

GENERAL INFORMATION

101J
compressor
train

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.

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 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

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, C _p /C _v	1.395
Flow, M ³ /Hr (CFM)	77,293
Rating, KW (BHP)	4,827 (6470)

*See CAUTION on Page GI-2

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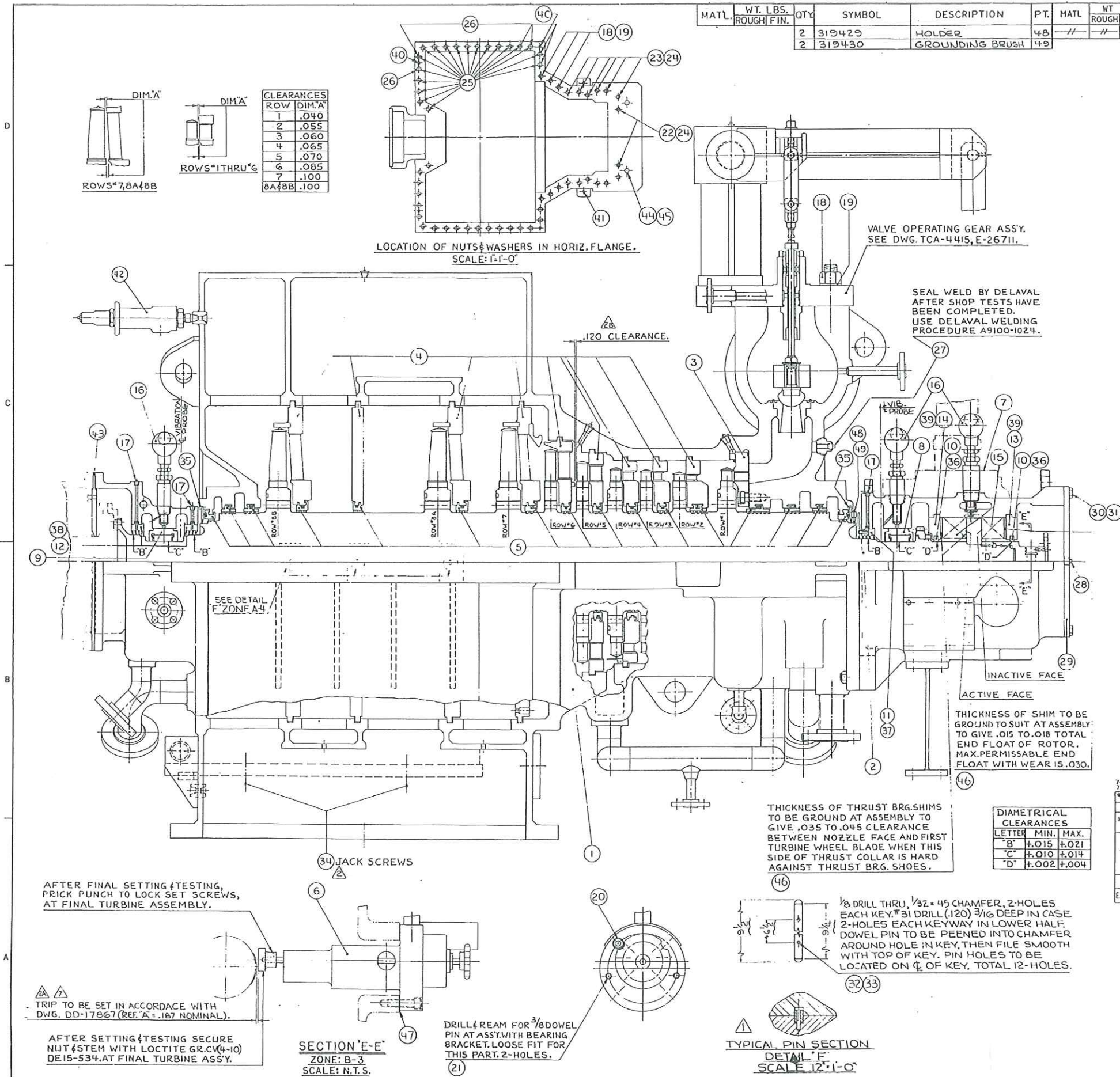
Second Body Compressor #100425

