







OWNER:  شرکت پتروشیمی بوشهر	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT							CONTRACTOR  Chagalesh-Engrehimi-Steam Joint Venture BUPC-MEG PLANT PROJECT  Netherlands	
MC:  شرکت مهندسی مشاوران پتروشیمی	MECHANICAL DATA SHEET FOR NITROGEN GAS BOOSTER							Contract No : 52-98/445	
Owner Document Number : 17811-11A	Project BU	Area 20	Phase VD	Unit 303	Dis. ME	Doc. DSH	Seq. 0022	Rev : 02	Page: 1 OF 20

MECHANICAL DATA SHEET FOR NITROGEN GAS BOOSTER

02	7-12-2021	Approve For Construction	KP	JR	LDM	
01	25-11-2021	Issued for approval	KP	JR	LDM	
00	9-11-2021	Issued for approval	KP	JR	LDM	
Rev.	Date	Description	Prepared By	Checked By	Approved	AC code.

Class:1 Phase: P

OWNER:  شرکت پتروشیمی بوشهر	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT	CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT
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MC:  شرکت سست دانشگاه بوشهر	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)	 Contract No : 52-98/445
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Owner Document Number : 17811-11A	BU	20	VD	303	ME	DSH	0022	Rev : 02	Page: 3 OF 20
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1 APPLICABLE TO: PROPOSALS PURCHASE AS BUILT

2 FOR/USER: BUPC SITE/LOCATION: ASSALUYEH SERVICE: NITROGEN BOOSTER COMPRESSOR NO. REQ'D: ONE SET (Two stages)

3 NOTE: INDICATES INFO. TO BE COMPLETED BY PURCH. BY MANUFACTURER WITH PROPOSAL BY MANUFACTURER AFTER ORDER BY MANUFACTURER OR PURCHASER AS APPLICABLE

4

5 COMPR. MFR: _____ TYPE MODEL NO(S): _____ SERIAL NO(S): TBC

6 COMPR. THROWS: TOTAL NO. 1 NO. WITH CYLS. 1 NOMINAL FRAME RATING: 55 BkW @ RATED RPM OF 690

7 MAX/MIN ALLOWABLE SPEED: 450 / 690 RPM

8 DRIVER MFR: WEG DRIVER NAMEPLATE kW/OPERATING RPM: 45 kW / 690

9 DRIVE SYSTEM: DIRECT COUPLED GEARED & COUPLED V-BELT

10 TYPE OF DRIVER: IND. MOTOR SYN. MOTOR STEAM TURBINE GAS TURBINE ENGINE OTHER _____




11 NO NEGATIVE TOLERANCE APPLIES: YES - PURCHASER TO FILL IN "REQUIRED CAPACITY" LINES. CYLINDERS: LUBE NON-LUBE


12 (NNT) NO - PURCHASER TO FILL IN "MFR.'S RATED CAP." LINES

13 MAX ACCEPTABLE AVG PISTON SPEED: 3.5 m/s

OPERATING CONDITIONS (EACH MACHINE)

<p>15 <input checked="" type="radio"/> OPERATING CASE</p> <p>16 <input type="radio"/> SIMULATION BASIS</p> <p>17 <input checked="" type="radio"/> NORM. OR ALT. CONDITION</p> <p>18 <input type="radio"/> CERTIFIED PT. (X) MARK ONE</p> <p>19 <input checked="" type="radio"/> MOLECULAR WEIGHT</p> <p>20 <input type="radio"/> Cp/Cv (K) @ 65°C OR _____ °C</p> <p>21 INLET CONDITIONS: AT INLET TO: <input checked="" type="radio"/> PULSE DEVICES <input type="radio"/> COMPRESSOR CYLINDER FLANGES</p> <p>22 NOTE: <input type="radio"/> SIDE STREAM TO _____ STAGE(S), THESE INLET PRESS. ARE FIXED</p> <p>23 <input checked="" type="radio"/> PRESSURE @ PUL. SUPP. INLET (bara)</p> <p>24 <input type="radio"/> PRESSURE (Bara) @ CYL. FLANGE</p> <p>25 <input checked="" type="radio"/> TEMPERATURE (°C)</p> <p>26 <input type="radio"/> INLET Cp/Cv</p> <p>27 <input checked="" type="radio"/> COMPRESSIBILITY (Z_s)</p> <p>28 INTERSTAGE: INTERSTAGE Δ P INCL: <input checked="" type="radio"/> PULSE DEVICES <input checked="" type="radio"/> PIPING <input checked="" type="radio"/> COOLERS <input checked="" type="radio"/> SEPARATORS <input type="radio"/> OTHER _____</p> <p>29 <input type="radio"/> Δ P BETWEEN STAGES, % / BAR</p> <p>30 DISCHARGE CONDITIONS: AT OUTLET FROM: <input checked="" type="radio"/> PULSE DEVICE <input type="radio"/> COMP. CYL. FLANGES <input type="radio"/> OTHER _____</p> <p>31 <input type="radio"/> PRESSURE @ CYL. FLANGE (bara)</p> <p>32 <input checked="" type="radio"/> PRESS. (bara) @ PUL. SUPP. OUTLET</p> <p>33 <input type="radio"/> TEMP., ADIABATIC, °C</p> <p>34 <input type="radio"/> TEMP., PREDICTED, °C</p> <p>35 <input type="radio"/> COMPRESSIBILITY (Z₂) OR (Z_{AVG})</p> <p>36 * REQUIRED CAPACITY, RATED FOR PROCESS, AT INLET TO COMPRESSOR, NO NEGATIVE TOLERANCE (-0%)</p> <p>37 <input checked="" type="radio"/> kg/h CAPACITY SPECIFIED</p> <p>38 <input type="radio"/> WET <input checked="" type="radio"/> DRY</p> <p>39 <input checked="" type="radio"/> m³ /h (760 mm HG & 0°C)</p> <p>40 * MFR.'S RATED CAPACITY (AT INLET TO COMPRESSOR) & kW @ CERTIFIED TOLERANCE OF ±3% FOR CAP. & ±3% FOR kW</p> <p>41 <input type="radio"/> kg/h CAPACITY SPECIFIED</p> <p>42 <input type="radio"/> WET <input type="radio"/> DRY</p> <p>43 <input type="radio"/> INLET m³/h</p> <p>44 <input type="radio"/> Nm³/h</p> <p>45 <input type="radio"/> kW/STAGE</p> <p>46 <input checked="" type="radio"/> ABSORBED POWER ESTIMATED, kW</p> <p>47 <input type="radio"/> TOTAL kW INCLUDING</p> <p>48 V-BELT & GEAR LOSSES</p> <p>49 * CAPACITY FOR NNT</p> <p>50 MANUFACTURER'S = REQUIRED ÷ 0.97</p> <p>51 THEREFORE REQUIRED = MFR'S x 0.97</p>	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width:10%;"></th> <th style="width:20%;">NITROGEN</th> <th style="width:20%;">NITROGEN</th> <th style="width:20%;">NITROGEN</th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr> <td></td> <td>Normal</td> <td>Min pressure</td> <td>Max pressure</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>28</td> <td>28</td> <td>28</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>1.4</td> <td>1.4</td> <td>1.4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>8</td> <td>7</td> <td>9</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>8</td> <td>7</td> <td>9</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>52</td> <td>52</td> <td>52</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>1.4</td> <td>1.4</td> <td>1.4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>23,2</td> <td>23,15</td> <td>23,1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>23,5</td> <td>23,5</td> <td>23,5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>115</td> <td><115</td> <td><115</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>134</td> <td><134</td> <td><134</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>707</td> <td>707</td> <td>707</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>565</td> <td>565</td> <td>565</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>718</td> <td>718</td> <td>718</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>574</td> <td>574</td> <td>574</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>17,5</td> <td>17,5</td> <td>17,5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>35</td> <td>35</td> <td>35</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>37</td> <td>37</td> <td>37</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		NITROGEN	NITROGEN	NITROGEN						Normal	Min pressure	Max pressure						X	X	X						28	28	28						1.4	1.4	1.4						8	7	9						8	7	9						52	52	52						1.4	1.4	1.4						1	1	1						23,2	23,15	23,1						23,5	23,5	23,5						115	<115	<115						134	<134	<134						1	1	1						707	707	707						565	565	565						718	718	718						574	574	574						17,5	17,5	17,5						35	35	35						37	37	37				
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MC:  شرکت سست، مینوسیران ایران	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)	Contract No : 52-98/445 Rev : 02 Page: 4 OF 20														
Owner Document Number : 17811-11A	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">Project</td> <td style="width:15%;">Area</td> <td style="width:15%;">Phase</td> <td style="width:15%;">Unit</td> <td style="width:10%;">Dis.</td> <td style="width:10%;">Doc.</td> <td style="width:10%;">Seq.</td> </tr> <tr> <td style="text-align: center;">BU</td> <td style="text-align: center;">20</td> <td style="text-align: center;">VD</td> <td style="text-align: center;">303</td> <td style="text-align: center;">ME</td> <td style="text-align: center;">DSH</td> <td style="text-align: center;">0022</td> </tr> </table>	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	BU	20	VD	303	ME	DSH	0022	
Project	Area	Phase	Unit	Dis.	Doc.	Seq.										
BU	20	VD	303	ME	DSH	0022										

1	GAS ANALYSIS AT OPERATING CONDITIONS					REMARKS
2	MOLE PERCENT					
3	<input type="radio"/> SERVICE/ITEM NO. <input type="radio"/> STAGE <input checked="" type="radio"/> NORMAL OR ALT					
4						
5						
6		M.W.				
7	NITROGEN	28,016	Min: 99.9	mol%		
8	WATER H ₂ O	18.016	1 (max)	ppm		
9	CARBON MONOXIDE CO	72.146	10	ppm		
10	CARBON DIOXIDE CO ₂	34.076				
11	HYDROGEN H ₂	2,016				
12	METHANE CH ₄	16.042				
13	ETHANE	30.068				
14	PROPANE	44.094				
15	i-BUTANE	58,12				
16	n-BUTANE	58,12				
17	i-PENTANE	72,146				
18	OXYGEN O ₂	32.00	Max:10	ppm		
19	S content S		Max: 0.2	ppm (by weight)		
20						
21						
22						APPLICABLE SPECIFICATIONS
23						<input checked="" type="radio"/> API-618-RECIPROCATING COMPRESSORS FOR PETROLEUM, CHEMICAL AND GAS INDUSTRY SERVICES
24						<input checked="" type="radio"/> MATERIAL STANDARD SPECIFICATION FOR RECIPROCATING GAS COMPRESSOR BU-20-D-000-MA-SPC-302
25						
26						
27						
28						
29						
30						
31	TOTAL:					
32	<input type="checkbox"/> CALCULATED MOL WT.					

