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ERRATA

Chapter 2, Annex A—Typical Data Sheets

Replace the US Customary Data Sheets and insert the SI Data Sheets

Chapter 3, Annex A—Typical Data Sheets

Replace the US Customary Data Sheets and insert the SI Data Sheets

Chapter 4, Annex A—Typical Data Sheets

Replace the US Customary Data Sheets and insert the SI Data Sheets

**ANNEX 2A
TYPICAL DATA SHEETS**

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
U.S. CUSTOMARY UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
 PURCHASE ORDER NO. _____
 INQUIRY NO. _____
 REVISION NO. _____ DATE _____
 PAGE 1 OF 7 BY _____

1 APPLICABLE TO: PROPOSAL PURCHASE AS BUILT

2 FOR _____ UNIT _____
 3 SITE _____ SERIAL NO. _____
 4 SERVICE _____ NO. REQUIRED _____
 5 MANUFACTURER _____ DRIVER TYPE (1-3.1.1) _____
 6 MODEL _____ DRIVER ITEM NO. _____

8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

OPERATING CONDITIONS

10 (ALL DATA ON PER UNIT BASIS)

	NORMAL (1-2.1.1.2)	OTHER CONDITIONS (1-2.1.1.1)				
		A	B	C	D	E
11						
12 <input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)						
13 <input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)						
14 <input type="radio"/> MMSCFD/SCFM (14.7 PSIA & 60 °F DRY)						
15 <input type="radio"/> WEIGHT FLOW, #/MIN (WET) (DRY)						
INLET CONDITIONS						
17 <input type="radio"/> PRESSURE (PSIA)						
18 <input type="radio"/> TEMPERATURE (°F)						
19 <input type="radio"/> RELATIVE HUMIDITY %						
20 <input type="radio"/> MOLECULAR WEIGHT						
21 <input type="checkbox"/> Cp/Cv (K ₁) OR (K _{AVG}) (NOTE 1)						
22 <input type="checkbox"/> COMPRESSIBILITY (Z ₁) OR (Z _{AVG}) (NOTE 1)						
23 <input type="checkbox"/> INLET VOLUME, (CFM) (WET / DRY)						
DISCHARGE CONDITIONS						
25 <input type="radio"/> PRESSURE (PSIA)						
26 <input type="checkbox"/> TEMPERATURE (°F)						
27 <input type="checkbox"/> Cp/Cv (K ₂) OR (K _{AVG}) (NOTE 1)						
28 <input type="checkbox"/> COMPRESSIBILITY (Z ₂) OR (Z _{AVG}) (NOTE 1)						
29 <input type="checkbox"/> GHP REQUIRED						
30 <input type="checkbox"/> TRAIN BHP REQUIRED						
31 <input type="checkbox"/> BHP REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)						
32 <input type="checkbox"/> SPEED (RPM)						
33 <input type="checkbox"/> TURNDOWN (%)						
34 <input type="checkbox"/> POLYTROPIC HEAD (FT-LB / LB)						
35 <input type="checkbox"/> POLYTROPIC EFFICIENCY (%)						
36 <input type="radio"/> CERTIFIED POINT						
37 <input type="radio"/> EXPECTED OPERATION AT EACH CONDITION (%)						
38 <input type="checkbox"/> PERFORMANCE CURVE NUMBER						

PROCESS CONTROL (1-3.4.2.1)

40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE COOLED BYPASS
 41 FROM _____ PSIA GUIDE VANES FROM _____ % BLOWOFF FROM _____
 42 TO _____ PSIA (2-2.4.1) TO _____ % TO _____ TO _____
 43 SIGNAL SOURCE (1-3.4.2.1) _____
 44 TYPE ELECTRONIC PNEUMATIC OTHER _____
 45 RANGE _____ MA _____ PSIG _____
 46
 47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____
 49 **NOTE 1:** IF GAS ANALYSIS IS GIVEN, MANUFACTURER SHALL SUPPLY DATA, OTHERWISE DATA SHALL BE SUPPLIED BY USER

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
U.S. CUSTOMARY UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
PURCHASE ORDER NO. _____
INQUIRY NO. _____
REVISION NO. _____ DATE _____
PAGE 1b OF 7 BY _____

1 APPLICABLE TO: PROPOSAL PURCHASE AS BUILT
2 FOR _____
3 SITE _____
4 SERVICE _____
5 MANUFACTURER _____
6 MODEL _____
7

UNIT _____
SERIAL NO. _____
NO. REQUIRED _____
DRIVER TYPE (1-3.1.1) _____
DRIVER ITEM NO. _____

8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

OPERATING CONDITIONS (INTERMEDIATE CONNECTIONS)

10 (ALL DATA ON PER UNIT BASIS)

NORMAL (1-2.1.1.2)		OTHER CONDITIONS (1-2.1.1.1)			
Section 1	Section 2	Section 1	Section 2	Section 1	Section 2

11
12 GAS HANDLED (ALSO SEE PAGE _____)
13 GAS PROPERTIES (1-2.1.1.4)
14 MMSCFD/SCFM (14.7 PSIA & 60 °F DRY)
15 WEIGHT FLOW, #/MIN (WET) (DRY)
16 **INLET CONDITIONS**
17 PRESSURE (PSIA)
18 TEMPERATURE (°F)
19 RELATIVE HUMIDITY %
20 MOLECULAR WEIGHT
21 Cp/Cv (K₁) OR (K_{AVG}) (NOTE 1)
22 COMPRESSIBILITY (Z₁) OR (Z_{AVG}) (NOTE 1)
23 INLET VOLUME, (CFM) (WET / DRY)
24 **DISCHARGE CONDITIONS**
25 PRESSURE (PSIA)
26 TEMPERATURE (°F)
27 Cp/Cv (K₂) OR (K_{AVG}) (NOTE 1)
28 COMPRESSIBILITY (Z₂) OR (Z_{AVG}) (NOTE 1)
29 GHP REQUIRED
30 TRAIN BHP REQUIRED
31 BHP REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)
32 SPEED (RPM)
33 TURNDOWN (%)
34 POLYTROPIC HEAD (FT-LB / LB)
35 POLYTROPIC EFFICIENCY (%)
36 CERTIFIED POINT
37 EXPECTED OPERATION AT EACH CONDITION (%)
38 PERFORMANCE CURVE NUMBER

39 **PROCESS CONTROL (1-3.4.2.1)**
40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE COOLED BYPASS
41 FROM _____ PSIA GUIDE VANES FROM _____ % BLOWOFF FROM _____
42 TO _____ PSIA (2-2.4.1) TO _____ % TO _____ TO _____
43 SIGNAL SOURCE (1-3.4.2.1) _____
44 TYPE ELECTRONIC PNEUMATIC OTHER _____
45 RANGE _____ MA _____ PSIG _____
46
47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____
49 **NOTE 1:** IF GAS ANALYSIS IS GIVEN, MANUFACTURER SHALL SUPPLY DATA, OTHERWISE DATA SHALL BE SUPPLIED BY USER

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617-7TH Chapter 2) U.S. CUSTOMARY UNITS (1-1.6.5)	JOB NO. _____ ITEM NO. _____ PURCHASE ORDER NO. _____ INQUIRY NO. _____ REVISION NO. _____ DATE _____ PAGE 1c OF 7 BY _____
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1 APPLICABLE TO: <input type="radio"/> PROPOSAL <input type="radio"/> PURCHASE <input type="radio"/> AS BUILT 2 FOR _____ 3 SITE _____ 4 SERVICE _____ 5 MANUFACTURER _____ 6 MODEL _____ 7	UNIT _____ SERIAL NO. _____ NO. REQUIRED _____ DRIVER TYPE (1-3.1.1) _____ DRIVER ITEM NO. _____
---	--

8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

OPERATING CONDITIONS (COMPRESSOR WITH TWO SIDESTREAMS)

EQUIP. FLNG. COND. SHOWN IN DBL.-WALLED CELLS (ALL DATA ON PER UNIT BASIS)	CONDITIONS (1-2.1.1.2)				
	Section 1	SS 1	Section 2	SS 2	Section 3
12 <input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)					
13 <input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)					
14 <input type="radio"/> MMSCFD/SCFM (14.7 PSIA & 60 °F DRY)					
15 <input type="radio"/> WEIGHT FLOW, #/MIN (WET) (DRY)					
16 INLET CONDITIONS					
17 <input type="radio"/> PRESSURE (PSIA)					
18 <input type="radio"/> TEMPERATURE (°F)					
19 <input type="radio"/> RELATIVE HUMIDITY %					
20 <input type="radio"/> MOLECULAR WEIGHT					
21 <input type="checkbox"/> Cp/Cv (K ₁) OR (K _{AVG}) (NOTE 1)					
22 <input type="checkbox"/> COMPRESSIBILITY (Z ₁) OR (Z _{AVG}) (NOTE 1)					
23 <input type="checkbox"/> INLET VOLUME, (CFM) (WET / DRY)					
24 DISCHARGE CONDITIONS					
25 <input type="radio"/> PRESSURE (PSIA)					
26 <input type="checkbox"/> TEMPERATURE (°F)					
27 <input type="checkbox"/> Cp/Cv (K ₂) OR (K _{AVG}) (NOTE 1)					
28 <input type="checkbox"/> COMPRESSIBILITY (Z ₂) OR (Z _{AVG}) (NOTE 1)					
29 <input type="checkbox"/> GHP REQUIRED					
30 <input type="checkbox"/> TRAIN BHP REQUIRED					
31 <input type="checkbox"/> BHP REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)					
32 <input type="checkbox"/> SPEED (RPM)					
33 <input type="checkbox"/> TURNDOWN (%)					
34 <input type="checkbox"/> POLYTROPIC HEAD (FT-LB / LB)					
35 <input type="checkbox"/> POLYTROPIC EFFICIENCY (%)					
36 <input type="radio"/> CERTIFIED POINT					
37 <input type="radio"/> EXPECTED OPERATION AT EACH CONDITION (%)					
38 <input type="checkbox"/> PERFORMANCE CURVE NUMBER					

39 **PROCESS CONTROL (1-3.4.2.1)**

40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE COOLED BYPASS

41 FROM _____ PSIA GUIDE VANES FROM _____ % BLOWOFF FROM _____

42 TO _____ PSIA (2-2.4.1) TO _____ % TO _____ TO _____

43 SIGNAL SOURCE (1-3.4.2.1) _____

44 TYPE ELECTRONIC PNEUMATIC OTHER _____

45 RANGE _____ MA _____ PSIG _____

46

47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____

49 **NOTE 1:** IF GAS ANALYSIS IS GIVEN, MANUFACTURER SHALL SUPPLY DATA, OTHERWISE DATA SHALL BE SUPPLIED BY USER

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617-7TH Chapter 2) U.S. CUSTOMARY UNITS (1-1.6.5)			JOB NO. _____ ITEM NO. _____ REVISION NO. _____ DATE _____ PAGE 2 OF 7 BY _____					
OPERATING CONDITIONS (Continued) (1-2.1.1.1) (1-3.1.2) (1-3.1.3)								
GAS ANALYSIS:		NORMAL	OTHER CONDITIONS					REMARKS:
<input type="radio"/> MOL %			A	B	C	D	E	
MW								
AIR	28.966							
OXYGEN	32.000							
NITROGEN	28.016							
WATER VAPOR	18.016							
CARBON MONOXIDE	28.010							
CARBON DIOXIDE	44.010							
HYDROGEN SULFIDE	34.076						(1-2.2.1.6)	
HYDROGEN	2.016						(1-2.2.1.9)	
METHANE	16.042							
ETHYLENE	28.052							
ETHANE	30.068							
PROPYLENE	42.078							
PROPANE	44.094							
I-BUTANE	58.120							
n-BUTANE	58.120							
I-PENTANE	72.146							
n-PENTANE	72.146							
HEXANE PLUS								
CORROSIVE AGENTS							(1-2.2.1.3)	
TOTAL								
AVG. MOL. WT.								
LOCATION: (1-2.1.8)				NOISE SPECIFICATIONS: (1-2.1.9)				
<input type="radio"/> INDOOR <input type="radio"/> OUTDOOR <input type="radio"/> GRADE <input type="radio"/> HEATED <input type="radio"/> UNDER ROOF <input type="radio"/> MEZZANINE <input type="radio"/> UNHEATED <input type="radio"/> PARTIAL SIDES <input type="radio"/> _____ <input type="radio"/> ELEC. AREA CLASSIFICATION (1-2.1.14) CL _____ GR _____ DIV _____				<input type="radio"/> APPLICABLE TO MACHINE: SEE SPECIFICATION _____ <input type="radio"/> APPLICABLE TO NEIGHBORHOOD: SEE SPECIFICATION _____				
SITE DATA (1-2.1.8)				ACUSTIC HOUSING: <input type="radio"/> YES <input type="radio"/> NO				
<input type="radio"/> ELEVATION _____ FT BAROMETER _____ PSIA <input type="radio"/> RANGE OF AMBIENT TEMPS: DRY BULB WET BULB NORMAL °F _____ MAXIMUM °F _____ MINIMUM °F _____ _____ °F _____				APPLICABLE SPECIFICATIONS:				
<input type="radio"/> UNUSUAL CONDITIONS: <input type="radio"/> DUST <input type="radio"/> FUMES _____ °F _____ <input type="radio"/> OTHER (1-2.1.8) _____				API 617, 7TH CHAPTER 1&2 <input type="radio"/> VENDOR HAVING UNIT RESPONSIBILITY (1-1.5.52) (1-1.8) (1-2.1.3) _____ <input type="radio"/> GOVERNING SPECIFICATION (IF DIFFERENT) _____				
<input type="radio"/> COPPER AND COPPER ALLOYS PROHIBITED (1-2.2.1.14)				PAINTING:				
COATING: (1-2.2.1.16)				<input type="radio"/> MANUFACTURER'S STD. <input type="radio"/> OTHER _____				
<input type="radio"/> ROTATING COMPONENTS _____ <input type="radio"/> STATIONARY COMPONENTS _____				SHIPMENT: (1-4.4)				
REMARKS: _____				<input type="radio"/> DOMESTIC <input type="radio"/> EXPORT <input type="radio"/> EXPORT BOXING REQD. <input type="radio"/> OUTDOOR STORAGE MORE THAN 6 MONTHS (1-4.4.1) _____ MO SPARE ROTOR ASSEMBLY PACKAGE (1-4.4.3.10) <input type="radio"/> HORIZONTAL STORAGE <input type="radio"/> VERTICAL STORAGE				

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
U.S. CUSTOMARY UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 3 OF 7 BY _____

CONSTRUCTION FEATURES

SPEEDS:
 3 MAX. CONT. _____ RPM TRIP _____ RPM
 4 MAX. TIP SPEEDS: _____ FPS @ 100% SPEED
 5 _____ FPS @ MAX. CONT. SPEED

LATERAL CRITICAL SPEEDS (DAMPED)
 7 FIRST CRITICAL _____ RPM _____ MODE
 8 SECOND CRITICAL _____ RPM _____ MODE
 9 THIRD CRITICAL _____ RPM _____ MODE
 10 FOURTH CRITICAL _____ RPM _____ MODE

LATERAL ANALYSIS ADDITIONAL REQUIREMENTS (1-2.6.2.14)
 TRAIN LATERAL ANALYSIS REQUIRED (1-2.6.2.6)
 TRAIN TORSIONAL ANALYSIS REQUIRED (1-2.6.7.1)

TORSIONAL CRITICAL SPEEDS:
 15 FIRST CRITICAL _____ RPM
 16 SECOND CRITICAL _____ RPM
 17 THIRD CRITICAL _____ RPM
 18 FOURTH CRITICAL _____ RPM

LIST OF TRAIN UNDESIRABLE SPEEDS (1-2.6.1.4)

VIBRATION:
 21 ALLOWABLE TEST LEVEL _____ MILS
 22 (PEAK TO PEAK)

NAMEPLATE (2-2.11.2)
 24 US CUSTOMARY METRIC

ROTATION, VIEWED FROM DRIVEN END CW CCW

MATERIALS INSPECTION REQUIREMENTS (1-4.2.2.1)
 27 RADIOGRAPHY REQUIRED FOR _____
 28 ULTRASONIC REQUIRED FOR _____
 29 MAGNETIC PARTICLE REQUIRED FOR _____
 30 LIQUID PENETRANT REQUIRED FOR _____
 31 LOW TEMPERATURE (1-2.2.1.15.3) _____
 32 MIN.DESIGN METAL TEMPERATURE (°F) _____
 33 AT CONCURRANT PRESSURE (PSIG) _____
 34 OTHER TRAIN COMPONENTS (1-2.2.1.15.2) _____

CASING:
 36 MODEL _____
 37 CASING SPLIT _____
 38 MATERIAL _____
 39 THICKNESS (IN.) _____ CORR. ALLOW. (IN.) _____
 40 MAX. ALLOWABLE PRESS _____ PSIG
 41 TEST PRESS (PSIG): _____ HYDRO _____
 42 MAX. ALLOWABLE TEMPERATURE (°F) _____
 43 MAX OPER. TEMP. _____ °F MIN. OPER. TEMP. _____ °F
 44 MAX CASING CAPACITY (ICFM) _____
 45 SYSTEM RELIEF VALVE SET PT. (2-2.3.1.1) _____ PSIG
 46 Q.C. OF INACCESSIBLE WELDS (1-2.3.1.11.2) _____

GUIDE VANES
 48 MATERIAL _____
 49 NO. VANES GUIDE VANE _____
 IGV EXTERNAL PURGE (2-2.4.2)
 VANE CONTROL SYSTEM (2-2.4.3) _____

DIAPHRAGMS:
 MATERIAL _____
 AXIALLY SPLIT YES NO (2-2.4.8)
 INTERMEDIATE MAIN PROCESS CONNECTIONS (2-2.4.5)
 DISCH. PRESSURE (PSIG): MAX _____ MIN _____
 INLET PRESSURE (PSIG): MAX _____ MIN _____
 DIAPHRAGM MAX. Δ P (PSI) _____

IMPELLERS:
 NO. _____ DIAMETERS _____
 NO. VANES EA. IMPELLER _____
 TYPE (OPEN, ENCLOSED, ETC.) _____
 TYPE FABRICATION _____
 MATERIAL _____
 MIN. YIELD STRENGTH (PSI) _____
 HARDNESS: (Rc) (BRINNEL) MAX _____ MIN _____
 SMALLEST TIP INTERNAL WIDTH (IN.) _____
 MAX. MACH. NO. @ IMPELLER EYE _____
 MAX. IMPELLER HEAD @ 100% SPD (FT-LB/LB) _____

SHAFT:
 ONE PIECE BUILT UP
 MATERIAL _____
 DIA @ IMPELLERS (IN) _____ DIA @ COUPLING (IN.) _____
 SHAFT END: TAPERED CYLINDRICAL
 SPLINED INTEGRAL FLANGE
 MIN. YIELD STRENGTH (PSI) _____
 SHAFT HARDNESS (BNH)(Rc) _____
 MAX TORQUE CAPABILITY (FT-LB) _____

BALANCE PISTON:
 MATERIAL _____ AREA _____ (IN²)
 FIXATION METHOD _____
 NORMAL CLEARANCE (IN) _____
 FLOW WITH NORMAL CLEARANCE (LB/MIN) _____
 FLOW WITH 2x NORMAL CLEARANCE (LB/MIN) _____
 PRESS. CONN. BAL LINE DOWNSTREAM (2-2.5.4.3)

SHAFT SLEEVES:
 AT INTERSTG. CLOSE _____ MATL _____
 CLEARANCE POINTS _____
 AT SHAFT SEALS _____ MATL _____

ACCESSIBLE (2-2.8.3)

ROTOR
 DISASSEMBLY AND REASSEMBLY (1-2.6.8.2.1.1)
 AT SPEED BALANCING (1-2.6.8.3)
 SEQUENTIAL LOW SPEED BAL. PREC. AT SPEED BAL. (1-2.6.8.6)
 RESIDUAL BALANCE CHECK (1-2.6.8.7)

LABYRINTHS:
 INTERSTAGE
 TYPE _____ MATERIAL _____
 BALANCE PISTON
 TYPE _____ MATERIAL _____

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617-7TH Chapter 2) U.S. CUSTOMARY UNITS (1-1.6.5)	JOB NO. _____ ITEM NO. _____ REVISION NO. _____ DATE _____ PAGE <u>4</u> OF <u>7</u> BY _____
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CONSTRUCTION FEATURES (CONTINUED)

<p>SHAFT SEALS:</p> <p><input type="radio"/> SEAL TYPE (1-2.8.1.3) _____</p> <p><input type="radio"/> MAX SEALING/SETTLING OUT PRESSURE (1-2.8.1.1) (PSIG) _____</p> <p><input type="radio"/> MIN. SEALING PRESSURE (PSIG) _____</p> <p><input type="radio"/> SUPPLEMENTAL DEVICE REQUIRED FOR CONTACT _____</p> <p><input type="radio"/> SEALS (1-2.8.3.4) TYPE _____</p> <p><input type="radio"/> BUFFER GAS SYSTEM REQUIRED (1-2.8.1.5)</p> <p><input type="radio"/> TYPE BUFFER GAS (1-2.8.1.5)</p> <p><input type="checkbox"/> PRESSURE (1-2.8.1.6) _____ (PSIG)</p> <p><input type="checkbox"/> FLOWRATE _____ (LB/MIN)</p> <p><input type="checkbox"/> FILTRATION _____</p> <p><input type="radio"/> MANIFOLD (1-2.8.1.7) _____</p> <p><input type="radio"/> METHOD OF CONTROL (1-2.8.1.5) _____</p>	<p><input type="radio"/> BUFFER GAS CONTROL SYSTEM SCHEMATIC BY VENDOR</p> <p><input type="radio"/> PRESSURIZING GAS FOR SUBATMOSPHERIC SEALS (1-2.8.2.4)</p> <p style="padding-left: 20px;"><input type="radio"/> EDUCTOR <input type="radio"/> INJECTION (1-2.8.2.3)</p> <p><input type="checkbox"/> SEAL MANUFACTURER _____</p> <p><input type="checkbox"/> LEAKAGE TO PROCESS (GAL/DAY/SEAL) _____</p> <p>BUFFER GAS REQUIRED FOR:</p> <p><input type="checkbox"/> AIR RUN-IN <input type="checkbox"/> OTHER _____</p> <p><input type="checkbox"/> FLOW (PER SEAL):</p> <p style="padding-left: 20px;">NORM: _____ LBS/MIN @ _____ PSI Δ P _____</p> <p style="padding-left: 20px;">MAX. _____ LBS/MIN @ _____ PSI Δ P _____</p> <p><input type="checkbox"/> BEARING HOUSING CONSTRUCTION:</p> <p style="padding-left: 20px;">TYPE (SEPARATE, INTEGRAL) _____ SPLIT _____</p> <p style="padding-left: 20px;">MATERIAL _____</p>
--	---

