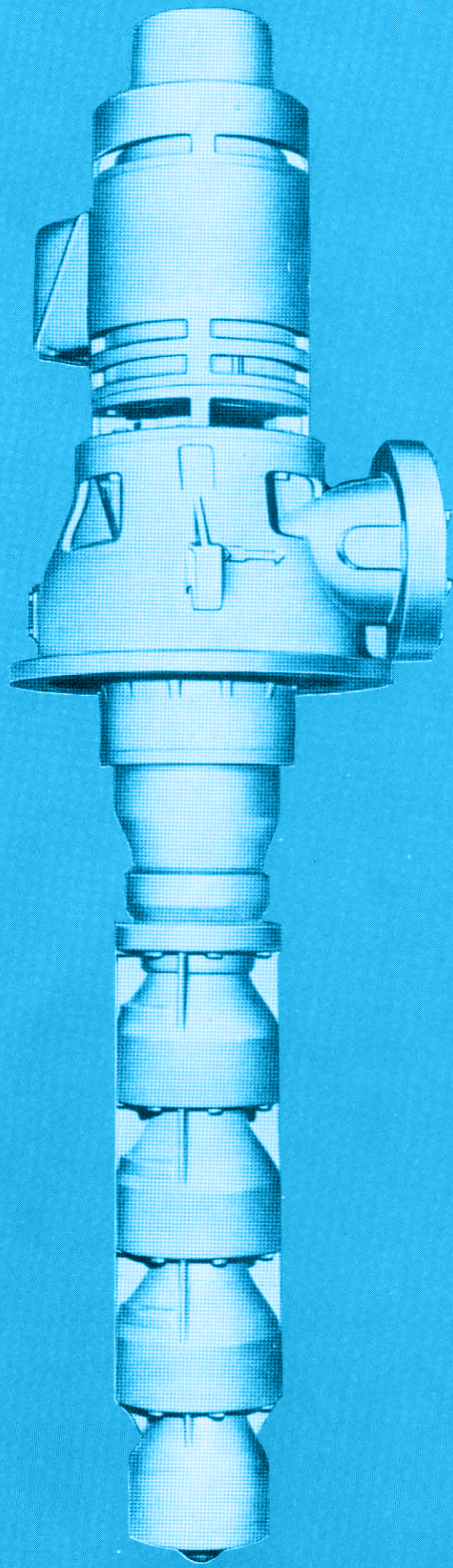




DWP

VERTICAL DEEP WELL PUMPS



DEEP WELL PUMPS

MODEL DWP

Capacities up to 600 m³/h
Total head up to 260 m
Bowl sizes from 6" to 12"
Settings up to 150 m
Speed up to 3600 RPM

**Robust construction for
long life and best
performance under all
operating conditions**

APPLICATIONS

- Irrigation
- Municipalities
- Utilities
- Industrial and Commercial Installations
- Pollution Control
- Mine Dewatering

GENERAL

The DWP pump type is a vertical deep well centrifugal or mixed flow pump, water or oil lubricated with high efficiency, high head and high reliability. It consists of three main assemblies, namely, bowl assembly, column assembly and discharge head.

The bowl assembly is single stage or multistage and the intermediate bowls are interchangeable. This enables addition or removal of any stage to increase or decrease the head of the pump. The lengths of column assembly are also interchangeable.

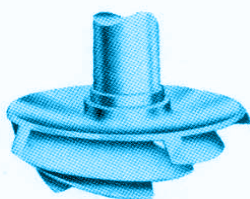
SPECIFICATIONS

Bowl Assembly

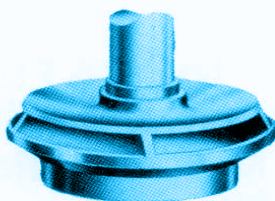
Bowls: Flanged bowls through 12" size of cast iron.

Impellers: Bronze semi-open or enclosed impellers mounted on shaft by taper collets of stainless steel.

