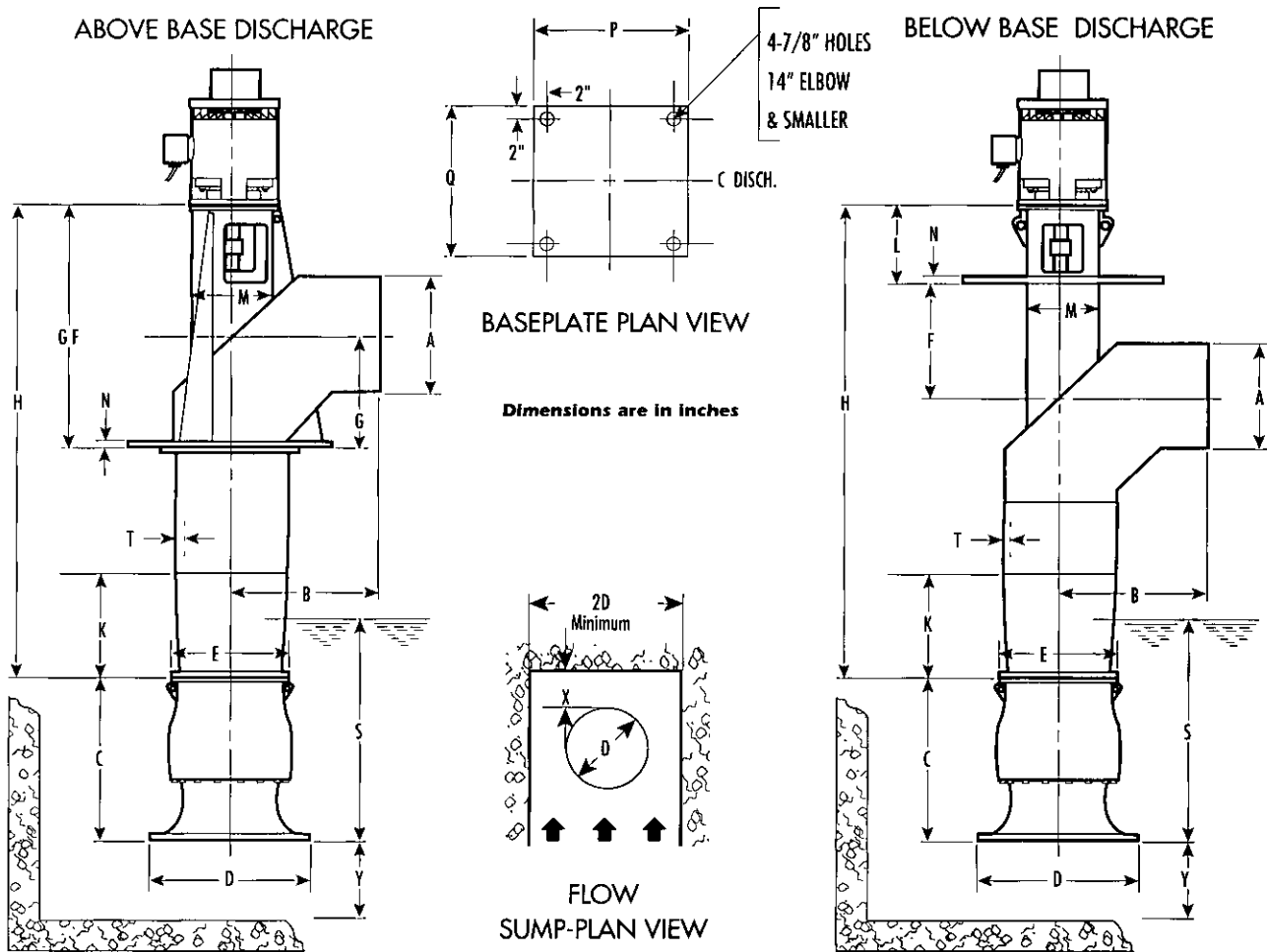


ENGINEERING DATA

1160 Vertical Low Lift Pumps

ENGINEERING data
MIXED FLOW PUMP

MIXED FLOW PUMP DIMENSIONS 6 LM - 14 LM



MODEL NO.	A ELL O.D.	B (1)		C		D (2)	E (5)	F BELOW BASE MIN.	G STD. MIN.	H BELOW BASE	
		PLAIN	FLGD.	ONE STAGE	TWO STAGE					MIN.	STD.
6L M8	8-5/8	14	12	13-1/8	22-11/16	13	11-3/8	10	9	34	120
6L M10	10-3/4	16	14	13-1/8	22-11/16	13	11-3/8	12	11	51	120
8L M8	8-5/8	14	12	15-1/4	26-5/16	14-7/8	11-3/8	10	9	34	120
8L M10	10-3/4	16	14	15-1/4	26-5/16	14-7/8	11-3/8	12	11	51	120
8L M12	12-3/4	18	16	15-1/4	26-5/16	14-7/8	11-3/8	12	13	54	120
10L M10	10-3/4	16	14	17-1/2	30-3/16	17	13-1/2	12	11	40	120
10L M12	12-3/4	18	16	17-1/2	30-3/16	17	13-1/2	12	13	52	120
10L M14	14	20	16	17-1/2	30-3/16	17	13-1/2	14	14	65	120
12L M12	12-3/4	18	16	19-3/4	34-1/8	18-3/4	16	12	13	42	120
12L M14	14	20	16	19-3/4	34-1/8	18-3/4	16	14	14	55	120
12L M16	16	22	18	19-3/4	34-1/8	18-3/4	16	16	16	69	120
14L M14	14	20	16	23	39-13/16	23	17-1/4	14	14	46	120
14L M16	16	22	18	23	39-13/16	23	17-1/4	16	16	59	120
14L M18	18	24	20	23	39-13/16	23	17-1/4	16	18	75	120

ENGINEERING data
MIXED FLOW PUMP

MIXED FLOW PUMP DIMENSIONS 6 LM – 14 LM

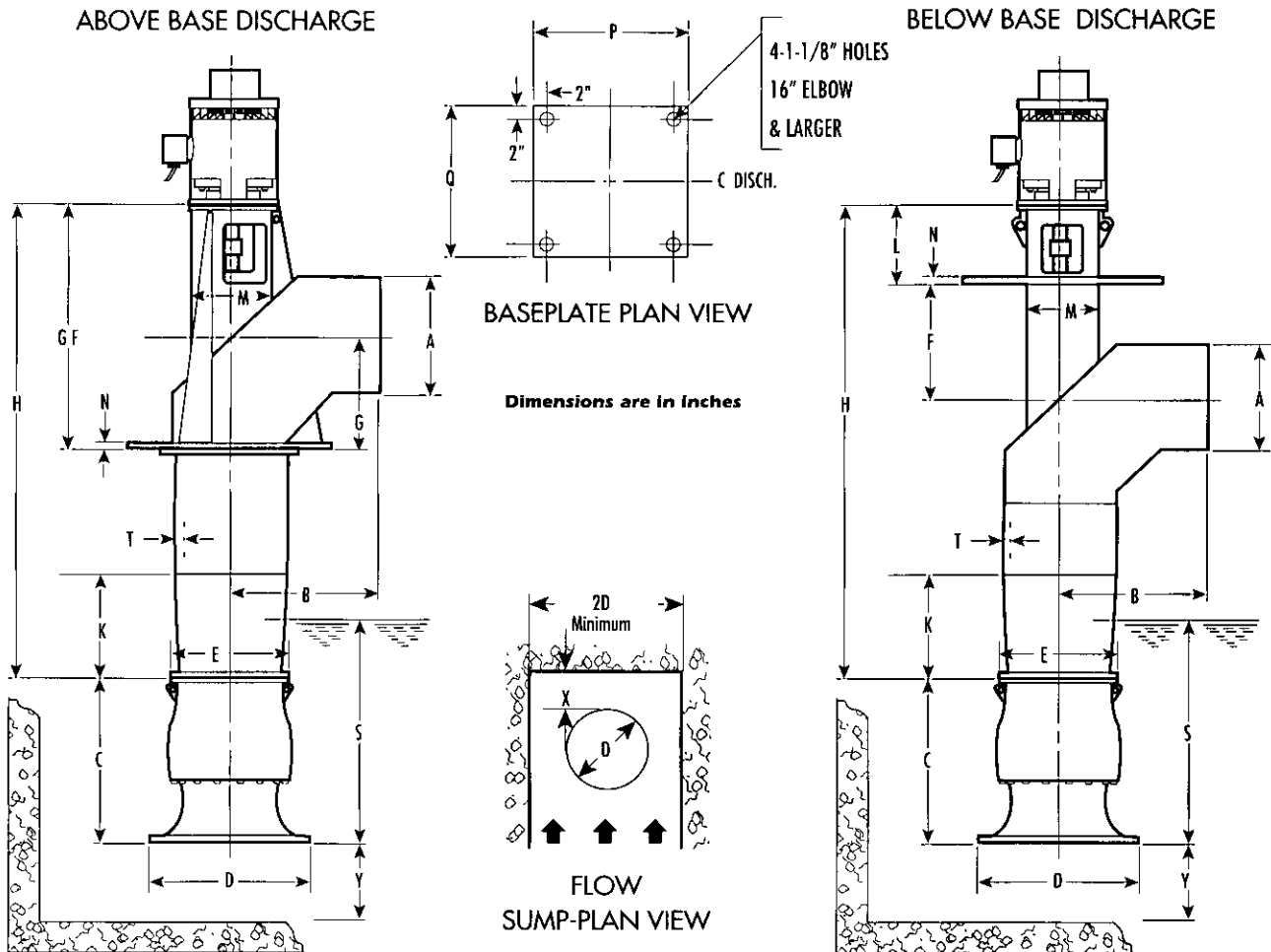
- (1) Flanges, when furnished, will be drilled to 150 LB. ANSI standards, flat face, holes straddle C_L thickness as shown in chart, unless otherwise specified
- (2) Increase "D" by 2" for floor opening clearance when using strainer
- (3) Minimum submergence to avoid excessive vortex formation when pumping continuously. Submergence may be reduced for intermittent operation. NPSH requirements, as shown on pump performance curve, must also be satisfied.
- (4) Increase 50% if strainer is used
- (5) Dimension "E" shown is for given size top bowl flange. When intermediate length of column pipe is furnished, flange O D is same as corresponding bowl size. Example – 10LM bowl with 12" intermediate column, flange diameter is 16" O D. Check floor opening for largest diameter flange clearance.

