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Replacement of hydraulic parts of turbo-compressors 650-21-2 at KS01-Veľké Kapušany

TECHNICAL SPECIFICATION

ATTACHMENT NO. 9

Rev. No.	Date	Description	Prepared	Checked	Approved	Datum	Approved
			Document Title **CENTRIFUGAL COMPRESSOR** **Data Sheet** **(API 617-6TH)**				
COMPANY Company Representative:			Area Code:		DFO:		
Reference:			Project Identification		Document No.		Rev.
PO. No.:							**0**
CONTRACTOR Contractor Representative:							
Document Originator:							

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CENTRIFUGAL COMPRESSOR DATA SHEET (API 617-6TH) METRIC UNITS

JOB NO. | ITEM NO.
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APPLICABLE TO: ⊗ PROPOSAL ○ PURCHASE ○ AS BUILT

FOR	SPP, SLOVAKIA	UNIT	E1, E2 (E3 OPTIONALY)
SITE	VEL'KE KAPUSANY	SERIAL NO.	
SERVICE	TRANSPORTATION	NO. REQUIRED	2 + 1 (ONE AS AN OPTION)
	⊗ CONTINUOUS ○ INTERMITTENT ○ STAND BY	DRIVER TYPE	ELECTRIC MOTOR (SYNCHRONOUS)
MANUFACTURER	MODEL	DRIVER ITEM NO.	

NOTE: INFORMATION TO BE COMPLETED: ○ BY PURCHASER ☐ BY MANUFACTURER

OPERATING CONDITIONS

(ALL DATA ON PER UNIT BASIS)

	Point 1	Point 2	Point 3	Point 4
⊗ GAS HANDLED (ALSO SEE ATTACHMENT)				
○ DELIVERED FLOW @ 1.013 BAR & 20 °C, (MNm³/h) **1), 2)**				
○ WEIGHT FLOW - WET, (kg/h)				
○ WEIGHT FLOW - DRY, (kg/h)				
INLET CONDITIONS				
⊗ PRESSURE, (MPa abs) **3)**	**5,00**	**5,00**	**5,00**	**5,00**
⊗ TEMPERATURE , (°C) **3)**	**20**	**20**	**20**	**20**
○ RELATIVE HUMIDITY , (%)				
○ MOLECULAR WEIGHT, (kg/kmol)				
○ Cp/Cv (K1) OR (KAVG)				
☐ COMPRESSIBILITY (Z1)				
☐ INLET VOLUME, (m³/h) (WET / DRY)				
DISCHARGE CONDITIONS				
X PRESSURE , (MPa abs) **3)**	**7,35**	**6,45**	**6,28**	**6,10**
☐ TEMPERATURE, (°C)				
☐ Cp/Cv (K2) OR (KAVG)				
☐ COMPRESSIBILITY (Z2)				
PERFORMANCE :				
☐ MAX. POWER REQUIRED - ALL LOSSES INCLUDED , (kW)				
X SPEED, (RPM)	**max 3700**			**max 3700**
☐ ESTIMATED SURGE AT SPEED ABOVE, (m³/h)				
☐ ISENTROPIC HEAD (kJ/kg)				
☐ ISENTROPIC EFFICIENCY (%)				
⊗ CERTIFIED POINT	**YES**	**YES**	**YES**	**YES**
☐ PERFORMANCE CURVE NUMBER				

PROCESS CONTROL

METHOD ○ SUCTION THROTTLING — FROM ____ BAR — TO ____ BAR
○ VARIABLE INLET GUIDE VANES (3.4.2.4)
⊗ SPEED VARIATION — FROM **2 000 min^{-1}** — TO **3 700 min^{-1}**
○ DISCHARGE BLOWOFF — TO ____
○ COOLED RECYCLE — FROM ____ — TO ____

○ LOAD SHARING MANUAL OR AUTOMATIC
○ DISCHARGE PRESSURE CONTROL (MINIMUM PRESSURE CONTROL)

