



532-A102JA

99559 / 99560 / 99561

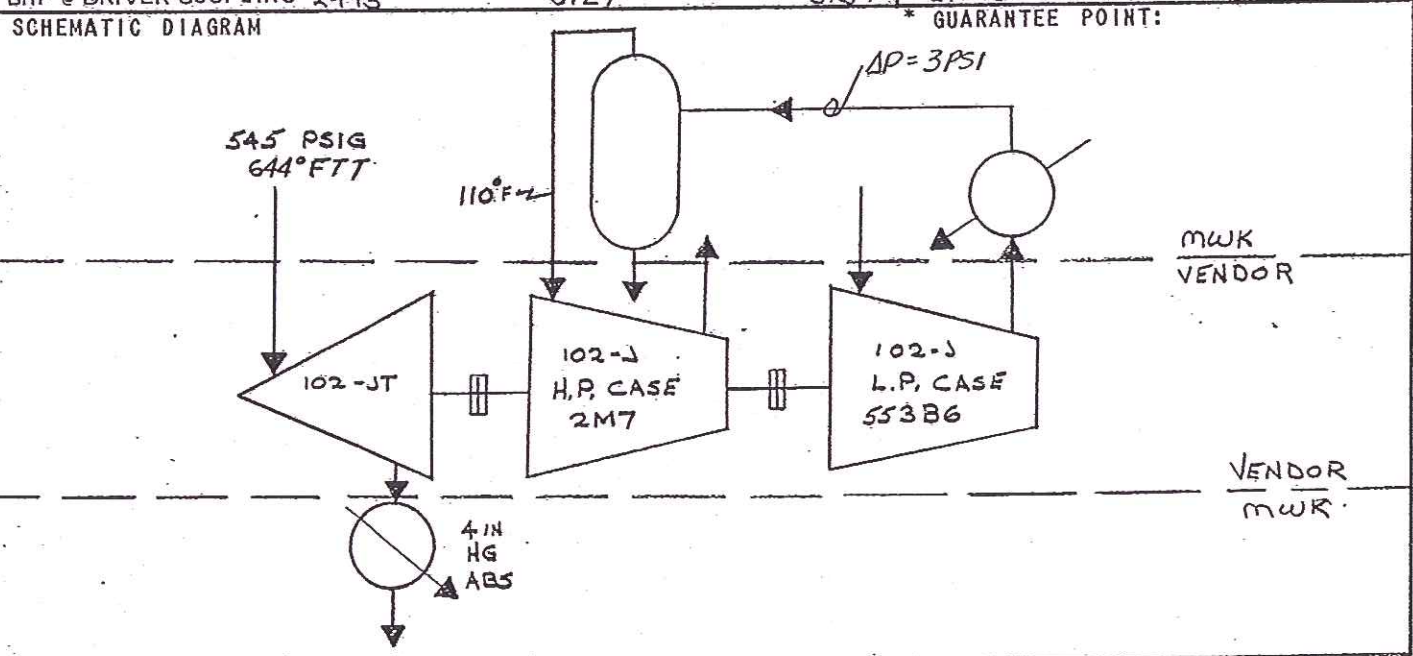
JOB NO.: 5103 ITEM NO.: 102-J
 REQ. NO.: 5103-P-J21-101
 PAGE NO. 102 BY: JEB
 DATE: 12.3.74
 Rev. 7/21/75

CENTRIFUGAL COMPRESSOR DATA SHEET

FOR: <u>IMC</u>	UNIT: <u>1150 ST/SD NH₂ PLANT</u>
SITE: <u>STERLINGTON, LA.</u>	SERIAL NO.: <u>553-6-3396 (L.P.)</u>
SERVICE: <u>FEED GAS COMPRESSOR</u>	<u>2-7-3397 (H.P.)</u>
MANUFACTURER: <u>DRESSER CLARK</u>	NUMBER REQUIRED: <u>ONE</u>
TYPE: <u>CENTRIFUGAL MODEL 553B6 + 2M7</u>	
DRIVER TYPE: <u>CONDENSING STEAM TURBINE</u>	RATED H.P. <u>6747</u> RPM <u>10121</u>

