



# SUBMERSIBLE PUMPS

## 50HZ CATALOGUE

AN ISO 9001:2015 COMPANY,  



SINCE 1935

**VARUNA**  
ELECTRIC

**La Gajjar Machineries Pvt. Ltd.**

Acidwala Estate, Nagarwel Hanuman road, Amraiwadi, Ahmedabad - 380 026, (Gujarat), INDIA  
Phone: +91-79-22777485/87/89 | Fax: +91-79-22730869 | Email: [internationalbusiness@lgmindia.com](mailto:internationalbusiness@lgmindia.com)  
Web: [www.varunaelectric.com](http://www.varunaelectric.com)

SINCE 1935

**VARUNA**  
ELECTRIC



**FOR OVER 85 YEARS, WE HAVE TAKEN WATER TO FARMS, HOMES AND FACTORIES ACROSS INDIA AND THE WORLD.**

### **AN 85-YEAR LEGACY**

What started with the production of a one-of-its-kind hand blower in 1935 by Shri Laljibhai Gajjar has today grown into one of India's most respectable pumps brand with an international presence with a manufacturing prowess and distribution networks across the world. As the creator of India's first oil-based submersible pumps in 1991 to introducing Stainless Steel Pumps in 2009 to integrated Solar Pumps in this decade, we continue to deliver well-engineered pumps that bring water where it is needed.

**Strategic partnership with KOEL since 2017, one of the most admired Indian MNC.**

### **OUR VISION**

To be the preferred water solutions Company for the domestic and agricultural sector across the world by virtue of its vision, techno-pioneering spirit, reliable technology and a growth-focused, customer-centric approach.

### **OUR MISSION**

To work relentlessly towards the Company's vision. To reach out to customers across sectors and geographic domains. To build prosperous partnerships across the world. To set new standards in pumping solutions and to respond efficiently to the world's water and energy challenges.

### **OUR VALUES**

La Gajjar Machineries is driven by the spirit of innovation that makes a difference. We genuinely believe that we are more than a manufacturing company. We are a brand that is adding value to water, the lifeline of the world. This drives us to create reliable, innovative and sustainable solutions for the world.



**PROVIDING WATER SOLUTIONS ACROSS INDIA AND 55 COUNTRIES OF THE WORLD FROM OUR 1 LAKH SQ.M. INTEGRATED INFRASTRUCTURE**

### **BEST-IN-CLASS MANUFACTURING INFRASTRUCTURE**

La Gajjar Machineries has an integrated manufacturing infrastructure with in-built R&D department, testing and warehousing in Ahmedabad, Gujarat.

- Spread across over 1,00,000 square meters (14 football fields)
- Five major manufacturing plants with ancillary units
  - Stainless Steel Pump Unit - Domestic Pump Unit - Agriculture Pump Unit
  - CMB Plant -Rotor Unit - LGM [Depot]
- Equipped with modern manufacturing and testing facilities
- Computer Aided Design
- Powered by over 2000 professional manpower

SETTING STANDARDS IN RESEARCH, QUALITY AND ENERGY- AN UNMATCHED EFFICIENCY .

R&D AND STANDARDS BEYOND COMPROMISE

La Gajjar Machineries we have a stringent quality control process and R&D to ensure that every product we create ives u p to the highest expectation and ever y prescribed qualit y norm. The reco gnitions, certifications and awards at national and international forums bear an apt testimony to this fact.



World-class R&D Team



Government recognised Star rated Export House



Maximum Star Rated pumps approved by the Bureau of Energy Efficiency (BEE)



Winner of Global Quality Award



ISI certification



Product certified by ISO 9001, IS: 8034, IS: 9283, IS: 14220 & CE



CE Certification



RoHS Compliant



ISO 9001 accredited production facility

HARNESSING THE POWER OF SUN

Committed to contributing to energy efficiency, we have created Solar Pump for AC/DC Current. These Submersible Pumps are specially designed to work from solar panels without the need for electricity or batteries as they are driven by electronically commuted motors. The safety switches within the controller prevents them from drying. Solar Pumps are highly efficient and perform even in low-intensity sunlight.



HOLISTIC CONTRIBUTION TO THE NATION



Core active member of Indian Pump Manufacturers Association (IPMA)



One of India's most reliable OEMs



Major contributor to energy efficiency initiatives of the government - 13020 Submersibles supplied to EESL in just one year

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# SUBMERSIBLE PUMPS

## SPECIFICATIONS & ADVANTAGES:

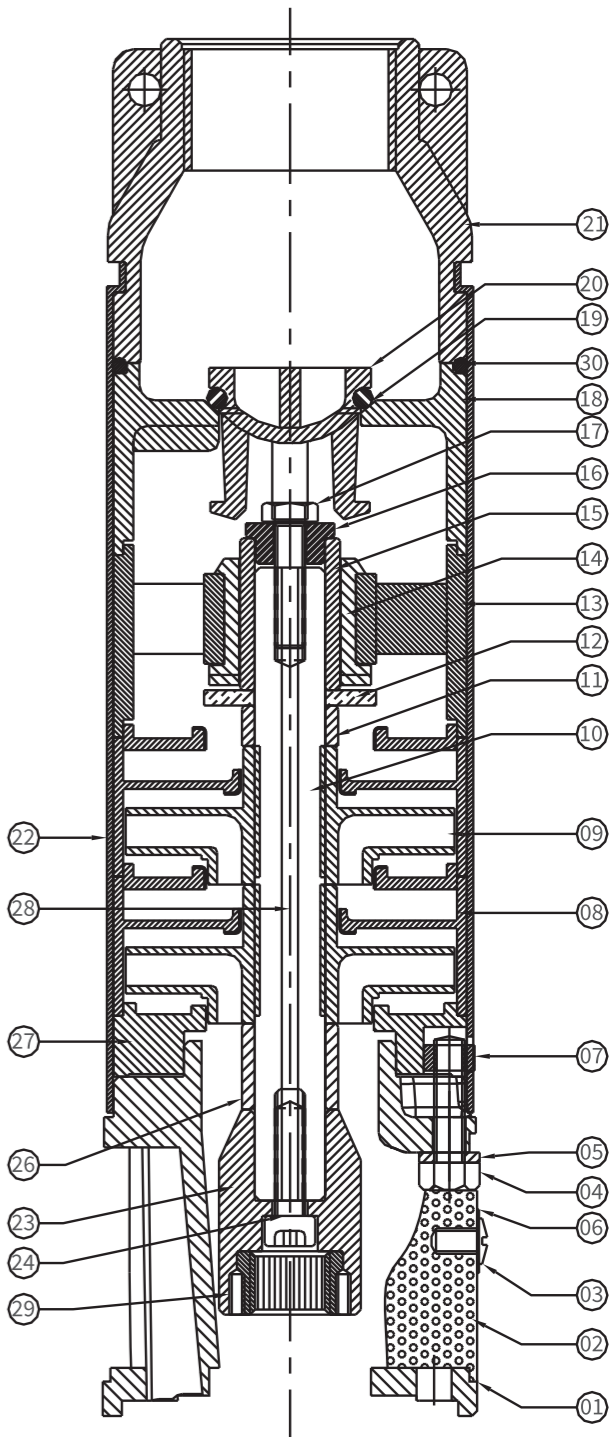
1. Suction and discharge outlets are made of cast iron with nickel coating & with a look of steel finish.
2. Impellers and Diffusers are of specially engineered Resins to provide wear resistance against sand.
3. Pump casing is made of PPO 20% GF.
4. Pump shaft is made of Stainless Steel.
5. Hexagonal Rubber Bearing Bush and Hard Chrome Sleeves help in long lasting performance.
6. Efficient and newly designed Non Return Valve (NRV).
7. Cable Guard and Strainer are of stainless steel.
8. Maximum level of sand content : 50 gm/m3.
9. Application : These pumps are for domestic, agriculture & industrial usage.
10. Operating range : 3" - Head range : 3 mtr to 95 mtr  
Flow rate : 7 lpm to 90 lpm  
Immersion : 1 mtr minimum  
4" - Head range : 9 mtr to 288 mtr  
Flow rate : 5 lpm to 160 lpm  
Immersion : 1 mtr minimum  
5" - Head range : 13 mtr to 104 mtr  
Flow rate : 650 lpm to 140 lpm  
Immersion : 1mtr minimum  
6" - Head range : 4 mtr to 444 mtr  
Flow rate : 1700 lpm to 60 lpm  
Immersion : 1mtr minimum  
7" - Head range : 8 mtr to 112 mtr  
Flow rate : 1660 lpm to 500 lpm  
Immersion : 1mtr minimum  
8" - Head range : 11mtr to 420 mtr  
Flow rate : 3500 lpm to 300 lpm  
Immersion : 1mtr minimum

\* Performance tolerance can be +/- 7%

## 3RF 300, 3RF 30A, 3RF 300H SERIES PUMP DESIGN

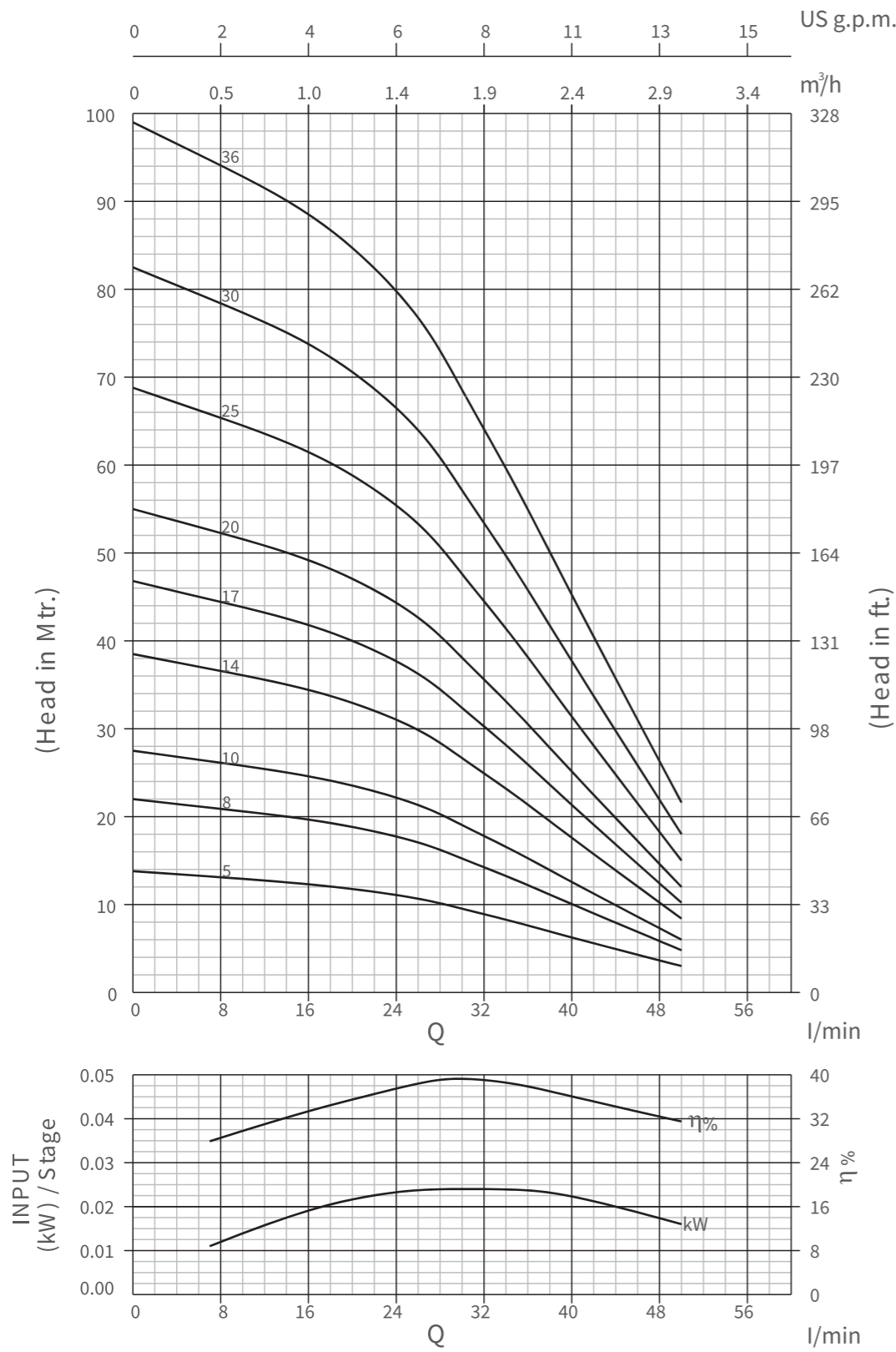
### Material Specification

NO.	PART'S NAME	MATERIAL
1	SUCTION	CAST IRON
2	STRAINER	S.S.202
3	SCREW (USE FOR STRAINER)	S.S.304
4	HEX BOLT (USE FOR SUCTION)	S.S.304
5	SPRING WASHER	S.S.304
6	WASHER (USE FOR STRAINER)	S.S.304
7	SQUARE NUT	S.S.304
8	STAGE CASING	P.P.O.(20% G.F)
9	IMPELLER	P.P.O.(20% G.F)
10	PUMP SHAFT	S.S.410
11	DISTANCE SLEEVE	P.P.O.(20% G.F)
12	THRUST PLATE]	S.S.202
13	D.O.L.	P.P.O.(20% G.F)
14	D.O.L.RUBBER BUSH	N.B.R
15	D.O.L SLEEVE	S.S.410
16	TOP COLLER	S.S.410
17	HEX BOLT	S.S.410
18	D.O.L N.R.V	P.P.O.(20% G.F)
19	N.R.V.CONE 'O' RING	N.B.R
20	N.R.V CONE	NYLON
21	DELIVERY CASING	CAST IRON
22	PUMP PIPE	S.S. 202
23	COUPLING (NEMA)	S.S.304
24	ALLEN BOLT	S.S.304
25	KEY (SUCTION SIDE)	S.S.304
26	SLEEVE (USE FOR SUCTION)	P.P.O.(20% G.F)
27	SUCTION PLATE	P.P.O.(20% G.F)
28	KEY	S.S.304
29	GRUB SCREW	S.S.304
30	O' RING	NBR



3RF 300, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



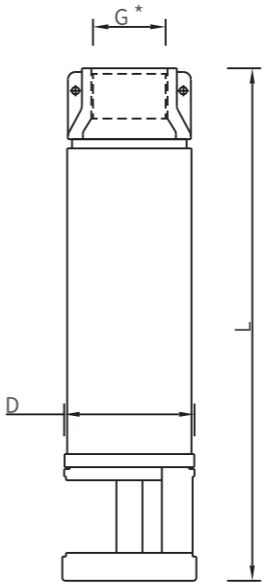
3RF 300, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge								
Single Phase	Stage	kW	HP	l/min	0	7	15	22	27	30	35	40	50
				m³/h	0	0.42	0.9	1.32	1.62	1.8	2.1	2.4	3.0