DISCHARGE FLANGE DATA				
SIZE	O.D.	B.C	NO. AND SIZE BOLTS	FLANGE THICKNESS
8	13-1/2	11-3/4	8-3/4	5/8
10	16	14-1/4	12-7/8	5/8
12	19	17	12-7/8	5/8
14	21	18-3/4	12-1	7/8
16	23-1/2	21-1/4	16-1	7/8
18	25	22-3/4	16-1-1/8	7/8

MODEL NO.	GF ABOVE BASE		H ABOVE BASE		K	L	M	N	P & Q	S (3)	T	X	Y (4)	STRAINER LENGTH
	MIN.	MIN.	STD.	STD.										
6LM8	25	25	120	0	12	8-5/8	3/4	18	20	1/4	4	7	8	
6LM10	31	43	120	12	15	10-3/4	3/4	20	20	1/4	4	7	8	
8LM8	25	25	120	0	12	8-5/8	3/4	18	24	1/4	5	8	10	
8LM10	31	43	120	12	15	10-3/4	3/4	20	24	1/4	5	8	10	
8LM12	34	46	120	12	15	12-3/4	3/4	24	24	1/4	5	8	10	
10LM10	31	31	120	0	15	10-3/4	3/4	20	26	1/4	6	9	10	
10LM12	34	44	120	10	15	12-3/4	3/4	24	26	1/4	6	9	10	
10LM14	36	56	120	20	15	14	1	26	26	1/4	6	9	10	
12LM12	34	34	120	0	15	12-3/4	3/4	24	30	1/4	7	10	12	
12LM14	36	46	120	10	15	14	1	26	30	1/4	7	10	12	
12LM16	40	60	120	20	15	16	1	30	30	1/4	7	10	12	
14LM14	36	36	120	0	15	14	1	26	36	1/4	8	12	12	
14LM16	40	50	120	10	15	16	1	30	36	1/4	8	12	12	
14LM18	44	64	120	20	17	18	1	30	36	1/4	8	12	12	

ENGINEERING data
MIXED FLOW PUMP

MIXED FLOW PUMP DIMENSIONS 16 LM - 30 LM



MODEL NO.	A		B		C		D	E	F	G	H	
	ELL O.D.	(1)		ONE STAGE	TWO STAGE	(2)	(5)	BELOW BASE MIN.	STD. MIN.	BELOW BASE		
		PLAIN	FLGD.							MIN.	STD.	
16L M16	16	22	18	26-1/4	45-3/8	24-3/4	19-1/4	16	16	50	120	
16L M18	18	24	20	26-1/4	45-3/8	24-3/4	19-1/4	16	18	63	120	
16L M20	20	26	22	26-1/4	45-3/8	24-3/4	19-1/4	18	20	78	120	
18L M18	18	24	20	29-3/4	51-3/8	29	21-3/8	16	18	54	120	
18L M20	20	26	22	29-3/4	51-3/8	29	21-3/8	18	20	68	120	
18L M24	24	28	24	29-3/4	51-3/8	29	21-3/8	20	21	93	120	
20L M20	20	26	22	35	60-1/2	34	23-5/8	18	20	60	120	
20L M24	24	28	24	35	60-1/2	34	23-5/8	20	21	83	120	
20L M30	30	34	30	35	60-1/2	34	23-5/8	24	26	122	120	
24L M24	24	28	24	39-1/2	68-1/4	38	28-1/2	20	21	65	120	
24L M30	30	34	30	39-1/2	68-1/4	38	28-1/2	24	26	104	120	
24L M36	36	38	34	39-1/2	68-1/4	38	28-1/2	28	31	133	133	
26L M24	24	28	24	43	74	43	32	20	21	65	120	
26L M30	30	34	30	43	74	43	32	24	26	104	120	
26L M36	36	38	34	43	74	43	32	28	31	133	133	
30L M30	30	34	30	49-3/8	85-3/8	48	34-1/2	24	26	76	120	
30L M36	36	38	34	49-3/8	85-3/8	48	34-1/2	28	31	115	120	

ENGINEERING data
MIXED FLOW PUMP

MIXED FLOW PUMP DIMENSIONS 16 LM - 30 LM

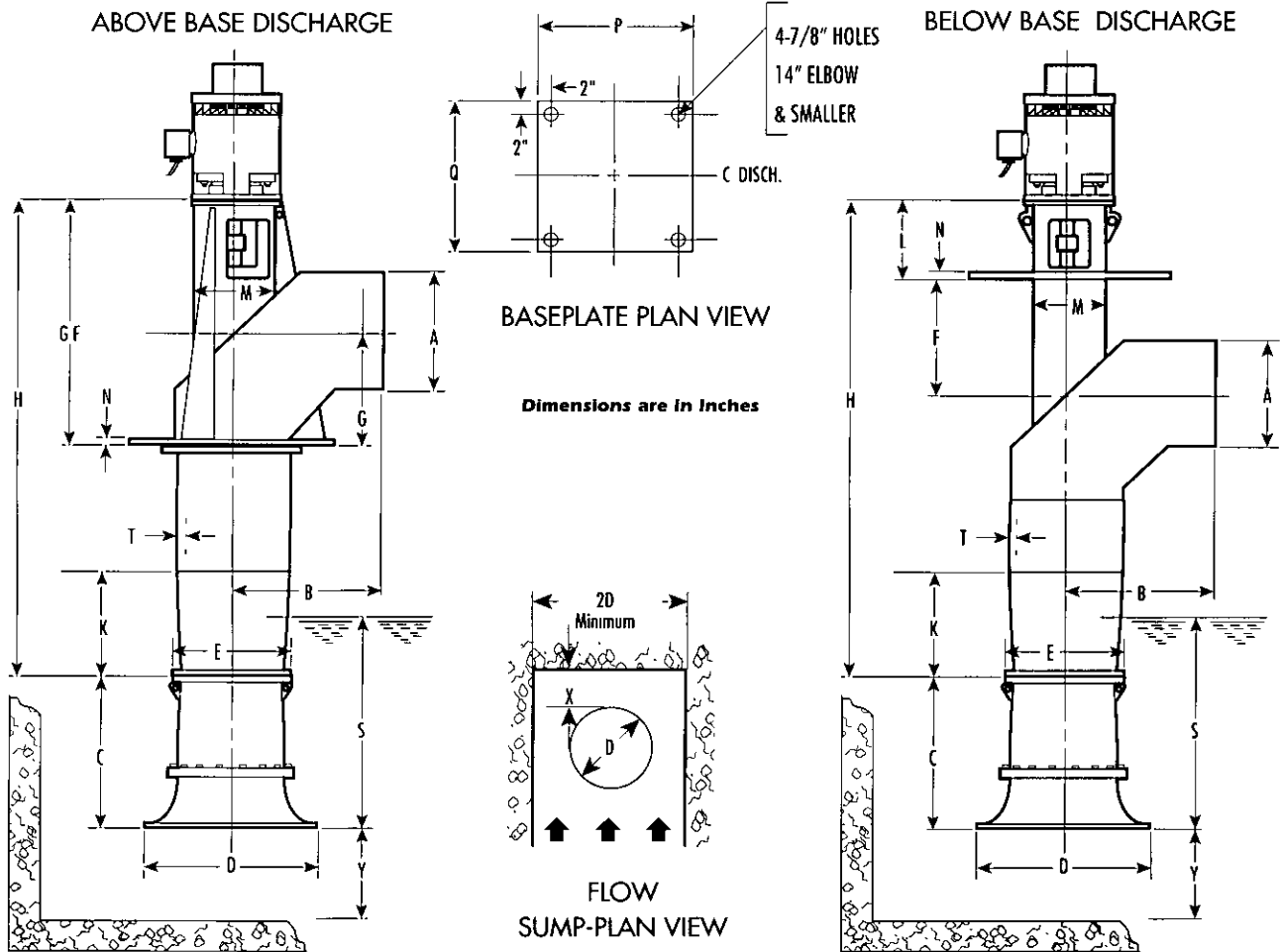
- (1) Flanges, when furnished, will be drilled to 150 LB ANSI standards, flat face, holes straddle Q_L thickness as shown in chart, unless otherwise specified
- (2) Increase "D" by 2" for floor opening clearance when using strainer.
- (3) Minimum submergence to avoid excessive vortex formation when pumping continuously. Submergence may be reduced for intermittent operation. NPSH requirements, as shown on pump performance curve, must also be satisfied
- (4) Increase 50% if strainer is used.
- (5) Dimension "E" shown is for given size top bowl flange. When intermediate length of column pipe is furnished, flange O.D. is same as corresponding bowl size. Example - 10LM bowl with 12" intermediate column, flange diameter is 16" O.D. Check floor opening for largest diameter flange clearance

DISCHARGE FLANGE DATA				
SIZE	O.D.	B.C	NO. AND SIZE BOLTS	FLANGE THICKNESS
16	23-1/2	21-1/4	16-1	7/8
18	25	22-3/4	16-1-1/8	7/8
20	27-1/2	25	20-1-1/8	7/8
24	32	29-1/2	20-1-1/4	1 1/8
30	38-3/4	36	28-1-1/4	1 1/8
36	46	42-3/4	32-1-1/2	1 1/8
42	53	49-1/2	36-1-1/2	1 1/8
48	59-1/2	56	44-1-1/2	1 3/8
54	66-1/4	62-3/4	44-1-3/4	1 3/8

MODEL NO.	GF ABOVE BASE		H ABOVE BASE		K	L	M	N	P & Q	S (3)	T	X	Y (4)	STRAINER LENGTH
	MIN.	MIN.	STD.	STD.										
16L M16	40	40	120	0	15	16	1	30	40	1/4	9	14	12	
16L M18	44	54	120	10	17	18	1	30	40	1/4	9	14	12	
16L M20	49	69	120	20	19	20	1	36	40	1/4	9	14	12	
18L M18	44	44	120	0	17	18	1	30	44	1/4	10	15	16	
18L M20	49	59	120	10	19	20	1	36	44	1/4	10	15	16	
18L M24	54	84	120	30	21	18	1 1/4	38	44	1/4	10	15	16	
20L M20	49	49	120	0	19	20	1	36	50	1/4	12	17	20	
20L M24	54	74	120	20	21	18	1 1/4	38	50	1/4	12	17	20	
20L M30	64	112	120	48	23	20	1 1/4	44	50	1/4	12	17	20	
24L M24	54	54	120	0	21	18	1 1/4	38	56	1/4	13	19	21	
24L M30	64	94	120	30	23	20	1 1/4	44	56	1/4	13	19	21	
24L M36	73	121	121	48	25	24	1 1/4	50	56	1/4	13	19	21	
26L M24	54	54	120	0	21	18	1 1/4	38	54	1/4	14	21	23	
26L M30	64	94	120	30	23	20	1 1/4	44	54	1/4	14	21	23	
26L M36	73	121	121	48	25	24	1 1/4	50	54	1/4	14	21	23	
30L M30	64	64	120	0	23	20	1 1/4	44	72	1/4	16	24	26	
30L M36	73	103	120	30	25	24	1 1/4	50	72	1/4	16	24	26	
30L M42	81	129	129	48	27	30	1 1/4	54	72	1/4	16	24	26	

