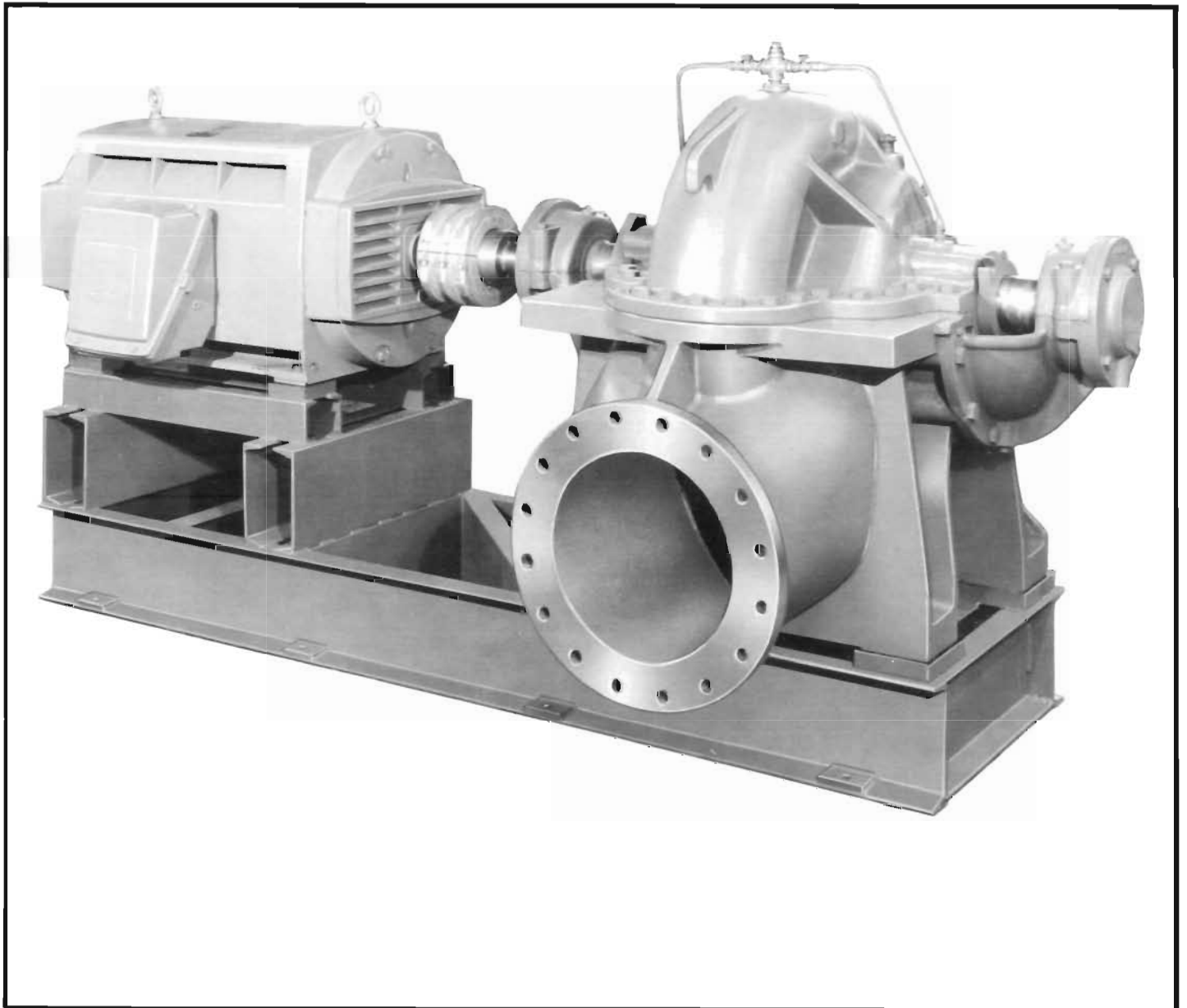


**BULLETIN 917**

# **DOUBLE SUCTION SINGLE STAGE PUMPS**

**SIZE RANGE - 14"-20"**



# DOUBLE SUCTION SINGLE STAGE PUMPS

- MAXIMUM EFFICIENCY • LONG SERVICE LIFE
- EASE OF MAINTENANCE • LOW PARTS INVENTORY

**EFFICIENCY** Buffalo Double Suction Pumps are designed to provide outstanding efficiency on demanding industrial applications. This goal is achieved by a combination of design integrity and quality manufacturing.