Model Name	Stage	kW	HP	HEAD IN Mtrs.	14	13	12.5	12	10.5	10	8	6	3
					22	21	20	18	17	15	13	10	5
3RF 300-05	5	0.25	0.33	14	28	26	25	23	21	19	16	12	6
3RF 300-08	8	0.37	0.50	38	37	35	32	29	27	22	18	8	
3RF 300-10	10	0.37	0.50	47	45	42	39	36	32	27	21	10	
3RF 300-14	14	0.55	0.75	55	53	50	46	42	38	32	25	12	
3RF 300-17	17	0.55	0.75	69	66	62	58	52	48	40	31	15	
3RF 300-20	20	0.75	1.00	82	79	75	69	63	57	48	38	18	
3RF 300-25	25	0.75	1.00	99	95	90	83	76	68	58	45	22	
3RF 300-30	30	1.10	1.50										
3RF 300-36	36	1.10	1.50										

Dimensions & Weights

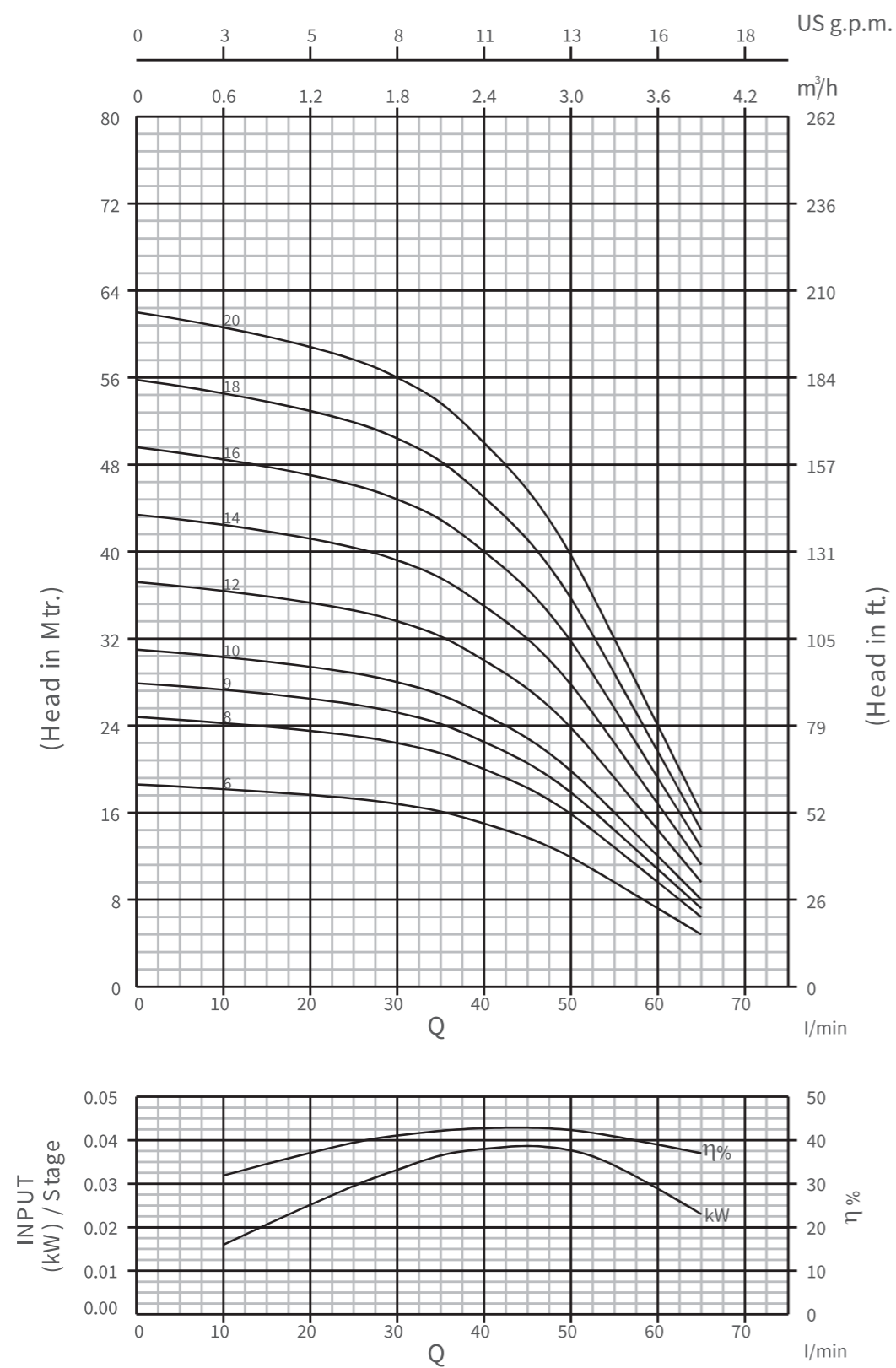


Model name	Specification			
	D(mm)	L(mm)	Weight (kg)	Weight (incl.pkg)[kg]
3RF 300-05	80	338	2.0	4.0
3RF 300-08	80	413	2.5	4.5
3RF 300-10	80	463	3.0	5.0
3RF 300-14	80	563	3.5	5.5
3RF 300-17	80	638	3.5	5.5
3RF 300-20	80	713	4.0	6.0
3RF 300-25	80	838	4.5	6.5
3RF 300-30	80	963	5.0	7.0
3RF 300-36	80	1113	5.5	7.5

\*G: Available Outlet Size 1.25"  
\*D: With Cable Guard

3RF 30-A, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



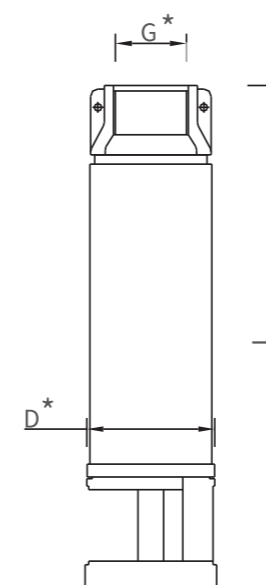
3RF 30-A, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name	Single Phase	Stage	Rating		l/min m³/h	Discharge									
						0	10	25	30	35	40	45	50	55	65

Model Name	Stage	kW	HP	HEAD IN Mtrs.	19	18	17.5	17	16	15	14	12	10	5
					25	24	23	22.5	22	20	18	16	13	6
					28	27	26	25	24	22	21	18	14	7
					31	30	29	28	27	25	23	20	16	8
					37	36	35	34	32	30	28	24	19	10
					43	42	41	39	38	35	32	28	22	11
					50	49	46	45	43	40	37	32	26	13
					56	55	52	50	49	45	41	36	29	14
					62	61	58	56	54	50	46	40	32	16

Dimensions & Weights



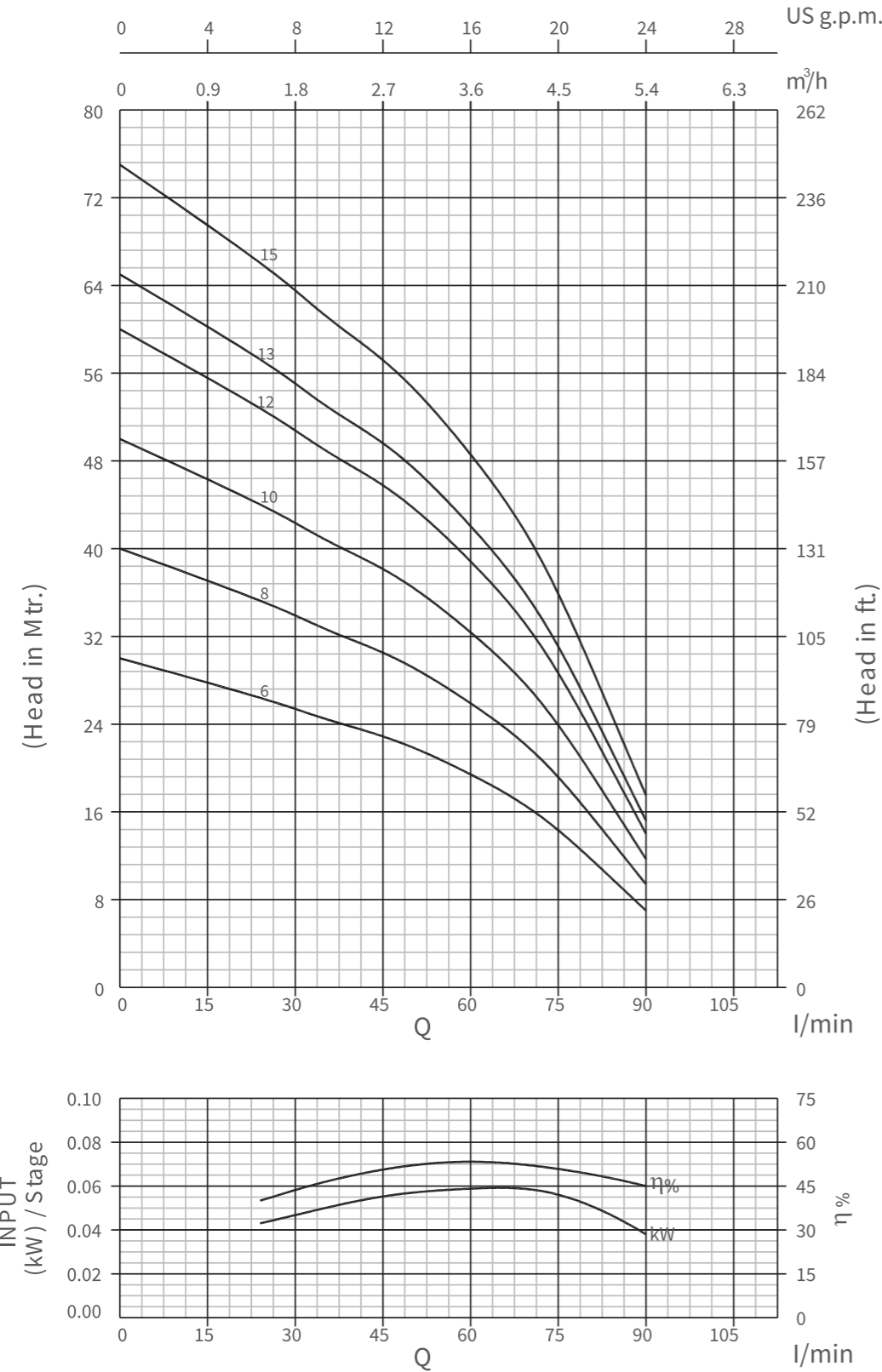
Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
3RF 30A-06	80	380	2.5	4.5
3RF 30A-08	80	436	3.0	5.0
3RF 30A-09	80	463	3.0	5.0
3RF 30A-10	80	491	3.0	5.0
3RF 30A-12	80	547	3.0	5.0
3RF 30A-14	80	602	3.5	5.5
3RF 30A-16	80	658	3.5	5.5
3RF 30A-18	80	714	4.0	6.0
3RF 30A-20	80	769	4.0	6.0

\*G: Available Outlet Size 1.25"

\*D: With Cable Guard

**3RF 300H, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



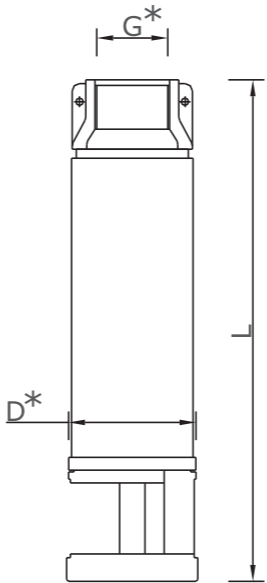
**3RF 300H, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge								
Single Phase	Stage	kW	HP	l/min	0	24	32	38	48	60	72	84	90
				m³/h	0	1.4	1.9	2.3	2.9	3.6	4.3	5.0	5.4

Model Name	Stage	kW	HP	HEAD IN Mtrs.	30	27	25	24	22	20	16	10	7
					40	35	33	32	30	26	21	13	9
					50	44	42	40	38	32	27	17	12
					60	53	50	48	45	39	32	20	14
					65	57	54	52	49	42	35	22	15
					75	66	63	60	56	49	40	25	18

**Dimensions & Weights**



Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
3RF 300H-06	80	382	2.5	4.5
3RF 300H-08	80	437	3.0	5.0
3RF 300H-10	80	492	3.0	5.0
3RF 300H-12	80	547	3.5	5.5
3RF 300H-13	80	575	3.5	5.5
3RF 300H-15	80	630	4.0	6.0

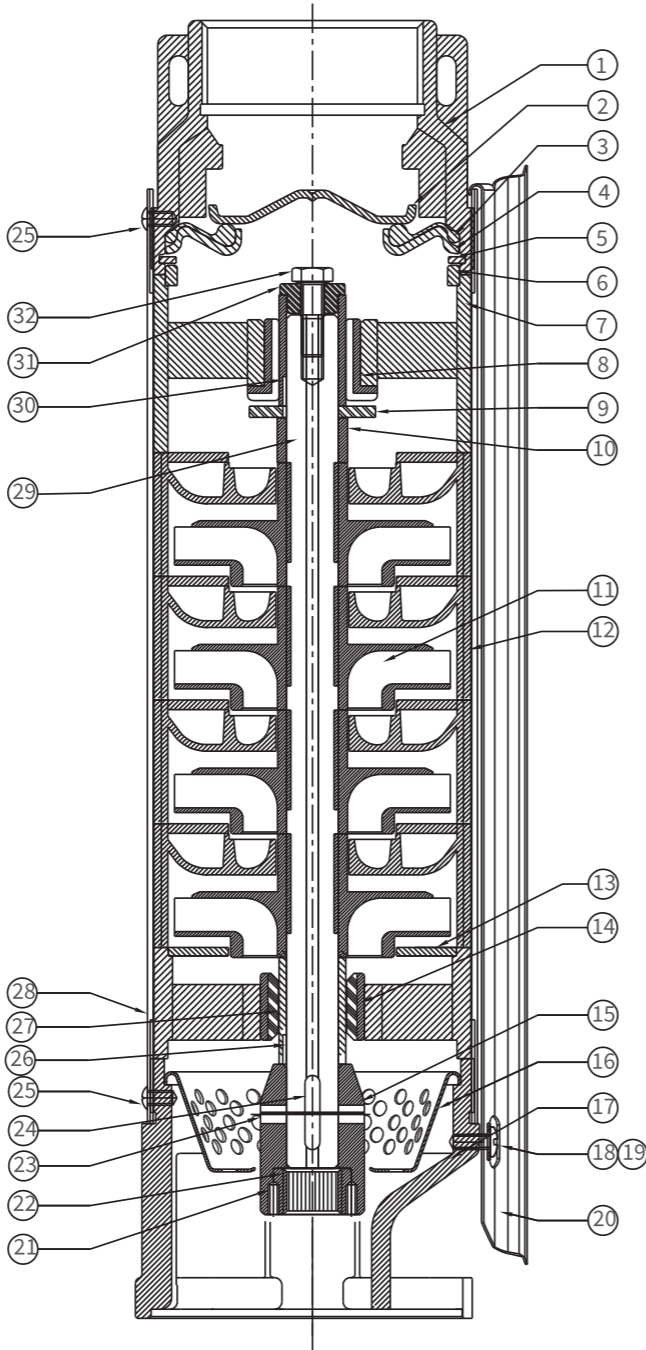
\*G: Available Outlet Size 1.25"  
\*D: With Cable Guard

