


 中海油石化工程有限公司 CNOOC Petrochemical Engineering Co., Ltd.	SPECIFICATION FOR PROTECTION OF GOODS DURING SHIPMENT	Owner Doc.No.	CMIT-240048-728-EQP-15.03-0007	
		Job's Doc. No.	253001D0728EQ00S07	
		Phase	Detailed Design	
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Company:		 CMIT CNOOC IRAQ LIMITED <small>CNOOC.MOC.IDC.1790</small>		
Project:		FQN NEW DEGASSING STATION UPGRADING PROJECT		
Unit:		FQN DEGASSING STATION		
Contract No.:		CMIT-PRT-10.53-240048		

Discipline:EQP

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 CNOOC Missan Oilfield		
Approval Code	<input checked="" type="checkbox"/> OK	Remarks
Code A	<input checked="" type="checkbox"/>	Approved
Code B	<input type="checkbox"/>	With Minor Comments: Revise and Resubmit. Works may proceed
Code C	<input type="checkbox"/>	With Major Comments: Revise and Resubmit. Works may NOT proceed
Code D	<input type="checkbox"/>	Reference and Information only
Mohd Alzain		19 Sep 2025
Approval Authority	Signature	Date
<small>Any comments made do not relieve the Contractor/ Vendor and/or their subcontractors of their responsibilities to meet the requirements of the Contract.</small>		

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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 establishing and upgrading of the FQN New Degassing Station Upgrade.