SIGNAL ○ SOURCE (3.4.2.1)
TYPE ⊗ ELECTRONIC ○ PNEUMATIC ○ OTHER ____
RANGE 4 -20 mA ____ BAR ____

ANTI-SURGE BYPASS ○ MANUAL ⊗ AUTOMATIC ○ NONE

REMARKS: 1) DELIVERED FLOW AT 20°C (NOT AT 0°C)
2) DELIVERED FLOW BY VENDOR
3) PURCHASER REQUIRED VALUES
4) ANY OF THE PURCHASER UNSPECIFIED ITEMS SHOULD BE FILLED BY VENDOR

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OPERATING CONDITIONS

GAS ANALYSIS: 1) ⊗ MOL % ○	MW	NORMAL	OTHER CONDITIONS A	B	C	D	E	REMARKS:
AIR								
OXYGEN								
NITROGEN		0,76						
WATER VAPOR								
CARBON MONOXIDE								
CARBON DIOXIDE		0,33						
HYDROGEN SULFIDE								
HYDROGEN								
METHANE		95,473						
ETHYLENE								
ETHANE		2,428						
PROPYLENE								
PROPANE		0,729						
I-BUTANE		0,109						
n-BUTANE		0,115						
I-PENTANE		0,022						
n-PENTANE		0,017						
n-HEXANE		0,017						
TOTAL		100,000	0,000	0,000	0,000			
AVG. MOL. WT.								

LOCATION: (2.1.9)

X INDOOR ○ OUTDOOR ○ GRADE

⊗ HEATED ○ UNDER ROOF ○ MEZZANINE

○ UNHEATED ○ PARTIAL SIDES ○

○ ELEC. AREA CLASSIFICATION (2.1.15) ZN GR CL

○ WINTERIZATION REQ'D. (2.1.9) ○ TROPICALIZATION REQ'D. (3.4.6.6)

SITE DATA:

○ ELEVATION 101,5 m BAROMETER mBAR

○ RANGE OF AMBIENT TEMPS (INSIDE OF THE HALL):

NORMAL	(°C)		
MAXIMUM	(°C)	+40	
MINIMUM	(°C)	+5	
	(°C)		

UNUSUAL CONDITIONS: ○ DUST ○ FUMES

⊗ OTHER (2.1.9) DUST, ACTIVITY, etc

REMARKS:

1) FOR GAS ANALYSIS ALSO SEE TECHNICAL SPECIFICATION

NOISE SPECIFICATIONS: (2.1.10)

○ APPLICABLE TO MACHINE:

○ APPLICABLE TO NEIGHBORHOOD:

SEE SPECIFICATION

ACOUSTIC HOUSING: ○ YES ○ NO

○ PACKAGE MAX. ALLOWABLE SPL @ 1m SHALL NOT EXCEED 85 dBA

APPLICABLE SPECIFICATIONS:

API 617, CENTRIFUGAL COMPR. FOR GEN. REFINERY SERV.

○ VENDOR HAVING UNIT RESPONSIBILITY (2.9.1.7)

○ GOVERING SPECIFICATION (IF DIFFERENT)

PAINTING:

○ MANUFACTURER'S STD.

○ OTHER

SHIPMENT: (4.4.1)

○ DOMESTIC ○ EXPORT ⊗ EXPORT BOXING REQ'D.

