:		Р	acking Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	E	mission Fre	e Material		
Short Pattern Valves A	Are Not Acceptable.	G	asket Mater	rial		
2. Valves To Be Suital	ble For Full Vacuum.	M	lanufacturer	Standard/	More Thar	
3. Valves To Be Asbes		T	he Gasket N	/laterial Of	The	
	kage Is Not Acceptable.		orrespondin	•		
5.Material Certification		2	40048-728-F	PIP-15.03-	3001	
6. Valve Design Life is	s 25 Years.	A	dditional Re	quirements	s:	
		S	ee Specifica	ation		
	Valve Check List					
Approved Manufacture	er Manufacturer Figure Num	ber N	lominal Size	Range		
		1,	/2"-1 ½"			
Valve Type Glol	be	T	ag Number	GL-3C01		
		1		5551		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 194 of 271			

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in					
Pressure		Test Press	t Pressure Mpa (ASME B16.34)			
Temperature Rating 300lb ASME B16.34	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34					
Body Material	Stainless Steel ASTM A351 CF3M					
Trim Material	Seat And Plug: ASTM A182 F316L+St	ellite, Sten	n: ASTM A18	82 F316L		
Bolting	Bolt To ASTM A320 B8M Class 2, Nut	To ASTM	A194 8M			
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:		P	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	:mission Fre	e Material		
Short Pattern Valves	Are Not Acceptable.	G	asket Mate	rial		
2. Valves To Be Suita	able For Full Vacuum.	l M	/lanufacturer	Standard/I	More Than	
3. Valves To Be Asbe	estos Free.	T	he Gasket N	Material Of	The	
4. Inner Or Outer Lea	kage Is Not Acceptable.	C	Correspondin	ng Class In	CMIT-	
5.Material Certification	n: EN 10204 Type3.1.	2	40048-728-1	PIP-15.03-3	3001	
6. Valve Design Life	s 25 Years.	Α	dditional Re	equirements	S:	
		s	See Specifica	ation		
	Valve Check Lis	t				
Approved Manufactu	rer Manufacturer Figure Nun	nber N	lominal Size	Range		
			"-6"			
Valve Type Glo	be	T	ag Number			
				GL-3C02		
Piping Class 3C0		8	Specification CMIT-24004	Number 48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 195 of 271			

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ir	Test Press		(ASME B16	2 24\	
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34		l			
Body Material	Stainless Steel ASTM A182 F316L					
Trim Material	Seat And Disc: ASTM A182 F316L+9	Stellite				
Bolting	Bolt To ASTM A320 B8M Class 2, No	ut To ASTM	A194 8M			
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Lift Piston Bolted Cover					
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(F	Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	e Material		
Short Pattern Valves	•		Gasket Material			
2. Valves To Be Suita		l N	/lanufacturer	Standard/I	More Than	
Valves To Be Asbe		T	he Gasket N	Material Of	The	
_	ording To API 598 / ASME B16.34.	C	Correspondin	ng Class In	CMIT-	
	kage Is Not Acceptable.	2	240048-728-PIP-15.03-3001			
6.Material Certification	• •	A	Additional Requirements:			
7. Valve Design Life is	s 25 Years.	8	See Specification			
	Valve Check L	st				
Approved Manufactur	er Manufacturer Figure Nu	mber N	Nominal Size	Range		
			/2"-1 ½"			
Valve Type Che	ck, Lift Piston	T	ag Number			
	,			CK-3C01		
Piping Class 3C0		S	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 196 of 27				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	ASME B36	6.10		
Pressure		Test Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34	•	•	•	
Body Material	Stainless Steel ASTM A351 CF3M				
Trim Material	Seat And Disc: ASTM A182 F316L+S	Stellite			
Bolting	Bolt To ASTM A320 B8M Class 2, Nu	ut To ASTM	A194 8M		
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Pattern				
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dime	ensions To Dual-Plate Lug Type Check	Valve E	Emission Fre	ee Material	
	hort Pattern Valves Are Not Acceptable	e. (Gasket Mate	rial	
2. Valves To Be Suita		1	Manufacture	r Standard/	More Than
3. Valves To Be Asbe		7	Γhe Gasket I	Material Of	The
•	ording To API 598 / ASME B16.34.	(Correspondir	ng Class In	CMIT-
	kage Is Not Acceptable.	2	240048-728-	PIP-15.03-	3001
	on: EN 10204 Type3.1.	A	Additional Re	equirement	s:
7. Valve Design Life is	s 25 Years.		See Specific	ation	
	Valve Check Li				
Approved Manufactur	rer Manufacturer Figure Nu	mber 1	Nominal Size	e Range	
		2	2"-6"		
Valve Type Wa	fer Check Valve		Гад Number		
valvo i ypo	TO CHOOK VAIVO			CK-3C02	
Piping Class 3C0			Specification		
I iping oldso 500			CMIT-2400	48-728-PIP-	15.03-3001



	ON IT 040040 700 DID 45 00 0000				
Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 197 of 27				

Valve Specification						
	Shall Be Equal To Nominal Pipe Size in A	ASME B3		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASME B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	ISO 17292 / ASME B16.34					
Body Material	Carbon Steel ASTM A105N(HIC&SSC)					
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTI ASTM F2329/ASTM A153	M A194 2	HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M	•	-	,	emperature	
Service	See APPENDIX A				'	
Notes:			Packing Mate	erial:		
	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Asbe			Gasket Mate	rial		
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture		More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And Clo	se	Correspondir	ng Class In	CMIT-	
Positions.			240048-728-	PIP-15.03-	3001	
6. Inner Or Outer Lea	kage Is Not Acceptable.	<u> </u>	Additional Re	equirement	s:	
7. This Type Of Valve	ls Used In Sour Service. Vendor Shall H	ave	See Specification			
Clear Information On	The Valve Tag That The Valves They Su	pplied	All Material L	Jsed In Sou	ır Service	
Are Sulphur Resisting			Shall Meet T	he Require	ments Of	
8. Valve Design Life i			NACE MR 0	175/ISO15 ²	156	
	s of Valves Should Take 3mm Corrosion					
Allowance Into Consideration						
10.Material Certificati	on: EN 10204 Type3.1.					
	Valve Check List			_		
Approved Manufactur	er Manufacturer Figure Num	ber	Nominal Size	Range		
			1/2"-1 ½"			
Valve Type Bal	1		Tag Number			
valve Type Bal	ı			BA-3D31S		
Piping Class 3D	3		Specification	Number		
Piping Class 3D3	J		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 198 of 271			

Valve Specification					
	Shall Be Equal To Nominal Pipe Size in A	SME B36		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			<u> </u>	
Body Material	Carbon Steel ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S	20910,Se	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	M A194 2I	HM; Hot Dip	ped Galvar	ized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M	•	_	•	emperature
Service	See APPENDIX A				<u> </u>
2. Valves To Be Asbe3. Seals To Be Resist	ant To Explosive Decompression.	E	Packing Mate Emission Fre Gasket Mate Manufacture	ee Material rial	More Than
5. Valves Shall Have Positions.	ording To API 598 / ASME B16.34. Position Indicator Showing Open And Clo	se (The Gasket I Correspondir 240048-728-	ng Class In PIP-15.03-	CMIT- 3001
7. This Type Of Valve	kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall H	ave s	Additional Requirements: See Specification		
Are Sulphur Resisting 8. Valve Design Life is 9. The Wall Thickness Allowance Into Consid	s 25 Years. s of Valves Should Take 3mm Corrosion deration. on: EN 10204 Type3.1.		All Material L Shall Meet T NACE MR 0 ⁻	he Require	ments Of
	Valve Check List			_	
Approved Manufactur	er Manufacturer Figure Numl		Nominal Size 2"-4"	e Range	
Valve Type Bal	I		Гад Number	BA-3D32S	
Piping Class 3D3	3		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 199 of 271				

Pressure	Т	est Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				l .
Body Material	Carbon Steel ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2	20910,S	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	PHM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Full Bore, Split Body, Trunnion Mounted				
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	`	· ·	,	emperature
Service	See APPENDIX A				
2. Valves To Be Doub Capable Of Bearing F 3. Valves To Be Asbe 4. Seals To Be Resist 5. Hydraulic Test Acc 6. Valves Shall Have Positions. 7. Inner Or Outer Lea 8. This Type Of Valve Clear Information On Are Sulphur Resisting 9. Valve Design Life is 10. The Wall Thicknes Allowance Into Consideration	tant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And Clos kage Is Not Acceptable. e Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup g. s 25 Years. ss of Valves Should Take 3mm Corrosion	se	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Correspondir 240048-728- Additional Ree See Specifica All Material U Shall Meet T NACE MR 02	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:
Approved Manufactur	Valve Check List		Nominal Size 6"-18"	Range	
Valve Type Bal	l			BA-3D33S	-
Piping Class 3D3	3		Specification CMIT-2400		15.02.2001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 200 of 271			

	Т	est Pres	st Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel					
Dody Malerial	ASTM A216 WCB (HIC&SSC)					
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2	20910,S	eat and Seal	: F347+RP	TFE	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	/ A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Reduced Bore, Split Body, Floating					
	Fire Tested To BS EN ISO 10497 And A	API 607(Providing Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For Me	edium A	t Rated Pres	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Asbe			Gasket Mate			
	tant To Explosive Decompression.		Manufacture			
•	ording To API 598 / ASME B16.34.		The Gasket I			
	Position Indicator Showing Open And Clos	se	Correspondir	•		
Positions.	Irono la Nat Appointable		240048-728-			
	kage Is Not Acceptable. e Is Used In Sour Service. Vendor Shall Ha		Additional Requirements:			
• •	The Valve Tag That The Valves They Sup		See Specification			
Are Sulphur Resisting		.	All Material Used In Sour Service Shall Meet The Requirements Of			
8. Valve Design Life i	•	I		•		
•	s of Valves Should Take 3mm Corrosion		NACE MR 0	175/15015	100	
Allowance Into Consi						
_	on: EN 10204 Type3.1.					
	Valve Check List					
Approved Manufactu		oer	Nominal Size	Range		
			2"-4"			
Valve Type Ba	I		Tag Number			
, , , , , , , , , , , , , , ,	•			BA-3D34S		
Piping Class 3D	3		Specification			
OD	-		CMIT-240048-728-PIP-15.03-3001			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 201 of 271				

Pressure	Т	est Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		1	-	l
Body Material	Carbon Steel				
Dody Material	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2	20910,S	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	/I A194 2	PHM; Hot Dip	ped Galvar	nized To
Dolling	ASTM F2329/ASTM A153				
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature	See APPENDIX A				
Limitations	See AFFENDIA A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion Mo	unted.			
	Fire Tested To BS EN ISO 10497 And A	API 607(Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Me	edium A	t Rated Pres	sure And T	emperatur
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Doub	ole Block And Bleed ones, With Any End		Gasket Mate	rial	
Capable Of Bearing F	ull Differential Pressure.		Manufacture	r Standard/	More Thar
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	The
	ant To Explosive Decompression.		Correspondir	ng Class In	CMIT-
•	ording To API 598 / ASME B16.34		240048-728-	PIP-15.03-	3001
	Position Indicator Showing Open And Clos	se	Additional Re	equirement	s:
Positions.			See Specific	ation	
	kage Is Not Acceptable.	I	All Material U	Jsed In Sou	ır Service
- · · · · · · · · · · · · · · · · · · ·	e Is Used In Sour Service. Vendor Shall Ha		Shall Meet T	he Require	ments Of
	The Valve Tag That The Valves They Sup	pplied	NACE MR 0	175/ISO15 ⁻	156
Are Sulphur Resisting					
9. Valve Design Life is					
	ss of Valves Should Take 3mm Corrosion				
Allowance Into Consid					
11.Material Certification	on: EN 10204 Type3.1.				
Annual Abb 6	Valve Check List		Name to all Of	D	
Approved Manufactur	rer Manufacturer Figure Numb		Nominal Size	e Kange	
			6"-18" 		
Valve Type Bal	I		Tag Number		
				BA-3D35S	
Piping Class 3D3	3		Specification		45.00.005
	-		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 202 of 271			

Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6 34)	
Pressure Temperature Rating	300lb ASMF B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Pady Material	Carbon Steel					
Body Material	ASTM A105N(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Stell	llite,Ste	m: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Constitution	Outside Screw And Yoke					
Trim Construction	Solid Wedge Type	_				
	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.	_	Emission Fre			
2. Valves To Be Suita			Gasket Mate			
3. Valves To Be Asbe			Manufacture			
•	ording To API 598 / ASME B16.34.		The Gasket I			
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
	Sour Service Shall Meet The Requiremen					
NACE MR 0175/ISO1			Additional Requirements:			
• •	Is Used In Sour Service. Vendor Shall Ha		See Specific			
Are Sulphur Resisting	The Valve Tag That The Valves They Sup	piied	All Material L			
8. Valve Design Life is			Shall Meet T	-		
	s of Valves Should Take 3mm Corrosion		NACE MR 0°	1/5/18015	156	
Allowance Into Consid						
_	on: EN 10204 Type3.1.					
	Valve Check List					
Approved Manufacture		er	Nominal Size	e Range		
- Transcrate						
			1/2"-1 ½"			
			Tag Number			
Valve Type	Gate		•	GA-3D31S	;	
			Specification			
Piping Class	3D3		CMIT-2400		15.00.0001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 203 of 271			

·	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASME B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel					
Dody Waterial	ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Stell					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	I A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Constituction	Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type					
	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.		Emission Fre			
2. Valves To Be Suita			Gasket Mate		<i>.</i>	
3. Valves To Be Asbe			Manufacture			
•	ording To API 598 / ASME B16.34. kage Is Not Acceptable.		The Gasket I			
	Rage is Not Acceptable. Sour Service Shall Meet The Requiremen	ote Of	Corresponding Class In CMIT-			
NACE MR 0175/ISO1	•	its Oi				
	Is Used In Sour Service. Vendor Shall Ha	ive	Additional Requirements:			
• •	The Valve Tag That The Valves They Sup		See Specification			
Are Sulphur Resisting			All Material Used In Sour Service			
8. Valve Design Life is			Shall Meet The Requirements Of NACE MR 0175/ISO15156			
_	s of Valves Should Take 3mm Corrosion		TANCE WITE	173/10013	100	
Allowance Into Consid	deration.					
10.Material Certification	on: EN 10204 Type3.1.					
	Valve Check List	I				
Approved Manufacture	er Manufacturer Figure Numb	er	Nominal Size	Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-3D32S	;	
Piping Class 3	3D3		Specification CMIT-2400	Number		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 204 of 271			