33	<input type="checkbox"/> Cp/Cv (K) @ 65° OR	Suction temperature °C				
34	NOTE: IF WATER VAPOR AND/OR CHLORIDES ARE PRESENT, EVEN MINUTE					
35	TRACES, IN THE GAS BEING COMPRESSED, IT MUST BE INCLUDED ABOVE.					

SITE CONDITION (SEE PROJECT SITE CONDITION FOR MORE DETAIL)						
37	ELEVATION	8,3	m	BAROMETER	1,013	(BARA)
38	● MIN DESIGN METAL TEMP	0	°C (2.14.8)	RELATIVE HUMIDITY: MAX	100%	MIN 74% %
39	COMPRESSOR LOCATION:	<input type="radio"/> INDOOR HEATED <input checked="" type="radio"/> UNHEATED <input type="radio"/> AT GRADE LEVEL <input type="radio"/> ELEVATED: _____ M <input checked="" type="radio"/> OUTDOOR NO ROOF <input type="radio"/> UNDER ROOF <input type="radio"/> PARTIAL SIDES <input type="radio"/> PLATFORM: <input checked="" type="radio"/> ON-SHORE <input type="radio"/> OFF-SHORE <input type="radio"/> WEATHER PROTECTION REQ. <input type="radio"/> TROPICALIZATION REQ.				
40						
41						
42						
43	UNUSUAL CONDITIONS:	<input type="radio"/> CORROSIVES <input checked="" type="radio"/> DUST <input checked="" type="radio"/> FUMES <input checked="" type="radio"/> OTHER		Sand storm , Thunder & Lightening, Sea Breeze		

ELECTRICAL CLASSIFICATIONS						
HAZARDOUS				NON-HAZRDOUS		
47	MAIN UNIT	● ZONE	2	GROUP	IIB	TEMP CLASS T3
48	L.O. CONSOLE	○ ZONE		GROUP		TEMP CLASS
49	CW CONSOLE	○ ZONE		GROUP	IIB	TEMP CLASS
50						
51						
52						

OWNER:  شرکت پترو شیمیایی بوشهر	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT	CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT  Netherlands
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MC:  شرکت سازه های مهندسی پارس مهندسی عمران	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)
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Owner Document Number : 17811-11A	Project BU	Area 20	Phase VD	Unit 303	Dis. ME	Doc. DSH	Seq. 0022	Contract No : 52-98/445	Rev : 02	Page: 5 OF 20
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PART LOAD OPERATING CONDITIONS

CAPACITY CONTROL BY: MFG'S CAP. CONTROL PURCHASERS BY-PASS BOTH OTHER _____

FOR: PART LOAD COND. START-UP ONLY BOTH

WITH: AUTO LOADING DELAY INTERLOCK AUTO IMMEDIATE UNLOADING

USING: FIXED VOLUME POCK. SUCTION VALVE UNLOADERS: FINGER PLUG OTHER

ACTION: DIRECT (AIR-TO-UNLOAD) REVERSE (AIR-TO-LOAD/FAIL SAFE)

NUMBER OF STEPS: ONE THREE FIVE OTHER _____

RAIN COVER REQUIRED OVER UNLOADERS

INLET AND DISCHARGE PRESSURE ARE	<input type="radio"/> AT CYLINDER FLANGES	<input checked="" type="radio"/> PULSATION SUPPRESSOR FLANGES																																																																																																																																																										
<input type="radio"/> SERVICE OR ITEM NO. <input checked="" type="radio"/> STAGE <input type="radio"/> NORMAL OR ALTERNATE CONDITION <input checked="" type="radio"/> PERCENT CAPACITY <input type="radio"/> WEIGHT FLOW, kg/h <input checked="" type="radio"/> m ³ /h (760 mm HG & 0°C) <input type="checkbox"/> POCKETS/VALVES OPERATION * <input type="checkbox"/> POCKET CLEARANCE ADDED % <input type="checkbox"/> TYPE UNLOADERS, PLUG/FINGER <input checked="" type="radio"/> INLET TEMPERATURE, °C <input checked="" type="radio"/> INLET PRESSURE, (BARG) <input checked="" type="radio"/> DISCHARGE PRESSURE, (BARG) <input type="checkbox"/> DISCHARGE TEMP., ADIABATIC °C <input type="checkbox"/> DISCHARGE TEMP., PREDICTED °C <input type="checkbox"/> VOLUMETRIC EFF., %HE/%CE(AVER) <input type="checkbox"/> CALC. GAS ROD LOAD, KN, C ** <input type="checkbox"/> CALC. GAS ROD LOAD, KN, T ** <input checked="" type="checkbox"/> COMB. ROD LOAD, KN C (GAS & INERTIA) <input checked="" type="checkbox"/> COMB. ROD LOAD, KN T (GAS & INERTIA) <input checked="" type="checkbox"/> ROD REV., DEGREES MIN @ X-HD PIN *** <input type="checkbox"/> BkW/STAGE <input type="checkbox"/> TOTAL KW @ COMPRESSOR SHAFT <input type="checkbox"/> TOTAL KW INCL. V-BELT & GEAR LOSSES	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><th></th><th>1</th><th>2</th><th></th><th></th><th></th><th></th></tr> <tr><td>NORMAL</td><td>NORMAL</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>100%</td><td>100%</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>718</td><td>718</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>574</td><td>574</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Valves</td><td>Valves</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>NA</td><td>NA</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Plug</td><td>Plug</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>5...55</td><td>45</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6...8</td><td>14,5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>14,5</td><td>22,5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>115</td><td>64</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>134</td><td>83</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>78/85</td><td>78/85</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr> <tr><td>16,43</td><td>8,78</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>14,54</td><td>5,28</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>16,57</td><td>9,13</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>14,26</td><td>5,45</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>195</td><td>195</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>22,5</td><td>12,5</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>35</td><td>35</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>37</td><td>37</td><td></td><td></td><td></td><td></td><td></td></tr> </table>		1	2					NORMAL	NORMAL						100%	100%						718	718						574	574						Valves	Valves						NA	NA						Plug	Plug						5...55	45						6...8	14,5						14,5	22,5						115	64						134	83						78/85	78/85	/	/	/	/	/	16,43	8,78						14,54	5,28						16,57	9,13						14,26	5,45						195	195						22,5	12,5						35	35						37	37						
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* SHOW OPERATION WITH THE FOLLOWING SYMBOLS:

HEAD END = HE	} PLUS	SUCTION VALVE(S) UNLOADED = S
OR		OR
CRANK END = CE		FIXED POCKET OPEN = F
		OR
		VARIABLE POCKET OPEN = V

** C = COMPRESSION T = TENSION *** X - HD = CROSSHEAD

MINIMUM PRESSURE REQUIRED TO OPERATE CYLINDER UNLOADING DEVICES, _____ (BARG)

CYLINDER UNLOADING MEDIUM: AIR NITROGEN OTHER _____

PRESSURE AVAILABLE FOR CYLINDER UNLOADING DEVICES, MAX/MIN 7,5 / 6,0 (BARG)

SPECIAL REMARK:

Capacity control by valve unloaders insteps of 0-50-100 % , in between these steps by recycle over the compressor.

