



SERIES 8175 ENGINEERING DATA

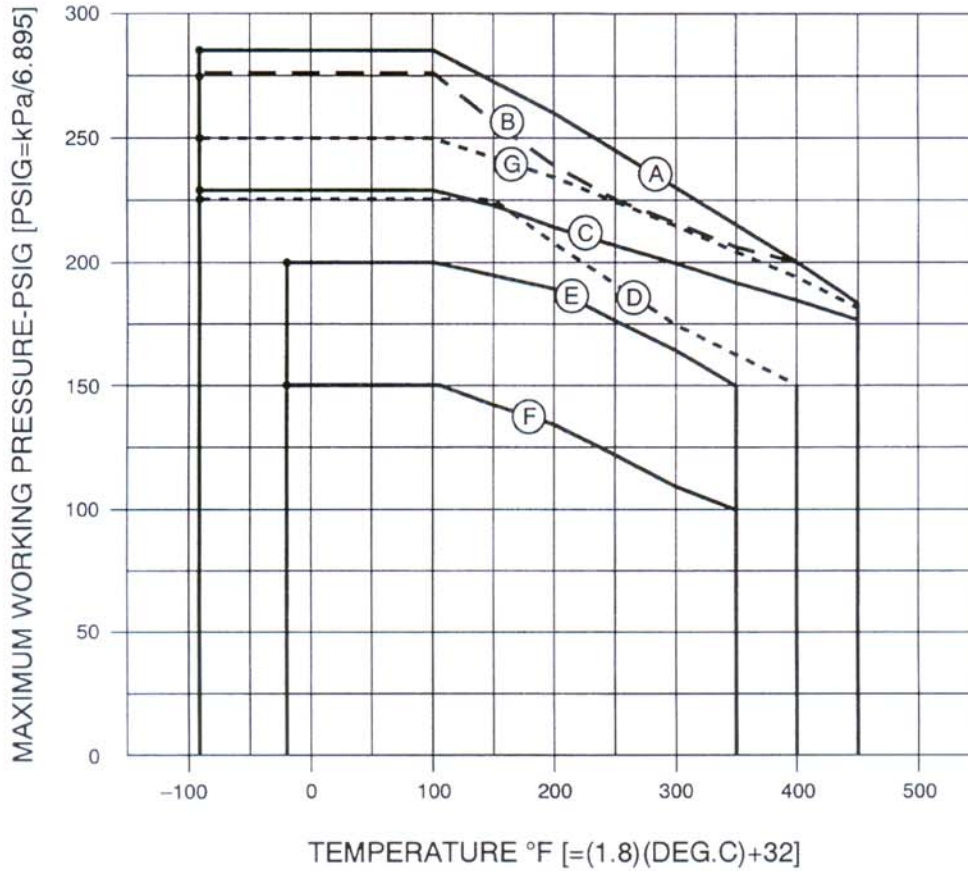
		GROUP S										GROUP M										GROUP L ***									
		36 - 14	46 - 14	46 - 18	68 - 14	68 - 18	68 - 22	810 - 14	810 - 18	810 - 18H	810 - 22	10x12 - 18	10x12 - 22	12x14 - 18	12x14 - 22	14x14 - 18H	14x14 - 22H	16x18 - 22	18x18 - 22	18x18 - 22H	20x24 - 22H										
General	Net-wt- Bare Pump (KG)	850 (386)	925 (420)	1050 (476)	1100 (499)	1525 (692)	1700 (771)	1400 (635)	1600 (726)	1725 (782)	1800 (816)	1900 (862)	2000 (907)	2350 (1066)	2125 (964)	2800 (1270)	3000 (1361)	4500 (2040)	4300 (1950)												
	Min. Casing Thickness-Iron	9/16 (14)	19/32 (17)	21/32 (17)	17/32 (18)	21/32 (18)	11/16 (21)	3/4 (19)	13/16 (21)	7/8 (22)	11/16 (22)	7/8 (22)	13/16 (24)	31/32 (25)	31/32 (25)	11/16 (27)	11/16 (29)	11/16 (32)	11/16 (32)	11/16 (32)	11/16 (32)	11/16 (32)									
	Min. Casing Thickness-Steel*	1/2 (13)	17/32 (13)	17/32 (13)	17/32 (13)	17/32 (13)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)	17/32 (14)									
	Max. Diameter Solids Stock Impeller	1 1/8 (30)	2 (51)	1 7/8 (71)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)	2 1/8 (52)									
	Max. Diameter Solids Process Impeller	1 3/8 (21)	1 7/8 (22)	2 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)	2 1/8 (24)									
Pressure	Max. Working Pressure PSIG (kPa)	Refer to Pressure-Temperature Chart																													
	Max. Test Pressure PSIG (kPa)	1.5 x Working Pressure																													
Temperature Limits	Max. Liquid Temperature-Oil Lube w/o Cooling	250°F (121°C)																													
	Max. Liquid Temperature-Oil Lube w/frame Cooling	350°F (177°C) CI 450°F (232°C) Steel										250°F (121°C)																			
	Max. Liquid Temperature-Grease Lube	250°F (121°C)																													
Power Limits	H.P. (KW) per 100 rpm C.I., 316SS, 317SS, CD4	17.4 (13.0)																													
	At Impeller	1 7/8 (48)																													
Shaft Diameter	Under Shaft Sleeve	2 1/2 (64)																													
	At Coupling	1 7/8 (48)																													
Between Bearings	3/8 (79)	3 (76)																													
	Thru Stuffing Box	3 3/4 (95)																													
Bearings	Coupling End	MRC 7313 D.B. or Equal																													
	Inboard (Pump End)	MRC 317 M or Equal																													
	Bearing Span	12 1/4 (311)										11 1/16 (297)																			
Stuffing Box	Shaft Overhang	1 1/8 (279)										1 1/8 (294)																			
	Bore	4 (102)										4 3/4 (121)																			
	Depth-to Stuffing Box Bushing	3 1/16 (94)																													
	Packing Size	1/2 x 1/2 (13 x 13)																													
	Number of Packing Rings	5																													
Width of Lantern Rings	Distance from end of Stuffing Box to nearest obstruction	1 (25)										1 (25)																			
		3 1/8 (79)																													