	Shall Be Equal To Nominal Pipe Size in A	est Pres		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASMF B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Ste	ellite,Ste	m: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip∣	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material		
	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	cording To API 598 / ASME B16.34.		The Gasket I			
	akage Is Not Acceptable.	I .	Correspondir	•		
• •	e Is Used In Sour Service. Vendor Shall Ha	L	240048-728-PIP-15.03-3001			
	The Valve Tag That The Valves They Sup	.	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '			
Are Sulphur Resisting	-		See Specifica			
7. Valve Design Life			All Material Used In Sour Service			
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of			
Allowance Into Consi			NACE MR 0	175/ISO15	156	
9. Material Certification	on: EN 10204 Type3.1.					
	Valve Check List					
Approved Manufactu		per	Nominal Size	Range		
			2"-8"			
Valve Type	Gate		Tag Number			
71 -				GA-3D33S	.	
Piping Class	3D3		Specification			
			CMIT-2400	48-728-PIP-	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 205 of 271				

_		SME B3 est Pres		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34			-1		
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+Ste	ellite,Ste	m: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	/I A194 2	2HM; Hot Dip _l	oed Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material		
Valves To Be Suital			Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	Standard	More Than	
	ording To API 598 / ASME B16.34.		The Gasket N			
	kage Is Not Acceptable.		Correspondir	_		
• •	Is Used In Sour Service. Vendor Shall Ha	I	240048-728-PIP-15.03-3001			
	The Valve Tag That The Valves They Տսր	pplied	'			
Are Sulphur Resisting			See Specifica			
7. Valve Design Life is			All Material L			
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of			
Allowance Into Consideration			NACE MR 01	175/ISO15	156	
Material Certificatio	II. ⊑N 10204 Types.T.					
	Valve Check List					
Approved Manufacture		oer	Nominal Size	Range		
			10"-18"			
Valve Type	Gate		Tag Number	GA-3D34S	-	
			Specification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 206 of 271			

	Shall Be Equal To Nominal Pipe Size in A	est Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			1	
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste	ellite,Ste	m: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dipp	oed Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	rtificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material	
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mater	rial	
3. Valves To Be Asbe	estos Free.		Manufacturer	Standard	More Than
•	cording To API 598 / ASME B16.34.		The Gasket N	/laterial Of	The
	ikage Is Not Acceptable.		Correspondin	ıg Class In	CMIT-
• •	e Is Used In Sour Service. Vendor Shall Ha	I	240048-728-PIP-15.03-3001		
	The Valve Tag That The Valves They Sup	plied	Additional Re	quirement	s:
Are Sulphur Resisting	_		See Specifica		
7. Valve Design Life i			All Material Used In Sour Service		
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Consi			NACE MR 01	75/ISO15	156
9. Material Certification	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactu		er	Nominal Size	Range	
			10"-18"		
Valva Typa	Gate		Tag Number		
Valve Type	Gale		(GA-3D35S	;
Piping Class	3D3		Specification	Number	
Fibility Class	טעט		CMIT-24004	18_728_PIP	15 03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 207 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASMF B16 34	ody	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	ite,Stem	n: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip _l	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	nensions To ASME B16.10.		Emission Fre	e Material	
	Are Not Acceptable.		Gasket Mate	rial	
	able For Full Vacuum.		Manufacture		
3. Valves To Be Asb			The Gasket I		
	akage Is Not Acceptable.		Correspondir	•	
- -	e Is Used In Sour Service. Vendor Shall Ha		240048-728-PIP-15.03-3001		
	The Valve Tag That The Valves They Sup	plied	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		
Are Sulphur Resisting	-		See Specification		
7. Valve Design Life			All Material L		
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Cons			NACE MR 0	175/ISO15	156
a. Material Certificati	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactu		er	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Gl	obe		Tag Number		
				GL-3D31S	
Piping Class 3D	03		Specification		
1 0 02			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Owner Doc.No.	CWIT-240046-726-FIF-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 208 of 271				

Pressure	Te	est Pre	ssure Mpa	t Pressure Mpa (ASME B16.34)			
Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor		
Design Code	API 623 / ASME B16.34						
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)						
Trim Material	Seat And Plug: ASTM A182-F347+Stellit	te,Stem	n: S20910				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	2HM; Hot Dip _l	ped Galvai	nized To		
End Connection	300 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Handwheel with Lock Device						
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke						
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)			
Service	See APPENDIX A						
Notes:			Packing Mate	erial:			
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material			
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial			
Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	More Than		
3. Valves To Be Asbe	estos Free.		The Gasket N	Material Of	The		
Inner Or Outer Lea	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-		
6. This Type Of Valve	e Is Used In Sour Service. Vendor Shall Ha	ve	240048-728-PIP-15.03-3001				
Clear Information On	The Valve Tag That The Valves They Supp	plied	Additional Requirements:				
Are Sulphur Resisting			See Specifica	ation			
7. Valve Design Life i		ļ	All Material L	Jsed In So	ur Service		
	s of Valves Should Take 3mm Corrosion		Shall Meet Ti	he Require	ements Of		
Allowance Into Consid			NACE MR 0175/ISO15156				
Material Certification	on: EN 10204 Type3.1.						
	Valve Check List						
Approved Manufactur	rer Manufacturer Figure Numbe	er	Nominal Size	Range			
			2"-6"				
Valve Type Glo	she .		Tag Number				
Valve Type Glo	אועכ			GL-3D32S			
Piping Class 3D	3		Specification	Number			
Piping Class 3D3	J		CMIT-24004	40 720 DID	15 02 2001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 209 of 271			

Pressure	Te	est Pre	ssure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34			-	
Body Material	Carbon Steel				
	ASTM A216 WCB(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Stelling				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	I A194 2	2HM; Hot Dip	ped Galvaı	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem				
	Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat				<u> </u>
Tilli Oolisti dottori	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	•		Gasket Mate		
2. Valves To Be Suita			Manufacture	r Standard	/More Thar
3. Valves To Be Asbe			The Gasket I		
	kage Is Not Acceptable.		Corresponding Class In CMIT- 240048-728-PIP-15.03-3001		
- -	Is Used In Sour Service. Vendor Shall Ha				
	The Valve Tag That The Valves They Sup	plied	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		
Are Sulphur Resisting			See Specific		
7. Valve Design Life is			All Material L		
	s of Valves Should Take 3mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Consideration Control Control			NACE MR 0175/ISO15156		
9. Material Certification	n: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur		er	Nominal Size	Range	
Approved Manufactur	oi mandiacturer i igure Numb	OI .	TNOTHINAL OIZE	range	
			8"-16"		
Valve Type Glo	.he		Tag Number		
valve Type Glo				GL-3D33S	
Piping Class 3D3	3		Specification		
p.i.ig Oldoo 0D.	•		CMIT-2400	48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	Α	Page 210 of 271			

Draceure		Test Pre	ssure Mpa	(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34			-	
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Seat And Disc: ASTM A182-F347+Ste	llite			
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2	2HM; Hot Dip	ped Galvaı	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A			<u> </u>	
Notes:			Packing Mate	erial:	
1. Face To Face Dimensions To ASME B16.10.			Emission Free Material		
Short Pattern Valves Are Not Acceptable.		The state of the s	Gasket Material		
2. Valves To Be Suita	ble For Full Vacuum.		Manufacturer Standard/More Than		
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-
5. Inner Or Outer Leal	kage Is Not Acceptable.		240048-728-	PIP-15.03-	3001
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall H	lave	Additional Re	equirement	s:
Clear Information On	The Valve Tag That The Valves They Su	pplied	See Specifica	ation	
Are Sulphur Resisting	l .		All Material L	Jsed In So	ur Service
7. Valve Design Life is			Shall Meet T	he Require	ements Of
_	s of Valves Should Take 3mm Corrosion		NACE MR 0	175/ISO15	156
Allowance Into Consid					
Material Certificatio	n: EN 10204 Type3.1.				
Annua - d Manager	Valve Check List		Namain d O	D	
Approved Manufactur	er Manufacturer Figure Num	ıber	Nominal Size	Range	
			1/2"-1 ½"		
Valve Type Che	eck, Lift Piston		Tag Number	CK-3D31S	
Piping Class 3D3	3		Specification CMIT-2400		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 211 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	n ASME B	36.10			
Pressure		(ASME B1	6.34)			
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 594 / ASME B16.34	1	1		L	
Body Material	Carbon Steel					
Dody Waterial	ASTM A216 WCB(HIC&SSC)					
Trim Material	Seat And Disc: ASTM A182-F347+S	tellite				
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	TM A194	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb To Be Connected With RF FI Connection.	anges Acc	cording To AS	ME B16.5.	Wafer Type	
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Wafer Type, Dual Plate, Long Patter	n				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	d API 6F	A(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To Dual-Plate Lug Type Check	Valve	Emission Fre	ee Material		
Of API 594 Type A. S	hort Pattern Valves Are Not Acceptable	€.	Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacturer Standard/More Than			
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-	
5. Inner Or Outer Leal	kage Is Not Acceptable.		240048-728-PIP-15.03-3001			
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall	Have	Additional Requirements:			
Clear Information On	The Valve Tag That The Valves They :	Supplied	See Specific	ation		
Are Sulphur Resisting			All Material U	Jsed In Sou	ur Service	
7. Valve Design Life is			Shall Meet T	he Require	ments Of	
	s of Valves Should Take 3mm Corrosic	n	NACE MR 0	175/ISO15 ⁻	156	
Allowance Into Consid						
Material Certificatio	n: EN 10204 Type3.1.					
	Valve Check L					
Approved Manufacture	er Manufacturer Figure Nu	ımber	Nominal Size	e Range		
			2"-18"			
Valve Type Wa	fer Check Valve		Tag Number			
vaive rype vva	Olicon valve			CK-3D32S		
Piping Class 3D3	3		Specification			
i ipilig Olass SDC	,		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 212 of 271				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B3 Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASMF B16 34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34				
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:	S20910,S	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2	PHM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For N	`	-	•	emperature
Service	See APPENDIX A				<u> </u>
Notes:		I	Packing Mate		
	ensions To ASME B16.10.	_	Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	tant To Explosive Decompression.		Manufacture		
•	ording To API 598 / ASME B16.34. Position Indicator Showing Open And Ck		The Gasket I		
Positions.	Position indicator Showing Open And Cit		Correspondir 240048-728-	•	
	kage Is Not Acceptable.	_			
	Is Used In Sour Service. Vendor Shall F	_	Additional Requirements: See Specification		
- · · · · · · · · · · · · · · · · · · ·	The Valve Tag That The Valves They Su	L	All Material U		ır Service
Are Sulphur Resisting		1	Shall Meet T		
8. Valve Design Life is		I	NACE MR 0	•	
9. The Wall Thickness	s of Valves Should Take 6mm Corrosion				. • •
Allowance Into Consid	deration.				
10.Material Certification	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur	er Manufacturer Figure Num	ber	Nominal Size	Range	
			1/2"-1 ½"		
Makes Tempo 5.1			Tag Number		
Valve Type Bal	I			BA-3D61S	
Dining Class 2D	6		Specification	Number	
Piping Class 3D6	U		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 213 of 271			

Valve Specification		<u> </u>	- 10		
·	Shall Be Equal To Nominal Pipe Size in A	SME B30		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16 34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			1	
Body Material	Carbon Steel				
	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	/I A194 2	HM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating				
	Fire Tested To BS EN ISO 10497 And A	API 607(I	Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Me	edium At	t Rated Pres	sure And T	emperature
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.	_	Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	tant To Explosive Decompression.		Manufacture	r Standard/	More Than
•	ording To API 598 / ASME B16.34.		The Gasket I		
	Position Indicator Showing Open And Clos		Correspondir	•	
Positions.	leave to NL 4 A constability	_	240048-728-		
	kage Is Not Acceptable.		Additional Requirements:		
• •	e Is Used In Sour Service. Vendor Shall Ha	L	See Specification		
	The Valve Tag That The Valves They Sup		7 111.0.10.10.10.1		
Are Sulphur Resisting 8. Valve Design Life i			Shall Meet T	•	
_	s of Valves Should Take 6mm Corrosion		NACE MR 0	175/18015	156
Allowance Into Consider					
_	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur		oer	Nominal Size	e Range	
1		'			
		:	2"-4"		
Valve Type Bal	1		Tag Number		
Valve Type Bal	II			BA-3D62S	
Piping Class 3D	6	:	Specification	Number	
i iping ciass 3D	O		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 214 of 271				

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in A	ASME B36	.10			
Pressure		Test Press	sure Mpa	(ASME B1	6.34)	
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34		ı			
Body Material	Carbon Steel					
body Material	ASTM A216 WCB (HIC&SSC)					
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:					
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2H	HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Full Bore, Split Body, Trunnion Mounte	ed.				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For N	•		•	emperature	
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	I .	Emission Fre			
2. Valves To Be Doub	le Block And Bleed ones, With Any End	G	Sasket Mate	rial		
Capable Of Bearing F	ull Differential Pressure.	N	/lanufacture	r Standard/	More Than	
3. Valves To Be Asbe	stos Free.	Т Т	he Gasket I	Material Of	The	
4. Seals To Be Resista	ant To Explosive Decompression.	C	Correspondir	ng Class In	CMIT-	
•	ording To API 598 / ASME B16.34.		40048-728-	PIP-15.03-	3001	
	Position Indicator Showing Open And Cl	lose A	Additional Requirements:			
Positions.		S	See Specification			
8. This Type Of Valve Clear Information On Are Sulphur Resisting 9. Valve Design Life is 10. The Wall Thicknes Allowance Into Consideration	s 25 Years. ss of Valves Should Take 6mm Corrosio	Have Supplied N	All Material U Shall Meet T JACE MR 0°	he Require	ments Of	
	Valve Check Lis	t				
Approved Manufacture	er Manufacturer Figure Nun		Nominal Size 5"-20"	Range		
Valve Type Ball		Т	ag Number	BA-3D63S		
Piping Class 3D6	6	S	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 215 of 271			

