

DOUBLE SUCTION

SINGLE STAGE PUMPS

CLASSES HSS-HSM-HSL-HSO



**FOR LONG LIFE,
QUIET OPERATION
AND HIGH EFFICIENCY**

DOUBLE SUCTION SINGLE STAGE PUMPS

More than 30 sizes efficiently cover capacities ranging to 20,000 gallons per minute.

Rugged mechanical design and construction provides for less than .002" shaft deflection. This cuts the frequency of stuffing box maintenance. A minimum average bearing life of 150,000 hrs. means fewer shut downs.

Horizontally split casings simplify inspection and maintenance of rotating parts; the piping does not have to be disturbed. Greater interchangeability has been provided by shaft groupings to reduce inventory requirements.



Shaft and Stuff Assembly

"In-Use" operating reports stress long life, quiet operation, high efficiency and freedom from frequent shut downs. This is assured by engineering and design experience utilizing the best obtainable materials and construction skills.

Horizontally split casing provides easy access





DOUBLE SUCTION SINGLE STAGE PUMPS / SPECIFICATIONS

CASING—Horizontally split, volute type, flanges in bottom half, designed for optimum velocity change and hydraulic balance at any capacity and head. Top and bottom halves bolted and dowelled to provide exact positioning at assembly, after inspection or replacement of parts. Top of volute and suction chambers provided with tapped vent connections. Standard construction provides 150 psi working pressure and 225 psi hydrostatic pressure with temperature range from 0° to 250° F. Modification of construction allows working pressures to 250 psi.

IMPELLER — Double suction, enclosed, one-piece type, hydraulically balanced and secured to shaft by feather key and locking collars for exact alignment.

CASING RINGS — Replaceable radial type held by pins to prevent rotation.

SHAFT — Stainless, type 303, ground and polished to provide precision fit of all parts and sized to provide less than .002" deflection at face of the stuffing box. Shaft sleeves are furnished as an optional feature. Above D-6 Group: Steel Shaft with bronze sleeve.

BEARINGS — Grease lubricated, deep groove type, shielded one side to minimize contamination.

INTERCHANGEABILITY

GROUP	D-1	D-3	D-4	D-5	D-6	16-1	16-2	16-3	18-1	20-1
25 HSM	3 HSO	4 HBL	5 HBL	6 HBL	8L HSM	16 HSB	16 HBL	18 HSB	20 HSB	20 HSB
2L HSM	4 HSS	5 HSS	6 HSL	8 HSL	12 HSL	16 HSB	20 HSB	20 HSM	20 HSM	20 HSM
2 HSO	4 HSM	5 HSM	10 HSM	10 HSM	16 HSM		20 HSM			
3 HSM	6 HSB	6 HSM	8M HSM	10 HSL						
	8 HSB	10 HSB	12 HSM							
		12 HSB								

*All D.P. items are 150 S.F.F.

PARTS COMMON TO EACH GROUP: Shaft Bearings, Thrust Collars or Nuts, Glands, Bearing Brackets, Seal Cages, Deflectors and Packing.

tion and over-greasing, are designed for 150,000 hours average life. Bearings adequately carry axial and radial thrust loads. The thrust bearing is fixed by snap rings and the radial bearing floats.

BEARING BRACKETS — Bolted and dowelled to bottom half of casing to insure perfect alignment of the rotor, bearing rings and bearings. The drip pocket of the brackets is provided with adequate drain holes to prevent flooding of the bearings.

GLANDS — Solid smothering type held by stainless steel adjusting bolts.

STUFFING BOXES — Packed with graphitized Teflon are supplied for suction pressures below 15 psi or when flushing is required. Stuffing boxes can be tapped for in and out water connection when required. Mechanical seals can be provided in standard casing.

BASEPLATE — Steel, ribbed for rigidity with provision for gROUTING. Drip channel feature collection and drainage for all leakage.

COUPLING — Flexible, Lowey or Ajax as standard with other types available.

MATERIALS OF CONSTRUCTION

PART	1 BRONZE FITTED	2 CAST IRON	3 DUCTILE IRON	4 BRONZE	5 A.R.B. BRONZE	6 316 SS FITTED	7 316 SS
Casing	C.I.	C.I.	D.I.	Brz.	A.R.B.	C.I.	316 SS
Impeller	Brz.	C.I.	C.I.	Brz.	A.R.B.	316 SS	316 SS
Casings**	Steel	Steel	Steel	Brz.	A.R.B.	316 SS	316 SS
Casing Rings	Brz.	Steel	Steel	Brz.	A.R.B.	#20	#20
Shaft	303 SS11	303 SS11	303 SS11	303 SS*	Monel	316 SS	316 SS
Glands	C.I.	C.I.	C.I.	Brz.	A.R.B.	C.I.	316 SS
Seat Cages				Glass Filled Teflon - Split			
Bearing Brackets				Cast Iron			
Deflector				Neoprene***			
Packing				John Crane 5811			

*Material can be used where necessary to prevent secondary erosion.