○ OUTDOOR STORAGE MORE THAN 6 MONTHS (4.4.1)

SPARE ROTOR ASSEMBLY PACKAGED FOR (4.4.3.10)

○ HORIZONTAL STORAGE ○ VERTICAL STORAGE

○ NITROGEN PURGED CONTAINER

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CONSTRUCTION FEATURES

☐ **SPEEDS:**
MAX. CONT. **3700** RPM TRIP ____ RPM
MAX. TIP SPEEDS: ____ m/s @ 100% SPEED
____ m/s @ MAX. CONT. SPEED

☐ **LATERAL CRITICAL SPEEDS (DAMPED)**
FIRST CRITICAL ____ RPM ____ MODE
SECOND CRITICAL ____ RPM ____ MODE
THIRD CRITICAL ____ RPM ____ MODE
FOURTH CRITICAL ____ RPM ____ MODE

○ TRAIN LATERAL ANALYSIS REQUIRED (2.9.2.3)
○ TRAIN TORSIONAL ANALYSIS REQUIRED
(TURBINE DRIVEN TRAIN) (2.9.4.5)

☐ **TORSIONAL CRITICAL SPEEDS:**
FIRST CRITICAL ____ RPM
SECOND CRITICAL ____ RPM
THIRD CRITICAL ____ RPM
FOURTH CRITICAL ____ RPM

☒ **VIBRATION:**
ALLOWABLE TEST LEVEL **as per API617** µm
(PEAK TO PEAK)

☒ **ROTATION, VIEWED FROM DRIVEN END** ⊗ CW ○ CCW

⊗ **MATERIALS INSPECTION REQUIREMENTS (4.2.2)**
○ SPECIAL CHARPY TESTING (2.11.3) ____
○ RADIOGRAPHY REQUIRED FOR ____
○ ULTRASONIC REQUIRED FOR ____
○ MAGNETIC PARTICLE REQUIRED FOR ____
○ LIQUID PENETRANT REQUIRED FOR ____

☐ **CASING:**
MODEL EXISTING
CASING SPLIT BAREL TYPE, VERTICAL SPLIT
MATERIAL ____
THICKNESS (mm) ____ CORR. ALLOW. (mm) ____
MAX. WORKING PRESS **73,50** BARG
MAX DESIGN PRESS ____ BARG
TEST PRESS., (BARG) ____ HYDRO ____
MAX OPER. TEMP. **100** °C MIN. OPER. TEMP. **0** °C
MAX NO. OF IMPELLERS FOR CASING ____
MAX CASING CAPACITY (m³/h) ____
CASING SPLIT SEALING (2.2.10) ____
○ SYSTEM RELIEF VALVE SET PT. (2.2.4) ____ BARG

☐ **DIAPHRAGMS:**
MATERIAL ____

☐ **IMPELLERS:**
NUMBER OF IMPELLERS ____
DIAMETERS, (mm) ____
NO. VANES EA. IMPELLER ____

TYPE (OPEN, ENCLOSED, ETC.) ____
TYPE FABRICATION ____
MATERIAL ____
MAX. YIELD STRENGTH (N/mm²) ____
BRINNEL HARDNESS: MAX ____ MIN ____
SMALLEST TIP INTERNAL WIDTH (mm) ____
MAX. MACH. NO. @ IMPELLER EYE ____
MAX. IMPELLER HEAD @ 100% SPEED (kJ/kg) ____

☐ **SHAFT:**
MATERIAL ____
DIA @ IMPELLERS ____ mm. DIA @ COUPLING ____ mm
SHAFT END: ○ TAPERED ○ CYLINDRICAL
MAX. YIELD STRENGTH, (N/mm²) ____
SHAFT HARDNESS (BNH)(Rc) ____
MAX TORQUE CAPABILITY (N-m) ____

☐ **BALANCE PISTON:**
MATERIAL ____ AREA ____ (mm²)
FIXATION METHOD ____

☐ **SHAFT SLEEVES :**
AT INTERSTAGE. CLOSE CLEARENCE POINTS MATL ____
AT SHAFT SEALS MATL ____

○ ACCESSIBLE (2.8.2)