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

CHIC 8/82



MATL.	WT. LBS. ROUGH	WT. LBS. FIN.	QTY	SYMBOL	DESCRIPTION	PT.	MATL.	WT. LBS. ROUGH	WT. LBS. FIN.	QTY	SYMBOL	DESCRIPTION	PT.
			2	319429	HOLDER	48				1	HJ-4200	HJ-TURBINE ASSEMBLY	PT
			2	319430	GROUNDING BRUSH	49				1	HJ-4260	STEAM CHEST BRKT. ASSY.	1
			1	HJ-2080AS	ROTOR ASSEMBLY	2				1	HJ-4223	NOZZLE RING ASSEMBLY	3
			1	HJ-4253	DIAPHRAGM ASSEMBLY	4				1	HJ-4241	SEAL LABYRINTH ASSEMBLY	5
			1	HJ-4248	HYDRAULIC TRIP ASSEMBLY	6				1	HJ-4280	GOVERNOR DRIVE ASSEMBLY	7
			1	HJ-4270	TILTING PAD BEARING ASSY.	8				1	HJ-4270A	TILTING PAD BEARING ASSY.	9
			2	HJ-4288	OIL GUARD ASSEMBLY	10				1	HJ-4288A	OIL GUARD ASSEMBLY	11
			2	HJ-4288B	OIL GUARD ASSEMBLY	12				1	HJ-4275A	RING RETAINING ASSEMBLY	13
			1	HJ-4275A	RING RETAINING ASSEMBLY	14				1	PM-1184A	THRUST BEARING ASSEMBLY	15
			1	HJ-4210	INSTRUMENTATION ASSEMBLY	16				3	O12086	PIPE PLUG SQ. HD. 1/8-27N.P.T.	17
			24	O01041	NUT SFASH 1.50-8	18				24	GP-586G	WASHER	19
			24	GP-586G	WASHER	19				4	O03050	SCREW CAP 60.50-13x1.50	20
			2	O10213	PIN STRAIGHT .375 DIA. x1.00	21				2	PD-402CF	NUT CAP	22
			12	O01042	NUT SFASH 1.75-8	23				12	O01042	NUT SFASH 1.75-8	23
			14	GP-586H	WASHER	24				50	O01092	NUT FAS 1.00-8	25
			12	O04634	STUD CONT. THD. 1.00-8x6.25	26				5	O12113	PLUG ROUND HD. .50	27
			1	O12090	PLUG SOL. SQ. HD. .75	28				1	HJ-549CN	COVER	28
			12	O05049	BOLT HEX FAS .50-13x1.25	30				6	O14234	KEY 1/4x3/8x9/16 LG	32
			31	320052	PKG. SHT. 18.50 SQ. X.010	31				12	O10172	PIN STRAIGHT 1/8 DIA. x 3/16 LG	33
			4	O03139	SCR SET SQ. HD. F. DOG 1.25-7400	34				4	O03139	SCR SET SQ. HD. F. DOG 1.25-7400	34
			4	O03181	SCR SET CUP PT. .25-20x.25	35				2	310021	PIN SPG. SLOT .25 x .50	36
			1	O10193	PIN STRAIGHT .25D x .62	37				1	O10193	PIN STRAIGHT .25D x .62	37
			2	O03187	SCR SET SQ. HD. F. DOG 1.00-8x4.50	41				2	O10211	PIN STRAIGHT .38D x .75	39
			4	O03126	SCR SET SQ. HD. F. DOG .75-10x3.00	40				2	O03135	SCR SET SQ. HD. F. DOG 1.00-8x4.50	41
			1	311332	RELIEF VALVE LOWER LET-20, 5SETS	42				1	311332	RELIEF VALVE LOWER LET-20, 5SETS	42
			1	KJ-588DJ	GUARD	43				2	GP-586F	WASHER	44
			2	O0104C	NUT SFASH 1.25-8	45				2	O0104C	NUT SFASH 1.25-8	45
			2	KJ-298BT	SHIM	46				1	320052	PKG. SHT. 5.50 DIA. x .010	47
			1	320052	PKG. SHT. 5.50 DIA. x .010	47							

NOTES:

- DESIGNED TOTAL DIAMETRICAL AND AXIAL CLEARANCES ARE INDICATED IN TABLE EXCEPT INTERSTAGE AND GLAND SEAL LABYRINTHS. THEY ARE SHOWN ON DELAVAL DWG. HJ-4241. + INDICATES CLEARANCE.
- TOTAL DESIGNED END PLAY IS .160 (COLD).
- FOR LIFTING ARRANGEMENT OF TURBINE UPPER HALF AND ROTOR ASSEMBLY SEE DRAWINGS LISTED.

ORDER NO.	DWG.
70707B-79	HJ-4295
70708A-85	HJ-4295A
708219-20	HJ-4295H
708223-24	HJ-4295J

BY	DATE	PT.	DESCRIPTION	DATE	BY	CHK	WHY
B/M	8	PT. #48 & 49 ADDED	3-2-82	KEE	J	F-180	
A-B	7	NOTE REVISED	11-18-84	JCP		F-413	
B/M	6A	QTY. PT. #42 WAS 2	1-10-77	WES	JLD	G	
B/M	6	ADDED PTS. #44 THRU #47	1-10-77	WES	JLD	G	
#115	A-B	TRIP SETTING WAS .120	7-25-75	WES	JLD	R	
B/M	4	PT. #44 ADDED	7-25-75	WES	JLD	R	
#496	B/M	PT. #10 QUANTITY WAS 1	5-2-75	B.K.	DSJ	R	
B/M	3	PTS. #36 THRU #41 ADDED	5-2-75	B.K.	DSJ	R	
B/M	2C	PT. 35 ADDED	4-8-75	WES	DSJ	R	
C-5	2B	.120 CLEARANCE ADDED	4-8-75	B.K.	DSJ	T	
A-B	2A	TRIP SETTING ADDED	4-8-75	B.K.	DSJ	T	
B/M	2	PT. #34 ADDED	4-8-75	B.K.	DSJ	J	
B/M	A-4	ADDED DTL. 'F' & PT. NOS 32 & 33	1/3/75	F.A.S.	JLD	J	
E.C.A. NO.	ZONE	CHG	ALTERATION	DATE	BY	CHK	WHY

CERTIFIED FOR CONSTRUCTION

SEE DE3 E6116.2 FOR TOL'S ETC NOT SPECIFIED

FEDERAL CODE IDENT NO. 16712

TRENTON, N.J. 08602

DEL AVAL

TITLE: HJ-TURBINE ASSEMBLY

SCALE: 3"=1'-0" AS NOTED. 1ST ORDER 70707B-9

DRAWN: B.K. 11-4-74 SHEET NO. 1 OF 1

CHECKED: [Signature] 11-15-74 SYMBOL

ISSUED: [Signature] 11-15-74 HJ-4200

106 E-26717