**Friction nuts used above D-6 Drive. No nut drawings.

***Fibrous Glass D E Group.

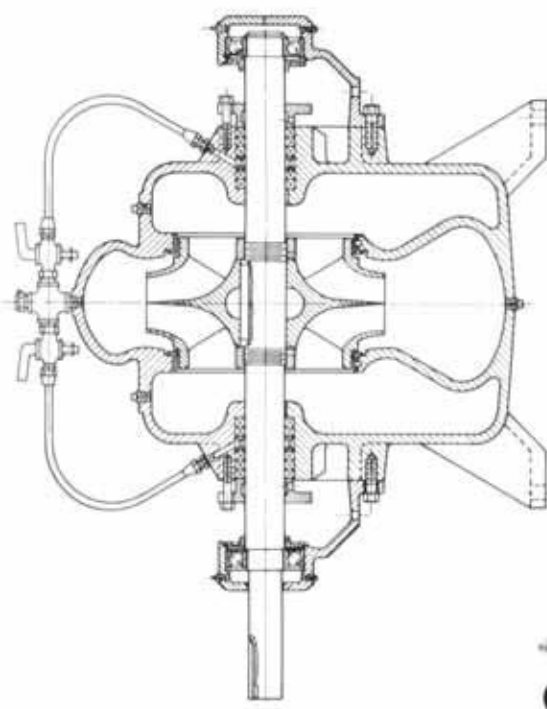
12 Inlet 16 L, 16 S, 16 T, 16 U and 20 L

with bronze sleeves.