Valve Specification					
	Shall Be Equal To Nominal Pipe Size in A	SME B36		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16 34	Body	By	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel				
	ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	HM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating				
	Fire Tested To BS EN ISO 10497 And A	API 607(I	Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For Me	edium At	t Rated Pres	sure And T	emperature
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.	_	Emission Fre		
2. Valves To Be Asbe			Gasket Mate		
	ant To Explosive Decompression.		Manufacture	r Standard/	More Than
•	ording To API 598 / ASME B16.34.		The Gasket I		
	Position Indicator Showing Open And Clos		Correspondir	•	
Positions.	Leave to Nick Associated to		240048-728-		
	kage Is Not Acceptable.		Additional Requirements:		
• •	e Is Used In Sour Service. Vendor Shall Ha	L	See Specification		
	The Valve Tag That The Valves They Sup		7 111.0.10.10.10.1		
Are Sulphur Resisting 8. Valve Design Life i			Shall Meet T	•	
_	s of Valves Should Take 6mm Corrosion		NACE MR 0°	175/15015	100
Allowance Into Consider					
_	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur		oer l	Nominal Size	Range	
	3			J	
		:	2"-4"		
Valva Typa D-1	1	-	Tag Number		
Valve Type Bal	I			BA-3D64S	
Piping Class 3D	6		Specification	Number	
Piping Class 3D	U		CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 216 of 271				

Pressure	Т	est Pres	essure Mpa (ASME B16.34)		
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				l .
Body Material	Carbon Steel ASTM A216 WCB (HIC&SSC)				
Trim Material	Ball: ASTM A182-F347+Stellite,Stem:S2	20910,S	eat and Seal	: F347+RP	TFE
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	/I A194 2	PHM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion Mo				
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	,	-	•	emperature
Service	See APPENDIX A				
2. Valves To Be Doub Capable Of Bearing F 3. Valves To Be Asbe 4. Seals To Be Resist 5. Hydraulic Test Acc 6. Valves Shall Have Positions. 7. Inner Or Outer Lea 8. This Type Of Valve Clear Information On Are Sulphur Resisting 9. Valve Design Life is 10. The Wall Thicknes Allowance Into Consideration	tant To Explosive Decompression. ording To API 598 / ASME B16.34 Position Indicator Showing Open And Clos kage Is Not Acceptable. e Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup g. s 25 Years. ss of Valves Should Take 6mm Corrosion	se -	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Correspondir 240048-728- Additional Ree See Specifica All Material L Shall Meet T NACE MR 02	rial rial r Standard, Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:
Approved Manufactur	Valve Check List		Nominal Size 6"-20"	Range	
Valve Type Bal	1			BA-3D65S	
Piping Class 3D0	6		Specification CMIT-2400		45.00.0004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 217 of 271			

Valve Specification	OL II D. E I T. N I D O				
	Shall Be Equal To Nominal Pipe Size in As	est Press		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16 34	ody	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Carbon Steel ASTM A105N(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste	llite,Stem	n: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2H	HM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And A	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acc 5. Inner Or Outer Lea 6. All Material Used Ir NACE MR 0175/ISO1 7. This Type Of Valve Clear Information On Are Sulphur Resisting 8. Valve Design Life is 9. The Wall Thickness Allowance Into Consider	estos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. In Sour Service Shall Meet The Requirement 15156. Is Used In Sour Service. Vendor Shall Hat The Valve Tag That The Valves They Supply. Is 25 Years. Is of Valves Should Take 6mm Corrosion deration. In Sour Service.	nts Of 2 ave splied A	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Corresponding 240048-728- Additional Res See Specifica MI Material U Shall Meet T NACE MR 07	ee Material rial r Standard/ Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:
Approved Manufactur	Valve Check List er Manufacturer Figure Numb		Nominal Size	e Range	
Valve Type	Gate		ag Number		
Piping Class	3D6	S	Specification	GA-3D61S Number 48-728-PIP-	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 218 of 27			

Valve Specification			140		
	Shall Be Equal To Nominal Pipe Size in A	est Press		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34		1		
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2H	HM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And A	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acc 5. Inner Or Outer Lea 6. All Material Used In NACE MR 0175/ISO1 7. This Type Of Valve Clear Information On Are Sulphur Resisting 8. Valve Design Life is 9. The Wall Thickness Allowance Into Consid 10.Material Certification	estos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. In Sour Service Shall Meet The Requirement 5156. Is Used In Sour Service. Vendor Shall Har The Valve Tag That The Valves They Supples 25 Years. Is of Valves Should Take 6mm Corrosion deration. In Sour Service. Vendor Shall Har The Valves They Supples 25 Years. In Supplementation of Valves Should Take 6mm Corrosion deration. In Supplementation on: EN 10204 Type3.1. Valve Check List	nts Of 2 Ave sopplied A	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Corresponding 240048-728- Additional Res See Specifica All Material L Shall Meet T NACE MR 02	rial r Standard/ Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou he Require	The CMIT- 3001 s: ur Service ments Of
Approved Manufactur	er Manufacturer Figure Numb		Nominal Size 2"-8"	e Range	
Valve Type	Gate	T	ag Number	GA-3D62S	
Piping Class	3D6	8	Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 219 of 271			

	Shall Be Equal To Nominal Pipe Size in AS	est Pres		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16 34	ody	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)				
Trim Material	Seats And Gate: ASTM A182-F347+Ste	llite,Ste	m: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip∣	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material	
	able For Full Vacuum.		Gasket Material		
3. Valves To Be Asbe			Manufacture	r Standard	More Than
•	ording To API 598 / ASME B16.34.		The Gasket Material Of The		
	skage Is Not Acceptable.		Corresponding Class In CMIT-		
• •	e Is Used In Sour Service. Vendor Shall Ha		240048-728-PIP-15.03-3001		
	The Valve Tag That The Valves They Sup	·	Additional Requirements:		
Are Sulphur Resisting			See Specifica		
7. Valve Design Life i			All Material Used In Sour Service		
	s of Valves Should Take 6mm Corrosion		Shall Meet The Requirements Of		
Allowance Into Consi	on: EN 10204 Type3.1.		NACE MR 0	1/5/ISO15	156
a. Material Certification	лі. Liv 10204 тур с о. Г.				
	Valve Check List				
Approved Manufactur		er	Nominal Size	Range	
			2"-8"		
Valve Type	Gate		Tag Number		
				GA-3D63S)
Piping Class	3D6		Specification		
			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 220 of 271			

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B		(ASME B1	6 24\	
Pressure	300lb ASME B16 34	Test Fle	By	Ì	By	
Temperature Rating	COOLD TOWNED TO OT	Body	Vendor	Seat	Vendor	
Design Code	API 600 / ASME B16.34			•		
Body Material	Carbon Steel ASTM A216 WCB(HIC&SSC)					
Trim Material	Seats And Gate: ASTM A182-F347+	Stellite,Ste	em: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	TM A194	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 An	d API 6FA	A(Providing Ce	ertificate)		
Service	See APPENDIX A			<u> </u>		
Notes:			Packing Mate	erial:		
	ensions To ASME B16.10.		Emission Fre	e Material		
2. Valves To Be Suital	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbes	stos Free.		Manufacture	r Standard	More Than	
•	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
	rage Is Not Acceptable.		Corresponding Class In CMIT-			
• •	Is Used In Sour Service. Vendor Shall		240048-728-PIP-15.03-3001			
	The Valve Tag That The Valves They S	Supplied	Additional Requirements:			
Are Sulphur Resisting.			See Specification			
7. Valve Design Life is			All Material U			
	of Valves Should Take 6mm Corrosion	n	Shall Meet The Requirements Of			
Allowance Into Consid			NACE MR 0	175/ISO15	156	
9. Material Certification	n: EN 10204 Type3.1.					
	Valve Check Li	st				
Approved Manufacture			Nominal Size	Range		
			10"-20"			
Valve Type (Gate		Tag Number	GA-3D64S		
Piping Class 3	BD6		Specification CMIT-2400	Number		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 221 of 271			

Shall Be Equal To Nominal Pipe Size in ⊺			/AQME D1	6 34)	
300lb ASMF B16 34	Test Fie		Ì	By	
COOLD TOWNE BTO.04	Body	Vendor	Seat	Vendor	
API 6D / ASME B16.34	•				
Carbon Steel					
	Stellite Ste	em: S20910			
			oed Galvar	nized To	
ASTM F2329/ASTM A153		, 11			
300 Lb RF Flange To ASME B16.5					
See APPENDIX A					
Gear Operator					
Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Flat Gate Fire Tested To BS EN ISO 10497 An	d API 6FA	(Providina Ce	ertificate)		
See APPENDIX A		()	,		
		Packing Mate	erial:		
ensions To ASME B16.10.		Emission Fre	e Material		
ole For Full Vacuum.		Gasket Mate	rial		
stos Free.		Manufacture	r Standard/	More Than	
ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
cage Is Not Acceptable.		Corresponding Class In CMIT-			
		240048-728-PIP-15.03-3001			
•	Supplied	Additional Re	equirement	s:	
		See Specification	ation		
		All Material U	Jsed In Sou	ur Service	
	ו	Shall Meet The Requirements Of			
		NACE MR 0	175/ISO15 ⁻	156	
n: EN 10204 Type3.1.					
Valve Check Li	st				
		Nominal Size	Range		
		10"-20"			
		Tag Number			
BD6		Specification	Number		
	API 6D / ASME B16.34 Carbon Steel ASTM A216 WCB(HIC&SSC) Seats And Gate: ASTM A182-F347+8 Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153 300 Lb RF Flange To ASME B16.5 See APPENDIX A Gear Operator Bolted Bonnet, Rising Stem Outside Screw And Yoke Flat Gate Fire Tested To BS EN ISO 10497 And See APPENDIX A consions To ASME B16.10. Dele For Full Vacuum. Stos Free. Derding To API 598 / ASME B16.34. Dele For Full Vacuum. Stos Free. Derding To API 598 / ASME B16.34. Dele For Full Vacuum. Stos Free. Derding To API 598 / ASME B16.34. Dele For Full Vacuum. Dele Fo	API 6D / ASME B16.34 Carbon Steel ASTM A216 WCB(HIC&SSC) Seats And Gate: ASTM A182-F347+Stellite,Ste Bolt To ASTM A193 B7M, Nut To ASTM A194 ASTM F2329/ASTM A153 300 Lb RF Flange To ASME B16.5 See APPENDIX A Gear Operator Bolted Bonnet, Rising Stem Outside Screw And Yoke Flat Gate Fire Tested To BS EN ISO 10497 And API 6FA See APPENDIX A misions To ASME B16.10. Die For Full Vacuum. Stos Free. Ording To API 598 / ASME B16.34. Lage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Have The Valve Tag That The Valves They Supplied 25 Years. Of Valves Should Take 6mm Corrosion eration. The En 10204 Type3.1. Valve Check List Manufacturer Figure Number	API 6D / ASME B16.34 Carbon Steel ASTM A216 WCB(HIC&SSC) Seats And Gate: ASTM A182-F347+Stellite,Stem: S20910 Bolt To ASTM A193 B7M, Nut To ASTM A194 2HM; Hot Dipper ASTM F2329/ASTM A153 300 Lb RF Flange To ASME B16.5 See APPENDIX A Gear Operator Bolted Bonnet, Rising Stem Outside Screw And Yoke Flat Gate Fire Tested To BS EN ISO 10497 And API 6FA(Providing Cells Fire Tested To BS EN ISO	API 6D / ASME B16.34 API 6D / ASME B16.34 Carbon Steel ASTM A216 WCB(HIC&SSC) Seats And Gate: ASTM A182-F347+Stellite, Stem: S20910 Bolt To ASTM A193 B7M, Nut To ASTM A194 2HM; Hot Dipped Galvar ASTM F2329/ASTM A153 300 Lb RF Flange To ASME B16.5 See APPENDIX A Gear Operator Bolted Bonnet, Rising Stem Outside Screw And Yoke Flat Gate Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate) See APPENDIX A Packing Material: Emission Free Material Gasket Material Manufacturer Standard/ The Gasket Material Of Corresponding Class In 240048-728-PIP-15.03-Additional Requirement See Specification All Material Used In Sou Shall Meet The Require NACE MR 0175/ISO15: Valve Check List Manufacturer Figure Number Valve Check List Manufacturer Figure Number Tag Number GA-3065S Specification Number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 222 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Pre		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASMF B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105N(HIC&SSC)					
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	ite,Sten	n: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	1 A194 2	2HM; Hot Dip _l	ped Galvai	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dimensions To ASME B16.10.			Emission Free Material			
Short Pattern Valves	•		Gasket Material			
	able For Full Vacuum.		Manufacturer Standard/More Than			
3. Valves To Be Asb			The Gasket I			
	akage Is Not Acceptable.		Corresponding Class In CMIT-			
- -	e Is Used In Sour Service. Vendor Shall Ha		240048-728-PIP-15.03-3001			
	The Valve Tag That The Valves They Sup	plied	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '			
Are Sulphur Resisting	-		See Specifica			
7. Valve Design Life			All Material Used In Sour Service			
	s of Valves Should Take 6mm Corrosion		Shall Meet The Requirements Of			
Allowance Into Cons	on: EN 10204 Type3.1.		NACE MR 0	1/5/ISO15	156	
e. Material Certificati	оп. Ем 10204 турео.т.					
	Valve Check List					
Approved Manufactu		er	Nominal Size	Range		
			1/2"-1 ½"			
Valve Type Gl	obe		Tag Number			
				GL-3D61S		
Piping Class 3D	06		Specification			
1 0 02			CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 223 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS	SME B3		(ASME B1	6 34)	
Pressure Temperature Rating	300lb ASMF B16 34	ody	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34					
Pady Material	Carbon Steel					
Body Material	ASTM A216 WCB(HIC&SSC)					
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	te,Stem	n: S20910			
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	2HM; Hot Dip	ped Galvaı	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Constituction	Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat					
	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.	L	Emission Fre			
Short Pattern Valves	•		Gasket Mate			
2. Valves To Be Suita			Manufacture			
3. Valves To Be Asbe			The Gasket I			
	kage Is Not Acceptable.		Corresponding Class In CMIT-			
• •	Is Used In Sour Service. Vendor Shall Ha	I	240048-728-PIP-15.03-3001			
	The Valve Tag That The Valves They Sup	plied	1			
Are Sulphur Resisting			See Specific			
7. Valve Design Life is	s 25 Years. s of Valves Should Take 6mm Corrosion		All Material L			
Allowance Into Consid			Shall Meet The Requirements Of			
	n: EN 10204 Type3.1.		NACE MR 0175/ISO15156			
o. Material Octanoalio	п. Ем 10204 турсо.т.					
	Valve Check List					
Approved Manufacture	er Manufacturer Figure Numb	er	Nominal Size	e Range		
			2"-6"			
Value Tree	h.		Tag Number			
Valve Type Glo	De .			GL-3D62S		
Dining Class 2D4			Specification	Number		
Piping Class 3D6)		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 224 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34				
Body Material	Carbon Steel				
body Malerial	ASTM A216 WCB(HIC&SSC)				
Trim Material	Seat And Plug: ASTM A182-F347+Stelli	te,Stem	n: S20910		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM ASTM F2329/ASTM A153	A194 2	2HM; Hot Dip	ped Galvar	nized To
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat				
Thin Construction	Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	e Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	able For Full Vacuum.		Manufacture	r Standard	More Than
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	The
4. Inner Or Outer Lea	kage Is Not Acceptable.		Corresponding Class In CMIT-		
6. This Type Of Valve	e Is Used In Sour Service. Vendor Shall Ha	ve	240048-728-PIP-15.03-3001		
Clear Information On	The Valve Tag That The Valves They Sup	plied	Additional Requirements:		
Are Sulphur Resisting] .		See Specification		
7. Valve Design Life i	s 25 Years.		All Material L	Jsed In Sou	ur Service
	s of Valves Should Take 6mm Corrosion		Shall Meet T	he Require	ments Of
Allowance Into Consi	deration.		NACE MR 0175/ISO15156		
9. Material Certification	on: EN 10204 Type3.1.				
	Valve Check List				
Approved Manufactur	rer Manufacturer Figure Numb	er	Nominal Size	Range	
			8"-16"		
			Tag Number		
Valve Type Glo	bbe		•	GL-3D63S	
			Specification		
Piping Class 3D	6		CMIT-2400		45 02 2004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 225 of 271			

Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Carbon Steel ASTM A105N(HIC&SSC)					
Trim Material	Seat And Disc: ASTM A182-F347+Ste	llite				
Bolting	Bolt To ASTM A193 B7M, Nut To AST ASTM F2329/ASTM A153	M A194 2	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Lift Piston					
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A			<u> </u>		
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Free Material			
Short Pattern Valves Are Not Acceptable.			Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacturer Standard/More Than			
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-	
5. Inner Or Outer Leal	kage Is Not Acceptable.		240048-728-	PIP-15.03-	3001	
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall H	lave	Additional Re	equirement	s:	
Clear Information On	The Valve Tag That The Valves They Su	pplied	See Specifica	ation		
Are Sulphur Resisting			All Material L	Jsed In Sou	ur Service	
7. Valve Design Life is	s 25 Years.		Shall Meet T	he Require	ments Of	
8. The Wall Thickness	of Valves Should Take 6mm Corrosion		NACE MR 0	175/ISO15	156	
Allowance Into Consid	deration.					
9. Material Certificatio	n: EN 10204 Type3.1.					
	Valve Check List			_		
Approved Manufactur	er Manufacturer Figure Num	ber	Nominal Size	Range		
			1/2"-1 ½"			
Valve Type Che	eck, Lift Piston		Tag Number	CK-3D61S		
Piping Class 3D6)		Specification CMIT-2400			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 226 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size i	n ASME B	36.10			
Pressure		Test Pre	essure Mpa	(ASME B1	6.34)	
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 594 / ASME B16.34	1				
Body Material	Carbon Steel					
body Waterial	ASTM A216 WCB(HIC&SSC)					
Trim Material	Seat And Disc: ASTM A182-F347+S	tellite				
Bolting	Bolt To ASTM A193 B7M, Nut To AS ASTM F2329/ASTM A153	STM A194	2HM; Hot Dip	ped Galvar	nized To	
End Connection	300 Lb To Be Connected With RF F Connection.	anges Acc	cording To AS	ME B16.5.	Wafer Type	
Temperature Limitations	See APPENDIX A					
Valve Operation						
Body Construction	Wafer Type, Dual Plate, Long Patter	n				
Trim Construction	Fire Tested To BS EN ISO 10497 Ar	nd API 6FA	A(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To Dual-Plate Lug Type Check	Valve	Emission Fre	ee Material		
Of API 594 Type A. S	hort Pattern Valves Are Not Acceptabl	Э.	Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	More Than	
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
•	ording To API 598 / ASME B16.34.		Correspondir	ng Class In	CMIT-	
	kage Is Not Acceptable.		240048-728-PIP-15.03-3001 Additional Requirements: See Specification			
• •	Is Used In Sour Service. Vendor Shal					
	The Valve Tag That The Valves They	Supplied				
Are Sulphur Resisting			All Material L	Jsed In Sou	ır Service	
7. Valve Design Life is			Shall Meet T	-		
	s of Valves Should Take 6mm Corrosic	n	NACE MR 0	175/ISO15	156	
Allowance Into Consid						
Material Certificatio	n: EN 10204 Type3.1.					
	Valve Check L					
Approved Manufacture	er Manufacturer Figure Nu	ımber	Nominal Size	e Range		
			2"-20"			
Valvo Type Ma	fer Check Valve		Tag Number			
Valve Type Wa	ICI CIICCK VAIVE			CK-3D62S		
Piping Class 3D6			Specification	Number		
Piping Class 3D6	J		CMIT-2400	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 227 of 271				

Valve Specification						
·	Shall Be Equal To Nominal Pipe Size in AS	SME B36	.10			
Pressure	Te	est Press	ure Mpa	(ASME B1	6.34)	
Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor	
Design Code	ISO 17292 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A182 F55					
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A18	82-F55,S	eat and Sea	al: A182-F5	5+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	A194 2F	IM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal Sea	nts				
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	`	J	,	emperature	
Service	See APPENDIX A				omporataro -	
Notes:	0007#11 ENDIX/N	P	acking Mate	erial·		
1. Face To Face Dimensions To ASME B16.10.			Emission Free Material			
Valves To Be Asbestos Free.			Gasket Material			
 Valves To Be Aspestos Free. Seals To Be Resistant To Explosive Decompression. Hydraulic Test According To API 598 / ASME B16.34. Valves Shall Have Position Indicator Showing Open And Close Positions. 		M T se C	Manufacturer Standard/More Than The Gasket Material Of The Corresponding Class In CMIT- 240048-728-PIP-15.03-3001			
6. Inner Or Outer Lea	kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha	А	Additional Requirements: See Specification			
Clear Information On The Valve Tag That The Valves They Supplied Are Sulphur Resisting. 8. Valve Design Life is 25 Years. 9.Material Certification: EN 10204 Type3.1.			•		ments Of	
Approved Manufactur	Valve Check List er Manufacturer Figure Numb		ominal Size	Range		
			/2"-1 ½"			
Valve Type Bal	I	T	ag Number	D 4 0' 0'		
				BA-3L01		
Piping Class 3L0)	S	pecification CMIT-2400 ²		15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 228 of 271				

Specified valve Size	Shall Be Equal To Nominal Pipe Size in A	SME B3		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASME B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Dady Matarial	Duplex Stainless Steel					
Body Material	ASTM A995 Gr.6A					
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A1	182-F55,	Seat and Sea	al: A182-F	55+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	Л A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal Se	ats				
	Fire Tested To BS EN ISO 10497 And A	API 607(Providing Ce	rtificate)		
Trim Construction	Anti-Static, Anti Blowout Stem					
	Sealing To Meet Requirements For Me	edium A	t Rated Press	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dimensions To ASME B16.10.			Emission Free Material			
2. Valves To Be Asbe	estos Free.		Gasket Material			
3. Seals To Be Resist	tant To Explosive Decompression.		Manufacturer Standard/More Than			
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And Clos	se	Corresponding Class In CMIT-			
Positions.			240048-728-	PIP-15.03-	3001	
6. Inner Or Outer Lea	kage Is Not Acceptable.		Additional Requirements:			
7. This Type Of Valve	e Is Used In Sour Service. Vendor Shall Ha	ave	See Specification			
Clear Information On	The Valve Tag That The Valves They Sup	oplied	All Material L	Jsed In So	ur Service	
Are Sulphur Resisting			Shall Meet The Requirements Of			
8. Valve Design Life is			NACE MR 0175/ISO15156			
9.Material Certification	n: EN 10204 Type3.1.					
	Valve Check List					
Approved Manufactur	er Manufacturer Figure Numb	ber	Nominal Size	Range		
			2"-4"			
Valve Type Bal	1		Tag Number			
vaive Type Dai	П			BA-3L02		
Piping Class 3L0	1		Specification	Number		
Piping Class 3L0	J		CMIT-2400	48-728-PIP	15 03-3001	



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002	
Job's Doc. No.	253001D0	728MP00S02	
Phase	Detailed Design		
Rev.	Α	Page 229 of 271	

Valve Specification	Shall Be Equal To Nominal Pipe Size in	ASME D2	6 10			
·		Test Pres		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB+ S32760 WELDING	G OVERL	AY CLAD (TH	HK≥3 mm)	
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A	A182-F55,	Seat and Sea	al: A182-F5	55+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Full Bore, Split Body, Trunnion Mounte	ed Metal S	Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For I	`	_	•	emperature	
Service	See APPENDIX A					
Notes:	1		Packing Mate	erial:		
Face To Face Dimensions To ASME B16.10.			Emission Free Material			
Valves To Be Double Block And Bleed ones, With Any End			Gasket Mate	rial		
Capable Of Bearing F	ull Differential Pressure.		Manufacturer Standard/More Than			
3. Valves To Be Asbe	stos Free.		The Gasket N	Material Of	The	
4. Seals To Be Resist	ant To Explosive Decompression.		Correspondir	ng Class In	CMIT-	
5. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		240048-728-PIP-15.03-3001			
6. Valves Shall Have I	Position Indicator Showing Open And Cl	lose	Additional Requirements:			
Positions.			See Specifica	ation		
7. Inner Or Outer Leal	kage Is Not Acceptable.		All Material U	Jsed In Sou	ır Service	
8. This Type Of Valve Is Used In Sour Service. Vendor Shall Have			Shall Meet The Requirements Of			
Clear Information On The Valve Tag That The Valves They Supplied			NACE MR 0175/ISO15156			
Are Sulphur Resisting						
9. Valve Design Life is						
10.Material Certification	on: EN 10204 Type3.1.					
	Valve Check Lis				<u> </u>	
Approved Manufactur	er Manufacturer Figure Nun	nber	Nominal Size	Range		
			6"-18"			
Valve Type Ball			Tag Number	BA-3L03		
Piping Class 3L0			Specification CMIT-24004		15.03-3001	



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 230 of 271		

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS	SME B36	.10		
Pressure	T	est Press	ure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			1	<u>'</u>
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A				
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A1	82-F55,S	eat and Sea	al: A182-F5	5+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	1 A194 2H	IM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating Meta	al Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 And A Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Me	`	J	,	emperature
Service	See APPENDIX A				<u>'</u>
 Valves To Be Asbe Seals To Be Resist Hydraulic Test Acc Valves Shall Have Positions. Inner Or Outer Lea This Type Of Valve Clear Information On Are Sulphur Resisting Valve Design Life is Material Certification 	rant To Explosive Decompression. ording To API 598 / ASME B16.34. Position Indicator Showing Open And Clos kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup J. S 25 Years. h: EN 10204 Type3.1. Valve Check List	se C A ave S oplied A S N	acking Materiasket Materiasket Material Model Mo	e Material rial Standard/ Material Of ng Class In PIP-15.03- equirement ation Ised In Sounce Require	The CMIT-3001 s:
Approved Manufactur	er Manufacturer Figure Numb		ominal Size '-4"	Range	
Valve Type Bal	I		ag Number	BA-3L04	
Piping Class 3L0)	S	pecification CMIT-2400		15.03-3001



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002		
Job's Doc. No.	253001D07	728MP00S02		
Phase	Detailed Design			
Rev.	А	Page 231 of 271		

Valve Specification						
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A			/A ON 45 D.4	0.04)	
Pressure		est Press				
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel					
	ASTM A216 WCB+ S32760 WELDING		•			
Trim Material	Ball: ASTM A182-F55+Stellite,Stem: A1					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	1 A194 2F	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Reduced Bore, Split Body, Trunnion Mo					
	Fire Tested To BS EN ISO 10497 And API 607(Providing Certificate)					
Trim Construction Anti-Static, Anti Blowout Stem						
	Sealing To Meet Requirements For Me	edium At	Rated Press	sure And T	emperature	
Service	See APPENDIX A					
Notes:			Packing Mate			
	ensions To ASME B16.10.	E	mission Fre	e Material		
	ble Block And Bleed ones, With Any End	G	Sasket Mate	rial		
	Full Differential Pressure.		/lanufacture			
3. Valves To Be Asbe			he Gasket N			
	tant To Explosive Decompression.		Corresponding Class In CMIT-			
-	ording To API 598 / ASME B16.34.		40048-728-			
	Position Indicator Showing Open And Clos		Additional Requirements:			
Positions. 7. Inner Or Outer Leakage Is Not Acceptable.			See Specification			
			All Material Used In Sour Service			
8. This Type Of Valve Is Used In Sour Service. Vendor Shall Have			Shall Meet The Requirements Of NACE MR 0175/ISO15156			
Clear Information On The Valve Tag That The Valves They Supplied			NACE MR 01	175/ISO151	156	
Are Sulphur Resisting 9. Valve Design Life i						
•	on: EN 10204 Type3.1.					
TO INICIONAL CONTINUALI	on. Liv 10204 Types.1.					
	Valve Check List					
Approved Manufactur		oer N	Nominal Size	Range		
- T- F Mananaotan		· -· • • • • • • • • • • • • • • • • • •		90		
		6	5"-18"			
Value Type D-1	ı	T	ag Number			
Valve Type Bal	I			BA-3L05		
Piping Class 3L0	1	S	Specification	Number		
Piping Class 3L0	J		CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002		
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 232 of 271		