*Includes 1/8" (3.2mm) corrosion allowance.
**Note 7V impeller is limited to 1 1/8" solids.
***Note stock impellers are 4V process impellers for L group.



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150 LB. FLANGES PRESSURE / TEMPERATURE RATINGS

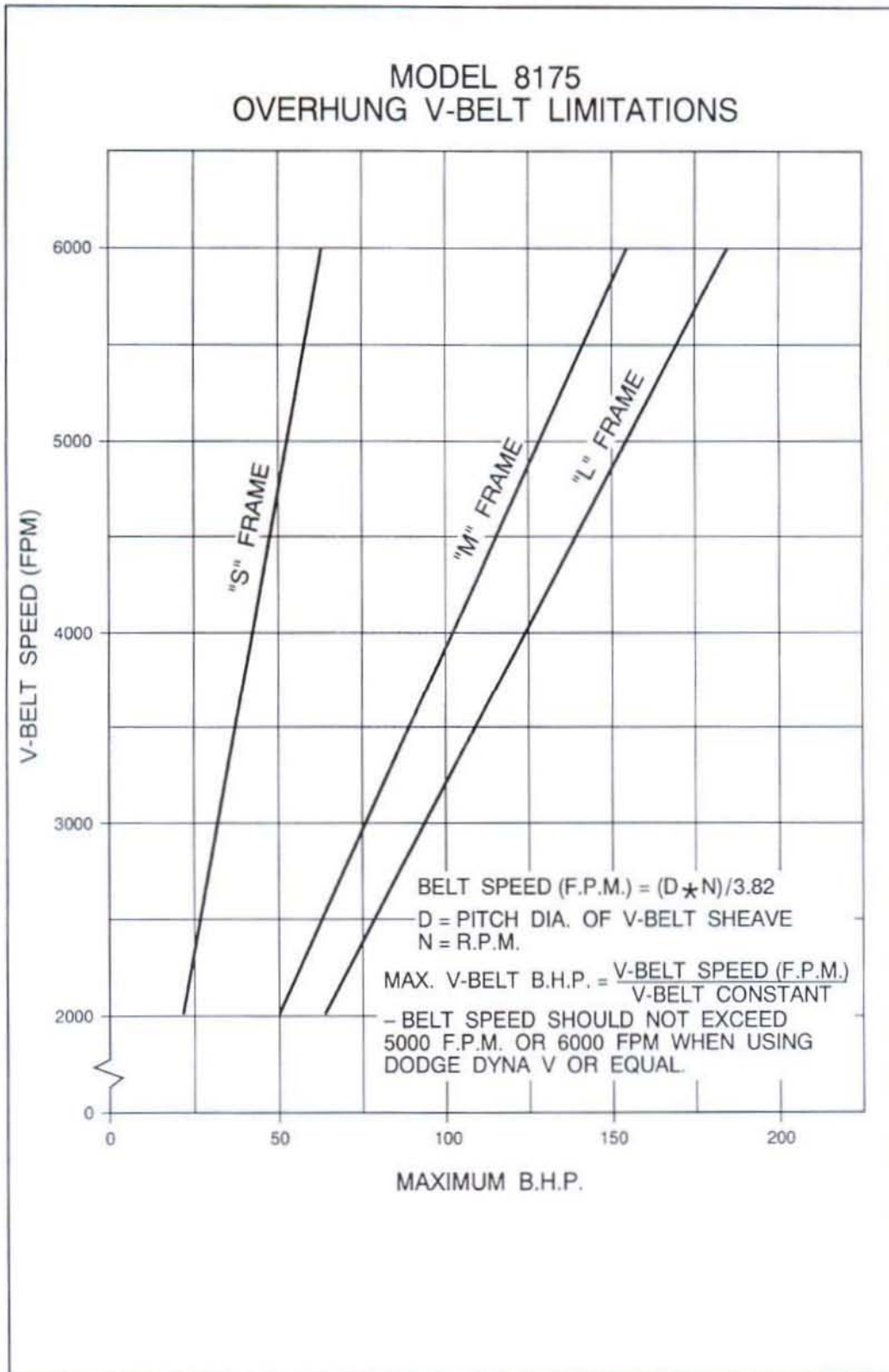


CURVE	MATERIAL	CURVE	MATERIAL