AXIAL COMPRESSOR

STAGE	1	2	3	4	5	6	7	8	9
-------	---	---	---	---	---	---	---	---	---

ROTOR	<input type="checkbox"/> BLADE MATERIAL								
	<input type="checkbox"/> BLADE ROOT TYPE								
	<input type="checkbox"/> CORD WIDTH (IN)								
	<input type="checkbox"/> OUTER DIAMETER (IN)								
	<input type="checkbox"/> BLADE HEIGHT (IN)								
	<input type="checkbox"/> BLADE QUANTITY								

STATOR	<input type="checkbox"/> BLADE MATERIAL								
	<input type="checkbox"/> TYPE (MOVABLE, FIXED, ADJUSTABLE)								
	<input type="checkbox"/> CORD WIDTH (IN)								
	<input type="checkbox"/> BLADE QUANTITY								

STAGE	10	11	12	13	14	15	16	17	18
-------	----	----	----	----	----	----	----	----	----

ROTOR	<input type="checkbox"/> BLADE MATERIAL								
	<input type="checkbox"/> BLADE ROOT TYPE								
	<input type="checkbox"/> CORD WIDTH (IN)								
	<input type="checkbox"/> OUTER DIAMETER (IN)								
	<input type="checkbox"/> BLADE HEIGHT (IN)								
	<input type="checkbox"/> BLADE QUANTITY								

STATOR	<input type="checkbox"/> BLADE MATERIAL								
	<input type="checkbox"/> TYPE (MOVABLE, FIXED, ADJUSTABLE) (2-3.4.2.3)								
	<input type="checkbox"/> CORD WIDTH (IN)								
	<input type="checkbox"/> BLADE QUANTITY								

46 REMARKS: _____

47 _____

48 _____

49 _____

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
U.S. CUSTOMARY UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
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CONSTRUCTION FEATURES (CONTINUED)

2 BEARINGS AND BEARING HOUSINGS

3 MAGNETIC BEARINGS (2-2.7.1.1.2)

4 RADIAL	THRUST	NON-THRUST	THRUST	ACTIVE	INACTIVE
5 <input type="checkbox"/> TYPE			<input type="checkbox"/> TYPE		
6 <input type="checkbox"/> MANUFACTURER			<input type="checkbox"/> MANUFACTURER		
7 <input type="checkbox"/> LENGTH (IN.)			<input type="checkbox"/> UNIT LOADING (MAX PSI)		
8 <input type="checkbox"/> SHAFT DIA. (IN.)			<input type="checkbox"/> UNIT LOAD (ULT.) (PSI)		
9 <input type="checkbox"/> UNIT LOAD (ACT/ALLOW)			<input type="checkbox"/> AREA (IN ²)		
10 <input type="checkbox"/> BASE MATERIAL			<input type="checkbox"/> NO. PADS		
11 <input type="checkbox"/> BABBIT THICKNESS (IN.)			<input type="checkbox"/> PIVOT: CENTER / OFFSET, %		
12 <input type="checkbox"/> NO. PADS			<input type="checkbox"/> PAD BASE MATL		
13 <input type="checkbox"/> LOAD: B'TWN/ON PAD			<input type="radio"/> COPPER BACKED (2-2.7.3.7)		
14 <input type="checkbox"/> PIVOT: CTR/OFFSET, %			LUBRICATION: <input type="radio"/> FLOODED <input type="radio"/> DIRECTED (2-2.7.3.6)		
15 PAD MATERIAL <input type="radio"/> (2-2.7.2.2) <input type="radio"/> (2-2.7.2.3)			THRUST COLLAR: <input type="radio"/> INTEGRAL <input type="radio"/> REPLACEABLE		
16 <input type="checkbox"/> BEARING SPAN _____ INCHES			MATERIAL _____		

18 BEARING TEMPERATURE DETECTORS (2-3.4.7.3)

19 SEE ATTACHED API-670 DATASHEET
 20 THERMOCOUPLES TYPE _____
 21 RESISTANCE TEMP DETECTORS
 22 RESISTANCE MAT'L _____ _____ OHMS
 23 ALARM TEMPERATURE (°F) (2-2.7.1.3) _____
 24 SHUTDOWN TEMPERATURE (°F) (2-2.7.1.3) _____
 25 PROVISION FOR LOCAL DISCONNECT (1-2.7.4.6)
 26 LOCATION-JOURNAL BRG
 27 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG
 28 OTHER _____
 29 LOCATION-THRUST BRG
 30 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG
 31 OTHER _____
 32 NO. (INACT) _____ EA PAD _____ EVERY OTH PAD _____ PER BRG
 33 OTHER _____
 34
 35 MONITOR SUPPLIED BY (2-3.4.7.4)
 36 LOCATION _____ ENCLOSURE _____
 37 MFR. _____ MODEL _____
 38 SCALE RGE _____ ALARM SET @ _____ °F
 39 SHTDWN SET @ _____ °F TIME DELAY _____ SEC
 40

VIBRATION DETECTORS: SEE ATTACHED API-670 DATA SHEET

TYPE _____ MODEL _____
 MFR _____
 NO. AT EA SHAFT BEARING _____ TOTAL NO. _____
 OSCILLATOR-DETECTORS SUPPLIED BY
 MFR _____ MODEL _____
 MONITOR SUPPLIED BY (2-3.4.7.2)
 LOCATION _____ ENCLOSURE _____
 MFR. _____ MODEL _____
 SCALE RGE _____ ALARM SET @ _____ MILS
 SHTDWN: SET @ _____ MILS TIME DELAY _____ SEC
 CASING VIBRATION TRANSDUCERS (2-3.4.7.5)
 CASING VIBRATION MONITORS (2-3.4.7.6)

41 KEY PHASOR REQUIRED

42 COMPRESSOR GEAR H.S. GEAR L.S.

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

TYPE _____ MODEL _____
 MFR _____ NO. REQUIRED _____
 OSCILLATOR-DEMODULATOR SUPPLIED BY
 MFR _____ MODEL _____
 MONITOR SUPPLIED BY (2-3.4.7.2)
 LOCATION _____ ENCLOSURE _____
 MFR. _____ MODEL _____
 SCALE RGE _____ ALARM SET @ _____ MILS
 SHTDWN: SET @ _____ MILS TIME DELAY _____ SEC

43 CASING CONNECTIONS (1-2.3.2.2.1)

44 CONNECTION	<input type="checkbox"/> ANSI/ASME (B16.1; B16.5; B16.42; B16.47 series A, B; ISO 7005-1, -2; OTHER	<input type="checkbox"/> FACING <input type="checkbox"/> BORE	<input type="radio"/> ORIENTATION	<input type="checkbox"/> FLANGED OR STUDD (1-2.3.2.2.1)	<input type="radio"/> MATING FLG & GASKET BY VENDOR (1-2.3.2.2.7)	<input type="checkbox"/> GAS VELOCITY FT/SEC
45 INLET						
46 DISCHARGE						
47						
48						
49						
50						
51						
52						
53						
54						

55 BOROSCOPIC INSPECTION PORTS (2-2.3.2.4)

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
U.S. CUSTOMARY UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
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1 **OTHER CONNECTIONS**

2 SERVICE:	NO.	SIZE	TYPE		NO.	SIZE	TYPE
3 LUBE-OIL INLET				PRESSURE			
4 LUBE OIL OUTLET				TEMPERATURE			
5 SEAL-OIL INLET				SOLVENT INJECTION			
6 SEAL-OIL OUTLET				PURGE FOR:			
7 SEAL GAS INLET				BRG. HOUSING			
8 SEAL GAS OUTLET				BTWN BRG & SEAL			
9 CASING DRAINS				BTWN SEAL & GAS			
10 STAGE DRAINS							

- 11 INDIVIDUAL STAGE DRAINS REQUIRED (1-2.3.2.1.7)
 12 VALVED & BLINDED
 13 VALVED & BLINDED & MANIFOLD

14 **LUBRICATION AND SEALING SYSTEMS (1-2.10) (1-3.5.1.2)**

- 15 SEE ATTACHED API 614 DATASHEET
 16 SEPARATE COMBINED (2-2.10.1)
 17 INTEGRAL OIL RESERVOIR (1-3.3.2.11)
 18 OIL TYPE (2-2.10.2)

19 **ACCESSORIES**

20 **COUPLING AND GUARDS (3.2)**

- 21 NOTE: SEE ROTATING ELEMENTS - SHAFT ENDS
 22 SEE ATTACHED API-671 DATA SHEET KEYLESS HYDRAULIC KEYED FLANGED OTHER _____
 23 COUPLING FURNISHED BY _____
 24 MANUFACTURER _____ TYPE _____ MODEL _____
 25 COUPLING GUARD FURNISHED BY: _____
 26 TYPE: FULLY ENCLOSED SEMI-OPEN OTHER

27 **COUPLING DETAILS**

- 28 MAX O.D. _____ IN. PLUG AND RING GAUGES (1-3.2.5)
 29 HUB WEIGHT _____ LBS
 30 SPACER LENGTH _____ IN
 31 SPACER WEIGHT _____ LBS
 32 LUBRICATION REQUIREMENTS:
 NON-LUBE CONT. OIL LUBE OTHER _____
 QUANTITY PER HUB _____ GPM

33 **MOUNTING PLATES (1-3.3)**

- 34 BASEPLATES FURNISHED BY (1-3.3.2.1) _____
 35 COMPRESSOR ONLY DRIVER GEAR
 36 OTHER _____
 37 NONSKID DECKING (1-3.3.2.4) SLOPED DECK (1-3.3.2.4.1)
 38 LEVELING PADS OR TARGETS (1-3.3.2.6)
 39 COLUMN MOUNTING (1-3.3.2.5)
 40 SUB-SOLE PLATES REQUIRED (1-3.3.2.10)
 41 STAINLESS STEEL SHIM THICKNESS _____ INCHES
 42 MACHINED MOUNTING PADS REQUIRED (1-3.3.2.9)
 43 SOLEPLATES FURNISHED BY (1-3.3.3.1) _____
 THICKNESS _____ IN
 SUBSOLE PLATES REQUIRED (1-3.3.3.1.3)
 EXTENT OF PIPING (2-3.5.1.1) _____
 STAINLESS STEEL SHIM THICKNESS _____ IN
 COMPRESSOR _____
 COUNTER BORE ANCHOR BOLT HOLES (1-3.3.3.1.2)

44 REMARKS:
 45 _____
 46 _____
 47 _____
 48 _____
 49 _____

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
U.S. CUSTOMARY UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
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1

2 **UTILITY CONDITIONS:**

3 **STEAM:**

4	INLET MIN _____	PSIG _____	°F _____
5	NORM _____	PSIG _____	°F _____
6	MAX _____	PSIG _____	°F _____
7	EXHAUST. MIN _____	PSIG _____	°F _____
8	NORM _____	PSIG _____	°F _____
9	MAX _____	PSIG _____	°F _____

10 **ELECTRICITY:**

11	DRIVERS _____	CONTROL _____	SHUTDOWN _____
12	VOLTAGE _____		
13	HERTZ _____		
14	PHASE _____		

15 REDUCED VOLTAGE START (1-3.1.6)

16 NUMBER OF STARTS (1-2.6.7.6.4) _____

17 **INSTRUMENT AIR:**

18 MAX PRESS _____ PSIG MIN PRESS _____ PSIG

19

20 **SHOP INSPECTION AND TESTS: (1-4.1.4)**

	REQ'D	WIT/OBV
21 HYDROSTATIC (1-4.3.2)	<input checked="" type="radio"/>	_____
22 IMPELLER OVERSPEED (1-4.3.3)	<input checked="" type="radio"/>	_____
23 MECHANICAL RUN (1-4.3.6)(2-4.3.1)	<input checked="" type="radio"/>	_____
24 <input type="radio"/> CONTRACT COUPLING		_____
25 OPTIONAL TESTS		
26 PURCHASER VIB. EQUIPMENT (2-4.3.1.1.10)	<input type="radio"/>	_____
27 VARY LUBE & SEAL OIL PRESSURES	<input type="radio"/>	_____
28 AND TEMPERATURES (1-4.3.6.1.5)	<input type="radio"/>	_____
29 POLAR FORM VIB DATA (1-4.3.6.1.2)	<input type="radio"/>	_____
30 TAPE RECORD VIB DATA (1-4.3.6.1.3)	<input type="radio"/>	_____
31 SHAFT END SEAL INSP. (1-4.3.6.2.2)	<input type="radio"/>	_____
32 GAS LEAK TEST AT DISCH PRESS (2-4.3.2.3)	<input type="radio"/>	_____
33 POST TEST INTERNAL INSP. (1-4.3.8.5)	<input type="radio"/>	_____
34 BEFORE GAS LEAKAGE TEST	<input type="radio"/>	_____
35 AFTER GAS LEAKAGE TEST	<input type="radio"/>	_____
36 PERFORMANCE TEST (GAS) (AIR) (2-4.3.3.1.1)	<input type="radio"/>	_____
37 INTERMEDIATE HEAD/PRESSURE TOL. (2-4.3.3.1.6)	<input type="triangle-up"/> P	_____
38 COMPLETE UNIT TEST (2-4.3.3.2)	<input type="radio"/>	_____
39 TANDEM TEST (2-4.3.3.3)	<input type="radio"/>	_____
40 GEAR TEST (2-4.3.3.4)	<input type="radio"/>	_____
41 HELIUM LEAK TEST (1-4.3.8.2)	<input type="radio"/>	_____
42 SOUND LEVEL TEST (1-4.3.8.3)	<input type="radio"/>	_____
43 AUX. EQUIPMENT TEST (1-4.3.8.4)	<input type="radio"/>	_____
44 FULL LOAD / SPEED / PRESS TEST (1-4.3.8.6)	<input type="radio"/>	_____
45 HYDRAULIC COUPLING INSP (1-4.3.8.7)	<input type="radio"/>	_____
46 SPARE PARTS TEST (1-4.3.8.8)	<input type="radio"/>	_____
47 INSPECTOR'S CHECKLIST COMPLIANCE (1-4.1.6)	<input type="radio"/>	_____
48 GAS SEAL TEST VENDOR SHOP (1-4.3.5)	<input type="radio"/>	_____
49		

UTILITIES

MANUALS

- DRAFT MANUAL FOR REVIEW (1-5.3.5.1.2)
- TECHNICAL DATA MANUAL (1-5.3.5.4)

MISCELLANEOUS:

- RECOMMENDED STRAIGHT RUN OF PIPE DIAMETERS BEFORE SUCTION _____
- COMPRESSOR TO BE SUITABLE FOR FIELD RUN-IN ON AIR (1-2.1.16)
- PROVISION FOR LIQUID INJECTION (1-2.1.10)
- INJECTION MANIFOLD (2-3.5.1.2)
- VENDOR'S REVIEW & COMMENTS ON PURCHASER'S CONTROL SYSTEMS (1-3.4.1.1)
- SHOP FITUP OF VENDOR PROCESS PIPING (1-4.4.3.11)
- WELDING HARDNESS TESTING (1-4.2.1.5)
- INSPECT CLEANLINESS (1-4.2.1.4)
- DESIGN AUDIT (1-5.1.4)
- BALANCE PISTON Δ P (1-5.3.2.1.5) (PSI) _____
- PROVIDE TAIL END SCHEDULES (1-5.3.3.2)

VENDOR'S REPRESENTATIVE SHALL (1-2.1.13)

- OBSERVE FLANGE PARTING
- CHECK ALIGNMENT AT TEMPERATURE
- BE PRESENT AT INITIAL ALIGNMENT

WEIGHTS (LB):

COMPR. _____ GEAR _____ DRIVER _____ BASE _____
 ROTORS: COMP.R. _____ DRIVER _____ GEAR _____
 COMPRESSOR UPPER CASE _____
 MAX. FOR MAINTENANCE (IDENTIFY) _____
 TOTAL SHIPPING WEIGHT _____

SPACE REQUIREMENTS (FT & IN):

COMPLETE UNIT: L _____ W _____ H _____

REMARKS:

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617-7TH Chapter 2) SI UNITS (1-1.6.5)	JOB NO. _____ ITEM NO. _____ PURCHASE ORDER NO. _____ INQUIRY NO. _____ REVISION NO. _____ DATE _____ PAGE <u>1</u> OF <u>7</u> BY _____
---	--

1 APPLICABLE TO: PROPOSAL PURCHASE AS BUILT

2 FOR _____ UNIT _____

3 SITE _____ SERIAL NO. _____

4 SERVICE _____ NO. REQUIRED _____

5 MANUFACTURER _____ DRIVER TYPE (1-3.1.1) _____

6 MODEL _____ DRIVER ITEM NO. _____

7

8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

OPERATING CONDITIONS

(ALL DATA ON PER UNIT BASIS)	NORMAL (1-2.1.1.2)	OTHER CONDITIONS (1-2.1.1.1)				
		A	B	C	D	E
11						
12 <input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)						
13 <input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)						
14 <input type="radio"/> MMm ³ /day (m ³ /h) (1.03 BAR & 0°C DRY)						
15 <input type="radio"/> WEIGHT FLOW, kg/h (WET) (DRY)						
16 INLET CONDITIONS						
17 <input type="radio"/> PRESSURE (BAR)(kPa abs)						
18 <input type="radio"/> TEMPERATURE (°C)						
19 <input type="radio"/> RELATIVE HUMIDITY %						
20 <input type="radio"/> MOLECULAR WEIGHT						
21 <input type="checkbox"/> Cp/Cv (K ₁) OR (K _{AVG}) (NOTE 1)						
22 <input type="checkbox"/> COMPRESSIBILITY (Z ₁) OR (Z _{AVG}) (NOTE 1)						
23 <input type="checkbox"/> INLET VOLUME, (m ³ /h) (WET / DRY)						
24 DISCHARGE CONDITIONS						
25 <input type="radio"/> PRESSURE (BAR)(kPa abs)						
26 <input type="checkbox"/> TEMPERATURE (°C)						
27 <input type="checkbox"/> Cp/Cv (K ₂) OR (K _{AVG}) (NOTE 1)						
28 <input type="checkbox"/> COMPRESSIBILITY (Z ₂) OR (Z _{AVG}) (NOTE 1)						
29 <input type="checkbox"/> GAS kW REQUIRED						
30 <input type="checkbox"/> TRAIN BRAKE kW REQUIRED						
31 <input type="checkbox"/> BRAKE kW REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)						
32 <input type="checkbox"/> SPEED (RPM)						
33 <input type="checkbox"/> TURNDOWN (%)						
34 <input type="checkbox"/> POLYTROPIC HEAD (N-m / kg)						
35 <input type="checkbox"/> POLYTROPIC EFFICIENCY (%)						
36 <input type="radio"/> CERTIFIED POINT						
37 <input type="radio"/> EXPECTED OPERATION AT EACH CONDITION (%)						
38 <input type="checkbox"/> PERFORMANCE CURVE NUMBER						

39 **PROCESS CONTROL (1-3.4.2.1)**

40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE COOLED BYPASS

41 FROM _____ BAR (kPa abs) GUIDE VANES FROM _____ % BLOWOFF FROM _____

42 TO _____ BAR (kPa abs) (2-2.4.1) TO _____ % TO _____ TO _____

43 SIGNAL SOURCE (1-3.4.2.1) _____

44 TYPE ELECTRONIC PNEUMATIC OTHER _____

45 RANGE _____ mA _____ BAR (kPa abs) _____

46

47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____

49 **NOTE 1:** IF GAS ANALYSIS IS GIVEN, MANUFACTURER SHALL SUPPLY DATA, OTHERWISE DATA SHALL BE SUPPLIED BY USER

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617-7TH Chapter 2) SI UNITS (1-1.6.5)	JOB NO. _____ ITEM NO. _____ PURCHASE ORDER NO. _____ INQUIRY NO. _____ REVISION NO. _____ DATE _____ PAGE <u>1b</u> OF <u>7</u> BY _____
---	---

1 APPLICABLE TO: PROPOSAL PURCHASE AS BUILT

2 FOR _____ UNIT _____

3 SITE _____ SERIAL NO. _____

4 SERVICE _____ NO. REQUIRED _____

5 MANUFACTURER _____ DRIVER TYPE (1-3.1.1) _____

6 MODEL _____ DRIVER ITEM NO. _____

8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

9 **OPERATING CONDITIONS (INTERMEDIATE CONNECTIONS)**

(ALL DATA ON PER UNIT BASIS)	NORMAL (1-2.1.1.2)		OTHER CONDITIONS (1-2.1.1.1)			
	Section 1	Section 2	Section 1	Section 2	Section 1	Section 2
11						
12 <input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)						
13 <input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)						
14 <input type="radio"/> MMm ³ /day (m ³ /h) (1.03 BAR & 0°C DRY)						
15 <input type="radio"/> WEIGHT FLOW, kg/h (WET) (DRY)						
16 INLET CONDITIONS						
17 <input type="radio"/> PRESSURE (BAR)(kPa abs)						
18 <input type="radio"/> TEMPERATURE (°C)						
19 <input type="radio"/> RELATIVE HUMIDITY %						
20 <input type="radio"/> MOLECULAR WEIGHT						
21 <input type="checkbox"/> Cp/Cv (K ₁) OR (K _{AVG}) (NOTE 1)						
22 <input type="checkbox"/> COMPRESSIBILITY (Z ₁) OR (Z _{AVG}) (NOTE 1)						
23 <input type="checkbox"/> INLET VOLUME, (m ³ /h) (WET / DRY)						
24 DISCHARGE CONDITIONS						
25 <input type="radio"/> PRESSURE (BAR)(kPa abs)						
26 <input type="checkbox"/> TEMPERATURE (°C)						
27 <input type="checkbox"/> Cp/Cv (K ₂) OR (K _{AVG}) (NOTE 1)						
28 <input type="checkbox"/> COMPRESSIBILITY (Z ₂) OR (Z _{AVG}) (NOTE 1)						
29 <input type="checkbox"/> GAS kW REQUIRED						
30 <input type="checkbox"/> TRAIN BRAKE kW REQUIRED						
31 <input type="checkbox"/> BRAKE kW REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)						
32 <input type="checkbox"/> SPEED (RPM)						
33 <input type="checkbox"/> TURNDOWN (%)						
34 <input type="checkbox"/> POLYTROPIC HEAD (N-m / kg)						
35 <input type="checkbox"/> POLYTROPIC EFFICIENCY (%)						
36 <input type="radio"/> CERTIFIED POINT						
37 <input type="radio"/> EXPECTED OPERATION AT EACH CONDITION (%)						
38 <input type="checkbox"/> PERFORMANCE CURVE NUMBER						