SUBMERSIBLE PUMPS

4RF 450, 4RF 430, 4RF 402, 4RF 410, 4RF 400  
SERIES PUMP DESIGN

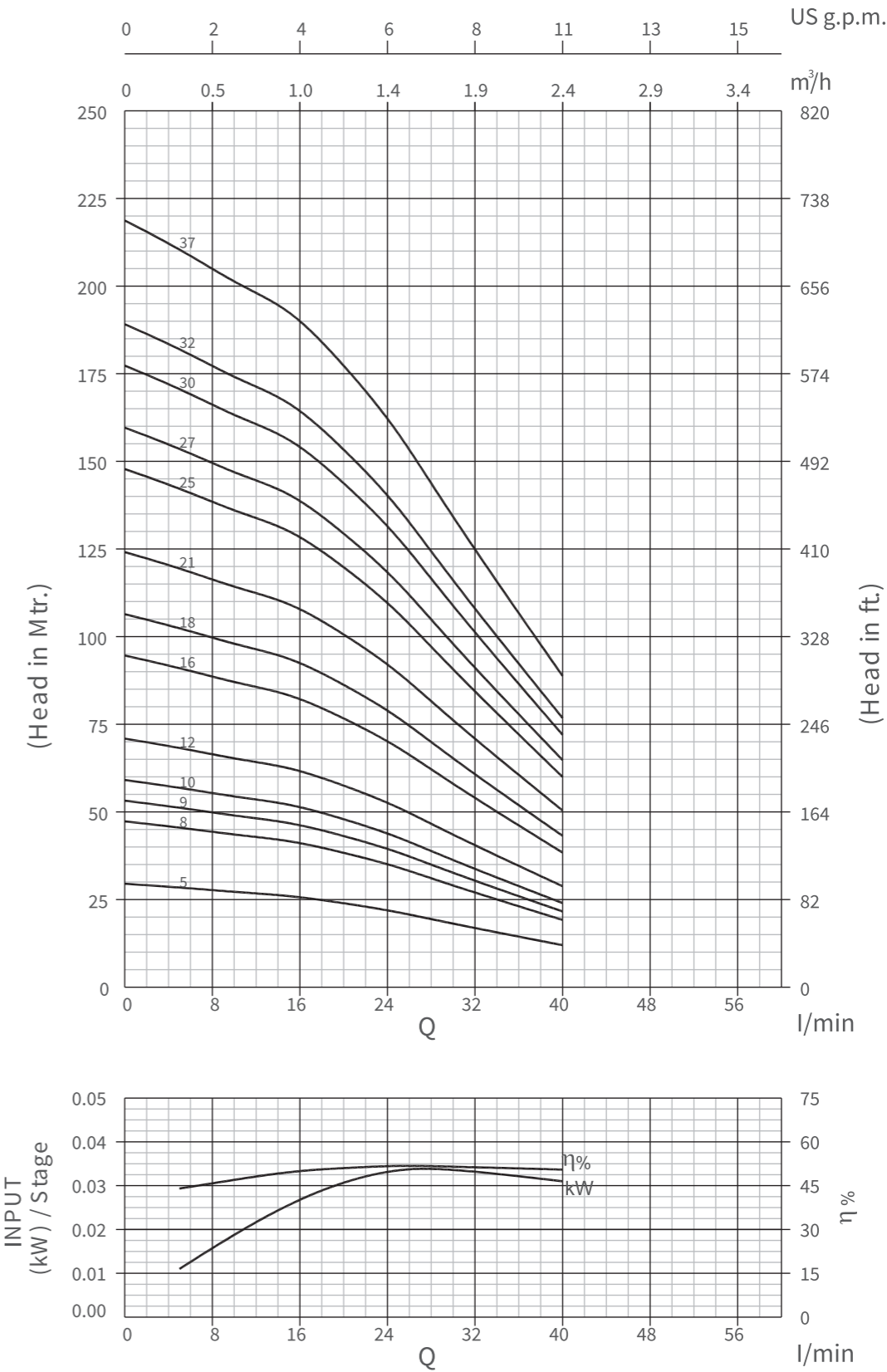
Material Specification

NO.	PART'S NAME	MATERIAL
1	DELIVERY CASING	S.S. 304
2	NRV CONE	S.S. 304
3	NRV RING	NITRILE RUBBER
4	NRV PLATE	S.S. 304
5	CIR CLIP	S.S. 304 (SPRING STEEL)
6	RING	P.C (10% G.F)
7	DOL	P.P.O (20% G.F)
8	C.T. BEARING BUSH	L.T.B-4
9	THRUST PLATE	S.S. 202
10	DISTANCE SLEEVE	NYLON
11	IMPELLER	P.P.O (20% G.F)
12	STAGE CASING	P.P.O (20% G.F)
13	MIDDLE BEARING	P.P.O (20% G.F)
14	BEARING BUSH	NBR + M.S
15	COUPLING	S.S. 304
16	STRAINER	S.S. 304
17	SUCTION	S.S. 304
18	SCREW	S.S. 304
19	WASHER	S.S. 304
20	CABLE GUARD	S.S. 304
21	GURB SCREW	S.S. 304
22	NEEMA SLEEVE	S.S. 304
23	CYLINDRICAL PIN	S.S. 304
24	KEY	S.S. 304
25	SCREW	S.S. 304
26	KEY	S.S. 304
27	SLEEVE	S.S. 410
28	PUMP PIPE	S.S. 304
29	PUMP SHAFT	S.S. 304
30	SLEEVE	S.S. 410
31	TOP COLLAR	S.S. 410
32	HEX BOLT	S.S. 304



4RF 450, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



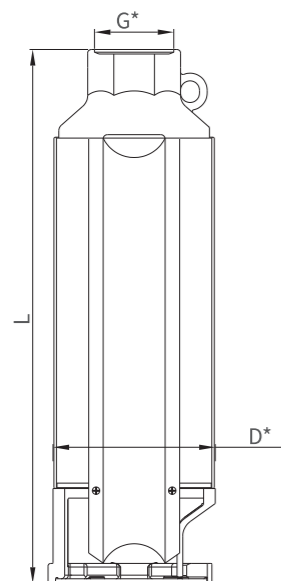
**4RF 450, 50Hz**  
ISO 9906 Annexure A

## PERFORMANCE CHART

Model Name		Stage	Rating		l/min m <sup>3</sup> /h	Discharge							
Single Phase	Three Phase		kW	HP		0	5	10	15	20	25	30	40
						0	0.3	0.6	0.9	1.2	1.5	1.8	2.4

4RF 450-05	4RF 450-05	5	0.25	0.33	HEAD IN Mtrs.	30	28	27	26	24	22	18	12
4RF 450-08	4RF 450-08	8	0.37	0.50		47	46	43	42	38	34	29	19
4RF 450-09	4RF 450-09	9	0.37	0.50		53	51	49	47	43	39	32	22
4RF 450-10	4RF 450-10	10	0.55	0.75		59	57	54	52	48	43	36	24
4RF 450-12	4RF 450-12	12	0.55	0.75		71	68	65	63	58	52	43	29
4RF 450-16	4RF 450-16	16	0.75	1.00		95	91	87	84	77	69	58	38
4RF 450-18	4RF 450-18	18	0.75	1.00		106	103	98	94	86	77	65	43
4RF 450-21	4RF 450-21	21	0.75	1.00		124	120	114	110	101	90	76	50
4RF 450-25	4RF 450-25	25	1.10	1.50		148	142	136	131	120	108	90	60
4RF 450-27	4RF 450-27	27	1.10	1.50		160	154	146	142	130	116	97	65
4RF 450-30	4RF 450-30	30	1.50	2.00		177	171	163	158	144	129	108	72
4RF 450-32	4RF 450-32	32	1.50	2.00		189	182	173	168	154	138	115	77
4RF 450-37	4RF 450-37	37	1.50	2.00		219	211	201	194	178	159	133	89

## Dimensions & Weights



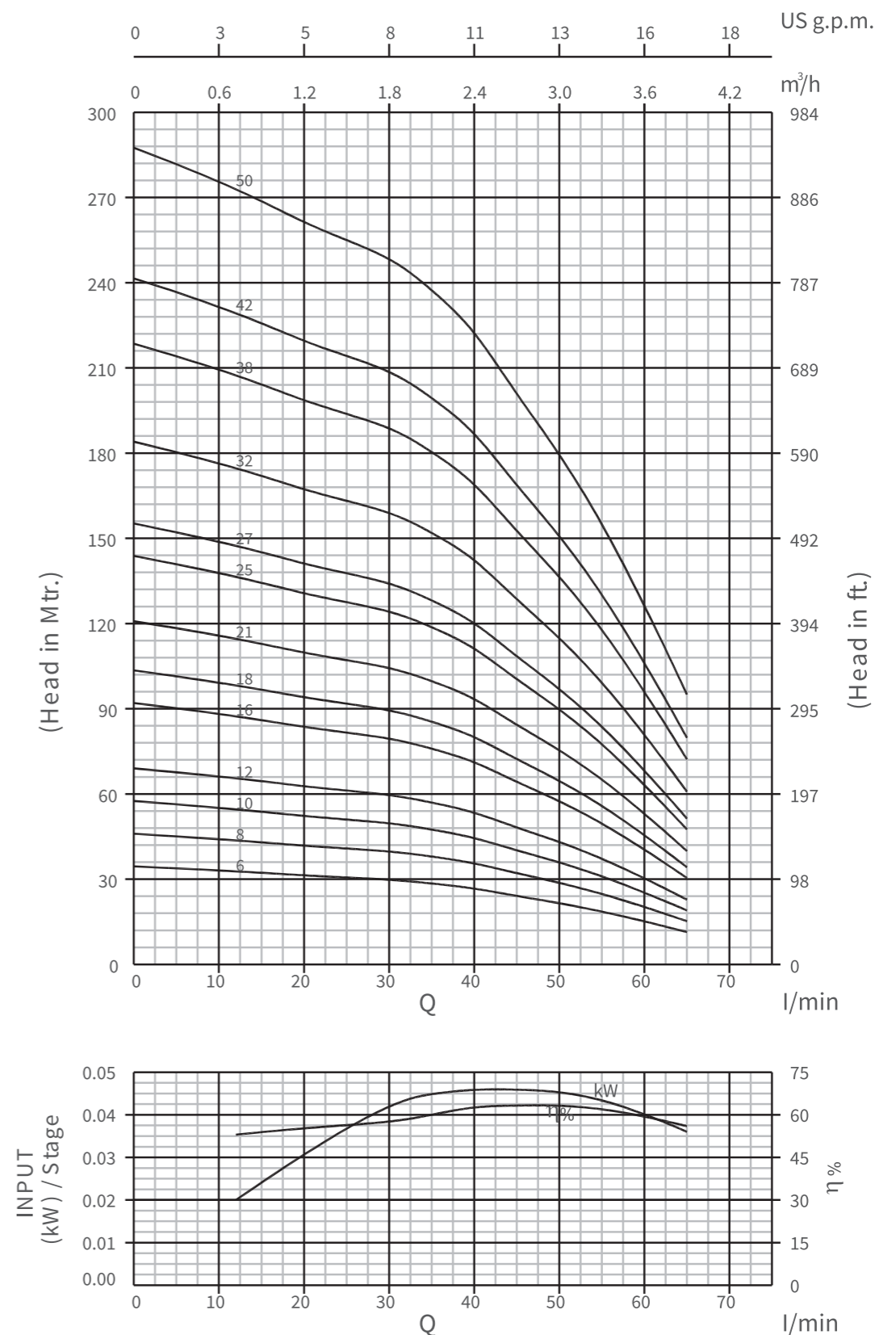
Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
4RF 450-05	100	341	3.5	5.5
4RF 450-08	100	415	4.0	6.0
4RF 450-09	100	440	4.0	6.0
4RF 450-10	100	465	4.5	6.5
4RF 450-12	100	514	4.5	6.5
4RF 450-16	100	614	5.0	7.0
4RF 450-18	100	663	5.5	7.5
4RF 450-21	100	738	6.0	8.0
4RF 450-25	100	867	7.5	9.5
4RF 450-27	100	916	7.5	9.5
4RF 450-30	100	991	8.0	10.0
4RF 450-32	100	1070	8.5	10.5
4RF 450-37	100	1194	9.5	11.5

\*G: Available Outlet Size 1.25", 1.50" & 2.0"

\*D: With Cable Guard

**4RF 430, 50Hz**  
ISO 9906 Annexure A

## PERFORMANCE CURVES

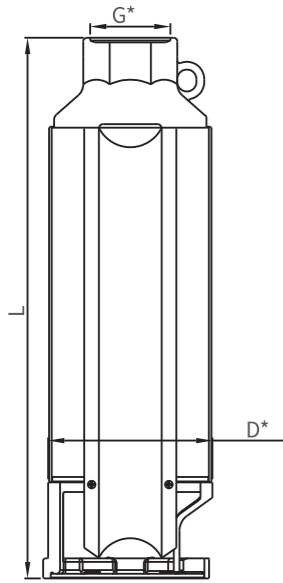


**4RF 430, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Stage	Rating			Discharge									
Single Phase	Three Phase		kW	HP		l/min m <sup>3</sup> /h	0	12	20	30	35	40	45	55	65
4RF 430-06	4RF 430-06	6	0.37	0.50	HEAD IN Mtrs.	34	33	31	30	28	27	24	19	11	
4RF 430-08	4RF 430-08	8	0.55	0.75		46	44	42	40	38	36	32	26	15	
4RF 430-10	4RF 430-10	10	0.55	0.75		58	55	52	50	48	45	40	32	19	
4RF 430-12	4RF 430-12	12	0.75	1.00		69	66	62	60	57	54	48	38	23	
4RF 430-16	4RF 430-16	16	1.10	1.50		92	88	83	80	76	72	64	51	30	
4RF 430-18	4RF 430-18	18	1.10	1.50		104	99	94	90	86	81	72	58	34	
4RF 430-21	4RF 430-21	21	1.10	1.50		121	115	109	105	100	94	84	67	40	
4RF 430-25	4RF 430-25	25	1.50	2.00		144	137	130	125	119	112	100	80	48	
4RF 430-27	4RF 430-27	27	1.50	2.00		155	148	140	135	128	121	108	86	51	
4RF 430-32	4RF 430-32	32	1.50	2.00		184	175	166	160	152	143	128	102	61	
4RF 430-38	4RF 430-38	38	2.20	3.00		218	208	198	190	180	170	152	122	72	
	4RF 430-42	42	3.00	4.00		242	230	218	210	200	188	168	134	80	
	4RF 430-50	50	3.00	4.00		288	274	260	250	238	224	200	160	95	