ENGINEERING data
PROPELLER PUMP

PROPELLER PUMP DIMENSIONS 8 P - 16 P



MODEL NO.	A ELL O.D.	B (1)		C		D (2)	E (5)	F BELOW BASE MIN.	G STD. MIN.	H BELOW BASE	
		PLAIN	FLGD.	ONE STAGE	TWO STAGE					MIN.	STD.
8P8	8-5/8	14	12	13-1/4	21-3/16	14-7/8	11-3/8	10	9	34	120
8P10	10-3/4	16	14	13-1/4	21-9/16	14-7/8	11-3/8	12	11	51	120
10P10	10-3/4	16	14	16	26-1/4	17	13-1/2	12	11	40	120
10P12	12-3/4	18	16	16	26-1/4	17	13-1/2	12	13	52	120
12P12	12-3/4	18	16	19	31-1/4	18-3/4	16	12	13	42	120
12P14	14	20	16	19	31-1/4	18-3/4	16	14	14	55	120
12P16	16	22	18	19	31-1/4	18-3/4	16	16	16	69	120
14P14	14	20	16	21-3/4	35-1/2	23	17-1/4	14	14	46	120
14P16	16	22	18	21-3/4	35-1/2	23	17-1/4	16	16	59	120
14P18	18	24	20	21-3/4	35-1/2	23	17-1/4	16	18	75	120
16P16	16	22	18	24-1/4	39-1/2	24-3/4	19-1/4	16	16	50	120
16P18	18	24	20	24-1/4	39-1/2	24-3/4	19-1/4	16	18	63	120
16P20	20	26	22	24-1/4	39-1/2	24-3/4	19-1/4	18	20	78	120

ENGINEERING data
PROPELLER PUMP

PROPELLER PUMP DIMENSIONS 8 P - 16 P

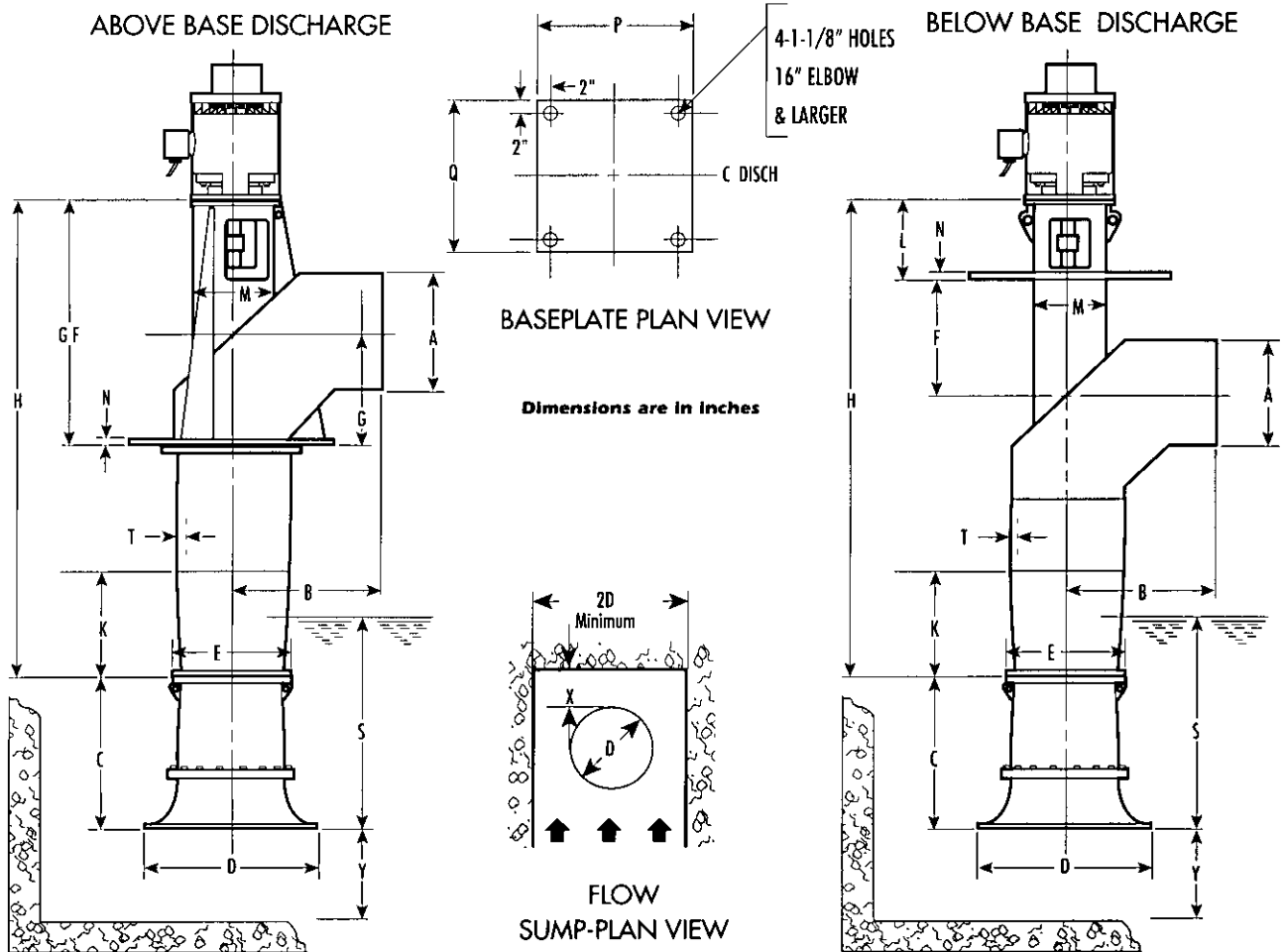
- (1) Flanges, when furnished, will be drilled to 150 LB ANSI standards, flat face, holes straddle Q_L thickness as shown in chart, unless otherwise specified
- (2) Increase "D" by 2" for floor opening clearance when using strainer
- (3) Minimum submergence to avoid excessive vortex formation when pumping continuously. Submergence may be reduced for intermittent operation. NPSH requirements, as shown on pump performance curve, must also be satisfied
- (4) Increase 50% if strainer is used
- (5) Dimension "E" shown is for given size top bowl flange. When intermediate length of column pipe is furnished, flange O.D. is same as corresponding bowl size. Example - 10P bowl with 12" intermediate column, flange diameter is 16" O.D. Check floor opening for largest diameter flange clearance.

DISCHARGE FLANGE DATA				
SIZE	O.D.	B.C	NO. AND SIZE BOLTS	FLANGE THICKNESS
8	13-1/2	11-3/4	8-3/4	5/8
10	16	14-1/4	12-7/8	5/8
12	19	17	12-7/8	5/8
14	21	18-3/4	12-1	7/8
16	23-1/2	21-1/4	16-1	7/8

MODEL NO.	GF ABOVE BASE		H ABOVE BASE		K	L	M	N	P & Q	S (3)	T	X	Y (4)	STRAINER LENGTH
	MIN.	MIN.	STD.	STD.										
8P8	25	25	120	0	12	8-5/8	3/4	18	24	1/4	5	8	10	
8P10	31	43	120	12	15	10-3/4	3/4	20	24	1/4	5	8	10	
10P10	31	31	120	0	15	10-1/4	3/4	20	26	1/4	6	9	10	
10P12	34	44	120	10	15	12-3/4	3/4	24	26	1/4	6	9	10	
12P12	34	34	120	0	15	12-3/4	3/4	24	30	1/4	7	10	10	
12P14	36	46	120	10	15	14	1	26	30	1/4	7	10	10	
12P16	40	60	120	20	15	16	1	30	30	1/4	7	10	10	
14P14	36	36	120	0	15	14	1	26	36	1/4	8	12	12	
14P16	40	50	120	10	15	16	1	30	36	1/4	8	12	12	
14P18	44	64	120	20	17	18	1	30	36	1/4	8	12	12	
16P16	40	40	120	0	15	16	1	30	40	1/4	9	14	12	
16P18	44	54	120	10	17	18	1	30	40	1/4	9	14	12	
16P20	49	69	120	20	19	20	1	36	40	1/4	9	14	12	

ENGINEERING data
PROPELLER PUMP

PROPELLER PUMP DIMENSIONS 20 P - 42 P



MODEL NO.	A ELL O.D.	B (1)		C		D (2)	E (5)	F BELOW BASE MIN.	G STD. MIN.	H BELOW BASE	
		PLAIN	FLGD.	ONE STAGE	TWO STAGE					MIN.	STD.
20P20	20	26	22	31	50-1/2	34	23-5/8	18	20	60	120
20P24	24	28	24	31	50-1/2	34	23-5/8	20	21	83	120
24P24	24	28	24	37	60-1/8	41	28-1/2	20	21	65	120
24P30	30	34	30	37	60-1/8	41	28-1/2	24	26	104	120
24P36	36	38	34	37	60-1/8	41	28-1/2	28	31	133	133
30P30	30	34	30	47	76-1/2	51-1/2	34-1/2	24	26	76	120
30P36	36	38	34	47	76-1/2	51-1/2	34-1/2	28	31	115	120
30P42	42	44	40	47	76-1/2	51-1/2	34-1/2	32	35	144	144
36P36	36	38	34	56	91-3/8	61	40-1/2	28	31	87	120
36P42	42	44	40	56	91-3/8	61	40-1/2	32	35	126	126
36P48	48	48	44	56	91-3/8	61	40-1/2	36	40	156	156
42P42	42	44	40	64	104	71	47-1/4	32	35	99	120
42P48	48	48	44	64	104	71	47-1/4	36	40	138	138
42P54	54	56	50	64	104	71	47-1/4	42	45	168	168