39 **PROCESS CONTROL (1-3.4.2.1)**

40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE COOLED BYPASS

41 FROM _____ BAR (kPa abs) GUIDE VANES FROM _____ % BLOWOFF FROM _____

42 TO _____ BAR (kPa abs) (2-2.4.1) TO _____ % TO _____ TO _____

43 SIGNAL SOURCE (1-3.4.2.1) _____

44 TYPE ELECTRONIC PNEUMATIC OTHER _____

45 RANGE _____ mA _____ BAR (kPa abs) _____

46

47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____

49 **NOTE 1:** IF GAS ANALYSIS IS GIVEN, MANUFACTURER SHALL SUPPLY DATA, OTHERWISE DATA SHALL BE SUPPLIED BY USER

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617-7TH Chapter 2) SI UNITS (1-1.6.5)	JOB NO. _____ ITEM NO. _____ PURCHASE ORDER NO. _____ INQUIRY NO. _____ REVISION NO. _____ DATE _____ PAGE 1c OF 7 BY _____
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1 APPLICABLE TO: <input type="radio"/> PROPOSAL <input type="radio"/> PURCHASE <input type="radio"/> AS BUILT 2 FOR _____ 3 SITE _____ 4 SERVICE _____ 5 MANUFACTURER _____ 6 MODEL _____ 7 _____	UNIT _____ SERIAL NO. _____ NO. REQUIRED _____ DRIVER TYPE (1-3.1.1) _____ DRIVER ITEM NO. _____
8 INFORMATION TO BE COMPLETED: <input type="radio"/> BY PURCHASER <input type="checkbox"/> BY MANUFACTURER <input type="checkbox"/> MUTUAL AGREEMENT (PRIOR TO PURCHASE)	

OPERATING CONDITIONS (COMPRESSOR WITH TWO SIDESTREAMS)

EQUIP. FLNG. COND. SHOWN IN DBL.-WALLED CELLS (ALL DATA ON PER UNIT BASIS)	CONDITIONS (1-2.1.1.2)				
	Section 1	SS 1	Section 2	SS 2	Section 3
12 <input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)					
13 <input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)					
14 <input type="radio"/> MMm ³ /day (m ³ /h) (1.03 BAR & 0°C DRY)					
15 <input type="radio"/> WEIGHT FLOW, kg/h (WET) (DRY)					
INLET CONDITIONS					
17 <input type="radio"/> PRESSURE (BAR)(kPa abs)					
18 <input type="radio"/> TEMPERATURE (°C)					
19 <input type="radio"/> RELATIVE HUMIDITY %					
20 <input type="radio"/> MOLECULAR WEIGHT					
21 <input type="checkbox"/> Cp/Cv (K ₁) OR (K _{AVG}) (NOTE 1)					
22 <input type="checkbox"/> COMPRESSIBILITY (Z ₁) OR (Z _{AVG}) (NOTE 1)					
23 <input type="checkbox"/> INLET VOLUME, (m ³ /h) (WET / DRY)					
DISCHARGE CONDITIONS					
25 <input type="radio"/> PRESSURE (BAR)(kPa abs)					
26 <input type="checkbox"/> TEMPERATURE (°C)					
27 <input type="checkbox"/> Cp/Cv (K ₂) OR (K _{AVG}) (NOTE 1)					
28 <input type="checkbox"/> COMPRESSIBILITY (Z ₂) OR (Z _{AVG}) (NOTE 1)					
29 <input type="checkbox"/> GAS kW REQUIRED					
30 <input type="checkbox"/> TRAIN BRAKE kW REQUIRED					
31 <input type="checkbox"/> BRAKE kW REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)					
32 <input type="checkbox"/> SPEED (RPM)					
33 <input type="checkbox"/> TURNDOWN (%)					
34 <input type="checkbox"/> POLYTROPIC HEAD (N-m / kg)					
35 <input type="checkbox"/> POLYTROPIC EFFICIENCY (%)					
36 <input type="radio"/> CERTIFIED POINT					
37 <input type="radio"/> EXPECTED OPERATION AT EACH CONDITION (%)					
38 <input type="checkbox"/> PERFORMANCE CURVE NUMBER					

39 **PROCESS CONTROL (1-3.4.2.1)**

40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE COOLED BYPASS

41 FROM _____ BAR (kPa abs) GUIDE VANES FROM _____ % BLOWOFF FROM _____

42 TO _____ BAR (kPa abs) (2-2.4.1) TO _____ % TO _____ TO _____

43 SIGNAL SOURCE (1-3.4.2.1) _____

44 TYPE ELECTRONIC PNEUMATIC OTHER _____

45 RANGE _____ mA _____ BAR (kPa abs) _____

46 _____

47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____

49 **NOTE 1:** IF GAS ANALYSIS IS GIVEN, MANUFACTURER SHALL SUPPLY DATA, OTHERWISE DATA SHALL BE SUPPLIED BY USER

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617-7TH Chapter 2)
SI UNITS (1-1.6.5)**

JOB NO. _____ ITEM NO. _____
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OPERATING CONDITIONS (Continued) (1-2.1.1.1) (1-3.1.2) (1-3.1.3)

1 2	GAS ANALYSIS:		NORMAL	OTHER CONDITIONS					REMARKS:
	3 ○ MOL %			A	B	C	D	E	
4		MW							
5	AIR	28.966							
6	OXYGEN	32.000							
7	NITROGEN	28.016							
8	WATER VAPOR	18.016							
9	CARBON MONOXIDE	28.010							
10	CARBON DIOXIDE	44.010							
11	HYDROGEN SULFIDE	34.076							(1-2.2.1.6)
12	HYDROGEN	2.016							(1-2.2.1.9)
13	METHANE	16.042							
14	ETHYLENE	28.052							
15	ETHANE	30.068							
16	PROPYLENE	42.078							
17	PROPANE	44.094							
18	I-BUTANE	58.120							
19	n-BUTANE	58.120							
20	I-PENTANE	72.146							
21	n-PENTANE	72.146							
22	HEXANE PLUS								
23	CORROSIVE AGENTS								(1-2.2.1.3)
24									
25	TOTAL								
26	AVG. MOL. WT.								

27 **LOCATION: (1-2.1.8)**

28 INDOOR OUTDOOR GRADE

29 HEATED UNDER ROOF MEZZANINE

30 UNHEATED PARTIAL SIDES _____

31 ELEC. AREA CLASSIFICATION (1-2.1.14) CL _____ GR _____ DIV _____

32 **SITE DATA (1-2.1.8)**

33 ELEVATION _____ m BAROMETER _____ BAR

34 RANGE OF AMBIENT TEMPS:

35 DRY BULB WET BULB

36 NORMAL °C _____ _____

37 MAXIMUM °C _____ _____

38 MINIMUM °C _____ _____

39 _____ °C _____ _____

40 **UNUSUAL CONDITIONS:** DUST FUMES

41 _____ °C _____ _____

42 OTHER (1-2.1.8) _____

43 _____

44 COPPER AND COPPER ALLOYS PROHIBITED (1-2.2.1.14)

45 **COATING: (1-2.2.1.16)**

46 ROTATING COMPONENTS _____

47 STATIONARY COMPONENTS _____

48 **REMARKS:** _____

49 _____

NOISE SPECIFICATIONS: (1-2.1.9)

APPLICABLE TO MACHINE:
SEE SPECIFICATION _____

APPLICABLE TO NEIGHBORHOOD:
SEE SPECIFICATION _____

ACOUSTIC HOUSING: YES NO

APPLICABLE SPECIFICATIONS:

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VENDOR HAVING UNIT RESPONSIBILITY (1-1.5.52) (1-1.8) (1-2.1.3)

GOVERNING SPECIFICATION (IF DIFFERENT)

PAINTING:

MANUFACTURER'S STD.

OTHER _____

SHIPMENT: (1-4.4)

DOMESTIC EXPORT EXPORT BOXING REQD.

OUTDOOR STORAGE MORE THAN 6 MONTHS (1-4.4.1) _____ MO

SPARE ROTOR ASSEMBLY PACKAGE (1-4.4.3.10)

HORIZONTAL STORAGE VERTICAL STORAGE

**CENTRIFUGAL AND AXIAL COMPRESSOR
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SI UNITS (1-1.6.5)**

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CONSTRUCTION FEATURES

SPEEDS:
 3 MAX. CONT. _____ RPM TRIP _____ RPM
 4 MAX. TIP SPEEDS: _____ m/sec @ 100% SPEED
 5 _____ m/sec @ MAX. CONT. SPEED

LATERAL CRITICAL SPEEDS (DAMPED)
 7 FIRST CRITICAL _____ RPM _____ MODE
 8 SECOND CRITICAL _____ RPM _____ MODE
 9 THIRD CRITICAL _____ RPM _____ MODE
 10 FOURTH CRITICAL _____ RPM _____ MODE

LATERAL ANALYSIS ADDITIONAL REQUIREMENTS (1-2.6.2.14)
 TRAIN LATERAL ANALYSIS REQUIRED (1-2.6.2.6)
 TRAIN TORSIONAL ANALYSIS REQUIRED (1-2.6.7.1)

TORSIONAL CRITICAL SPEEDS:
 15 FIRST CRITICAL _____ RPM
 16 SECOND CRITICAL _____ RPM
 17 THIRD CRITICAL _____ RPM
 18 FOURTH CRITICAL _____ RPM

LIST OF TRAIN UNDESIRABLE SPEEDS (1-2.6.1.4)

VIBRATION:
 21 ALLOWABLE TEST LEVEL _____ μ m
 22 (PEAK TO PEAK)

NAMEPLATE (2-2.11.2)
 24 US CUSTOMARY METRIC

ROTATION, VIEWED FROM DRIVEN END CW CCW

MATERIALS INSPECTION REQUIREMENTS (1-4.2.2.1)
 27 RADIOGRAPHY REQUIRED FOR _____
 28 ULTRASONIC REQUIRED FOR _____
 29 MAGNETIC PARTICLE REQUIRED FOR _____
 30 LIQUID PENETRANT REQUIRED FOR _____
 31 LOW TEMPERATURE (1-2.2.1.15.3) _____
 32 MIN.DESIGN METAL TEMPERATURE (°C) _____
 33 AT CONCURRANT PRESSURE (BARG)(kPaG) _____
 34 OTHER TRAIN COMPONENTS (1-2.2.1.15.2) _____

CASING:
 36 MODEL _____
 37 CASING SPLIT _____
 38 MATERIAL _____
 39 THICKNESS (mm) _____ CORR. ALLOW. (mm) _____
 40 MAX. ALLOWABLE PRESS _____ BARG (kPaG)
 41 TEST PRESS (BARG)(kPaG): HYDRO _____
 42 MAX. ALLOWABLE TEMPERATURE (°C) _____
 43 MAX OPER. TEMP. _____ °C MIN. OPER. TEMP. _____ °C
 44 MAX CASING CAPACITY (m³/h) _____
 45 SYSTEM RELIEF VALVE SET PT. (2-2.3.1.1) _____ BARG (kPaG)
 46 Q.C. OF INACCESSIBLE WELDS (1-2.3.1.11.2) _____

GUIDE VANES
 48 MATERIAL _____
 49 NO. VANES GUIDE VANE _____
 IGV EXTERNAL PURGE (2-2.4.2)
 VANE CONTROL SYSTEM (2-2.4.3) _____

DIAPHRAGMS:
 MATERIAL _____
 AXIALLY SPLIT YES NO (2-2.4.8)
 INTERMEDIATE MAIN PROCESS CONNECTIONS (2-2.4.5)
 DISCH. PRESSURE (BARG)(kPaG): MAX _____ MIN _____
 INLET PRESSURE (BARG)(kPaG): MAX _____ MIN _____
 DIAPHRAGM MAX. Δ P (BAR)(kPaG): _____

IMPELLERS:
 NO. _____ DIAMETERS _____
 NO. VANES EA. IMPELLER _____
 TYPE (OPEN, ENCLOSED, ETC.) _____
 TYPE FABRICATION _____
 MATERIAL _____
 MIN. YIELD STRENGTH (MPa) _____
 HARDNESS: (BNH)(Rc) _____ MAX _____ MIN _____
 SMALLEST TIP INTERNAL WIDTH (mm) _____
 MAX. MACH. NO. @ IMPELLER EYE _____
 MAX. IMPELLER HEAD @ 100% SPD (N-m/kg) _____

SHAFT:
 ONE PIECE BUILT UP
 MATERIAL _____
 DIA @ IMPELLERS (mm) _____ DIA @ COUPLING (mm) _____
 SHAFT END: TAPERED CYLINDRICAL
 SPLINED INTEGRAL FLANGE
 MIN. YIELD STRENGTH (MPa) _____
 SHAFT HARDNESS (BNH)(Rc) _____
 MAX TORQUE CAPABILITY (N-m) _____

BALANCE PISTON:
 MATERIAL _____ AREA _____ (mm²)
 FIXATION METHOD _____
 NORMAL CLEARANCE (mm) _____
 FLOW WITH NORMAL CLEARANCE (kg/min) _____
 FLOW WITH 2x NORMAL CLEARANCE (kg/min) _____
 PRESS. CONN. BAL LINE DOWNSTREAM (2-2.5.4.3)

SHAFT SLEEVES:
 AT INTERSTG. CLOSE _____ MATL _____
 CLEARANCE POINTS _____
 AT SHAFT SEALS _____ MATL _____

ACCESSIBLE (2-2.8.3)
ROTOR
 DISASSEMBLY AND REASSEMBLY (1-2.6.8.2.1.1)
 AT SPEED BALANCING (1-2.6.8.3)
 SEQUENTIAL LOW SPEED BAL. PREC. AT SPEED BAL. (1-2.6.8.6)
 RESIDUAL BALANCE CHECK (1-2.6.8.7)

LABYRINTHS:
 INTERSTAGE
 TYPE _____ MATERIAL _____
 BALANCE PISTON
 TYPE _____ MATERIAL _____

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CONSTRUCTION FEATURES (CONTINUED)

<p>SHAFT SEALS:</p> <p><input type="radio"/> SEAL TYPE (1-2.8.1.3) _____</p> <p><input type="radio"/> MAX SEALING/SETTLING OUT PRES. (1-2.8.1.1)(BARG)(kPaG) _____</p> <p><input type="radio"/> MIN. SEALING PRESSURE (BARG)(kPaG) _____</p> <p><input type="radio"/> SUPPLEMENTAL DEVICE REQUIRED FOR CONTACT _____</p> <p><input type="radio"/> SEALS (1-2.8.3.4) TYPE _____</p> <p><input type="radio"/> BUFFER GAS SYSTEM REQUIRED (1-2.8.1.5)</p> <p><input type="radio"/> TYPE BUFFER GAS (1-2.8.1.5)</p> <p><input type="checkbox"/> PRESSURE (1-2.8.1.6) _____ (BARG)(kPaG)</p> <p><input type="checkbox"/> FLOWRATE _____ (kg/min)</p> <p><input type="checkbox"/> FILTRATION _____</p> <p><input type="radio"/> MANIFOLD (1-2.8.1.7) _____</p> <p><input type="radio"/> METHOD OF CONTROL (1-2.8.1.5) _____</p>	<p><input type="radio"/> BUFFER GAS CONTROL SYSTEM SCHEMATIC BY VENDOR</p> <p><input type="radio"/> PRESSURIZING GAS FOR SUBATMOSPHERIC SEALS (1-2.8.2.4)</p> <p style="padding-left: 20px;"><input type="radio"/> EDUCTOR <input type="radio"/> INJECTION (1-2.8.2.3)</p> <p><input type="checkbox"/> SEAL MANUFACTURER _____</p> <p><input type="checkbox"/> LEAKAGE TO PROCESS (m³/DAY/SEAL) _____</p> <p>BUFFER GAS REQUIRED FOR:</p> <p><input type="checkbox"/> AIR RUN-IN <input type="checkbox"/> OTHER _____</p> <p><input type="checkbox"/> FLOW (PER SEAL):</p> <p>NORM: _____ kg/min @ _____ BAR(kPa) Δ P _____</p> <p>MAX. _____ kg/min @ _____ BAR(kPa) Δ P _____</p> <p><input type="checkbox"/> BEARING HOUSING CONSTRUCTION:</p> <p style="padding-left: 20px;">TYPE (SEPARATE, INTEGRAL) _____ SPLIT _____</p> <p style="padding-left: 20px;">MATERIAL _____</p>
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AXIAL COMPRESSOR

STAGE	1	2	3	4	5	6	7	8	9
-------	---	---	---	---	---	---	---	---	---

ROTOR	<input type="checkbox"/> BLADE MATERIAL									
	<input type="checkbox"/> BLADE ROOT TYPE									
	<input type="checkbox"/> CORD WIDTH (mm)									
	<input type="checkbox"/> OUTER DIAMETER (mm)									
	<input type="checkbox"/> BLADE HEIGHT (mm)									
	<input type="checkbox"/> BLADE QUANTITY									

STATOR	<input type="checkbox"/> BLADE MATERIAL									
	<input type="checkbox"/> TYPE (MOVABLE, FIXED, ADJUSTABLE)									
	<input type="checkbox"/> CORD WIDTH (mm)									
	<input type="checkbox"/> BLADE QUANTITY									

STAGE	10	11	12	13	14	15	16	17	18
-------	----	----	----	----	----	----	----	----	----

ROTOR	<input type="checkbox"/> BLADE MATERIAL									
	<input type="checkbox"/> BLADE ROOT TYPE									
	<input type="checkbox"/> CORD WIDTH (mm)									
	<input type="checkbox"/> OUTER DIAMETER (mm)									
	<input type="checkbox"/> BLADE HEIGHT (mm)									
	<input type="checkbox"/> BLADE QUANTITY									

STATOR	<input type="checkbox"/> BLADE MATERIAL									
	<input type="checkbox"/> TYPE (MOVABLE, FIXED, ADJUSTABLE) (2-3.4.2.3)									
	<input type="checkbox"/> CORD WIDTH (mm)									
	<input type="checkbox"/> BLADE QUANTITY									

46 REMARKS: _____

47 _____

48 _____

49 _____

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CONSTRUCTION FEATURES (CONTINUED)

2 BEARINGS AND BEARING HOUSINGS

3 MAGNETIC BEARINGS (2-2.7.1.1.2)

4 RADIAL	THRUST	NON-THRUST	THRUST	ACTIVE	INACTIVE
5 <input type="checkbox"/> TYPE			<input type="checkbox"/> TYPE		
6 <input type="checkbox"/> MANUFACTURER			<input type="checkbox"/> MANUFACTURER		
7 <input type="checkbox"/> LENGTH (mm)			<input type="checkbox"/> UNIT LOADING (MAX) (BAR)		
8 <input type="checkbox"/> SHAFT DIA. (mm)			<input type="checkbox"/> UNIT LOAD (ULT.) (BAR)		
9 <input type="checkbox"/> UNIT LOAD (ACT/ALLOW)			<input type="checkbox"/> AREA (mm ²)		
10 <input type="checkbox"/> BASE MATERIAL			<input type="checkbox"/> NO. PADS		
11 <input type="checkbox"/> BABBIT THICKNESS (mm)			<input type="checkbox"/> PIVOT: CENTER / OFFSET, %		
12 <input type="checkbox"/> NO. PADS			<input type="checkbox"/> PAD BASE MATL		
13 <input type="checkbox"/> LOAD: B'TWN/ON PAD			<input type="radio"/> COPPER BACKED (2-2.7.3.7)		
14 <input type="checkbox"/> PIVOT: CTR/OFFSET, %			LUBRICATION: <input type="radio"/> FLOODED <input type="radio"/> DIRECTED (2-2.7.3.6)		
15 <input type="checkbox"/> PAD MATERIAL <input type="radio"/> (2-2.7.2.2) <input type="radio"/> (2-2.7.2.3)			THRUST COLLAR: <input type="radio"/> INTEGRAL <input type="radio"/> REPLACEABLE		
16 <input type="checkbox"/> BEARING SPAN _____ mm			MATERIAL _____		

18 BEARING TEMPERATURE DETECTORS (2-3.4.7.3)

19 SEE ATTACHED API-670 DATASHEET
 20 THERMOCOUPLES TYPE _____
 21 RESISTANCE TEMP DETECTORS
 22 RESISTANCE MAT'L _____ _____ OHMS
 23 ALARM TEMPERATURE (°C) (2-2.7.1.3) _____
 24 SHUTDOWN TEMPERATURE (°C) (2-2.7.1.3) _____
 25 PROVISION FOR LOCAL DISCONNECT (1-2.7.4.6)
 26 LOCATION-JOURNAL BRG
 27 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG
 28 OTHER _____
 29 LOCATION-THRUST BRG
 30 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG
 31 OTHER _____
 32 NO. (INACT) _____ EA PAD _____ EVERY OTH PAD _____ PER BRG
 33 OTHER _____
 34
 35 MONITOR SUPPLIED BY (2-3.4.7.4)
 36 LOCATION _____ ENCLOSURE _____
 37 MFR. _____ MODEL _____
 38 SCALE RGE _____ ALARM SET @ _____ °C
 39 SHTDWN SET @ _____ °C TIME DELAY _____ SEC
 40

VIBRATION DETECTORS: SEE ATTACHED API-670 DATA SHEET

TYPE _____ MODEL _____
 MFR _____
 NO. AT EA SHAFT BEARING _____ TOTAL NO. _____
 OSCILLATOR-DETECTORS SUPPLIED BY
 MFR _____ MODEL _____
 MONITOR SUPPLIED BY (2-3.4.7.2)
 LOCATION _____ ENCLOSURE _____
 MFR. _____ MODEL _____
 SCALE RGE _____ ALARM SET @ _____ μ m
 SHTDWN: SET @ _____ μ m TIME DELAY _____ SEC
 CASING VIBRATION TRANSDUCERS (2-3.4.7.5)
 CASING VIBRATION MONITORS (2-3.4.7.6)

41 KEY PHASOR REQUIRED

42 COMPRESSOR GEAR H.S. GEAR L.S.

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

TYPE _____ MODEL _____
 MFR _____ NO. REQUIRED _____
 OSCILLATOR-DEMODULATOR SUPPLIED BY
 MFR _____ MODEL _____
 MONITOR SUPPLIED BY (2-3.4.7.2)
 LOCATION _____ ENCLOSURE _____
 MFR. _____ MODEL _____
 SCALE RGE _____ ALARM SET @ _____ μ m
 SHTDWN: SET @ _____ μ m TIME DELAY _____ SEC

43 CASING CONNECTIONS (1-2.3.2.2.1)

44 CONNECTION	<input type="checkbox"/> ANSI/ASME (B16.1; B16.5; B16.42; B16.47 series A, B; ISO 7005-1, -2; OTHER	<input type="checkbox"/> FACING <input type="checkbox"/> BORE	<input type="radio"/> ORIENTATION	<input type="checkbox"/> FLANGED OR STUDDED (1-2.3.2.2.1)	<input type="radio"/> MATING FLG & GASKET BY VENDOR (1-2.3.2.2.7)	<input type="checkbox"/> GAS VELOCITY m/sec
45 INLET						
46 DISCHARGE						
47						
48						
49						