**Dimensions & Weights**

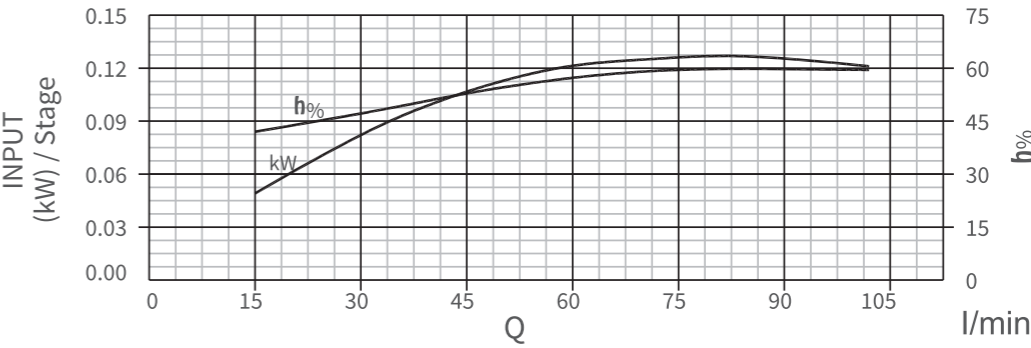
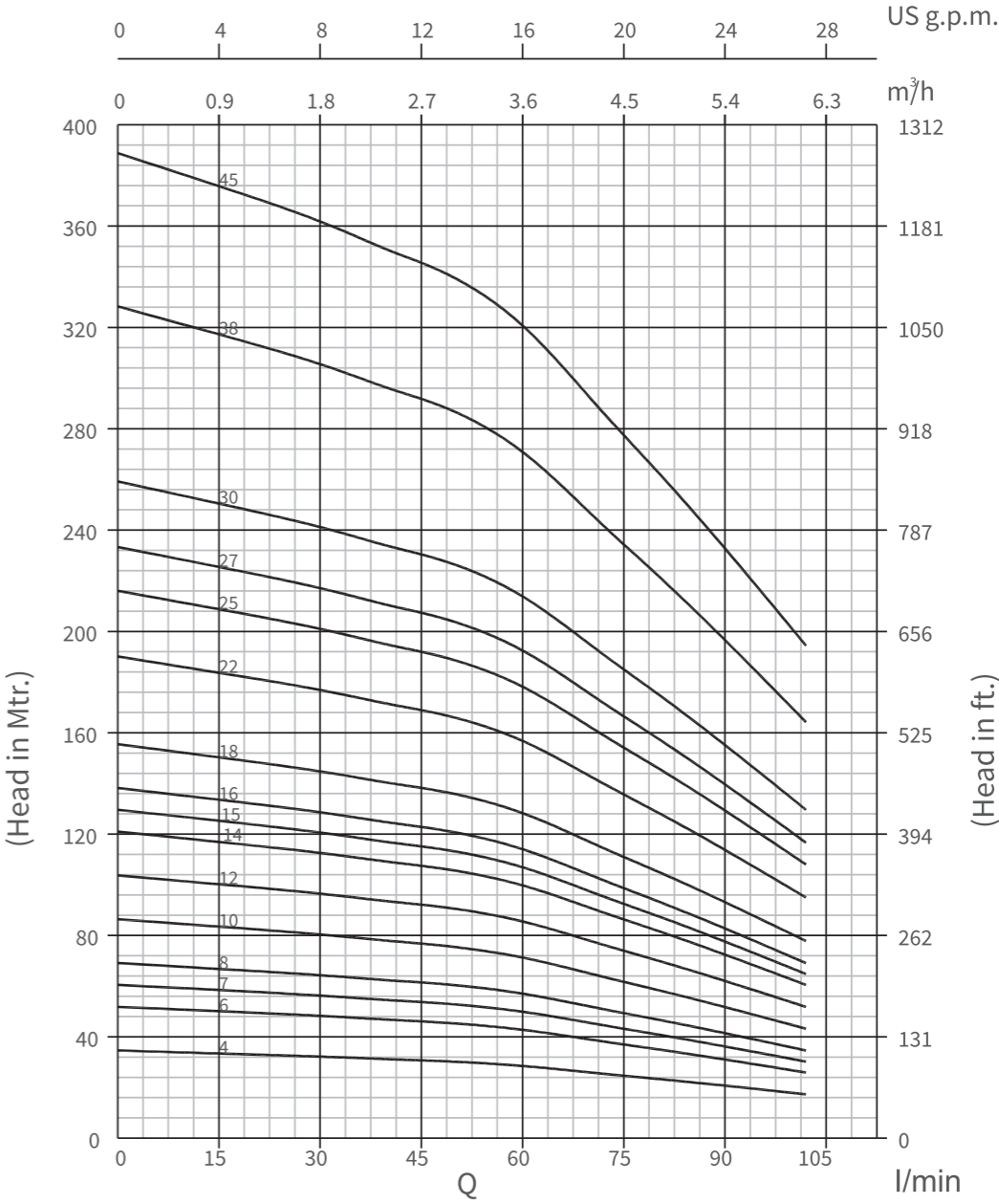


Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
4RF 430-06	100	350	4.0	6.0
4RF 430-08	100	394	4.0	6.0
4RF 430-10	100	439	4.5	6.5
4RF 430-12	100	483	4.5	6.5
4RF 430-16	100	572	5.5	7.5
4RF 430-18	100	616	5.5	7.5
4RF 430-21	100	683	6.0	8.0
4RF 430-25	100	802	7.0	9.0
4RF 430-27	100	846	7.5	9.5
4RF 430-32	100	987	8.0	10.0
4RF 430-38	100	1120	8.5	10.5
4RF 430-42	100	1239	9.0	11.0
4RF 430-50	100	1417	10.5	12.5

\*G:Available Outlet Size 1.25", 1.50" & 2.0"  
\*D:With Cable Guard

**4RF 402, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



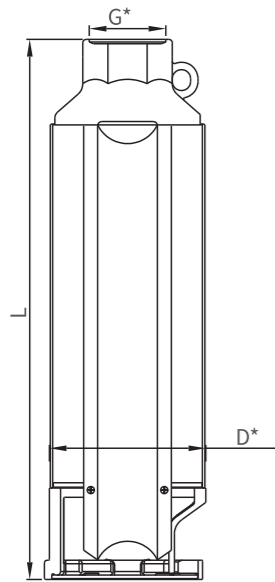
4RF 402, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Stage	Rating		l/min m³/h	Discharge								
Single Phase	Three Phase		kW	HP		0	12	25	33	40	50	60	70	85
						0	0.72	1.5	1.98	2.4	3.0	3.6	4.2	5.1

4RF 402-04	4RF 402-04	4	0.37	0.50	HEAD IN Mtrs.	24	23	22.5	22	21	20	18	15	12
4RF 402-06	4RF 402-06	6	0.55	0.75		36	35	34	32.5	32	30	26	23	18
4RF 402-07	4RF 402-07	7	0.55	0.75		42	41	39	38	37	35	31	27	21
4RF 402-08	4RF 402-08	8	0.75	1.00		48	46	45	43	42	40	35	30	24
4RF 402-10	4RF 402-10	10	0.75	1.00		60	58	56	54	53	50	44	38	30
4RF 402-12	4RF 402-12	12	1.10	1.50		72	70	67	65	64	60	53	46	36
4RF 402-14	4RF 402-14	14	1.10	1.50		84	81	78	76	74	70	62	53	42
4RF 402-15	4RF 402-15	15	1.10	1.50		90	87	84	81	80	75	66	57	45
4RF 402-16	4RF 402-16	16	1.50	2.00		96	93	90	86	85	80	70	61	48
4RF 402-18	4RF 402-18	18	1.50	2.00		108	104	101	97	95	90	79	68	54
4RF 402-20	4RF 402-20	20	1.50	2.00		120	116	112	108	106	100	88	76	60
4RF 402-22	4RF 402-22	22	2.20	3.00		132	128	123	119	117	110	97	84	66
4RF 402-25	4RF 402-25	25	2.20	3.00		150	145	140	135	132	125	110	95	75
4RF 402-27	4RF 402-27	27	2.20	3.00		162	157	151	146	143	135	119	103	81
	4RF 402-30	30	3.00	4.00		180	174	168	162	159	150	132	114	90
	4RF 402-38	38	3.00	4.00		228	220	213	205	201	190	167	144	114
	4RF 402-45	45	4.00	5.50		270	261	252	243	239	225	198	171	135

Dimensions & Weights

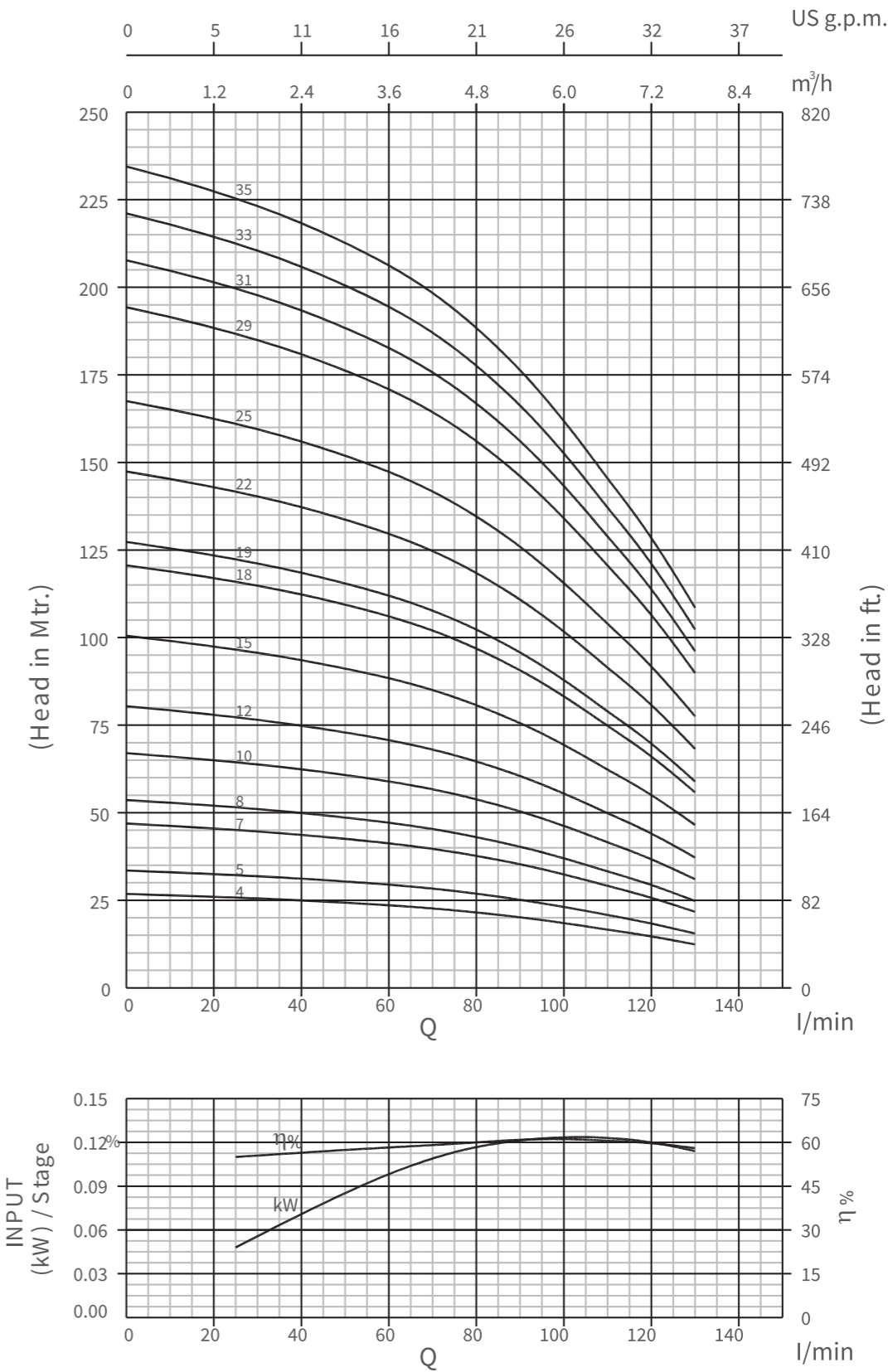


Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
4RF 402-04	100	316	3.5	5.5
4RF 402-06	100	366	4.0	6.0
4RF 402-07	100	390	4.0	6.0
4RF 402-08	100	415	4.0	6.0
4RF 402-10	100	465	4.5	6.5
4RF 402-12	100	514	4.5	6.5
4RF 402-14	100	564	5.0	7.0
4RF 402-15	100	589	5.5	7.5
4RF 402-16	100	614	5.5	7.5
4RF 402-18	100	663	6.0	8.0
4RF 402-20	100	713	6.5	8.6
4RF 402-22	100	792	7.0	9.0
4RF 402-25	100	867	7.5	9.5
4RF 402-27	100	916	8.0	10.0
4RF 402-30	100	991	8.0	10.0
4RF 402-38	100	1219	9.0	11.0
4RF 402-45	100	1423	10.0	12.0