Body 34 Body 34 Body MA182 F55+Stellite, Si B7M, Nut To ASTM A19 ASME B16.5 Device Stem Oke N ISO 10497 And API 6F 10. ME B16.34.	FA(Providing Certificate) Packing Material: Emission Free Materia Gasket Material	By Vendor ymer Coated			
M A182 F55+Stellite, Si B7M, Nut To ASTM A194 ASME B16.5 Device Stem Oke N ISO 10497 And API 6F	FA(Providing Certificate) Packing Material: Emission Free Materia Gasket Material Manufacturer Standard	I			
TM A182 F55+Stellite, Start A194 ASME B16.5 Device Stem Yoke N ISO 10497 And API 6F	FA(Providing Certificate) Packing Material: Emission Free Materia Gasket Material Manufacturer Standard	I			
B7M, Nut To ASTM A19- ASME B16.5 Device Stem Oke N ISO 10497 And API 6F	FA(Providing Certificate) Packing Material: Emission Free Materia Gasket Material Manufacturer Standard	I			
ASME B16.5 Device Stem Oke N ISO 10497 And API 6F	FA(Providing Certificate) Packing Material: Emission Free Material Gasket Material Manufacturer Standard	I			
Device g Stem oke N ISO 10497 And API 6F	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
g Stem oke N ISO 10497 And API 6F 10. ME B16.34.	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
g Stem oke N ISO 10497 And API 6F 10. ME B16.34.	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
oke N ISO 10497 And API 6F 10. ME B16.34.	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
N ISO 10497 And API 6F 10. ME B16.34.	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
10. ME B16.34.	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
10. ME B16.34.	Packing Material: Emission Free Materia Gasket Material Manufacturer Standard				
ME B16.34.	Emission Free Materia Gasket Material Manufacturer Standard				
ME B16.34.	Emission Free Materia Gasket Material Manufacturer Standard				
ME B16.34.	Gasket Material Manufacturer Standard				
	Manufacturer Standard	I/More Than			
		I/More Than			
	The Casket Material O	Manufacturer Standard/More Than			
	The Gasket Material G	f The			
•	Corresponding Class I	n CMIT-			
e. Vendor Shall Have	240048-728-PIP-15.03	-3001			
e Valves They Supplied	Additional Requirements:				
	See Specification				
7. Material Certification: EN 10204 Type3.1.		All Material Used In Sour Service			
	Shall Meet The Requirements Of				
	NACE MR 0175/ISO15156				
Valve Check List					
_	Nominal Size Range				
	1/2"-1 ½"				
	Tag Number				
	04.01.04				
	GA-3L01 Specification Number				
_	Valve Check List cturer Figure Number	cturer Figure Number Nominal Size Range 1/2"-1 ½" Tag Number			



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002	
Job's Doc. No.	253001D07	728MP00S02	
Phase	Detailed Design		
Rev.	А	Page 233 of 271	

Valve Specification						
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in			/A ONAE D4	0.04)	
Pressure	2001- ACME DAG 24	Test Pres	, ,			
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Duplex Stainless Steel					
Body Waterial	ASTM A995 Gr.6A					
Trim Material	Seats And Gate: ASTM A182 F55+St	tellite, Sten	n: ASTM A18	2 F55		
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Body Constituction	Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type					
Tilli Construction	Fire Tested To BS EN ISO 10497 And	d API 6FA	(Providing Ce	rtificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material		
2. Valves To Be Suital	ble For Full Vacuum.		Gasket Material			
3. Valves To Be Asbes	stos Free.		Manufacturer Standard/More Than The Gasket Material Of The			
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.					
5. Inner Or Outer Leak	cage Is Not Acceptable.		Corresponding Class In CMIT-			
6. This Type Of Valve	Is Used In Sour Service. Vendor Shall	Have	240048-728-PIP-15.03-3001			
Clear Information On	The Valve Tag That The Valves They S	Supplied	Additional Requirements:			
Are Sulphur Resisting			See Specifica	ation		
7. Material Certification: EN 10204 Type3.1.8. Valve Design Life is 25 Years.			All Material Used In Sour Service			
			Shall Meet The Requirements Of			
			NACE MR 0175/ISO15156			
	Valve Check Lis	st				
Approved Manufacture	er Manufacturer Figure Nu	mber	Nominal Size	Range		
	-			-		
			2"-8"			
Value Tures	Cata		Tag Number			
Valve Type (Gate			GA-3L02		
Dining Class	21.0		Specification	Number		
Piping Class 3	BL0		CMIT-24004	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-24004	48-728-PIP-15.03-3002		
Job's Doc. No.	253001D07	728MP00S02		
Phase	Detailed Design			
Rev.	А	Page 234 of 271		

Dragoura	To	ASME B36.10 Test Pressure Mpa (ASME B16.34)				
Pressure Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel					
Tring Makerial	ASTM A995 Gr.6A	4- 04	ACTNA A40	0 555		
Trim Material	Seats And Gate: ASTM A182 F55+Stelli					
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	A194 2	2HM; XYLAN	Fluoropoly	mer Coate	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	PI 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A		<u> </u>	,		
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Free Material			
Valves To Be Suitable For Full Vacuum.			Gasket Material			
3. Valves To Be Asbe	stos Free.		Manufacture		/More Thar	
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		The Gasket I			
•	kage Is Not Acceptable.		Corresponding Class In CMIT- 240048-728-PIP-15.03-3001			
	Is Used In Sour Service. Vendor Shall Ha	ve				
Clear Information On The Valve Tag That The Valves They Supplied Are Sulphur Resisting. 7. Material Certification: EN 10204 Type3.1.		I .	Additional Requirements:			
			See Specification			
		+	All Material Used In Sour Service			
8. Valve Design Life is	s 25 Years.		Shall Meet The Requirements Of			
o. varve besign the is to rears.			NACE MR 0175/ISO15156			
Approved Manufactur	Valve Check List er Manufacturer Figure Numb	er	Nominal Size	e Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-3L03		
Piping Class			Specification			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 235 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in AS				
Pressure Temperature Rating	300lb ASMF B16 34	est Press ody	ure Mpa By Vendor	(ASME B16	By Vendor
Design Code	API 600 / ASME B16.34				1
Body Material	Carbon Steel ASTM A216 WCB+ S32760 WELDING	OVERLA	Y CLAD (TH	lK ≥ 3 mm)	
Trim Material	Seats And Gate: ASTM A182 F55+Stelli	te, Stem:	ASTM A18	2 F55	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	I A194 2H	IM; XYLAN	Fluoropolym	ner Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And A	NPI 6FA(P	roviding Ce	rtificate)	
Service	See APPENDIX A				
2. Valves To Be Suita3. Valves To Be Asbe4. Hydraulic Test Acco5. Inner Or Outer Leal6. This Type Of ValveClear Information OnAre Sulphur Resisting	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup . n: EN 10204 Type3.1.	E G M T T C 24 plied A S A S	he Gasket Morrespondir 40048-728- dditional Re ee Specifica Il Material U hall Meet Tl	e Material rial Standard/N Material Of T ng Class In 0 PIP-15.03-3	The CMIT-001: Service nents Of
Approved Manufacture	Valve Check List er Manufacturer Figure Numb		ominal Size 0"-18"	Range	
Valve Type	Gate	T	ag Number		
valve Type	<u> </u>			GA-3L04	
Piping Class	3L0	S	pecification CMIT-24004	Number 48-728-PIP-1	5.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 236 of 271				

<u> </u>	Shall Be Equal To Nominal Pipe Size in AS	est Pres		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	ody	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				
Body Material	Carbon Steel ASTM A216 WCB+ S32760 WELDING	OVERL	AY CLAD (TI	HK≥3 mm)
Trim Material	Seats And Gate: ASTM A182 F55+Stelli	ite, Sten	n: ASTM A18	32 F55	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	1 A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And A	API 6FA((Providing Ce	ertificate)	
Service	See APPENDIX A				
2. Valves To Be Suita 3. Valves To Be Asbe 4. Hydraulic Test Acco 5. Inner Or Outer Leal 6. This Type Of Valve Clear Information On Are Sulphur Resisting 7. Material Certificatio 8. Valve Design Life is	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall Ha The Valve Tag That The Valves They Sup . n: EN 10204 Type3.1. s 25 Years. Valve Check List	ave oplied	Packing Mate Emission Free Gasket Mate Manufacture The Gasket I Corresponding 240048-728- Additional Res See Specifical All Material U Shall Meet T NACE MR 0	ee Material rial r Standard Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou he Require	The CMIT-3001 s:
Approved Manufactur	er Manufacturer Figure Numb		Nominal Size	_	
Valve Type	Gate		Tag Number	GA-3L05	
Piping Class	3L0		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 237 of 271			

Valve Specification	Shall Be Equal To Nominal Pipe Size in	ASME D	36 10		
	Shall be Equal 10 Norminal Fipe Size III	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34		1		L
Body Material	Duplex Stainless Steel ASTM A182 F55				
Trim Material	Seat And Plug: ASTM A182 F55+Stell	lite, Sten	n: ASTM A182	F55	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	ΓM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And	d API 6FA	A(Providing Ce	ertificate)	
Service	See APPENDIX A				
Short Pattern Valves 2. Valves To Be Suita 3. Valves To Be Asbe 4. Inner Or Outer Lea 5. This Type Of Valve Clear Information On Are Sulphur Resisting	able For Full Vacuum. estos Free. kage Is Not Acceptable. e Is Used In Sour Service. Vendor Shall The Valve Tag That The Valves They S g. on: EN 10204 Type3.1. s 25 Years.	upplied	Packing Mate Emission Free Gasket Mate Manufacture The Gasket Corresponding 240048-728- Additional Ree See Specific All Material Control Material Control Shall Meet Tonacce MR Of	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement ation Jsed In Sou	The CMIT-3001 s:
Approved Manufactur	Valve Check Lis er Manufacturer Figure Nui		Nominal Size	e Range	
Valve Type Glo	be		Tag Number	GL-3L01	
Piping Class 3L0)		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 238 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	SME B3		(ASME B1	6 34)	
Pressure Temperature Rating	300lb ASME B16 34	Body	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A					
Trim Material	Seat And Plug: ASTM A182 F55+Stellit	e, Stem:	ASTM A182	F55		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	/I A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Construction	Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And A	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.	I .	Emission Fre			
Short Pattern Valves	Are Not Acceptable.		Gasket Material			
2. Valves To Be Suita	ıble For Full Vacuum.		Manufacture	r Standard	More Than	
3. Valves To Be Asbe	estos Free.		The Gasket N	Material Of	The	
4. Inner Or Outer Lea	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-	
5. This Type Of Valve	e Is Used In Sour Service. Vendor Shall Ha		240048-728-	-		
Clear Information On	The Valve Tag That The Valves They Sup	plied	Additional Re	equirement	s:	
Are Sulphur Resisting	J.		See Specifica	ation		
6. Material Certification	on: EN 10204 Type3.1.		All Material L	Jsed In Sou	ur Service	
7. Valve Design Life is	s 25 Years.		Shall Meet The Requirements Of			
			NACE MR 01	175/ISO15 ⁻	156	
Approved Manufactur	Valve Check List rer Manufacturer Figure Numb	oer	Nominal Size	Range		
			2"-6"			
\/-b T C'	l		Tag Number			
Valve Type Glo	ede		-	GL-3L02		
Dining Olass			Specification	Number		
Piping Class 3L0	J		CMIT-2400		-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 239 of 271				

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ir	a ASME B	36.10			
Pressure		Test Pre		(ASME B1	6.34)	
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 623 / ASME B16.34	1	1			
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A					
Trim Material	Seat And Plug: ASTM A182 F55+Ste	llite, Sten	n: ASTM A182	F55		
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem					
Dody Construction	Outside Screw And Yoke					
Trim Construction	Swivel Type Plug, Renewable Seat					
Thin Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	A(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:	1		Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	e Material		
Short Pattern Valves	Are Not Acceptable.		Gasket Material			
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard/	More Than	
3. Valves To Be Asbe	stos Free.		The Gasket I	Material Of	The	
4. Inner Or Outer Leal	kage Is Not Acceptable.		Correspondir	ng Class In	CMIT-	
5. This Type Of Valve	Is Used In Sour Service. Vendor Shall	Have	240048-728-	PIP-15.03-	3001	
Clear Information On	The Valve Tag That The Valves They S	Supplied	Additional Requirements:			
Are Sulphur Resisting	l .		See Specifica	ation		
6. Material Certificatio	n: EN 10204 Type3.1.		All Material L	Jsed In Sou	ır Service	
7. Valve Design Life is	s 25 Years.		Shall Meet The Requirements Of			
			NACE MR 0175/ISO15156			
Approved Manufactur	Valve Check Li er Manufacturer Figure Nu		Nominal Size	Range		
			8"-16"			
Valve Type Glo	be		Tag Number	GL-3L03		
Piping Class 3L0			Specification CMIT-2400	Number 48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 240 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in A	Test Pres		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34			1	
Body Material	Duplex Stainless Steel ASTM A182 F55				
Trim Material	Seat And Disc: ASTM A182 F55+Stelli				
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 And	API 6FA	Providing Ce	rtificate)	
Service	See APPENDIX A				
Short Pattern Valves A 2. Valves To Be Suital 3. Valves To Be Asbet 4. Hydraulic Test Acco 5. Inner Or Outer Leak 6. This Type Of Valve Clear Information On Are Sulphur Resisting	ble For Full Vacuum. stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. Is Used In Sour Service. Vendor Shall H The Valve Tag That The Valves They Su . n: EN 10204 Type3.1. s 25 Years.	lave pplied	Emission Fre Gasket Mater Manufacturer The Gasket M Correspondir 240048-728-1 Additional Re See Specifica All Material U Shall Meet TI NACE MR 01	rial r Standard, Material Of ng Class In PIP-15.03- equirement ation Ised In Sou	The CMIT-3001 s:
Approved Manufacture	Valve Check List er Manufacturer Figure Num	ber	Nominal Size	Range	
Valve Type Che	eck, Lift Piston		Tag Number	CK-3L01	
Piping Class 3L0			Specification CMIT-24004		45.00.0004