☐ **LABYRINTHS:**
INTERSTAGE
TYPE ____ MATERIAL ____
BALANCE PISTON
TYPE ____ MATERIAL ____

SHAFT SEALS:
⊗ SEAL TYPE (2.8.3) CONTACT OIL SEALS
⊗ PRESSURE, (BARG) COMPRESSOR MAX WORKING PRESSURE
○ SPECIAL OPERATION (2.8.1) ____
○ SUPPLEMENTAL DEVICE REQUIRED FOR SEALS (2.8.3.2) TYPE ____
○ BUFFER GAS SYSTEM REQUIRED (2.8.7) ○ MANIFOLD (3.5.1.6)
○ TYPE BUFFER GAS ____
○ BUFFER GAS CONTROL SYSTEM SCHEMATIC BY VENDOR
○ PRESSURIZING GAS FOR SUBATMOSPHERIC SEALS (2.8.8)
☐ TYPE SEAL ____
☐ INNER OIL LEAKAGE GUAR. (l /DAY/SEAL) ____
BUFFER GAS REQUIRED FOR:
☐ AIR RUN-IN ☐ OTHER ____
☐ BUFFER GAS FLOW (PER SEAL):
NORM: ____ kg/min @ ____ BAR D P ____
MAX. ____ kg/min @ ____ BAR D P ____

☐ **BEARING HOUSING CONSTRUCTION:**
TYPE (SEPARATE, INTEGRAL) SEPARATE SPLIT HORIZONTAL
MATERIAL ____

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CONSTRUCTION FEATURES (CONTINUED)

BEARINGS AND BEARING HOUSINGS

RADIAL	INLET	EXHAUST
☐ TYPE		
☐ MANUFACTURER		
☐ LENGTH (mm)		
☐ SHAFT DIA. (mm)		
☐ UNIT LOAD (ACT/ALLOW), (BAR)		
☐ BASE MATERIAL		
☐ BABBIT THICKNESS (mm)		
☐ NO. PADS		
☐ LOAD: B'TWN/ON PAD		
☐ PIVOT: CTR/OFFSET, %		
☐		

☐ BEARING SPAN ____ mm

THRUST	ACTIVE	INACTIVE
☐ TYPE		
☐ MANUFACTURER		
☐ UNIT LOADING - MAX, (BAR)		
☐ UNIT LOADING - ULT., (BAR)		
☐ AREA (mm²)		
☐ NO. PADS		
☐ PIVOT: CENTER / OFFSET, %		
☐ PAD BASE MATL		

LUBRICATION: ○ FLOODED ○ DIRECTED
THRUST COLLAR: ○ INTEGRAL ○ REPLACEABLE
MATERIAL ____

BEARING TEMPERATURE DEVICES ○ SEE ATTACHED API-670 DATA SHT

○ THERMISTORS
- ○ TYPE ____ POS TEMP COEFF ____ NEG TEMP COEFF
- ○ TEMP SWITCH & INDICATOR BY: ____ PURCH ____ MFR

○ THERMOCOUPLES
- ○ SELECTOR SWITCH & INDIC. BY: ____ PURCH ____ MFR

○ RESISTANCE TEMP DETECTORS
- ○ RESISTANCE MAT'L ____ ○ ____ OHMS
- ○ SELECTOR SWITCH & INDICATOR BY:
- ____ PURCH ____ MFR

○ LOCATION-JOURNAL BRG
NO. ____ EA PAD ____ EVERY OTH PAD ____ PER BRG
OTHER ____

○ LOCATION-THRUST BRG
NO. ____ EA PAD ____ EVERY OTH PAD ____ PER BRG
OTHER ____
NO. (INACT) ____ EA PAD ____ EVERY OTH PAD ____ PER BRG
OTHER ____

○ MONITOR SUPPLIED BY (3.4.7.4) ____
- ○ LOCATION ____ ENCLOSURE ____
- ○ MFR. ____ ☐ MODEL ____
- ☐ SCALE RANGE ____ ☐ ALARM SET @ ____ °C
- ○ SHUTDOWN ☐ SET @ ____ °C ○ TIME DELAY ____ SEC