55 BOROSCOPIC INSPECTION PORTS (2-2.3.2.4)

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1 **OTHER CONNECTIONS**

2 SERVICE:	NO.	SIZE	TYPE		NO.	SIZE	TYPE
3 LUBE-OIL INLET				PRESSURE			
4 LUBE OIL OUTLET				TEMPERATURE			
5 SEAL-OIL INLET				SOLVENT INJECTION			
6 SEAL-OIL OUTLET				PURGE FOR:			
7 SEAL GAS INLET				BRG. HOUSING			
8 SEAL GAS OUTLET				BTWN BRG & SEAL			
9 CASING DRAINS				BTWN SEAL & GAS			
10 STAGE DRAINS							

- 11 INDIVIDUAL STAGE DRAINS REQUIRED (1-2.3.2.1.7)
 12 VALVED & BLINDED
 13 VALVED & BLINDED & MANIFOLD

14 **LUBRICATION AND SEALING SYSTEMS (1-2.10) (1-3.5.1.2)**

- 15 SEE ATTACHED API 614 DATASHEET
 16 SEPARATE COMBINED (2-2.10.1)
 17 INTEGRAL OIL RESERVOIR (1-3.3.2.11)
 18 OIL TYPE (2-2.10.2)

19 **ACCESSORIES**

20 **COUPLING AND GUARDS (3.2)**

- 21 NOTE: SEE ROTATING ELEMENTS - SHAFT ENDS
 22 SEE ATTACHED API-671 DATA SHEET KEYLESS HYDRAULIC KEYED FLANGED OTHER _____
 23 COUPLING FURNISHED BY _____
 24 MANUFACTURER _____ TYPE _____ MODEL _____
 25 COUPLING GUARD FURNISHED BY: _____
 26 TYPE: FULLY ENCLOSED SEMI-OPEN OTHER

27 **COUPLING DETAILS**

- 28 MAX O.D. _____ mm PLUG AND RING GAUGES (1-3.2.5)
 29 HUB WEIGHT _____ kg LUBRICATION REQUIREMENTS:
 30 SPACER LENGTH _____ mm NON-LUBE CONT. OIL LUBE OTHER _____
 31 SPACER WEIGHT _____ kg QUANTITY PER HUB _____ kg OR L/min

33 **MOUNTING PLATES (1-3.3)**

- 34 BASEPLATES FURNISHED BY (1-3.3.2.1) SOLEPLATES FURNISHED BY (1-3.3.3.1) _____
 35 COMPRESSOR ONLY DRIVER GEAR THICKNESS _____ mm
 36 OTHER _____ SUBSOLE PLATES REQUIRED (1-3.3.3.1.3)
 37 NONSKID DECKING (1-3.3.2.4) SLOPED DECK (1-3.3.2.4.1) EXTENT OF PIPING (2-3.5.1.1) _____
 38 LEVELING PADS OR TARGETS (1-3.3.2.6) STAINLESS STEEL SHIM THICKNESS _____ mm
 39 COLUMN MOUNTING (1-3.3.2.5) COMPRESSOR _____
 40 SUB-SOLE PLATES REQUIRED (1-3.3.2.10)
 41 STAINLESS STEEL SHIM THICKNESS _____ mm COUNTER BORE ANCHOR BOLT HOLES (1-3.3.3.1.2)
 42 MACHINED MOUNTING PADS REQUIRED (1-3.3.2.9)

44 REMARKS:
 45 _____
 46 _____
 47 _____
 48 _____
 49 _____

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<p>1</p> <p>2 <input type="radio"/> UTILITY CONDITIONS:</p> <p>3 STEAM: DRIVERS</p> <p>4 INLET MIN BARG _____ °C</p> <p>5 NORM BARG _____ °C</p> <p>6 MAX BARG _____ °C</p> <p>7 EXHAUST. MIN BARG _____ °C</p> <p>8 NORM BARG _____ °C</p> <p>9 MAX BARG _____ °C</p> <p>10 ELECTRICITY:</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"></td> <td style="width:33%; text-align: center;">DRIVERS</td> <td style="width:33%; text-align: center;">CONTROL</td> <td style="width:33%; text-align: center;">SHUTDOWN</td> </tr> <tr> <td>11</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>12</td> <td style="border-bottom: 1px solid black;">VOLTAGE</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>13</td> <td style="border-bottom: 1px solid black;">HERTZ</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>14</td> <td style="border-bottom: 1px solid black;">PHASE</td> <td style="border-bottom: 1px solid black;"></td> <td style="border-bottom: 1px solid black;"></td> </tr> </table> <p>15 <input type="radio"/> REDUCED VOLTAGE START (1-3.1.6)</p> <p>16 <input type="checkbox"/> NUMBER OF STARTS (1-2.6.7.6.4) _____</p> <p>17 INSTRUMENT AIR:</p> <p>18 MAX PRESS _____ BARG(kPaG) MIN PRESS _____ BARG(kPaG)</p> <p>19</p> <p>20 SHOP INSPECTION AND TESTS: (1-4.1.4)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:80%;"></td> <td style="width:10%; text-align: center;">REQ'D</td> <td style="width:10%; text-align: center;">WIT/OBV</td> </tr> <tr> <td>21 HYDROSTATIC (1-4.3.2)</td> <td style="text-align: center;">●</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>22 IMPELLER OVERSPEED (1-4.3.3)</td> <td style="text-align: center;">●</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>23 MECHANICAL RUN (1-4.3.6)(2-4.3.1)</td> <td style="text-align: center;">●</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>24 <input type="radio"/> CONTRACT COUPLING</td> <td></td> <td></td> </tr> <tr> <td>25 OPTIONAL TESTS</td> <td></td> <td></td> </tr> <tr> <td>26 PURCHASER VIB. EQUIPMENT (2-4.3.1.1.10)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>27 VARY LUBE & SEAL OIL PRESSURES</td> <td></td> <td></td> </tr> <tr> <td>28 AND TEMPERATURES (1-4.3.6.1.5)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>29 POLAR FORM VIB DATA (1-4.3.6.1.2)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>30 TAPE RECORD VIB DATA (1-4.3.6.1.3)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>31 SHAFT END SEAL INSP. (1-4.3.6.2.2)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>32 GAS LEAK TEST AT DISCH PRESS (2-4.3.2.3)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>33 POST TEST INTERNAL INSP. (1-4.3.8.5)</td> <td></td> <td></td> </tr> <tr> <td>34 BEFORE GAS LEAKAGE TEST</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>35 AFTER GAS LEAKAGE TEST</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>36 PERFORMANCE TEST (GAS) (AIR) (2-4.3.3.1.1)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>37 INTERMEDIATE HEAD/PRESSURE TOL. (2-4.3.3.1.6)</td> <td style="text-align: center;">△ P</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>38 COMPLETE UNIT TEST (2-4.3.3.2)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>39 TANDEM TEST (2-4.3.3.3)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>40 GEAR TEST (2-4.3.3.4)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>41 HELIUM LEAK TEST (1-4.3.8.2)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>42 SOUND LEVEL TEST (1-4.3.8.3)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>43 AUX. EQUIPMENT TEST (1-4.3.8.4)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>44 FULL LOAD / SPEED / PRESS TEST (1-4.3.8.6)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>45 HYDRAULIC COUPLING INSP (1-4.3.8.7)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>46 SPARE PARTS TEST (1-4.3.8.8)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>47 INSPECTOR'S CHECKLIST COMPLIANCE (1-4.1.6)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>48 GAS SEAL TEST VENDOR SHOP (1-4.3.5)</td> <td style="text-align: center;">○</td> <td style="text-align: center;">_____</td> </tr> <tr> <td>49</td> <td></td> <td></td> </tr> </table>		DRIVERS	CONTROL	SHUTDOWN	11				12	VOLTAGE			13	HERTZ			14	PHASE				REQ'D	WIT/OBV	21 HYDROSTATIC (1-4.3.2)	●	_____	22 IMPELLER OVERSPEED (1-4.3.3)	●	_____	23 MECHANICAL RUN (1-4.3.6)(2-4.3.1)	●	_____	24 <input type="radio"/> CONTRACT COUPLING			25 OPTIONAL TESTS			26 PURCHASER VIB. EQUIPMENT (2-4.3.1.1.10)	○	_____	27 VARY LUBE & SEAL OIL PRESSURES			28 AND TEMPERATURES (1-4.3.6.1.5)	○	_____	29 POLAR FORM VIB DATA (1-4.3.6.1.2)	○	_____	30 TAPE RECORD VIB DATA (1-4.3.6.1.3)	○	_____	31 SHAFT END SEAL INSP. (1-4.3.6.2.2)	○	_____	32 GAS LEAK TEST AT DISCH PRESS (2-4.3.2.3)	○	_____	33 POST TEST INTERNAL INSP. (1-4.3.8.5)			34 BEFORE GAS LEAKAGE TEST	○	_____	35 AFTER GAS LEAKAGE TEST	○	_____	36 PERFORMANCE TEST (GAS) (AIR) (2-4.3.3.1.1)	○	_____	37 INTERMEDIATE HEAD/PRESSURE TOL. (2-4.3.3.1.6)	△ P	_____	38 COMPLETE UNIT TEST (2-4.3.3.2)	○	_____	39 TANDEM TEST (2-4.3.3.3)	○	_____	40 GEAR TEST (2-4.3.3.4)	○	_____	41 HELIUM LEAK TEST (1-4.3.8.2)	○	_____	42 SOUND LEVEL TEST (1-4.3.8.3)	○	_____	43 AUX. EQUIPMENT TEST (1-4.3.8.4)	○	_____	44 FULL LOAD / SPEED / PRESS TEST (1-4.3.8.6)	○	_____	45 HYDRAULIC COUPLING INSP (1-4.3.8.7)	○	_____	46 SPARE PARTS TEST (1-4.3.8.8)	○	_____	47 INSPECTOR'S CHECKLIST COMPLIANCE (1-4.1.6)	○	_____	48 GAS SEAL TEST VENDOR SHOP (1-4.3.5)	○	_____	49			<p style="text-align: center;">UTILITIES</p> <p>MANUALS</p> <p><input type="radio"/> DRAFT MANUAL FOR REVIEW (1-5.3.5.1.2)</p> <p><input type="radio"/> TECHNICAL DATA MANUAL (1-5.3.5.4)</p> <p>MISCELLANEOUS:</p> <p><input type="checkbox"/> RECOMMENDED STRAIGHT RUN OF PIPE DIAMETERS BEFORE SUCTION _____</p> <p><input type="radio"/> COMPRESSOR TO BE SUITABLE FOR FIELD RUN-IN ON AIR (1-2.1.16)</p> <p><input type="radio"/> PROVISION FOR LIQUID INJECTION (1-2.1.10)</p> <p><input type="radio"/> INJECTION MANIFOLD (2-3.5.1.2)</p> <p><input type="radio"/> VENDOR'S REVIEW & COMMENTS ON PURCHASER'S CONTROL SYSTEMS (1-3.4.1.1)</p> <p><input type="radio"/> SHOP FITUP OF VENDOR PROCESS PIPING (1-4.4.3.11)</p> <p><input type="radio"/> WELDING HARDNESS TESTING (1-4.2.1.5)</p> <p><input type="radio"/> INSPECT CLEANLINESS (1-4.2.1.4)</p> <p><input type="radio"/> DESIGN AUDIT (1-5.1.4)</p> <p><input type="radio"/> BALANCE PISTON Δ P (1-5.3.2.1.5) (BAR) (kPa)</p> <p><input type="radio"/> PROVIDE TAIL END SCHEDULES (1-5.3.3.2)</p> <p>VENDOR'S REPRESENTATIVE SHALL (1-2.1.13)</p> <p><input type="radio"/> OBSERVE FLANGE PARTING</p> <p><input type="radio"/> CHECK ALIGNMENT AT TEMPERATURE</p> <p><input type="radio"/> BE PRESENT AT INITIAL ALIGNMENT</p> <p><input type="checkbox"/> WEIGHTS (kg):</p> <p>COMPR. _____ GEAR _____ DRIVER _____ BASE _____</p> <p>ROTORS: COMPR. _____ DRIVER _____ GEAR _____</p> <p>COMPRESSOR UPPER CASE _____</p> <p>MAX. FOR MAINTENANCE (IDENTIFY) _____</p> <p>TOTAL SHIPPING WEIGHT _____</p> <p><input type="checkbox"/> SPACE REQUIREMENTS (mm):</p> <p>COMPLETE UNIT: L _____ W _____ H _____</p> <p>REMARKS: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
	DRIVERS	CONTROL	SHUTDOWN																																																																																																												
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12	VOLTAGE																																																																																																														
13	HERTZ																																																																																																														
14	PHASE																																																																																																														
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21 HYDROSTATIC (1-4.3.2)	●	_____																																																																																																													
22 IMPELLER OVERSPEED (1-4.3.3)	●	_____																																																																																																													
23 MECHANICAL RUN (1-4.3.6)(2-4.3.1)	●	_____																																																																																																													
24 <input type="radio"/> CONTRACT COUPLING																																																																																																															
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48 GAS SEAL TEST VENDOR SHOP (1-4.3.5)	○	_____																																																																																																													
49																																																																																																															

**ANNEX 3A
TYPICAL DATA SHEETS**

**INTEGRALLY GEARED COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 PURCHASE ORDER NO. _____
 INQUIRY NO. _____
 REVISION NO. _____ DATE _____
 PAGE 1 OF 8 BY _____

1 APPLICABLE TO: PROPOSAL PURCHASE AS-BUILT
 2 FOR _____ UNIT _____
 3 SITE _____ SERIAL NO. _____
 4 SERVICE _____ NO. REQUIRED _____
 5 MANUFACTURER _____ DRIVER TYPE (1-3.1.1) _____
 6 MODEL _____ DRIVER ITEM NO. _____
 7
 8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

OPERATING CONDITIONS

(ALL DATA ON PER UNIT BASIS)	NORMAL	OTHER CONDITIONS (1-2.1.1.1)				
	(1-2.1.1.2)	A	B	C	D	E
<input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)						
<input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)						
<input type="radio"/> MMSCFD/SCFM (14.7 PSIA & 60°F DRY)						
<input type="radio"/> WEIGHT FLOW, #/MIN (WET) (DRY)						
INLET CONDITIONS						
<input type="radio"/> PRESSURE (PSIA)						
<input type="radio"/> TEMPERATURE (°F)						
<input type="radio"/> RELATIVE HUMIDITY %						
<input type="radio"/> MOLECULAR WEIGHT						
<input type="checkbox"/> C_p/C_v (K_1) OR (K_{AVG})						
<input type="checkbox"/> COMPRESSIBILITY (Z_1) OR (Z_{AVG})						
<input type="checkbox"/> INLET VOLUME, (CFM) (WET/DRY)						
DISCHARGE CONDITIONS						
<input type="radio"/> PRESSURE (PSIA)						
<input type="checkbox"/> TEMPERATURE (°F)						
<input type="checkbox"/> C_p/C_v (K_2) OR (K_{AVG}) (NOTE 1)						
<input type="checkbox"/> COMPRESSIBILITY (Z_2) OR (Z_{AVG}) (NOTE 1)						
<input type="checkbox"/> GHP REQUIRED						
<input type="checkbox"/> TRAIN BHP REQUIRED						
<input type="checkbox"/> BHP REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)						
<input type="checkbox"/> SPEED of driver (RPM)						
<input type="checkbox"/> TURNDOWN (%)						
<input type="checkbox"/> POLYTROPIC HEAD (FT-LB)						
<input type="checkbox"/> POLYTROPIC EFFICIENCY (%)						
<input type="radio"/> CERTIFIED POINT						
<input type="checkbox"/> PERFORMANCE CURVE NUMBER						

39 **PROCESS CONTROL (1-3.4.2.1)**

40 METHOD SUCTION THROTTLING VARIABLE INLET SPEED VARIATION DISCHARGE VARIABLE DIFFUSER
 41 FROM _____ PSIA GUIDE VANES FROM _____ % BLOWOFF OR GUIDE VANES _____
 42 TO _____ PSIA (3-2.4) TO _____ % RECIRCULATION (3-2.4)

43 SIGNAL SOURCE (1-3.4.2.1) _____

44 TYPE ELECTRONIC PNEUMATIC OTHER _____

45 RANGE _____ mA _____ PSIG

46

47 ANTI-SURGE SYSTEM (1-3.4.2.2)

48 **REMARKS:** _____

49

**INTEGRALLY GEARED COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 2 OF 8 BY _____

OPERATING CONDITIONS (Continued) (1-2.1.1.1) (1-3.1.2) (1-3.1.3)

1 2	GAS ANALYSIS: 3 <input type="radio"/> MOL %	NORMAL	OTHER CONDITIONS					REMARKS:
			A	B	C	D	E	
4	MW							
5	AIR	28.966						
6	OXYGEN	32.000						
7	NITROGEN	28.016						
8	WATER VAPOR	18.016						
9	CARBON MONOXIDE	28.010						
10	CARBON DIOXIDE	44.010						
11	HYDROGEN SULFIDE	34.076						(1-2.2.1.6)
12	HYDROGEN	2.016						(1-2.2.1.9)
13	METHANE	16.042						
14	ETHYLENE	28.052						
15	ETHANE	30.068						
16	PROPYLENE	42.078						
17	PROPANE	44.094						
18	I-BUTANE	58.120						
19	n-BUTANE	58.120						
20	I-PENTANE	72.146						
21	n-PENTANE	72.146						
22	HEXANE PLUS							
23	CORROSIVE AGENTS							(1-2.2.1.3)
24								
25	TOTAL							
26	AVG. MOL. WT.							

27 **LOCATION:** (1-2.1.8)

28 INDOOR OUTDOOR GRADE

29 HEATED UNDER ROOF MEZZANINE

30 UNHEATED PARTIAL SIDES _____

31 ELEC. AREA CLASSIFICATION (1-2.1.14) CL _____ GR _____ DIV _____

32 **SITE DATA** (1-2.1.8)

33 ELEVATION _____ FT BAROMETER _____ PSIA

34 RANGE OF AMBIENT TEMPS:

35 _____ DRY BULB _____ WET BULB

36 NORMAL °F _____

37 MAXIMUM °F _____

38 MINIMUM °F _____

39 _____ °F _____

40 **UNUSUAL CONDITIONS:** DUST FUMES

41 _____ °F _____

42 OTHER (1-2.1.8) _____

43 _____

44 COPPER AND COPPER ALLOYS PROHIBITED (1-2.2.1.14)

45 **COATING:** (1-2.2.1.16)

46 ROTATING COMPONENTS _____

47 STATIONARY COMPONENTS _____

48 **REMARKS:** _____

49 _____

NOISE SPECIFICATIONS: (1-2.1.9)

APPLICABLE TO MACHINE:
SEE SPECIFICATION _____

APPLICABLE TO NEIGHBORHOOD:
SEE SPECIFICATION _____

ACOUSTIC HOUSING: YES NO

APPLICABLE SPECIFICATIONS:
API 617, 7TH CHAPTERS 1 & 3

VENDOR HAVING UNIT RESPONSIBILITY (1-1.5.53) (1-1.8) (1-2.1.3)

GOVERNING SPECIFICATION (IF DIFFERENT)

PAINTING:

MANUFACTURER'S STD.

OTHER _____

NAMEPLATE (2-2.11.2) US CUSTOMARY METRIC

SHIPMENT: (4.4)

DOMESTIC EXPORT EXPORT BOXING REQ'D.

OUTDOOR STORAGE MORE THAN 6 MONTHS (1-4.4.1) _____ MO

SPARE ROTOR ASSEMBLY PACKAGE (1-4.4.3.10)

HORIZONTAL STORAGE VERTICAL STORAGE

**INTEGRALLY GEARED COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 3 OF 8 BY _____

CONSTRUCTION FEATURES (1 COLUMN PER STAGE, USE ADDITIONAL SHEETS IF NEEDED)

1							
2	Rotor	Rotor 1					
3	Stage	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
4	<input type="checkbox"/> CASING:						
5	MODEL						
6	CASING SPLIT						
7	MATERIAL						
8	THICKNESS (IN.)						
9	CORROSION ALLOWANCE (IN.)						
10	MAX. ALLOWABLE PRESS (PSIG)						
11	TEST PRESS (PSIG):						
12	MAX. ALLOWABLE TEMP. (°F)						
13	MAX. OPERATING TEMP. (°F)						
14	MIN. OPERATING TEMPERATURE (°F)						
15	MAX CASING CAPACITY (ICFM)						
16	<input type="checkbox"/> INLET CONNECTIONS (1-2.3.2.2.1, 1-2.3.2.2.7)						
17	TYPE						
18	ORIENTATION						
19	FLANGED OR STUDDED?						
20	MATING FLG & GASKET BY VENDOR?						
21	GAS VELOCITY (FT/SEC.)						
22	<input type="checkbox"/> DISCHARGE CONNECTIONS (1-2.3.2.2.1, 1-2.3.2.2.7)						
23	TYPE						
24	ORIENTATION						
25	FLANGED OR STUDDED?						
26	MATING FLG & GASKET BY VENDOR?						
27	GAS VELOCITY (FT/SEC.)						
28	<input type="radio"/> INTERMEDIATE MAIN PROCESS CONNECTIONS (2-2.4.5)						
29	DISCH. PRESSURE (PSIG):						
30	INLET PRESSURE (PSIG):						
31	<input type="checkbox"/> ADJUSTABLE INLET GUIDE VANES						
32	MATERIAL _____						
33	NO. INLET GUIDE VANES						
34	<input type="checkbox"/> IMPELLER:						
35	DIAMETER						
36	NUMBER OF VANES						
37	TYPE (OPEN, ENCLOSED, ETC.)						
38	TYPE FABRICATION						
39	MATERIAL						
40	MIN. YIELD STRENGTH (PSI)						
41	HARDNESS: (Rc) (BRINNEL)						
42	SMALLEST TIP INTERNAL WIDTH (IN.)						
43	MAX. MACH. NO. @ IMPELLER EYE						
44	MAX. IMPELLER HEAD @ 100% SPD (FT)						
45	MAX. IMPELLER TIP SPEED (FT/MIN.)						
46	<input type="checkbox"/> DIFFUSER GUIDE VANES						
47	ADJUSTABLE?						
48	MATERIAL						
49	NO. GUIDE VANES						

**INTEGRALLY GEARED COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
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CONSTRUCTION FEATURES, continued (1 COLUMN PER STAGE, USE ADDITIONAL SHEETS IF NEEDED)