A	CAST STEEL	C	ALLOY 20
A	HAST. B	D	BRONZE
A	HAST. C	E	C.I. thru 12" Dia.
B	CD4MCu	F	C.I. 14" - 24" Dia.
B	316 S.S.	G	DUCT. IRON
B	317 S.S.		

MAXIMUM SUCTION PRESSURE 160 PSIG
 (EXCEPT C.I. & BRZ. MAX. 100 PSIG)



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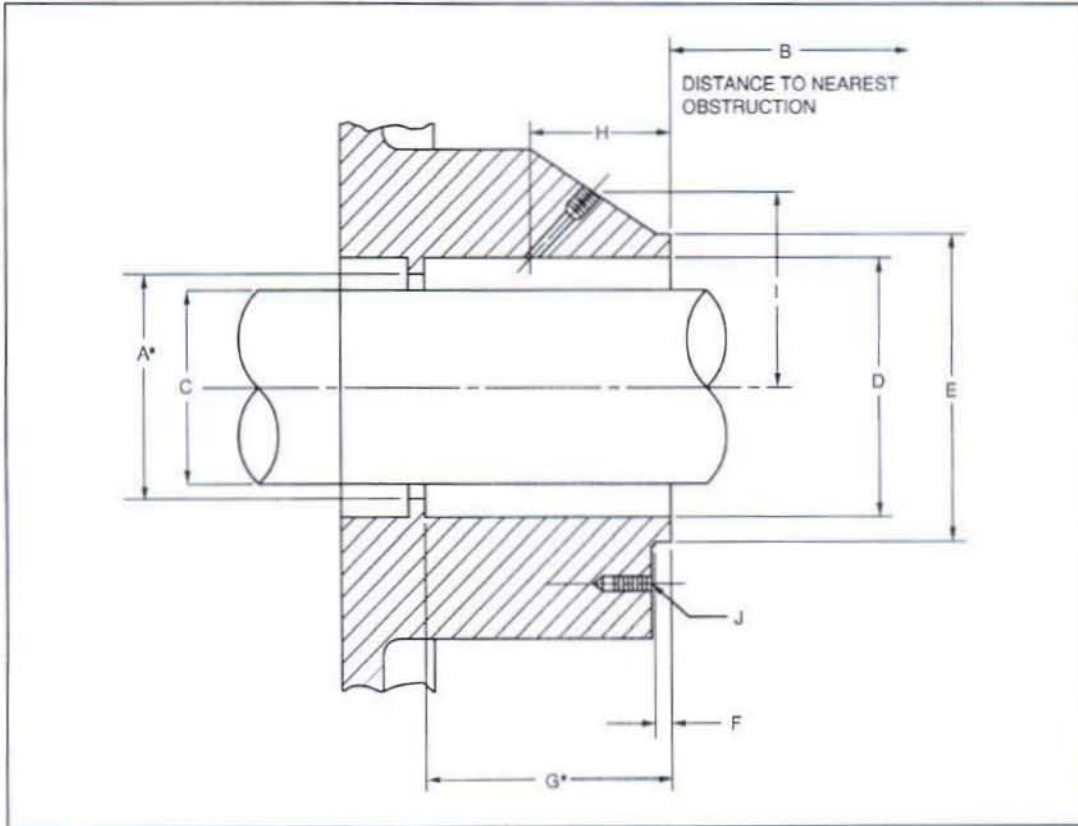