VIBRATION DETECTORS: ○ SEE ATTACHED API-670 DATA SHEET

○ TYP DS-1051 EEx ☐ MODEL DS-1051/03/040/050/3/1
○ MFR Brüel & Kjær (INSTALLATION TO EXISTING "COMPASS" SYS.)
○ NO. AT EA SHAFT BEARING 2 TOTAL NO. 4
○ OSCILLATOR-DETECTORS SUPPLIED BY ____
- ○ MFR Brüel & Kjær ☐ MODEL OD 1051 EEx

MONITOR SUPPLIED BY (3.4.7.2) Compass
- ○ LOCATION UCS ENCLOSURE ____
- ○ MFR. Brüel & Kjær ☐ MODEL ____
- ☐ SCALE RANGE ____ ○ ALARM ☐ SET @ ____ µm
- ○ SHUTDOWN ☐ SET @ ____ µm ○ TIME DELAY 2 SEC

AXIAL POSITION DETECTOR: ○ SEE ATTACH. API-670 DATA SHEET

○ TYPE DS-1051 EEx ☐ MODEL DS-1051/03/040/050/3/1
○ MFR Brüel & Kjær ○ NO. REQUIRED 2
○ OSCILLATOR-DEMODULATOR SUPPLIED BY ____
- ○ MFR Brüel & Kjær ☐ MODEL OD 1051 EEx

MONITOR SUPPLIED BY (3.4.7.2) Compass
- ◉ LOCATION UCS ENCLOSURE ____
- ○ MFR. Brüel & Kjær ☐ MODEL ____
- ☐ SCALE RANGE ____ ☐ ALARM SET @ ____ µm
- ○ SHUTDOWN ☐ SET @ ____ µm ○ TIME DELAY 2 SEC

CASING CONNECTIONS

CONNECTION	○ DESIGN APPROVAL REQ'D	☐ ASME ☐ API605 ☐ OTHERS SIZE	☐ FACING ☐ BORE	○ ORIENTATION	◉ FLANGED OR STUDDED	○ MATING FLG & GASKET BY VENDOR	☐ GAS VELOCITY (m/s)
INLET							
DISCHARGE							

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[X] **OTHER CONNECTIONS**

SERVICE:	NO.	SIZE	TYPE
LUBE-OIL INLET	1	DN40 PN6	
LUBE OIL OUTLET	2	DN150 PN6	
SEAL-OIL INLET	2	DN40 PN100	
SEAL-OIL OUTLET	2	DN40 PN100	
SEAL GAS INLET			
SEAL GAS OUTLET			
CASING DRAINS			
STAGE DRAINS			
VENTS			
COOLING WATER N.A.			
PRESSURE			
TEMPERATURE			
SOLVENT INJECTION			
PURGE FOR:			
BRG. HOUSING			
BTWN BRG & SEAL AIR			
BTWN SEAL & GAS GAS			

○ INDIVIDUAL STAGE DRAINS REQUIRED (2.4.3.2)
○ VALVED & BLINDED
○ VALVED & BLINDED & MANIFOLD

KEY PHASOR REQUIRED
○ COMPRESSOR ○ GEAR ○ DRIVER

ALLOWABLE PIPING FORCES AND MOMENTS:

	INLET		DISCHARGE			
	FORCE N	MOMT N-m	FORCE N	MOMT N-m	FORCE N	MOMT N-m
AXIAL						
VERTICAL						
HORIZ. 90°						
	FORCE N	MOMT N-m	FORCE N	MOMT N-m	FORCE N	MOMT N-m
AXIAL						
VERTICAL						
HORIZ. 90°						