All pump components are designed to work in perfect harmony. The impeller is an enclosed, one piece double suction design which is hydraulically balanced and secured to the shaft with a feather key and locking nuts. This maintains exact alignment of the impeller within the horizontally split, volute type casing. This casing provides optimum velocity change and hydraulic balance at any capacity and head. Working together, these major pump components provide the efficiency and quiet operation you expect from Buffalo Pumps.

**RELIABILITY** Reliability was a major objective in the design of Buffalo Double Suction Pumps. Components subject to stress were carefully sized and detailed to insure a long service life. For example, the pump shaft permits less than .002" deflection at the face of the stuffing box. Bearings are designed for 30,000 minimum hours L-10 life. Bearing brackets are bolted and doweled to the bottom half of the casing to insure perfect alignment of the impeller, wearing rings and bearings. Base plates, when using NEMA frames through 449T, are formed steel with welded ribs for

rigidity. Base plates for larger motors are fabricated from heavy gauge channel. These features all contribute to years of trouble-free performance.

**MAINTENANCE** Very few pumps are as easy to service as a Buffalo Double Suction. The split casing allows easy inspection of the impeller, shaft and stuffing boxes without disturbing piping. Dowels permit exact replacement of the casing top section. Casing wear rings have a tongue and groove fit in the casing. They are pinned to prevent rotation and are readily replaced. Stuffing boxes (or mechanical seals) are accessible for service. For routine maintenance or major service, you'll appreciate the Buffalo design.

## OVERALL SPECIFICATIONS

CLASSES HSS - HSM - HSL

PUMP SIZES: EIGHT

PUMP-MOTOR COMBINATIONS: EIGHTEEN

CAPACITIES: TO 22,000 GPM

HEADS: TO 380 FEET

DISCHARGE: 14", 16", 18", 20"

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## IMPELLER AND SHAFT ASSEMBLY



## PARTS INTERCHANGEABILITY

GROUP	D-7		D-8		16-3	18-1	20-1
	Std.	Short	Std.	Short	Std.	Std.	Std.
PUMP SIZES	14 HSS	16 HSS	14 HSM	18 HSM	16 HSL	20 HSS*	20 HSS
		16 HSM				20 HSM*	20 HSM

\*600 H.P. MAX @ 1150 RPM

### PARTS COMMON TO EACH GROUP:

Bearings, Bearing Lock Nuts, Bearing Brackets, Seal Cages, Deflectors and Packing. Shafts are interchangeable for Pump Sizes listed in same column.