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**BUSHEHR PETROCHEMICAL COMPANY
MEG PLANT**

CONTRACTOR:



Chagalesh-Enerchimi-Steam
Joint Venture
BUPC-MEG PLANT PROJECT

MC:



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**DATA SHEET FOR
NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)**

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● SCOPE OF BASIC SUPPLY

PURCHASER TO FILL IN () **AFTER COMMODITY TO INDICATE:** **BY COMPR. MFR.** **BY PURCH.** **BY OTHERS**

● DRIVER (): **VARIABLE SPEED** **SPEED RANGE** **NOT APPLICABLE** **RPM TO** **NOT APPLICABLE** **RPM**

● INDUCTION MOTOR **SYNCHRONOUS MOTOR** **STEAM TURBINE** **ENGINE** **OTHER** _____

API-541 **API-546** **API-611** **API-612**

● OUTBOARD BEARING **PROVISION FOR DRY AIR PURGE FOR OUTBOARD BEARING.**

● SLIDE BASE FOR DRIVER () **SOLE PLATE FOR DRIVER** ()

● MOTOR STARTING EQUIPMENT (); **DEFINE** _____ **Local power distribution board**

GEAR (): **BASEPLATE FOR GEAR** **API-613** **API-677**

COUPLING(S) (): **LOW SPD.** **HI-SPD.** **QUILL SHAFT** **KEY-LESS DRV.** **KEY'D DRV.** **OTHER** _____

API 671

● V-BELT DRIVE (): **SHEAVES & V-BELTS** () **STATIC CONDUCTING V-BELTS** **BANDED V-BELTS**

● DRIVE GUARD(S) (): **● MANUFACTURER'S STD.** **● NON-SPARKING** **CALIF CODE** **API-671 APPENDIX C**

OTHER _____

● PULSATION SUPPRESSORS WITH INTERNALS (): **● INITIAL INLET & FINAL DISCHARGE** **● SUPPORTS** ()

● INTERSTAGE **● SUPPORTS** ()

PULSATION SUPPRESSORS WITHOUT INTRNL (): **INITIAL INLET & FINAL DISCHARGE** **SUPPORTS** ()

INTERSTAGE **SUPPORTS** ()

SUPPRESSOR(S) TO HAVE MOISTURE REMOVAL SECTION: **INITIAL INLET ONLY** **ALL INLET SUPPRESSORS**

● ACOUSTICAL SIMUL. STUDY (): **DESIGN APPROACH** 1, **EMPRICAL PULSATION SUPPRESSION DEVICE SIZING**

DIGITAL **ANALOG** **● 2, ACOUSTIC SIMULATION AND PIPING RESTRAINT ANALYSIS**

3, **ACOUSTIC SIMULATION AND PIPING RESTRAINT ANALYSIS PLUS MECHANICAL ANALYSIS**

STUDY TO CONSIDER: **ALL SPECIFIED LOAD COND., INCL.** **● SINGLE ACT., PLUS**

COMP. OPER. IN PARALLEL **ALTERNATE GASES**

WITH EXISTING COMP. AND PIPING SYSTEMS

COMPRESSOR VALVE DYNAMIC RESPONSE

STUDY TO BE WITNESSED **PULSATION SUPPRESSEN DEVICE LOW CYCLE FATIGUE ANALYSIS**

● VENDOR REVIEW OF PURCHASER'S PIPING ARRANGEMENT **PIPING SYSTEM FLEXIBILITY**

PACKAGED: **NO** **YES** () **DEFINE BASIC SCOPE OF PACKAGING IN REMARKS SECTION**

● SKID **● SOLEPLT.** **● BASEPLT.** **● BOLTS OR STUDS FOR SOLEPLT. TO FRAME** **RAILS** **CHOKE BLOCKS** **SHIMS**

SUITABLE FOR COLUMN MOUNTING (UNDER SKID AND/OR BASEPLATE)

LEVELING SCREWS **NON-SKID DECKING** **SUB SOLEPLATES**

● DIRECT GROUTED **● CEMENTED/MORTAR GROUT** **EPOXY GROUT; MFG/TYPE** _____ / _____

INTERCOOLER(S) () **SEPARATOR(S)** () **● AFTERCOOLER(S)** ()

INTERCOOLERS:

● INTERSTAGE PIPE () **PIPING MATCHMARKED** **SHOP FITTED** **MACHINE MTD.**

CONDENSATE SEPARATION & COLLECTION FACILITY SYSTEM PER 3.8.12 **OFF MOUNTED**

● INLET STRAINER(S) (): **● INITIAL INLET** **SIDESTREAM INLET** **SPOOL PIECE FOR INLET STRAINERS**

● MANIFOLD PIPING; **DRAINS** **VENTS** **● RELIEF VALVES** **● AIR/GAS SUPPLY** **FLANGE FINISH**

● RELIEF VALVE(S) (): **INITIAL INLET** **● INTERSTAGE** **● FINAL DISCHARGE** **API-618 FLANGE FINISH**

RUPTURE DISC(S) () **THRU STUDS IN PIPING FLANGES**

CRANKCASE RAPID PRESSURE RELIEF DEVICE(S) () **● FLANGE FINISH PER ANSI 16.5**

● SPECIAL PIPING REQUIREMENTS **SPECIAL FINISH**

INITIAL INLET, **INTERSTAGE SUCTION PIPING ARR'D FOR:** **INSULATION** () **HEAT TRACING** ()

FOR ATMOSPHERIC INLET AIR COMPR. ONLY: **INLET AIR FILTER** () **INLET FILTER -SILENCER** ()

● PREFERRED TYPE OF CYLINDER COOLING (): **● FORCED** **THERMOSYPHON** _____ **STAGE CYL(S)**

STATIC (STAND-PIPE) _____ **STAGE CYL(S)**

● CYL. COOLING WATER PIPING () **MATCH M'RKED**



● SINGLE INLET/OUTLET MANIFOLD & VALVES **● SIGHT GL'S(S)**



INDIVIDUAL INLET/ OUTLET PER CYL. **● VALVE(S)**

CLOSED SYS. WITH WATER PUMP, COOLER, SURGE TANK, & PIPING

SHOP RUN **ARR'D FOR HEATING JACKET AS WELL AS COOLING**

**NOTE: MANUFACTURER SHALL RECOMMENDBEST
TYPE OF COOLING AFTERFINAL ENGINEERING
REVIEW OF ALLOPERATING CONDITIONS**

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MC: 	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)							
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SCOPE OF BASIC SUPPLY (Con't)

SEPARATE COOLING CONSOLE (): ONE FOR EA. UNIT ONE CMMN TO ALL UNITS DUAL PUMPS (AUX. & MAIN)
 ARRANGED FOR HEATING JACKET WATER AS WELL AS COOLING

ROD PRESS. PACKING COOLING SYSTEM SEPARATE CONSOLE COMBINE WITH JKT SYSTEM FILTERS

FRAME LUBE OIL SYSTEM (): AUX. PUMP DUAL FILTERS WITH TRANSFER VALVE SHOP RUN
 CONTINUOUS FLOW IN SENSING LINE TO PRESSURE SWITCHES

SEPARATE LUBE OIL CONSOLE (): EXTENDED TO MOTOR OUTBOARD BEARING SHOP RUN
 API 614 APPLIES NO YES

NOTE: PIPING BETWEEN ALL CONSOLES AND COMPRESSOR UNIT BY PURCHASER

CAPACITY CONTROL (): SEE DATA SHEET PAGE 5 FOR DETAILS INSTRUMENT & CONTROL PANEL
 SEPARATE MACHINE MOUNTED PANEL SEPARATE FREE STANDING PANEL
 PNEUMATIC ELECTRIC ELECTRONIC HYDRAULIC
 PROGRAMMABLE CONTROLLER

INSTRUMENT & CONTROL PANEL (): ONE FOR EACH UNIT ONE COMMON TO ALL UNITS
 MACHINE MOUNTED FREE STANDING (OFF UNIT)

BUFFER GAS CONTROL PANEL () = ONE FOR EACH UNIT ONE COMMON TO ALL UNITS
 MACHINE MOUNTED FREE STANDING (OFF UNIT)

SEE INSTRUMENTATION DATA SHEETS FOR DETAILS OF PANEL, ADDITIONAL REMARKS, AND INSTRUMENTATION
 NOTE: ALL TUBING, WIRING, & CONNECTIONS BETWEEN OFF-UNIT FREE STANDING PANELS AND COMPRESSOR UNIT BY PURCHASER

HEATERS (): FRAME LUBE OIL CYL. LUBRICATORS COOLING WATER DRIVER(S) GEAR OIL
 ELECTRIC STEAM

BARRING DEVICE (): MANUAL PNEUMATIC ELECTRIC FLYWHEEL LOCKING DEVICE ()

ROD PRESSURE PACKING COOLING SYSTEM (): SEPARATE CONSOLE FILTERS

SPECIAL CORROSION PROTECTION: NO YES MFR'S STANDARD OTHER _____

HYDRAULIC TENSIONING TOOLS NO YES

MECHANICAL RUN TEST: NO YES MFG'S STANDARD OTHER _____
 COMPLETE SHOP RUN TEST OF ALL MACHINE MOUNTED EQUIPMENT, PIPING & APPURT.:(S)

PAINTING: MANUFACTURER'S STANDARD SPECIAL Project specification for color

NAMEPLATES: U.S. CUSTOMARY UNITS SI UNITS

SHIPMENT: DOMESTIC EXPORT EXPORT BOXING REQUIRED ()
 STANDARD 6 MONTH STORAGE PREPARATION (), PER SPEC _____
 OUTDOOR STORAGE FOR OVER 12 MONTHS (), PER SPEC _____

INITIAL INSTALLATION AND OPERATING TEMP ALIGNMENT CHECK AT JOBSITE BY VENDOR REPRESENTATIVE

COMPRESSOR MANUFACTURER'S USER'S LIST FOR SIMILAR SERVICE

PERFORMANCE DATA REQUIRED PER 5.3.3: BkW VS. SUCTION PRESSURE CURVES
 ROD LOAD/GAS LOAD CHARTS
 VALVE FAILURE DATA CHARTED
 SPEED/TORQUE CURVE DATA