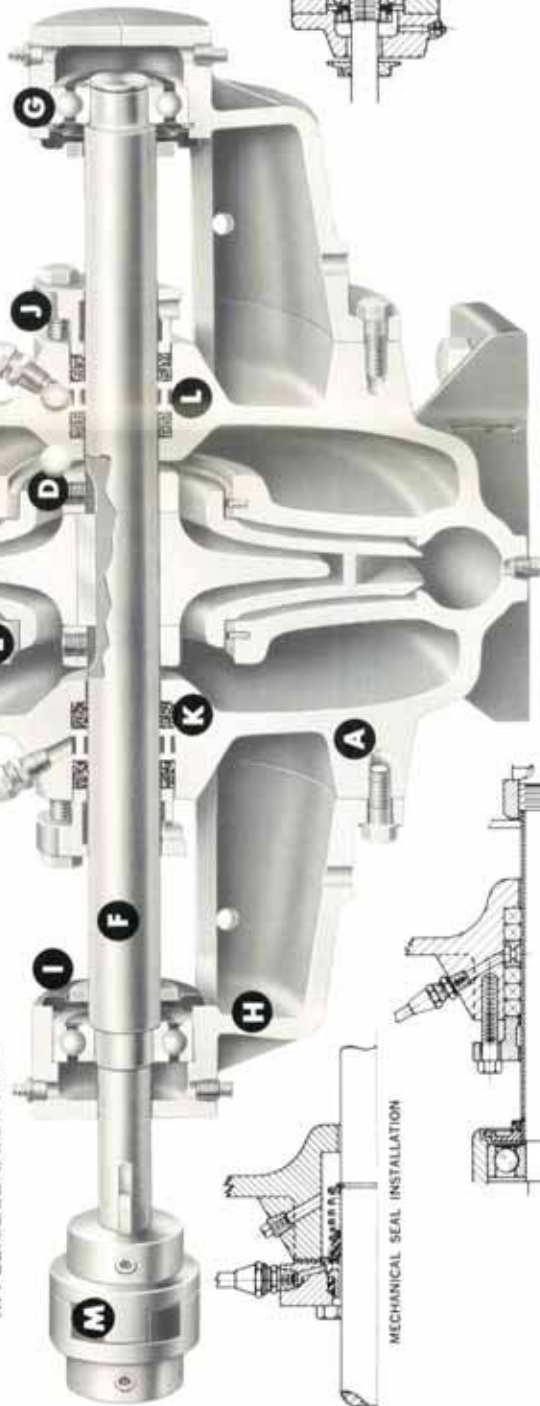


DOUBLE SUCTION SINGLE STAGE PUMPS

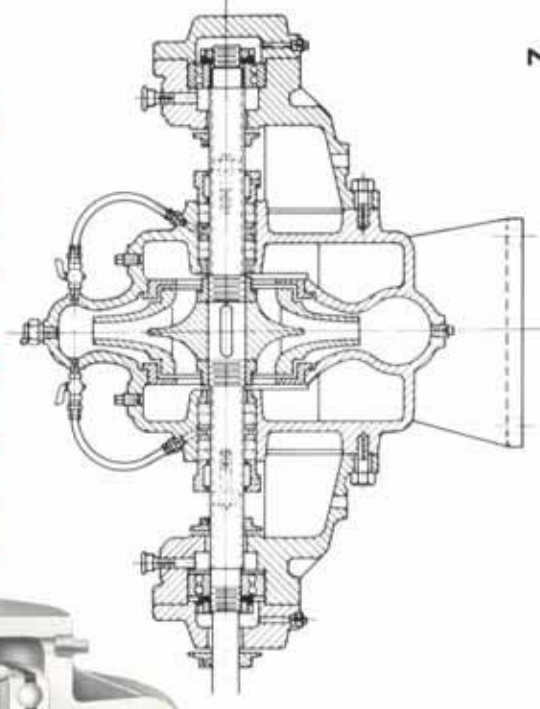
- A CASING
- B CASING COVER
- C IMPELLER
- D COLLAR
- E CASING RINGS
- F SHAFT
- G BEARINGS
- H BEARING BRACKET
- I DEFLECTOR
- J GLAND
- K PACKING
- L SEAL CAGE
- M FLEXIBLE COUPLING



GROUPS D-6 AND 16-2



GROUPS 16-1, 16-3, 18 AND 20

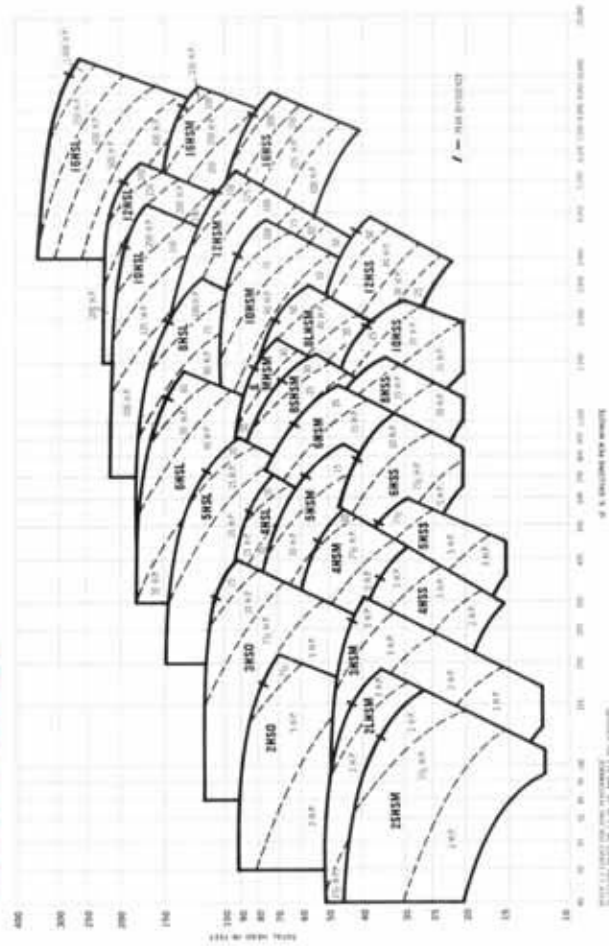


TYPICAL OF
GROUPS D-1 through D-6
(refer MX sectional)