○ ACCELEROMETER(3.4.7.5) NEW INSTALLATION TO COMPR. NDE
○ SEE ATTACHED API-670 DATA SHEET
○ TYPE Accelerometer ☐ MODEL 8326 EEx
○ MFR Brüel & Kjær NO. REQUIRED 3
○ LOCATION VERTICAL/HORIZONTAL/AXIAL
○ OSCILATOR-DEMODULATORS SUPPLIED components which are necessary: detector
○ MFR ☐ , cabling, vibrational module
○ MONITOR SUPPLIED BY (3.4.7.6)
○ LOCATION UCS ENCLOSURE co B & K ltd.
○ MFR Brüel & Kjær ☐ MODEL Compass
☐ SCALE RANGE ○ ALARM ☐ SET @ mm/s²
○ SHUTDOWN ☐ SET @ mm/s² ○ TIME DELAY 2 SEC

ACCESSORIES

COUPLING AND GUARDS (3.2)

NOTE: SEE ROTATING ELEMENTS - SHAFT ENDS

○ SEE ATTACHED API-671 DATA SHEET ○ KEYLESS HYDRAULIC ○ KEYED

COUPLING FURNISHED BY ČKD PRAHA

MANUFACTURER ČKD PRAHA TYPE MODEL

COUPLING GUARD FURNISHED BY: PURCHASOR - EXISTING

TYPE: ⊗ FULLY ENCLOSED ○ SEMI-OPEN ○ OTHER

COUPLING DETAILS

☐ MAX O.D. mm
☐ HUB WEIGHT kg
☐ SPACER LENGTH mm
☐ SPACER WEIGHT kg

○ VENDOR MOUNT HALF COUPLING

LUBRICATION REQUIREMENTS:
○ NON-LUBE ○ GREASE ⊗ CONT. OIL LUBE ○ OTHER
QUANTITY PER HUB l/min

MOUNTING PLATES

○ BASEPLATES: FURNISHED BY (3.3.1.1)
○ COMPRESSOR (3.3.2.1) ○ DRIVER ○ GEAR
○ OTHER AS REQUIRED
○ DRIP TRIM ○ LEVELING PADS (3.3.2.2)
○ COLUMN MOUNTING (3.3.2.3)
○ SUB-SOLE PLATES REQ'D (3.3.3.2)
☐ STAINLESS STEEL SHIM THICKNESS mm
○ PRIMER FOR EPOXY GROUT REQ'D (3.3.1.2.9)
TYPE

○ BASE PLATE WILL BE ON CONCRETE FOUNDATION (3.3.2.5)
○ MACHINED MOUNTING PADS REQ'D. (3.3.2.6)

○ SOLEPLATES: FURNISHED BY:
☐ THICKNESS mm
○ SUBSOLE PLATES REQ'D (3.3.3.2)
☐ STAINLESS STEEL SHIM THICKNESS - (mm)
○ DRIVER ○ GEAR ○ COMPRESSOR
○ PRIMER FOR EPOXY GROUT REQ'D (3.3.1.2.9)
TYPE

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UTILITIES

○ **UTILITY CONDITIONS:** N. A.

STEAM: N. A.	**DRIVERS**		**HEATING**	
INLET MIN	____ BARG	____ °C	____ BARG	____ °C
NORM	____ BARG	____ °C	____ BARG	____ °C
MAX	____ BARG	____ °C	____ BARG	____ °C
EXHAUST. MIN	____ BARG	____ °C	____ BARG	____ °C
NORM	____ BARG	____ °C	____ BARG	____ °C
MAX	____ BARG	____ °C	____ BARG	____ °C

ELECTRICITY: (3.4.6.1)

	DRIVERS	HEATING	CONTROL	SHUTDOWN
VOLTAGE				
HERTZ				
PHASE				

COOLING WATER:
TEMP. INLET ____ °C MAX RETURN ____ °C
PRESS NORM ____ BARG
DESIGN ____ BARG
MIN RETURN ____ BARG
MAX ALLOW D P ____ BAR
WATER SOURCE _____