Shaft: Stainless steel in both water and oil lubricated.



Semi - Open Impeller



Enclosed Impeller

Column Assembly

Water lubricated construction: Threaded or flanged steel column with bronze bearing retainers. Rubber bearings spacing 5 ft for speeds exceeding 2200 RPM and 10 ft for speeds lower than 2200 RPM.

Column shaft of stainless steel or carbon steel with sleeve of stainless steel.

Oil lubricated construction: Threaded or flanged steel column with rubber tube centering spider spacing 30 ft. Bronze tube shaft bearings and steel enclosing tube.

Bearings spacing for all sizes and speeds is 5 ft. Column shaft of carbon steel.

Discharge Head

Cast iron standard for pressures to 10 kp/cm². Driver mounting flange designed to NEMA standards for vertical hollow shaft motor or right angle gear drive.

Heads up to 5" x 12" use separate stuffing box while type C and all the rest head sizes stuffing box type A (see pages 4, 5).

Driver

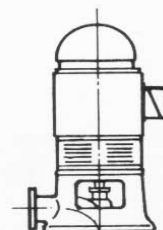
Hollow shaft motor or right angle gear drive or pulley drive (for horizontal motors or internal

combustion engines).

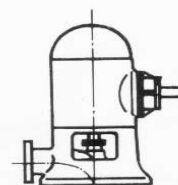
Shaft adjusting nut permits exact impeller adjustment for maximum performance.

The pump downthrust is carried by a thrust bearing built into the driver.

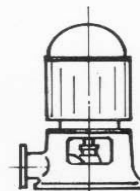
For solid shaft motor and separate thrust bearing refer to factory.



EM



RAGD



PD

CODE DESIGNATION

Bowl Assembly

1 2 3 4

1. Bowl size in inc
2. Hydraulic type
3. Number of stages
4. Lubrication
P Product
O Oil

Column Assembly

1 2 3 4

1. Size in inc of column pipe, enclosing tube for oil lubrication and column shaft
2. Column pipe coupling
CT Threaded
CF Flanged
3. Setting in ft
4. Lubrication
P Product
O Oil