BkW VS. CAPACITY PERFORMANCE CURVES OR TABLES REQUIRED FOR UNLOADING STEPS AND/OR VARIABLE SUCTION/DISCHARGE PRESSURES


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CYLINDER DATA AT FULL LOAD CONDITION

1						
2	SERVICE/ITEM NO.					
3	STAGE	1	2			
4	INLET PRESSURE, (BARG)	6...8	14,5			
5	DISCHARGE PRESSURE, (BARG)	14,5	22,5			
6	CYLINDERS PER STAGE	1	1			
7	SINGLE OR DOUBLE ACTING (SA OR DA)	DA	DA			
8	BORE, mm	160	100			
9	STROKE, mm	140	140			
10	RPM:	450 / 850				
11	PISTON SPEED, m/s:	3,5	3,5			
12	CYLINDER LINER, YES/NO	YES	YES			
13	LINER NOMINAL THICKNESS, mm	48	24			
14	PISTON DISPLACEMENT, m ³ /h	131,9	49,5			
15	CYLINDER DESIGN CLEARANCE, % AVERAGE					
16	VOLUMETRIC EFFICIENCY, % AVERAGE	78	87			
17	VALVES, INLET/DISCHARGE, QTY PER CYL.	2	2	/	/	/
18	TYPE OF VALVES	plate	plate			
19	VALVE LIFT, INLET/DISCHARGE, mm	1,05 / 1,05	1,05 / 1,05	/	/	/
20	VALVE VELOCITY, API 4TH EDITION, m/s	21,1	21,1			
21	SUCTION VALVE(S)	13,55	18,56			
22	DISCHARGE VALVE(S)	13,55	18,56			
23	ROD DIAMETER, (mm)	35	35			
24	MAX ALLOW. COMBINED ROD LOADING, kN, C *	31	31			
25	MAX ALLOW. COMBINED ROD LOADING, kN, T *	31	31			
26	CALCULATED GAS ROD LOAD, kN, C *	16,43	8,78			
27	CALCULATED GAS ROD LOAD, kN, T *	14,51	5,28			
28	COMBINED ROD LOAD (GAS + INERTIA), kN, C *	16,57	9,13			
29	COMBINED ROD LOAD (GAS + INERTIA), kN, T *	14,26	5,45			
30	ROD REV., DEGREES MIN @ X-HD PIN**	195,00	195,00			
31	RECIP WT. (PISTON, ROD, X-HD & NUTS), kg**	23,9	23,93			
32	MAX ALLOW. WORKING PRESSURE, (BARG)	34	45			
33	MAX ALLOW. WORKING TEMPERATURE, °C	230	230			
34	HYDROSTATIC TEST PRESSURE, (BARG)	51	67,5			
35	HELIUM TEST PRESSURE, (BARG)	3	3			
36	INLET FLANGE SIZE/RATING at CYLINDER	NOTE 2	NOTE 2	/	/	/
37	FACING at CYLINDER	R.F	R.F			
38	DISCHARGE FLANGE SIZE/RATING at CYLINDER	NOTE 2	NOTE 2	/	/	/
39	FACING at CYLINDER	R.F	R.F			
40	DISCHARGE RELIEF VALVE SETTING DATA AT INLET PRESSURES GIVEN ABOVE:					
41	RECOMMENDED SETTING, (BARG)	~16	~25			
42	GAS ROD LOAD, kN, C *	17,5	17,5			
43	GAS ROD LOAD, kN, T *	17,5	17,5			
44	COMBINED ROD LOAD, kN, C *	13,13	17,24			
45	COMBINED ROD LOAD, kN, T *	12,6	15,3			
46	ROD REVERSAL, °MIN @ X-HD PIN**	195	195			
47	NOTE: CALCULATED AT INLET PRESSURES					
48	GIVEN ABOVE & RECOMMENDED SETTING.					
49	SETTLE-OUT GAS PRESSURE	6.5...8.5	6.5...8.5			
50	(DATA REQUIRED FOR STARTING)					
51	* C = COMPRESSION * T = TENSION **X-HD = CROSSHEAD					

52 NOTES/REMARKS:

53 2. Special flanges are applied, therefore size cannot be given


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	<input type="checkbox"/> CONSTRUCTION FEATURES						
1							
2	SERVICE ITEM NO. NITROGEN BOOSTER COMPRESSOR						
3	STAGE	1	2				
4	CYLINDER SIZE (BORE DIA), mm						
5	ROD RUN-OUT: NORMAL COLD VERTICAL (per appendix C)						

MATERIALS OF CONSTRUCTION	
8	CYLINDER(S) DUCTILE CAST IRON
9	CYLINDER LINER(S) EN-GJL-250
10	PISTON(S) AISI10Mg
11	PISTON RINGS HS21027/H6
12	WEAR BANDS <input type="checkbox"/> REQUIRED
13	PISTON ROD(S): MATERIAL/YIELD, MPA 1.2316 (X36CrMo17QT) 1.2316 (X36CrMo17QT)
14	THREAD ROOT STRESS @ MACRL * @ X-HD END
15	PISTON ROD HARDNESS, BASE MATERIAL, Rc 29 - 33 29 - 33
16	PISTON ROD COATING <input checked="" type="checkbox"/> REQUIRED TUNGSTEN CARBIDE TUNGSTEN CARBIDE
17	COATING HARDNESS, Rc
18	VALVE SEATS / SEAT PLATE SS/SS SS/SS
19	VALVE SEAT MIN HARDNESS, Rc
20	VALVE GUARDS (STOPS) SS SS
21	VALVE DISCS X20Cr13G / AISI 420 X20Cr13G / AISI 420
22	VALVE SPRINGS SS SS
23	ROD PRESSURE PACKING RINGS FKM, 75-ShA FKM, 75-ShA
24	ROD PRESSURE PACKING CASE SS SS
25	ROD PRESSURE PACKING SPRINGS - -
26	SEAL / BUFFER PACKING, DISTANCE PIECE HS21027/H6 HS21027/H6
27	SEAL / BUFFER PACKING, INTERMEDIATE HS21027/H6 HS21027/H6
28	WIPER PACKING RINGS bronze bronze
29	MAIN JOURNAL BEARINGS, CRANKSHAFT SS SS
30	CONNECTING ROD BEARING, CRANKPIN SS SS
31	CONNECTING ROD BUSHING, X-HD END SnSb12Cu6Cd SnSb12Cu6Cd
32	CROSSHEAD (X-HD) PIN BUSHING - -
33	CROSSHEAD PIN 16MnCr5 (1.7131) 16MnCr5 (1.7131)
34	CROSSHEAD EN-GJL-250 EN-GJL-250
35	CROSSHEAD SHOES EN-GJL-250 EN-GJL-250
36	CYLINDER INDICATOR VALVES (X)
37	INDICATOR CONNECTIONS ABOVE 5000 PSI
38	FLUOROCARBON SPRAYED CYLINDER (X)
39	INSTRUMENTATION IN (X) COLD SIDE
40	CONTACT W/PROCESS GAS (X) HOT SIDE
41	* MAXIMUM ALLOWABLE COMBINED ROD LOAD

<p><input checked="" type="checkbox"/> COMPRESSOR CYLINDER ROD PACKING</p> <p><input checked="" type="checkbox"/> FULL FLOATING PACKING</p> <p><input checked="" type="checkbox"/> VENTED TO: <input type="checkbox"/> FLARE @ _____ <input checked="" type="checkbox"/> ATM</p> <p><input type="checkbox"/> SUCTION PRESSURE @ _____ (BARG)</p> <p><input type="checkbox"/> FORCED LUBRICATED <input checked="" type="checkbox"/> NON-LUBE <input type="checkbox"/> TFE</p> <p><input type="checkbox"/> WATER COOLED, _____ STAGE(S), _____ m³/h REQ'D</p> <p><input type="checkbox"/> OIL COOLED, _____ STAGE(S), _____ m³/h REQ'D</p> <p><input type="checkbox"/> WATER FILTER _____ PROV.FUTURE WATER/OIL COOLING</p> <p><input type="checkbox"/> VENT/BUFFER GAS SEAL PACKING ARR. _____ (Ref: Appndx I FIG I-1)</p> <p><input type="checkbox"/> CONSTANT OR <input type="checkbox"/> VARIABLE DISPOSAL SYSTEM</p> <p><input type="checkbox"/> BUFFER GAS PRESSURE, _____ (BARG)</p> <p><input type="checkbox"/> SPLASH GUARDS FOR WIPER PACKING</p>	<p style="text-align: center;">USE (X) IN APPROPRIATE COLUMN WHERE APPLICABLE</p> <p>DISTANCE PIECE(S): <input type="checkbox"/> TYPE A <input checked="" type="checkbox"/> TYPE B <input type="checkbox"/> TYPE C <input type="checkbox"/> TYPE D Ref: Appendix G, Fig. G-3</p> <p>COVERS: <input checked="" type="checkbox"/> SOLID METAL <input type="checkbox"/> SCREEN <input type="checkbox"/> LOUVERED</p> <p>CYLINDER COMPARTMENT: (Outboard Distance Piece) <input checked="" type="checkbox"/> VENTED TO ATM _____ (BARG)</p> <p><input type="checkbox"/> PURGED AT _____ (BARG)</p> <p><input type="checkbox"/> PRESSURIZED TO _____ (BARG)</p> <p><input type="checkbox"/> WITH RELIEF VALVE</p> <p>FRAME COMPARTMENT: (Inboard Distance Piece) <input checked="" type="checkbox"/> VENTED TO _____ (BARG)</p> <p><input type="checkbox"/> PURGED AT _____ (BARG)</p> <p><input type="checkbox"/> PRESSURIZED TO _____ (BARG)</p> <p><input type="checkbox"/> WITH RELIEF VALVE</p> <p><input checked="" type="checkbox"/> DISTANCE PIECE MAWP _____ (BARG)</p>
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FRAME LUBE OIL SYSTEM