\*G:Available Outlet Size 1.25",1.50" & 2.0"  
\*D:With Cable Guard

4RF 410, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES

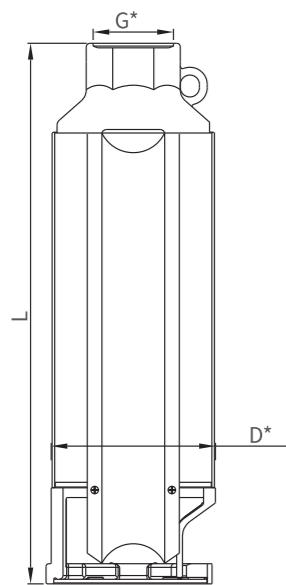


**4RF 410, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name			Rating			Discharge										
Single Phase	Three Phase	Stage	kW	HP	l/min m³/h	0	25	50	70	85	95	105	110	120	130	
						0	1.5	3.0	4.2	5.1	5.7	6.3	6.6	7.2	7.8	
4RF 410-04	4RF 410-04	4	0.55	0.75	HEAD IN Mtrs.	27	26	24	23	21	19	18	17	15	12	
4RF 410-05	4RF 410-05	5	0.75	1.00		34	32	30	28	26	24	22	21	18	16	
4RF 410-07	4RF 410-07	7	1.10	1.50		47	45	43	40	37	34	31	29	26	22	
4RF 410-08	4RF 410-08	8	1.50	2.00		54	52	49	46	42	39	35	33	30	25	
4RF 410-10	4RF 410-10	10	1.50	2.00		67	65	61	57	52	48	44	42	37	31	
4RF 410-12	4RF 410-12	12	2.20	3.00		80	78	73	68	63	58	53	50	44	37	
4RF 410-15	4RF 410-15	15	2.20	3.00		100	97	92	86	78	73	66	62	56	46	
	4RF 410-18	18	3.00	4.00		121	116	110	103	94	87	79	75	67	56	
	4RF 410-19	19	4.00	5.50		127	123	116	108	99	92	84	79	70	59	
	4RF 410-22	22	4.00	5.50		147	142	134	125	115	107	97	91	81	68	
	4RF 410-25	25	4.00	5.50		168	162	152	142	131	121	110	104	92	78	
	4RF 410-29	29	4.50	6.00		194	188	177	165	152	141	128	120	107	90	
	4RF 410-31	31	4.50	6.00		208	201	189	177	162	150	136	129	115	96	
	4RF 410-33	33	5.50	7.50		221	214	201	188	173	160	145	137	122	102	
	4RF 410-35	35	5.50	7.50		234	226	214	200	183	170	154	145	130	108	

**Dimensions & Weights**



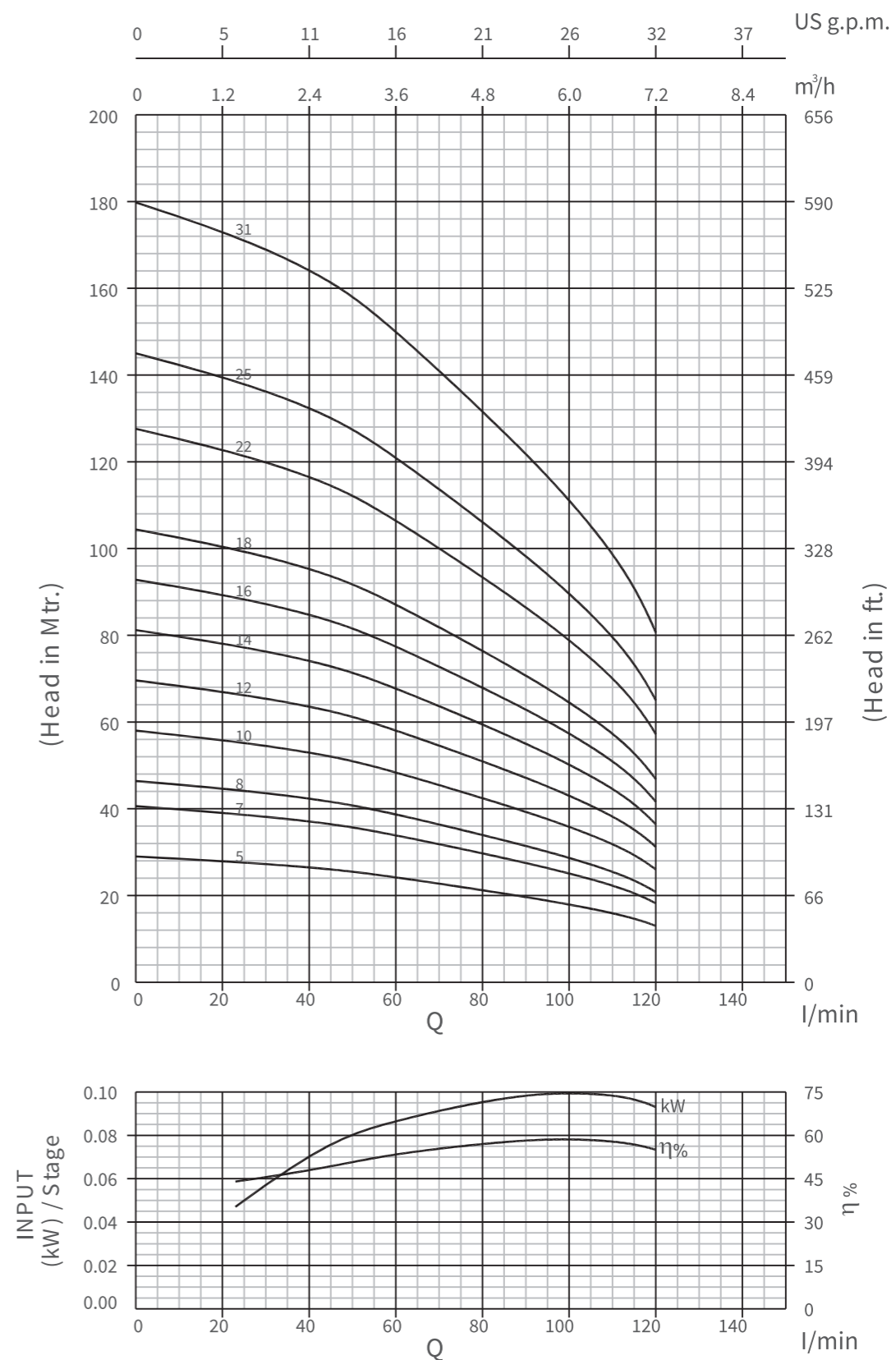
Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
4RF 410-04	100	350	3.5	5.5
4RF 410-05	100	383	4.0	6.0
4RF 410-07	100	450	4.5	6.5
4RF 410-08	100	483	4.5	6.5
4RF 410-10	100	550	5.0	7.0
4RF 410-12	100	616	6.0	8.0
4RF 410-15	100	716	6.5	8.5
4RF 410-18	100	816	6.5	8.5
4RF 410-19	100	879	7.0	9.0
4RF 410-22	100	979	8.0	10.0
4RF 410-25	100	1079	8.0	10.0
4RF 410-29	100	1212	9.0	11.0
4RF 410-31	100	1309	9.5	11.5
4RF 410-33	100	1376	10.0	12.0
4RF 410-35	100	1442	10.5	12.5

\*G:Available Outlet Size 1.25",1.50" & 2.0"

\*D:With Cable Guard

**4RF 400, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



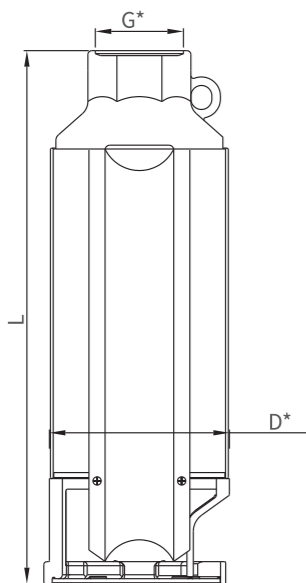
**4RF 400, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge								
Single Phase	Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	23	42	55	85	100	115	120
						0	1.38	2.52	3.3	5.1	6.0	6.9	7.2

4RF 400-05	4RF 400-05	5	0.55	0.75	HEAD IN Mtrs.	29	28	26	25	20	18	15	13
4RF 400-07	4RF 400-07	7	0.75	1.00		41	39	37	35	29	25	21	18
4RF 400-08	4RF 400-08	8	1.10	1.50		46	44	42	40	33	29	24	21
4RF 400-10	4RF 400-10	10	1.10	1.50		58	56	53	50	41	36	30	26
4RF 400-12	4RF 400-12	12	1.50	2.00		70	67	63	60	49	43	36	31
4RF 400-14	4RF 400-14	14	2.20	3.00		81	78	74	70	57	50	42	36
4RF 400-16	4RF 400-16	16	2.20	3.00		93	89	84	80	66	58	48	42
4RF 400-18	4RF 400-18	18	2.20	3.00		104	100	95	90	74	65	54	47
4RF 400-22	4RF 400-22	22	2.20	3.00		128	122	116	110	90	79	66	57
	4RF 400-25	25	3.00	4.00		145	139	132	125	102	90	75	65
	4RF 400-31	31	4.00	5.50		180	172	164	155	127	112	93	81

**Dimensions & Weights**



Model name	Specification			
	D (mm)	L (mm)	Pump Weight kg.	Weight (incl.pkg) kg
4RF 400-05	100	383	3.5	5.5
4RF 400-07	100	450	4.0	6.0
4RF 400-08	100	483	4.5	6.5
4RF 400-10	100	550	5.0	7.0
4RF 400-12	100	616	5.0	7.0
4RF 400-14	100	683	5.5	7.5
4RF 400-16	100	730	6.0	8.0
4RF 400-18	100	816	6.5	8.5
4RF 400-22	100	979	7.0	9.0
4RF 400-25	100	1079	8.0	10.0
4RF 400-31	100	1309	12.0	14.0

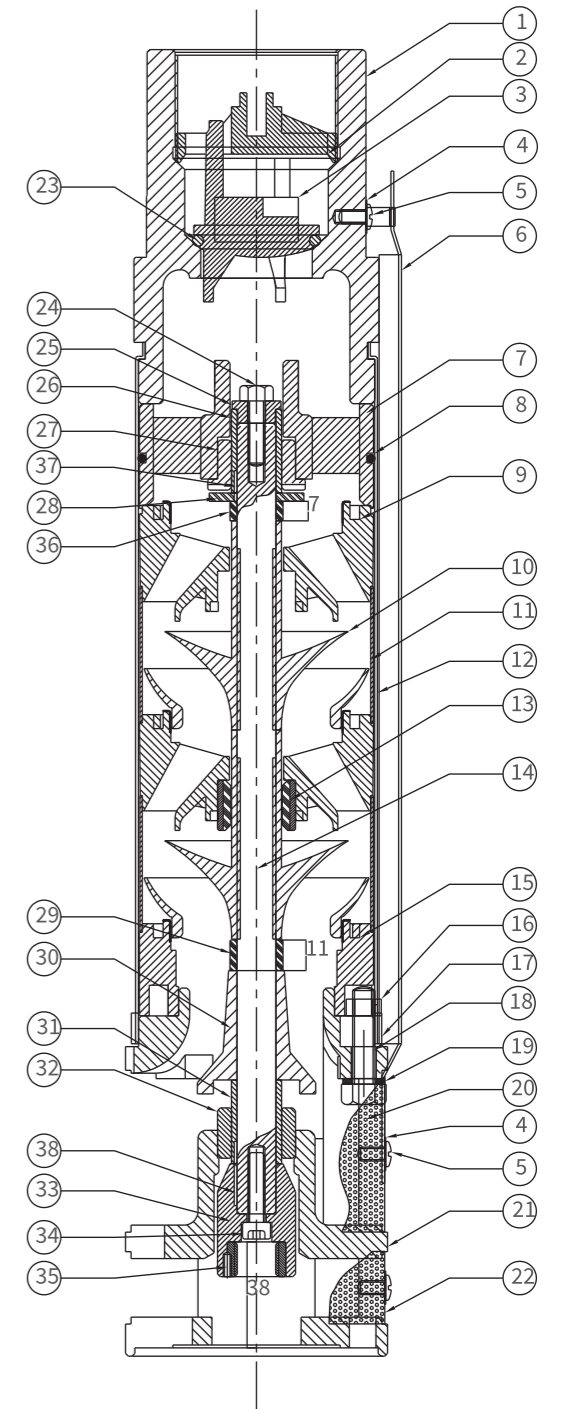
\*G:Available Outlet Size 1.50" & 2.0"  
\*D:With Cable Guard