Discharge Head

1 2 3

1. Size in inc
2. Stuffing box type A, C only for product lubrication
3. Lubrication
P Product
O Oil

Driving

1

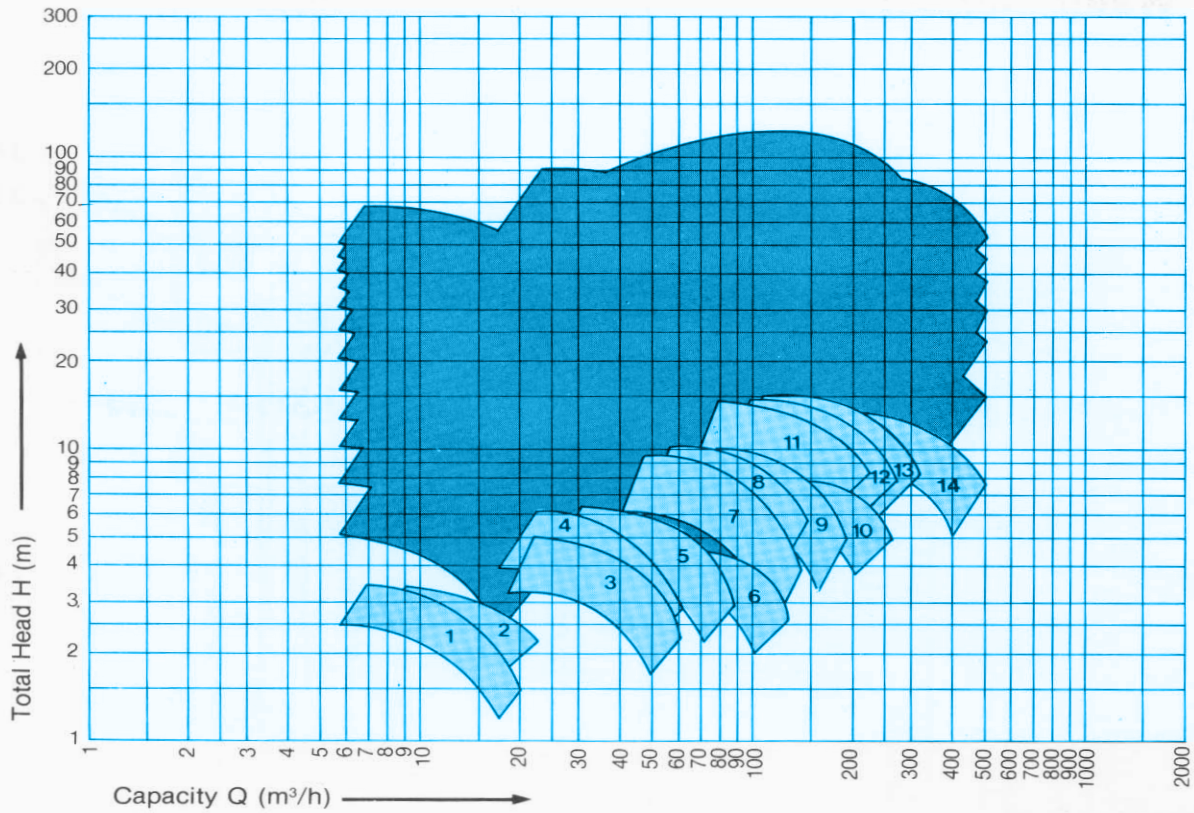
1. EM Electric Motor
RAGD Right Angle Gear Drive
PD Pulley Drive

Example

Bowl assembly 6 - BHC - 10 - O
Column assembly 4 x 1 1/2 x 1 - CT - 100 - O
Discharge head 4 x 10 - O
Driving EM