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Standard Bore Box Cover Dimensions



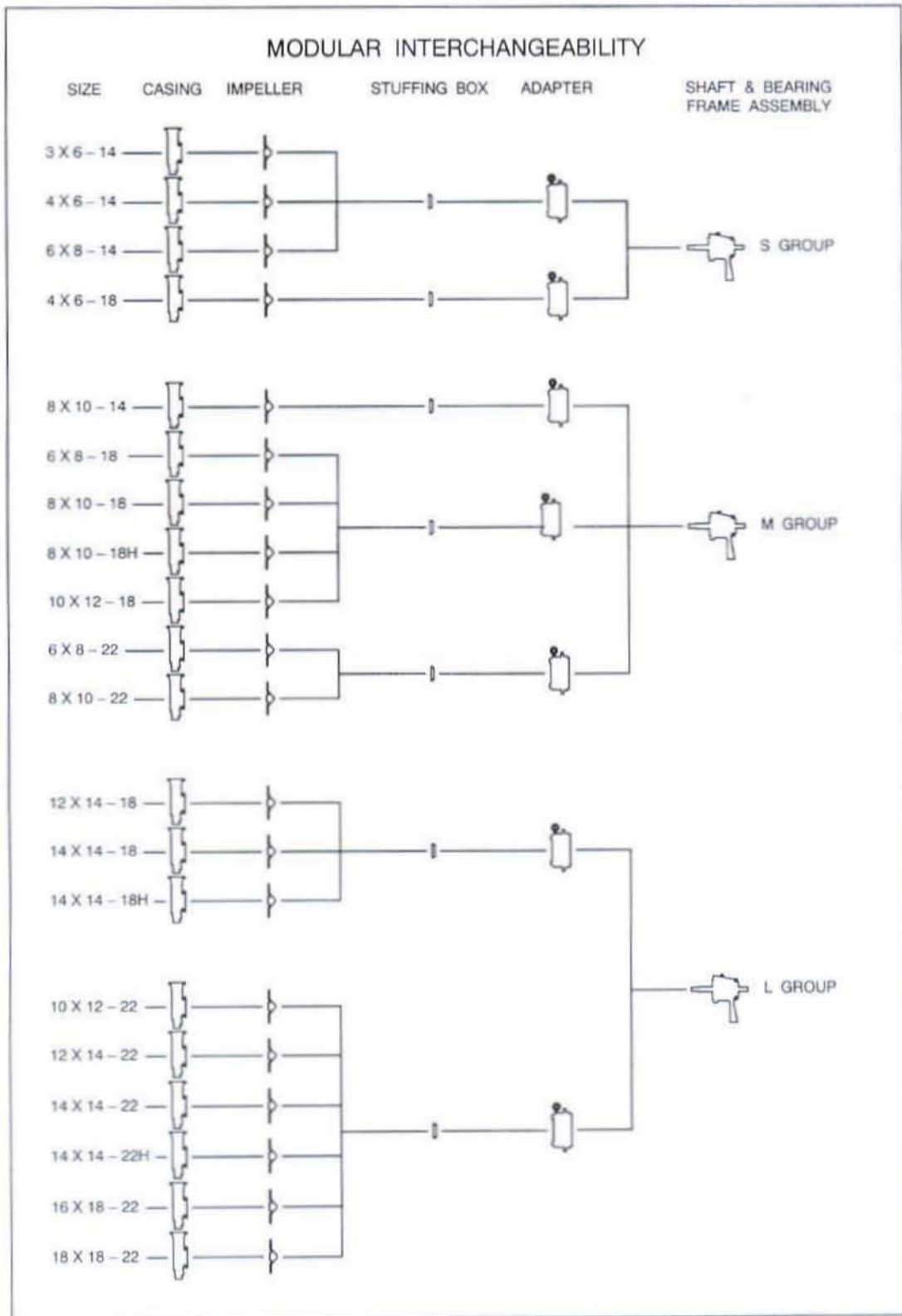
PUMP SIZE	BOX COVER										J		BOX CVR NPT	GLD NPT	
	A*	B	C	D	E	F	G*	H	I	STUDS		BOLT HOLE CIR.			
										SIZE	NO.				
8175 S	14	3.502	3.13	3.000	4.003	4.748	.250	3.938	2.25	3.00	5/8-11	4	6.250	.50	.50
	18	3.500		2.998	3.999	4.745									
8175 M	14	4.252	3.13	3.750	4.753	5.498	.250	3.938	2.25	3.75	5/8-11	4	7.000	.50	.50
	18	4.250		3.748	4.749	5.495									
8175 L	18	5.252	3.25	4.750	5.753	6.498	.250	3.938	2.25	3.88	5/8-11	4	8.000	.50	.50
	22	5.250		4.748	5.749	6.495									