BASIC LUBE OIL SYSTEM FOR FRAME: **SPLASH (TBA)** **PRESSURE (FORCED)** **HEATERS REQUIRED:**

REF: TYPE MAIN BEARINGS: **TAPERD ROLLER** **PRECISION SLEEVE** **ELEC. W/THERMOSTAT(S)** **STEAM**

PRESSURE SYSTEM: **MAIN OIL PUMP DRIVEN BY:** **COMP. CRANKSHAFT** **ELEC. MOTOR** **OTHER** _____

AUX OIL PUMP DRIVEN BY: **PSV FOR MAIN PUMP EXTERNAL TO CRANKCASE** **OTHER** _____

HAND OPERATED PRE-LUBE PUMP FOR STARTING **ELEC. MOTOR** **OTHER** _____

API-614 LUBE SYSTEM: **NO** **YES** **OPERATIONAL TEST & 4 HOUR MECH RUN TEST**

CONTINUOUS FLOW THROUGH OIL (3.7.2.7) **CHECK VALVE ON MAIN PUMP**

SEP. CONSOLE FOR PRESS. LUBE SYS: **ONE CONSOLE FOR EA. COMP.** **ONE CONSOLE FOR** _____ **COMPRESSORS**

CONSOLE TO BE OF DECK PLATE TYPE CONSTRUCTION SUITABLE FOR MULTI-POINT SUPPORT AND GROUTING WITH GROUT & VENT HOLES.

ELECTRICAL CLASSIFICATION : ZONE 2 , **GROUP** IIB **CLASS** _____ **T3** **NON-HAZARDOUS**

BASIC SYS. REQ'MTS (NORM. OIL FLOWS & VOLUMES)

LUBE OIL	FLOW m³/h	PRESSURE (BARG)	VISCOSITY cst @ 40°C	VISCOSITY cst @ 100°C	SUMP VOLUME m³
<input type="checkbox"/> COMPRESSOR FRAME	_____	_____	_____	_____	_____
<input type="checkbox"/> DRIVER	_____	_____	_____	_____	_____
<input type="checkbox"/> GEAR	_____	_____	_____	_____	_____
<input type="checkbox"/> SYSTEM PRESSURES:	<input type="checkbox"/> DESIGN _____ (BARG)	<input type="checkbox"/> HYDROTEST _____ (BARG)			
	<input type="checkbox"/> PRESSURE CONTROL VALVE SETTING _____ (BARG)	<input type="checkbox"/> PUMP RELIEF VALVE(S) SET _____ (BARG)			

PIPING MATERIALS:

	CARBON STEEL	STAINLESS STEEL WITH SS FLANGES	STAINLESS STEEL WITH CARBON STEEL FLANGES
<input checked="" type="checkbox"/> UPSTREAM OF PUMPS & FILTERS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> DOWNSTREAM OF FILTERS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PUMPS

PUMPS	RATED FLOW	PRESSURE (BARG)	COLD START REQ'D KW	DRIVER KW	SPEED RPM	COUPLING REQ'D	MECH. SEAL REQ'D
MAIN	NA	2,0	NA	SHAFT DRIVEN	NA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AUXILIARY	_____	_____	_____	_____	_____	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> PUMP CASING MATERIAL	MAIN PUMP		STEEL		AUX PUMP		
<input type="checkbox"/> GUARD(S) REQ. FOR COUPLING(S):	<input type="checkbox"/> MAIN PUMP	<input type="checkbox"/> AUX PUMP	<input type="checkbox"/> GUARD TYPE OR CODE _____				
<input type="checkbox"/> AUXILIARY PUMP CONTROL:	<input type="checkbox"/> MANUAL	<input type="checkbox"/> AUTOMATIC	<input type="checkbox"/> ON-OFF-AUTO SEL. SWITCH:		<input type="checkbox"/> BY PURCH.	<input type="checkbox"/> BY MFR.	
			<input type="checkbox"/> WIRING TO TERMINAL BOX:		<input type="checkbox"/> BY PURCH.	<input type="checkbox"/> BY MFR.	
			<input type="checkbox"/> SWITCHES		<input type="checkbox"/> RTD'S/THERMOCOUPLES		

COOLERS:

SHELL & TUBE **SINGLE** **DUAL W/TRANSFER VALVE** **MFG'S STD.** **TEMA C** **TEMA R**

REMOVABLE BUNDLE **WATER COOLED** **AIR COOLED W/AUTO TEMP CONTROL**

W/BYPASS & TEMP CONTROL VALVE: **MANUAL** **AUTO** **SEE SEPARATE HEAT EXCHANGER DATA SHTEET**

FILTER(S)

SINGLE **DUAL W/TRANSFER VALVE** **ASME CODE DESIGN** **ASME CODE STAMPED**

DESIGN PRESSURE, _____ (BARG) **Δ P CLEAN,** _____ (BARG) **Δ P COLLAPSE,** _____ (BARG)


MICRON RATING, _____ **CARTRIDGE MATERIAL,** _____ **CARTRIDGE P/N** _____

BONNET MATERIAL, _____ **CASING MATERIAL,** _____ **FURN.SPARE CARTR.,QTY** _____

SYS. COMPONENT SUPP.

	MANUFACTURER	MODEL		MANUFACTURER	MODEL
<input type="checkbox"/> MAIN PUMP	AS PER AVL	_____	<input type="checkbox"/> OIL COOLER(S)	AS PER AVL	_____
<input type="checkbox"/> AUXILIARY PUMP	AS PER AVL	_____	<input type="checkbox"/> TRANSFER VALVE(S)	AS PER AVL	_____
<input type="checkbox"/> MECHANICAL SEALS	AS PER AVL	_____	<input type="checkbox"/> PUMP COUPLING(S)	AS PER AVL	_____
<input type="checkbox"/> ELECTRIC MOTORS	AS PER AVL	_____	<input type="checkbox"/> SUCTION STRAINER(S)	AS PER AVL	_____
<input type="checkbox"/> STEAM TURBINES	NOT APPLICABLE	NOT APPLICABLE	<input type="checkbox"/> CHECK VALVE(S)	AS PER AVL	_____
<input type="checkbox"/> OIL FILTER(S)	AS PER AVL	_____			

OWNER:



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CONTRACTOR:



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Joint Venture
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MC:



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COOLING WATER SYSTEM

BASIC COOLING SYS. FOR: COMPRESSOR CYL.(S) INTERCOOLER(S) AFTERCOOLER OIL COOLER(S)
 HEATERS REQ'D FOR PRE-HEATING: ELEC.,W/ THERMOSTAT(S) STEAM

PRESSURE FORCED CIRCULATING SYS.: OPEN, PIPING BY: PURCH MFR CLOSED, PIPING BY MFR.
 MAIN WATER PUMP DRIVEN BY: ELEC. MOTOR STEAM TURBINE OTHER
 AUX WATER PUMP DRIVEN BY: ELEC. MOTOR STEAM TURBINE OTHER

SEP. CONSOLE FOR COOLING WATER SYS.: ONE CONSOLE FOR EA. COMP. ONE CONSOLE FOR _____ COMP'RS
 CONSOLE TO BE OF DECK PLATE TYPE CONSTRUCTION SUITABLE FOR MULTI-POINT SUPPORT AND GROUTING WITH GROUT & VENT HOLES.

ELECTRICAL CLASSIFICATION ZONE 2 IIB T3 NON-HAZARDOUS

BASIC SYS. REQ'MTS (NORM. COOLING WATER FLOW DATA) COOL'G WATER TO BE _____ % ETHYL'NE GLYC'L **SITE**

	FORCED COOL'G	THERMO SYPHON	STAND PIPE	FLOW m³/h	PRESSURE (BARG)	INLET TEMP °C	OUTLET TEMP °C	FLOW IND'TR
CYLINDER(S), 1 STAGE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4,3	4,5	35	45	<input type="checkbox"/>
CYLINDER(S), 2 STAGE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4,5	35	45	<input type="checkbox"/>
CYLINDER(S), _____ STAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
CYLINDER(S), _____ STAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
CYLINDER(S), _____ STAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
CYLINDER(S), _____ STAGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
PISTON ROD PACK'G TOTAL	<input type="checkbox"/>							<input type="checkbox"/>
INTERCOOLER(S) TOTAL	<input type="checkbox"/>							<input type="checkbox"/>
AFTERCOOLER	<input type="checkbox"/>							<input type="checkbox"/>
OIL COOLER(S)	<input type="checkbox"/>							<input type="checkbox"/>
JACKET COOLER	<input type="checkbox"/>							<input type="checkbox"/>
TOTAL FLOW								

SYS. PRESSURES: DESIGN, _____ (BARG) (kPa) HYDROTEST, _____ (BARG) (kPa) RELIEF VALVE(S), SETTING _____ PSIG

WATER RESERVOIR: SIZE, _____ mm DIA X _____ mm HT. CAPACITY _____ m @ Normal Operating Level

PUMPS: (Centrifugal Only) RESERVOIR MATER'l c.s INTERNAL COATING, TYPE _____

LEVEL GAUGE LEVEL SWITCH DRAIN VALVE INSPECTION & CLEAN-OUT OPENINGS

RAT'D FL'W _____ m³/h PRESS. (BARG) _____ REQ'D _____ kW DRIVER _____ kW SPEED _____ RPM COUPLING REQ'D _____ MECH. SEAL REQ'D _____

PUMP CASING MATERIAL (Ref 6.14.2.1.5): MAIN PUMP _____ AUX PUMP _____

GUARD(S) REQ'D FOR COUP'G(S) MAIN PUMP AUX PUMP GUARD TYPE OR CODE _____

AUX.PUMP CONTROL: MANUAL AUTO ON-OFF-AUTO SEL. SWITCH: BY PURCH. BY MANUFACTURER
 WIRING TO TERMINAL BOX: BY PURCH. BY MANUFACTURER

COOLING WATER HEAT EXCH.: SHELL & TUBE SINGLE DUAL W/TRANSFER VALVE TEMA C TEMA R(API-660)


AIR COOLED EXCHANGER W/AUTO TEMP CONTROL (API-661 Data Sheets Attached)

W/BYPASS & TEM. CONTROL VALVE MANUAL AUTO LOUVERS FOR AIR EXCH.