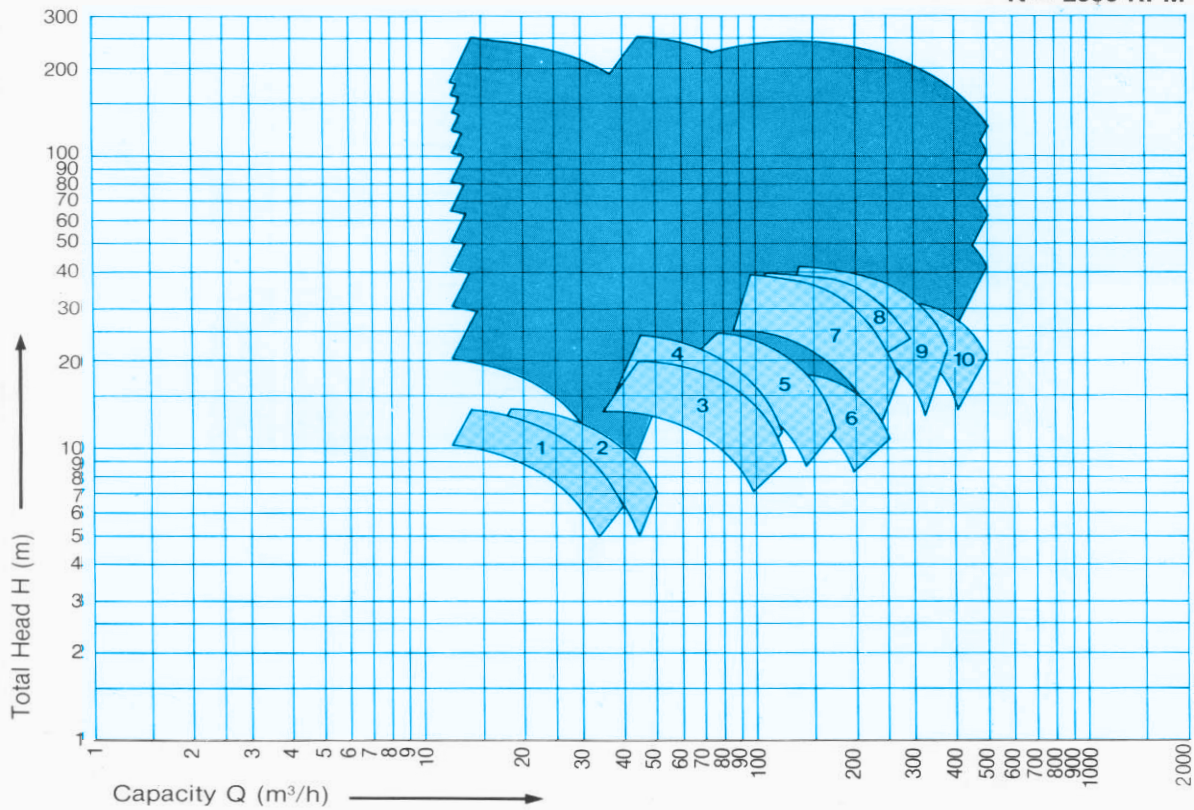
PERFORMANCE RANGE

STANDARD CONSTRUCTION

N = 1450 RPM ¹⁾

1. 6 BLC
2. 6 BHC
3. 7 BHC
4. 8 BLC
5. 8 BHC
6. 8 EC
7. 10 BLC
8. 10 BMC
9. 10 BHC
10. 10 EC
11. 12 BLC
12. 12 BMC
13. 12 BHC
14. 13 EC