*BOX WITHOUT BOTTOM BUSHING

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ENGINEERING DATA



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Parts List

ITEM #	GOULD'S ITEM #	QTY	DESCRIPTION	MATERIAL			
				C.I. W/316SS TRIM	ALL 316SS	ALL 317SS	ALL CD4MCu
1	100	1	Casing	C.I.	316SS	317SS	CD4MCu
1A	370A	8-24	H.H.M. Bolt - Adapter to Casing	Steel			
1C	358A	1	Pipe Plug - Casing Drain	316SS	316SS	317SS	CD4MCu
2	101	1	Impeller	316SS		317SS	CD4MCu
6	122	1	Shaft	AISI 4140		316SS	4140
11	184	1	Stuffing Box Cover	C.I.	316SS	317SS	CD4MCu
11C	370H	2	H.H.M. Bolt - Adapter to S.B. Cover	Steel			
13	106	1 set	Stuffing Box Packing	Non-Asbestos			
13A	210	1	Gland Packing	Non-Asbestos			
14	126	1	Shaft Sleeve (Packed box only)	316SS Hard Metal Coated		317SS	316SSHMC
16	168	1	Ball Bearing Inboard	Steel			
17A	107	2 halves	Stuffing Box Gland	316SS	316SS	317SS	316SS
17B	353	1	Gland Stud	AISI 303			
17C	355	1	Gland Stud Nut	AISI 304			
18	112	1	Ball Bearing Coupling End	Steel			
19	249	1	Bearing Frame	C.I.			
19A	241	1	Frame Pedestal	C.I. - 1A			
19E	370F	2	H.H.M. Bolt with Lockwasher - Ped. to Frame	Steel			
19H	113A	1	Breather	Steel			
22	136	1	Bearing Locknut	Steel			
26	198	1	Impeller Screw	316SS		317SS	316SS
29	105	1	Lantern Ring	Glass Filled Teflon			
32	178	1	Impeller Key	AISI 303			
33	111	1	Bearing Housing	C.I. - 1A			
33A	370C	4	H.H. Tap Bolt - Bearing Housing to Frame	Steel			
33B	370D	4	H.H. Tap Bolt with Jam Nut - Impeller Adjustment	Steel			
35	160	1	Bearing End Cover - Inboard	C.I. - 1A			
37	119	1	Bearing End Cover - Coupling End	C.I. - 1A			
37A	370J	6	H.H.M. Bolt - Brg. End Cov. to Hsg. - Coupling End	Steel			
37B	370K	6	H.H.M. Bolt - Brg. End Cov. to Frame - Inboard	Steel			
40	123	1	Deflector	C.I. - 1A			
61	176	1	Suction Sideplate	C.I.	316SS	317SS	CD4MCu
61A	370E	3-4	H.H. Tap Bolt - Sideplate Removal	Steel			
61B	356	4	Stud - Suction Sideplate to Casing	AISI 303			
61C	357A	4	Hex Nut - Sideplate Stud	AISI 304			
63	125	1	Stuffing Box Throat Bushing	316SS	316SS	317SS	CD4MCu
71	108	1	Frame Adapter	C.I. - 1A			
71A	370B	4	H.H.M. Bolt - Adapter to Frame	Steel			
73	412C	1	*O*Ring - Suction Sideplate	Buna-N			
73A	360C	1	Gasket - Sideplate to Casing	Non-Asbestos			
73B	412A	1	*O*Ring - Shaft Sleeve	Teflon			
73C	412B	1	*O*Ring - Impeller Screw	Teflon			
73D	360E	1	Gasket - Stuffing Box Cover to Casing	Non-Asbestos			
73E	360A	1	Gasket - Bearing End Cover - Coupling End	.006 Vellumoid			
73F	412	1	*O*Ring - Bearing Housing	Buna-N			
73G	360	1	Gasket - Bearing End Cover - Inboard	.006 Vellumoid			
77	251	1	Bottle Oiler Constant Level - Not Illustrated	Glass and White Metal			
80	383	1	Mechanical Seal - Optional	Varies			
89A	333A	1	Oil Seal Inboard	Neoprene			
89B	332A	1	Oil Seal - Coupling End	Neoprene			