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
2 <input type="checkbox"/> SHAFT SLEEVES:						
3 MATERIAL						
4 AT SHAFT SEALS?						
5 OTHER LOCATIONS?						
6 SHAFT SEALS: (1-2.8.1.1, 1-2.8.1.5)						
7 <input type="radio"/> SEAL TYPE (1-2.8.1.3)						
8 <input type="radio"/> SETTLING OUT PRESS. (PSIG)						
9 <input type="radio"/> MIN. SEALING PRESSURE (PSIG)						
10 <input type="radio"/> TYPE BUFFER GAS, PRIMARY						
11 <input type="checkbox"/> PRESSURE (PSIG) (1-2.8.1.6)						
12 <input type="checkbox"/> FLOWRATE (LB/MIN)						
13 <input type="checkbox"/> FILTRATION						
14 <input type="radio"/> TYPE BUFFER GAS, SECONDARY						
15 <input type="checkbox"/> PRESSURE (PSIG) (1-2.8.1.6)						
16 <input type="checkbox"/> FLOWRATE (LB/MIN)						
17 <input type="checkbox"/> FILTRATION						
18 <input type="checkbox"/> FLOW RATE TO PROCESS						
19 <input type="radio"/> BUFFER GAS SYSTEM REQUIRED (2-2.8.1.5)						
20 <input type="radio"/> MANIFOLD (1-3.5.1.4)						
21 <input type="radio"/> METHOD OF CONTROL (1-2.8.1.5)						
22 <input type="radio"/> BUFFER GAS CONTROL SYSTEM SCHEMATIC BY VENDOR						
23 <input type="radio"/> PRESSURIZING GAS FOR SUBATMOSPHERIC SEALS (1-2.8.2.4)						
24 <input type="checkbox"/> SEAL MANUFACTURER						

EDUCTOR INJECTION (1-2.8.2.3) _____
 SYSTEM RELIEF VALVE SET P1 (2-2.3.1.1) _____

<p>26 BEARING TEMPERATURE DETECTORS (2-3.4.7)</p> <p>27 <input type="radio"/> SEE ATTACHED API-670 DATASHEET</p> <p>28 <input type="radio"/> THERMOCOUPLES TYPE _____</p> <p>29 <input type="radio"/> RESISTANCE TEMP DETECTORS</p> <p>30 <input type="radio"/> RESISTANCE MAT'L _____ <input type="radio"/> _____ OHMS</p> <p>31 <input type="checkbox"/> ALARM TEMPERATURE (°F) _____</p> <p>32 <input type="checkbox"/> SHUTDOWN TEMPERATURE (°F) _____</p> <p>33 <input type="radio"/> PROVISION FOR LOCAL DISCONNECT (1-2.7.4.6)</p> <p>34 <input type="radio"/> LOCATION-JOURNAL BRG</p> <p>35 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG</p> <p>36 OTHER _____</p> <p>37 <input type="radio"/> LOCATION-THRUST BRG</p> <p>38 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG</p> <p>39 OTHER _____</p> <p>40 NO. (INACT) _____ EA PAD _____ EVERY OTH PAD _____ PER BRG</p> <p>41 OTHER _____</p> <p>42 <input type="radio"/> LOCAL DISCONNECTION (1-2.7.4.6)</p> <p>43 <input type="radio"/> MONITOR SUPPLIED BY (2-3.4.7.4)</p> <p>44 <input type="radio"/> LOCATION _____ ENCLOSURE _____</p> <p>45 <input type="radio"/> MFR. _____ <input type="checkbox"/> MODEL _____</p> <p>46 <input type="checkbox"/> SCALE RGE _____ ALARM <input type="checkbox"/> SET @ _____ °F</p> <p>47 <input type="radio"/> SHTDWN <input type="checkbox"/> SET @ _____ °F <input type="radio"/> TIME DELAY _____ SEC.</p>	<p>VIBRATION DETECTORS: <input type="radio"/> SEE ATTACHED API-670 DATA SHEET</p> <p><input type="radio"/> TYPE _____ <input type="checkbox"/> MODEL _____</p> <p><input type="radio"/> MFR _____</p> <p><input type="radio"/> NO. AT EA SHAFT BEARING _____ TOTAL NO. _____</p> <p><input type="radio"/> OSCILLATOR-DETECTORS SUPPLIED BY _____</p> <p><input type="radio"/> MFR _____ <input type="checkbox"/> MODEL _____</p> <p>MONITOR SUPPLIED BY (2-3.4.7.2)</p> <p><input type="radio"/> LOCATION _____ ENCLOSURE _____</p> <p><input type="radio"/> MFR. _____ <input type="checkbox"/> MODEL _____</p> <p><input type="checkbox"/> SCALE RGE _____ ALARM <input type="checkbox"/> SET @ _____ MILS</p> <p><input type="radio"/> SHTDWN: <input type="checkbox"/> SET @ _____ MILS <input type="radio"/> TIME DELAY _____ SEC.</p> <p><input type="radio"/> CASING VIBRATION TRANSDUCERS (2-3.4.7.5)</p> <p><input type="radio"/> CASING VIBRATION MONITORS (2-3.4.7.6)</p>
<p>49 KEY PHASOR REQUIRED</p> <p>50 <input type="radio"/> COMPRESSOR <input type="radio"/> GEAR H.S. <input type="radio"/> GEAR L.S.</p>	<p>AXIAL POSITION DETECTOR: <input type="radio"/> SEE ATTACHED API-670 DATA SHEET</p> <p><input type="radio"/> TYPE _____ <input type="checkbox"/> MODEL _____</p> <p><input type="radio"/> MFR _____ <input type="radio"/> NO. REQUIRED _____</p> <p><input type="radio"/> OSCILLATOR-DEMODULATOR SUPPLIED BY _____</p> <p><input type="radio"/> MFR _____ <input type="checkbox"/> MODEL _____</p> <p>MONITOR SUPPLIED BY (2-3.4.7.2)</p> <p><input type="radio"/> LOCATION _____ ENCLOSURE _____</p> <p><input type="radio"/> MFR. _____ <input type="radio"/> ALARM <input type="checkbox"/> MODEL _____</p> <p><input type="checkbox"/> SCALE RGE _____ <input type="checkbox"/> SET @ _____ MILS</p> <p><input type="radio"/> SHTDWN: <input type="checkbox"/> SET @ _____ MILS <input type="radio"/> TIME DELAY _____ SEC.</p>

**INTEGRALLY GEARED COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 5 OF 8 BY _____

CONSTRUCTION FEATURES, ROTORS (1 COLUMN PER ROTOR, USE ADDITIONAL SHEETS IF NEEDED)

1

2 **DRIVER SPEEDS:** PITCH LINE VELOCITY (FT/SEC) _____

3 MAX. CONT. _____ NORMAL DIAMETRICAL PITCH _____

4 TRIP SPEED _____ HELIX ANGLE _____ PRESSURE ANGLE _____

5

6 **ROTOR NUMBER**

	BULL GEAR	ROTOR 1	ROTOR 2	ROTOR 3	ROTOR 4
7 SPEED (RPM)					
8 SERVICE POWER (HP)					
9 SERVICE FACTOR					
10 NUMBER OF TEETH					
11 FACE WIDTH (IN.)					
12 AGMA GEOMETRY FACTOR "J"					
13 AGMA GEOMETRY FACTOR "I"					
14 MINIMUM HARDNESS (Rc)					
15 ROTOR WEIGHT (INC WHEELS) (LB.)					
16 BACKLASH (IN.)					

17 GEARBOX FULL LOAD POWER LOSS _____

18 **LATERAL CRITICAL SPEEDS (DAMPED)**

19 FIRST CRITICAL					
20 SECOND CRITICAL					
21 THIRD CRITICAL					
22 FOURTH CRITICAL					

23 LATERAL ANALYSIS ADDITIONAL REQUIREMENTS (1-2.6.2.14)

24 TRAIN LATERAL ANALYSIS REQUIRED (1-2.6.2.6)

25 TRAIN TORSIONAL ANALYSIS REQUIRED (1-2.6.7.1)

26 **TORSIONAL CRITICAL SPEEDS:**

27 FIRST CRITICAL	
28 SECOND CRITICAL	
29 THIRD CRITICAL	
30 FOURTH CRITICAL	

31 LIST OF TRAIN UNDESIRABLE SPEEDS (1-2.6.1.4)

32 STABILITY ANALYSIS (1-2.6.5)

33 **VIBRATION:**

34 ALLOWABLE TEST LEVEL (PK-PK)					
---------------------------------	--	--	--	--	--

35 **BALANCE PISTON:**

36 MATERIAL				
37 FIXATION METHOD				
38 NORMAL CLEARANCE (IN.)				
39 AREA				
40 FLOW, NORMAL CLEARANCE (LB./MIN.)				
41 FLOW, 2x NORMAL CLEAR (LB./MIN.)				
42 <input type="radio"/> PRESS. CONN. BAL LINE (2-2.5.4.3)				

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**INTEGRALLY GEARED COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
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1 CONSTRUCTION FEATURES, ROTOR BEARINGS (1 COLUMN PER ROTOR, USE ADDITIONAL SHEETS IF NEEDED)

2	RADIAL BEARINGS, DRIVE END	BULL GEAR	ROTOR 1	ROTOR 2	ROTOR 3	ROTOR 4
3	<input type="checkbox"/> TYPE					
4	<input type="checkbox"/> MANUFACTURER					
5	<input type="checkbox"/> LENGTH (IN.)					
6	<input type="checkbox"/> SHAFT DIA. (IN.)					
7	<input type="checkbox"/> UNIT LOAD (ACT/ALLOW)					
8	<input type="checkbox"/> BASE MATERIAL					
9	<input type="checkbox"/> BABBIT THICKNESS (IN.)					
10	<input type="checkbox"/> NO. PADS					
11	<input type="checkbox"/> LOAD: BETWEEN/ON PAD					
12	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
13	<input type="checkbox"/> RADIAL BEARING SPAN (IN.)					
14	RADIAL BRG, OPPOSITE DRIVE END					
15	<input type="checkbox"/> TYPE					
16	<input type="checkbox"/> MANUFACTURER					
17	<input type="checkbox"/> LENGTH (IN.)					
18	<input type="checkbox"/> SHAFT DIA. (IN.)					
19	<input type="checkbox"/> UNIT LOAD (ACT/ALLOW)					
20	<input type="checkbox"/> BASE MATERIAL					
21	<input type="checkbox"/> BABBIT THICKNESS (IN.)					
22	<input type="checkbox"/> NO. PADS					
23	<input type="checkbox"/> LOAD: BETWEEN/ON PAD					
24	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
25	THRUST BEARINGS , ACTIVE					
26	<input type="checkbox"/> TYPE					
27	<input type="checkbox"/> MANUFACTURER					
28	<input type="checkbox"/> UNIT LOADING (MAX PSI)					
29	<input type="checkbox"/> UNIT LOAD (ULT.) (PSI)					
30	<input type="checkbox"/> AREA (IN ²)					
31	<input type="checkbox"/> NO. PADS					
32	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
33	<input type="checkbox"/> PAD BASE MATL					
34	<input type="checkbox"/> COPPER BACKED (2-2.7.3.7)					
35	<input type="checkbox"/> COLLAR MATERIAL					
36	<input type="checkbox"/> INTEGRAL OR REPLACEABLE COLLAR					
37	<input type="checkbox"/> SIZING CRITERIA (2-2.7.3.5)					
38	<input type="checkbox"/> FLOODED OR DIRECTED LUBRICATION					
39	THRUST BEARINGS , INACTIVE					
40	<input type="checkbox"/> TYPE					
41	<input type="checkbox"/> MANUFACTURER					
42	<input type="checkbox"/> UNIT LOADING (MAX PSI)					
43	<input type="checkbox"/> UNIT LOAD (ULT.) (PSI)					
44	<input type="checkbox"/> AREA (IN.)					
45	<input type="checkbox"/> NO. PADS					
46	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
47	<input type="checkbox"/> PAD BASE MATL					
48	<input type="checkbox"/> COPPER BACKED (2-2.7.3.7)					
49	<input type="checkbox"/> COLLAR MATERIAL					
50	<input type="checkbox"/> INTEGRAL OR REPLACEABLE COLLAR					
51	<input type="checkbox"/> SIZING CRITERIA (2-2.7.3.5)					
52	<input type="checkbox"/> FLOODED OR DIRECTED LUBRICATION					

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1 OTHER CONNECTIONS

SERVICE:	NO.	SIZE	TYPE		NO.	SIZE	TYPE
3 LUBE-OIL INLET				PRESSURE			
4 LUBE OIL OUTLET				TEMPERATURE			
5 SEAL-OIL INLET				SOLVENT INJECTION			
6 SEAL-OIL OUTLET				PURGE FOR:			
7 SEAL GAS INLET				BRG. HOUSING			
8 SEAL GAS OUTLET				BTWN BRG & SEAL			
9 CASING DRAINS				BTWN SEAL & GAS			
10 STAGE DRAINS							

11 INDIVIDUAL STAGE DRAINS REQUIRED (1-2.3.2.1.7)
 12 VALVED & BLINDED
 13 VALVED & BLINDED & MANIFOLD

14 **LUBRICATION AND SEALING SYSTEMS (1-2.10) (1-3.5.1.2)**

15 SEE ATTACHED API 614 DATASHEET
 16 SEPARATE COMBINED (2-2.10.1)
 17 INTEGRAL OIL RESERVOIR (1-3.3.2.11)
 18 OIL TYPE (2-2.10.2)

19 **ACCESSORIES**

20 **COUPLING AND GUARDS (3.2)**

21 NOTE: SEE ROTATING ELEMENTS—SHAFT ENDS

22 SEE ATTACHED API-671 DATA SHEET KEYLESS HYDRAULIC KEYED FLANGED OTHER _____

23 COUPLING FURNISHED BY _____

24 MANUFACTURER _____ TYPE _____ MODEL _____

25 COUPLING GUARD FURNISHED BY: _____

26 TYPE: FULLY ENCLOSED SEMI-OPEN OTHER

27 **COUPLING DETAILS**

28 <input type="checkbox"/> MAX O.D. _____ IN.	<input type="checkbox"/> PLUG AND RING GAUGES (1-3.2.5) LUBRICATION REQUIREMENTS: <input type="checkbox"/> NON-LUBE <input type="checkbox"/> CONT. OIL LUBE <input type="checkbox"/> OTHER _____ QUANTITY PER HUB _____ GPM
29 <input type="checkbox"/> HUB WEIGHT _____ LB.	
30 <input type="checkbox"/> SPACER LENGTH _____ IN.	
31 <input type="checkbox"/> SPACER WEIGHT _____ LB.	

33 **MOUNTING PLATES (1-3.3)**

34 <input type="checkbox"/> BASEPLATES FURNISHED BY (1-3.3.2.1) 35 <input type="checkbox"/> COMPRESSOR ONLY <input type="checkbox"/> DRIVER <input type="checkbox"/> GEAR 36 <input type="checkbox"/> OTHER _____ 37 <input type="checkbox"/> NONSKID DECKING (1-3.3.2.4) <input type="checkbox"/> SLOPED DECK (1-3.3.2.4.1) 38 <input type="checkbox"/> LEVELING PADS OR TARGETS (1-3.3.2.6) 39 <input type="checkbox"/> COLUMN MOUNTING (1-3.3.2.5) 40 <input type="checkbox"/> SUB-SOLE PLATES REQUIRED (1-3.3.2.10) 41 <input type="checkbox"/> STAINLESS STEEL SHIM THICKNESS _____ IN. 42 <input type="checkbox"/> MACHINED MOUNTING PADS REQUIRED (1-3.3.2.9)	<input type="checkbox"/> SOLEPLATES FURNISHED BY (1-3.3.3.1) <input type="checkbox"/> THICKNESS _____ IN. <input type="checkbox"/> SUBSOLE PLATES REQUIRED (1-3.3.3.1.5) <input type="checkbox"/> STAINLESS STEEL SHIM THICKNESS _____ IN. <input type="checkbox"/> COMPRESSOR _____ <input type="checkbox"/> COUNTER BORE ANCHOR BOLT HOLES (1-3.3.3.1.2)
--	---

44 **MATERIALS INSPECTION REQUIREMENTS (1-4.2.2.1)**

45 <input type="checkbox"/> RADIOGRAPHY REQUIRED FOR _____ 46 <input type="checkbox"/> ULTRASONIC REQUIRED FOR _____ 47 <input type="checkbox"/> MAGNETIC PARTICLE REQUIRED FOR _____ 48 <input type="checkbox"/> LIQUID PENETRANT REQUIRED FOR _____	<input type="checkbox"/> LOW TEMPERATURE (1-2.2.1.15.2) _____ MIN.DESIGN METAL TEMPERATURE (°F) _____ AT CONCURRENT PRESSURE (PSIG) _____ <input type="checkbox"/> OTHER TRAIN COMPONENTS (1-2.2.1.15.2) _____ <input type="checkbox"/> Q.C. OF INACCESSIBLE WELDS (1-2.3.1.11.2) _____
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**INTEGRALLY GEARED COMPRESSOR
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JOB NO. _____ ITEM NO. _____
 PURCHASE ORDER NO. _____
 INQUIRY NO. _____
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1 APPLICABLE TO: PROPOSAL PURCHASE AS-BUILT
 2 FOR _____ UNIT _____
 3 SITE _____ SERIAL NO. _____
 4 SERVICE _____ NO. REQUIRED _____
 5 MANUFACTURER _____ DRIVER TYPE (1-3.1.1) _____
 6 MODEL _____ DRIVER ITEM NO. _____
 7
 8 INFORMATION TO BE COMPLETED: BY PURCHASER BY MANUFACTURER MUTUAL AGREEMENT (PRIOR TO PURCHASE)

OPERATING CONDITIONS

	(ALL DATA ON PER UNIT BASIS)	NORMAL	OTHER CONDITIONS (1-2.1.1.1)				
		(1-2.1.1.2)	A	B	C	D	E
13	<input type="radio"/> GAS HANDLED (ALSO SEE PAGE _____)						
14	<input type="checkbox"/> GAS PROPERTIES (1-2.1.1.4)						
15	<input type="radio"/> MMm ³ /day (m ³ /h) (1.03 BAR abs & 0°C)						
16	<input type="radio"/> WEIGHT FLOW, kg/MIN (WET) (DRY)						
17	INLET CONDITIONS						
18	<input type="radio"/> PRESSURE (BAR abs)						
19	<input type="radio"/> TEMPERATURE (°C)						
20	<input type="radio"/> RELATIVE HUMIDITY %						
21	<input type="radio"/> MOLECULAR WEIGHT						
22	<input type="checkbox"/> C _p /C _v (K ₁) OR (K _{AVG})						
23	<input type="checkbox"/> COMPRESSIBILITY (Z ₁) OR (Z _{AVG})						
24	<input type="checkbox"/> INLET VOLUME, (m ³ /min) (WET/DRY)						
25	DISCHARGE CONDITIONS						
26	<input type="radio"/> PRESSURE (BAR abs)						
27	<input type="checkbox"/> TEMPERATURE (°C)						
28	<input type="checkbox"/> C _p /C _v (K ₂) OR (K _{AVG}) (NOTE 1)						
29	<input type="checkbox"/> COMPRESSIBILITY (Z ₂) OR (Z _{AVG}) (NOTE 1)						
30	<input type="checkbox"/> GAS kW REQUIRED						
31	<input type="checkbox"/> TRAIN BRAKE kW REQUIRED						
32	<input type="checkbox"/> BRAKE kW REQUIRED AT DRIVER INCL. EXT. LOSSES (GEAR, ETC.)						
33	<input type="checkbox"/> SPEED of driver (RPM)						
34	<input type="checkbox"/> TURNDOWN (%)						
35	<input type="checkbox"/> POLYTROPIC HEAD (N-m/kg)						
36	<input type="checkbox"/> POLYTROPIC EFFICIENCY (%)						
37	<input type="radio"/> CERTIFIED POINT						
38	<input type="checkbox"/> PERFORMANCE CURVE NUMBER						
39	PROCESS CONTROL (1-3.4.2.1)						
40	METHOD <input type="radio"/> SUCTION THROTTLING <input type="radio"/> VARIABLE INLET						
41	FROM _____ BAR abs						
42	TO _____ BAR abs						
43	SIGNAL <input type="radio"/> SOURCE (1-3.4.2.1)						
44	TYPE <input type="radio"/> ELECTRONIC <input type="radio"/> PNEUMATIC <input type="radio"/> OTHER						
45	RANGE _____ MA _____ BARG						
46							
47	<input type="radio"/> ANTI-SURGE SYSTEM (1-3.4.2.2)						

48 REMARKS: _____
 49

**INTEGRALLY GEARED COMPRESSOR
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OPERATING CONDITIONS (Continued) (1-2.1.1.1) (1-3.1.2) (1-3.1.3)

1 2	GAS ANALYSIS:		NORMAL	OTHER CONDITIONS					REMARKS:
	<input type="radio"/> MOL %	<input type="radio"/>		A	B	C	D	E	
4		MW							
5	AIR	28.966							
6	OXYGEN	32.000							
7	NITROGEN	28.016							
8	WATER VAPOR	18.016							
9	CARBON MONOXIDE	28.010							
10	CARBON DIOXIDE	44.010							
11	HYDROGEN SULFIDE	34.076							(1-2.2.1.6)
12	HYDROGEN	2.016							(1-2.2.1.9)
13	METHANE	16.042							
14	ETHYLENE	28.052							
15	ETHANE	30.068							
16	PROPYLENE	42.078							
17	PROPANE	44.094							
18	I-BUTANE	58.120							
19	n-BUTANE	58.120							
20	I-PENTANE	72.146							
21	n-PENTANE	72.146							
22	HEXANE PLUS								
23	CORROSIVE AGENTS								(1-2.2.1.3)
24									
25	TOTAL								
26	AVG. MOL. WT.								

27 **LOCATION:** (1-2.1.8)

28 INDOOR OUTDOOR GRADE

29 HEATED UNDER ROOF MEZZANINE

30 UNHEATED PARTIAL SIDES

31 ELEC. AREA CLASSIFICATION (1-2.1.14) CL GR DIV

32 **SITE DATA (1-2.1.8)**

33 ELEVATION _____ m BAROMETER _____ BAR abs

34 RANGE OF AMBIENT TEMPS:

35 _____ DRY BULB _____ WET BULB

36 NORMAL °C _____

37 MAXIMUM °C _____

38 MINIMUM °C _____

39 _____ °C _____

40 **UNUSUAL CONDITIONS:** DUST FUMES

41 _____ °C _____

42 OTHER (1-2.1.8) _____

43 _____

44 COPPER AND COPPER ALLOYS PROHIBITED (1-2.2.1.14)

45 **COATING:** (1-2.2.1.16)

46 ROTATING COMPONENTS _____

47 STATIONARY COMPONENTS _____

48 **REMARKS:** _____

49 _____

NOISE SPECIFICATIONS: (1-2.1.9)

APPLICABLE TO MACHINE:
SEE SPECIFICATION _____

APPLICABLE TO NEIGHBORHOOD:
SEE SPECIFICATION _____

ACOUSTIC HOUSING: YES NO

APPLICABLE SPECIFICATIONS:
API 617, 7TH CHAPTERS 1 & 3

VENDOR HAVING UNIT RESPONSIBILITY (1-1.5.53) (1-1.8) (1-2.1.3)

GOVERNING SPECIFICATION (IF DIFFERENT)

PAINTING:

MANUFACTURER'S STD.