**SUBMERSIBLE PUMPS**

**4MF 440C SERIES PUMP DESIGN**

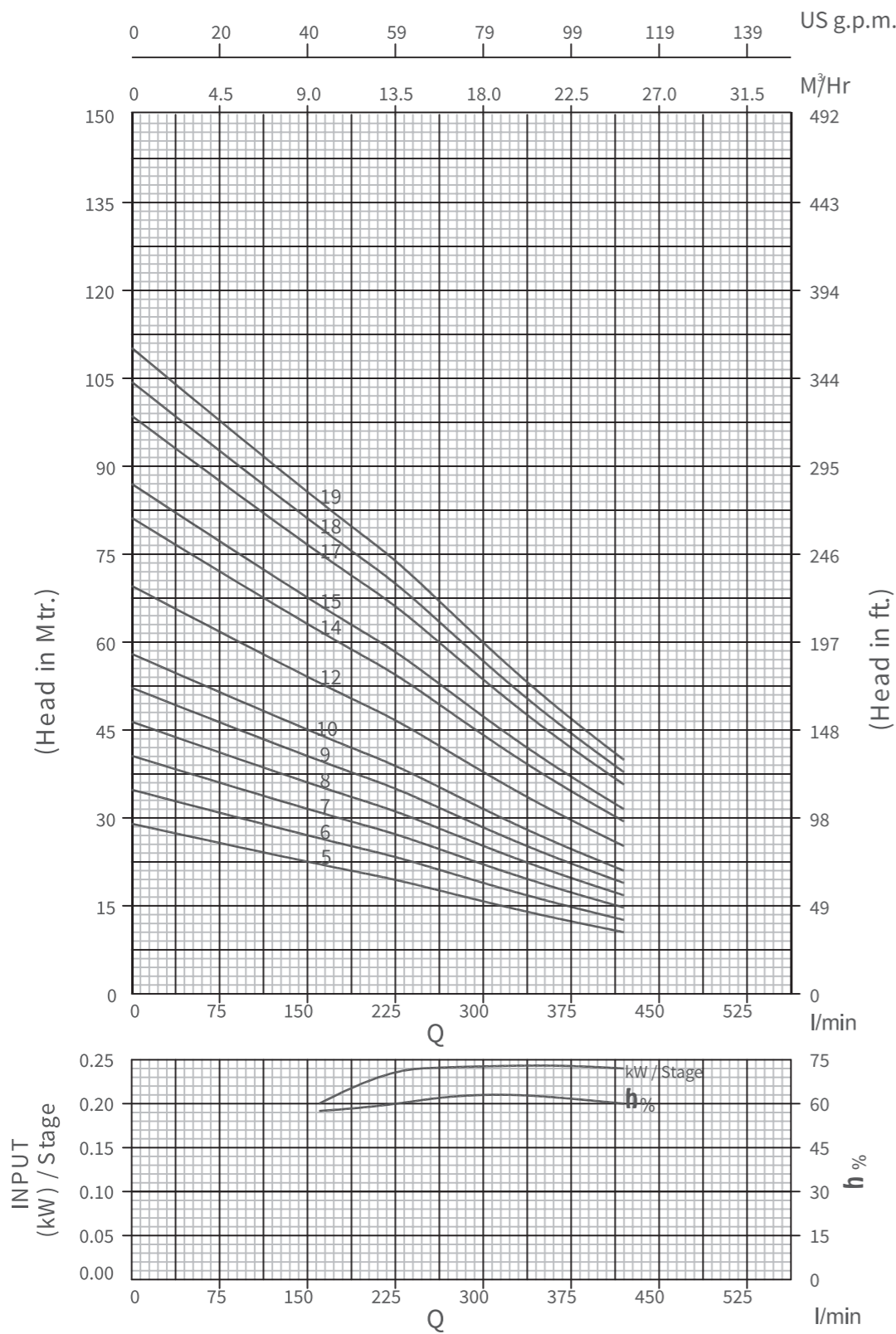
**Material Specification**

No.	PART'S NAME	MATERIAL	QTY
1	DELIVERY CASING	C.I.(F.G.200)	01
2	N.R.V. THREAD RING	P.P.O (20% G.F)	01
3	N.R.V CONE	NYLON	01
4	WAHSER	S.S.304	04
5	SCREW	S.S.304	04
6	CABLE GUARD	S.S. 202	01
7	D.O.L	P.P.O (20% G.F)	01
8	D.O.L 'O' RING	N.B.R	01
9	STAGE CASING	P.P.O (20% G.F)	1/ST
10	IMPELLER	P.P.O (20% G.F)	1/ST
11	BOWL PIPE	S.S.202	1/ST
12	PUMP PIPE	S.S. 202	01
13	METAL RUBBER BUSH	M.S/ N.B.R	01
14	PUMP SHAFT	S.S.410	01
15	SUCTION PLATE	P.P.O (20% G.F)	01
16	S.Q NUT	S.S.304	04
17	SPOT RING	S.S.202	01
18	HEX BOLT(SUCTION SIDE)	S.S.304	04
19	SPRING WASHER	SPRING STEEL	04
20	STRAINER	S.S.202	01
21	SUCTION	C.I.(F.G.200)	01
22	STRAINER	S.S.202	01
23	N.R.V CONE 'O' RING	N.B.R	01
24	HEX BOLT(TOP SIDE)	S.S.304	01
25	TOP COLLER	S.S.410	01
26	TOP SLEEVE(WITH H/C)	S.S.410	01
27	C.T. BEARING BUSH	L.T.B 4 (2%Ni)	01
28	THRUST PLATE	S.S.202	01
29	DISTANCE SLEEVE	P.P.O (20% G.F)	01
30	DISTANCE SLEEVE	P.P.O (20% G.F)	01
31	SLEEVE (SUCTION)	S.S.410	01
32	BUSH(SUCTION)	L.T.B 4 (2%Ni)	01
33	COUPLING(EXPORT)	S.S.304	01
34	ALLEN BOLT	S.S.304	01
35	GRUB SCREW	S.S.304	01
36	TOP SLEEVE	P.P.O (20% G.F)	01
37	KEY	S.S.410	01
38	KEY	S.S.410	01



**4MF 440C, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



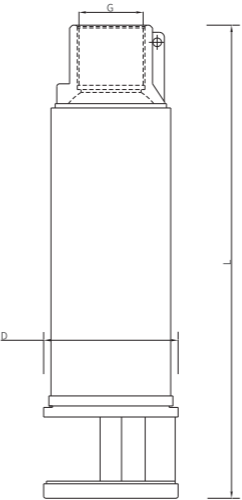
**4MF 440C, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			l/min m <sup>3</sup> /h	Discharge						
Single Phase	Three Phase	Stage	kW	HP		0	160	215	255	315	370	420

4MF 440C-05	4MF 440C-05	5	1.50	2.00	HEAD IN Mtrs.	29	22	20	18	15	12	10
	4MF 440C-06	6	1.50	2.00		35	26	24	22	18	15	13
	4MF 440C-07	7	2.20	3.00		41	31	28	25	21	18	15
	4MF 440C-08	8	2.20	3.00		46	35	32	29	24	20	17
	4MF 440C-09	9	3.00	4.00		52	40	36	32	27	22	19
	4MF 440C-10	10	3.00	4.00		58	44	40	36	30	25	21
	4MF 440C-12	12	4.00	5.50		70	53	48	43	36	30	25
	4MF 440C-14	14	4.50	6.00		81	62	56	50	42	35	29
	4MF 440C-15	15	4.50	6.00		87	66	60	54	45	38	31
	4MF 440C-17	17	5.50	7.50		99	75	68	61	51	42	36
	4MF 440C-18	18	5.50	7.50		104	79	72	65	54	45	38
	4MF 440C-19	19	5.50	7.50		110	84	76	68	57	48	40

**Dimensions & Weights**



Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
4MF-440C-05	98	694	8.5	10.5
4MF-440C-06	98	769	12.5	14.5
4MF-440C-07	98	844	17.0	19.0
4MF-440C-08	98	919	19.0	21.0
4MF-440C-09	98	994	21.0	23.0
4MF-440C-10	98	1069	23.0	25.0
4MF-440C-12	98	1219	27.0	29.0
4MF-440C-14	98	1369	31.0	33.0
4MF-440C-15	98	1519	33.0	35.0
4MF-440C-17	98	1594	37.0	39.0
4MF-440C-18	98	1669	39.0	41.0
4MF-440C-19	98	1744	41.0	43.0

\*G:Available Outlet Size 2"

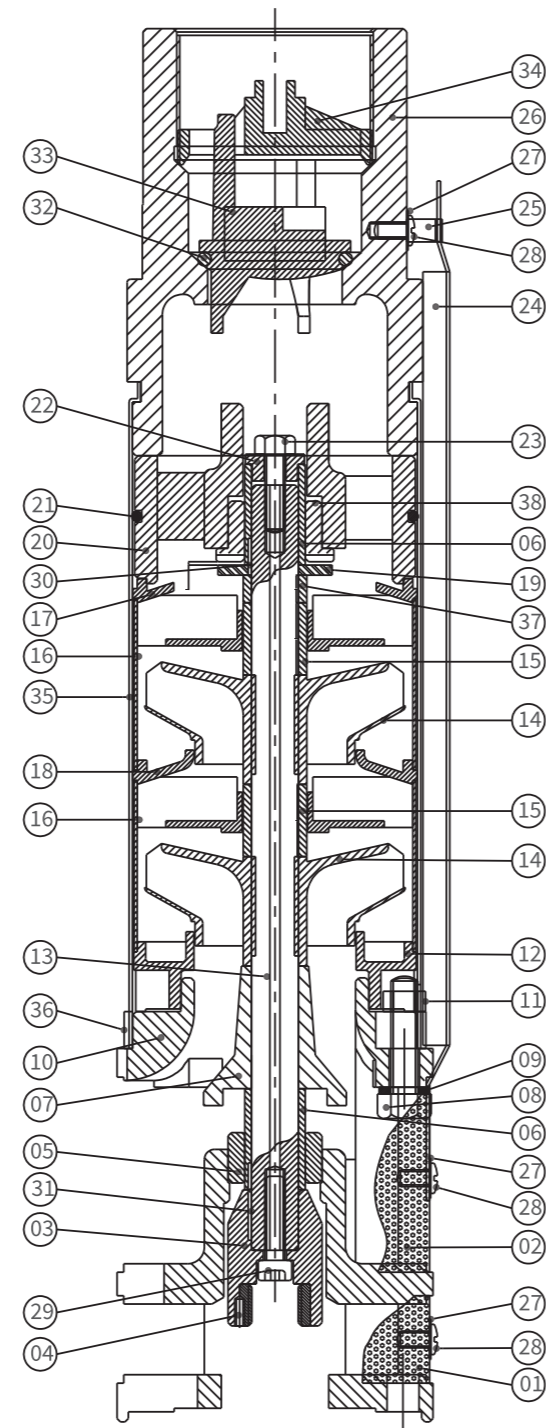
\*D:With Cable Guard

# SUBMERSIBLE PUMPS

## 4MF 470 SERIES PUMP DESIGN

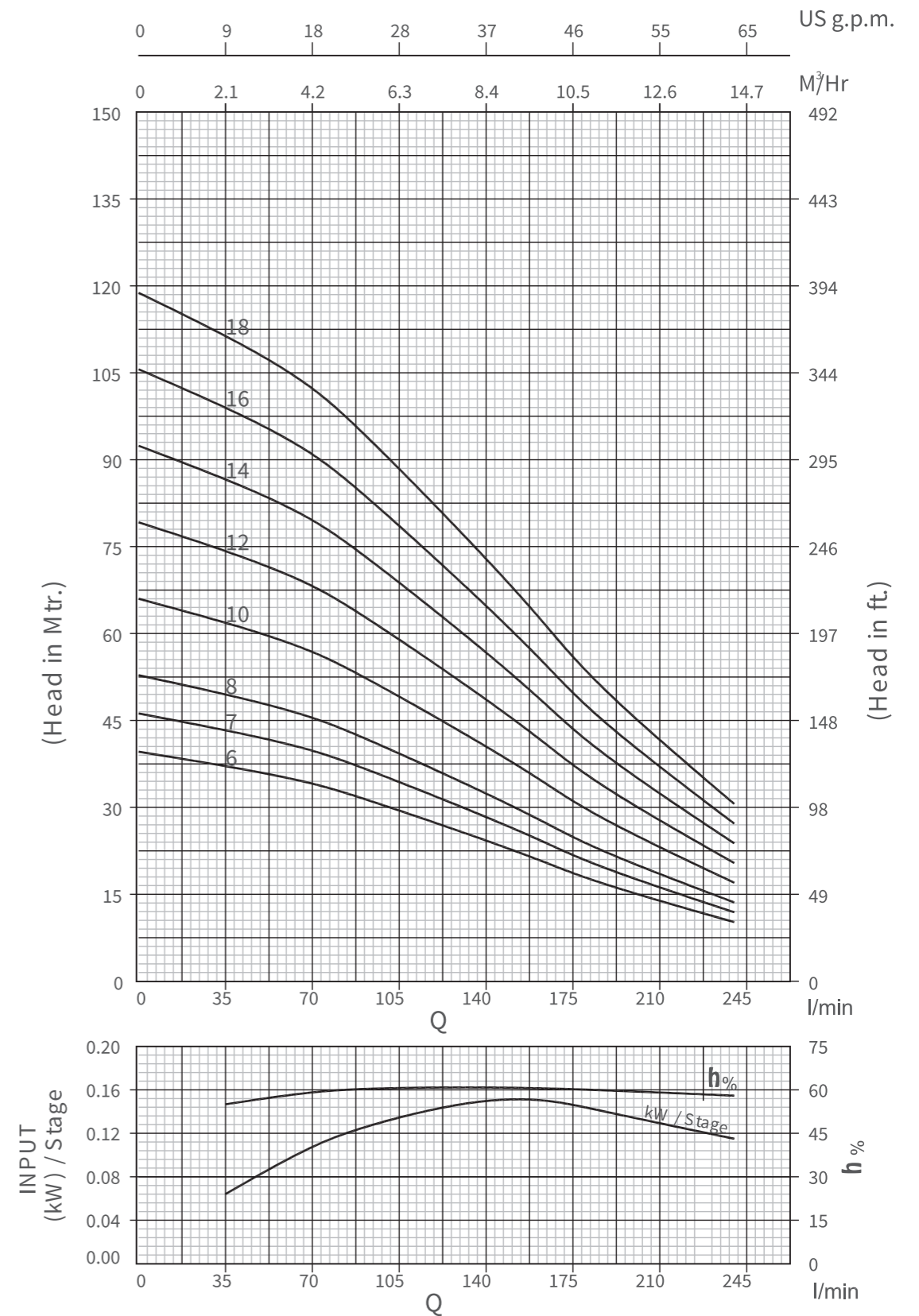
### Material Specification

SR	PART NAME	MATERIAL	QTY
1	STRAINER	S.S.202	01
2	STRAINER	S.S.202	01
3	COUPLING	S.S.304	01
4	GRUB SCREW	S.S.304	01
5	SUCTION BUSH	L.T.B.4(2% NI)	01
6	SLEEVE(H/C)	S.S.410	02
7	DISTANCE SLEEVE	P.P.O.(20% G.F.)	01
8	HEX BOLT	S.S.304	04
9	SPRING WASHER	S.S.304	04
10	SUCTION (EXPORT)	C.I.(F.G.200)	01
11	SQUARE NUT	S.S.304	04
12	SUCTION PLATE	P.P.O.(20% G.F.)	01
13	PUMP SHAFT	S.S.410	01
14	IMPELLER	P.P.O.(20% G.F.)	1/ST
15	SLEEVE	P.P.O.(20% G.F.)	1/ST
16	BOWL PIPE	S.S.202	1/ST
17	TOP CASING	P.P.O.(20% G.F.)	01
18	STAGE CASING	P.P.O.(20% G.F.)	1/ST-1
19	THRUST PLATE	S.S. 202	01
20	D.O.L	P.P.O.(20% G.F.)	01
21	D.O.L. 'O' RING	NITRILE RUBBER	01
22	TOP COLLAR	S.S.410	01
23	HEX BOLT	S.S.304	01
24	CABLE GUARD	S.S.202	01
25	CABLE CLIP	S.S.202	01
26	DELIVERY CASING	C.I.(F.G.200)	01
27	WASHER	BRASS	04
28	SCREW	S.S.304	04
29	ALLEN BOLT	S.S.304	01
30	KEY	S.S.410	01
31	KEY	S.S.304	01
32	N.R.V.CONE 'O' RING	NITRILE RUBBER	01
33	N.R.V.CONE	NYLON	01
34	N.R.V. THREAD RING	P.P.O.(20% G.F.)	01
35	PUMP PIPE	S.S.202	01
36	SPOT RING	S.S.202	01
37	TOP SLEEVE	P.P.O.(20% G.F.)	01
38	C.T. BEARING BUSH	L.T.B.4(2% NI)	01



**4MF 470, 50Hz**  
ISO 9906 Annexure A

## PERFORMANCE CURVES



4MF 470, 50Hz  
ISO 9906 Annexure A

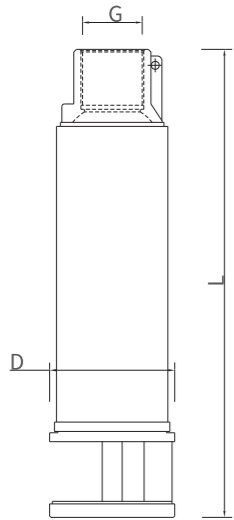
PERFORMANCE CHART

Model Name		Rating			l/min m <sup>3</sup> /h	Discharge							
Single Phase	Three Phase	Stage	kW	HP		0	35	65	85	135	165	185	240
						0	2.1	3.9	5.1	8.1	9.9	11.7	14.4