MATERIALS OF CONSTRUCTION

MATERIAL	CODE	SPECIFICATION
CAST IRON	040	ASTM A48 CLASS 30
CAST IRON - 1A	056	ASTM A48 CLASS 25
STEEL	075	4140 STEEL ASTM A331 - 64
316 STAINLESS STEEL	086	CAST, ASTM A743 GRADE CF - 8M
317 STAINLESS STEEL	653	CAST, ASTM A743 GRADE CG - 8M
CD4MCu	507	IRON, CHROME, NICKEL ALLOY ASTM A743 GRADE CD4MCu

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Sectional View

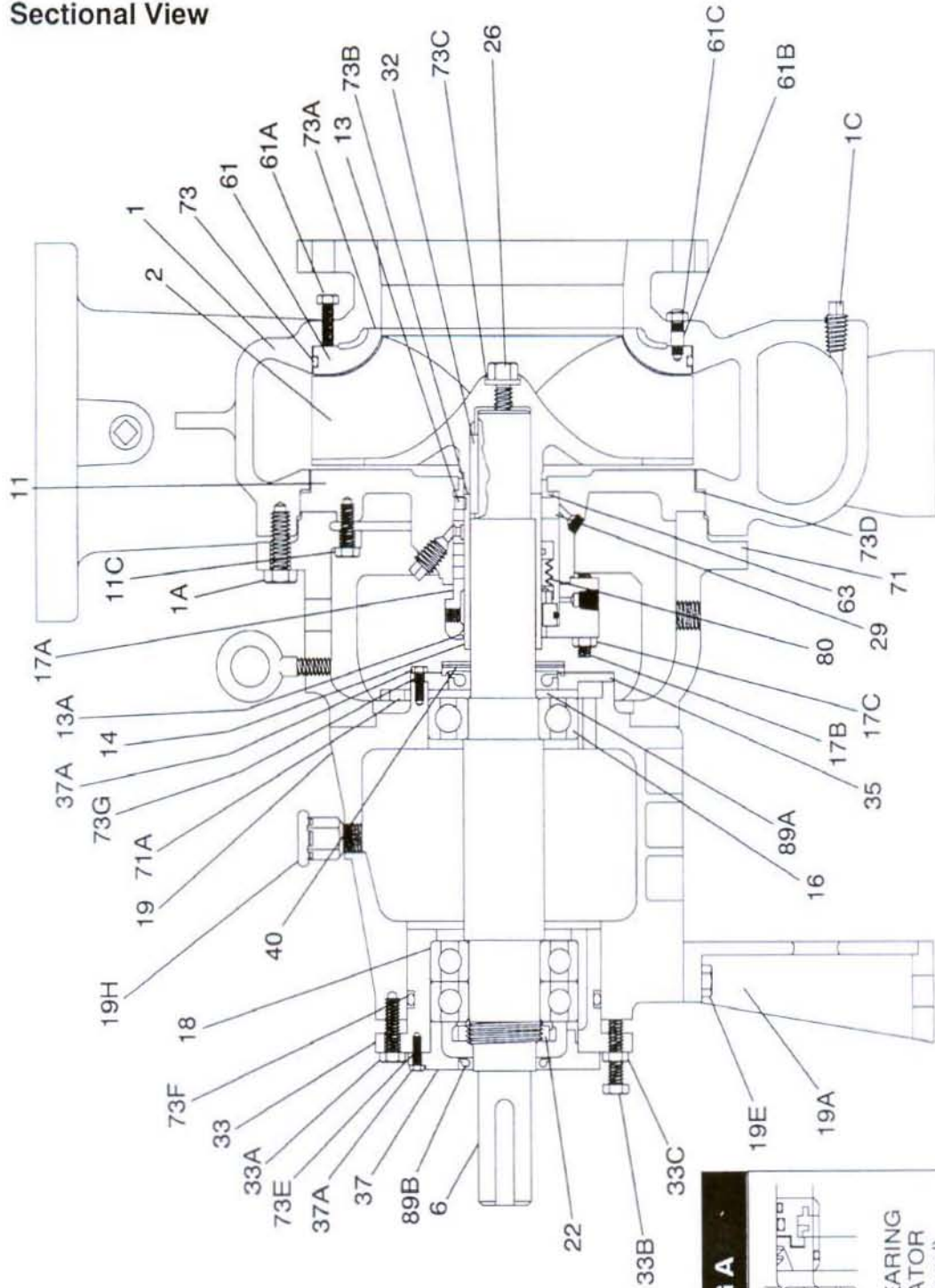


FIG A

VBX BEARING ISOLATOR (Optional)

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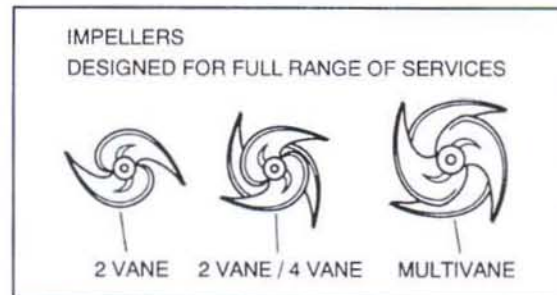
Application Considerations: Model 8175 Impellers

The Model 8175 has three impeller designs available to meet the various requirements of the Process Industries. These are the 2 vane, 2 vane/4 vane, and multivane process types.

The 2 vane impeller has a Lawaszeck inlet designed to pick up paper stock and convey it into the impeller without dewatering the stock or plugging at the impeller eye. The 2 vane impeller handles stock consistencies up to 6%, occasionally higher. The 2 vane impeller generally does not run as smoothly as the 2 vane/4 vane and multiple vane impellers described below. Field problems involving pulsating flow in the discharge piping have been encountered, especially at 1780 RPM operation. The pulsations are a result of an interaction between pump and system. Pump vibration levels are not a problem, however, piping vibration with the commonly used lightweight stainless piping may be unacceptable. Except for infrequent cases where the 2 vane impeller may provide an unusually good hydraulic fit or where it must be used for high consistency stock, the use of the 2 vane impeller is not encouraged.