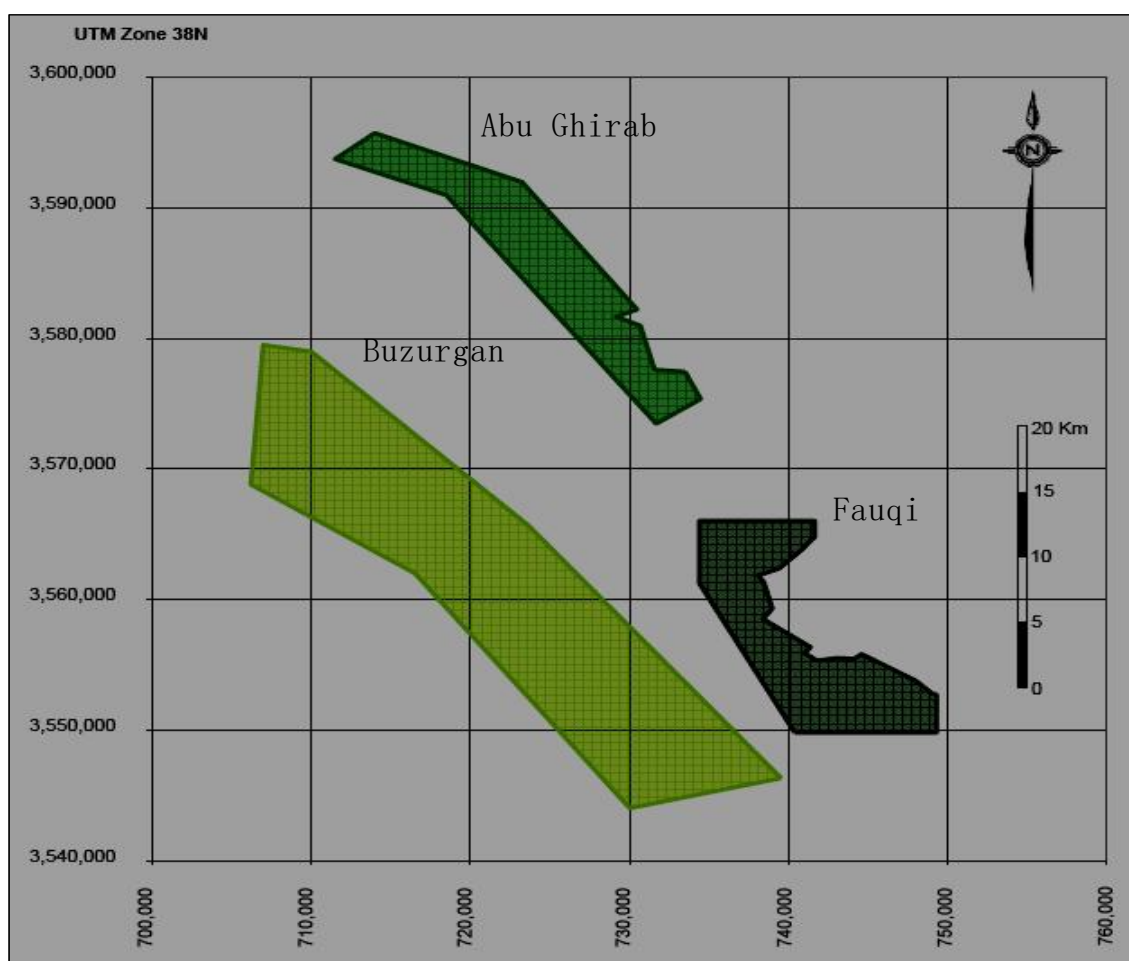



Figure 1.1-1 The overall MISSAN Oil Field

General Field Layout is shown in Figure 1.1-2:

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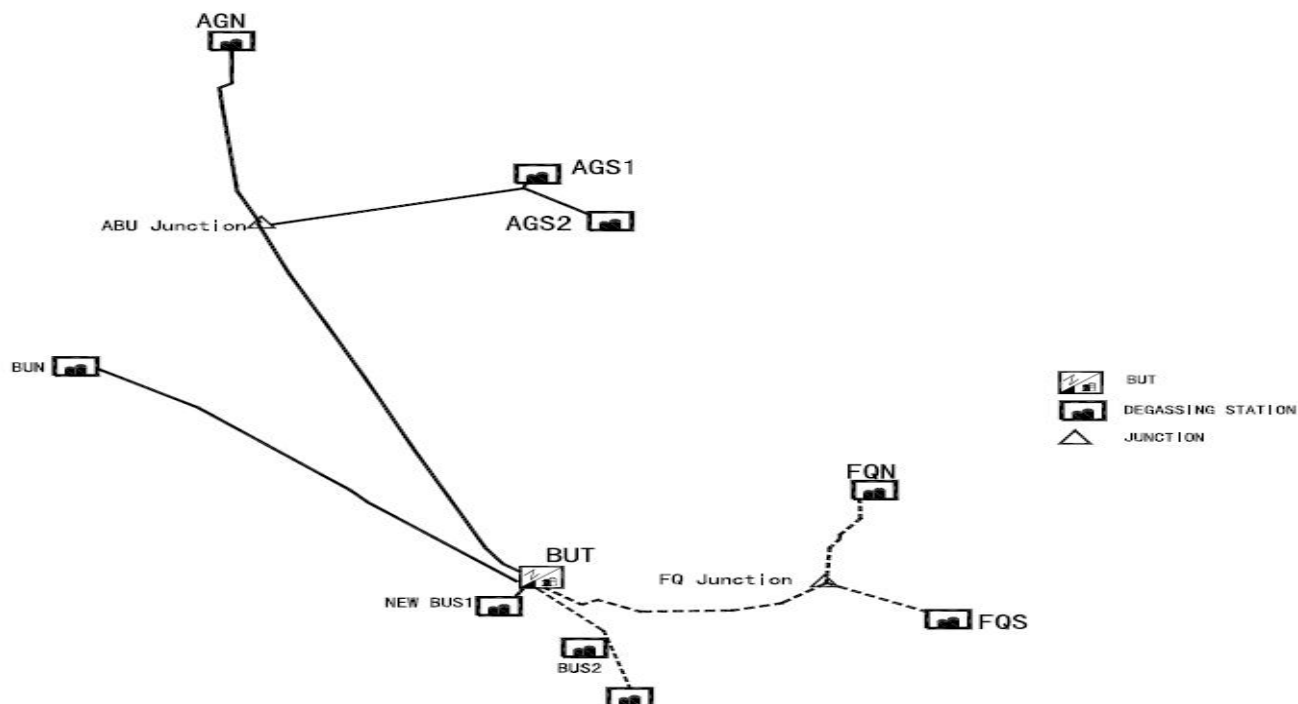


Figure 1.1-2 General Field Layout

1.1. Degassing Station (DS):

The FQN degassing station(DS) 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 conduct data collection of 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 Kbb/d plus 20% (each)) will be constructed in FQN degassing station, with Utilities and Auxiliary Supporting Systems.