4MF 470-06	4MF 470-06	6	1.10	1.50	HEAD IN Mtrs.	40	37	35	32	25	20	17	10
4MF 470-07	4MF 470-07	7	1.10	1.50		46	43	41	38	29	24	20	12
4MF 470-08	4MF 470-08	8	1.50	2.00		53	50	46	43	34	27	22	14
4MF 470-10	4MF 470-10	10	2.20	3.00		66	62	58	54	42	34	28	17
4MF 470-12	4MF 470-12	12	2.20	3.00		79	74	70	65	50	41	34	20
	4MF 470-14	14	3.00	4.00		92	87	81	76	59	48	39	24
	4MF 470-16	16	4.00	5.50		106	99	93	86	67	54	45	27
	4MF 470-18	18	4.00	5.50		119	112	104	97	75	61	50	31

Dimensions & Weights



Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
4MF-470-06	98	630	8.5	10.5
4MF-470-07	98	684	8.5	10.5
4MF-470-08	98	738	9.0	11.0
4MF-470-10	98	846	10.0	12.0
4MF-470-12	98	954	10.5	12.5
4MF-470-14	98	1062	11.5	13.5
4MF-470-16	98	1170	12.0	14.0
4MF-470-18	98	1278	12.5	14.5

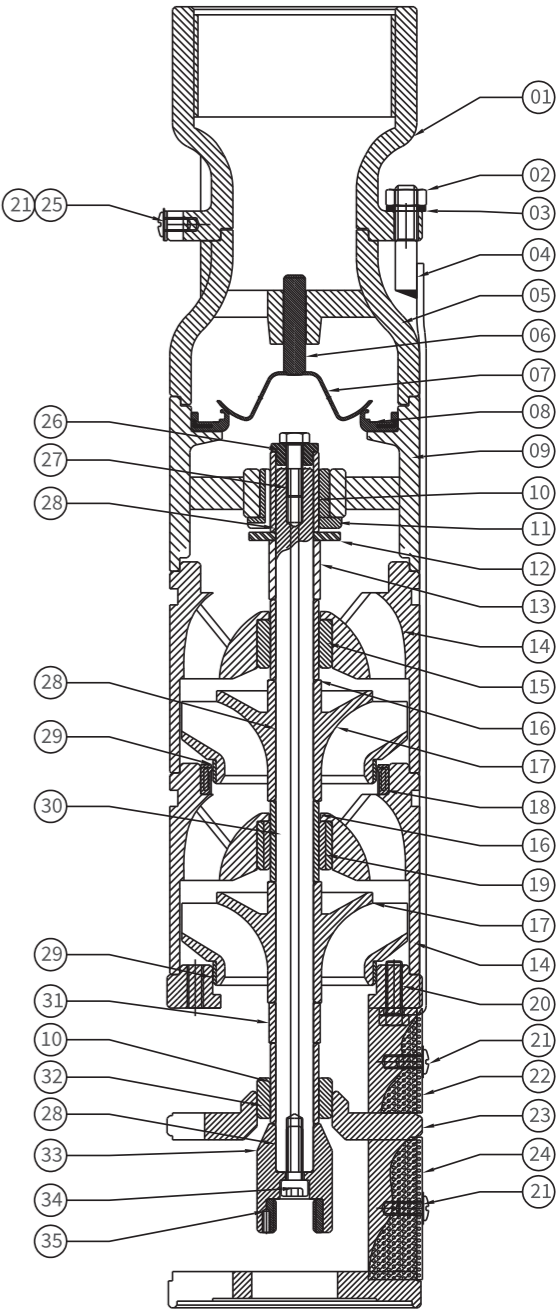
\*G:Available Outlet Size 2"  
\*D:With Cable Guard

SUBMERSIBLE PUMPS

4MF 490 SERIES PUMP DESIGN

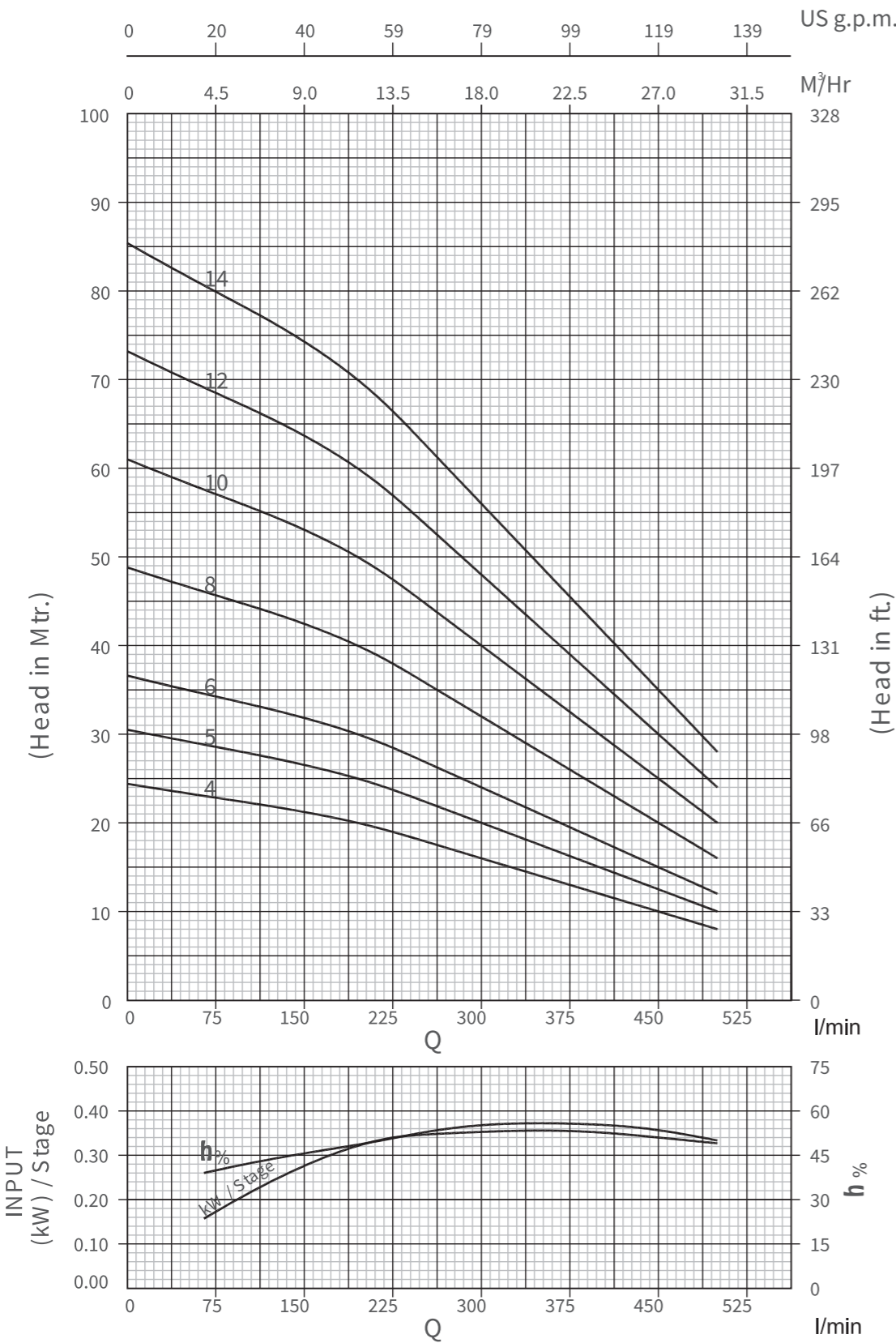
Material Specification

No.	PART'S NAME	MATERIAL	QTY.
1	DELIVERY CASING PART-1	C.I (F.G-200)	01
2	HEX NUT (USE FOR PUMP PATTI)	S.S.304	04
3	WASHER (USE FOR PUMP PATTI)	S.S.304	04
4	PUMP PATTI	S.S.304	04
5	DELIVERY CASING PART-2	C.I (F.G-200)	01
6	N.R.V CONE STUD	S.S.410	01
7	N.R.V CONE	S.S.304	01
8	RUBBER NECKRING (FOR D.O.L)	N.B.R/M.S	01
9	D.O.L	C.I (F.G-200)	01
10	D.O.L SLEEVE	S.S.410	01
10	SLEEVE (SUCTION PLATE)	S.S.410	01
11	C.T BEARING BUSH (USE FOR D.O.L)	L.T.B-4 2% Ni	01
12	THRUST PLATE	S.S.202	01
13	DISTANCE SLEEVE (TOP SIDE)	NYLON	01
14	STAGE CASING	C.I (F.G-200)	1/ST
15	BEARING BUSH	L.T.B-4 2% Ni	1/ST
16	BOWL SLEEVE	S.S.410	1/ST
17	REGULAR IMPELLER	S.S.410	1/st
18	BOWL NECKRING	N.B.R/M.S	1/ST
19	RUBBER MATEL BUSH	N.B.R/M.S	1/ST
20	HEX BOLT (USE FOR PUMP PATTI)	S.S.304	04
21	SCREW	S.S.304	04
21	SCREW WASHER	S.S.304	04
22	STRAINER-1	S.S.202	01
23	SUCTION	C.I (F.G-200)	01
24	STRAINER-2	S.S.202	01
25	CABLE CLIP	S.S.202	01
26	TOP COLLER	S.S.410	01
27	HEX BOLT (TOP SIDE)	S.S.304	01
28	KEY (TOP SLEEVE)	S.S.410	01
28	KEY (BOTTOM SLEEVE)	S.S.410	01
28	KEY (IMPELLER)	S.S.410	/ST
29	IMPELLER NECKRING	S.S.202	01/ST
30	PUMP SHAFT	S.S.410	01
31	DISTANCE SLEEVE (SUCTION SIDE)	P.P.O (20% G.F)	01
32	BEARING BUSH (FOR SUCTION)	L.T.B-4 2% Ni	01
33	COUPLING	S.S.304	01
34	ALLEN BOLT	S.S.304	01
35	GRUB SCREW	S.S.304	01



**4MF 490, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



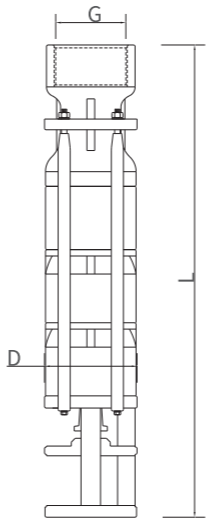
**4MF 490, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name			Rating			Discharge										
Single Phase	Three Phase	Stage	kW	HP	l/min	0	65	120	200	250	300	350	400	450	500	
					m³/h	0	3.9	7.2	12	15	18	21	24	27	30	

4MF 490-04	4MF 490-04	4	2.20	3.00	HEAD IN Mtrs.	24	23	22	20	18	16	14	12	10	8
4MF 490-05	4MF 490-05	5	2.20	3.00		30	29	28	25	22	20	18	15	12	10
4MF 490-06	4MF 490-06	6	2.20	3.00		37	34	33	30	27	24	21	18	15	12
	4MF 490-08	8	3.00	4.00		49	46	44	40	36	32	28	24	20	16
	4MF 490-10	10	4.00	5.50		61	58	55	50	45	40	35	30	25	20
	4MF 490-12	12	4.50	6.00		73	69	66	60	54	48	42	36	30	24
	4MF 490-14	14	5.50	7.50		85	80	77	70	63	56	49	42	35	28

**Dimensions & Weights**



Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
4MF-490-04	98	635	8.5	10.5
4MF-490-05	98	710	12.0	14.0
4MF-490-06	98	785	15.0	17.0
4MF-490-08	98	935	19.5	21.5
4MF-490-10	98	1085	23.0	25.0
4MF-490-12	98	1235	27.5	29.5

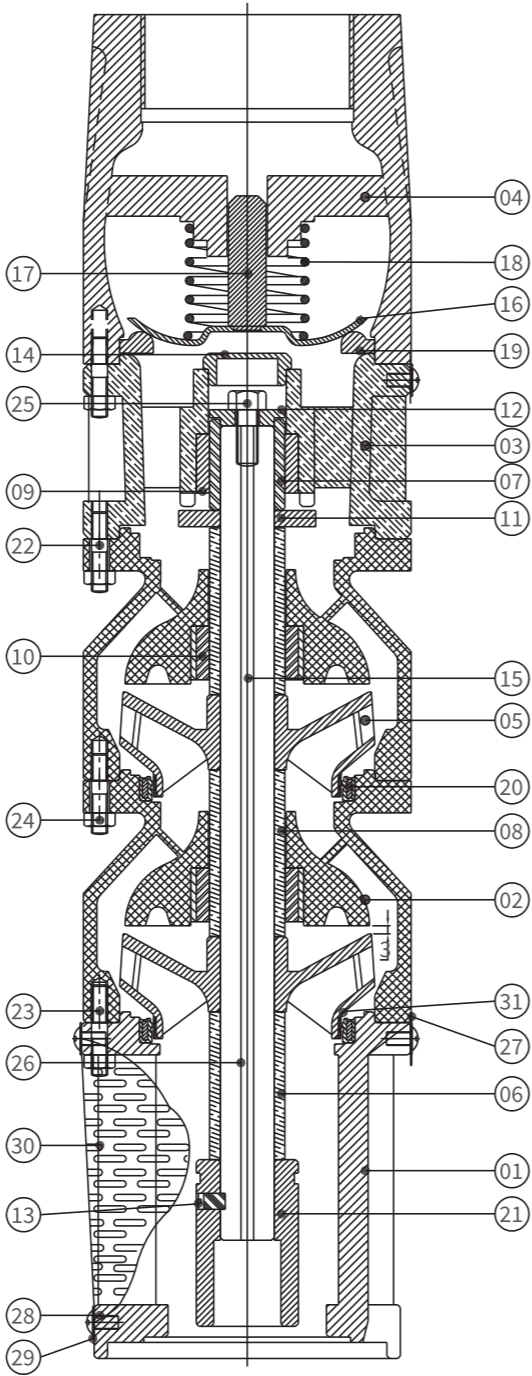
\*G:Available Outlet Size 2" & 2.5"  
\*D:With Cable Guard