ENGINEERING data
PROPELLER PUMP**PROPELLER PUMP DIMENSIONS 20 P - 42 P**

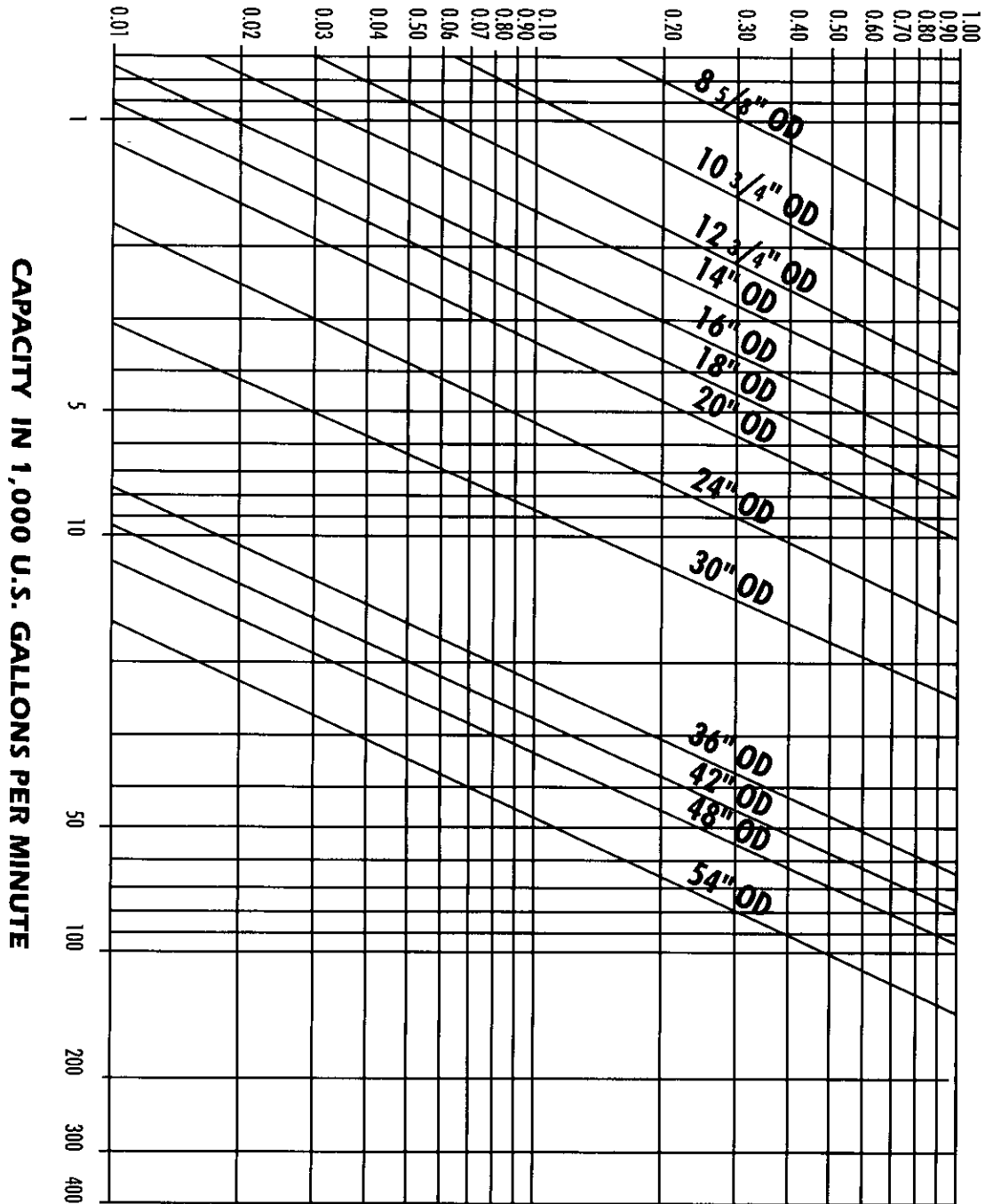
- (1) Flanges, when furnished, will be drilled to 150 LB. ANSI standards, flat face, holes straddle Q , thickness as shown in chart, unless otherwise specified
- (2) Increase "D" by 2" for floor opening clearance when using strainer
- (3) Minimum submergence to avoid excessive vortex formation when pumping continuously. Submergence may be reduced for intermittent operation. NPSH requirements, as shown on pump performance curve, must also be satisfied.
- (4) Increase 50% if strainer is used
- (5) Dimension "E" shown is for given size top bowl flange. When intermediate length of column pipe is furnished, flange O.D. is same as corresponding bowl size. Example - 10P bowl with 12" intermediate column, flange diameter is 16" O.D. Check floor opening for largest diameter flange clearance.

DISCHARGE FLANGE DATA				
SIZE	O.D.	B.C	NO. AND SIZE BOLTS	FLANGE THICKNESS
20	27-1/2	25	20-1-1/8	7/8
24	32	29-1/2	20-1-1/4	1-1/8
30	38-3/4	36	28-1-1/4	1-1/8
36	46	42-3/4	32-1-1/2	1-1/8
42	53	49-1/2	36-1-1/2	1-1/8
48	59-1/2	56	44-1-1/2	1-3/8
54	66-1/4	62-3/4	44-1-3/4	1-3/8

MODEL NO.	GF ABOVE BASE		H ABOVE BASE		K	L	M	N	P & Q	S (3)	T	X	Y (4)	STRAINER LENGTH
	MIN.	STD.	MIN.	STD.										
20P20	49	49	120	0	19	20	1	36	50	1/4	12	17	20	
20P24	54	74	120	20	21	18	1-1/4	38	50	1/4	12	17	20	
24P24	54	54	120	0	21	18	1-1/4	38	62	1/4	14	21	21	
24P30	64	94	120	30	23	20	1-1/4	44	62	1/4	14	21	21	
24P36	73	121	121	48	25	24	1-1/4	50	62	1/4	14	21	21	
30P30	64	64	120	0	23	20	1-1/4	44	76	1/4	18	26	26	
30P36	73	103	120	30	25	24	1-1/4	50	76	1/4	18	26	26	
30P42	81	129	129	48	27	30	1-1/4	54	76	1/4	18	26	26	
36P36	73	73	120	0	25	24	1-1/4	50	92	1/4	22	31	30	
36P42	81	111	120	30	27	30	1-1/4	54	92	1/4	22	31	30	
36P48	90	138	138	48	30	36	1-1/2	64	92	1/4	22	31	30	
42P42	81	81	120	0	27	30	1-1/4	54	106	1/4	25	36	35	
42P48	90	120	120	30	30	36	1-1/2	64	106	1/4	25	36	35	
42P54	99	147	147	48	32	42	1-1/2	74	106	1/4	25	36	35	

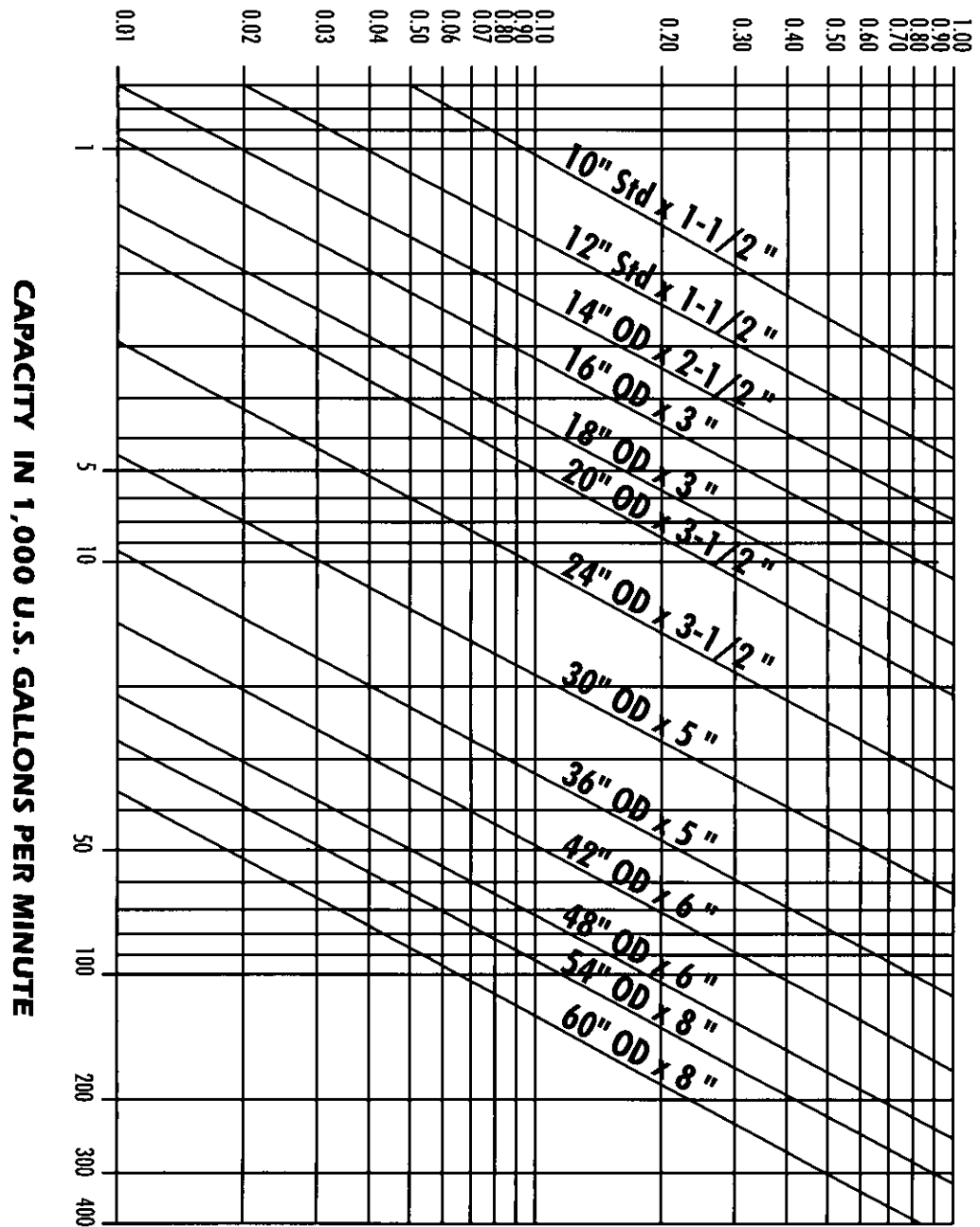
ENGINEERING data
VERTICAL LOW LIFT PUMP

90° ELBOW FRICTION LOSSES (HEAD IN FEET)