The 2 vane/4 vane impeller uses the same 2 vane Lawaszeck inlet design to assure good stock handling to consistencies of 6%. There are two partial vanes added near the impeller periphery. The partial vanes increase the number of vanes at the periphery to four, resulting in higher head generation and smoother operation. The 2 vane/4 vane impeller is suitable for use on most stock consistencies ranging to 6%.

Multivane impellers now available on all sizes of the Model 3175 have a minimum of four full vanes. Generally they are more efficient and require less NPSH than the 2 vane or 2 vane/4 vane impeller. When reduced flow operation is encountered, the multivane impeller for a given size pump would be the preferred selection. Process impellers are considered more applicable when handling clear liquids, white water, or slurries with other than fibrous content.



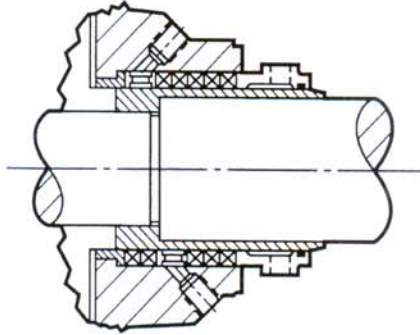
General capability limitations of multivane impellers when handling paper stock are as follows:

3" and 4" discharge pumps	4% consistency max.
6" and 8" discharge pumps	4 1/2% consistency max.
10" discharge and larger	6% consistency max.

While these limits are general guidelines, specific service details or mill experience may dictate the need for different limits.

ENGINEERING DATA

Model 8175 Packed Box and Mechanical Seals

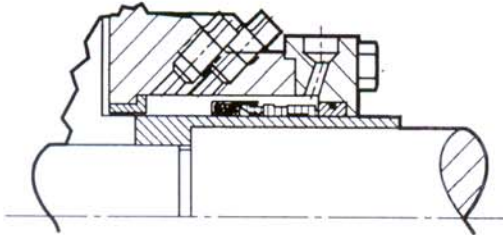


PACKING: The stuffing box is designed to accommodate 5 rings of packing 1/2" square. The stuffing box includes a separate throat bushing and a lantern ring. The lantern ring can be positioned at the throat of the stuffing box for slurry handling, or at the center of the stuffing box for handling liquids of low NPSH or vacuum conditions. The 8175 is drilled and tapped with in and out connections at both lantern ring positions.