SEE SEPARATE COOLER DATA SHEET FOR DETAILS; SPECIFY % GLYCOL ON BOTH SIDES OF SHELL & TUBE

SYS. COMPONENT SUPP.	MANUFACTURER	MODEL	MANUFACTURER	MODEL
<input type="checkbox"/> MAIN PUMP			<input type="checkbox"/> TEMP CONTROL VALVE(S)	
<input type="checkbox"/> AUXILIARY PUMP			<input type="checkbox"/> TRANSFER VALVE(S)	
<input type="checkbox"/> MECHANICAL SEALS			<input type="checkbox"/> PUMP COUPLING(S)	
<input type="checkbox"/> ELECTRIC MOTORS				
<input type="checkbox"/> STEAM TURBINES				

OWNER: 	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT	CONTRACTOR: 
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MC: 	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)	Contract No : 52-98/445														
Owner Document Number: 17811-11A	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <th>Project</th> <th>Area</th> <th>Phase</th> <th>Unit</th> <th>Dis.</th> <th>Doc.</th> <th>Seq.</th> </tr> <tr> <td>BU</td> <td>20</td> <td>VD</td> <td>303</td> <td>ME</td> <td>DSH</td> <td>0022</td> </tr> </table>	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	BU	20	VD	303	ME	DSH	0022	Rev : 02 Page: 15 OF 20
Project	Area	Phase	Unit	Dis.	Doc.	Seq.										
BU	20	VD	303	ME	DSH	0022										

PULSATION SUPPRESSION DEVICES FOR RECIPROCATING COMPRESSORS

THESE SHEETS TO BE FILLED OUT FOR EACH SERVICE AND/OR STAGE OF COMPRESSION

3 APPLICABLE TO: PROPOSALS PURCHASE AS BUILT

4 FOR/USER BUSHEHR PETROCHEMICAL COMPANY (BUPC)

5 SITE/LOCATION ASSALUYE AMBIENT TEMPERATURE MIN/MAX 5 / 52 °C

6 COMPRESSOR SERVICE NITROGEN COMPRESSOR NUMBER OF COMPRESSORS 1 SET

7 COMPRESSOR MFG. Airpack MODEL/TYPE _____

8 SUPPRESSOR MFG. TBC

9 NOTE: Ind.Data Comp.'d Purch. By Compr/Supp.Mfg.w/Proposal By Mfg(s) after order By Mfg(s)/Purchaser as Applicable

GENERAL INFORMATION APPLICABLE TO ALL SUPPRESSORS

11 TOTAL NUMBER OF SERVICES AND/OR STAGES _____

12 TOTAL NUMBER OF COMPRESSOR CYL. 2 TOTAL NUMBER OF CRANKTHROWS 1 STROKE _____ mm RPM 690

13 ASME CODE DESIGN GOVERNMENTAL CODES OF _____ CODE REGULATIONS APPLY

14 OTHER APPLICABLE PRESSURE VESSEL SPEC. OR CODE _____

15 LUBE SERVICE NON-LUBE SERV. NO OIL ALLOWED INTERNALLY DRY TYPE INTER.CORR.COATING YES NO

16 RADIOGRAPHY (X-RAY OF WELDS): NONE SPOT 100% IMPACT TEST SPECIAL WELDING REQUIREMENTS

17 SHOP INSPECTION WITNESS HYDROTEST OUTDOOR STORAGE OVER 12 MONTHS SPECIAL PAINT SPEC: BU-20-D-000-PI-SPC-409

18 WITNESSED OBSERVED

CYLINDER, GAS, OPERATING, AND SUPPRESSOR DESIGN DATA

	SERVICE <u>NITROGEN COMPRESSOR</u> STAGE NO. <u>2</u>
<input type="checkbox"/> COMPRESSOR MANUFACTURER'S RATED CAPACITY	LBS/HR _____ SCFM _____ MMSCFD _____
<input type="checkbox"/> LINE SIDE OPERATING PRESSURE	INLET, _____ (BARA) DISCHARGE, _____ (BARA)
<input type="checkbox"/> OPERATING TEMP. WITHIN SUPPRESSORS	INLET, _____ °C DISCHARGE, _____ °C
<input type="checkbox"/> ALLOWABLE PRESSURE DROP THROUGH SUPPRESSORS	Δ P _____ (BAR) / _____ % Δ P _____ (BAR) / _____ %
	INLET SUPPRESSOR DISCHARGE SUPPRESSOR
<input checked="" type="radio"/> SUPPRESSOR TAG NUMBER	
<input checked="" type="radio"/> COMBINATION INLET SUPP SEPARATOR/INTERNALS	<input type="radio"/> YES <input checked="" type="radio"/> NO / <input type="radio"/> YES <input checked="" type="radio"/> NO <input type="radio"/> YES <input checked="" type="radio"/> NO / <input type="radio"/> YES <input checked="" type="radio"/> NO
<input checked="" type="checkbox"/> NO. (QTY) OF INLET & DISCH. SUPP. PER STAGE	1SET/EACH STAGE 1SET EACH STAGE
<input type="checkbox"/> ALLOWABLE PEAK-PEAK PULSE @ LINE SIDE NOZZLE	(BAR) _____ / _____ % (BAR) _____ / _____ %
<input type="checkbox"/> ALLOWABLE PEAK-PEAK PULSE @ CYL FLANGE NOZZLE	(BAR) _____ / _____ % (BAR) _____ / _____ %
<input checked="" type="radio"/> DESIGN FOR FULL VACUUM CAPABILITY	<input type="radio"/> YES <input checked="" type="radio"/> NO <input type="radio"/> YES <input checked="" type="radio"/> NO
<input type="checkbox"/> MIN. REQ'D WORKING PRESSURE & TEMPERATURE	(BARA) <u>13,5</u> @ <u>85</u> °C (BARA) <u>23,5</u> @ <u>210</u> °C
<input checked="" type="radio"/> INITIAL SIZING VOLUME	_____ m ³ _____ m ³
<input type="checkbox"/> AS BUILT VOLUME (m ³)	_____ m ³ _____ m ³

42

43

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OWNER:



شرکت پترو شیمی بوشهر
BUPC

**BUSHEHR PETROCHEMICAL COMPANY
MEG PLANT**

CONTRACTOR:



Chagalesh-Enerchimi-Steam
Joint Venture
BUPC-MEG PLANT PROJECT



Netherlands

MC:



شرکت مهندسی و پیمانکاری
پارس پارس

**DATA SHEET FOR
NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)**

Project	Area	Phase	Unit	Dis.	Doc.	Seq.
BU	20	VD	303	ME	DSH	0022

Contract No : 52-98/445

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1 PULSATION SUPPRESSION DEVICES FOR RECIPROCATING COMPRESSORS (CONT'D) SERVICE NITROGEN COMPRESSOR
2 THESE SHEETS TO BE FILLED OUT FOR EACH SERVICE AND/OR STAGE OF COMPRESSION STAGE NO. **2**

- 3 CONSTRUCTION REQUIREMENTS & DATA**
- 4 SUPPRESSOR TAG NUMBER
 - 5 BASIC MATERIAL REQUIRED, CS, SS, ETC.
 - 6 ACTUAL MATERIAL DESIGNINATION SHELL/HEAD
 - 7 SPECIAL HARDNESS LIMITATIONS, Rc YES NO
 - 8 CORROSION ALLOWANCE., mm REQUIRED SHELL/HEAD
 - 9 WALL THICKNESS, mm SHELL/HEAD
 - 10 NOM. SHELL DIA X OVERALL LGTH. (mm/m³)
 - 11 PIPE OR ROLLED PLATE CONSTRUCTION
 - 12 ACT. MAX ALLOW. WORKING PRESS. AND TEMPERATURE
 - 13 MINIMUM DESIGN METAL TEMP (2.14.8)
 - 14 INLET SUPPRESS. TO BE SAME MAWP AS DISCH'RGE SUPPRESS.
 - 15 MAX EXPECTED PRESSURE DROP(Δ P, %) LINE PRESS
 - 16 WEIGHT (EACH)
 - 17 INSUL CLIP
 - 18 EXPECTED P-P PULSE @ LINE SIDE/CYL FLG, % LINE PRESS
BASED ON FINAL SUPPRESSOR DESIGN
 - 19 SUPPORTS, TYPE/QUANTITY