1.2. Abbreviation and Acronyms

The following definitions shall apply to this document:

COMPANY: CNOOC IRAQ LIMITED

PMC:Dorsch Gruppe Holding


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

VENDOR/SUBCONTRACTOR: The party to the contract and/or purchase order which has undertaken the obligation to supply the goods and/or services which are ordered and specified herein.

DGS or DS: Degassing Station

SHALL:Mandatory in relation to the requirement of this document

SHOULD:Strong recommendation to comply with the requirement of this document

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1.3. Purpose

This document outlines the minimum requirements and procedures for protecting equipment and materials during export shipment for the FQN New Degassing Station Upgrading Project.

It is intended to serve as a minimum requirement guide and will depend on use of Vendor's judgment to determine if physical characteristics of items being packed will require more than these minimum standards to ensure safe arrival at their destination. When portions of these instructions are not applicable, the best commercial export packing methods to attain comparable protection shall be used. In all cases, materials will be prepared for shipment to withstand multiple handling, outside storage, exposure to rain, dust and salt spray.

If the Vendor's standard export packing will provide equal or better protection at a lesser cost, this information should be brought to the attention of the COMPANY. If an area of doubt arises, the COMPANY shall be contacted.

This document should be read in conjunction with the technical requirements specified in the Equipment Data Sheets and related PROJECT specifications, codes and standards.

1.4. Scope

This document is applicable to Fixed equipment, Rotating equipment, Electrical components, Piping materials, Telecommunication, Structural steel, instruments, valves, etc. And materials during export shipment for the FQN new degassing station upgrading project.

1.5. Abbreviations

ACRONYM	MEANING
API	American Petroleum Institute

1.6. Order of Precedence for Documents

In case of conflict for any requirements, the order of precedence shall be as follow:

(1) Iraqi Laws and Regulations

(2) Latest International Codes and Standards

(3) Purchase Order

(4) Project referenced Specifications in Material Requisition, Data sheets and P&ID


In the event of any conflict of data or requirement in any of the above documents, it is the Vendor's responsibility to resolve these conflicts and obtain written approval from CONTRACTOR and COMPANY before proceeding with design, manufacture or purchase. In any case the most stringent requirement shall prevail.

1.7. 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.

1.8. Language and Units of Measurements

The governing language of the contract shall be English Language. All notices, correspondences, information, literature, data, manuals and other documents required under this contract shall be in the English Language.

Technical units, quantities, etc. shall be expressed, used and abbreviated according to the SI system. Preferred units of measure are as for:

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Unit	USC	SI
Temperature	-	°C
Pressure-Absolute	psia	MPaa, kPaa
Pressure-Gauge	psig	MPag, kPag
Length	-	m, km, mm
Time	-	s, min, h
Mass Flow	-	kg/h
Volume, Liquid	bbl	m ³
Volume, Gas	-	Sm ³ /N, m ³
Density	°API	kg/m ³ , g/cm ³
Flow, Liquid	BPD	m ³ /h, m ³ /s
Flow, Gas	MMSCFD	m ³ /h, m ³ /s
Heat	-	J
Power	-	kW, MW, kVA
Current	-	A
Voltage	-	V
Thermal Conductivity	-	W/(m.k)
Heat Transfer Coefficient	-	W/(m ² .k)
Viscosity-Dynamic	cP	mPa.s, Pa.s
Velocity	-	m/s
Diameter	Inch	mm
Concentration	-	ppm
Mass	-	kg
Amount of substance	-	mol
Area	-	m ²

2. AIR FREIGHT

The packing standards, as outlined in these instructions, are for ocean freight shipments only and do not apply to air freight shipment. Vendors' standard domestic packing shall be provided for air shipment. Vendor shall obtain COMPANY approval of its standard domestic packing.