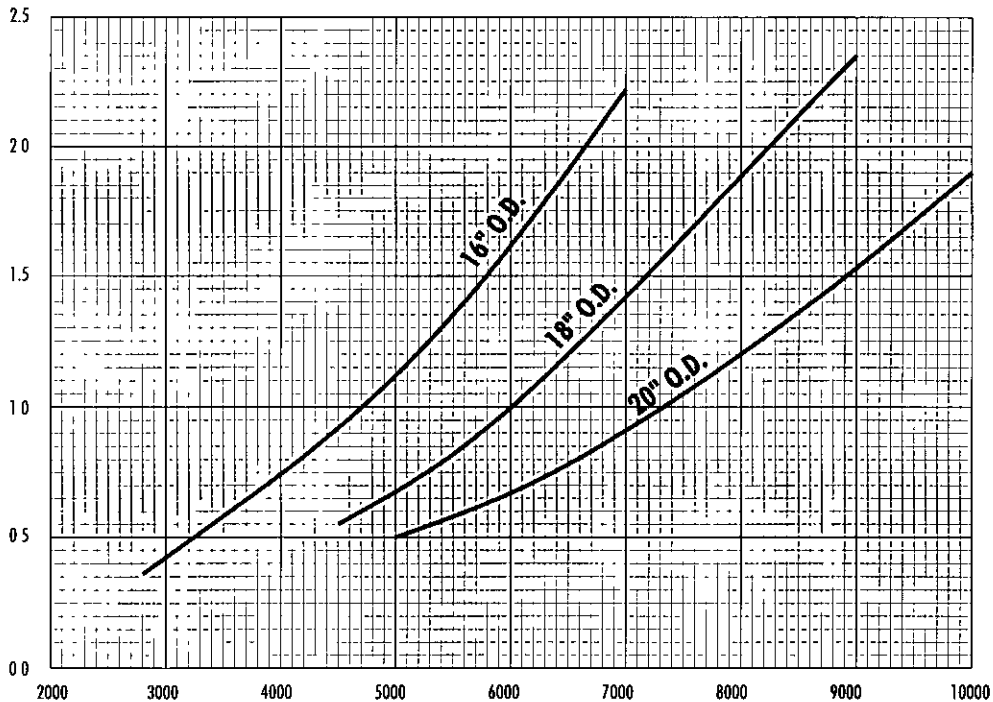
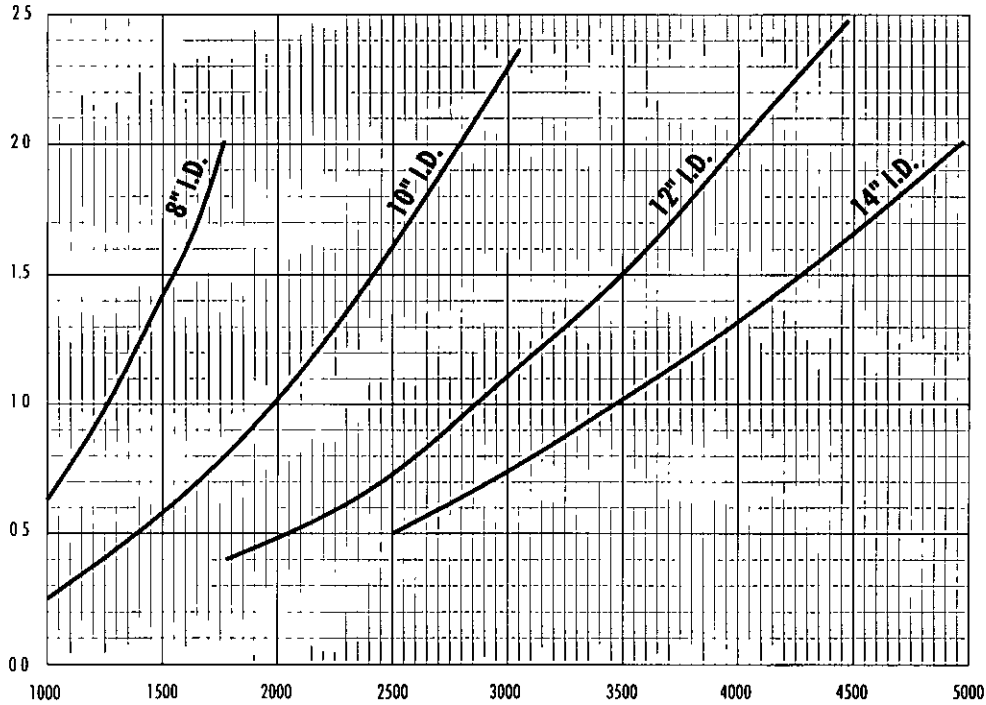
ENGINEERING data
VERTICAL LOW LIFT PUMP

COLUMN FRICTION LOSSES (HEAD IN FEET) Per 10' of column



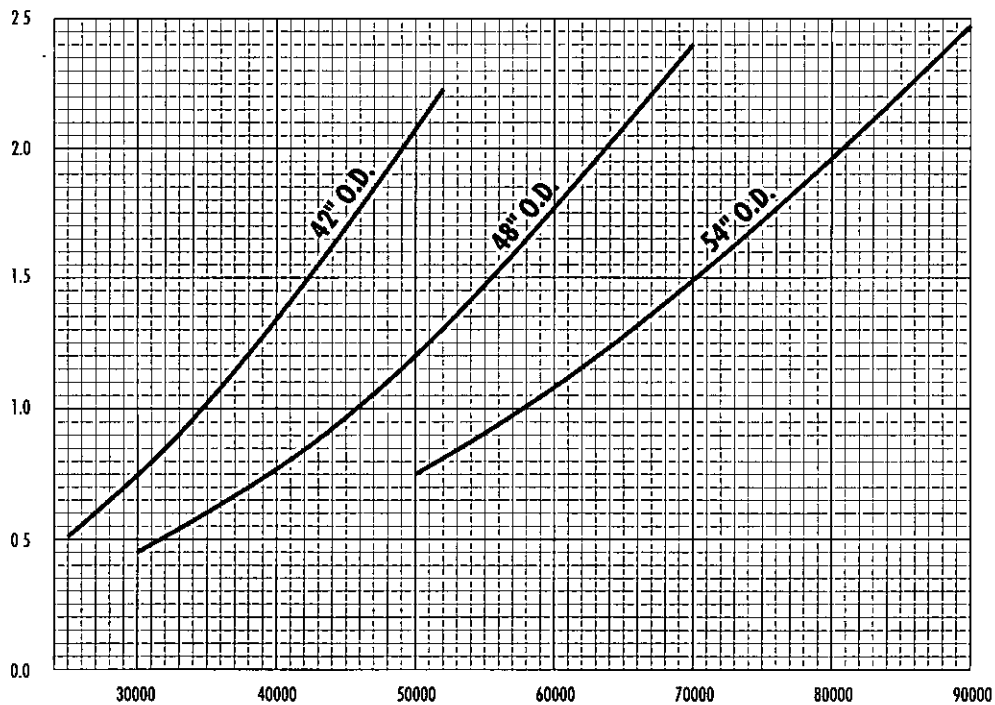
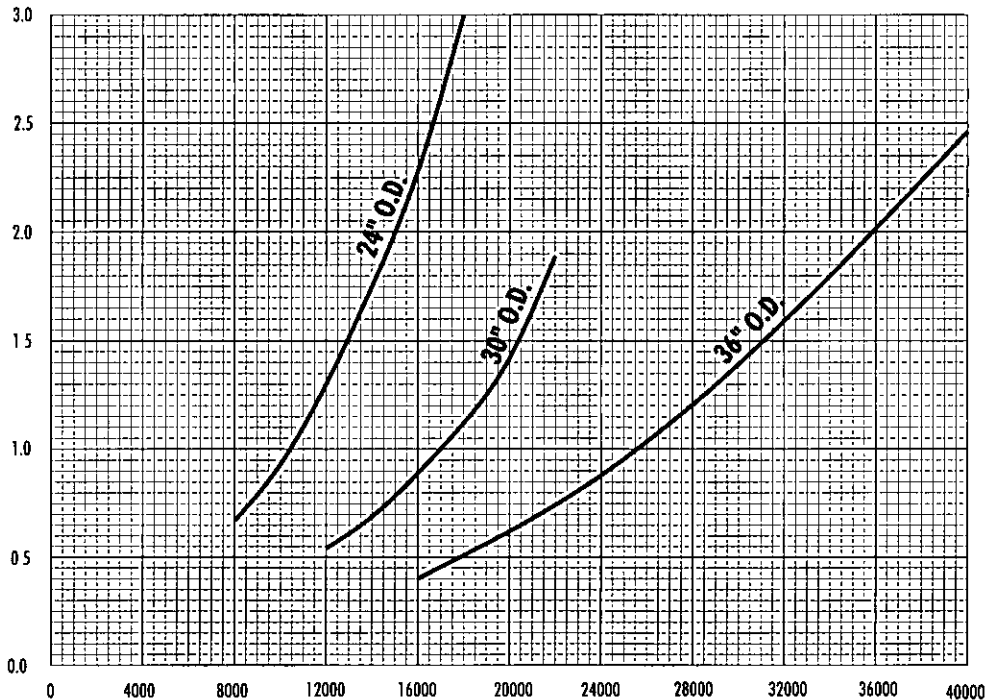
ENGINEERING data
VERTICAL LOW LIFT PUMP

COLUMN VELOCITY HEAD $\frac{(V^2)}{(2g)}$ - 8" THRU 20" PIPE
(2g)



ENGINEERING data
VERTICAL LOW LIFT PUMP

COLUMN VELOCITY HEAD $\frac{V^2}{2g}$ - 24" THRU 54" PIPE



ENGINEERING data
VERTICAL LOW LIFT PUMP

STANDARD COLUMN PIPE DATA (1) & MATERIALS OF CONSTRUCTION

PIPE SIZE	PIPE SCH.	NOMINAL WALL THICKNESS	SQ. FT. PER LINEAR FOOT		WEIGHT PER FT. LBS (2)	BUTT THREAD T.P.I. (3)(4)	THREADED COUPLING		WELDED STEEL PLATE FLANGES	
			I.D.	O.D.			O.D.	WT.	O.D.	WT.
8"	30	0.277	2.115	2.26	24.7	8	9.63	25	12.5	16.5
10"	(5)	0.279	2.66	2.81	31.2	8	11.75	35	14.75	20
12"	30	0.33	3.16	3.34	43.77	8	14	45	17	32
14"	30	0.375	3.47	3.67	54.57	8	15	50	18.5	37
16"	20	0.313	4.03	4.19	52.36	—	—	—	20.5	41
18"	20	0.313	4.55	4.71	59.03	—	—	—	22.5	45
20"	API	0.313	5.08	5.24	66	—	—	—	24.5	61
24"	API	0.313	6.12	6.28	79	—	—	—	28.5	69
30"	API	0.375	7.66	7.85	119	—	—	—	34.5	113
36"	API	0.375	9.23	9.42	143	—	—	—	41.75	200
42"	API	0.375	10.8	10.99	167	—	—	—	47.75	259

- (1) Column pipe sizes through 14" O D conforms to AWWA standards
- (2) Weight does not include couplings or flanges. Add one coupling or two flanges to pipe weight for column section weight
- (3) T P I =Threads Per Inch, Right Hand
- (4) Pipe couplings are straight thread
- (5) No pipe schedule is listed for 10" I.D. 279" wall pipe. This thickness is between Schedule 20 (250" wall) and Schedule 30(307" wall)