INLET SUPPRESSOR		DISCHARGE SUPPRESSOR	
Carbon Steel		Carbon Steel	
/		/	
SHELL & HEADS	WELDS	SHELL & HEADS	WELDS
3	mm	3	mm
mm/	mm	mm.	mm
mm/	mm³	mm.	mm³
<input type="checkbox"/> PIPE	<input type="checkbox"/> ROLLED PLATE	<input type="checkbox"/> PIPE	<input type="checkbox"/> ROLLED PLATE
(BAR)	@ °C	(BAR)	@ °C
	°C		°C
<input type="radio"/> YES	<input checked="" type="radio"/> NO		
Δ P (BAR) /	%	Δ P (BAR) /	%
	kg		kg
VTS		VTS	
%/	%	%/	%

21 CONNECTION REQUIREMENTS & DATA

- 22 LINE SIDE FLANGE. SIZE/RATING/FACING/TYPE
- 23 COMP CYL FLANGE(S), QTY/SIZE/RATING/FACING/TYPE
- 24 FLANGE FINISH, PER 3.9.3.15 SPECIAL (SPECIFY)
>3.2 <6.4 PER ANSI 16.5
- 26 INSPECTION OPENINGS REQUIRED YES NO BLINDED
- 27 SPEC. QTY. SIZE, /FLG TYPE & RATING
- 28 * QTY. SIZE, /FLG TYPE & RATING
- 29 VENT CONNECTIONS REQUIRED YES NO
- 30 SPEC. QTY. SIZE, /FLG TYPE & RATING
- 31 * QTY. SIZE, /FLG TYPE & RATING
- 32 DRAIN CONNECTIONS REQUIRED YES NO
- 33 SPEC. QTY. SIZE, /FLG TYPE & RATING
- 34 * QTY. SIZE, /FLG TYPE & RATING
- 35 PRESSURE CONNECTIONS REQUIRED YES NO
- 36 SPEC. QTY. SIZE, /FLG TYPE & RATING
- 37 * QTY. SIZE, /FLG TYPE & RATING
- 38 TEMPERATURE CONNECTIONS REQUIRED YES NO
- 39 SPEC. QTY. SIZE, /FLG TYPE & RATING
- 40 CYL NOZZLE MAIN BODY
- 41 * QTY. SIZE, /FLG TYPE & RATING

VTS/VTS/RF/WN	VTS/VTS/RF/WN
VTS	VTS
<input type="radio"/> YES <input checked="" type="radio"/> NO <input type="radio"/> BLINDED	<input type="radio"/> YES <input checked="" type="radio"/> NO <input type="radio"/> BLINDED
VTS	VTS
<input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO
VTS	VTS
<input checked="" type="radio"/> YES <input type="radio"/> NO	<input checked="" type="radio"/> YES <input type="radio"/> NO
1/2"NPT	1/2"NPT
<input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO
VTS	VTS
<input type="radio"/> YES <input checked="" type="radio"/> NO	<input type="radio"/> YES <input checked="" type="radio"/> NO
VTS	VTS

46 OTHER DATA AND NOTES

- 47 COMPRESSOR MFG'S SUPP. OUTLINE OR DRAWING NO.
- 48 SUPP. MFG'S OUTLINE OR DRAWING NO.

OWNER:



شرکت پتروشیمی بوشهر

**BUSHEHR PETROCHEMICAL COMPANY
MEG PLANT**

CONTRACTOR:



Chagalesh-Enerchim-Steem
Joint Venture
BUPC-MEG PLANT PROJECT



MC:



شرکت مستشاری و مهندسی پتروشیمی
ایران

**DATA SHEET FOR
NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)**

Contract No : 52-98/445

**Owner Document Number:
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Project	Area	Phase	Unit	Dis.	Doc.	Seq.
BU	20	VD	303	ME	DSH	0022

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INSTRUMENTATION

PURCHASER TO FILL IN () **AFTER COMMODITY TO INDICATE:** **BY COMP. MFR.** **BY PURCH.** **BY OTHERS**

INSTRUMENT & CONTROL PANEL ():

- ONE FOR EA. UNIT ONE COMMON TO ALL UNITS
- MACHINE M'T'ED FREE STANDING (OFF UNIT) / LOCAL REMOTE INDOORS
- PNEUMATIC ELEC. ELECTRONIC HYDRAULIC PROGRAMMABLE CONTR'L'R
- NEMA 7, CLASS _____, GROUP _____, DIVISION _____ INTRINSICALLY SAFE (Exi)
- I/S BARRIERS ()
- NEMA 4, WATERTIGHT & DUSTTIGHT PURGED TO NFPA 496 TYPE X Y Z
- OTHER NEMA IP42 _____ LOW PURGE PRESS. ALARM SHUTDOWN
- VIB. ISOLATORS STRIP HEATERS PURGE CONN. EXTRA CUTOUTS
- ANNUNCIATOR W/FIRST-OUT INDICATION LOCATED ON CONTROL PANEL
- PURCHASER'S CONN. BROUGHT OUT TO TERMINAL BOX BY VENDOR
- IP PROTECTION : IP 42 FOR INDOOR CONTROL PANEL

INSTRUMENTATION SUITABLE FOR: INDOORS OUTDOORS IP PROTECTION: IP-65 OTHER _____

PREFERRED INSTRUMENT SUPPLIERS, (TO BE COMPLETED BY PURCHASER), OTHERWISE MFR'S STANDARD APPLIES


20	PRESSURE GAUGES	MFR	as per instrument data sheets	SIZE & TYPE	as per instrument data sheets	MTL
21	TEMPERATURE GAUGES	MFR	as per instrument data sheets	SIZE & TYPE	as per instrument data sheets	MTL
22	LIQUID LEVEL GAUGES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
23	DIFF. PRESSURE GAUGES	MFR	as per instrument data sheets	SIZE & TYPE	as per instrument data sheets	MTL
24	PRESS. TRANSMITTERS	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
25	LIQUID LEV. TRANSMITTER	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
26	PRESSURE SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
27	TEMPERATURE SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
28	LIQUID LEVEL SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
29	DIFF. PRESSURE SWITCHES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
30	CONTROL VALVES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
31	PRESSURE SAFETY VALVES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
32	SIGHT FLOW INDICATORS	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
33	VIBRATION MONITORS & EQUIP.	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
34	THERMOCOUPLES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
35	RTD'S	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
36	SOLENOID VALVES	MFR	as per instrument data sheets	TYPE	as per instrument data sheets	MTL
37	ANNUNCIATOR	MFR	_____	MODEL & (QTY SPARE POINTS)	_____	()
38	PROGRAMMABLE CONTROLLER	MFR	_____	TYPE	_____	MTL
39		MFR	_____	TYPE	_____	MTL
40		MFR	_____	TYPE	_____	MTL

PRESSURE GAUGE REQUIREMENTS LIQUID FILLED PRESSURE GAUGES: YES NO

FUNCTION	LOCALLY MOUNTED		PANEL MOUNTED			LOCALLY MOUNTED		PANEL MOUNTED	
	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)		(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)
LUBE OIL MAIN PUMP DISCHAR.	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	PROCESS GAS: INLET PRESS.				
LUBE OIL AUX. PUMP DISCHARG.	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	@ EA. STAGE	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)
LUBE OIL PRESS. AT FRAME HEADER ((<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)					
LUBE OIL FILTER Δ P	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	DISCH. PRESS.	@ EA. STAGE	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)
COOLING H ₂ O INLET HEADER	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)			(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)
	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)			(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)
	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)			(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)

REMARKS: _____

OWNER:  شرکت پتروشیمی بوشهر	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT	CONTRACTOR:  Chagalesh-Enerchim- Steam Joint Venture BUPC-MEG PLANT PROJECT 
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MC: 	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)	Contract No : 52-98/445														
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Project	Area	Phase	Unit	Dis.	Doc.	Seq.										
BU	20	VD	303	ME	DSH	0022										