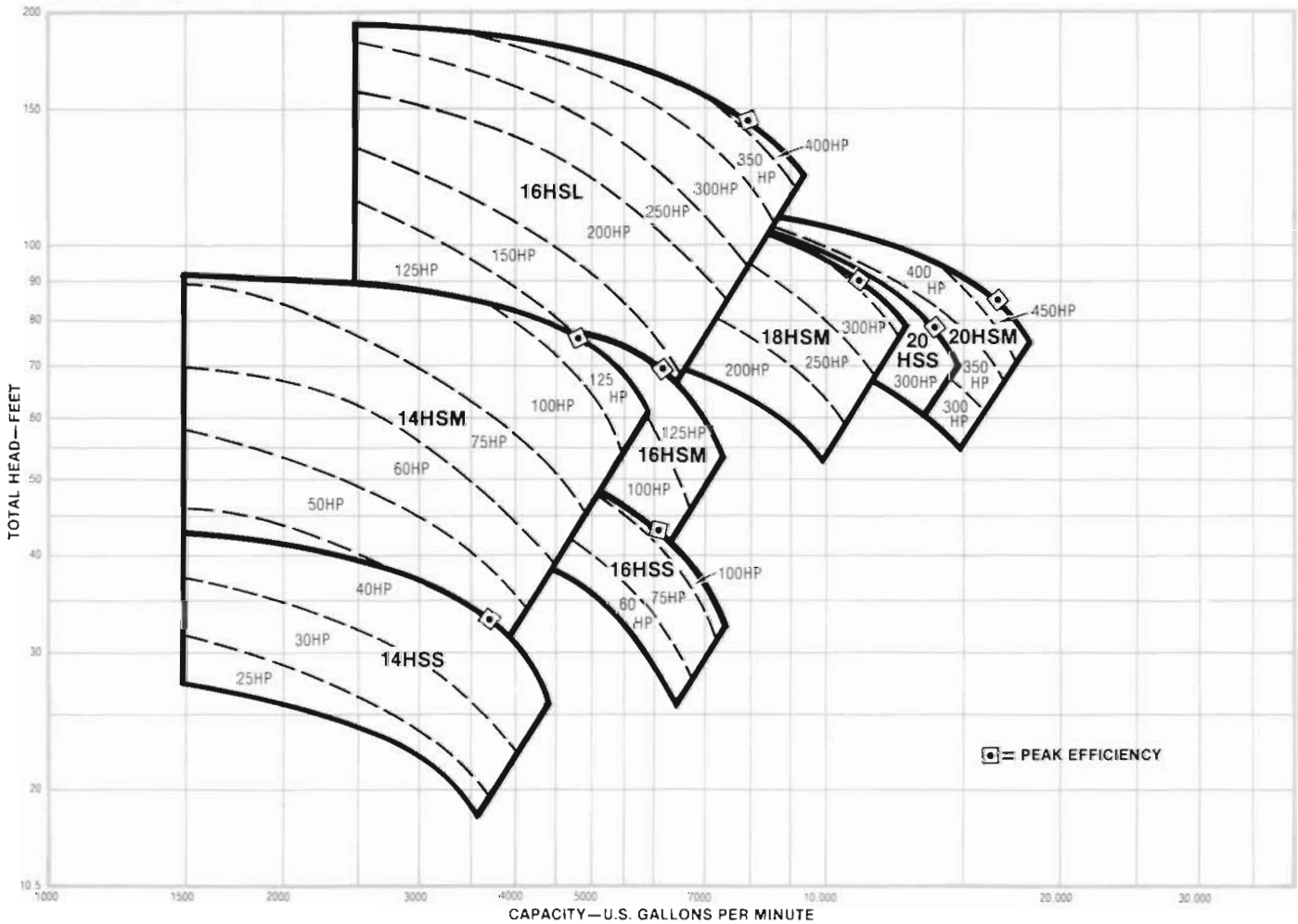
Horizontally split casing provides easy access for inspection and maintenance.