N = 2900 RPM

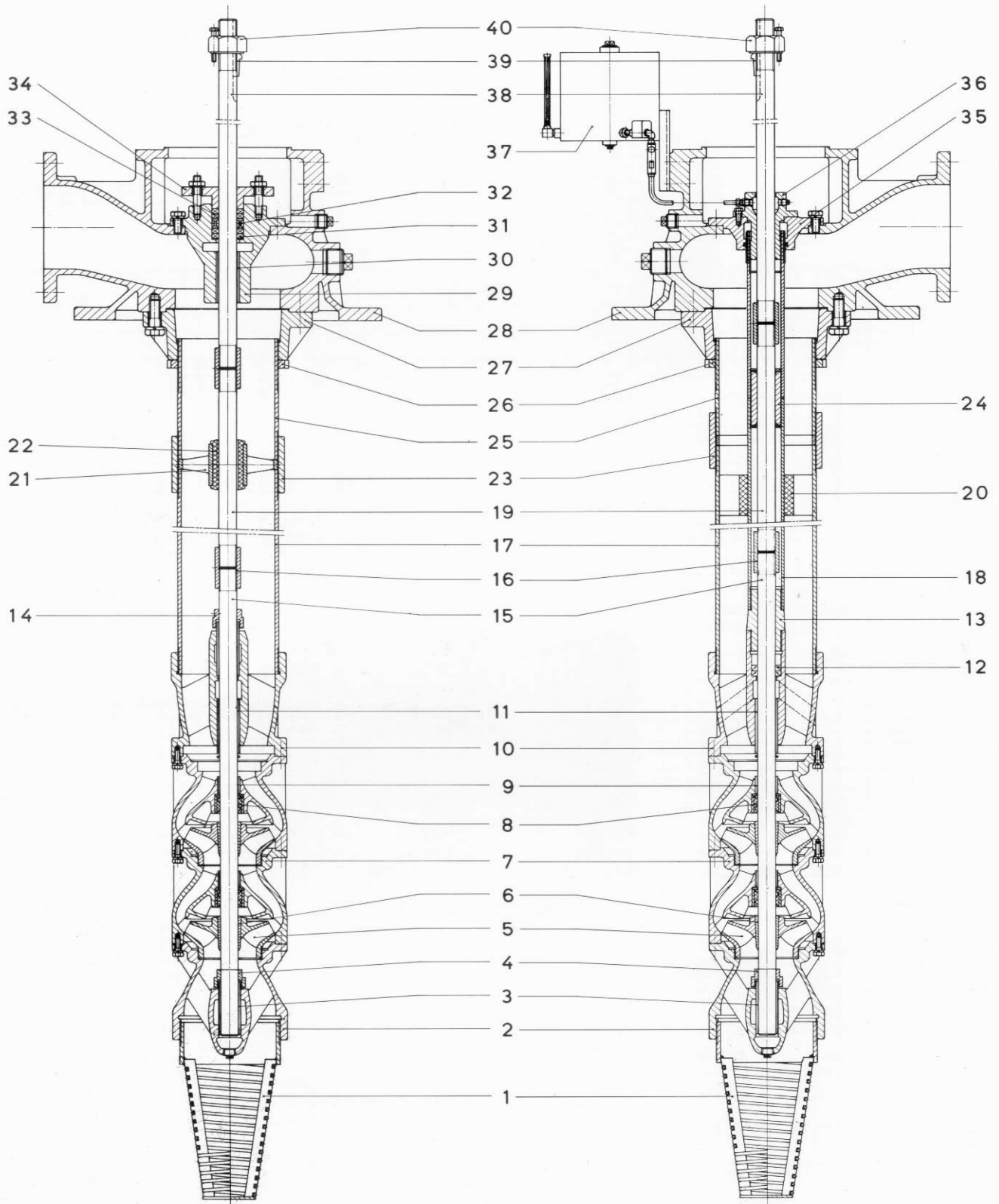


1) For higher pressures at 1450 RPM refer to factory

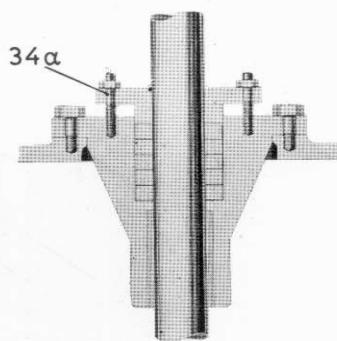
SECTIONAL VIEWS

Water lubrication

Oil lubrication

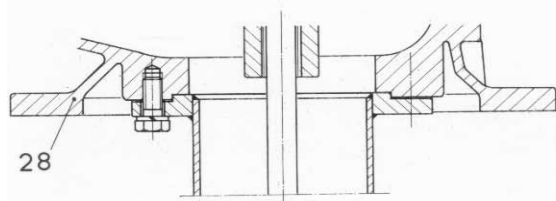


PARTS LIST

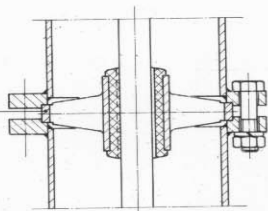


Stuffing Box Assembly
Type C

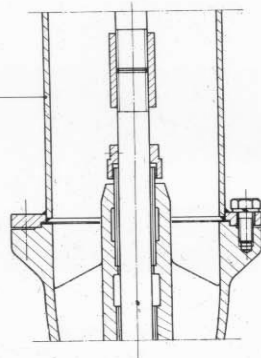
ITEM NUMBER	CODE NUMBER	PART NAME	STANDARD MATERIAL OF CONSTRUCTION
1	155	Cone Strainer	Galvanized steel
2	106	Suction Bowl	Cast iron GG-20
3	545.1	Suction Bowl Bearing	Bronze Rg 7
4	271.1	Sand Collar	Bronze Rg 5
5	230	Impeller	Bronze Rg 5
6	943	Impeller Taper Collet	Stainless steel X20Cr13
7	112	Intermediate Bowl	Cast iron GG-20
8	545.2	Intermediate Bowl Bearing	Rubber 45-55 shore
9	545.3	Intermediate Bowl Bearing	Bronze Rg 7
10	107	Discharge Bowl	Cast iron GG-20
11	545.4	Discharge Bowl Bearing	Bronze Rg 7
12	421	Sealing Rings	
13	544	Tube Adaptor Bearing	Bronze Rg 7
14	271.2	Sand Collar	Bronze Rg 5
15	211	Pump Shaft	Stainless steel X20Cr13
16	852	Shaft Coupling	Steel St 70-2
17	711.1	Threaded Column Pipe	Steel St 37-2
17a	711.2	Flanged Column Pipe	Steel St 37-2
18	714	Enclosing Tube	Steel - St 35
19	212	Column Shaft	Stainless steel X20Cr13 or steel Ck45
20	717	Tube Centering Spider	Rubber 75-80 shore