OTHER _____

NAMEPLATE (2-2.11.2) US CUSTOMARY METRIC

SHIPMENT: (4.4)

DOMESTIC EXPORT EXPORT BOXING REQ'D.

OUTDOOR STORAGE MORE THAN 6 MONTHS (1-4.4.1) _____ MO

SPARE ROTOR ASSEMBLY PACKAGE (1-4.4.3.10)

HORIZONTAL STORAGE VERTICAL STORAGE

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CONSTRUCTION FEATURES (1 COLUMN PER STAGE, USE ADDITIONAL SHEETS IF NEEDED)

1		CONSTRUCTION FEATURES (1 COLUMN PER STAGE, USE ADDITIONAL SHEETS IF NEEDED)					
2 Rotor		Rotor 1					
3 Stage		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
4	<input type="checkbox"/> CASING:						
5	MODEL						
6	CASING SPLIT						
7	MATERIAL						
8	THICKNESS (mm)						
9	CORROSION ALLOWANCE (mm)						
10	MAX. ALLOWABLE PRESS (BARG)						
11	TEST PRESS (BARG):						
12	MAX. ALLOWABLE TEMP. (°C)						
13	MAX. OPERATING TEMP. (°C)						
14	MIN. OPERATING TEMPERATURE (°C)						
15	MAX CASING CAPACITY (m ³ /min)						
16	<input type="checkbox"/> INLET CONNECTIONS (1-2.3.2.2.1, 1-2.3.2.2.7)						
17	TYPE						
18	ORIENTATION						
19	FLANGED OR STUDDED?						
20	MATING FLG & GASKET BY VENDOR?						
21	GAS VELOCITY (m/SEC.)						
22	<input type="checkbox"/> DISCHARGE CONNECTIONS (1-2.3.2.2.1, 1-2.3.2.2.7)						
23	TYPE						
24	ORIENTATION						
25	FLANGED OR STUDDED?						
26	MATING FLG & GASKET BY VENDOR?						
27	GAS VELOCITY (m/SEC.)						
28	<input type="radio"/> INTERMEDIATE MAIN PROCESS CONNECTIONS (2-2.4.5)						
29	DISCH. PRESSURE (BARG):						
30	INLET PRESSURE (BARG):						
31	<input type="checkbox"/> ADJUSTABLE INLET GUIDE VANES						
32	MATERIAL _____						
33	NO. INLET GUIDE VANES						
34	<input type="checkbox"/> IMPELLER:						
35	DIAMETER						
36	NUMBER OF VANES						
37	TYPE (OPEN, ENCLOSED, ETC.)						
38	TYPE FABRICATION						
39	MATERIAL						
40	MIN. YIELD STRENGTH (PSI)						
41	HARDNESS: (Rc) (BRINNEL)						
42	SMALLEST TIP INTERNAL WIDTH (mm)						
43	MAX. MACH. NO. @ IMPELLER EYE						
44	MAX. IMPELLER HEAD @ 100% SPD (m)						
45	MAX. IMPELLER TIP SPEED (m/sec)						
46	<input type="checkbox"/> DIFFUSER GUIDE VANES						
47	ADJUSTABLE?						
48	MATERIAL						
49	NO. GUIDE VANES						

**CENTRIFUGAL AND AXIAL COMPRESSOR
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CONSTRUCTION FEATURES, continued (1 COLUMN PER STAGE, USE ADDITIONAL SHEETS IF NEEDED)

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
<input type="checkbox"/> SHAFT SLEEVES:						
3 MATERIAL						
4 AT SHAFT SEALS?						
5 OTHER LOCATIONS?						
6 SHAFT SEALS: (1-2.8.1.1, 1-2.8.1.5)						
7 <input type="radio"/> SEAL TYPE (1-2.8.1.3)						
8 <input type="radio"/> SETTLING OUT PRESS. (BARG)						
9 <input type="radio"/> MIN. SEALING PRESSURE (BARG)						
10 <input type="radio"/> TYPE BUFFER GAS, PRIMARY						
11 <input type="checkbox"/> PRESSURE (BARG) (1-2.8.1.6)						
12 <input type="checkbox"/> FLOWRATE (kg/MIN)						
13 <input type="checkbox"/> FILTRATION						
14 <input type="radio"/> TYPE BUFFER GAS, SECONDARY						
15 <input type="checkbox"/> PRESSURE (BARG) (1-2.8.1.6)						
16 <input type="checkbox"/> FLOWRATE (kg/MIN)						
17 <input type="checkbox"/> FILTRATION						
18 <input type="checkbox"/> FLOW RATE TO PROCESS						
19 <input type="radio"/> BUFFER GAS SYSTEM REQUIRED (2-2.8.1.5)						
20 <input type="radio"/> MANIFOLD (1-3.5.1.4)						
21 <input type="radio"/> METHOD OF CONTROL (1-2.8.1.5)						
22 <input type="radio"/> BUFFER GAS CONTROL SYSTEM SCHEMATIC BY VENDOR						
23 <input type="radio"/> PRESSURIZING GAS FOR SUBATMOSPHERIC SEALS (1-2.8.2.4)						
24 <input type="checkbox"/> SEAL MANUFACTURER						

26 **BEARING TEMPERATURE DETECTORS (2-3.4.7)**

27 SEE ATTACHED API-670 DATASHEET

28 THERMOCOUPLES TYPE _____

29 RESISTANCE TEMP DETECTORS

30 RESISTANCE MAT'L _____ _____ OHMS

31 ALARM TEMPERATURE (°C) _____

32 SHUTDOWN TEMPERATURE (°C) _____

33 PROVISION FOR LOCAL DISCONNECT (1-2.7.4.6)

34 LOCATION-JOURNAL BRG

35 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG

36 OTHER _____

37 LOCATION-THRUST BRG

38 NO. _____ EA PAD _____ EVERY OTH PAD _____ PER BRG

39 OTHER _____

40 NO. (INACT) _____ EA PAD _____ EVERY OTH PAD _____ PER BRG

41 OTHER _____

42 LOCAL DISCONNECTION (1-2.7.4.6)

43 MONITOR SUPPLIED BY (2-3.4.7.4)

44 LOCATION _____ ENCLOSURE _____

45 MFR. _____ MODEL _____

46 SCALE RGE _____ ALARM _____ SET @ _____ °C

47 SHTDWN SET @ _____ °C TIME DELAY _____ SEC.

VIBRATION DETECTORS: SEE ATTACHED API-670 DATA SHEET

TYPE _____ MODEL _____

MFR _____

NO. AT EA SHAFT BEARING _____ TOTAL NO. _____

OSCILLATOR-DETECTORS SUPPLIED BY

MFR _____ | MODEL _____

MONITOR SUPPLIED BY (2-3.4.7.2)

LOCATION _____ ENCLOSURE _____

MFR. _____ | MODEL _____

SCALE RGE _____ ALARM _____ SET @ _____ μ m

SHTDWN: SET @ _____ μ m TIME DELAY _____ SEC.

CASING VIBRATION TRANSDUCERS (2-3.4.7.5)

CASING VIBRATION MONITORS (2-3.4.7.6)

AXIAL POSITION DETECTOR: SEE ATTACHED API-670 DATA SHEET

TYPE _____ | MODEL _____

MFR _____ | NO. REQUIRED _____

OSCILLATOR-DEMODULATOR SUPPLIED BY

MFR _____ | MODEL _____

MONITOR SUPPLIED BY (2-3.4.7.2)

LOCATION _____ ENCLOSURE _____

MFR. _____ | ALARM MODEL _____

SCALE RGE _____ SET @ _____ μ m

SHTDWN: SET @ _____ μ m TIME DELAY _____ SEC.

49 **KEY PHASOR REQUIRED**

50 COMPRESSOR GEAR H.S. GEAR L.S.

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CONSTRUCTION FEATURES, ROTORS (1 COLUMN PER ROTOR, USE ADDITIONAL SHEETS IF NEEDED)

1					
2	<input type="checkbox"/> DRIVER SPEEDS:	PITCH LINE VELOCITY (m/SEC)	_____		
3	MAX. CONT.	NORMAL DIAMETRICAL PITCH	_____		
4	TRIP SPEED	HELIX ANGLE	_____	PRESSURE ANGLE	_____
5					
6	<input type="checkbox"/> ROTOR NUMBER	BULL GEAR	ROTOR 1	ROTOR 2	ROTOR 3
7	SPEED (RPM)				
8	SERVICE POWER (kW)				
9	SERVICE FACTOR				
10	NUMBER OF TEETH				
11	FACE WIDTH (mm)				
12	AGMA GEOMETRY FACTOR "J"				
13	AGMA GEOMETRY FACTOR "I"				
14	MINIMUM HARDNESS (Rc)				
15	ROTOR WEIGHT (INC WHEELS) (kg)				
16	BACKLASH (mm)				
17	GEARBOX FULL LOAD POWER LOSS	_____			
18	<input type="checkbox"/> LATERAL CRITICAL SPEEDS (DAMPED)				
19	FIRST CRITICAL				
20	SECOND CRITICAL				
21	THIRD CRITICAL				
22	FOURTH CRITICAL				
23	<input type="radio"/> LATERAL ANALYSIS ADDITIONAL REQUIREMENTS (1-2.6.2.14)				
24	<input type="radio"/> TRAIN LATERAL ANALYSIS REQUIRED (1-2.6.2.6)				
25	<input type="radio"/> TRAIN TORSIONAL ANALYSIS REQUIRED (1-2.6.7.1)				
26	<input type="checkbox"/> TORSIONAL CRITICAL SPEEDS:				
27	FIRST CRITICAL				
28	SECOND CRITICAL				
29	THIRD CRITICAL				
30	FOURTH CRITICAL				
31	<input type="radio"/> LIST OF TRAIN UNDESIRABLE SPEEDS (1-2.6.1.4)				
32	<input type="radio"/> STABILITY ANALYSIS (1-2.6.5)				
33	<input type="checkbox"/> VIBRATION:				
34	ALLOWABLE TEST LEVEL (PK-PK)				
35	<input type="checkbox"/> BALANCE PISTON:				
36	MATERIAL				
37	FIXATION METHOD				
38	NORMAL CLEARANCE (mm)				
39	AREA				
40	FLOW, NORMAL CLEARANCE (kg/MIN.)				
41	FLOW, 2x NORMAL CLEAR (kg/MIN.)				
42	<input type="radio"/> PRESS. CONN. BAL LINE (2-2.5.4.3)				
43					
44					
45					
46					
47					
48					
49					

**INTEGRALLY GEARED COMPRESSOR
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1 CONSTRUCTION FEATURES, ROTOR BEARINGS (1 COLUMN PER ROTOR, USE ADDITIONAL SHEETS IF NEEDED)

		BULL GEAR	ROTOR 1	ROTOR 2	ROTOR 3	ROTOR 4
2	RADIAL BEARINGS, DRIVE END					
3	<input type="checkbox"/> TYPE					
4	<input type="checkbox"/> MANUFACTURER					
5	<input type="checkbox"/> LENGTH (mm)					
6	<input type="checkbox"/> SHAFT DIA. (mm)					
7	<input type="checkbox"/> UNIT LOAD (ACT/ALLOW)					
8	<input type="checkbox"/> BASE MATERIAL					
9	<input type="checkbox"/> BABBIT THICKNESS (mm)					
10	<input type="checkbox"/> NO. PADS					
11	<input type="checkbox"/> LOAD: BETWEEN/ON PAD					
12	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
13	<input type="checkbox"/> RADIAL BEARING SPAN (mm)					
14	RADIAL BRG, OPPOSITE DRIVE END					
15	<input type="checkbox"/> TYPE					
16	<input type="checkbox"/> MANUFACTURER					
17	<input type="checkbox"/> LENGTH (mm)					
18	<input type="checkbox"/> SHAFT DIA. (mm)					
19	<input type="checkbox"/> UNIT LOAD (ACT/ALLOW)					
20	<input type="checkbox"/> BASE MATERIAL					
21	<input type="checkbox"/> BABBIT THICKNESS (mm)					
22	<input type="checkbox"/> NO. PADS					
23	<input type="checkbox"/> LOAD: BETWEEN/ON PAD					
24	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
25	THRUST BEARINGS , ACTIVE					
26	<input type="checkbox"/> TYPE					
27	<input type="checkbox"/> MANUFACTURER					
28	<input type="checkbox"/> UNIT LOADING (MAX BAR)					
29	<input type="checkbox"/> UNIT LOAD (ULT.) (BAR)					
30	<input type="checkbox"/> AREA (mm)					
31	<input type="checkbox"/> NO. PADS					
32	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
33	<input type="checkbox"/> PAD BASE MATL					
34	<input type="checkbox"/> COPPER BACKED (2-2.7.3.7)					
35	<input type="checkbox"/> COLLAR MATERIAL					
36	<input type="checkbox"/> INTEGRAL OR REPLACEABLE COLLAR					
37	<input type="checkbox"/> SIZING CRITERIA (2-2.7.3.5)					
38	<input type="checkbox"/> FLOODED OR DIRECTED LUBRICATION					
39	THRUST BEARINGS , INACTIVE					
40	<input type="checkbox"/> TYPE					
41	<input type="checkbox"/> MANUFACTURER					
42	<input type="checkbox"/> UNIT LOADING (MAX BAR)					
43	<input type="checkbox"/> UNIT LOAD (ULT.) (BAR)					
44	<input type="checkbox"/> AREA (mm ²)					
45	<input type="checkbox"/> NO. PADS					
46	<input type="checkbox"/> PIVOT: CENTER/OFFSET, %					
47	<input type="checkbox"/> PAD BASE MATL					
48	<input type="checkbox"/> COPPER BACKED (2-2.7.3.7)					
49	<input type="checkbox"/> COLLAR MATERIAL					
50	<input type="checkbox"/> INTEGRAL OR REPLACEABLE COLLAR					
51	<input type="checkbox"/> SIZING CRITERIA (2-2.7.3.5)					
52	<input type="checkbox"/> FLOODED OR DIRECTED LUBRICATION					

**CENTRIFUGAL AND AXIAL COMPRESSOR
DATA SHEET (API 617—7TH Chapter 3)
SI UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
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1 OTHER CONNECTIONS

SERVICE:	NO.	SIZE	TYPE		NO.	SIZE	TYPE
3 LUBE-OIL INLET				PRESSURE			
4 LUBE OIL OUTLET				TEMPERATURE			
5 SEAL-OIL INLET				SOLVENT INJECTION			
6 SEAL-OIL OUTLET				PURGE FOR:			
7 SEAL GAS INLET				BRG. HOUSING			
8 SEAL GAS OUTLET				BTWN BRG & SEAL			
9 CASING DRAINS				BTWN SEAL & GAS			
10 STAGE DRAINS							

11 INDIVIDUAL STAGE DRAINS REQUIRED (1-2.3.2.1.7)
 12 VALVED & BLINDED
 13 VALVED & BLINDED & MANIFOLD

14 **LUBRICATION AND SEALING SYSTEMS (1-2.10) (1-3.5.1.2)**

15 SEE ATTACHED API 614 DATASHEET
 16 SEPARATE COMBINED (2-2.10.1)
 17 INTEGRAL OIL RESERVOIR (1-3.3.2.11)
 18 OIL TYPE (2-2.10.2)

19 **ACCESSORIES**

20 **COUPLING AND GUARDS (3.2)**

21 NOTE: SEE ROTATING ELEMENTS—SHAFT ENDS

22 SEE ATTACHED API-671 DATA SHEET KEYLESS HYDRAULIC KEYED FLANGED OTHER _____

23 COUPLING FURNISHED BY _____

24 MANUFACTURER _____ TYPE _____ MODEL _____

25 COUPLING GUARD FURNISHED BY: _____

26 TYPE: FULLY ENCLOSED SEMI-OPEN OTHER

27 **COUPLING DETAILS**

28 <input type="checkbox"/> MAX O.D. _____ mm	<input type="checkbox"/> PLUG AND RING GAUGES (1-3.2.5) LUBRICATION REQUIREMENTS: <input type="checkbox"/> NON-LUBE <input type="checkbox"/> CONT. OIL LUBE <input type="checkbox"/> OTHER _____ QUANTITY PER HUB _____ L/MIN
29 <input type="checkbox"/> HUB WEIGHT _____ kg	
30 <input type="checkbox"/> SPACER LENGTH _____ mm	
31 <input type="checkbox"/> SPACER WEIGHT _____ kg	

33 **MOUNTING PLATES (1-3.3)**

34 <input type="checkbox"/> BASEPLATES FURNISHED BY (1-3.3.2.1) 35 <input type="checkbox"/> COMPRESSOR ONLY <input type="checkbox"/> DRIVER <input type="checkbox"/> GEAR 36 <input type="checkbox"/> OTHER _____ 37 <input type="checkbox"/> NONSKID DECKING (1-3.3.2.4) <input type="checkbox"/> SLOPED DECK (1-3.3.2.4.1) 38 <input type="checkbox"/> LEVELING PADS OR TARGETS (1-3.3.2.6) 39 <input type="checkbox"/> COLUMN MOUNTING (1-3.3.2.5) 40 <input type="checkbox"/> SUB-SOLE PLATES REQUIRED (1-3.3.2.10) 41 <input type="checkbox"/> STAINLESS STEEL SHIM THICKNESS _____ mm 42 <input type="checkbox"/> MACHINED MOUNTING PADS REQUIRED (1-3.3.2.9)	<input type="checkbox"/> SOLEPLATES FURNISHED BY (1-3.3.3.1) <input type="checkbox"/> THICKNESS _____ mm <input type="checkbox"/> SUBSOLE PLATES REQUIRED (1-3.3.3.1.5) <input type="checkbox"/> STAINLESS STEEL SHIM THICKNESS _____ mm <input type="checkbox"/> COMPRESSOR _____ <input type="checkbox"/> COUNTER BORE ANCHOR BOLT HOLES (1-3.3.3.1.2)
---	---

44 **MATERIALS INSPECTION REQUIREMENTS (1-4.2.2.1)**

45 <input type="checkbox"/> RADIOGRAPHY REQUIRED FOR _____ 46 <input type="checkbox"/> ULTRASONIC REQUIRED FOR _____ 47 <input type="checkbox"/> MAGNETIC PARTICLE REQUIRED FOR _____ 48 <input type="checkbox"/> LIQUID PENETRANT REQUIRED FOR _____	<input type="checkbox"/> LOW TEMPERATURE (1-2.2.1.15.2) _____ MIN.DESIGN METAL TEMPERATURE (°C) _____ AT CONCURRENT PRESSURE (BARG) _____ <input type="checkbox"/> OTHER TRAIN COMPONENTS (1-2.2.1.15.2) _____ <input type="checkbox"/> Q.C. OF INACCESSIBLE WELDS (1-2.3.1.11.2) _____
--	---

CENTRIFUGAL AND AXIAL COMPRESSOR DATA SHEET (API 617—7TH Chapter 3) SI UNITS	JOB NO. _____ ITEM NO. _____ REVISION NO. _____ DATE _____ PAGE <u>8</u> OF <u>8</u> BY _____
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1	UTILITIES			
2	<input type="radio"/> UTILITY CONDITIONS:			MANUALS
3	STEAM:	DRIVERS		<input type="radio"/> DRAFT MANUAL FOR REVIEW (1-5.3.5.1.2)
4	INLET MIN _____	BARG _____	°C _____	<input type="radio"/> TECHNICAL DATA MANUAL (1.5.3.5)
5	NORM _____	BARG _____	°C _____	
6	MAX _____	BARG _____	°C _____	MISCELLANEOUS:
7	EXHAUST. MIN _____	BARG _____	°C _____	<input type="checkbox"/> RECOMMENDED STRAIGHT RUN OF PIPE DIAMETERS
8	NORM _____	BARG _____	°C _____	BEFORE SUCTION _____
9	MAX _____	BARG _____	°C _____	<input type="radio"/> COMPRESSOR TO BE SUITABLE FOR FIELD RUN-IN ON AIR (1-2.1.16)
10	ELECTRICITY:			<input type="radio"/> PROVISION FOR LIQUID INJECTION (1-2.1.10) _____
11		DRIVERS	CONTROL	<input type="radio"/> INJECTION MANIFOLD (2-3.5.1.2)
12	VOLTAGE _____	_____	_____	<input type="radio"/> SHUTDOWN _____
13	HERTZ _____	_____	_____	<input type="radio"/> VENDOR'S REVIEW & COMMENTS ON PURCHASER'S
14	PHASE _____	_____	_____	CONTROL SYSTEMS (1-3.4.1.1)
15	<input type="radio"/> REDUCED VOLTAGE START (1-3.1.6)			<input type="radio"/> SHOP FITUP OF VENDOR PROCESS PIPING (1-4.4.3.11)
16	<input type="checkbox"/> NUMBER OF STARTS (1-2.6.7.6.4) _____			<input type="radio"/> WELDING HARDNESS TESTING (1-4.2.1.5)
17	INSTRUMENT AIR:			<input type="radio"/> DESIGN AUDIT (1-5.1.4)
18	MAX PRESS _____ BARG	MIN PRESS _____	BARG _____	<input type="radio"/> BALANCE PISTON DP (1-5.3.2.15)
19	<input type="checkbox"/> ROTATION, VIEWED OPP. DRIVE END			<input type="radio"/> PROVIDE TAIL END SCHEDULES (1-5.3.3.2)
				<input type="radio"/> BOROSCOPIC INSPECTION PORTS (2-2.3.2.4)
20	SHOP INSPECTION AND TESTS: (1-4.1.4)			VENDOR'S REPRESENTATIVE SHALL (1-2.1.13)
21	<input type="radio"/> (SEE INSPECTOR'S CHECKLIST)	REQ'D	WIT/OBV	<input type="radio"/> OBSERVE FLANGE PARTING
22	HYDROSTATIC (1-4.3.2)	●	_____	<input type="radio"/> CHECK ALIGNMENT AT TEMPERATURE
23	IMPELLER OVERSPEED (1-4.3.3)	●	_____	<input type="radio"/> BE PRESENT AT INITIAL ALIGNMENT
24	MECHANICAL RUN (1-4.3.6)	●	_____	<input type="checkbox"/> WEIGHTS (LB.):
25	<input type="radio"/> CONTRACT COUPLING	<input type="radio"/> IDLING ADAPTOR(S)		COMPR. _____ GEAR _____ DRIVER _____ BASE _____
26	<input type="radio"/> CONTRACT PROBES	<input type="radio"/> SHOP PROBES		ROTORS: COMPR. _____ DRIVER _____ GEAR _____
27	<input type="radio"/> PURCHASER VIB. EQUIPMENT (2-4.3.1.1.10)			COMPRESSOR UPPER CASE _____
28	VARY LUBE & SEAL OIL PRESSURES			MAX. FOR MAINTENANCE (IDENTIFY) _____
29	AND TEMPERATURES (1-4.3.6.1.5)	○	_____	TOTAL SHIPPING WEIGHT _____
30	POLAR FORM VIB DATA (1-4.3.6.1.2)	○	_____	<input type="checkbox"/> SPACE REQUIREMENTS (m):
31	TAPE RECORD VIB DATA (1-4.3.6.1.3)	○	_____	COMPLETE UNIT: L _____ W _____ H _____
32	SHAFT END SEAL INSP (1-4.3.6.2.2)	○	_____	
33	GAS LEAK TEST AT DISCH PRESS (2-4.3.2.3)	○	_____	REMARKS:
34	<input type="radio"/> POST TEST INTERNAL INSP (1-4.3.8.5)			_____
35	<input type="radio"/> BEFORE GAS LEAKAGE TEST			_____
36	<input type="radio"/> AFTER GAS LEAKAGE TEST			_____
37	PERFORMANCE TEST (GAS) (AIR) (2-4.3.3.1.1)	○	_____	_____
38	COMPLETE UNIT TEST (2-4.3.3.2)	○	_____	_____
39	TANDEM TEST (2-4.3.3.3)	○	_____	_____
40	GEAR TEST (2-4.3.3.4)	○	_____	_____
41	HELIUM LEAK TEST (1-4.3.8.2)	○	_____	_____
42	SOUND LEVEL TEST (1-4.3.8.3)	○	_____	_____
43	AUX. EQUIPMENT TEST (1-4.3.8.4)	○	_____	_____
44	FULL LOAD/SPEED/PRESS TEST (1-4.3.8.6)	○	_____	_____
45	HYDRAULIC COUPLING INSP (1-4.3.8.7)	○	_____	_____
46	SPARE PARTS TEST (1-4.3.8.8)	○	_____	_____
47	INSPECTOR'S CHECKLIST COMPLIANCE (1-4.1.6)	○	_____	_____
48	GAS SEAL TEST VENDOR SHOP (1-4.3.5)	○	_____	_____
49				