# DOUBLE SUCTION SINGLE STAGE PUMPS

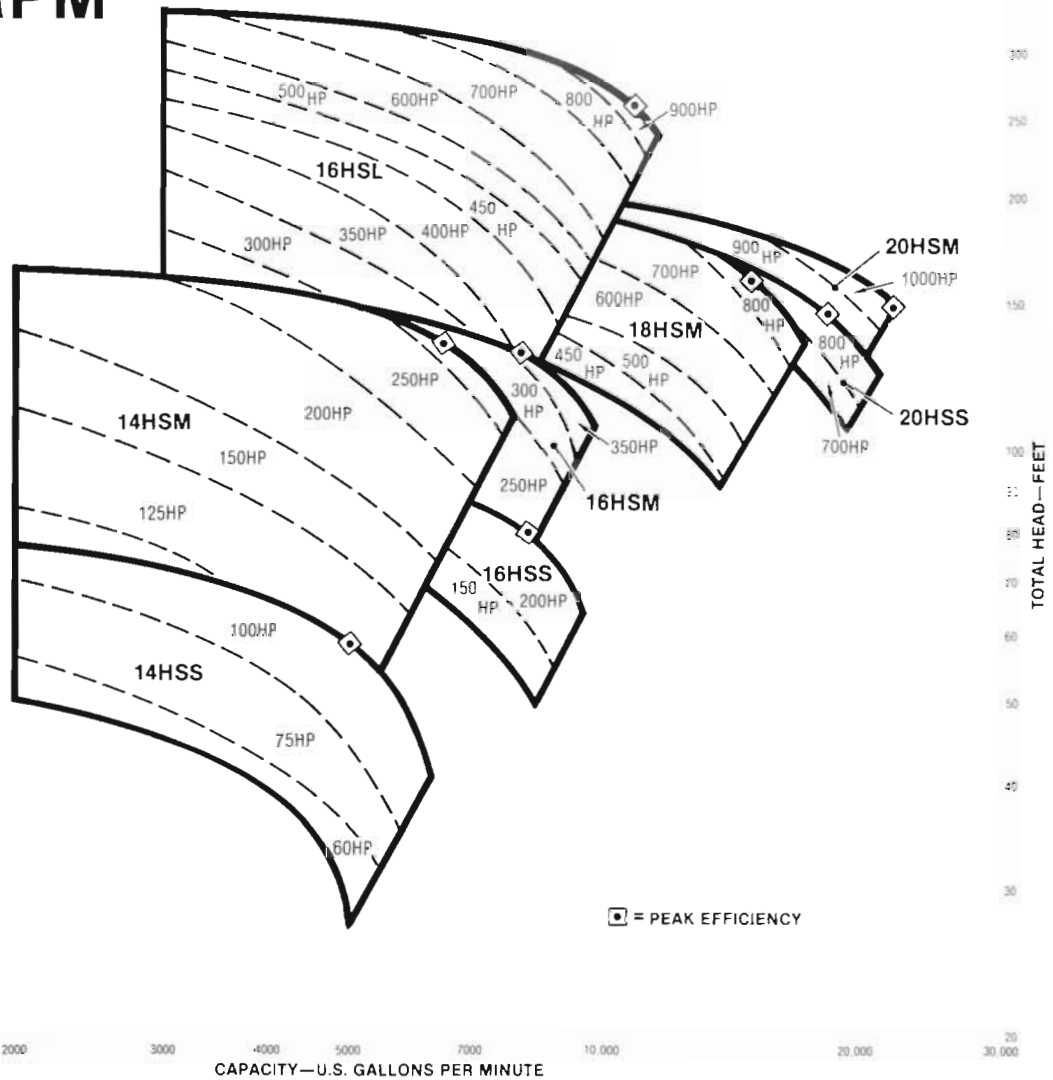
## COMPOSITE RATING CHARTS

860 RPM

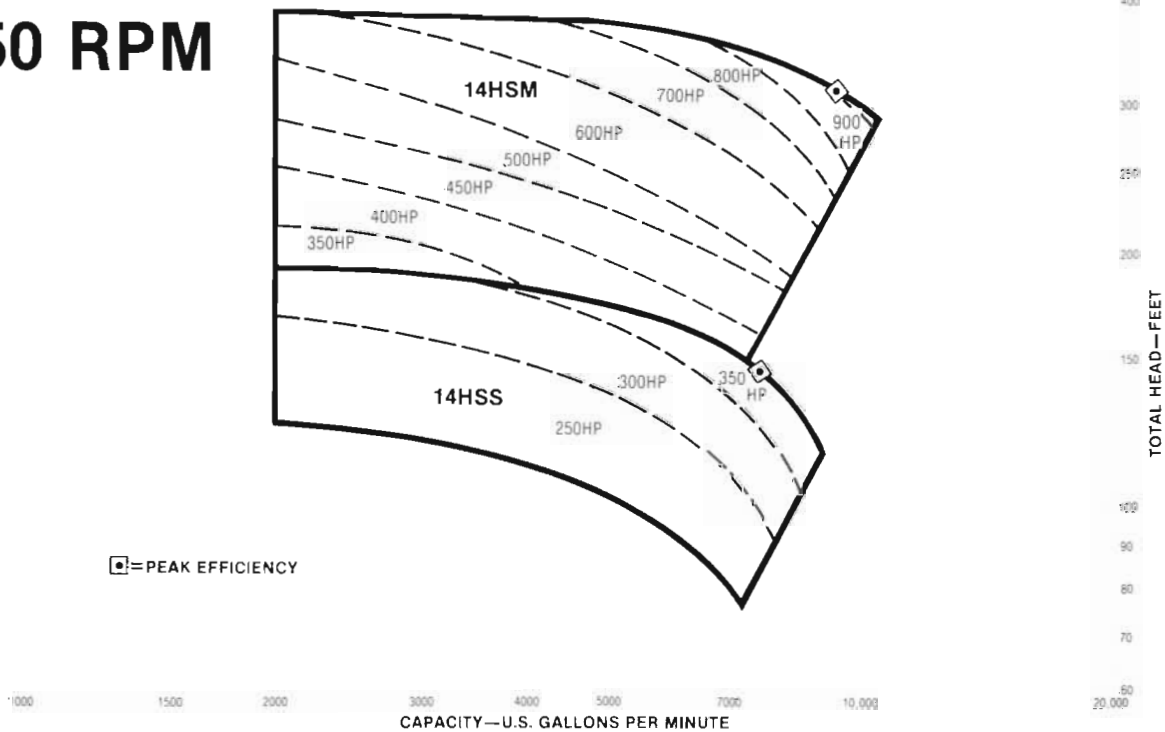


REFER D-5 CURVES FOR ZONE PERFORMANCE SELECTIONS  
BASED ON 1.0 SP. GR. AND 31.5 SSU VISCOSITY

# 1150 RPM



# 1750 RPM



REFER D-5 CURVES FOR ZONE PERFORMANCE SELECTIONS  
BASED ON 1.0 SP. GR. AND 31.5 SSU VISCOSITY

# DOUBLE SUCTION

## PUMP END DATA

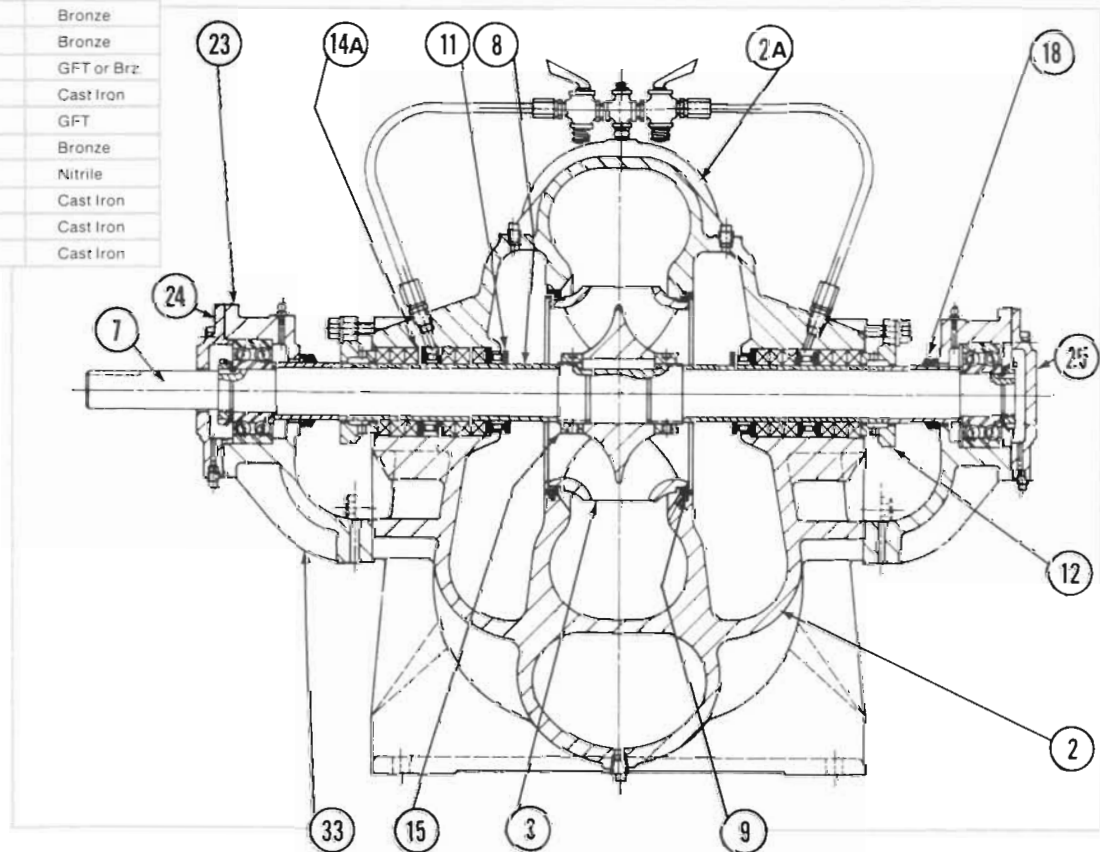
DESIGNATION			STD. PRESS. (PSI)		MINIMUM (METAL) CASING THICKNESS INCHES	IMPELLER	
PUMP SIZE DISCHARGE x SUCTION - INCHES	CLASS	SHAFT GROUPING	WORKING	HYDRO- STATIC		TOTAL EYE AREA - SQ. INCHES	SOLID SIZE DIA. - INCHES
14x16	HSS	D-7	175	265	3/4	146.8	2 1/4
16x18	HSS	D-7S	150	190	3/4	188.2	2 1/2
20x24	HSS	18-1	150	190	1	273.7	2 1/2
20x24	HSS	20-1	150	190	1	253.3	2 1/2
14x16	HSM	D-8	175	265	3/4	169.7	1 1/4
16x18	HSM	D-7S	175	265	3/4	188.2	2
18x20	HSM	D-8S	150	190	1	253.3	2 1/4
20x24	HSM	18-1	150	190	1	345.6	3
20x24	HSM	20-1	150	190	1	344.2	3
16x18	HSL	16-3	150	190	3/4	138.1	1 1/4