21	383.1	Bearing Retainer for Threaded Column	Bronze Rg 5
21a	383.2	Bearing Retainer for Flanged Column	Bronze Rg 5
22	545.5	Column Shaft Bearing	Rubber 65-70 shore
23	730	Column Coupling	Steel St 35
24	545.6	Tube Shaft Bearing	Bronze Rg 7
25	711.3	Column Nipple	Steel St 37-2
26	930	Lock Ring	Steel St 35
27	722	Upper Column Flange	Cast iron GG-20
28	115	Discharge Head	Cast iron GG-20
29	451	Stuffing Box Casing	Cast iron GG-20
30	456	Stuffing Box Bearing	Bronze Rg 7
31	457	Stuffing Box Washer	Bronze Rg 5
32	458	Split Stuffing Box Bushing	Bronze Rg 5
33	461	Stuffing Box Packing	Graphitized asbestos
34	452.1	Split Stuffing Box Gland Type A	Bronze Rg 5
34a	452.2	Stuffing Box Gland Type C	Bronze Rg 5
35	465	Tension Nut Body	Cast iron GG-20
36	466	Tension Nut	Bronze Rg 7
37	633	Oiler	
38	213	Drive Shaft	Stainless steel X20Cr13 or steel Ck45
39	942	Drive Shaft Gib Key	Steel Ck 35
40	921	Adjusting Nut	Steel Ck 35



21α



17α



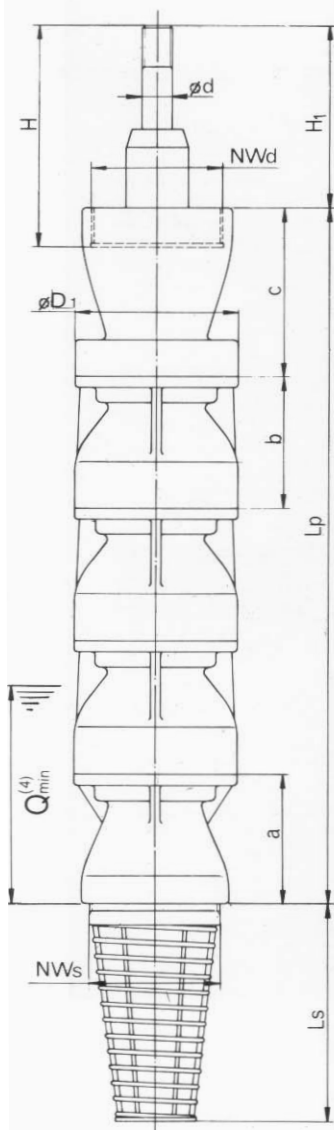
Flanged Column Assembly
Water Lubrication

MATERIAL SPECIFICATIONS

DIN Designation	DIN Number	USA Designation
GG - 20	0.6020	A48 Class 30
X20Cr13	1.4021	AISI 420
Ck 35	1.1181	
Ck 45	1.1191	C-1045
St 35	1.0308	
St 70-2	1.0633	A 108
St 37-2	1.0112	
Rg 5 (CuSn 5 ZnPb)	2.1096.01	SAE 40
Rg 7 (CuSn 7 ZnPb)	2.1090.01	SAE 660