RATED OPERATING CONDITIONS (EACH MACHINE)

SERVICE / ITEM NO.	FEED GAS COMPRESSOR / 102-J		GAS ANALYSIS DATA SATURATED		
	1	2	MATERIAL	(MPH)(MOL %)	LBS./HR.
STAGE	<u>1</u>	<u>2</u>			
CASING	<u>LP</u>	<u>HP</u>			
GAS COMPRESSED	<u>HC MIX (SEE ANALYSIS)</u>		<u>N₂</u>	<u>161.0</u>	<u>4509</u>
CORROSIVE DUE TO	<u>NOT CORROSIVE</u>		<u>CH₄</u>	<u>2679.7</u>	<u>42990</u>
RELATIVE HUMIDITY	<u>SAT.</u>		<u>CO₂</u>	<u>7.5</u>	<u>331</u>
MOL. WGT. AT INTAKE	<u>17.23</u>	<u>17.23</u>	<u>C₂H₆</u>	<u>25.5</u>	<u>766</u>
C _p / C _v VALUE AT SUCT	<u>1.290</u>	<u>1.280</u>	<u>C₃H₈</u>	<u>9.6</u>	<u>421</u>
C _p / C _v VALUE AT DISCH	<u>1.238</u>	<u>1.231</u>	<u>i C₄H₁₀</u>	<u>2.3</u>	<u>135</u>
INLET TEMP. °F	<u>85</u>	<u>110</u>	<u>n C₅H₁₀</u>	<u>3.2</u>	<u>185</u>
INLET PRESS. PSIA	<u>50.7</u>	<u>189.2</u>	<u>i C₅H₁₂</u>	<u>1.4</u>	<u>104</u>
DISCH. TEMP. °F	<u>318</u>	<u>360</u>	<u>n C₅H₁₂</u>	<u>1.2</u>	<u>84</u>
DISCH. PRESS. PSIA	<u>192.3</u>	<u>640</u>	<u>C₆H₁₄</u>	<u>1.2</u>	<u>100</u>
Z @ SUCTION	<u>.995</u>	<u>.984</u>	<u>C₇H₁₆</u>	<u>2.6</u>	<u>261</u>
Z @ DISCHARGE	<u>.996</u>	<u>.993</u>	<u>TOTAL</u>	<u>2895.2</u>	<u>49886</u>
POLYTROPIC HEAD, FT.	<u>78612</u>	<u>75028</u>	<u>NORMAL TOTAL SULFUR IN GAS 2.4 PPM VOL.</u>		
	<u>D 78200</u>	<u>75054</u>			
NORMAL CAPACITY			APPLICABLE SPECIFICATIONS		
LBS./HR.	<u>50520</u>	<u>50220</u>	<input checked="" type="checkbox"/> MWK SPEC J-47-IE 70 AND		
INLET CFM	<u>5600</u>	<u>1535</u>	<input checked="" type="checkbox"/> J31-1E68 & J31-1S68		
COMPR. SPEED RPM	<u>10022</u>	<u>10022</u>	<input type="checkbox"/> API CENT. COMP. SPEC. 617		
BHP @ DRIVER COUPLING	<u>2770</u>	<u>2881</u>	<input checked="" type="checkbox"/> API TURBINE SPEC 612		
DESIGN CAPACITY			<input type="checkbox"/> MWK MOTOR SPEC.		
LBS./HR.	<u>55620</u>	<u>55260</u>	<input checked="" type="checkbox"/> MWK SPEC J30-2S68		
INLET CFM	<u>6165</u>	<u>1695</u>	<input checked="" type="checkbox"/> MWK SPEC 1-3S68		
COMPR. SPEED RPM		<u>10121</u>	<u>VENDOR TO ATTACH</u>		
BHP @ DRIVER COUPLING	<u>2993</u>	<u>6127</u>	<u>EXCEPTIONS TO ABOVE SPECS.</u>		



MANUFACTURER TO FILL IN ALL MISSING DATA.