3. EXPORT PACKING STANDARDS

It is important that all materials arrive at a destination in an undamaged condition. This Specification serves as a minimum requirement for "Commercial Packaging for Export", but compliance does not relieve Vendor of responsibility for adequately packing materials,

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supplies and equipment. Packing and conservation of goods shall be sufficient to protect them from damage during transit from point of manufacturer and storage at job site under conditions which may involve multiple handling, extended storage, exposure to moisture and the possibility of pilferage.

3.1. Packaging Materials

3.1.1 Felt, cellophane paper, polyester cuttings, crepe cellulose and some equally efficient materials may be used for padding or cushioning.

3.1.2 Lumber shall be new, sound and well-seasoned, knots are permitted provided they are sound and tight and do not exceed one-third of the board width. The knots shall be located as not to cause railing interference which would result in structural weakness. The lumber shall be certified completely free from bark, insect infestation and decay.

3.2. Packing Methods and Prohibited Materials

3.2.1. When consolidating materials in a box or crate, items shall be packed or nested to reduce volume as much as possible. All items shall be braced and/or cushioned as necessary within the container to prevent damage from shock, vibration and rough handling. Finished and painted surfaces will be protected from abrasion.

3.2.2. Small items and spare parts danger to main item shall be separately packaged with box properly identified as to its main item.

3.2.3. It is necessary that all shipping containers be tightly packed. They will be filled with cushioning material or securely blocked off to prevent any movement of contents where void appear. Wooden wool may be freely used for packing.

3.2.4. Containers shall be packed in such a manner to insure an even distribution of weight within the case.

3.2.5. Heavier items, where possible, should be packed on the bottom with lighter items on the top.

3.2.6. Should any materials be scheduled to be freighted as deck cargo, additional packing instructions may be required of which VENDOR will be advised for vessels and column. shipment cradles will be used throughout the transportation. Cradles to be secured to vessels and columns by strapping.

3.2.7. All bulk items, lighting, fittings cable glands, witches, etc. are to be packed in batches sufficient for a specific volume of work.

3.2.8. Units or parts belonging to main equipment but separately packed shall be clearly marked for easy identification with the main equipment to which they relate.


3.2.9. All vessel internals and items not installed by VENDOR at works including accessories such as small parts, bolts, nuts, gaskets, etc. shall be packed in wooden cases separately for each vessel and marked with the same item number as the vessel.

3.2.10. Palletizing

Items which are not crated or boxed and are impervious to damage from moisture, water handling and external damage, which can be conveniently secured to a pallet to facilitate handling, shall be palletized.


3.3. Open Crates

Open crates are not allowed.