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	А	Page 241 of 271			

Specified valve Size C		iza in ASME R	36 10		
<u> </u>	Shall Be Equal To Nominal Pipe Si	Test Pre		(ASME B1	6.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 594 / ASME B16.34	1		1	1
Body Material	Duplex Stainless Steel ASTM A995 Gr.6A				
Trim Material	Seat And Disc: ASTM A182 F55	+Stellite			
Bolting	Bolt To ASTM A193 B7M, Nut To	o ASTM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb To Be Connected With R Connection.	RF Flanges Acc	cording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Pa	attern			
Trim Construction	Fire Tested To BS EN ISO 1049	7 And API 6FA	A(Providing Co	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
1. Face To Face Dime	nsions To Dual-Plate Lug Type Cl	heck Valve	Emission Fre	ee Material	
Of API 594 Type A. Sh	nort Pattern Valves Are Not Accep	table.	Gasket Mate	rial	
2. Valves To Be Suital	ole For Full Vacuum.		Manufacture	r Standard	More Than
3. Valves To Be Asbes	stos Free.		The Gasket	Material Of	The
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34		Correspondi	ng Class In	CMIT-
5. Inner Or Outer Leak	age Is Not Acceptable.		240048-728-	PIP-15.03-	3001
6. This Type Of Valve	Is Used In Sour Service. Vendor S	Shall Have	Additional Re	equirement	s:
	Γhe Valve Tag That The Valves Τh	ney Supplied	See Specific	ation	
Are Sulphur Resisting.			All Material U	Ised In Soi	ır Service
7. Material Certification			Shall Meet T		
8. Valve Design Life is	s 25 Years.		NACE MR 0	•	
					-
Approved Manufacture	Valve Che er Manufacturer Figur		Nominal Size	e Range	
		1			
Valve Type Waf	er Check Valve		Tag Number	CK-3L02	
			Specification		
			Specification	Niimhar	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 242 of 271		

Valve Specification	Shall Be Equal To Nominal Pipe Size i	a ASME B3	86 10		
·		Test Pre		(ASME B	16.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Ball: ASTM A182-F51+Stellite,Stem	A182-F51	,Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	STM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating Metal	Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 Ar Anti-Static, Anti Blowout Stem Sealing To Meet Requirements Fo			,	emperature
Service	See APPENDIX A				<u> </u>
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe	stos Free.	-	Gasket Mate	rial	
3. Seals To Be Resist	ant To Explosive Decompression.		Manufacture	r Standard	/More Than
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The
5. Valves Shall Have Positions.	Position Indicator Showing Open And	Close	Correspondir 240048-728-	•	
6. Inner Or Outer Leal	kage Is Not Acceptable.		Additional Re	equirement	ts:
	n: EN 10204 Type3.1.		See Specific	ation	
8. Valve Design Life is					
	Valve Check L			_	
Approved Manufactur	er Manufacturer Figure No	ımber	Nominal Size	e Range	
			1/2"-1 ½"		
Valve Type Ball			Tag Number		
			Specification	BA-3N01	
Piping Class 3N0			Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 243 of 271				

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36	.10			
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	182-F51,S	Seat and Sea	al: A182-F	51+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Full Bore, Split Body, Floating Metal S	eats				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For M	•		,	emperature	
Service	See APPENDIX A				<u> </u>	
Notes:		P	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		:mission Fre			
2. Valves To Be Asbe	estos Free.	G	Sasket Mate	rial		
3. Seals To Be Resis	tant To Explosive Decompression.	l N	/lanufacture	r Standard	More Than	
4. Hydraulic Test Acc	cording To API 598 / ASME B16.34.	т	he Gasket I	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And Cle	ose C	Correspondir	ng Class Ir	CMIT-	
Positions.			40048-728-	•		
6. Inner Or Outer Lea	akage Is Not Acceptable.	A	dditional Re	equirement	s:	
7. Material Certification	on: EN 10204 Type3.1.		See Specific			
8. Valve Design Life	is 25 Years.		·			
	Valve Check List	t -				
Approved Manufactu	rer Manufacturer Figure Num	nber N	Iominal Size	e Range		
			"-4"			
Valve Type Ba	II	T	ag Number			
				BA-3N02		
Piping Class 3N	0	S	specification			
			CMIT-2400	48-728-PIP	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 244 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36	5.10		
Pressure		Test Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		1		1
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN	G OVERLA	AY CLAD (TH	HK≥3 mm)
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,	Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Full Bore, Split Body, Trunnion Moun	ted Metal S	eats		
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For	•		•	emperature
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Doub	ole Block And Bleed ones, With Any End	d (Gasket Mate	rial	
	Full Differential Pressure.	1	Manufacture	r Standard	More Than
3. Valves To Be Asbe		I .	Γhe Gasket Ν		
	tant To Explosive Decompression.	I	Correspondir	•	
•	ording To API 598 / ASME B16.34.		240048-728-PIP-15.03-3001		
	Position Indicator Showing Open And C		Additional Requirements:		
Positions.	lee we le Niet A coorteble		See Specifica	ation	
	kage Is Not Acceptable.				
Valve Design Life i	on: EN 10204 Type3.1. s 25 Years.				
	Valve Check Li	st			
Approved Manufactur	rer Manufacturer Figure Nu	mber i	Nominal Size	Range	
			6"-20"		
Valve Type Ba		-	Гад Number	-	
valve lype Dal				BA-3N03	
Piping Class 3N	0		Specification	Number	
i iping Cidoo ON			CMIT-24004	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 245 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36	.10			
Pressure		Test Pressure Mpa (ASME B16.34)				
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	182-F51,S	Seat and Sea	al: A182-F	51+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Lever					
Body Construction	Reduced Bore, Split Body, Floating Me	etal Seats				
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For N	`	· ·	,	emperature	
Service	See APPENDIX A				<u> </u>	
Notes:		F	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	ee Material		
2. Valves To Be Asbe	estos Free.	G	Sasket Mate	rial		
3. Seals To Be Resis	tant To Explosive Decompression.	l N	/lanufacture	r Standard	/More Than	
4. Hydraulic Test Acc	cording To API 598 / ASME B16.34.	Т Т	he Gasket I	Material Of	The	
5. Valves Shall Have	Position Indicator Showing Open And Cl	ose C	Correspondir	ng Class In	CMIT-	
Positions.		2	40048-728-	PIP-15.03-	3001	
6. Inner Or Outer Lea	akage Is Not Acceptable.	A	dditional Re	equirement	s:	
	on: EN 10204 Type3.1.	S	See Specific	ation		
8. Valve Design Life	is 25 Years.					
	Valve Check Lis			_		
Approved Manufactu	rer Manufacturer Figure Nun	nber N	Iominal Size	e Range		
			"-4"			
Valve Type Ba	 II	Т	ag Number			
Taito Typo Da	••			BA-3N04		
Piping Class 3N	0	S	specification			
			CMIT-2400	48-728-PIP-	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 246 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	a ASME B3	6.10		
Pressure		Test Pres	sure Mpa	(ASME B1	16.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34			-	
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN	IG OVERL	AY CLAD (TI	HK ≥ 3 mm)
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,	Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	PHM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Reduced Bore, Split Body, Trunnion	Mounted M	letal Seats		
Trim Construction	Fire Tested To BS EN ISO 10497 An Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For	·		,	emperature
Service	See APPENDIX A				·
Notes:			Packing Mat	erial:	
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
2. Valves To Be Doul	ole Block And Bleed ones, With Any En	d	Gasket Mate	rial	
Capable Of Bearing F	Full Differential Pressure.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe	estos Free.		The Gasket l	Material Of	The
	tant To Explosive Decompression.		Correspondii	ng Class Ir	CMIT-
-	cording To API 598 / ASME B16.34.		240048-728-PIP-15.03-3001		
	Position Indicator Showing Open And C		Additional Requirements:		
Positions.			See Specific	ation	
	akage Is Not Acceptable.				
Material Certification Valve Design Life i	on: EN 10204 Type3.1. is 25 Years.				
	Valve Check Li				
Approved Manufactu	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			6"-20"		
Valve Type Ba	II		Tag Number		
				BA-3N05	
Piping Class 3N	0		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed De	esign			
Rev.	A Page 247 of 271				

Drogouro		Test Pres	Pressure Mpa (ASME B16.34)			
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seats And Gate: ASTM A182 F51+Ste	Ilite, Ster	n: ASTM A18	2 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coate	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Solid Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket I			
	kage Is Not Acceptable.		Correspondir	-		
	on: EN 10204 Type3.1.		240048-728-PIP-15.03-3001			
7. Valve Design Life i	s 25 Years.		Additional Requirements:			
			See Specific	ation		
	Valve Check List					
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	e Range		
			1/2"-1 ½"			
Valve Type	Gate		Tag Number	GA-3N01		
Piping Class	3N0		Specification CMIT-2400		45.00.0004	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 248 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in	ASME B36		(ASME B1	16 34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 600 / ASME B16.34			1	
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seats And Gate: ASTM A182 F51+St	ellite, Stem	n: ASTM A18	32 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	ΓM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	d API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A				
 Valves To Be Suita Valves To Be Asbe Hydraulic Test Acce Inner Or Outer Lea 	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. n: EN 10204 Type3.1. s 25 Years.		Packing Mate Emission Fre Gasket Mate Manufacture The Gasket I Correspondin 240048-728- Additional Re See Specific	ee Material rial r Standard Material Of ng Class Ir PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur	Valve Check Lis er Manufacturer Figure Nur	mber I	Nominal Size 2"-8"	e Range	
Valve Type	Gate	-	Tag Number	GA-3N02	
Piping Class	3N0	:	Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 249 of 271			

Pressure	Shall Be Equal To Nominal Pipe Size in A	Test Pre	ssure Mpa	Pressure Mpa (ASME B16.34)			
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 6D / ASME B16.34						
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A						
Trim Material	Seats And Gate: ASTM A182 F51+Ste	llite, Ster	n: ASTM A18	32 F51			
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated		
End Connection	300 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Handwheel with Lock Device						
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke						
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)			
Service	See APPENDIX A						
Notes:			Packing Mat				
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material			
2. Valves To Be Suita	ıble For Full Vacuum.		Gasket Mate	rial			
3. Valves To Be Asbe			Manufacture				
•	ording To API 598 / ASME B16.34.		The Gasket				
	kage Is Not Acceptable.		Correspondi	-			
	on: EN 10204 Type3.1.		240048-728-				
7. Valve Design Life is	s 25 Years.		Additional Requirements:				
			See Specific	ation			
Approved Manufacture	Valve Check List		Naminal Size	Dongo			
Approved Manufactur	rer Manufacturer Figure Num	iber	Nominal Size	Range			
			2"-8"				
Valve Type	Gate		Tag Number	GA-3N03			
Piping Class	3N0		Specification CMIT-2400		45.00.0004		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 250 of 271			

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size ii	n ASME B3	6.10			
		Test Pres		(ASME B1	6.34)	
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34				l .	
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN	IG OVERLA	AY CLAD (TH	HK≥3 mm)	
Trim Material	Seats And Gate: ASTM A182 F51+S	tellite, Sten	n: ASTM A18	2 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb RF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 Ar	nd API 6FA(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	ble For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket I	Material Of	The	
	kage Is Not Acceptable.		Correspondir	•		
	n: EN 10204 Type3.1.		240048-728-			
7. Valve Design Life is	s 25 Years.		Additional Requirements:			
			See Specific	ation		
	Valve Check L					
Approved Manufactur	er Manufacturer Figure Nu	ımber	Nominal Size	e Range		
			10"-20"			
Valve Type	Gate		Tag Number			
- valvo Typo				GA-3N04		
Piping Class	3N0		Specification	Number		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 251 of 271			

Draceure		Test Press	sure Mpa	(ASME B	16.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34		ı		
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERLA	Y CLAD (TH	HK≥3 mm)
Trim Material	Seats And Gate: ASTM A182 F51+Stel	lite, Stem	: ASTM A18	2 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Suita	able For Full Vacuum.	(Sasket Mate	rial	
3. Valves To Be Asbe		l N	/lanufacturer	r Standard	/More Than
-	ording To API 598 / ASME B16.34.	T	he Gasket N	Material O	The
	kage Is Not Acceptable.		Correspondin	-	
	on: EN 10204 Type3.1.		40048-728-		
7. Valve Design Life i	s 25 Years.	A	Additional Re	equirement	s:
		S	See Specifica	ation	
	Valve Check List				
Approved Manufactur	rer Manufacturer Figure Num	ber N	lominal Size	Range	
			0"-20"		
Valve Type	Gate	T	ag Number		
				GA-3N05	
Piping Class	3N0	8	Specification		
, 5			CMIT-24004	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 252 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in A	Test Press		(ASME B	16.34)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34		1		
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Seat And Plug: ASTM A182 F51+Stellit	te, Stem: /	ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	И A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material	
Short Pattern Valves	•		Sasket Mate	rial	
	able For Full Vacuum.	l N	/lanufacture	r Standard	/More Than
3. Valves To Be Asbe			he Gasket N		
	ikage Is Not Acceptable.		Correspondir	-	
	on: EN 10204 Type3.1.		40048-728-		
6. Valve Design Life i	s 25 Years.		Additional Re		is:
		S	See Specifica	ation	
	Valve Check List				
Approved Manufactu	rer Manufacturer Figure Num	ber N	lominal Size	Range	
			/2"-1 ½"		
Valve Type Glo	bbe	T	ag Number		
				GL-3N01	
Piping Class 3N	0	5	Specification		
. 3			CMIT-24004	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 253 of 271				