CENTRIFUGAL COMPRESSOR DATA SHEET

LUBE AND SEAL OIL SYSTEM

MFR. SHALL FURNISH OIL SYSTEM PER J31-1E68 & J31-1568 TO SUPPLY OIL TO COMP. DRIVERS GEAR COMPLETE SYSTEM MOUNTED INTERNAL WITH COMPRESSOR DRIVER BASE PLATE

COMPLETE SYSTEM MOUNTED IN SEPARATE CONSOLE

COMBINED LUBE AND SEAL OIL SYSTEM

SEPARATE LUBE AND SEAL OIL SYSTEMS

TWO AUTOMATIC SOUR OIL DRAINERS PER COMPR. MOUNTED ON SEPARATE BASE PLATE (COMPLETELY PIPED BY VENDOR)

TAKE OFF TO STEAM TURBINE POWER CYLINDER

STEAM OIL RESEVOIR HEATING COIL

ELECTRIC OIL RESEVOIR HEATING COIL

OIL RESEVOIR INERT GAS PURGE

PRESSURE REDUCING STATION

ACCUMULATORS IN THE PUMP DISCHARGE

DEGASSIFYING TANK MOUNTED ON THE LUBE OIL RESERVOIR

LUBE OIL COOLERS TO HAVE S.S. TUBES & TUBE SHEETS

S.S. OIL SUPPLY LINES DOWNSTREAM OF FILTERS DRAIN LINES & THE OVERHEAD TANKS

INSTRUMENT LIST

THERMOMETERS IN °F °C

PRESSURE GAGES IN POUNDS / SQ. IN. KILOGRAMS / SQ. CENTIMETERS

ALL INSTRUMENTS LOCALLY MOUNTED

COMPRESSOR MFR. SHALL FURNISH INSTRUMENT PANEL LOCATED ON BASEPLATE

CONTAINING THE FOLLOWING INSTRUMENTS:

PRESSURE INDICATORS

1. L.O. FILTER AND COOLER DP

2. S.O. FILTER DP

3. L.O. PUMP DISCHARGE HEADER

4. S.O. PUMP DISCHARGE HEADER

LIST OF INSTRUMENTS PROVIDED BY COMPRESSOR MFR. FOR MOUNTING ON MWK PANEL: (MFR. SHALL INCLUDE MAKE AND CATALOG NUMBER FOR EACH INSTRUMENT.)

ALARMS AND SHUTDOWNS

COMPRESSOR MFR. SHALL FURNISH CONTACTS FOR:

LOW L.O. PRESSURE ALARMS

LOW L.O. PRESSURE AUX. PUMP START-UP

LOW L.O. PRESSURE SHUTDOWN OF DRIVER BY ELECTPIC PNEUMATIC HYDRAULIC

HIGH BALANCE PISTON DP ALARMS

LOW SEAL OIL LEVEL ALARM

LOW SEAL OIL LEVEL AUX. PUMP START-UP

LOW SEAL OIL LEVEL SHUTDOWN BY ELECTRIC PNEUMATIC HYDRAULIC

AUX. S.O. PUMP RUNNING ALARM

HIGH SEAL OIL LEVEL ALARM

AUX. L.O. PUMP RUNNING ALARM

HIGH L.O. FILTER DP ALARM

HIGH S.O. FILTER DP ALARM

LOW L.O. RESERVOIR LEVEL ALARM

LOW SEAL OIL PUMP INLET PRESSURE ALARM ELECT PNEUMATIC HYDRAULIC

REMOTE SHUTDOWN ELECT PNEUMATIC HYDRAULIC

ALARM CONTACTS SHALL OPEN CLOSE TO ALARM

SHUTDOWN CONTACTS SHALL OPEN CLOSE TO SHUTDOWN

PURCH WILL FURNISH HIGH DISCHARGE TEMPERATURE ELEMENT TO ALARM AND SHUTDOWN BY ELECT PNEUMATIC HYDRAULIC

RECOMMENDED SETTINGS: ALARM 370 °F

SHUTDOWN 390 °F

ACCESSORIES

COMPRESSOR MFR. SHALL FURNISH:

AIR INTAKE FILTER MFR. _____ MODEL _____ TYPE _____

INTERSTAGE PIPING

INTER COOLERS

SEPARATE MOISTURE SEPARATORS W/TRAPS AND LIQUID LEVEL ALARMS.