STANDARD MATERIALS OF CONSTRUCTION COLUMN ASSEMBLY

OPEN LINESHAFT			
DESCRIPTION	MATERIAL	MATERIAL CODE	SPECIFICATION NO.
COLUMN 8"-14" 16"-18" 20"-42"	STEEL	077	{8"-24" ASTM A-53} {30" & UP API 5L}
COLUMN COUPLING	STEEL	087	
COLUMN FLANGE (WELDED TO PIPE) PRESSURE EQUIVALENT TO ANSI 150 # FLANGE RATING	STEEL	087	
LINESHAFT SLEEVE (1"-1 15/16") SPRAYED JOURNAL 2 3/16" & UP SHAFT W/BONDED SLEEVE SHAFT W/SPRAYED JOURNAL	STEEL 304S S METCOLOY #5 18-5 S S SEE ABOVE SEE ABOVE	063 101 — 638 377	ASTM A-108 GR 1045 ASTM A-276 TYPE 304
SHAFT COUPLING THREADED SLEEVE TYPE 1"-3 3/16" KEYED THRUST STUD TYPE 3 7/16" & UP BODY KEYS STUD SETSCREWS	410 S S 416S S 410S S 316S S	106 107 106 104	ASTM A-108 GR 1144 ASTM A-276 TYPE 410 ASTM A-582 TYPE 416 ASTM A-276 TYPE 410 ASTM A-276 TYPE 316
SHAFT BEARING 1"-2 7/16" 2 11/16" & UP	SPIRAL GROOVED RUBBER BRONZE BACKED - FLUTED RUBBER	999 999	BRONZE BACKING B146-CA857 RUBBER BRG MIL-B-17901 CL 11
BEARING RETAINER 3"-18" COLUMN 20"-42" COLUMN	BRONZE STEEL FABRICATED IN PIPE	208 087	ASTM B-584 C84400 ASTM A-36
OPEN LINESHAFT			
COLUMN PIPE	SAME AS FOR OPEN LINESHAFT ABOVE		
COLUMN COUPLING			
COLUMN FLANGE			
SHAFT COUPLING			
LINESHAFT	STEEL	063	ASTM A-106 GR. 1045
SHAFT BEARING	BRONZE	208	ASTM B-584 C84400
ENCLOSING TUBE	STEEL	078	ASTM A-120
ENCLOSING TUBE STABILIZER	SYNTHETIC RUBBER	999	—

ENGINEERING data
VERTICAL LOW LIFT PUMP

INSTRUCTIONS FOR DETERMINING THE SHAFT SIZE ACCORDING TO THE HORSE POWER

- 1) For shafts made of standard C1045 material, see maximum recommended B H P charts for threaded shaft and threaded shaft with keyway
NOTE keep in mind that the drive shaft will always have thread and keyway
- 2) for special materials, see chart below.

STEPS FOR DETERMINING SHAFT HORSE POWER CAPABILITY

- A) Find correct nominal shaft diameter
- B) For nominal shaft diameter choose the specified speed
- C) Follow the line to the column with corresponding thrust load and read HP rating
- D) Interpolate between listed thrust loads or in between HP ratings

EXAMPLE: C 1045 threaded 1" shaft @ 1780 RPM and 3000 LBS Thrust has a corresponding 71 SHP

2000 LBS corresponds to 72 HP

4000 LBS corresponds to 71HP

MATERIAL	SPECIFICATIONS	UTS PSI	YIELD STRENGTH PSI	MAX ALLOW AWWA (PSI)	MULT.
C-1045	A108,TYPE S104500	100000	80000	15300	1
316	A276 TYPE 316 COLD FIN	90000	45000	13500	0.88
410	A276 TYPE S41000	100000	80000	18000	1.18
416	A582	100000	70000	18000	1.18
17-4(H1150)	A564TYPE 630 COND.H1150	135000	105000	24300	1.59
(H1025)	A564TYPE 630 COND.H1025	155000	145000	27900	1.82
(H900)	A564TYPE 630 COND.H900	190000	170000	34200	2.24
18-18	A276 TYPE S28200	110000	60000	18000	1.18
NITRONIC 50	A276 TYPE XM-19 COND.A	100000	55000	16500	1.08

ENGINEERING data
VERTICAL LOW LIFT PUMP

MAXIMUM RECOMMENDED B.H.P. THREADED SHAFT W/KEYWAY

NOM. DIA. (INS.)	RPM n	THRUST (1000 lbs)													
		2	4	6	8	10	15	20	25	30	40	60			
7/8	1	0.017	0.016	0.015	0.013										
	1180	20	19	17	15										
	1780	30	28	26	22										
	3500	58	56	51	44										
1	1	0.027	0.027	0.026	0.024										
	1180	32	32	30	29										
	1780	49	48	46	43										
	3500	96	94	90	85										
1 - 3/16	1	0.049	0.049	0.048	0.047										
	1180	58	57	56	55										
	1780	87	87	85	83										
	3500	172	170	167	163										
1 - 1/2	1	0.093	0.093	0.092	0.091	0.090	0.086								
	880	82	82	81	80	79	75								
	1180	110	109	109	108	108	101								
	1780	166	165	164	162	160	152								
1 - 11/16	3500	326	325	322	319	315	300								
	1	0.143	0.142	0.142	0.141	0.140	0.136								
	880	125	125	125	124	123	120								
	1180	168	168	167	166	165	161								
1 - 15/16	1780	254	253	252	251	249	242								
	3500	499	498	496	493	489	476								
	1	0.201	0.201	0.201	0.200	0.199	0.196								
	880	177	177	177	176	175	172								
2 - 3/16	1180	238	237	237	236	235	231								
	1780	359	358	357	356	354	348								
	3500	705	704	702	700	696	685								
	1	0.312	0.312	0.311	0.311	0.310	0.307								
2 - 7/16	880	275	274	274	273	273	270								
	1180	368	368	367	367	366	362								
	1780	556	555	554	553	552	547								
	1	0.409	0.409	0.408	0.408	0.407	0.404	0.401	0.396						
2 - 11/16	880	360	359	359	359	358	356	353	349						
	1180	482	482	482	481	480	477	473	467						
	1780	728	727	726	725	724	720	713	705						
	1	0.580	0.580	0.579	0.579	0.578	0.576	0.573	0.569	0.564					
2 - 15/16	710	412	412	411	411	410	409	407	404	400					
	880	510	510	510	509	509	507	504	500	496					
	1180	684	684	684	683	682	680	676	671	665					
	1780	1032	1032	1031	1030	1029	1025	1019	1012	1003					
3 - 3/16	1	0.723	1.000	0.723	0.722	0.722	0.720	0.717	0.713	0.708	0.696				
	710	514	513	513	513	513	511	509	506	503	494				
	880	637	636	636	636	635	633	631	627	623	613				
	1180	854	853	853	852	852	849	846	841	836	822				
3 - 7/16	1780	1288	1287	1287	1286	1285	1281	1276	1269	1261	1239				
	1	0.970	0.970	0.969	0.969	0.968	0.966	0.964	0.960	0.956	0.945				
	710	689	688	688	688	687	686	684	682	679	671				
	880	853	853	853	853	852	850	848	845	841	832				
3 - 11/16	1180	1144	1144	1144	1143	1143	1140	1137	1133	1128	1115				
	1780	1726	1726	1725	1724	1724	1720	1715	1709	1702	1683				
	1					1.167	1.165	1.163	1.160	1.156	1.146	1.116			
	710					829	827	826	823	821	813	792			
3 - 15/16	880					1027	1025	1023	1020	1017	1008	982			
	1180					1377	1375	1372	1368	1364	1352	1317			
	1780					2077	2074	2070	2064	2057	2039	1987			
	1					1.511	1.510	1.507	1.504	1.501	1.492	1.465			
3 - 15/16	585					884	883	882	880	878	873	857			
	710					1073	1072	1070	1068	1066	1059	1040			
	880					1330	1328	1326	1324	1321	1313	1289			
	1180					1783	1781	1779	1775	1771	1760	1729			
3 - 15/16	1780					2690	2687	2683	2678	2671	2655	2608			
	1					1.767	1.765	1.763	1.760	1.757	1.748	1.723			
	585					1034	1033	1031	1030	1028	1023	1008			
	710					1254	1253	1252	1250	1247	1241	1223			
3 - 15/16	880					1555	1553	1551	1549	1546	1538	1516			

ENGINEERING data
VERTICAL LOW LIFT PUMP

MAXIMUM RECOMMENDED B.H.P. THREADED SHAFT

NOM. DIA. (INS.)	RPM n	THRUST (1000 lbs)										
		2	4	6	8	10	15	20	25	30	40	60
7/8	1	0.026	0.026	0.025	0.023							
	1180	31	31	29	27							
	1780	47	46	44	41							
	3500	93	90	87	81							
1	1	0.041	0.040	0.039	0.038							
	1180	48	47	46	45							
	1780	72	71	70	67							
	3500	142	140	137	132							
1-3/16	1	0.065	0.065	0.064	0.063							
	1180	77	77	76	74							
	1780	116	116	114	112							
	3500	229	227	225	221							
1-1/2	1	0.138	0.137	0.137	0.136	0.135	0.131					
	880	121	121	120	119	119	115					
	1180	162	162	161	160	159	155					
	1780	245	244	243	242	240	233					
1-15/16	1	0.200	0.199	0.199	0.198	0.197	0.194					
	880	176	175	175	174	173	171					
	1180	235	235	235	234	233	229					
	1780	355	355	354	352	351	345					
1-15/16	0	698	697	696	693	690	678					
	1	0.308	0.307	0.307	0.306	0.305	0.303					
	880	271	270	270	270	269	266					
	1180	363	363	362	361	360	357					
2-3/16	1780	548	547	546	545	544	539					
	3500	1077	1076	1074	1072	1069	1059					
	1	0.449	0.449	0.448	0.448	0.447	0.445					
	880	395	395	395	394	393	391					
2-7/16	1180	530	529	529	528	528	525					
	1780	799	799	798	797	796	791					
	1	0.628	0.628	0.627	0.627	0.626	0.624	0.621	0.617			
	880	553	552	552	552	551	549	547	543			
2-11/16	1180	741	741	740	739	737	733	728				
	1780	1,118	1,118	1,117	1,116	1,115	1,111	1,106	1,098			
	1	0.849	0.849	0.849	0.848	0.848	0.846	0.843	0.839	0.835		
	710	603	603	603	602	602	601	599	596	593		
2-15/16	880	747	747	747	747	746	744	742	739	735		
	1180	1002	1002	1002	1001	1000	998	995	991	985		
	1780	1512	1511	1511	1510	1509	1506	1501	1494	1486		
	1	1.117	1.117	1.117	1.116	1.116	1.114	1.112	1.108	1.104	1.094	
3-3/16	710	793	793	793	793	792	791	789	787	784	777	
	880	983	983	983	982	982	980	978	975	972	963	
	1180	1318	1318	1318	1317	1317	1315	1312	1308	1303	1291	
	1780	1989	1989	1988	1987	1986	1983	1979	1973	1966	1947	
3-7/16	1	1.436	1.436	1.436	1.436	1.435	1.434	1.431	1.428	1.425	1.415	
	710	1020	1020	1020	1019	1019	1018	1016	1014	1011	1005	
	880	1264	1264	1264	1263	1263	1261	1259	1257	1254	1245	
	1180	1695	1695	1695	1694	1694	1692	1689	1685	1681	1670	
3-11/16	1780	2557	2557	2556	2555	2555	2552	2548	2542	2536	2519	
	1					1.810	1.808	1.806	1.804	1.800	1.792	1.767
	710					1285	1284	1283	1281	1278	1272	1254
	880					1593	1591	1590	1587	1584	1577	1555
3-15/16	1180					2136	2134	2131	2128	2124	2114	2084
	1780					3222	3219	3215	3210	3204	3189	3144
	1					2.245	2.244	2.242	2.239	2.236	2.228	2.205
	585					1313	1312	1311	1310	1308	1303	1290
3-15/16	710					1594	1593	1591	1590	1587	1582	1565
	880					1976	1974	1973	1970	1968	1960	1940
	1180					2649	2647	2645	2642	2638	2629	2601
	1780					3996	3993	3990	3985	3980	3965	3924
3-15/16	1					2.744	2.743	2.741	2.739	2.736	2.728	2.707
	585					1605	1605	1604	1602	1600	1596	1583
	710					1949	1948	1946	1945	1942	1937	1922
	880					2415	2414	2412	2410	2408	2401	2382