**ANNEX 4A
TYPICAL DATA SHEETS**

JOB NO. _____ ITEM NO. _____

PURCHASE ORDER NO. _____

SPECIFICATION NO. _____

REVISION NO. _____ DATE _____

PAGE 1 OF 6 BY _____

**TURBOEXPANDER/COMPRESSOR
DATA SHEET
U.S. CUSTOMARY UNITS**

1 APPLICABLE TO: PROPOSAL PURCHASE AS-BUILT

2 SERVICE _____ NO. REQUIRED _____

3 MANUFACTURER _____ MODEL _____

4 NOTE: INFORMATION TO BE COMPLETED:

5 BY PURCHASER BY MANUFACTURER EITHER, BUT BY VENDOR IF NOT BY PURCHASER

OPERATING CONDITIONS

(ALL DATA ON PER UNIT BASIS)

	NORMAL CASE		CASE A		CASE B	
	EXP	COMP	EXP	COMP	EXP	COMP
9 INLET CONDITIONS:						
10 <input type="radio"/> MMSCFD/SCFM (14.7 PSIA & 60 °F DRY)						
11 <input type="radio"/> WEIGHT FLOW, LB./HR (EXP: WET / DRY; COMP: WET / DRY)						
12 <input type="radio"/> PRESSURE (PSIA)						
13 <input type="radio"/> TEMPERATURE (°F)						
14 <input type="radio"/> MOLECULAR WEIGHT						
15 <input type="radio"/>						
16 <input type="radio"/>						
17 DISCHARGE CONDITIONS:						
18 <input type="checkbox"/> PRESSURE (PSIA)						
19 <input type="checkbox"/> TEMPERATURE (°F)						
20 <input type="checkbox"/> WEIGHT PERCENT LIQUID (%)						
21 <input type="checkbox"/> GAS HORSEPOWER						
22 <input type="checkbox"/> SPEED (RPM)						
23 <input type="checkbox"/> ADIABATIC/POLYTROPIC EFFICIENCY (Exp/Comp, %)						
24 <input type="radio"/>						
25 <input type="radio"/>						
26 <input type="radio"/> GUARANTEE CASE (check one case)						

28 **VARIABLE INLET GUIDE VANE PROCESS CONTROL SIGNAL SOURCE:**

29 TYPE: ELECTRONIC RANGE: _____ MA

30 PNEUMATIC _____ PSIG

31 _____

32 _____

33 _____

34 _____

35 **CASING CONNECTIONS:**

CONNECTION	<input type="checkbox"/> SIZE NPS/RATING	<input type="checkbox"/> FACING	<input type="checkbox"/> POSITION	<input type="checkbox"/> FLANGED OR STUDDED	<input type="radio"/> MATING FLG & GASKET BY VENDOR	<input type="checkbox"/> GAS VELOCITY FT/SEC.
39 EXPANDER INLET						
40 EXPANDER DISCHARGE						
41						
42 COMPRESSOR INLET						
43 COMPRESSOR DISCHARGE						

44 **REMARKS:** _____

45 _____

46 _____

47 _____

48 _____

49 _____

**TURBOEXPANDER / COMPRESSOR
DATA SHEET
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
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OPERATING CONDITIONS (Continued)

1 2	3 GAS ANALYSIS: <input type="radio"/> MOL % <input type="radio"/> WT %	NORMAL		CASE A		CASE B		SEAL GAS	REMARKS:
		EXP	COMP	EXP	COMP	EXP	COMP		
4	MW								
5	HELIUM	4.000							
6	HYDROGEN	2.016							
7	NITROGEN	28.016							
8	WATER VAPOR	18.016							
9	CARBON DIOXIDE	44.010							
10	HYDROGEN SULFIDE	34.076							
11	METHANE	16.042							
12	ETHYLENE	28.052							
13	ETHANE	30.068							
14	PROPYLENE	42.078							
15	PROPANE	44.094							
16	I-BUTANE	58.120							
17	n-BUTANE	58.120							
18	I-PENTANE	72.146							
19	n-PENTANE	72.146							
20	HEXANE PLUS								
21									
22									
23									
24									
25	TOTAL								
26	AVG. MOL. WT.								

27 **SITE DATA**

28 ELEVATION _____ FT BAROMETER _____ PSIA

29 RANGE OF AMBIENT TEMPS:

30 NORMAL _____ °F

31 MAXIMUM _____ °F

32 MINIMUM _____ °F

33 **LOCATION:**

34 INDOOR OUTDOOR GRADE

35 HEATED UNDER ROOF MEZZANINE

36 UNHEATED PARTIAL SIDES _____

37 AREA CLASSIFICATION NEC _____ IEC _____

38 CLASS _____ GROUP _____ DIV. _____

39 ZONE _____ GROUP _____ TEMP CLASS _____

40 **UNUSUAL CONDITIONS:** DUST FUMES

41 WINTERIZATION REQ'D. TROPICALIZATION REQ'D.

42 OTHER _____

APPLICABLE SPECIFICATIONS:

VENDOR STANDARD

API 617, 7TH EDITION

OTHER: _____

NOISE SPECIFICATIONS:

VENDOR STANDARD

PURCHASER SPECIFICATION

SEE SPECIFICATION _____

ACOUSTIC COVERING: YES NO

PAINTING:

VENDOR STANDARD

OTHER _____

SHIPPING PREPARATION:

DOMESTIC PACKING

EXPORT PACKING (MIL-P 116J METHOD II)

SPECIAL: _____

DELIVERY:

FCA FACTORY FOB SITE (DOMESTIC ONLY)

OTHER: _____

SPARE ROTATING ASSEMBLY:

WOODEN SHIPPING CONTAINER

METAL SHIPPING CONTAINER W/ PURGE PROVISION

44 **REMARKS:** _____

45 _____

46 _____

47 _____

48 _____

49 _____

**TURBOEXPANDER / COMPRESSOR
DATA SHEET
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
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CONSTRUCTION FEATURES

SPEEDS:
 MAX. CONT. _____ RPM TRIP _____ RPM
 TIP SPEEDS: EXPANDER _____ FT/SEC @ MCS
 COMPRESSOR _____ FT/SEC @ MCS

LATERAL CRITICAL SPEEDS (DAMPED)
 FIRST CRITICAL _____ RPM BENDING MODE
 UNDAMPED CRITICAL SPEED MAP
 COMPLETE ROTORDYNAMIC ANALYSIS

CASINGS:
 MODEL _____

	EXP	BRG HSG	COMP
<input type="checkbox"/> CASING SPLIT			
<input type="checkbox"/> MATERIAL			
<input type="checkbox"/> ASTM A-351 CF8			
<input type="checkbox"/> ASTM A-352 LC3			
<input type="checkbox"/> ASTM A-352 LCC			
<input type="checkbox"/> ASTM A-216 WCB			
<input type="checkbox"/> _____			
<input type="radio"/> DESIGN PRES, PSIG			
<input type="radio"/> MAX DESIGN TEMP, ° F			
<input type="radio"/> MIN. DESIGN TEMP, °F			
<input type="radio"/> VISUAL INSPECTION			
<input type="radio"/> CHARPY TESTING			
<input type="radio"/> MAGNETIC PARTICLE			
<input type="radio"/> LIQUID PENETRANT			
<input type="radio"/> CRITICAL AREA X-RAY			
<input type="radio"/> _____			
<input type="radio"/> _____			
<input type="checkbox"/> HYDROTEST PRESS <input type="checkbox"/> 1.5 X DESIGN <input type="checkbox"/> _____			
<input type="radio"/> CASING LEAK TEST <input type="checkbox"/> 1.0 X DESIGN <input type="checkbox"/> _____			
<input type="radio"/> 100% NITROGEN			
<input type="radio"/> NITROGEN / HELIUM MIX (90 / 10)			
<input type="radio"/> 100% HELIUM			

NOTE: LEAK TEST PERFORMED FOLLOWING
 HYDROTEST USING SOAP BUBBLE METHOD

IMPELLERS:

	EXP	COMP
<input type="checkbox"/> DIAMETER (IN.)		
<input type="checkbox"/> TYPE (OPEN, ENCLOSED)		
<input type="checkbox"/> TYPE FABRICATION		
<input type="checkbox"/> EXPANDER WHEEL MATERIAL		
<input type="checkbox"/> YIELD STRENGTH (KSI) MAX _____ MIN _____ (TYP)		
<input type="checkbox"/> HARDNESS: _____ BNH / R _c (TYP)		
<input type="checkbox"/> COMPRESSOR WHEEL MATERIAL		
<input type="checkbox"/> YIELD STRENGTH (KSI) MAX _____ MIN _____ (TYP)		
<input type="checkbox"/> HARDNESS: _____ BNH / R _c (TYP)		

SHAFT:
 MATERIAL _____

SHAFT END: TAPERED CYLINDRICAL

YIELD STRENGTH (PSI) _____

SHAFT HARDNESS (BNH)(R_c) _____

SHAFT SEALS:

SINGLE PORT BUFFERED LABYRINTH
 DOUBLE PORT BUFFERED LABYRINTH
 TRIPLE PORT BUFFERED LABYRINTH

BLEED PRESSURE: _____ PSIG

DRY GAS SEAL: _____
 TYPE BUFFER GAS _____
 BUFFER GAS SUPPLY PRESSURE _____ PSIG

OTHER _____

SEAL GAS REQUIREMENTS :

TYPE: _____

MIN. SUPPLY PRESS. _____ PSIG
 MAX SUPPLY PRESS. _____ °F
 MIN SUPPLY TEMP. _____ °F
 MAX SUPPLY TEMP. _____ °F

NORMAL FLOW _____ SCFM @ _____ PSI Δ P
 MAX FLOW _____ SCFM @ _____ PSI Δ P

NOTE: PURCHASER TO SUPPLY SEAL GAS
 COMPOSITION ON SHEET 2.

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**TURBOEXPANDER / COMPRESSOR
DATA SHEET
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
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CONSTRUCTION FEATURES (CONTINUED)

BEARINGS:

RADIAL:

TYPE:
 SLEEVE BEARING
 TILTING PAD BEARING
 ACTIVE MAGNETIC BEARING
 OTHER _____

MATERIAL:
 ALUMINUM (BABBITTED)
 BRASS / BRONZE (BABBITTED)
 CARBON STEEL (BABBITTED)
 OTHER _____

SHAFT DIA. (IN.) _____
 MANUFACTURER _____

BEARING TEMPERATURE DEVICES:
 TYPE
 THERMOCOUPLES TYPE: _____
 RESISTANCE TEMP DETECTORS
 RESISTANCE MAT'L _____ _____ OHMS

LOCATION / QTY
 SINGLE DUAL ELEMENT (MAIN & SPARE) _____ PER BRG

TEMPERATURE PROTECTION LOGIC DEVICE:
 TEMPERATURE MONITOR DCS
 PLC OTHER _____
 LOGIC DEVICE SUPPLIED BY: VENDOR PURCH
 LOCATION OF TEMPERATURE PROTECTION LOGIC DEVICE:
 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 MAIN CONTROL ROOM OTHER _____

BEARING TEMPERATURE DISPLAY TYPE:
 TEMPERATURE MONITOR MODEL _____
 ALPHANUMERIC DISPLAY
 MMI / VDU
 PURCHASER
 OTHER _____

DISPLAY DEVICE PROVIDED BY: VENDOR PURCH
 LOCATION OF TEMPERATURE DISPLAY DEVICE:
 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 MAIN CONTROL ROOM OTHER _____

SPEED PROBES:

TYPE: ELECTROMAGNETIC EDDY CURRENT
 QUANTITY _____

MACHINE PROTECTION LOGIC DEVICE:
 SWITCH SPEED MONITOR _____

LOCATION OF SPEED DISPLAY:
 LOCAL PANEL REMOTE DISPLAY

THRUST:

TYPE:
 TAPERED LAND THRUST BEARING
 TILTING PAD THRUST BEARING
 ACTIVE MAGNETIC THRUST BEARING
 OTHER _____

MANUFACTURER _____
 LUBRICATION: FLOODED DIRECTED N/A
 THRUST COLLAR / DISK: INTEGRAL SEPARATE

VIBRATION DETECTORS:
 TYPE: EDDY CURRENT INDUCTIVE _____
 MFR _____
 MODEL _____

LOCATION AND QUANTITY:
 NO. PER JOURNAL BEARING _____ TOTAL NO. _____
 IF REQ'D, OSCILLATOR-DEMODULATORS SUPPLIED BY:
 VENDOR MODEL _____
 PURCHASER MODEL _____

MACHINE VIBRATION PROTECTION LOGIC DEVICE:
 VIBRATION MONITOR DCS
 PLC OTHER _____
 LOGIC DEVICE PROVIDED BY: VENDOR PURCH
 LOCATION OF VIBRATION PROTECTION LOGIC DEVICE:
 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 MAIN CONTROL ROOM _____

VIBRATION AMPLITUDE DISPLAY
 VIBRATION MONITOR MODEL _____
 ALPHANUMERIC DISPLAY
 MMI / VDU
 OTHER _____
 DISPLAY DEVICE PROVIDED BY: VENDOR PURCH
 LOCATION OF DISPLAY DEVICE:
 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 MAIN CONTROL ROOM _____

KEY PHASOR YES NO

MAGNETIC BEARING CONTROL CABINET, IF REQUIRED

UPS SUPPLIED BY: VENDOR PURCHASER

LOCATION OF CONTROL CABINET:
 LOCAL PANEL REMOTE PANEL
 MAIN CONTROL ROOM _____

CABLE LENGTH FROM MACHINE SKID
 TO CONTROL CABINET: _____ FT

POWER AND SIGNAL CABLES:
 SUPPLIED BY PURCHASER SUPPLIED BY VENDOR

COMMUNICATION PROTOCOL
 MODBUS OTHER: _____

POWER CONSUMPTION: _____ KW

TURBOEXPANDER / COMPRESSOR DATA SHEET U.S. CUSTOMARY UNITS			JOB NO. _____ ITEM NO. _____ REVISION NO. _____ DATE _____ PAGE <u>5</u> OF <u>6</u> BY _____		
1	<input type="checkbox"/> OTHER CONNECTIONS		<input type="radio"/> ALLOWABLE PIPING FORCES AND MOMENTS: <input type="radio"/> 1.85 X NEMA SM23 <input type="radio"/> 3 X NEMA SM23 <input type="radio"/> OTHER: _____ <input type="radio"/> CASING DRAINS: <input type="radio"/> PLUGGED <input type="radio"/> FLANGED AND VALVED <input type="radio"/> FLANGED <input type="radio"/> FLANGED, VALVED, AND MANIFOLDED		
2	SERVICE:				
3	LUBE-OIL INLET				
4	LUBE OIL OUTLET				
5	SEAL GAS INLET				
6	SEAL GAS OUTLET				
7	CASING DRAINS, EXP / COMP				
8	INTERMEDIATE BLEED				
9	THRUST PRESSURES				
10	WHEEL PRESSURES, EX / COM				
11	BEARING HOUSING PRES				
12					
13					
14					
15					
ACCESSORIES					
17	<input type="radio"/> EXPANDER INLET TRIP VALVE:				
18	<input type="radio"/> TYPE:				
19	<input type="radio"/> BUTTERFLY VALVE	<input type="radio"/> SIZE: _____	<input type="radio"/> RATING: _____	<input type="radio"/> ALLOWABLE PRESSURE DROP: _____	PSID
20	<input type="radio"/> OTHER: _____				
21	<input type="radio"/> DESIGN PRESSURE: _____	PSIG	<input type="radio"/> DESIGN TEMPERATURE (MIN / MAX)	_____ / _____	°F
22	<input type="radio"/> MATERIAL:				
23	<input type="radio"/> STAINLESS STEEL	<input type="radio"/> LOW TEMP CARBON STEEL	<input type="radio"/> CARBON STEEL	<input type="radio"/> OTHER: _____	
24	<input type="radio"/> TRIP VALVE SUPPLIED BY: <input type="radio"/> VENDOR <input type="radio"/> PURCHASER				
25	<input type="radio"/> INLET SCREENS AND PIPE SPOOLS:				
26	<u>INLET SCREENS:</u>		<u>INLET SPOOLS FOR INLET SCREENS:</u>		
27	TYPE: (CONE, BASKET, OTHER)	EXP	COMP	SIZE	EXP
28	SIZE (DIA. IN INCHES)			RATING	
29	MESH SIZE			FACING	
30	PRESSURE DROP (PSID)			DESIGN PRESSURE: _____	PSIG
31	MATERIAL:			DESIGN TEMPERATURE (MIN/MAX)	°F
32	STAINLESS STEEL	<input type="radio"/>	<input type="radio"/>	DESIGN TEMPERATURE (MIN/MAX)	°F
33	OTHER _____	<input type="radio"/>	<input type="radio"/>	MATERIAL:	
34				STAINLESS STEEL	<input type="radio"/>
35	INLET SCREENS SUPPLIED BY:	<input type="radio"/> VENDOR		LOW TEMP CARBON STEEL	<input type="radio"/>
36		<input type="radio"/> PURCHASER		CARBON STEEL	<input type="radio"/>
37				OTHER: _____	
38				SPOOL CONSTRUCTION:	
39				SLIP-ON / SOCKETWELD	<input type="radio"/>
40				SOCKETWELD	<input type="radio"/>
41				WELDNECK / BUTTWELD	<input type="radio"/>
42				PIPE SPECIFICATION: _____	
43					
44	<input type="radio"/> COMPRESSOR ANTI-SURGE SYSTEM				
45	CONTROLLER:	<input type="radio"/> PID CONTROLLER	<input type="radio"/> OTHER: _____		
46	<input type="radio"/> RECYCLE VALVE	TYPE: _____	MTL: _____	NOISE LIMIT: <input type="radio"/> VENDOR STD	<input type="radio"/> SPECIAL: _____
47	<input type="radio"/> DESIGN PRESSURE: _____	PSIG	<input type="radio"/> DESIGN TEMPERATURE (MIN/MAX)	_____ / _____	°F
48	<input type="radio"/> INLET FLOW DEVICE	TYPE: _____	<input type="radio"/> BY: _____		
49	<input type="radio"/> COMP. INLET FLOW TRANSMITTER	<input type="radio"/> COMP. DIFF. PRESSURE TRANSMITTER			

**TURBOEXPANDER / COMPRESSOR
DATA SHEET
U.S. CUSTOMARY UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 6 OF 6 BY _____

1 SHOP INSPECTION AND TESTS:		REQ'D	OBSRV	WTNS
2				
3	CLEANLINESS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	HYDROSTATIC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	LOW SPEED BALANCE (ISO 1940 G2.5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	IMPELLER OVERSPEED (115% OF MCS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	IMPELLER RESONANCE TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	MECHANICAL RUN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	<input type="radio"/> MAIN <input type="radio"/> SPARE			
10	<input type="radio"/> CONTRACT PROBES <input type="radio"/> SHOP PROBES			
11	VARY LUBE & SEAL OIL PRESSURES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	AND TEMPERATURES			
13	POLAR FORM VIB DATA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	TAPE RECORD VIB DATA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	TAPE DATA TO PURCHASER	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	PERFORMANCE TEST (AIR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	COMPLETE UNIT TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	HE/N2 CASING LEAK TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	SOUND LEVEL TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	FULL POWER TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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37				

UTILITY CONDITIONS:
INSTRUMENT AIR FOR GUIDE VANE ACTUATOR:
 MAX PRESS _____ PSIG MIN PRESS _____ PSIG

MISCELLANEOUS:
 RECOMMENDED STRAIGHT RUN OF PIPE DIAMETERS
 AT EXPANDER DISCHARGE: _____
 AT COMPRESSOR INLET: _____
 VENDOR TO REVIEW & COMMENT ON PURCHASER'S
 PIPING & FOUNDATION
 VENDOR TO REVIEW & COMMENT ON PURCHASER'S
 CONTROL SYSTEMS

WEIGHTS (LB):
 EXP / COMP UNIT _____ LBS
 MAINTENANCE (SPARE ROTATING ASSY) _____ LBS
 TOTAL MACHINERY SKID WEIGHT: _____ LBS
 TOTAL SUPPORT SYSTEM SKID WT. (IF SEPARATE): _____ LBS

SPACE REQUIREMENTS (FT & IN.):
 MACHINERY SKID: L _____ W _____ H _____
 SUPPORT SYSTEM SKID: L _____ W _____ H _____

38 **REMARKS:** _____
 39 _____
 40 _____
 41 _____
 42 _____
 43 _____
 44 _____
 45 _____
 46 _____
 47 _____
 48 _____
 49 _____

TURBOEXPANDER/COMPRESSOR DATA SHEET SI UNITS	JOB NO. _____ ITEM NO. _____ PURCHASE ORDER NO. _____ SPECIFICATION NO. _____ REVISION NO. _____ DATE _____ PAGE <u>1</u> OF <u>6</u> BY _____
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1 APPLICABLE TO: PROPOSAL PURCHASE AS-BUILT