Valve Specification							
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A						
Pressure		Test Press	est Pressure Mpa (ASME B16.34)				
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 623 / ASME B16.34			1	'		
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A						
Trim Material	Seat And Plug: ASTM A182 F51+Stelli	te, Stem: A	ASTM A182	F51			
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	IM; XYLAN	Fluoropoly	mer Coated		
End Connection	300 Lb RF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Handwheel with Lock Device						
Body Construction	Bolted Bonnet, Rising Stem						
Body Constituction	Outside Screw And Yoke						
Trim Construction	Swivel Type Plug, Renewable Seat						
Tilli Constituction	Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	rtificate)			
Service	See APPENDIX A						
Notes:		Р	acking Mate	erial:			
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material			
Short Pattern Valves	Are Not Acceptable.	G	asket Mate	rial			
2. Valves To Be Suita	able For Full Vacuum.	M	1anufacturer	Standard	More Than		
3. Valves To Be Asbe		T	he Gasket N	Material Of	The		
	akage Is Not Acceptable.		orrespondin	•			
	on: EN 10204 Type3.1.		40048-728-1				
6. Valve Design Life	s 25 Years.	A	Additional Requirements:				
		S	ee Specifica	ation			
	Valve Check List						
Approved Manufactu	rer Manufacturer Figure Num	ber N	Iominal Size	Range			
		2	"-6"				
Valve Type Glo	bbe	T	ag Number				
valve Type Git	DUG			GL-3N02			
Piping Class 3N	0	S	pecification				
i iping Oldoo ON			CMIT-24004	48-728-PIP-	15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 254 of 271			

Pressure	1	Test Pre	ssure Mpa	(ASME B	16.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 623 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Plug: ASTM A182 F51+Stellit	e, Stem	: ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	Л A194 2	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre		
Short Pattern Valves	·		Gasket Mate	rial	
2. Valves To Be Suita			Manufacture		
3. Valves To Be Asbe			The Gasket		
	kage Is Not Acceptable.		Correspondi	-	
	on: EN 10204 Type3.1.		240048-728-		
6. Valve Design Life i	5 2J 16d15.		Additional Re See Specific	•	S:
	Valve Check List				
Approved Manufactur	rer Manufacturer Figure Num	ber	Nominal Size	e Range	
			8"-16"		
Valve Type Glo	bbe		Tag Number	GL-3N03	
			Cnooificati		
Piping Class 3N	Λ		Specification	number	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 255 of 27				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	ASME B3	3.10		
Pressure		Test Pres	sure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Seat And Disc: ASTM A182 F51+Ste	llite			
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb RF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Lift Piston				
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mat	erial:	
4. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material	
Short Pattern Valves	Are Not Acceptable.		Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	/More Than
Valves To Be Asbe	stos Free.	'	The Gasket l	Material Of	The
•	ording To API 598 / ASME B16.34.		Correspondii	ng Class In	CMIT-
	kage Is Not Acceptable.		240048-728-	PIP-15.03-	3001
	n: EN 10204 Type3.1.	[,	Additional Re	equirement	s:
7. Valve Design Life is	s 25 Years.		See Specific	ation	
	Valve Check Li	st			
Approved Manufactur			Nominal Size	e Range	
, aprovou manalactal	o. Manadadio Figuro Nu			. tarigo	
			1/2"-1 ½"		
Valve Type Che	eck, Lift Piston		Tag Number		
				CK-3N01	
Piping Class 3N0			Specification		
p.ing ciaco			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	A Page 256 of 2				

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir			(ASME B	16 24\
Pressure	300lb ASME B16.34	Test Pre	By By	(ASIME B	By
Temperature Rating		Body	Vendor	Seat	Vendor
Design Code	API 594 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Disc: ASTM A182 F51+Ste	llite			
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194	2HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb To Be Connected With RF Fla	anges Acc	cording To AS	ME B16.5.	Wafer Type
Temperature Limitations	See APPENDIX A				
Valve Operation					
Body Construction	Wafer Type, Dual Plate, Long Patteri	1			
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA	(Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate	erial:	
1. Face To Face Dime	ensions To Dual-Plate Lug Type Check	Valve	Emission Fre	ee Material	
Of API 594 Type A. S	hort Pattern Valves Are Not Acceptable).	Gasket Mate	rial	
2. Valves To Be Suita	ble For Full Vacuum.		Manufacture	r Standard	/More Than
3. Valves To Be Asbe	estos Free.		The Gasket I	Material Of	f The
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		Corresponding	ng Class Ir	n CMIT-
	kage Is Not Acceptable.		240048-728-	PIP-15.03	-3001
6. Material Certification	on: EN 10204 Type3.1.		Additional Re	equiremen	ts:
7. Valve Design Life i	s 25 Years.		See Specific	ation	
	Valve Check Li				
Approved Manufactur	rer Manufacturer Figure Nu	mber	Nominal Size	e Range	
			2"-20"		
Valve Type Wa	afer Check Valve		Tag Number	CK-3N02	
Piping Class 3N	0		Specification		45.00.0004
· •			CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 257 of 271		

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in				
Pressure		Test Pres			
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	ISO 17292 / ASME B16.34		'	'	
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,	Seat and Sea	al: A182-F	51+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	PHM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Full Bore, Split Body, Floating Metal S	Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem	·	-	•	
	Sealing To Meet Requirements For	Medium A	t Rated Pres	sure And T	emperature
Service	See APPENDIX A				
Notes:		I	Packing Mate		
	ensions To ASME B16.10.		Emission Fre		
2. Valves To Be Asbe			Gasket Mate		/b.a. —:
	tant To Explosive Decompression. ording To API 598 / ASME B16.34.		Manufacture		
•	Position Indicator Showing Open And C		The Gasket I		
Positions.	Position indicator showing Open And C		Correspondir 240048-728-	•	
	kage Is Not Acceptable.		Additional Re		
	on: EN 10204 Type3.1.		See Specific	-	5.
8. Valve Design Life i		-	See Specific	alion	
	Valve Check Lis				
Approved Manufactur	er Manufacturer Figure Nu	mber	Nominal Size	e Range	
			1/2"-1 ½"		
Valve Type Bal	I		Tag Number		
Tairo i jeo Dai	•			BA-3P01	
Piping Class 3P0	0	T	Specification		45.00.0004
. 5			CMIT-2400	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 258 of 271		

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36	.10				
Pressure		Test Press		(ASME B1	6.34)		
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 6D / ASME B16.34	API 6D / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A						
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	182-F51,S	eat and Sea	al: A182-F	51+Stellite		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2H	IM; XYLAN	Fluoropoly	mer Coated		
End Connection	300 Lb FF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation	Lever						
Body Construction	Full Bore, Split Body, Floating Metal S	eats					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For Managements	•		,	emperature		
Service	See APPENDIX A				<u> </u>		
Notes:		P	acking Mate	erial:			
1. Face To Face Dim	ensions To ASME B16.10.		mission Fre				
2. Valves To Be Asbe	estos Free.	G	Sasket Mate	rial			
3. Seals To Be Resis	tant To Explosive Decompression.	N	1anufacture	r Standard	/More Than		
4. Hydraulic Test Acc	cording To API 598 / ASME B16.34.	т	he Gasket I	Material Of	The		
5. Valves Shall Have	Position Indicator Showing Open And Cl	ose C	orrespondir	ng Class Ir	CMIT-		
Positions.		2	40048-728-	PIP-15.03-	3001		
6. Inner Or Outer Lea	akage Is Not Acceptable.	Α	dditional Re	equirement	s:		
7. Material Certification	on: EN 10204 Type3.1.	S	See Specification				
8. Valve Design Life	is 25 Years.						
	Valve Check Lis			_			
Approved Manufactu	rer Manufacturer Figure Num	nber N	Iominal Size	e Range			
			"-4"				
Valve Type Ba	 II	T	ag Number				
				BA-3P02			
Piping Class 3P	0	S	pecification				
ig 2e2	-		CMIT-2400	48-728-PIP	15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 259 of 27			

Pressure		Test Pres	sure Mpa	(ASME B1	16.34)	
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING		•		•	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A					
Bolting	Bolt To ASTM A193 B7M, Nut To AST	ΓM A194 2	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Full Bore, Split Body, Trunnion Mounte					
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For I	·	-	,	emperature	
Service	See APPENDIX A					
Notes:			Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Doul	ble Block And Bleed ones, With Any End		Gasket Mate	rial		
Capable Of Bearing F	Full Differential Pressure.		Manufacture	r Standard	/More Than	
3. Valves To Be Asbe			The Gasket I	Material Of	The	
	tant To Explosive Decompression.		Correspondir	-		
-	cording To API 598 / ASME B16.34.	_	240048-728-PIP-15.03-3001			
	Position Indicator Showing Open And Cl		Additional Requirements:			
Positions.	In the Indiana American		See Specific	ation		
	akage Is Not Acceptable.					
Valve Design Life i	on: EN 10204 Type3.1. s 25 Years.					
	Valve Check Lis	st				
Approved Manufactu	rer Manufacturer Figure Nun	nber	Nominal Size	e Range		
			6"-18"			
Valve Type Ba	II		Tag Number			
				BA-3P03		
Piping Class 3P	0		Specification			
. •			CMIT-2400	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 260 of 27			

Valve Specification					
Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36	5.10		
Pressure		Test Press	sure Mpa	(ASME B1	6.34)
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor
Design Code	API 6D / ASME B16.34				1
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Ball: ASTM A182-F51+Stellite,Stem:	A182-F51,S	Seat and Sea	al: A182-F5	1+Stellite
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2H	HM; XYLAN	Fluoropolyr	mer Coated
End Connection	300 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Lever				
Body Construction	Reduced Bore, Split Body, Floating M	letal Seats			
	Fire Tested To BS EN ISO 10497 And	d API 607(F	Providing Ce	rtificate)	
Trim Construction	Anti-Static, Anti Blowout Stem				
	Sealing To Meet Requirements For	Medium At	Rated Press	sure And Te	emperature
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dime	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Asbe	stos Free.		Sasket Mate	rial	
	ant To Explosive Decompression.	N	/lanufacture	r Standard/l	More Than
4. Hydraulic Test Acco	ording To API 598 / ASME B16.34.	T	he Gasket N	Material Of	The
	Position Indicator Showing Open And C	Close	Correspondir	ng Class In	CMIT-
Positions.		2	240048-728-	PIP-15.03-3	3001
	cage Is Not Acceptable.	A	Additional Re	equirements	s:
7. Material Certification		5	See Specification		
8. Valve Design Life is	s 25 Years.				
	Valve Check Lis	st			
Approved Manufacture	er Manufacturer Figure Nu	mber N	Nominal Size	Range	
		2	2"-4"		
Valve Type Ball		T	ag Number		
vaive rype Dali				BA-3P04	
Piping Class 3P0	1	S	Specification		
THING CIGOD OF O			CMIT-24004	48-728-PIP-	15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 261 of 2			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A	ASME B36 Test Press		(ASME B1	6 24)	
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34		1			
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	G OVERLA	Y CLAD (TH	HK≥3 mm)	
Trim Material	Ball: ASTM A182-F51+Stellite,Stem: A	A182-F51,S	Seat and Sea	al: A182-F	51+Stellite	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	TM A194 2H	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Reduced Bore, Split Body, Trunnion M	Nounted Me	tal Seats			
Trim Construction	Fire Tested To BS EN ISO 10497 And Anti-Static, Anti Blowout Stem Sealing To Meet Requirements For N	•	-	,	emperature	
Service	See APPENDIX A					
Notes:		P	acking Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	mission Fre	e Material		
2. Valves To Be Doul	ole Block And Bleed ones, With Any End	G	Sasket Mate	rial		
	Full Differential Pressure.	N	/lanufacturer	Standard	/More Than	
3. Valves To Be Asbe		Т	he Gasket N	Material Of	The	
	tant To Explosive Decompression.		Corresponding Class In CMIT-			
•	ording To API 598 / ASME B16.34.		40048-728-1			
	Position Indicator Showing Open And Cl	lose A	Additional Requirements:			
Positions.		S	See Specifica	ation		
	kage Is Not Acceptable.					
	on: EN 10204 Type3.1.					
9. Valve Design Life i	s 25 fears.					
	Valve Check Lis	:t				
Approved Manufactur	_		Iominal Size	Range		
		6	"-18"			
Valva Typa Da	II	Т	ag Number			
Valve Type Ba	II			BA-3P05		
Piping Class 3P	n	S	Specification	Number		
riping Class 3P	U		CMIT-24004	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 262 of 2			

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in			/ACME D1	16.24)
Pressure Temperature Rating	300lb ASME B16.34	Test Press Body	By Vendor	(ASME B1	By Vendor
Design Code	API 602 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A182 F51				
Trim Material	Seats And Gate: ASTM A182 F51+St	ellite, Stem	: ASTM A18	2 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	TM A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem				
Body Constituction	Outside Screw And Yoke				
Trim Construction	Solid Wedge Type				
Tilli Constituction	Fire Tested To BS EN ISO 10497 And	d API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate		
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material	
2. Valves To Be Suita	able For Full Vacuum.		Sasket Mate	rial	
3. Valves To Be Asbe		l N	/lanufacturer	r Standard	/More Than
	cording To API 598 / ASME B16.34.	⊺	The Gasket N	Material Of	The
	akage Is Not Acceptable.		Correspondir	-	
	on: EN 10204 Type3.1.		240048-728-		
7. Valve Design Life	is 25 Years.		Additional Re	-	is:
		5	See Specifica	ation	
	Valve Check Lis				
Approved Manufactu	rer Manufacturer Figure Nur	mber N	Nominal Size	Range	
		1	/2"-1 ½"		
Valve Type	Gate	1	Tag Number	GA-3P01	
Piping Class	3P0	5	Specification	Number	
p.i.ig Oldoo	<u> </u>		CMIT-24004	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 263 of 271		