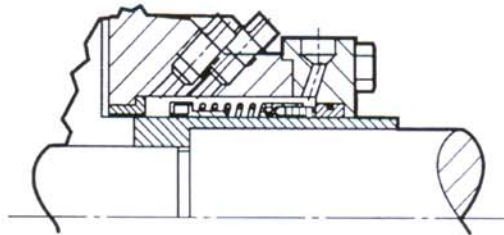
A split cowl type quench gland is standard. The hook type shaft sleeve extends through the stuffing box and gland assembly.

Unbalanced Inside Seals with Elastomer Shaft Seal

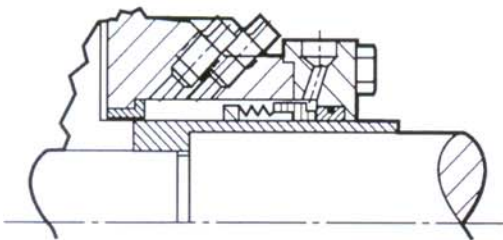
Crane Type 8



Crane Type 1



Durametallic Type RO



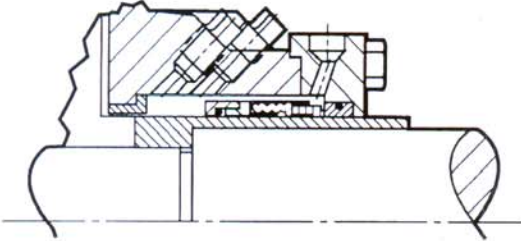
Single unbalanced seals with Elastomer shaft seal are applied in the general pressure ranges to 275 PSI (see PV chart). Temperature range from -40° to +250° F. (to 400° F. with special elastomers such as Viton A.



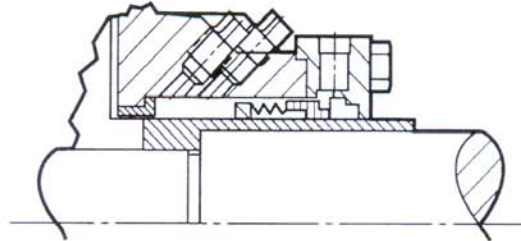
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Unbalanced Inside Seal With Teflon Shaft Seal

Crane Type 9



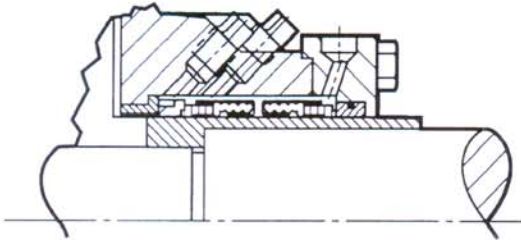
Dura RO-TT



Single unbalanced seals with Teflon (fluorocarbon) shaft seal are applied in the general pressure ranges to 275 PSI. Temperature range from -80° F. to 500° F. Stuffing box cooling recommended above 300° F.

Double, unbalanced seals (below) are applied on slurries, heavy solid suspensions, or volatile and/or toxic liquids where safety precautions are required.

The double seal requires an independent source of circulating liquid (oil, water, etc.) for seal face lubrication and cooling. The circulating liquid should be introduced into the stuffing box at 20# over the product pressure on the inboard seal face to keep the product out of the seal chamber. (Temperature limitation on circulating liquid 300° F., pressure 200# on outboard seal face.)



MAXIMUM OPERATING PRESSURE												
GROUP	CRANE TYPES 1, 9, & 8-1						DURA TYPES RO & RO-TT					
	S		M		L		S		M		L	
RPM	1750	1150	1750	1150	1180	880	1750	1150	1750	1150	1180	880
Acid & Hydrocarbon Ceramic & Ni-Resist	225	275	165	250	225	275	140	210	120	180	140	188
Stellite	225	275	165	250	225	275	113	170	85	130	67	90
Tungsten Carbide	275	275	225	275	275	275	260	275	245	275	275	275
Water Solutions Ceramic & Ni-Resist	175	265	130	—	175	225	120	180	95	145	77	104
Tungsten Carbide	225	275	175	265	225	275	265	275	245	245	275	275

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