INSTRUMENT AIR:
MAX PRESS ____ BARG. MIN PRESS ____ BARG

SHOP INSPECTION AND TESTS: (4.1.4)	**REQ'D.**
CLEANLINES (4.2.1.5)	○
HYDROSTATIC	○
IMPELLER OVERSPEED	⊗
MECHANICAL RUN	○
○ CONTRACT COUPLING ○ IDLING ADAPTORS	
○ CONTRACT PROBES ○ SHOP PROBES	
VARY LUBE & CONTROL OIL PRESSURES AND TEMPERATURES (4.3.4.2.5)	○
POLAR FORM VIB DATA (4.3.4.3.3)	○
TAPE RECORD VIB DATA (4.3.4.3.6)	○
TAPE DATA TO PURCHASER (4.3.4.3.7)	○
SHAFT END SEAL INSP (4.3.4.4.1)	○
GAS LEAK TEST DISCH PRESS (4.3.5.2)	○
○ BEFORE ○ AFTER POST TEST INSPECTION (4.3.6.8)	
PERFORMANCE TEST(GAS)(AIR)(4.3.6.1)	○
COMPLETE UNIT TEST (4.3.6.2)	○
TORSIONAL VIB MEAS (4.3.6.2)	○
TANDEM TEST (4.3.6.3)	○
GEAR TEST (4.3.6.4)	○
HELIUM LEAK TEST (4.3.6.5)	○
SOUND LEVEL TEST (4.3.6.6)	○
FULL LOAD/SPEED/PRESS TEST (4.3.6.9)	○
HYDRAULIC COUPLING INSP (4.3.6.10)	○
	○
	○
	○
	○

☐ **TOTAL UTILITY CONSUMPTION:**

COOLING WATER	m³/h
STEAM, NORMAL	kg/h
STEAM, MAX	kg/h
INSTRUMENT AIR	Nm³/h
HP (DRIVER)	kW
HP (AUXILIARIES)	kW
HEATERS	kW
PURGE (AIR OR N2)	Nm³/h

MISCELLANEOUS:
☐ RECOMMENDED STRAIGHT RUN OF PIPE DIAMETERS BEFORE SUCTION _____
○ NOMOGRAPHS REQUIRED FOR EACH SECTION (5.3.3.1.5)
○ VENDOR'S REVIEW & COMMENTS ON PURCHASER'S PIPING & FOUNDATION (3.5.3.2)
○ COMPRESSOR TO BE SUITABLE FOR FIELD RUN IN ON AIR (2.1.17)
○ PROVISION FOR LIQUID INJECTION (2.1.11) _____
○ VENDOR'S REVIEW & COMMENTS ON PURCHASER'S CONTROL SYSTEMS (3.4.1.1)
○ EXTENT OF PROCESS PIPING BY VENDOR (3.5.3.1) _____
○ SHOP FITUP OF VENDOR PROCESS PIPING (4.4.3.11)
○ WELDING HARDNESS TESTING (4.2.1.6)

VENDOR'S REPRESENTATIVE SHALL (2.1.14)
○ OBSERVE FLANGE PARTING
○ CHECK ALIGNMENT AT TEMPERATURE
○ BE PRESENT AT INITIAL ALIGNMENT

☐ **WEIGHTS (kg):**

COMPR.	GEAR		DRIVER	BASE	
ROTORS:	COMPR.		DRIVER	GEAR	
COMPRESSOR UPPER CASE					
SOUR SEAL OIL TRAPS					
L.O. CONSOLE		S.O. CONSOLE			
OVERHEAD SEAL OIL TANKS					
MAX. FOR MAINTENANCE (IDENTIFY)					
TOTAL SHIPPING WEIGHT					

☐ **SPACE REQUIREMENTS (mm):**

COMPLETE UNIT:	L		W	H	
L.O. CONSOLE:	L		W	H	
S.O. CONSOLE:	L		W	H	
SOUR SEAL OIL TRAPS					
OVERHEAD SEAL OIL TANKS					

REMARKS:

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