Valve Specification Specified Valve Size S	Shall Be Equal To Nominal Pipe Size in	ASME B36		/ACME DA	(6.24)
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	(ASME B1	By Vendor
Design Code	API 600 / ASME B16.34				
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seats And Gate: ASTM A182 F51+St	ellite, Stem	: ASTM A18	2 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AST	ΓM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	d API 6FA(Providing Ce	ertificate)	
Service	See APPENDIX A				
 Valves To Be Suita Valves To Be Asbe Hydraulic Test Acce Inner Or Outer Leaf 	stos Free. ording To API 598 / ASME B16.34. kage Is Not Acceptable. n: EN 10204 Type3.1. s 25 Years.	I	Packing Mate Emission Fre Gasket Mate Manufacture The Gasket I Correspondir 240048-728- Additional Re See Specific	ee Material rial r Standard, Material Of ng Class In PIP-15.03- equirement	/More Than The CMIT- 3001
Approved Manufactur	Valve Check Lis er Manufacturer Figure Nur	mber I	Nominal Size 2"-8"	e Range	
Valve Type	Gate	-	Гад Number	GA-3P02	
Piping Class	3P0	:	Specification CMIT-2400	Number 48-728-PIP-	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 264 of 27			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	n ASME B3				
Pressure		Test Pres	ssure Mpa	(ASME B1	6.34)	
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 6D / ASME B16.34	•		•		
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A					
Trim Material	Seats And Gate: ASTM A182 F51+S	tellite, Ster	n: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 An	ıd API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dim	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe	estos Free.		Manufacture	r Standard	More Than	
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.		The Gasket	Material Of	The	
5. Inner Or Outer Lea	ikage Is Not Acceptable.		Correspondi	ng Class In	CMIT-	
	on: EN 10204 Type3.1.		240048-728-	PIP-15.03-	3001	
7. Valve Design Life i	s 25 Years.		Additional Requirements:			
			See Specific	ation		
	Valve Check L					
Approved Manufactur	rer Manufacturer Figure Nu	ımber	Nominal Size	e Range		
			2"-8"			
Valve Type	Gate		Tag Number	GA-3P03		
			Specification			
Piping Class	3P0		•	48-728-PIP-	15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	А	Page 265 of 271		

Dragouro		Test Pressure Mpa (ASME B16.34				
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 600 / ASME B16.34					
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDING	OVERL	AY CLAD (TI	HK≥3 mm)	
Trim Material	Seats And Gate: ASTM A182 F51+Ste	ellite, Ster	m: ASTM A18	32 F51		
Bolting	Bolt To ASTM A193 B7M, Nut To AST	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Gear Operator					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Flexible Wedge Type Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:			Packing Mat	erial:		
1. Face To Face Dime	ensions To ASME B16.10.		Emission Fre	ee Material		
2. Valves To Be Suita	able For Full Vacuum.		Gasket Mate	rial		
3. Valves To Be Asbe			Manufacture	r Standard	/More Than	
•	ording To API 598 / ASME B16.34.		The Gasket			
	kage Is Not Acceptable.		Correspondi	-		
	on: EN 10204 Type3.1.		240048-728-			
7. Valve Design Life i	s 25 Years.		Additional Re	-	is:	
			See Specific	ation		
	Valve Check Lis					
Approved Manufactur	er Manufacturer Figure Num	nber	Nominal Size	e Range		
			10"-18"			
Valve Type	Gate		Tag Number			
			Specification	GA-3P04		
Piping Class	3P0		•	1 Number 48-728-PIP		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 266 of 271			

Valve Specification					
Specified Valve Size	Shall Be Equal To Nominal Pipe Size in			(1.01.1==	
Pressure Temperature Rating	300lb ASME B16.34	Test Pres	By Vendor	(ASME B1	By Vendor
Design Code	API 6D / ASME B16.34		vendoi		Vendoi
Body Material	Carbon Steel ASTM A216 WCB+ S31803 WELDIN	G OVERLA	Y CLAD (TI	HK ≥ 3 mm)
Trim Material	Seats And Gate: ASTM A182 F51+St	ellite, Stem	: ASTM A18	32 F51	
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Gear Operator				
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke				
Trim Construction	Flat Gate Fire Tested To BS EN ISO 10497 And	d API 6FA(I	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:		F	Packing Mate	erial:	
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	ee Material	
2. Valves To Be Suita	able For Full Vacuum.	(Gasket Mate	rial	
3. Valves To Be Asbe	estos Free.	1	Manufacture	r Standard	/More Than
4. Hydraulic Test Acc	ording To API 598 / ASME B16.34.	7	Γhe Gasket I	Material Of	The
	kage Is Not Acceptable. on: EN 10204 Type3.1.		Correspondir 240048-728-	-	
7. Valve Design Life i			Additional Re		
Ŭ			See Specific	•	
	Valve Check Lis	st			
Approved Manufactur	rer Manufacturer Figure Nui	mber 1	Nominal Size	e Range	
		,	10"-18"		
Valve Type	Gate		Гад Number	GA-3P05	
Piping Class	3P0		Specification CMIT-2400		-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 267 of 271			

<u> </u>	Shall Be Equal To Nominal Pipe Size in A	Test Pressure Mpa (ASME B16.34)				
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor	
Design Code	API 602 / ASME B16.34		I			
Body Material	Duplex Stainless Steel ASTM A182 F51					
Trim Material	Seat And Plug: ASTM A182 F51+Stellit	e, Stem: /	ASTM A182	F51		
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	Л А194 2H	HM; XYLAN	Fluoropoly	mer Coated	
End Connection	300 Lb FF Flange To ASME B16.5					
Temperature Limitations	See APPENDIX A					
Valve Operation	Handwheel with Lock Device					
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke					
Trim Construction	Swivel Type Plug Fire Tested To BS EN ISO 10497 And A	API 6FA(F	Providing Ce	ertificate)		
Service	See APPENDIX A					
Notes:		F	Packing Mate	erial:		
1. Face To Face Dim	ensions To ASME B16.10.	E	Emission Fre	e Material		
Short Pattern Valves	•		Sasket Mate	rial		
	able For Full Vacuum.	l N	/lanufacture	r Standard	/More Than	
3. Valves To Be Asbe			he Gasket N			
	ikage Is Not Acceptable.		Correspondir	•		
	on: EN 10204 Type3.1.		40048-728-			
6. Valve Design Life i	s 25 Years.	P	Additional Re	equirement	ts:	
		S	See Specifica	ation		
	Valve Check List					
Approved Manufactu	rer Manufacturer Figure Numl	ber N	lominal Size	Range		
			/2"-1 ½"			
Valve Type Glo	bbe	T	ag Number			
				GL-3P01		
Piping Class 3P	0	5	Specification			
. 3			CMIT-2400	48-728-PIP	-15.03-3001	



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	Α	Page 268 of 271			

Valve Specification Specified Valve Size	Shall Be Equal To Nominal Pipe Size in A				
Pressure Temperature Rating	300lb ASMF B16 34	Test Press Body	By Vendor	(ASME B	By Vendor
Design Code	API 623 / ASME B16.34		1 31143		1 511451
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A				
Trim Material	Seat And Plug: ASTM A182 F51+Stellit	te, Stem: /	ASTM A182	F51	
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	M A194 2H	HM; XYLAN	Fluoropoly	mer Coated
End Connection	300 Lb FF Flange To ASME B16.5				
Temperature Limitations	See APPENDIX A				
Valve Operation	Handwheel with Lock Device				
Body Construction	Bolted Bonnet, Rising Stem				
body Constituction	Outside Screw And Yoke				
Trim Construction	Swivel Type Plug, Renewable Seat	Swivel Type Plug, Renewable Seat			
	Fire Tested To BS EN ISO 10497 And	API 6FA(F	Providing Ce	ertificate)	
Service	See APPENDIX A				
Notes:			Packing Mate		
	ensions To ASME B16.10.		mission Fre		
Short Pattern Valves	•		Sasket Mate		
	able For Full Vacuum.				/More Than
3. Valves To Be Asb			he Gasket I		
	akage Is Not Acceptable.		Correspondir	-	
	on: EN 10204 Type3.1.		40048-728-		
6. Valve Design Life	is 20 fears.		Additional Re	-	is:
			See Specific	ation	
	Valve Check List				
Approved Manufactu	rer Manufacturer Figure Num	ber N	Nominal Size	e Range	
			2"-6"		
Valve Type Gl	obe	T	ag Number		
varvo rypo Oli				GL-3P02	
Piping Class 3P	0	S	Specification		
			CMIT-2400	48-728-PIP	-15.03-3001



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	A Page 269 of 271			

Draggura		Test Pres	ssure Mpa	Test Pressure Mpa (ASME B16.34)				
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor			
Design Code	API 623 / ASME B16.34			l	<u> </u>			
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A							
Trim Material	Seat And Plug: ASTM A182 F51+Stellit	te, Stem	ASTM A182	: F51				
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM	M A194 2	2HM; XYLAN	Fluoropoly	mer Coated			
End Connection	300 Lb FF Flange To ASME B16.5							
Temperature Limitations	See APPENDIX A							
Valve Operation	Gear Operator							
Body Construction	Bolted Bonnet, Rising Stem Outside Screw And Yoke							
Trim Construction	Swivel Type Plug, Renewable Seat Fire Tested To BS EN ISO 10497 And	API 6FA	(Providing Ce	ertificate)				
Service	See APPENDIX A							
Notes:			Packing Mat					
1. Face To Face Dim	ensions To ASME B16.10.	L	Emission Fre					
Short Pattern Valves	•		Gasket Mate	rial				
	able For Full Vacuum.		Manufacture					
3. Valves To Be Asb			The Gasket					
	akage Is Not Acceptable.		Correspondi	•				
	on: EN 10204 Type3.1.		240048-728-					
6. Valve Design Life	IS 20 1 Gals.		Additional Re See Specific	-	is:			
	Valve Check List							
Approved Manufactu	rer Manufacturer Figure Num	ber	Nominal Size	e Range				
			8"-16"					
Valve Type Gl	obe		Tag Number					
				GL-3P03				
Piping Class 3P	0		Specification					
, 5			CMIT-2400	48-728-PIP	-15.03-3001			



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002			
Job's Doc. No.	253001D0728MP00S02			
Phase	Detailed Design			
Rev.	Α	Page 270 of 271		

Valve Specification							
Specified Valve Size	Shall Be Equal To Nominal Pipe Size ir	n ASME B36	6.10				
Pressure		Test Pres	sure Mpa	(ASME B1	6.34)		
Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 602 / ASME B16.34	API 602 / ASME B16.34					
Body Material	Duplex Stainless Steel ASTM A182 F51						
Trim Material	Seat And Disc: ASTM A182 F51+Ste	ellite					
Bolting	Bolt To ASTM A193 B7M, Nut To AS	TM A194 2	HM; XYLAN	Fluoropoly	mer Coated		
End Connection	300 Lb FF Flange To ASME B16.5						
Temperature Limitations	See APPENDIX A						
Valve Operation							
Body Construction	Lift Piston						
Trim Construction	Fire Tested To BS EN ISO 10497 An	d API 6FA(Providing Ce	ertificate)			
Service	See APPENDIX A						
Notes:		ı	Packing Mat	erial:			
6. Face To Face Dir	mensions To ASME B16.10.	E	Emission Fre	ee Material			
Short Pattern Valves	Are Not Acceptable.	(Gasket Mate	rial			
2. Valves To Be Suita		1	Manufacture	r Standard	More Than		
3. Valves To Be Asbe		-	The Gasket l	Material Of	The		
	ording To API 598 / ASME B16.34.	(Correspondii	ng Class In	CMIT-		
	kage Is Not Acceptable.	2	240048-728-	PIP-15.03-	3001		
6. Material Certification 7. Valve Design Life i	on: EN 10204 Type3.1. s 25 Years.		Additional Re See Specific	•	s:		
	Valve Check L	ist					
Approved Manufactur			Nominal Size	e Range			
			1/2"-1 ½"				
Valve Type Ch	eck, Lift Piston		Tag Number	CK-3P01			
Piping Class 3P0	0		Specification CMIT-2400	Number 48-728-PIP-	15.03-3001		



Owner Doc.No.	CMIT-240048-728-PIP-15.03-3002				
Job's Doc. No.	253001D0728MP00S02				
Phase	Detailed Design				
Rev.	Α	Page 271 of 271			

·	Shall Be Equal To Nominal Pipe Size in A	Test Pres					
Pressure Temperature Rating	300lb ASME B16.34	Body	By Vendor	Seat	By Vendor		
Design Code	API 594 / ASME B16.34						
Body Material	Duplex Stainless Steel ASTM A890 Gr.4A						
Trim Material	Seat And Disc: ASTM A182 F51+Stellite						
Bolting	Bolt To ASTM A193 B7M, Nut To ASTM A194 2HM; XYLAN Fluoropolymer Coated						
End Connection	300 Lb To Be Connected With FF Flanges According To ASME B16.5. Wafer Type Connection.						
Temperature Limitations	See APPENDIX A						
Valve Operation							
Body Construction	Wafer Type, Dual Plate, Long Pattern						
Trim Construction	Fire Tested To BS EN ISO 10497 And API 6FA(Providing Certificate)						
Service	See APPENDIX A						
Notes:			Packing Material:				
1. Face To Face Dimensions To Dual-Plate Lug Type Check Valve			Emission Free Material				
Of API 594 Type A. Short Pattern Valves Are Not Acceptable.			Gasket Material				
2. Valves To Be Suitable For Full Vacuum.			Manufacturer Standard/More Thar				
3. Valves To Be Asbestos Free.			The Gasket Material Of The				
4. Hydraulic Test According To API 598 / ASME B16.34.			Corresponding Class In CMIT-				
5. Inner Or Outer Leakage Is Not Acceptable.			240048-728-PIP-15.03-3001				
6. Material Certification: EN 10204 Type3.1.			Additional Requirements:				
7. Valve Design Life is	s 25 Years.		See Specifica	ation			
	Valve Check List						
Approved Manufacturer Manufacturer Figure Number		ber	Nominal Size Range				
			2"-18"				
Valve Type Wafer Check Valve			Tag Number CK-3P02				
Piping Class 3P0			Specification Number CMIT-240048-728-PIP-15.03-3001				