

**Transamerica  
Delaval**



Transamerica Delaval Inc.  
Turbine / Compressor Div.  
P. O. Box 8788  
Trenton, New Jersey 08650

INSTRUCTIONS  
TURBINE DRIVEN AMMONIA COMPRESSOR TRAIN

for

M. W. KELLOGG

P. O. 6239-02-J21-101

PETROLEOS MEXICANOS

Camargo

Chihuahua

Mexico

TRANSAMERICA DELAVAL SERIAL NOS.

Turbine	708224
First Body Compressor	605599
Second Body Compressor	605603
Oil System	605597

INSTRUCTIONS  
20, 306C  
DRO/CES

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GENERAL INFORMATION

GENERAL DESCRIPTION - The equipment furnished by Transamerica Delaval and covered in this manual consists of a turbine driven ammonia compressor train. The train consists of a driving turbine, a first body compressor and a second body compressor. Each compressor body contains two compressing sections. The turbine and the compressors are mounted on a common fabricated bedplate. The turbine driven compressor train is equipped with control and lube and seal oil systems and with the accessories necessary for the safe and efficient operation of the unit.

The Unit Outline drawing in the last section shows the general arrangement of the equipment, component weights, and the connections to be made to the unit.

DESIGN DATA - The design data of the compressor train is shown below and on the Expected Performance Curves in Section 9.

Turbine

Make .....	Transamerica Delaval
Type .....	HJ
Number of Stages .....	8
Rated KW (BHP) .....	12620 (16929)
Rated Speed, RPM.....	7300
Maximum Continuous Speed, RPM .....	7665
Tripping Speed, RPM .....	8278-8431
Normal Inlet Pressure, PSIG (kg/cm <sup>2</sup> ) .....	565 (39.7)
Normal Inlet Temperature, °F (°C) .....	700 (371)
Maximum Inlet Pressure, PSIG (kg/cm <sup>2</sup> ) .....	635 (44.7)
Exhaust Pressure, in. HgA (kg/cm <sup>2</sup> ) .....	4 (0.137)
Maximum Exhaust Pressure, PSIG (kg/cm <sup>2</sup> G) .....	15 (1.05)
Casing Sentinel Valve Setting, PSIG (kg/cm <sup>2</sup> ) .....	5 (0.35)
Steam Seal Relief Valve Setting, PSIG (kg/cm <sup>2</sup> ).....	15 (1.05)
*Rotor Response Speed, RPM.....	4200

First Body Compressor

Make .....	Transamerica Delaval
Type .....	7CL44
Number of Stages .....	7
Design Speed, RPM .....	7250
Rotation .....	Clockwise
Gas Handled .....	Ammonia
Molecular Wt. ....	17.0
Ratio of Specific Heats, Cp/Cv .....	1.305
Flow, First Compressing Section, M <sup>3</sup> /Hr (CFM) .....	20,560 (12,100)
Flow, Second Compressing Section, M <sup>3</sup> /Hr (CFM) .....	24,146 (14,210)
Rating, KW (BHP) .....	2294 (3,075)

\*See CAUTION on Page GI-2

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GENERAL INFORMATION
Second Body Compressor

Make .....	Transamerica Delaval
Type .....	8CK44
Number of Stages .....	8
Speed, RPM .....	7250
Rotation .....	Clockwise
Gas Handled .....	Ammonia
Molecular Wt. ....	17.0
Ratio of Specific Heats, $C_p/C_v$ .....	1.305
Flow, First Compressing Section, $M^3/hr$ (CFM) .....	23,805 (14,010)
Flow, Second Compressing Section, $M^3/Hr$ (CFM) .....	16,193 (9,530)
Rating, KW (BHP) .....	7,617 (10,210)

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 COPERATING LEVEL" (See Operation Section, Page VL-3). IF THIS LEVEL IS EXCEEDED, SPEEDS SHOULD BE CHANGED TO VALUES AT LEAST 10% REMOVED FROM CRITICALS.

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