D-1	MX-55	D-4	MX-60
D-2	MX-59	D-5	MX-68
D-3	MX-57	D-6	MX-78

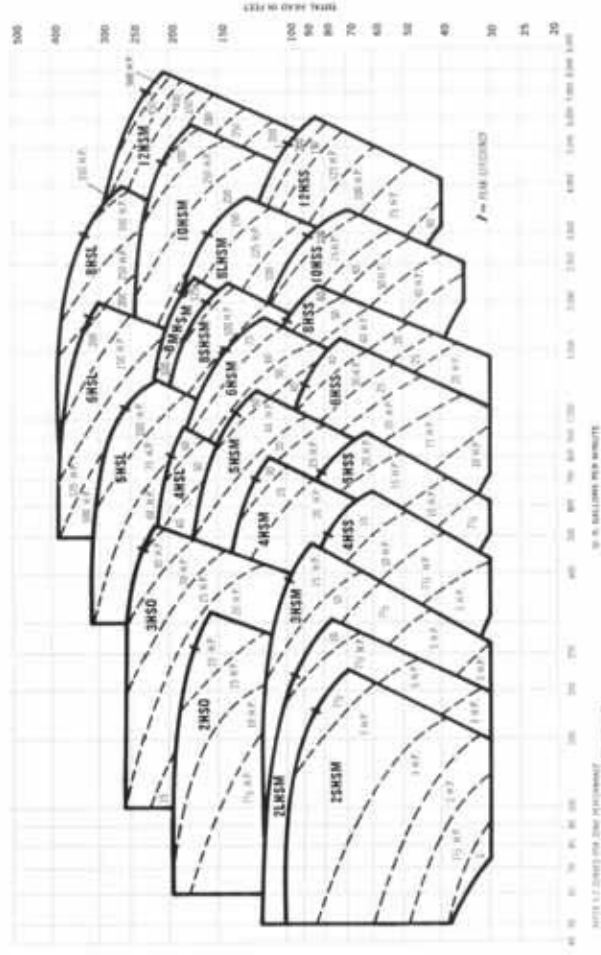
DOUBLE SUCTION SINGLE STAGE PUMPS / COMPOSITE

1150 RPM

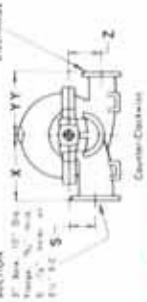


RATING CHARTS

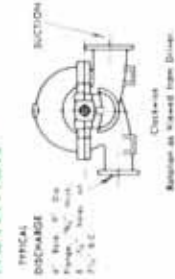
1750 RPM



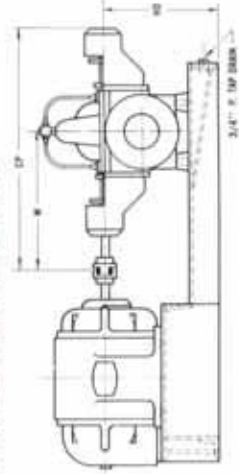
TYPICAL SECTION
 Dimensions in inches
 1" = 1/8" DIA.
 1" = 1/8" DIA.



ROTATION



PUMP END DIMENSIONS



DOUBLE SUCTION SINGLE STAGE PUMPS / DIMENSIONS

AMERICAN STANDARD C. I. FLANGES
 (125 Lb. Standard)

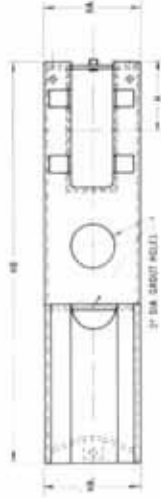
Nominal Size Inches	Flange Dia. of Flange	No. of Bolt Holes	Flange Thick-ness	Size Bolt
1	4 1/4	4	1 1/8	1/2
1 1/2	4 1/2	4	1 1/8	1/2
2	5	4	1 1/8	1/2
2 1/2	5 1/2	4	1 1/8	1/2
3	6	4	1 1/8	1/2
3 1/2	6 1/2	4	1 1/8	1/2
4	7	4	1 1/8	1/2
4 1/2	7 1/2	4	1 1/8	1/2
5	8	4	1 1/8	1/2
5 1/2	8 1/2	4	1 1/8	1/2
6	9	4	1 1/8	1/2
6 1/2	9 1/2	4	1 1/8	1/2
8	11	8	1 1/2	3/4
10	13 1/2	12	1 1/2	3/4
12	16	16	1 1/2	3/4
14	18 1/2	20	1 1/2	3/4
16	21 1/2	24	1 1/2	3/4
18	24 1/2	28	1 1/2	3/4
20	27 1/2	32	1 1/2	3/4
24	33 1/2	40	1 1/2	3/4