ENGINEERING data
VERTICAL LOW LIFT PUMP

RECOMMENDED BEARING SPANS

STEPS FOR DETERMINING HORSE POWER

- A) Find correct nominal shaft diameter
- B) For nominal shaft diameter choose the specified speed
- C) Follow the line to column with corresponding thrust load and read HP rating

SFT DIA (INS.)	RPM			THRUST (1000 lbs)											
				0	2	4	6	8	10	15	20	25	30	40	60
1	1180	Shft Sft	Max	57	63.5	70	77	84							
		Flex	Min	96	114	132	150	167							
		Sft	Max	113	122	134	147	160							
	1770	Shft Sft	Max	46	50	53.8	57	61							
		Flex	Min	78	88	98	108	117							
		Sft	Max	92	96	103	110	117							
3500	Shft Sft	Max	33	34	35	36	38								
	Flex	Min	56	59	63	66	70								
	Sft	Max	63	66	68	71	73								
1 - 3/16	1180	Shft Sft	Max	62	66	70	75	79							
		Flex	Min	105	116	128	139	151							
		Sft	Max	124	132	141	150	159							
	1770	Shft Sft	Max	51	52	55	57	60							
		Flex	Min	85	92	100	104	111							
		Sft	Max	101	105	110	115	120							
3500	Shft Sft	Max	36	36	37	38	39								
	Flex	Min	61	63	65	68	70								
	Sft	Max	72	73	75	77	78								
1 - 1/2	1180	Shft Sft	Max	69	72	74	76	79	81	88					
		Flex	Min	118	124	130	137	143	150	166					
		Sft	Max	139	144	148	153	158	163	176					
	1770	Shft Sft	Max	56	58	59	60	62	63	66					
		Flex	Min	97	100	103	106	110	113	122					
		Sft	Max	113	116	118	121	124	126	133					
3500	Shft Sft	Max	40	40	41	41	42	42	43						
	Flex	Min	69	70	71	72	73	75	78						
	Sft	Max	80	81	82	83	84	85	87						
1 - 11/16	880	Shft Sft	Max	85	88	91	93	96	99	107					
		Flex	Min	145	152	159	166	174	181	200					
		Sft	Max	171	176	182	187	193	199	214					
	1180	Shft Sft	Max	73	75	77	79	81	82	87					
		Flex	Min	125	130	134	139	144	148	161					
		Sft	Max	147	151	154	158	162	165	175					
1770	Shft Sft	Max	60	61	62	63	64	65	67						
	Flex	Min	102	105	107	110	112	115	121						
	Sft	Max	120	122	124	126	128	130	135						
3500	Shft Sft	Max	42	43	43	43	44	44	45						
	Flex	Min	73	74	75	76	76	77	80						
	Sft	Max	85	86	87	87	88	89	91						

ENGINEERING data
VERTICAL LOW LIFT PUMP

RECOMMENDED BEARING SPANS (INS.) FOR SHORT-COUPLED PUMPS

SFT DIA (INS.)	RPM			THRUST (1000 lbs)													
				0	2	4	6	8	10	15	20	25	30	40	60		
1 - 15/16	880	Stiff	Sft	Max	91	93	95	97	99	101	106						
		Flex	Min	155	160	165	170	175	181	194							
		Sft	Max	183	187	191	195	199	203	213							
	1180	Stiff	Sft	Max	79	80	81	82	84	85	88						
		Flex	Min	135	138	140	144	147	150	159							
		Sft	Max	158	160	163	165	168	170	177							
	1770	Stiff	Sft	Max	64	65	66	66	67	68	69						
		Flex	Min	110	111	113	115	117	118	123							
		Sft	Max	129	130	132	133	134	136	139							
	3500	Stiff	Sft	Max	46	46	46	46	46	47	47						
		Flex	Min	78	79	79	80	81	81	83							
		Sft	Max	92	92	92	93	93	94	95							
2 - 3/16	880	Stiff	Sft	Max	97	98	100	101	103	104	108						
		Flex	Min	165	169	172	176	180	183	193							
		Sft	Max	194	197	200	203	206	209	216							
	1180	Stiff	Sft	Max	84	85	85	86	87	88	91						
		Flex	Min	143	145	147	149	152	154	160							
		Sft	Max	168	170	171	173	175	177	182							
	1770	Stiff	Sft	Max	69	69	69	70	70	71	72						
		Flex	Min	116	118	119	120	122	123	126							
		Sft	Max	137	138	139	140	141	142	144							
2 - 7/16	880	Stiff	Sft	Max	102	103	105	106	107	108	111	113	116				
		Flex	Min	174	177	180	182	185	188	195	203	210					
		Sft	Max	205	207	210	212	214	216	222	227	233					
	1180	Stiff	Sft	Max	88	89	90	90	91	92	94	95	97				
		Flex	Min	150	152	154	156	157	159	164	169	173					
		Sft	Max	177	179	180	181	183	184	188	191	195					
	1770	Stiff	Sft	Max	72	72	73	73	74	74	75	76	77				
		Flex	Min	123	124	125	126	127	128	130	133	135					
		Sft	Max	145	145	146	147	148	148	150	152	154					
2 - 11/16	710	Stiff	Sft	Max	120	121	122	123	124	126	129	132	135	138			
		Flex	Min	203	206	209	212	215	218	226	234	242	250				
		Sft	Max	240	242	245	247	249	252	258	264	270	276				
	880	Stiff	Sft	Max	108	108	109	110	111	112	114	116	118	121			
		Flex	Min	183	185	187	189	191	194	199	205	211	217				
		Sft	Max	216	217	219	221	222	224	228	233	237	242				
	1180	Stiff	Sft	Max	93	93	94	94	95	96	97	98	100	101			
		Flex	Min	158	159	161	162	163	164	168	172	176	179				
		Sft	Max	186	187	188	189	190	192	194	197	200	203				
	1770	Stiff	Sft	Max	76	76	76	77	77	77	78	79	79	80			
		Flex	Min	129	130	131	131	132	133	135	137	139	141				
		Sft	Max	152	152	153	154	154	155	156	158	159	161				
2 - 15/16	710	Stiff	Sft	Max	125	126	127	128	129	130	132	135	137	140	145		
		Flex	Min	213	215	217	220	222	225	231	237	243	250	263			
		Sft	Max	251	253	255	257	258	260	265	270	275	280	290			
	880	Stiff	Sft	Max	112	113	114	114	115	116	118	119	121	123	126		
		Flex	Min	191	193	195	196	198	200	204	209	213	218	227			
		Sft	Max	225	227	228	229	231	232	236	239	243	246	253			
	1180	Stiff	Sft	Max	97	97	98	98	99	99	100	101	103	104	106		
		Flex	Min	165	166	167	168	170	171	173	176	179	182	188			
		Sft	Max	195	195	196	197	198	199	201	203	206	208	212			
	1770	Stiff	Sft	Max	79	79	80	80	80	80	81	82	82	83	84		
		Flex	Min	135	136	136	137	137	138	139	141	142	144	147			
		Sft	Max	159	159	160	160	161	161	162	164	165	166	168			

ENGINEERING data
VERTICAL LOW LIFT PUMP

RECOMMENDED BEARING SPANS (INS.) FOR SHORT-COUPLED PUMPS

SFT DIA (INS.)	RPM			THRUST (1000 lbs)											
				0	2	4	6	8	10	15	20	25	30	40	60
3 - 3/16	710	Stiff Sft	Max	131			133	134	134	136	138	140	142	146	
		Flex	Min	222			227	229	231	236	241	246	251	262	
		Sft	Max	262			266	268	269	273	277	281	285	293	
	880	Stiff Sft	Max	117			119	119	120	121	123	124	126	128	
		Flex	Min	199			203	205	206	210	213	217	220	228	
		Sft	Max	235			238	239	240	243	246	249	252	260	
	1180	Stiff Sft	Max	101			102	103	103	104	105	106	106	108	
		Flex	Min	172			175	176	176	179	181	183	186	190	
		Sft	Max	203			205	206	206	208	210	212	213	217	
	1770	Stiff Sft	Max	82			83	83	83	84	84	85	85	86	
		Flex	Min	141			142	142	143	144	145	147	148	150	
		Sft	Max	165			167	167	167	168	169	170	171	173	
3 - 7/16	710	Stiff Sft	Max	136			137	138	139	140	142	143	145	148	155
		Flex	Min	230			235	236	238	242	246	250	255	263	281
		Sft	Max	272			275	277	278	281	284	287	291	297	311
	880	Stiff Sft	Max	122			123	124	124	125	126	127	129	131	136
		Flex	Min	207			210	211	212	215	218	221	224	230	243
		Sft	Max	244			247	248	248	251	253	255	258	262	272
	1180	Stiff Sft	Max	105			106	106	106	107	108	109	109	111	114
		Flex	Min	179			181	182	182	184	186	188	190	194	202
		Sft	Max	211			212	213	213	215	216	218	219	222	228
	1770	Stiff Sft	Max	86			86	86	86	87	87	88	88	89	90
		Flex	Min	146			147	148	148	149	150	151	152	154	158
		Sft	Max	172			173	173	173	174	175	176	177	178	181
3 - 11/16	585	Stiff Sft	Max	155					158	160	162	164	165	169	177
		Flex	Min	262					272	276	280	285	290	299	319
		Sft	Max	310					317	321	324	328	331	339	354
	710	Stiff Sft	Max	140					143	144	146	147	148	151	157
		Flex	Min	238					245	248	252	255	259	266	280
		Sft	Max	281					287	289	292	295	297	303	314
	880	Stiff Sft	Max	126					128	129	130	131	132	134	138
		Flex	Min	214					219	221	224	226	229	234	244
		Sft	Max	253					256	258	260	262	264	268	276
	1180	Stiff Sft	Max	109					110	111	111	112	112	114	116
		Flex	Min	185					188	190	191	193	194	198	204
		Sft	Max	218					221	221	223	224	225	228	233
1770	Stiff Sft	Max	89					89	90	90	90	91	91	93	
	Flex	Min	151					153	154	154	155	156	158	161	
	Sft	Max	178					179	180	181	181	182	183	186	
3 - 15/16	585	Stiff Sft	Max	160					163	164	166	167	169	172	178
		Flex	Min	271					279	282	286	290	294	302	319
		Sft	Max	320					326	329	332	335	338	345	357
	710	Stiff Sft	Max	145					147	148	150	151	152	154	159
		Flex	Min	246					252	255	258	260	263	269	281
		Sft	Max	291					295	297	300	302	304	309	318
	880	Stiff Sft	Max	130					132	133	134	134	135	137	140
		Flex	Min	221					225	227	229	231	234	238	247
		Sft	Max	261					264	266	268	269	271	274	281