## BEARING AND STUFFING BOX DATA

SHAFT GROUP- ING	SHAFT DIAMETER AT COUPLING - INCHES	SHAFT (SLEEVE) DIAMETER THROUGH STUFFING BOX - INCHES	PACKING RING SIZE - INCHES	SEAL CAGE WIDTH - INCHES	ARRANGEMENT OF PACKING IN STUFFING BOX FROM THROAT TO THE GLAND S - SEAL CAGE	NUMBER OF RINGS W/O SEAL CAGE	SK.F DESIGNATIONS GUIDE BEARING	THRUST BEARING
D-7	3.1875	4.0	1"	1.5	3-S-3	8	5317 H	5317 H
D-7S	3.1875	4.0	1"	1.5	2-S-3	7	5317 H	5317 H
D-8	3.375	4.625	1"	1.5	3-S-3	8	5318 H	5318 H
D-8S	3.375	4.625	1"	1.5	2-S-3	7	5318 H	5318 H
16-3	3.5625	4.125	3/4"	1.0	3-S-3	8	5319 H	5319 H
18-1	3.0	4.125	1"	1.5	2-S-3	7	5316 H	5316 H
20-1	3.75	5.25	1"	1.5	2-S-3	7	5220 H	5220 H

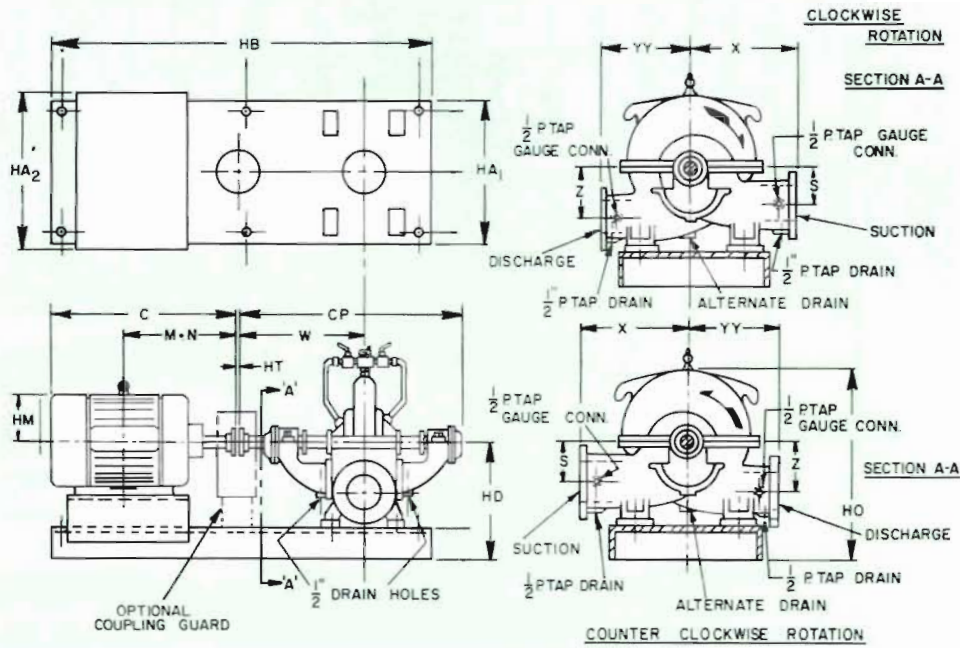
## MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MAT'L.
2	Casing	Cast Iron
2A	Casing Cover	Cast Iron
3	Impeller	Bronze
7	Shaft	Steel
8	Shaft Sleeves	Bronze
9	Casing Rings	Bronze
11	Throat Bushing	GFT or Brz.
12	Glands	Cast Iron
14A	Seal Cages	GFT
15	Impeller Nuts	Bronze
18	Deflectors	Nitrile
23	Bearing Cap	Cast Iron
24/25	Bearing Cover	Cast Iron
33	Bearing Bracket	Cast Iron