DIMENSIONS BOWL ASSEMBLY

All dimensions in mm except where inches or feet are indicated



PUMP TYPE	6 BC	7 BC	8 BC	8 EC	10 BC	10 EC	12 BC	13 EC
Min well size	6"	8"	8"	8"	10"	10"	12"	13"
Pmax. work. (kp/cm ²)	27	27	26	26	25	25	24	25
Lateral	7,8	12,2	25,6	19,8	25,8	24,6	24,7	15,7
WEIGHT (kg)	1st stage	25	38	49	50	94	100	151
	Each add'l stage	9	15	19	21	36	40	55
DIMENSIONS	NWd	4"	4", 5"	4", 5", 6"	4", 5", 6"	6" 8"	6", 8"	6", 8"
	NWs	4"	5" 6"	5" 6"	6"	6" 8"	8"	8" 10"
	Ls	270	285 345	285 345	345	345 415	415	415 480
	ϕD_1	140	182	191	190,5	238	241	286
	ϕd	1"	1"	1 3/16"	1 3/16"	1 1/2"	1 1/2"	1 11/16"
	H	WL	254	254	254	254	254	254
		OL	—	—	305	305	305	305
	H ₁	WL	216	214	214	214	206	206
		OL	—	—	265	265	257	257
	a	123,7	159,5	177,8	139,7	196,8	177,8	266,7
BOWL ASSEMBLY LENGTH Lp	b	127	156	184,6	206,8	235,6	262,8	273
	c	161,8	170	193	193	243,2	243,2	273
	No of stages	1	412,5	485,5	555,4	539,5	675,6	683,8
		2	539,5	641,5	740	746,3	911,2	946,6
		3	666,5	797,5	924,6	953,1	1146,8	1209,4
		4	793,5	953,5	1109,2	1159,9	1382,4	1472,2
		5	920,5	1109,5	1293,8	1366,7	1618	1735
		6	1047,5	1265,5	1478,4	1573,5	1853,6	1997,8
		7	1174,5	1421,5	1663	1780,3	2089,2	2260,6
		8	1301,5	1577,5	1847,6	1987,1	2324,8	2523,4
		9	1428,5	1733,5	2032,2	2193,9	2560,4	2786,2
		10	1555,5	1889,5	2216,8	2400,7	2796	
		11	1682,5	2045,5	2401,4	2607,5		
		12	1809,5	2201,5	2586	2814,3		
		13	1936,5	2357,5	2770,6			
		14	2063,5	2513,5	2955,2			
		15	2190,5	2669,5				
		16	2317,5	2825,5				
		17	2444,5					
		18	2571,5					
		19	2698,5					
		20	2825,5					

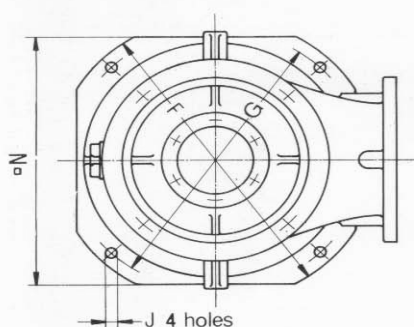
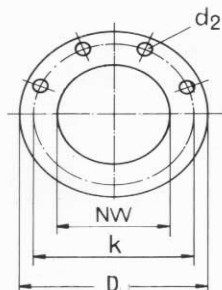
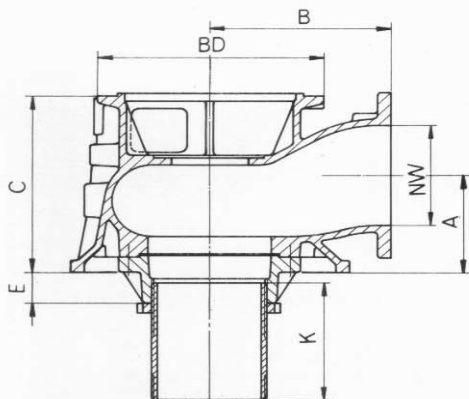
NWd	THREADS SPECIFICATIONS
4"	4,483" - 8 NS - 3 R.H.
5"	5,542" - 8 NS - 3 R.H.
6"	6,617" - 8 NS - 3 R.H.
8"	8,617" - 8 NS - 3 R.H.
10"	10,733" - 8 NS - 3 R.H.