- (1) Applies to all total column lengths of 30 ft and less
- (2) Line shaft bearing spans listed herein are designed to avoid all potential critical speeds, and resultant destructive shaft vibration, by 20%
- (3) All variable speed pumps must have stiff shaft bearing spans

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ENGINEERING data
VERTICAL LOW LIFT PUMP
MIXED FLOW & PROPELLER PUMPS

CLASS	TYPE	BOWL	PROP.IMP. & RET. PLATE	THRUST COLLAR	PUMP SHAFT	BOWL BEARINGS	BOLTING	BOWL LINER
1	STANDARD	CAST IRON	RED BRASS	416 S STEEL	410 S STEEL	LEADED RED BRASS	C-1018 STL	NONE
2	ALL IRON	CAST IRON CL 30	CAST IRON CL30	416 S STEEL	410 S STEEL	LEADED RED BRASS	C-1018 STL	NONE
3	NI-IRON OR MOLY-IRON	2% NI OR 1.85% MOLY CAST IRON	2% NI OR 1.85% MOLY CAST IRON	416 S STEEL	410 S STEEL	ZINCLESS BRONZE SAE 64	304 S STEEL	2% NI OR 1.85% MOLY CAST IRON
4	ZINCLESS BRONZE	ZINCLESS BRONZE SAE 64	ZINCLESS BRONZE SAE 64	303 S STEEL	303 S STEEL	ZINCLESS BRONZE SAE 64	304 S STEEL	NONE
5	S STEEL	316 S STEEL	316 S STEEL	316 S STEEL	316 S STEEL	FIBERGLASS	316 S STEEL	NONE

SHAFT WEIGHTS

SHAFT SIZE	WEIGHT PER FOOT
3/4	1.5
7/8	2.09
1	2.67
1 3/16	3.77
1 1/2	6.01
1 11/16	7.6
1 15/16	10.02
2 3/16	12.78
2 7/16	15.87
2 11/16	19.29
2 15/16	23.06
3	24.03
3 1/4	28.21
3 1/2	32.71
3 3/4	37.55
4	42.73
4 1/4	48.23
4 1/2	54.07
4 3/4	60.25
5	66.76

ENGINEERING data

VERTICAL LOW LIFT PUMP

MIXED FLOW TYPE

PUMP SIZE	MIXED-FLOW/IMPELLER				STANDARD		MAXIMUM		TUBE PROJ.	SHAFT PROJ.	WALL THICK'S	PRESS. RATING PSI	BRG. LG.	(1) MAX. SPHERE	TRASH RACK SPACING
	INCHES DIAM.	LBS. WGT.	SQ. IN. EYE AREA	WR ² # FT ²	SHAFT	TUBE	SHAFT	TUBE							
6	8	12	30.7	—	1	1 1/2	1	1 1/2	0	14	3/8	50	2 3/4	1	1/2
8	9 1/4	15	41.3	—	1	1 1/2	1 3/16	1 1/2	0	14	3/8	50	3 1/4	1	1/2
10	10 5/8	21	54.7	—	1 3/16	2	1 3/16	2	0	14	7/16	50	3 1/2	1 1/4	1/2
12	12	30	69.4	1.3	1 1/2	2 1/2	1 1/2	2 1/2	0	14	7/16	50	4	1 1/2	1
14	14	40	94.9	3	1 1/2	2 1/2	1 11/16	3	0	14	7/16	50	4	1 3/4	1
16	15 15/16	62	122.8	6	1 11/16	3	2 3/16	3 1/2	0	14	1/2	50	5	2	1 1/2
18	18	92	156.4	11	1 15/16	3	2 7/16	4	1 1/2	14	1/2	50	6	2 1/4	1 1/2
20	21 1/4	104	218.4	25	2 3/16	3 1/2	2 11/16	5	1 1/2	14	9/16	50	8 1/8	2 1/2	2
24	24	235	277.7	48	2 7/16	4	3	5	1 1/2	14	5/8	50	7 3/4	3	2
26	26 1/4	265	330.4	67.5	2 7/16	4	3	5	1 1/2	14	5/8	50	9 1/2	3 1/4	2
30	30	300	434	147	3	5	4	6	3	20	11/16	50	10	4 1/2	3

PROPELLER TYPE

PUMP SIZE	PROPELLER				STANDARD		MAXIMUM		TUBE PROJ.	SHAFT PROJ.	WALL THICK'S	PRESS. RATING PSI	BRG. LG.	(1) MAX. SPHERE	TRASH RACK SPACING
	INCHES DIAM.	LBS. WGT.	SQ. IN. EYE AREA	WR ² # FT ²	SHAFT	TUBE	SHAFT	TUBE							
8	8 3/8	10	46.8	—	1	1 1/2	1	1 1/2	2	14	3/8	50	2 3/4	2	1
10	9 3/4	16	63.6	—	1 3/16	2	1 11/16	2 1/2	2	14	3/8	50	3 1/2	2 1/2	1
12	11 1/2	26	88.6	1	1 1/5	2	1 2/3	2 1/2	2	14	7/16	50	4	3 1/4	1 1/2
14	13 1/2	41	122.1	2.5	1 1/2	2 1/2	1 15/16	2 1/2	3	14	7/16	50	4 1/2	3 3/4	1 1/2
16	15 1/4	60	155.6	5	1 11/16	3	2 3/16	3	3	14	1/2	50	5	4 1/4	2
20	19 1/2	122	255	17	1 15/16	3	2 11/16	3 1/2	4 1/2	14	9/16	50	6	5 1/2	2 1/2
24	23 1/2	216	369	43	2 3/16	3 1/2	3 1/4	4	5 1/2	14	9/16	50	8 1/8	6 1/2	3
30	29 1/2	312	583	135	2 11/16	5	3 1/4	5	7	20	5/8	50	9 15/16	8	4
36	35	500	826	330	3	5	3 3/4	6	10	20	5/8	50	11 1/2	9 3/4	4
42	40 3/4	750	1110	690	3 1/2	6	4	8	10	26	11/16	50	13 1/2	11	4

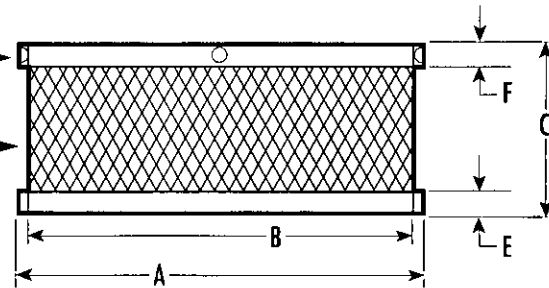
- 1.) The maximum sphere size diameters noted in the above table are the sphere sized diameters that will pass through the impeller, or propeller, only.
- 2.) The maximum sphere size diameter noted on each individual pump performance curve is the sphere size diameter that will pass between the minimum opening between the trailing edge of the impeller or propeller, vanes and the leading edge of the stationary diffuser vanes in the bowl
- 3.) THE MAXIMUM SPHERE SIZE DIAMETERS LISTED ON THIS PAGE OR ELSEWHERE ARE NOT A GUARANTEE THAT THE PUMPS ARE CAPABLE OF PUMPING SOLIDS OF THE SIZES INDICATED. PERCENTAGE OF SOLIDS AND COMPLETE DETAILS MUST BE REFERRED TO THE FACTORY.

ENGINEERING data
VERTICAL LOW LIFT PUMP

MIXED FLOW & PROPELLER PUMPS

Drill G Dia. tap H Dia. NC-2 4 holes equally spaced

- #1 thru #5 – 13 Ga. Expanded metal 0.25 x 1.00 Opening (Flattened)
- #6 thru #14 – 9 ga. Expanded metal 0.56 x 1.69 Openings (Flattened)
- #50 thru #54 – 13 Ga. Expanded Metal 0.69 x 1.78 Opening (Flattened)
- #60 – 16 Ga. Expanded Metal



Note: Unless otherwise specified, material shall be carbon steel with hot dip zinc coating, S1N5. Dimensional Tolerance + 0.06

A	B	C	E	F	G	CAPSCREW		BOWLS
						H@	LENGTH	
3.50	3.06	4.50	0.75	0.38	0.31	0.25	0.50	4R
5.56	5.06	4.63	0.75	0.38	F	0.31	0.63	6T,6R
5.81	5.56	4.50	0.63	0.25	0.25	0.25	0.50	6GR,6BH,6AW
10.75	10.25	6.75	0.75	0.38	0.31	0.38	0.88	7R,8ED
7.81	7.56	5.63	0.63	0.31	0.25	0.25	0.50	8FH,7MK,9GH
12.75	12.13	8.88	1.25	0.50	0.31	0.38	0.88	12EL
9.81	9.56	5.75	0.63	0.38	0.25	0.25	0.50	8R,10CH
11.81	11.56	6.75	0.63	0.38	0.25	0.25	0.50	10R,10FH,11GH
								13MK
13.43	13.19	7.75	0.63	0.38	0.25	0.25	0.5	12R,12FH
14	13.38	8.88	1.25	0.5	0.31	0.38	0.88	12KH
16	15.38	10.88	1.25	0.5	0.31	0.38	1	14KH
14.81	14.56	7.75	0.63	0.38	0.25	0.25	0.5	16KH
20	19.25	10.88	1.25	0.5	0.31	0.38	1	18EH,18FXH
17.56	17.31	9.88	0.63	0.44	0.25	0.25	0.5	14R,14FH,16FH
								16AW,18AW
								19AW (17.5" BELL)
22	21.63	12.88	1.5	0.5	0.31	0.38	1	20EH,20K
22.81	22.56	13	0.63	0.5	0.25	0.25	0.5	19AW (22" BELL)
								22AW,24AW
26	25.63	13.13	1.5	0.63	0.42	0.5	1	24EH
32	31.25	13.25	1.75	0.75	0.63	0.5	1.25	28SK
34.25	33.75	14	2	0.63	0.42	0.5	1	30K,28SKKS
44	43.5	24.13	2	0.63	0.42	0.5	1	36EH

Supersedes **All previous catalog materials**

ENGINEERING data
VERTICAL LOW LIFT PUMP

The requirements of a good sump are. It allows the water to reach the pump intake with minimum head loss, demands the least submergence, and is simple to build or excavate. While cylindrical and other special shapes are sometimes used, the most practical is a rectangle.

The water should approach the pump with the least turbulence possible. A transition from pipe or canal should be gradual, avoiding a sudden drop in floor elevation. Water should flow to each pump with as long a straight run as possible. Pumps should never be installed so water must flow past one to reach the next.