# SINGLE STAGE PUMPS



## PUMP DATA

SIZE DISCH. & SUCT.	CLASS	BASE NO'S												PUMP WGT.								
		1		2		3 & 4		5		8 & 9		10 & 11										
		HD	HO	HD	HO	HD	HO	HD	HO	HD	HO	HD	HO	S	W	X	Z	CP	YY			
14 x 16	HSS	-	-	-	-	-	-	-	-	32%	50%	-	-	16%	36%	27%	16%	65%	18%	3000		
14 x 16	HSM	34	51%	36	53%	36%	54	38%	56	32%	50%	-	-	17%	37%	30	17%	66%	20	3229		
16 x 18	HSS	-	-	-	-	-	-	-	-	30%	45	-	-	14%	33%	25%	14%	60	20	2300		
16 x 18	HSM	30	44%	32	46%	-	-	34%	49	26%	44%	-	-	12%	33%	23%	12%	60	20	2450		
16 x 18	HSL	29	49%	31	51%	-	-	33%	54	-	-	-	-	14%	34	26	15%	59%	21	4200		
18 x 20	HSM	-	-	-	-	40	59%	42	61%	-	-	-	-	36	55%	17%	35%	33	17%	63%	23	4900
20 x 24	HSS	-	-	-	-	40	63	42	65	-	-	-	-	18%	39	32	18%	70%	22%	5900		
20 x 24	HSM	-	-	-	-	40	63	42	65	-	-	-	-	18%	39	32	18%	70%	22%	5900		

## BASE PLATE DATA

BASE NO.	MOTOR FRAMES	HA <sub>1</sub>	HA <sub>2</sub>	HB	BASE WT.
1	G.E. 8155S, 8188S, 8110S West. 5066S+L, thru, 5010S+L	33	33	109%	1522
2	G.E. 8266S, 8210S West. 5808S+L, thru, 5811S+L	33	33	117%	1623
3	G.E. 8188S, 8110S West. 5006L, thru, 5010L	37	37	112%	1550
4	G.E. 8266S, thru, 8211S West. 5808L, thru, 5811L	40%	40%	123%	1715
5	G.E. 8307S West. 6808L, thru, 6811L	38	38	134	2010
8	NEMA 404TS, T - 445TS, T	31%	32%	91%	750
9	NEMA 447TS, T - 449TS, T	31%	32%	100%	788
10	NEMA 404TS, T - 445TS, T	36%	37%	91%	842
11	NEMA 447TS, T - 449TS, T	36%	37%	100%	884

## MOTOR DATA

WESTINGHOUSE				GENERAL ELECTRIC				NEMA FRAMES							
MTR. FRAME	M - N		TEFC		MTR. FRAME	M - N		TEFC		MTR. FRAME	C	M - N	HM		
	C	HM	C	HM		C	HM	C	HM						
5006S	24%	NOT AVAIL	42%	10%	8155S	23%	47%	14%	40%	12%	404T	36%	20	10%	
5008S	26%	51%	14%	47%	12%	8188S	26%	54%	14%	47%	12%	404TS	34%	17	10%
5009S	28%	54%	14%	50%	12%	8110S	30%	61%	14%	54%	12%	405T	38%	20%	10%
5010S	30%	58%	14%	54%	12%	8266S	27%	NOT AVAIL	48%	14%	405TS	35%	17%	10%	
5808S	30%	NOT AVAIL	54%	14%	444T	42%	23%	12%	444TS	38%	19%	12%	14%		
5809S	32%	62%	17%	58%	14%	445T	44%	24%	12%	445TS	40%	20%	12%	14%	
5810S	34%	66%	17%	62%	14%	447T	48%	26	12%	447TS	46%	22%	12%	14%	
5811S	36%	70%	17%	NOT AVAIL	449T	48%	28%	12%	449TS	48%	24%	12%	14%		
6808S	38%	NOT AVAIL	67%	17	8210S	35%	NOT AVAIL	63%	14%	499T	44%	24%	12%	14%	
6809S	38%	74%	19	71%	17	8211S	37%	78%	18%	67%	14%	499TS	44%	24%	12%
6810S	41%	79%	19	76%	17	8307S	36%	NOT AVAIL	63%	17	499TS	44%	24%	12%	
6811S	43%	84%	19	NOT AVAIL											