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4. PROTECTION METHODS

- 4.1. Equipment (included skid and module) that should be sealed off from the atmosphere shall be protected in proper method.
- 4.2. Equipment that cannot be sealed off from the atmosphere by wrapping or boxing shall be protected by coating the unpainted surface.
- 4.3. Flange openings shall be coated with a layer of anti-corrosive material then closed off with wooden, metallic or plastic, fastened in place with tape or non-rusting devices.
- 4.4. Caution shall be exercised in applying preservatives so that items fabricated of leather, mica, rubber, and similar material, are not coated with the preservative compound because of the damaging effect on such items.
- 4.5. Vendor shall provide sea worthy packing procedure for electrical equipment Motor, Panels, Battery etc, and provide sea worthy packing for Insulation, Mastic, Cement, Special aggregate.
- 4.6. Vessels shall, where possible, be packed on skid constructions and secured with adjustable steel straps. Manholes and other major openings shall be protected with either plastic caps or wooden lids, which shall be firmly secured. Smaller openings shall be closed with plastic plugs.
- 4.7. All flanged connections of vessels / rotary machines shall be protected by metal plates correctly casketed by wooden plugs or plastic caps suitably secured in positions.
- 4.8. Shipping containers shall be constructed and sealed in a manner that shall provide maximum protection from pilferage and theft.
- 4.9. After rust-treating and sealing, equipment shall be boxed and crated as specified in Section 3.0 of this specification.
- 4.10. Vessels if required, shall be nitrogen purged at a pressure of 0.35 bar(g) during transportation and storage at site to protect the vessel internals from moisture and corrosion.
- 4.11. All internal parts shall be suitably supported or braced. SUPPLIER shall show details on fabrication drawings.
- 4.12. Spare parts and Special Tools shall be packed separately and clearly marked "Spare Parts" and "Special Tools" respectively.
- 4.13. Spare part list shall be supplied with equipment. Moreover, if special tools are supplied with the equipment then, special tool list shall also be provided.
- 4.14. Prior to transportation, all instrumentation and other equipment vulnerable to damage shall be disassembled and tagged.
- 4.15. Weights and "centre of gravity" diagrams should be available for all equipment above 2tons.
- 4.16. Austenitic Stainless Steel
Equipment made of austenitic stainless steel material shall be protected with a waterproof, chloride free, overwrap to prevent exposure to chloride contamination, such as wetting by sea water, sea water spray, rain or dew in an refinery atmosphere and road salts.
- 4.17. To protect temporary saddles during transportation, ensure they are securely fastened to the transport frame using padded rubber to prevent abrasion. Apply a light rust-preventive oil or wax coating to exposed steel surfaces to avoid corrosion, especially in humid or sea environments. Use weatherproof covers if exposed to rain. For long shipments, inspect saddles pre-departure to confirm no loose bolts or structural damage, and reinforce with additional strapping if needed to prevent shifting.


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5. ELECTRICAL&INSTRUMENTATION EQUIPMENT

- 5.1. Board-mounted and all electronic instruments shall be shipped to the panel fabricator enclosed in plastic bags in protective cartons. All these instruments will be unpacked and mounted on the board at the panel fabricator's shop for check-out.
- 5.2. When the panel-board check-out is completed, all the instruments will be enclosed in the original plastic bag and placed in their original cartons before boxing in accordance with Section 3.
- 5.3. Panel boards consist of painted steel plates on a steel framework. To avoid rusting, the panel board sections shall be packed in boxes according to Section 3. All precautions should be made to have the enclosure air tight. This preparation should keep the panel in good condition until it is ready for installation.
- 5.4. Field mounted transmitters and controllers shall be enclosed in plastic bags. Bags shall be thoroughly sealed and instrument placed in a protective carton before boxing on the base of Section 3.
- 5.5. Pressure gauges, dial thermometers, pressure and temperature switches, and all other small articles shall be individually wrapped and placed in protective cartons before boxing in accordance with Section 3.
- 5.6. Level gages, continuous drainers, etc., shall be protected internally.
- 5.7. Relief Valves & Control Valves, On-off Valves, ESD, BDV etc
 - 5.7.1. All relief valves and control valves, On-off Valves, ESD, BDV etc, shall have the flanges painted. Flange covers with gaskets will be installed before shipping.
 - 5.7.2. All relief valves and control valves, On-off Valves, ESD, BDV etc, shall be shipped in totally enclosed wooden boxes.

6. MARKING INSTRUCTIONS

- 6.1. All cases, packages and boxes are to be stenciled in Black weatherproof ink on top and two adjacent sides in clear legible characters.
- 6.2. Weights must be shown in kilograms; dimensions in centimeters. (Imperial weights and dimensions may be shown but they need not be more than half the size of metric figures).
- 6.3. Shipping marks must appear on all packages, tags, labels and packing list(s). Shipping Marksshall be reviewed and approved by COMPANY Logistic department. "FRAGILE" articles shall be appropriately packed and in addition to the words "Fragile-Handle With Care" being stenciled on two opposite sides, internationally recognized symbols shall also be used "This Side Up" Spare part for two years operation, which shall be individually tagged, must be covered with a suitable preservative and wrapped with greaseproof paper and be packed in separate cases from the prime item.Commissioning spares shall be individually tagged and marked "COMMISSIONING SPARES" and shall be packed and shipped with the prime item.