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INSTRUMENTATION (CONT'D)										
2	TEMPERATURE MEASUREMENT REQUIREMENTS				LOCALLY MOUNTED	PANEL MOUNTED	GAUGE W/ CAPIL'RY	THERMO CPL SYS	RTD SYS	I/S SYS
3	FUNCTION									
4	LUBE OIL	<input type="radio"/> INLET TO	<input type="radio"/> OUT OF	FRAME	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	LUBE OIL	<input type="radio"/> INLET TO	<input type="radio"/> OUT OF	COOLER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	MAIN JRNL BEARINGS (THERMOCOUPLES OR RTD'S ONLY)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	MOTOR BEARING(S) (THERMOCOUPLES OR RTD'S ONLY)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	COOLING WATER HEADER: ● INLET ● OUTLET				(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	CYL. COOLING WATER: ● INLET ● OUTLET ○ EA. CYL				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	PROCESS GAS:	<input type="radio"/> INLET	<input type="radio"/> DISCH.	<input type="radio"/> EACH CYL	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	PROCESS GAS:	<input type="radio"/> INLET	<input type="radio"/> GAS	<input type="radio"/> WATER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	INTERCOOLER(S)	<input type="radio"/> INLET	<input type="radio"/> GAS	<input type="radio"/> WATER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13		<input type="radio"/> INLET	<input type="radio"/> GAS	<input type="radio"/> WATER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	AFTERCOOLER:	<input type="radio"/> INLET	<input type="radio"/> GAS	<input type="radio"/> WATER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15		<input type="radio"/> INLET	<input type="radio"/> GAS	<input type="radio"/> WATER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	COOLING WATER	<input type="radio"/> INLET	<input type="radio"/> OUTLET/COOLED PKG CASE(S)		(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	PRESS. PGK CASE, CYL PIST ROD (THRM/CPLS OR RTD'S ONLY)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	COMPRESSOR VALVES <input type="radio"/> SUCT. <input type="radio"/> DISCH. TC'S OR RTD'S ONLY				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19					(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ALARM & SHUTDOWN SWITCH REQ'MTS						NOTE: ALARM & SHUTDOWN SWITCHES SHALL BE INDIVIDUALLY SEPARATE					
FUNCTION						ANNUNCIATION POINTS					
						ALARM		SHUT DOWN		ALARM	
		ALARM	SHUT DOWN	IN PNL BY MFR	IN CTL ROOM PANEL OTH'RS	IN PNL BY MFR	IN CTL ROOM PANEL OTH'RS				
27	LOW LUBE OIL PRESS. @ BEARING HEADER				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____
28	HIGH LUBE OIL Δ P ACROSS FILTER				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
29	LOW LUBE OIL LEVEL, FRAME				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
30	AUX LUBE OIL PUMP, FAIL TO START				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
31	CYL LUBE SYSTEM PROTECTION				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
32	COMPR. VIBRATION, SHUTDOWN ONLY					(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____
33	VIBRATION, W/ CONTINUOUS MONITORING				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
34	ROD DROP DETECTOR, CONTACT TYPE(1/CYL)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
35	ROD DROP PROXIMITY PROBE (1/CYL)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
36	OIL TEMP OUT OF FRAME				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
37	HIGH GAS DISCH. TEMP EACH CYLINDER				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
38	HIGH JACKET WATER TEMP., EA. CYL				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
39	LOW SUCTION PRESS., FIRST STG INLET				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____
40	HI DISCH. PRESS. <input type="radio"/> FINAL <input checked="" type="radio"/> EA STG				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____
41	HI CYL. GAS Δ P, EACH STAGE				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
42	HI LIQ. LEV., SEPARATOR				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
43	LOW PURGE GAS PRESS, DISTANCE PIECE(S)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
44	HI X-HD PIN TEMP				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
45	PRESS PKG CASE (PISTON ROD TEMP)				(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
46					(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
47	TOTAL NUMBER OF ANNUNCIATION POINTS										

48 SWITCH CONTACT OPERATION NOTE: EACH SWITCH SHALL BE MINIMUM SPDT ARRANGEMENT

49 ALARM CONTACTS SHALL:

- OPEN (DE-ENER.) TO SOUND ALARM & BE ENERGIZED WHEN COMPR. IS IN OPERATION(NORMALLY CLOSE)
- CLOSE (ENERGIZE) TO SOUND ALARM & BE DE-ENERGIZED WHEN COMPR. IS IN OPERATION(NORMALLY OPEN)

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51 SHUTDOWN CONTACTS SHALL:

- OPEN (DE-ENERGIZED) TO SHUTDOWN & BE ENERGIZE WHEN COMPR. IS IN OPERATION(NORMALLY CLOSE)
- CLOSE (ENERGIZE) TO SHUTDOWN & BE DE-ENERGIZE WHEN COMPR. IS IN OPERATION(NORMALLY OPEN)

52

53 REF: 3.6.5.1 FOR MINIMUM RECOMMENDED PROTECTION REQUIREMENTS


OWNER:




شرکت پتروشیمی بوشهر
BUPC

**BUSHEHR PETROCHEMICAL COMPANY
MEG PLANT**

CONTRACTOR:



Chagalesh-Enerchimi-Steam
Joint Venture
BUPC-MEG PLANT PROJECT



Netherlands

MC:




شرکت مهندسی و پیمانکاری
مکانیک

**DATA SHEET FOR
NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)**

Project	Area	Phase	Unit	Dis.	Doc.	Seq.
BU	20	VD	303	ME	DSH	0022

Contract No : 52-98/445
Rev : 02 Page: 19 OF 20

**Owner Document Number:
17811-11A**

INSTRUMENTATION (CONT'D)




<input type="checkbox"/> MISCELLANEOUS INSTRUMENTATION		<input type="checkbox"/> INTERCLR(S)	<input type="checkbox"/> AFTERCLR	<input type="checkbox"/> OIL CLR	<input type="checkbox"/> H ₂ O CLR
3	SIGHT FLOW IND. (COOLING H ₂ O ONLY)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	<input type="checkbox"/> CYL JACKET WATER	<input type="checkbox"/> ROD PRESS. PKG CASES
4	PNEUMATIC PRESSURE TRANSMITTERS	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
5	PRESSURE TRANSMITTERS (ELEC. OUTP.)	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
6	PNEUMATIC LEVEL TRANSMITTERS	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
7	ALARM HORN & ACKN'LMT TEST BUTTON	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
8	CONDUIT & WIRING W/JUNCT. BOXES	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
9	TEST VALVES	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
10	DRAIN VALVES	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
11	GAUGE GLASS(ES)	(<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	oil	_____
12	TACHOMETER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____ SPEED RANGE _____ TO _____ RPM	_____
13	CRANKSHAFT KEY PHASER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
14	AND TRANSDUCER	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
15	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
16	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	

<input type="checkbox"/> SEPARATE LUBE OIL CONSOLE INSTRUMENTATION:		PURCH. TO LIST REQ'MTS IN ADDITION TO ANY ABOVE REQ'MTS			
18	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
19	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
20	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
21	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
22	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
23	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	

<input type="checkbox"/> SEPARATE COOLING WATER CONSOLE INSTRUMENT:		PURCH. TO LIST REQ'MTS IN ADDITION TO ANY ABOVE REQ'MTS			
25	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
26	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
27	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
28	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
29	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	
30	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	FOR:	_____	

<input type="checkbox"/> RELIEF VALVES						
	LOCATION		BY	MANUFACTURER	TYPE	◇ SIZE ◇ SETTING
33	EACH STAGE DISCHARGE	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
34	COOLING WATER OUTLET	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
35	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
36	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
37	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
38	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
39	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
40	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
41	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____
42	_____	(<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>)	_____	_____	_____	_____

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OWNER: 	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT							CONTRACTOR: 	
MC: 	DATA SHEET FOR NITROGEN GAS BOOSTER COMPRESSOR (20-C-1002)							Contract No : 52-98/445	
Owner Document Number: 17811-11A	Project BU	Area 20	Phase VD	Unit 303	Dis. ME	Doc. DSH	Seq. 0022	Rev : 02	Page: 20 OF 20

GENERAL NOTES

- (1) COMPRESSOR START / STOP AS PER CONTROL PHILOSOPHY, THE COMPRESSOR IS CONTINOUS SERVICE
- (2) DELETED, VENDOR SHALL PROVIDE AFTER-COOLER .AFTERCOOLER OUTLET GAS TEMPERATURE TO BE 50 DEG C.
- (3) DELETED
- (4) DELETED
- (5) FOR UTILITIES SUPPLY CONDITION AND CLIMATE CONDITION REFER TO "AMBIENT ,SITE CONDITION & UTILITY DATA" , (1216-DE-00-PR-ESS-101)
- (6) MINIMUM METAL TEMPRATURE = 0 DEG C
- (7) DELETED
- (8) DEW POINT AT INLET -70 DEG C
- (9) TYPE OF COMPRESSOR : VERTICAL
- (10) VENDOR ALSO SHALL PROVIDE BELOW ITEMS:
SPARE PARTS
TEMPORARY STRAINER
- (11)GENERAL NOTES :
A. PROVIDE CONTACTS OPEN FOR CUMULATIVE ALARM AND CUMULATIVE SHUTDOWN .
B. PROVIDE SAFETY VALVE ON COMPRESSOR DISCHARGE ,WITH LOCKED OPEN ISOLATING VALVE .
C. PROVIDE SEPARATE INSTRUMENT FOR ALARM AND SHUTDOWN.
D. THE VENDOR TOGETHER WITH THE INSTRUMENT DOCUMENTATION MUST SUPPLY. A COMPLETE LIST OF ALL THE ALARMS AND INTERLOCKS WITH ALL SET VALUES.
E. PROVIDE A VISUAL FLOWMETER ON COOLING WATER RETURN LINE.
F. NOISE PRESSURE LEVEL AT 1 M. SHALL BE LESS THAN 80 DB(A)
- (12)VENDOR SHOULD FOLLOW DOC NO.: 1216-DE-00-IN-ESS-603 FOR SPECIFICATION OF APPLICABLE INSTRUMENT.
- (13)PLC PACKAGE SYSTEM (UCP) WILL BE INSTALLED IN CONTROL/AUXILIARY ROOM.
LOCAL PANEL INCLUDING START/STOP PUSH BUTTONS ,LAMPS AND INDICATORS, TRIP RESET PUSH BUTTON ,AMMETER AND ETC
(AS PER PROJECT REQUIREMENTS) WILL BE INSTALLED IN FIELD.
INSTRUMENT WILL BE INSTALLED ON MACHINE OR FREE STANDING.
- (14) DELETED
- (15) THE CAPACITY TO BE SUPPLIED CONSIDERING NO NEGATIVE TOLERANCE. THE REQUIRED CAPACITY (NNT) IS 707 KG/H.