NOTES

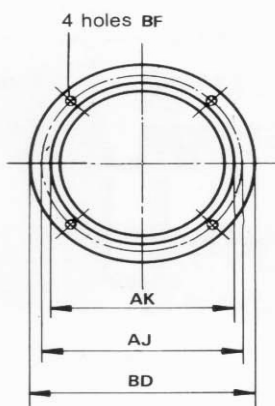
1. Refer to factory for more stages.
2. Semi-open impellers are limited to a maximum of 10 stages.
3. Semi-open impellers must not be used when more than one flow condition is to be met or in pumps that operate in parallel, causing variable flow rates.
4. The minimum submergence Q_{min} for Vortex - free operation also satisfying NPSH requirements is given by the factory in each specific case.

DIMENSIONS DISCHARGE HEAD

All dimensions in mm except where inches or feet are indicated



Discharge head max. working pressure 10 kp/cm² and max. test pressure 16 kp/cm².



DISCHARGE FLANGE

NW	D	k	Number of holes	d ₂
4"	229	190,5	8	5/8"
5"	254	215,9	8	3/4"
6"	280	241,3	8	3/4"
8"	343	298,5	8	3/4"
10"	406	362	12	7/8"

Discharge flange dimensions according to ASA 125 psi.

DRIVER MOUNTING FLANGE

BD	AJ	AK	BF
10"	231.8	209.5	11.2
12"			
16.5"	374.6	342.9	17.5
20"			

Driver mounting flange dimensions according to NEMA standards.

DISCHARGE HEAD SIZE		4" × 10" 4" × 12"	5" × 10" 5" × 12"	6" × 12" 6" × 16 1/2"	8" × 16 1/2" 8" × 20"	10" × 16 1/2" 10" × 20"
Max. setting (ft)		400	400	500	500	500
Approx. weight (kp)		47	63	95 110	121 135	143 159
DIMENSIONS	NW	4"	5"	6"	8"	10"
	BD	10"	10"	12"	16 1/2"	16 1/2"
		12"	12"	16 1/2"	20"	20"
	A	127	140	171,5	200,2	235
	B	229	228,5	304,8	330,2	355,6
	C	254	279,4	317,5	368,3	406,4
	E	82,5	89	74	64,2	82,2
	ø F	381	385	597	597	636
	ø G	355,5	355,5	539,8	539,8	577,9
	ø J	16	16	19	19	19
	K (ft)	1	1	1	1	1
	ø N	*	*	508	508	533

* Baseplate for these sizes is completely circular Ø F.

NOTES

1. All applications over 500 ft setting must be referred to the factory.
2. Semi-open impellers are limited to 200 ft setting since shaft stretch variation due to changing pumping conditions (varying water level or discharge pressure) will affect the critical impeller running clearance.
3. Prelubrication is recommended for water lubricated rubber bearings when distance between ground and static liquid level is more than 50 ft.
4. For other than 50 - and 60 - cycle speeds refer to the factory to check on critical speeds.
5. Non-reverse ratchets (NRR) are recommended on drivers for all applications where the setting is over 100 ft. For settings of 400 ft or more the driver manufacturer must be consulted for availability of NRR.



HEAD OFFICE

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