



Unused Kellogg Ammonia Equipment Built for 1,500 TPD Kellogg Ammonia

Exchangers

100423 - 129C CS Shell/CS Tubes/CS Heads 256
PSI Shell/1,550 PSI Tubes/Built 1988

95061 - 108C 3,600 SqFt CS Shell/304SS Tubes/
304SS Heads 260 PSI Shell/93 PSI Tubes/ Built 1988



100423

Complete Compressor Trains: *Kellogg 101 and Kellogg 105*

95055 - 105J Ammonia Refrigeration 10,210 HP/7,250 RPM Mfg. Delaval Model 8CK44 14,010 ACFM
95056 - 105J Ammonia Refrigeration 3,075 HP/7,250 RPM Mfg. Delaval Model 7CL44 12,000 ACFM
95057 - 105JT Ammonia Refrigeration Steam Turbine 16,929 HP/7,300 RPM Mfg. Delaval Model HJ-DF-MV
100425 - 101J Air Compressor Mfg. Delaval Model 9CK37
100427 - 101J Air Compressor Mfg. Delaval Model 5CDK44 47,762 ACFM
100426 - 101JT Steam Turbine 16,929 HP/7,980 RPM Mfg. Delaval Model HJDF



100425, 100426, & 100427

For additional information please contact
Larry Medford
Louisiana Chemical Equipment Company, LLC
larrym@lcec.com www.LCEC.com
O (225) 923-3602 C (713) 553-8339

Exchangers

86539 - **136C** 1,365 SqFt CS Shell/CS Tubes/CS Heads 435 PSI Shell/1,040 PSI Tubes
99557 - **136C** 1,365 SqFt CS Shell/CS Tubes/CS Heads 435 PSI Shell/1,040 PSI Tubes Built 1976
58995 - **128C** 2,063 SqFt CS Shell/CS Tubes/CS Heads 150 PSI Shell/75 PSI Tubes Built 1991
58994 - **119C** 3,110 SqFt CS Shell/CS Tubes/CS Heads 150FV PSI Shell/2,250 PSI Tubes Built 1964
71698 - **114C** 4,430 SqFt CS Shell/CRMO Tubes 1,715 PSI Shell/425 PSI Tubes Built 1967
98867 - **114C** 4,430 SqFt CS Shell/CRMO Tubes/CS Heads 1,715 PSI Shell/425 PSI Tubes Built 1966
98866 - **118C** 5,135 SqFt CS Shell/CS Tubes/CS Heads 250 PSI Shell/2,350 PSI Tubes Built 1966
98880 - **106C** 5,705 SqFt 304SS Shell/430SS Tubes/CS & 304SS Heads 130 PSI Shell/440 PSI Tubes Built 1976
98865 - **106C** 5,728 SqFt 304SS Shell/430SS Tubes/304SS Heads 130 PSI Shell/440 PSI Tubes Built 1966
98859 - **103C** 6,027 SqFt CS Shell/CRMO Tubes/CRMO Heads 1,685 PSI Shell/500 PSI Tubes Built 1993
76168 - **105CB** 6,110 SqFt CS Shell/316 Tubes/304 Heads 440 PSI Shell/75 PSI Tubes Built 1976
98869 - **105CA** 6,110 SqFt CS Shell/316SS Tubes/304SS & 304SS Clad Heads 440 PSI Shell/75 PSI Tubes Built 1966
98868 - **123C** 6,230 SqFt CRMO Shell/CRMO Tubes/CRMO Heads 1,715 PSI Shell/2,184 PSI Tubes Built 1999
98860 - **103C** 6,400 SqFt CS Shell/CRMO Tubes/CRMO Heads 1,685 PSI Shell/485 PSI Tubes Built 1996
98863 - **104C** 7,425 SqFt CRMO Shell/CRMO Tubes/CRMO Heads 420 PSI Shell/485 PSI Tubes Built 1997

Vessels & Reactors

98871 - **106D** 5,800 Gallons 9'6" x 9'2" CS 425 PSI Built 1966
98870 - **106D** 8,000 Gallons 10'6" x 10'6" CS 430 PSI Built 1976

Compressors

89086 - **102J** Mfg. Clark Model 1M7 946 ACFM
99560 - **102JB** Low Pressure Feed Gas Mfg. Clark Model 55386 6,165 ACFM
98876 - **103JL** SynGas Mfg. Clark Model 2BC9-8 3,871 ACFM
98875 - **103JH** SynGas 3,052 HP Mfg. Clark Model 2BF9-8 1,539 ACFM
89076 - **103JH** SynGas 10,850 RPM Mfg. Clark Model 2BF9-8 1,134 ACFM
99562 - **103JAH** SynGas 11,000 RPM Mfg. Clark Model 2BF9-8 1,643 ACFM
99563 - **103JBLP** SynGas 11,000 RPM Mfg. Clark Model 2BC9 4,311 ACFM
98873 - **105JL** 2,208 HP/5,981 RPM Mfg. Delaval Model 4C 30/20 18,560 ACFM
76240 - **105J** Ammonia Refrigeration 6,700 RPM Mfg. Delaval Model 7CK45 15,994 ACFM
76241 - **105J** Ammonia Refrigeration, 6,700 RPM, Mfg by Delaval Model 4CK45 15,994 ACFM