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SHIP TO: _____

MADE IN: _____

P.O. NO.: _____

EQUIPMET TAG NUMBER: _____

PACKAGE NO.: _____ of _____

GROSS WEIGHT: _____ kg

NET WEIGHT: _____ kg

DIMENSIONS: _____ (L) x _____ (W) x _____ (H) mm

MAJOR CONTRACT No: _____

7. PACKING LIST

One (1) copy of the packing list and technical data shall be placed in a sealed waterproof envelope and firmly fastened to the non-working surface of the equipment in such a fashion that it will not be torn away.

8. PROTECTION FOR SKID OR MODULE

The equipment shall be completely emptied, dried and cleaned thoroughly of all grease, loose scale, loose rust, and rubble. Appropriate anti-corrosion agent shall be applied internally if it is unpainted. The equipment shall be properly covered and fastened during shipment. All ship loose items shall be properly identified and packed.


For general goods, adoption of suitable packing method and materials is at the sole discretion of the VENDOR. For the skid or module, wooden box is the minimum requirement of protection, and should any loss, damage and / or deterioration be caused due to improper packing, the consequences shall be the responsibility of the VENDOR.

All facilities included equipment, piping and so on shall be suitable supported by permanent or temporary one. All facilities shall be supported, tied down or removed, and packed separately so that it is not damaged during lifting or shipment. Lifting points shall be clearly identified.

All protrusions which have to be removed for shipment shall be removed by the VENDOR. A comprehensive packing list shall be identifying all loose shipped components. All shortages shall be clearly indicated. For the bulk materials together with the module, each part shall be packaged separately, treated with anti rust and waterproof treatment, and put into a suitable wooden box for transportation with the whole module.

For oversized packages that are not covered in the specification, VENDOR to propose following:

1. Proper packaging and transportation method (Road, Sea, Air etc.) to reach site safely.
2. Transportation limits (Road, Sea, Air etc.) to be considered before packaging and shipment.

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9. PROTECTION OF ROTATING EQUIPMENT

9.1. Packaging Requirements:

Rotating Equipment must be securely packaged in crates or containers designed to withstand transportation stresses, including vibration, shock, and environmental conditions.

Internal packaging materials (e.g., foam, bubble wrap, or cushioning) must be used to prevent movement within the crate.

Critical components, such as shafts, couplings, and impellers, must be immobilized to prevent damage during transit.

9.2. Protection of External Surfaces:

All external surfaces, including painted or coated areas, must be protected with appropriate coverings (e.g., plastic wrap, protective film, or corrosion-resistant coatings) to prevent scratches, dents, or corrosion.

Exposed flanges, nozzles, and threaded connections must be covered with protective caps or plugs to prevent damage or contamination.

9.3. Shaft and Bearing Protection:

The rotating equipment shaft must be supported and locked in place to prevent rotation or bending during transit.

Bearings must be protected from moisture and contamination by applying grease or other protective coatings and sealing them with appropriate covers.

9.4. Moisture and Environmental Protection:

Desiccant packs or moisture-absorbing materials must be included inside the packaging to prevent condensation and corrosion.

The packaging must be weatherproof to protect the equipment from rain, humidity, and other environmental factors.

9.5. Labeling and Handling Instructions:

Clearly label the package with handling instructions, such as "Fragile," "This Side Up," and "Do Not Stack."

Include a detailed packing list and documentation inside the crate for easy identification and inspection upon arrival.

9.6. Securing for Transport:

Ensure the rotating equipment is securely fastened within the shipping container to prevent movement during transit.

Use straps, braces, or blocking to stabilize the equipment and distribute weight evenly.

9.7. Inspection and Documentation:

Conduct a pre-shipment inspection to verify that all protective measures are in place and the equipment is properly secured.

Provide a certificate of compliance or shipping checklist to confirm that the rotating equipment is ready for transport.