## FLANGE DATA

SUCTION - DISCHARGE FLANGE (125 PSI ANSI SERIES, FLAT FACED)					
SIZE	14	16	18	20	24
OUTSIDE DIA.	21	23%	25	27%	32
BOLT CIRCLE	18%	21%	22%	25	29%
NO.-SIZE BOLT	12-1"	16-1"	16-1"	20-1"	20-1"
FLANGE THICK.	3%	3%	3%	3%	3%

# OTHER BUFFALO PUMPS

## SALES REPRESENTATIVES

ALBANY, NY  
ALBUQUERQUE, NM  
ALLENTOWN, PA  
ATLANTA, GA  
BALTIMORE (SEVERNA PARK), MD  
BIRMINGHAM, AL  
BOSTON (WAKEFIELD), MA  
BUFFALO (ORCHARD PARK), NY  
CHICAGO (WHEELING), IL  
CINCINNATI, OH  
CLEVELAND, OH  
COLUMBUS, OH  
DALLAS (RICHARDSON), TX  
DENVER (ENGLEWOOD), CO  
DES MOINES, IA  
DETROIT, MI  
(FARMINGTON HILLS)  
GREENSBORO, NC  
GREENVILLE, SC  
HARTFORD (AVON), CT  
HOUSTON, TX  
INDIANAPOLIS, IN  
JACKSONVILLE, FL  
KANSAS CITY, MO  
KNOXVILLE, TN  
LOS ANGELES, CA  
(SANTA FE SPRINGS)  
LOUISVILLE, KY  
MEMPHIS, TN  
MILWAUKEE, WI  
MINNEAPOLIS, MN  
(BLOOMINGTON)  
NEW ORLEANS, LA  
NEW YORK, NY (E. NORWALK)  
NORTHERN NEW JERSEY  
(PLUCKEMIN, NJ)  
OKLAHOMA CITY, OK  
PHILADELPHIA, PA  
(WYNNWOOD)  
PHOENIX, AZ  
PITTSBURGH, PA  
RICHMOND, VA  
ROCHESTER, NY  
ST. LOUIS, MO  
SALT LAKE CITY, UT  
SAN ANTONIO, TX  
SAN FRANCISCO, CA  
(EMERYVILLE)  
SEATTLE (BELLEVUE), WA  
SOUTH FLORIDA (MIAMI), FL  
SYRACUSE, NY  
TOLEDO (PERRYSBURG), OH  
TULSA, OK  
WASHINGTON, DC  
(ROCKVILLE, MD)

### In Canada:

CALGARY, ALTA.  
EDMONTON, ALTA.  
HAMILTON, ONT.  
KITCHENER, ONT.  
MONTREAL, QUE.  
OTTAWA, ONT.  
SAINT JOHN, N.B.  
SARNIA, ONT.  
SASKATOON, SASK.  
TORONTO, ONT.  
VANCOUVER, B.C.  
WINNIPEG, MAN.

### In Mexico:

GUADALAJARA, JAL.  
MEXICO CITY, D.F.  
MONTERREY, N.L.

## 4-WAY FRAME MOUNTED PUMP



Buffalo 4-Way Pumps are designed to operate with reduced axial and radial loads for long maintenance-free service in the chemical process and allied industries. 21 sizes. Capacities to 5000 gpm. Pressures to 300 psi. Bulletin 903.

## PAPER STOCK PUMPS



Buffalo Paper Stock Pumps are engineered for high efficiency and designed for ease of service. Back pull-out design permits fast removal of the bearing frame, side plate and rotating assembly without disturbing piping. Capacities to 11,000 gpm. Heads to 260 feet. Pressures to 150 psi. Stock handling capacity up to 6%. Bulletin 950.

## VORTEX PUMPS



Designed to handle abrasive slurries and solids, Buffalo Vortex Pumps feature an adjustable, replaceable vane impeller. One impeller hub size and three vane lengths provide impeller diameters from 7" to 13" at 1/2" increments. Adjustability feature provides modification of pump output and compensation for wear. Capacities to 2000 gpm. Heads to 190 ft. Bulletin 902. Patent Pending.

**buffalo pumps**



An Ampco-Pittsburgh Company

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