Turbines

99561 - **102JT** Condensing 6,747 HP/10,121 RPM Mfg. Turbodyne
89078 - **105JT** Condensing 12,390 HP/6,625 RPM Mfg. Delaval Model KJDF

Spare Compressor Rotors

99559R - **102JA** High Pressure Feed Gas Mfg. Clark Model 2M7
99560R - **102JB** High Pressure Feed Gas Mfg. Clark Model 553-8+6
77856 - **103J** Mfg. Clark Model 2BF9-8
77857 - **103J** Mfg. Clark Model 2BC-9
76244B - **103J** CI Mfg. Clark Model 2BF9-8
76245B - **103J** CI Mfg. Clark Model 2BC-9
76245R - **103J** SynGas Mfg. Clark Model 2BC-9
98875R - **103JH** SynGas Mfg. Clark Model 2BF9-8
99562R - **103JL** SynGas Mfg. Clark Model 2BF9-8
76244R - **103J** SynGas 5,270 RPM Mfg. Clark Model 2BF9-8
76244R- **103J** SynGas 5,270 RPM Mfg. Clark Model 2BF9-8

Spare Turbine Rotors

77862 - Rotor Assembly Mfg. Elliott Model DYRPG

77864 - Rotor Assembly Mfg. Elliott Model SBPG-5

89823 - **101JT** Mfg. Delaval Model KJDF

89824 - **101JT** Mfg. Delaval Model KJDF

99561R - **102JT** Mfg. Turbodyne

98891 - **103JBT** Mfg. Delaval Model GJMV

Pumps

77871 - **107J** Mfg. Bingham Model MSB

76216 - **107JE** 10 x 8 x 13.5 SS Case/SS Impeller Mfg. Bingham Model HT-HSB

76209 - **104JA** 1,900 HP 8 x 6 CS Case/CS Impeller Mfg. Pacific Model BFIC

Gears

76243 - **105JG** 10,180 HP Helical Gear Mfg. Delaval Model HG-Spec

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Kellogg Ammonia Plant

Unused 1,500 TPD Air Compressor

100425 - 101J Air Compressor; Mfg by Delaval; Model 8CK37

100427 - 101J Air Compressor; Mfg by Delaval; Model 5CDK44; 47,762 ACFM

100426 - 101JT Steam Turbine; 16,929 HP; 980 RPM; Mfg by Delaval; Model HJDF



101-J Compressor Train

General Information

General Description – The equipment furnished and covered in this manual consists of a Transamerica Delaval turbine driven air compressor train. The train consists of a driving turbine, a first body compressor, a second body compressor, and three intercoolers. The turbine and compressors are mounted on a common fabricated bedplate. The compressor train is equipped with control and lube oil systems and with accessories necessary for the safe and efficient operation of the unit.

Design Data – The design data of the compressor train is shown below and on the Expected Performance Curve in Section 9.

Turbine (#100426)

Make.	Transamerica Delaval
Type.	HJ
Number of Stages.	8
Rated KW (BHP)	12620 (16929)
Rated Speed, RPM.	7980
Maximum Continuous Speed, RPM.	8379
Tripping Speed, RPM.	9049- 9217
Normal Inlet Pressure, PSIG (kg/cm ²)	565 (39.7)
Normal Inlet Temperature, °F (°C)	700 (371)
Maximum Inlet Pressure, PSIG (kg/cm ²).	635 (44.7)
Exhaust Pressure, in. HgA (kg/cm ²).	4 (0.137)
Maximum Exhaust Pressure, PSIG (kg/cm ² G)	15 (1.05)
Casing Sentinel Valve Setting, PSIG (kg/cm ²)	5 (0.35)
Steam Seal Relief Valve Setting, PSIG (kg/cm ²)	15 (1.05)
**Rotor Response Speed, RPM	4200

See **CAUTION on Page 2**

First Body Compressor (#100427)

Make.	Transamerica Delaval
Type.	5CDK44
Number of Stages.	5
Design Speed, RPM.	7,900
Rotation.	Clockwise
Gas Handled.	Air
Molecular Wt.	28.53
Relative Humidity, %.	50
Ratio of Specific Heats, Cp/Cv.	1.395
Flow, M ³ /Hr (CFM)	77,293
Rating, KW (BHP)	4,827 (6470)

Second Body Compressor (#100425)

Make.	Transamerica Delaval
Type.	9CK37
Number of Stages.	9
Speed, RPM.	7,910
Rotation.	Clockwise
Gas Handled.	Air
Molecular Wt.	28.77
Ratio of Specific Heats, Cp/Cv.	1.395
Flow, M ³ /Hr (CFM)	14,244 (8,383)
Rating, KW (BHP)	6,046 (8,105)

****CAUTION****

Care should be exercised when the turbine is operating in critical speeds. Shaft vibrations should be limited to the values specified as "Maximum safe continuous operating level". If this level is exceeded, speeds should be changed to values at least 10% removed from critical.

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