AFTERCOOLERS

INSTRUMENT PANEL

LOCAL INSTRUMENTS AS PER M.W. KELLOGG SPECS.

ESTIMATED MAX. SEAL OIL LEAKAGE:

10/15 GPD PER SEAL

20/30 GPD TOTAL



JOB NO. 5103 ITEM NO.: 102-D
 REQ. NO.: 5103-P-321-101
 PAGE NO. 102C BY: JFB
 DATE: 12/3/74

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SITE DATA	UTILITY CONSUMPTION																																																								
ALTITUDE <u>85'</u> FT. BAROMETER <u>14.7</u> PSIA DESIGN TEMP. *F <u>95°</u> SUMMER <u>10</u> WINTER MIN. DESIGN WET BULB TEMP. *F <u>80</u> COOLING WATER PRESS. PSIG <u>50</u> SUPPLY <u>35</u> RETURN TEMP. *F <u>90</u> SUPPLY <u>115</u> RETURN MAX. ELECTRIC POWER: <u>201</u> H.P. & OVER <u>2300</u> VOLTS <u>3</u> PH <u>60</u> CYCLES <u>1/2</u> H.P. TO <u>2000</u> HP <u>460</u> VOLTS <u>3</u> PH <u>60</u> CYCLES <u>1/2</u> H.P. & LESS <u>240/110</u> VOLTS <u>1</u> PH <u>60</u> CYCLES CONTROL EQUIPMENT: VOLTS <u>120</u> PH <u>1</u> CYCLES <u>60</u> <input checked="" type="checkbox"/> EXPLOSION PROOF (NEMA 7) <input type="checkbox"/> GENERAL PURPOSE (NEMA 1A) <input type="checkbox"/> WEATHER PROOF (NEMA 4) AUXILIARY MOTORS: <input checked="" type="checkbox"/> TEFC <input type="checkbox"/> EXP. PROOF <input type="checkbox"/> DRIP PROOF <input type="checkbox"/> OPEN INSULATION TYPE _____ CLASS <u>B</u> EQUIPMENT SHALL BE SUITABLE FOR: <input type="checkbox"/> INDOORS <input type="checkbox"/> HEATED <input type="checkbox"/> UNHEATED <input checked="" type="checkbox"/> OUTDOORS <input checked="" type="checkbox"/> UNDER ROOF <input type="checkbox"/> WITHOUT ROOF STEAM SUPPLY: NORMAL PRESS. <u>545</u> PSIG @ <u>644</u> *FTT MIN. PRESS. _____ PSIG @ _____ *FTT STEAM EXHAUST: NORMAL PRESS. <u>55</u> PSIG @ <u>430</u> *FTT MAX. PRESS. _____ PSIG @ _____ *FTT INSTRUMENT AIR SUPPLY <u>100</u> PSIG	ELECTRIC: MAIN DRIVER/SPACE HEATER-SEE MOTOR PAGE NO. <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">HP</th> <th style="text-align: center;">LRC</th> <th style="text-align: center;">FLC</th> </tr> </thead> <tbody> <tr> <td>(MAIN)(AUX) LUBE OIL PUMP</td> <td style="text-align: center;"><u>30</u></td> <td style="text-align: center;"><u>213</u></td> <td style="text-align: center;"><u>35.4</u></td> </tr> <tr> <td>MAIN SEAL OIL PUMP</td> <td></td> <td></td> <td></td> </tr> <tr> <td>AUX. SEAL OIL PUMP</td> <td style="text-align: center;"><u>20</u></td> <td style="text-align: center;"><u>139</u></td> <td style="text-align: center;"><u>23.4</u></td> </tr> </tbody> </table> LUBE OIL RES. HTR. _____ WATTS _____ VOLTS _____ PH MOTOR SPACE HEATER _____ WATTS <u>120</u> VOLTS <u>1</u> PH STEAM: MAIN DRIVER SEE TURBINE PAGE NO. <u>102-D</u> MAIN L.O. PUMP _____ # HR. <u>545</u> PSIG <u>644</u> *FTT TO <u>55</u> PSIG AUX. L.O. PUMP _____ # HR. _____ PSIG _____ *FTT TO _____ PSIG MAIN S.O. PUMP _____ # HR. <u>545</u> PSIG <u>644</u> *FTT TO <u>55</u> PSIG AUX. S.O. PUMP _____ # HR. _____ PSIG _____ *FTT TO _____ PSIG L.O. RES. HTR. _____ # HR. <u>45</u> PSIG <u>644</u> *FTT TO <u>0</u> PSIG S.O. RES. HTR. _____ # HR. _____ PSIG _____ *FTT TO _____ PSIG COMP. EJECTOR: _____ # HR. _____ PSIG _____ *FTT TO _____ PSIG SEAL _____ # HR. _____ PSIG _____ *FTT TO _____ PSIG COOLING WATER - FOR PROCESS GAS COOLERS, SEE PAGE NO. _____ <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">L.O. COOL</th> <th style="text-align: center;">S.O. COOL</th> <th style="text-align: center;">DIAPH. SYSTEM</th> <th style="text-align: center;">DIAPH. COOLERS</th> </tr> </thead> <tbody> <tr> <td>TYPE WATER</td> <td style="text-align: center;"><u>TWR</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>QUANTITY GPM</td> <td style="text-align: center;"><u>200</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>INLET TEMP *F</td> <td style="text-align: center;"><u>90</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OUTLET TEMP. *F</td> <td style="text-align: center;"><u>100 (115 MAX)</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PRESS DROP PSIG</td> <td style="text-align: center;"><u>10</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MAX. PRESS. PSIG</td> <td style="text-align: center;"><u>75</u></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTAL C.W. GPM</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		HP	LRC	FLC	(MAIN)(AUX) LUBE OIL PUMP	<u>30</u>	<u>213</u>	<u>35.4</u>	MAIN SEAL OIL PUMP				AUX. SEAL OIL PUMP	<u>20</u>	<u>139</u>	<u>23.4</u>		L.O. COOL	S.O. COOL	DIAPH. SYSTEM	DIAPH. COOLERS	TYPE WATER	<u>TWR</u>				QUANTITY GPM	<u>200</u>				INLET TEMP *F	<u>90</u>				OUTLET TEMP. *F	<u>100 (115 MAX)</u>				PRESS DROP PSIG	<u>10</u>				MAX. PRESS. PSIG	<u>75</u>				TOTAL C.W. GPM				
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Δ COMPR. & DRIVER L. <u>24'6"</u> W. <u>6'-1"</u> H. <u>7'-6"</u> LUBE OIL CONSOLE L. <u>30'</u> W. <u>12'</u> H. <u>6'</u> SEAL OIL CONSOLE-L. _____ W. _____ H. _____ Δ TOTAL WT. <u>78155</u> LBS. ERECT. WT. <u>78155</u> LBS. Δ MAINTENANCE WT. <u>15000</u> LBS. PARTIAL <u>Half</u> LUBE OIL CONSOLE WT. _____ LBS. SEAL OIL CONSOLE WT. _____ LBS.	SURGE CFM <u>5128</u> @ <u>687</u> PSIA <u>377</u> *F <u>17.23</u> MW FIELD BREAK IN ON ATMOSPHERIC AIR AT _____ RPM AND MAX. DISCH. TEMP. OF <u>250</u> *F. TURBINE TO BE SUITABLE FOR MAX STEAM CONDITIONS OF <u>600</u> PSIG & <u>750</u> *FTT																																																								
INSPECTION AND TESTS																																																									
<input checked="" type="checkbox"/> MFR. STD. MECH. RUN TEST FOR <input checked="" type="checkbox"/> COMPR. <input type="checkbox"/> GEARS <input type="checkbox"/> DRIVER TO TRIP SPEED <input type="checkbox"/> PERFORMANCE TEST <input type="checkbox"/> MODIFIED ASME POWER TEST <input type="checkbox"/> MANUFACTURER STANDARD <input type="checkbox"/> CLOSE LOOP WITH _____ (GAS) @ _____ PSIA SUCTION PRESSURE <input type="checkbox"/> AIR <input checked="" type="checkbox"/> STATIC SEAL OIL LEAKAGE TEST <input checked="" type="checkbox"/> AT <u>192</u> PSIG																																																									

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