2 SERVICE _____ NO. REQUIRED _____

3 MANUFACTURER _____ MODEL _____

4 NOTE: INFORMATION TO BE COMPLETED:
 5 BY PURCHASER BY MANUFACTURER EITHER, BUT BY VENDOR IF NOT BY PURCHASER

OPERATING CONDITIONS							
(ALL DATA ON PER UNIT BASIS)							
		NORMAL CASE		CASE A		CASE B	
		EXP	COMP	EXP	COMP	EXP	COMP
9 INLET CONDITIONS:							
10	<input type="radio"/> MMm ³ /day (m ³ /h): (1.03 BAR & 0°C DRY)						
11	<input type="radio"/> WEIGHT FLOW, kg/HR (EXP: WET / DRY; COMP: WET / DRY)						
12	<input type="radio"/> PRESSURE (BAR abs)						
13	<input type="radio"/> TEMPERATURE (°C)						
14	<input type="radio"/> MOLECULAR WEIGHT						
15	<input type="radio"/>						
16	<input type="radio"/>						
17 DISCHARGE CONDITIONS:							
18	<input type="checkbox"/> PRESSURE (BAR abs)						
19	<input type="checkbox"/> TEMPERATURE (°C)						
20	<input type="checkbox"/> WEIGHT PERCENT LIQUID (%)						
21	<input type="checkbox"/> GAS kW						
22	<input type="checkbox"/> SPEED (RPM)						
23	<input type="checkbox"/> ADIABATIC/POLYTROPIC EFFICIENCY (Exp/Comp, %)						
24	<input type="radio"/>						
25	<input type="radio"/>						
26	<input type="radio"/> GUARANTEE CASE (check one case)						

28 **VARIABLE INLET GUIDE VANE PROCESS CONTROL SIGNAL SOURCE:**

29 TYPE: ELECTRONIC RANGE: _____ MA

30 PNEUMATIC _____ BARG

31

32

33

34

35 **CASING CONNECTIONS:**

CONNECTION	<input type="checkbox"/> SIZE NPS/RATING	<input type="checkbox"/> FACING	<input type="checkbox"/> POSITION	<input type="checkbox"/> FLANGED OR STUDDED	<input type="radio"/> MATING FLG & GASKET BY VENDOR	<input type="checkbox"/> GAS VELOCITY m/SEC.
39 EXPANDER INLET						
40 EXPANDER DISCHARGE						
41						
42 COMPRESSOR INLET						
43 COMPRESSOR DISCHARGE						

44 **REMARKS:** _____

45 _____

46 _____

47 _____

48 _____

49 _____

**TURBOEXPANDER / COMPRESSOR
DATA SHEET
SI UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
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OPERATING CONDITIONS (Continued)

2	3	GAS ANALYSIS: <input type="radio"/> MOL % <input type="radio"/> WT %	NORMAL		CASE A		CASE B		SEAL GAS	REMARKS:
			EXP	COMP	EXP	COMP	EXP	COMP		
4		MW								
5		HELIUM 4.000								
6		HYDROGEN 2.016								
7		NITROGEN 28.016								
8		WATER VAPOR 18.016								
9		CARBON DIOXIDE 44.010								
10		HYDROGEN SULFIDE 34.076								
11		METHANE 16.042								
12		ETHYLENE 28.052								
13		ETHANE 30.068								
14		PROPYLENE 42.078								
15		PROPANE 44.094								
16		I-BUTANE 58.120								
17		n-BUTANE 58.120								
18		I-PENTANE 72.146								
19		n-PENTANE 72.146								
20		HEXANE PLUS								
21										
22										
23										
24										
25		TOTAL								
26		AVG. MOL. WT.								

27 SITE DATA

28 ELEVATION _____ m BAROMETER _____ BARA

29 RANGE OF AMBIENT TEMPS:

30 NORMAL _____ °C

31 MAXIMUM _____ °C

32 MINIMUM _____ °C

33 LOCATION:

34 INDOOR OUTDOOR GRADE

35 HEATED UNDER ROOF MEZZANINE

36 UNHEATED PARTIAL SIDES _____

37 AREA CLASSIFICATION NEC _____ IEC _____

38 CLASS _____ GROUP _____ DIV. _____

39 ZONE _____ GROUP _____ TEMP CLASS _____

40 UNUSUAL CONDITIONS: DUST FUMES

41 WINTERIZATION REQ'D. TROPICALIZATION REQ'D.

42 OTHER _____

APPLICABLE SPECIFICATIONS:

VENDOR STANDARD

API 617, 7TH EDITION

OTHER: _____

NOISE SPECIFICATIONS:

VENDOR STANDARD

PURCHASER SPECIFICATION

SEE SPECIFICATION

ACOUSTIC COVERING: YES NO

PAINTING:

VENDOR STANDARD

OTHER _____

SHIPPING PREPARATION:

DOMESTIC PACKING

EXPORT PACKING (MIL-P 116J METHOD II)

SPECIAL: _____

DELIVERY:

FCA FACTORY FOB SITE (DOMESTIC ONLY)

OTHER: _____

SPARE ROTATING ASSEMBLY:

WOODEN SHIPPING CONTAINER

METAL SHIPPING CONTAINER W/ PURGE PROVISION

44 REMARKS: _____

45 _____

46 _____

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48 _____

49 _____

**TURBOEXPANDER / COMPRESSOR
DATA SHEET
SI UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 3 OF 6 BY _____

CONSTRUCTION FEATURES

SPEEDS:
 MAX. CONT. _____ RPM TRIP _____ RPM
 TIP SPEEDS: EXPANDER _____ m/SEC @ MCS
 COMPRESSOR _____ m/SEC @ MCS

LATERAL CRITICAL SPEEDS (DAMPED)
 FIRST CRITICAL _____ RPM BENDING MODE
 UNDAMPED CRITICAL SPEED MAP
 COMPLETE ROTORDYNAMIC ANALYSIS

IMPELLERS:

	EXP	COMP
<input type="checkbox"/> DIAMETER (mm)	_____	_____
<input type="checkbox"/> TYPE (OPEN, ENCLOSED)	_____	_____
<input type="checkbox"/> TYPE FABRICATION	_____	_____
<input type="checkbox"/> EXPANDER WHEEL MATERIAL	_____	_____
<input type="checkbox"/> YIELD STRENGTH (MPa)	MAX _____ MIN _____ (TYP)	_____
<input type="checkbox"/> HARDNESS: _____ BNH / R _c (TYP)		
<input type="checkbox"/> COMPRESSOR WHEEL MATERIAL	_____	_____
<input type="checkbox"/> YIELD STRENGTH (MPa)	MAX _____ MIN _____ (TYP)	_____
<input type="checkbox"/> HARDNESS: _____ BNH / R _c (TYP)		

CASINGS:
 MODEL _____

	EXP	BRG HSG	COMP
<input type="checkbox"/> CASING SPLIT	_____	_____	_____
<input type="checkbox"/> MATERIAL	_____	_____	_____
<input type="checkbox"/> ASTM A-351 CF8	_____	_____	_____
<input type="checkbox"/> ASTM A-352 LC3	_____	_____	_____
<input type="checkbox"/> ASTM A-352 LCC	_____	_____	_____
<input type="checkbox"/> ASTM A-216 WCB	_____	_____	_____
<input type="checkbox"/> _____	_____	_____	_____
<input type="radio"/> DESIGN PRES, PSIG	_____	_____	_____
<input type="radio"/> MAX DESIGN TEMP, °C	_____	_____	_____
<input type="radio"/> MIN. DESIGN TEMP, °C	_____	_____	_____
<input type="radio"/> VISUAL INSPECTION	_____	_____	_____
<input type="radio"/> CHARPY TESTING	_____	_____	_____
<input type="radio"/> MAGNETIC PARTICLE	_____	_____	_____
<input type="radio"/> LIQUID PENETRANT	_____	_____	_____
<input type="radio"/> CRITICAL AREA X-RAY	_____	_____	_____
<input type="radio"/> _____	_____	_____	_____
<input type="radio"/> _____	_____	_____	_____
<input type="checkbox"/> HYDROTEST PRESS <input type="checkbox"/> 1.5 X DESIGN <input type="checkbox"/> _____			
<input type="radio"/> CASING LEAK TEST <input type="checkbox"/> 1.0 X DESIGN <input type="checkbox"/> _____			
<input type="radio"/> 100% NITROGEN			
<input type="radio"/> NITROGEN / HELIUM MIX (90 / 10)			
<input type="radio"/> 100% HELIUM			

NOTE: LEAK TEST PERFORMED FOLLOWING
 HYDROTEST USING SOAP BUBBLE METHOD

SHAFT:
 MATERIAL _____

SHAFT END: TAPERED CYLINDRICAL

YIELD STRENGTH (MPa) _____

SHAFT HARDNESS (BNH)(R_c) _____

SHAFT SEALS:

SINGLE PORT BUFFERED LABYRINTH
 DOUBLE PORT BUFFERED LABYRINTH
 TRIPLE PORT BUFFERED LABYRINTH
 BLEED PRESSURE: _____ BARG

DRY GAS SEAL: _____
 TYPE BUFFER GAS _____
 BUFFER GAS SUPPLY PRESSURE _____ BARG

OTHER _____

SEAL GAS REQUIREMENTS :

TYPE: _____

MIN. SUPPLY PRESS. _____ BARG
 MAX SUPPLY PRESS. _____ °C
 MIN SUPPLY TEMP. _____ °C
 MAX SUPPLY TEMP. _____ °C

NORMAL FLOW _____ nm³/min @ _____ BAR ΔP
 MAX FLOW _____ nm³/min @ _____ BAR ΔP

NOTE: PURCHASER TO SUPPLY SEAL GAS
 COMPOSITION ON SHEET 2.

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**TURBOEXPANDER / COMPRESSOR
DATA SHEET
SI UNITS**

JOB NO. _____ ITEM NO. _____
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CONSTRUCTION FEATURES (CONTINUED)

2 BEARINGS:

3 RADIAL:

- 4 TYPE:
 5 SLEEVE BEARING
 6 TILTING PAD BEARING
 7 ACTIVE MAGNETIC BEARING
 8 OTHER _____
 9 MATERIAL:
 10 ALUMINUM (BABBITTED)
 11 BRASS / BRONZE (BABBITTED)
 12 CARBON STEEL (BABBITTED)
 13 OTHER _____
 14 SHAFT DIA. (mm) _____
 15 MANUFACTURER _____

16 BEARING TEMPERATURE DEVICES:

- 17 TYPE
 18 THERMOCOUPLES TYPE: _____
 19 RESISTANCE TEMP DETECTORS
 20 RESISTANCE MAT'L _____ _____ OHMS
 21 LOCATION / QTY
 22 SINGLE DUAL ELEMENT (MAIN & SPARE) _____ PER BRG
 23 TEMPERATURE PROTECTION LOGIC DEVICE:
 24 TEMPERATURE MONITOR DCS
 25 PLC OTHER _____
 26 LOGIC DEVICE SUPPLIED BY: VENDOR PURCH
 27 LOCATION OF TEMPERATURE PROTECTION LOGIC DEVICE:
 28 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 29 MAIN CONTROL ROOM OTHER _____
 30 BEARING TEMPERATURE DISPLAY TYPE:
 31 TEMPERATURE MONITOR MODEL _____
 32 ALPHANUMERIC DISPLAY
 33 MMI / VDU
 34 PURCHASER
 35 OTHER _____
 36 DISPLAY DEVICE PROVIDED BY: VENDOR PURCH
 37 LOCATION OF TEMPERATURE DISPLAY DEVICE:
 38 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 39 MAIN CONTROL ROOM OTHER _____

42 SPEED PROBES:

- 43 TYPE: ELECTROMAGNETIC EDDY CURRENT
 44 QUANTITY _____
 45
 46 MACHINE PROTECTION LOGIC DEVICE:
 47 SWITCH SPEED MONITOR _____
 48 LOCATION OF SPEED DISPLAY:
 49 LOCAL PANEL REMOTE DISPLAY

THRUST:

- TYPE:
 TAPERED LAND THRUST BEARING
 TILTING PAD THRUST BEARING
 ACTIVE MAGNETIC THRUST BEARING
 OTHER _____
 MANUFACTURER _____
 LUBRICATION: FLOODED DIRECTED N/A
 THRUST COLLAR / DISK: INTEGRAL SEPARATE

VIBRATION DETECTORS:

- TYPE: EDDY CURRENT INDUCTIVE _____
 MFR _____
 MODEL _____
 LOCATION AND QUANTITY:
 NO. PER JOURNAL BEARING _____ TOTAL NO. _____
 IF REQ'D, OSCILLATOR-DEMODULATORS SUPPLIED BY:
 VENDOR MODEL _____
 PURCHASER MODEL _____

MACHINE VIBRATION PROTECTION LOGIC DEVICE:

- VIBRATION MONITOR DCS
 PLC OTHER _____
 LOGIC DEVICE PROVIDED BY: VENDOR PURCH
 LOCATION OF VIBRATION PROTECTION LOGIC DEVICE:
 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 MAIN CONTROL ROOM _____

VIBRATION AMPLITUDE DISPLAY

- VIBRATION MONITOR MODEL _____
 ALPHANUMERIC DISPLAY
 MMI / VDU
 OTHER _____
 DISPLAY DEVICE PROVIDED BY: VENDOR PURCH
 LOCATION OF DISPLAY DEVICE:
 LOCAL CONTROL PANEL REMOTE CONTROL PANEL
 MAIN CONTROL ROOM _____
 KEY PHASOR YES NO

MAGNETIC BEARING CONTROL CABINET, IF REQUIRED

- UPS SUPPLIED BY: VENDOR PURCHASER
 LOCATION OF CONTROL CABINET:
 LOCAL PANEL REMOTE PANEL
 MAIN CONTROL ROOM _____
 CABLE LENGTH FROM MACHINE SKID
 TO CONTROL CABINET: _____ m
 POWER AND SIGNAL CABLES:
 SUPPLIED BY PURCHASER SUPPLIED BY VENDOR
 COMMUNICATION PROTOCOL
 MODBUS OTHER: _____
 POWER CONSUMPTION: _____ kW

	JOB NO. _____ ITEM NO. _____ REVISION NO. _____ DATE _____ PAGE <u>5</u> OF <u>6</u> BY _____																																																																																																																								
TURBOEXPANDER / COMPRESSOR DATA SHEET SI UNITS																																																																																																																									
1 <input type="checkbox"/> OTHER CONNECTIONS 2 SERVICE:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">NO.</th> <th style="width: 15%;">SIZE</th> <th style="width: 70%;">TYPE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	SIZE	TYPE																																																																																																																					
NO.	SIZE	TYPE																																																																																																																							
3 LUBE-OIL INLET 4 LUBE OIL OUTLET 5 SEAL GAS INLET 6 SEAL GAS OUTLET 7 CASING DRAINS, EXP / COMP 8 INTERMEDIATE BLEED 9 THRUST PRESSURES 10 WHEEL PRESSURES, EX / COM 11 BEARING HOUSING PRES 12 _____ 13 _____ 14 _____ 15 _____	17 <input type="radio"/> ALLOWABLE PIPING FORCES AND MOMENTS: <input type="radio"/> 1.85 X NEMA SM23 <input type="radio"/> 3 X NEMA SM23 <input type="radio"/> OTHER: _____ CASING DRAINS: <input type="radio"/> PLUGGED <input type="radio"/> FLANGED AND VALVED <input type="radio"/> FLANGED <input type="radio"/> FLANGED, VALVED, AND MANIFOLDED																																																																																																																								
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17 <input type="radio"/> EXPANDER INLET TRIP VALVE: 18 <input type="radio"/> TYPE: 19 <input type="radio"/> BUTTERFLY VALVE <input type="radio"/> SIZE: _____ <input type="radio"/> RATING: _____ <input type="radio"/> ALLOWABLE PRESSURE DROP: _____ BAR 20 <input type="radio"/> OTHER: _____ 21 <input type="radio"/> DESIGN PRESSURE: _____ BARG <input type="radio"/> DESIGN TEMPERATURE (MIN / MAX) _____ / _____ °C 22 <input type="radio"/> MATERIAL: 23 <input type="radio"/> STAINLESS STEEL <input type="radio"/> LOW TEMP CARBON STEEL <input type="radio"/> CARBON STEEL <input type="radio"/> OTHER: _____ 24 <input type="radio"/> TRIP VALVE SUPPLIED BY: <input type="radio"/> VENDOR <input type="radio"/> PURCHASER																																																																																																																									
25 <input type="radio"/> INLET SCREENS AND PIPE SPOOLS: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">EXP</th> <th style="width: 10%;">COMP</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>INLET SCREENS:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>TYPE: (CONE, BASKET, OTHER)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SIZE (DIA. IN mm)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MESH SIZE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PRESSURE DROP (BAR)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MATERIAL:</td> <td></td> <td></td> <td></td> </tr> <tr> <td> <input type="radio"/> STAINLESS STEEL</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td> <input type="radio"/> OTHER _____</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td>INLET SCREENS SUPPLIED BY:</td> <td></td> <td></td> <td></td> </tr> <tr> <td> <input type="radio"/> VENDOR</td> <td></td> <td></td> <td></td> </tr> <tr> <td> <input type="radio"/> PURCHASER</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		EXP	COMP		INLET SCREENS:				TYPE: (CONE, BASKET, OTHER)				SIZE (DIA. IN mm)				MESH SIZE				PRESSURE DROP (BAR)				MATERIAL:				<input type="radio"/> STAINLESS STEEL	<input type="radio"/>	<input type="radio"/>		<input type="radio"/> OTHER _____	<input type="radio"/>	<input type="radio"/>		INLET SCREENS SUPPLIED BY:				<input type="radio"/> VENDOR				<input type="radio"/> PURCHASER				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">EXP</th> <th style="width: 10%;">COMP</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>INLET SPOOLS FOR INLET SCREENS:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SIZE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RATING</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FACING</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DESIGN PRESSURE: BARG</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DESIGN TEMPERATURE (MIN/MAX) °C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DESIGN TEMPERATURE (MIN/MAX) °C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MATERIAL:</td> <td></td> <td></td> <td></td> </tr> <tr> <td> <input type="radio"/> STAINLESS STEEL</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td> <input type="radio"/> LOW TEMP CARBON STEEL</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td> <input type="radio"/> CARBON STEEL</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td> <input type="radio"/> OTHER: _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPOOL CONSTRUCTION:</td> <td></td> <td></td> <td></td> </tr> <tr> <td> <input type="radio"/> SLIP-ON / SOCKETWELD</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td> <input type="radio"/> SOCKETWELD</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td> <input type="radio"/> WELDNECK / BUTTWELD</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td></td> </tr> <tr> <td>PIPE SPECIFICATION: _____</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		EXP	COMP		INLET SPOOLS FOR INLET SCREENS:				SIZE				RATING				FACING				DESIGN PRESSURE: BARG				DESIGN TEMPERATURE (MIN/MAX) °C				DESIGN TEMPERATURE (MIN/MAX) °C				MATERIAL:				<input type="radio"/> STAINLESS STEEL	<input type="radio"/>	<input type="radio"/>		<input type="radio"/> LOW TEMP CARBON STEEL	<input type="radio"/>	<input type="radio"/>		<input type="radio"/> CARBON STEEL	<input type="radio"/>	<input type="radio"/>		<input type="radio"/> OTHER: _____				SPOOL CONSTRUCTION:				<input type="radio"/> SLIP-ON / SOCKETWELD	<input type="radio"/>	<input type="radio"/>		<input type="radio"/> SOCKETWELD	<input type="radio"/>	<input type="radio"/>		<input type="radio"/> WELDNECK / BUTTWELD	<input type="radio"/>	<input type="radio"/>		PIPE SPECIFICATION: _____			
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44 <input type="radio"/> COMPRESSOR ANTI-SURGE SYSTEM 45 CONTROLLER: <input type="radio"/> PID CONTROLLER <input type="radio"/> OTHER: _____ 46 <input type="radio"/> RECYCLE VALVE TYPE: _____ MTL: _____ NOISE LIMIT: <input type="radio"/> VENDOR STD <input type="radio"/> SPECIAL: _____ 47 <input type="radio"/> DESIGN PRESSURE: _____ BARG <input type="radio"/> DESIGN TEMPERATURE (MIN/MAX) _____ / _____ °C 48 <input type="radio"/> INLET FLOW DEVICE TYPE: _____ <input type="radio"/> BY: _____ 49 <input type="radio"/> COMP. INLET FLOW TRANSMITTER <input type="radio"/> COMP. DIFF. PRESSURE TRANSMITTER																																																																																																																									

**TURBOEXPANDER / COMPRESSOR
DATA SHEET
SI UNITS**

JOB NO. _____ ITEM NO. _____
 REVISION NO. _____ DATE _____
 PAGE 6 OF 6 BY _____

1 SHOP INSPECTION AND TESTS:			REQ'D	OBSRV	WTNS
2					
3	CLEANLINESS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
4	HYDROSTATIC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
5	LOW SPEED BALANCE (ISO 1940 G2.5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
6	IMPELLER OVERSPEED (115% OF MCS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
7	IMPELLER RESONANCE TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
8	MECHANICAL RUN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
9	<input type="radio"/> MAIN <input type="radio"/> SPARE				
10	<input type="radio"/> CONTRACT PROBES <input type="radio"/> SHOP PROBES				
11	VARY LUBE & SEAL OIL PRESSURES 12 AND TEMPERATURES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
13	POLAR FORM VIB DATA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14	TAPE RECORD VIB DATA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
15	TAPE DATA TO PURCHASER	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
16	PERFORMANCE TEST (AIR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
17	COMPLETE UNIT TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
18	HE/N2 CASING LEAK TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
19	SOUND LEVEL TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
20	FULL POWER TEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
21		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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UTILITY CONDITIONS:
INSTRUMENT AIR FOR GUIDE VANE ACTUATOR:
 MAX PRESS _____ BARG MIN PRESS _____ BARG

MISCELLANEOUS:
 RECOMMENDED STRAIGHT RUN OF PIPE DIAMETERS
 AT EXPANDER DISCHARGE: _____
 AT COMPRESSOR INLET: _____
 VENDOR TO REVIEW & COMMENT ON PURCHASER'S
 PIPING & FOUNDATION
 VENDOR TO REVIEW & COMMENT ON PURCHASER'S
 CONTROL SYSTEMS

WEIGHTS (kg):
 EXP / COMP UNIT _____ kg
 MAINTENANCE (SPARE ROTATING ASSY) _____ kg
 TOTAL MACHINERY SKID WEIGHT: _____ kg
 TOTAL SUPPORT SYSTEM SKID WT. (IF SEPARATE): _____ kg

SPACE REQUIREMENTS (m):
 MACHINERY SKID: L _____ W _____ H _____
 SUPPORT SYSTEM SKID: L _____ W _____ H _____

38 **REMARKS:** _____
 39 _____
 40 _____
 41 _____
 42 _____
 43 _____
 44 _____
 45 _____
 46 _____
 47 _____
 48 _____
 49 _____