PUMP END DIMENSIONS / INCHES

CLASS	Discharge	Sections	Net Wt. Lbs.	CP	S	W	X	Y	Z
HSM	2	2 1/2	140	23%	4%	13 1/2	9	8 1/2	6 1/4
	3	4	185	23%	5 1/2	13 1/2	8 1/2	8 1/2	6 1/4
	4	5	330	26%	5	14 1/2	12 1/2	9 1/2	7 1/2
	5	6	440	29	6 1/2	17	14	12	9 1/4
	6	8	610	29	8 1/2	17	14	12	9 1/4
	8	10	870	29%	9 1/2	22 1/2	16	12 1/2	10 1/2
8M	10	8M	880	29%	9 1/2	22 1/2	16	12 1/2	10 1/2
8L	10	8L	940	43%	9 1/2	24 1/2	16	12 1/2	10 1/2
10	12	10	1000	43%	11 1/2	24 1/2	17 1/2	15	11 1/2
12	14	14	1460	53%	13 1/2	30 1/2	19	15 1/2	13 1/2
16	18	18	2450	53%	12 1/2	30 1/2	20 1/2	17 1/2	15 1/2
18	20	20	4000	70%	17 1/2	39	23	22 1/2	17 1/2
20	24	24	5000	70%	18 1/2	39	22	22 1/2	18 1/2
HSD	2	2 1/2	200	23%	7	13 1/2	9 1/2	8 1/2	7 1/4
	3	4	330	26%	7 1/4	14 1/2	12	10	8 1/4
HSL	4	5	420	29	7 1/4	17	13	12	8 1/4
	5	6	710	29%	10	22 1/2	15	11 1/2	10
	6	8	1010	29%	8 1/2	22 1/2	16 1/2	13 1/2	11
	8	10	1530	43%	10 1/2	24 1/2	20	15	12 1/2
	10	12	2060	43%	12	24 1/2	23	18	13 1/2
	12	14	2710	53%	12 1/2	30 1/2	20	15 1/2	13 1/2
	16	18	4300	53%	14 1/2	34	28	21	18 1/2
HSS	4	6	275	26%	6	14 1/2	11	9	8
	5	6	425	29	6 1/2	17	12 1/2	11 1/2	8 1/4
	6	8	580	26%	7 1/4	18 1/2	13 1/2	11 1/2	8 1/4
	8	10	680	29	8 1/2	17	15 1/2	12 1/2	8 1/4
	10	12	900	29%	10	22 1/2	18	14 1/2	10 1/4
	12	14	980	29%	11 1/2	22 1/2	20 1/2	16	11 1/2
	16	18	2000	56%	14 1/2	30%	25 1/2	20	14 1/2
	20	24	5900	70%	18 1/2	39	32	27 1/2	18 1/2

*Approximate — do not use for construction purposes.

BASE PLATE DIMENSIONS



BASE PLATE DIMENSIONS / INCHES

PUMP SIZE	NEMA++ Motor T Frame	Net Wt. Lbs.	MA	MA1	MB	HD	H
2 HSM	145/215	90	13 1/2	13 1/2	40 1/2	11 1/2	7 1/2
3 HSM	145/215	90	13 1/2	13 1/2	40 1/2	11 1/2	7 1/2
4 HSM	213/256	120	15 1/2	15 1/2	48 1/2	15	8 1/2
5 HSM	213/256	120	15 1/2	15 1/2	48 1/2	15	8 1/2
6 HSM	184/226	200	18 1/2	18 1/2	56 1/2	17	9 1/2
8 HSM	184/226	200	18 1/2	18 1/2	56 1/2	17	9 1/2
10 HSM	213/256	260	22 1/2	22 1/2	64 1/2	20	10 1/2
2 HSD	264/326	160	13 1/2	13 1/2	40 1/2	11 1/2	7 1/2
3 HSD	213/256	120	15 1/2	15 1/2	48 1/2	15	8 1/2
4 HSL	184/226	200	18 1/2	18 1/2	56 1/2	17	9 1/2

PUMP SIZE	NEMA++ Motor T Frame	Net Wt. Lbs.	MA	MA1	MB	HD	H
5 HSL	264/326	400	21 1/2	21 1/2	62 1/2	19 1/2	10 1/2
6 HSL	364/426	448	22 1/2	22 1/2	71 1/2	20	11 1/2
8 HSL	364/426	448	22 1/2	22 1/2	71 1/2	20	11 1/2
10 HSS	364/426	532	24 1/2	24 1/2	77 1/2	21	12 1/2
12 HSS	440/445	550	24 1/2	24 1/2	77 1/2	21	12 1/2
4 HSS	284/286	120	15 1/2	15 1/2	46 1/2	15	8 1/2
5 HSS	184/226	200	18 1/2	18 1/2	53 1/2	17	9 1/2
6 HSS	213/256	200	20	20	61 1/2	17 1/2	10 1/2
8 HSS	184/226	200	18 1/2	18 1/2	53 1/2	17 1/2	9 1/2
10 HSS	264/326	210	18 1/2	18 1/2	56 1/2	17 1/2	9 1/2
12 HSS	364/426	260	22 1/2	22 1/2	64 1/2	20	10 1/2
10 HSS	364/426	532	24 1/2	24 1/2	77 1/2	21	12 1/2
12 HSS	440/445	552	24 1/2	24 1/2	77 1/2	21	12 1/2

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