# SUBMERSIBLE PUMPS

## 5MF 510 SERIES PUMP DESIGN

### Material Specification

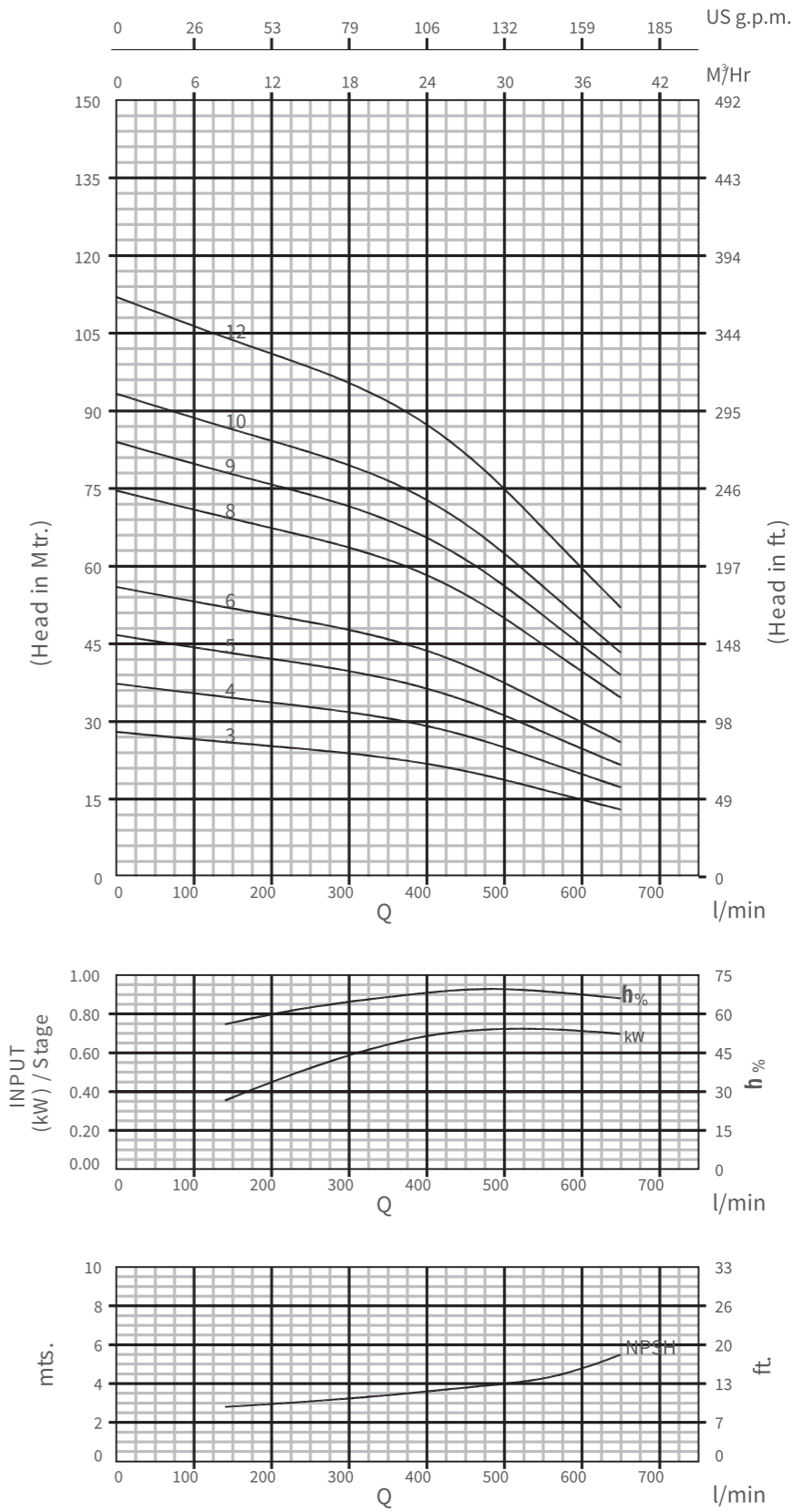
NO	PART NAME	MATERIAL	QTY.
1	SUCTION	C.I. (F.G 200)	01
2	STAGE CASING	C.I. (F.G 200)	/ST.
3	D.O.L.	C.I. (F.G 200)	01
4	DELIVERY CASING	C.I. (F.G 200)	01
5	IMPELLER (C.I.)	C.I. (F.G 200)	/ST.
6	SLEEVE (DIST.)	S.S. 410	01
7	SLEEVE (DOL)	S.S. 410	01
8	SLEEVE (BOWL)	S.S. 410	/ST.
9	BEARING BUSH	L.T.B 4 (2% Ni.)	01
10	METAL RUBBER BUSH	N.B.R./M.S.	/ST.
11	THRUST COLLAR	S.S. 410	01
12	TOP COLLAR	S.S. 410	01
13	GRUB SCREW(DOMESTIC)	S.S. 304	01
14	DOL CAP	PVC	01
15	SHAFT	S.S. 410	01
16	N.R.V. CONE PLATE	S.S. 202	01
17	N.R.V. CONE ROD	S.S. 410	01
18	N.R.V. CONE SPRING	SPRING STEEL	01
19	N.R.V. NECKRING	N.B.R.	01
20	BOWL NRCKRING	M.S./N.B.R.	/ST.
21	COUPLING(DOMESTIC)	S.S. 410	01
22	STUD(DOL,BOWL)	S.S. 410	8+08/ST.
23	STUD (SUCTION)	S.S. 410	08
24	HEX NUT	S.S. 202	16+8/ST.
25	HEX BOLT	S.S. 304	01
26	KEY	S.S. 410	REQ.
27	SCREW(CABLE CLIP)	BRASS	04
28	SCREW(STRAINER)	BRASS	02
29	SCREW WASHER	BRASS	06
30	STRAINER	S.S.202	01
31	IMPELLER NECKRING	S.S. 202	/ST.



### 5MF 510, 50Hz

ISO 9906 Annexure A

## PERFORMANCE CURVES



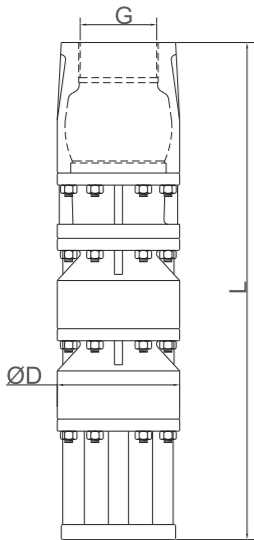
5MF 510, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge							
Single Phase	Three Phase	Stage	kW	HP	l/min	0	140	225	360	470	570	650
					m³/h	0	8.4	13.5	21.6	28.2	34.2	39.0

5MF 510-03	5MF 510-03	3	2.20	3.00	HEAD IN Mtrs.	28	26	25	23	20	16	13
5MF 510-04	5MF 510-04	4	4.00	5.50		37	35	33	31	27	21	17
5MF 510-05	5MF 510-05	5	4.50	6.00		47	43	42	38	33	27	22
5MF 510-06	5MF 510-06	6	5.50	7.50		56	52	50	46	40	32	26
	5MF 510-08	8	7.50	10.00		75	69	67	61	53	43	35
	5MF 510-09	9	7.50	10.00		84	78	75	69	60	48	39
	5MF 510-10	10	9.30	12.50		93	87	83	77	67	53	43
	5MF 510-12	12	9.30	12.50		112	104	100	92	80	64	52

Dimensions & Weights



Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)(kg)
5MF-510/03	133	590	21.5	29.5
5MF-510/04	133	680	25.5	33.5
5MF-510/05	133	770	29.5	37.5
5MF-510/06	133	860	33.0	41.0
5MF-510/08	133	950	41.0	49.0
5MF-510/09	133	1040	46.0	55.0
5MF-510/10	133	1130	51.0	61.0
5MF-510/12	133	1310	61.0	73.0

\*G:Available Outlet Size 3"

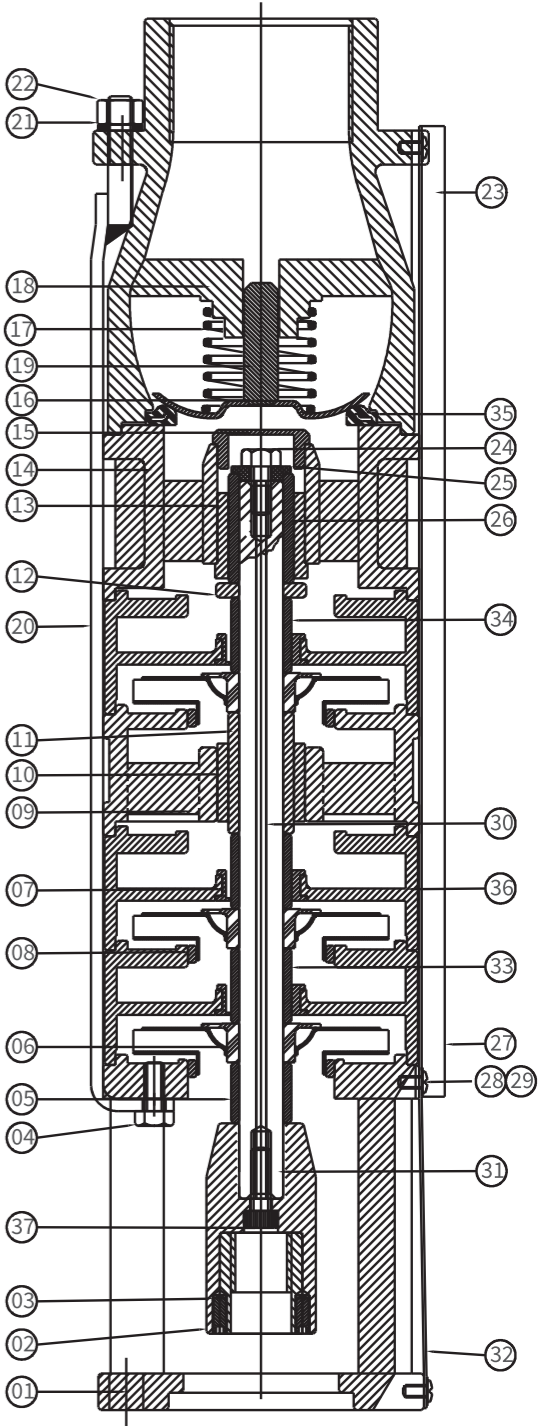
\*D:With Cable Guard

SUBMERSIBLE PUMPS

6RF 61B, 6RF 64B, 6RF 610, 6RF 620, 6RF 640, 6RF 650  
SERIES PUMP DESIGN

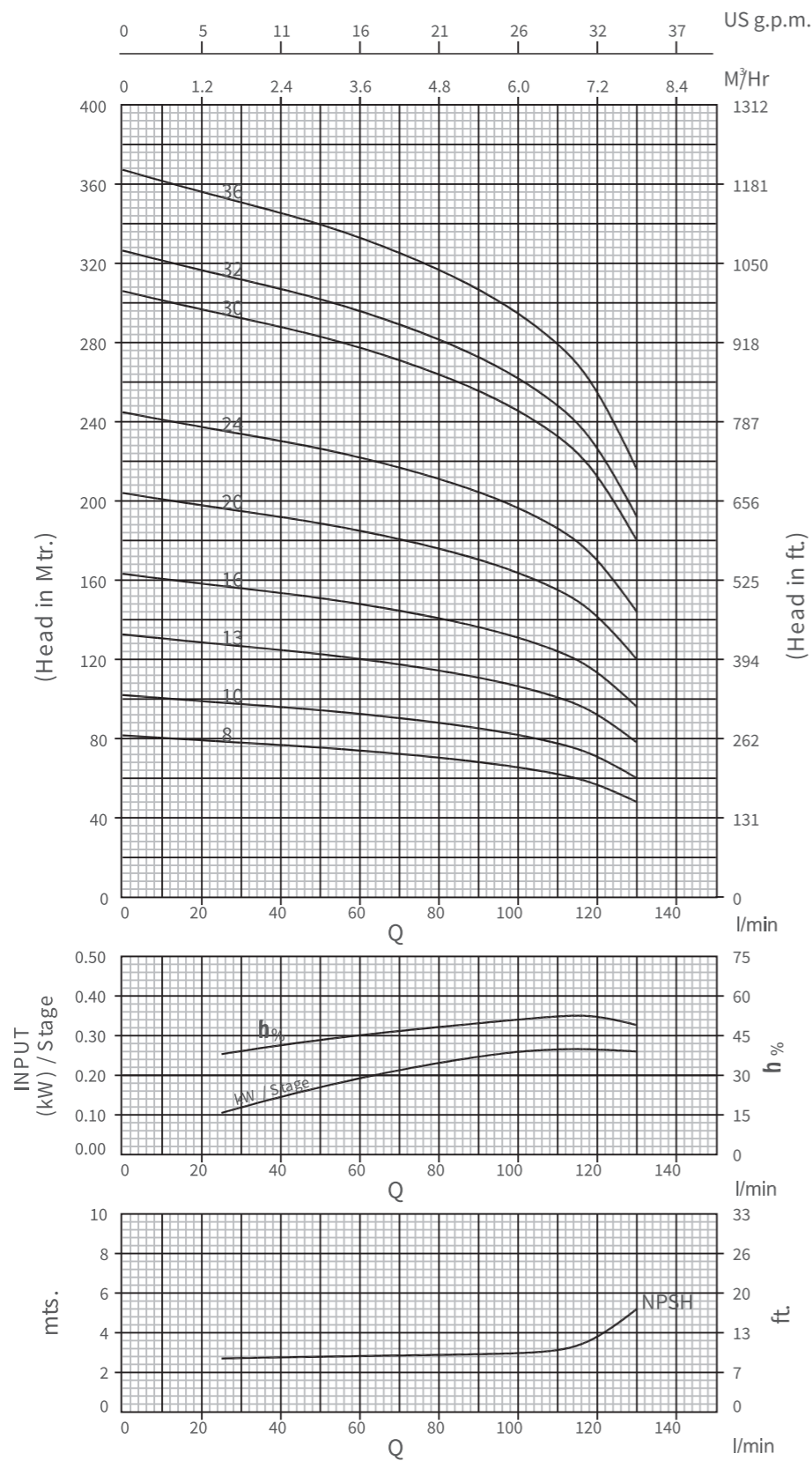
Material Specification

NO	PART NAME	MATERIAL	QTY
1	SUCTION	C.I. (FG 200)	01
2	COUPLING EXPORT	S.S. 304	01
3	GRUB SCREW	S.S. 304	01
4	HEX BOLT (PUMP PATTI)(DOMESTIC)	S.S. 304	04
5	DIST. SLEEVE	S.S. 410	01
6	IMPELLER	S.S. 304	REQ.
7	BEARING BUSH	N.B.R.	REQ.
8	BOWL & SUCTION NECKRING	P.V.C.	REQ.
9	MIDDLE	C.I. (FG 200)	REQ
10	MIDDLE BUSH	LTB 4 (2% NI)	REQ
11	MIDDLE SLEEVE	S.S. 410	REQ
12	THRUST COLLAR	S.S.304	01
13	DOL BUSH	LTB 4 (2% NI)	01
14	D.O.L.	C.I. (FG 200)	01
15	DOL CAP	P.V.C.	01
16	CONE PLATE	S.S. 202	01
17	NRV CONE SPRING	SPRING STEEL	01
18	DELIVERY CASING	C.I. (FG 200)	01
19	CONE STUD	S.S. 304	01
20	PUMP PATTI	S.S. 304	04
21	WASHER (PATTI)	S.S. 304	04
22	HEX NUT	S.S. 304	04
23	CABLE GUARD	S.S. 202	REQ.
24	HEX BOLT	S.S. 304	01
25	TOP COLLAR	S.S.304	01
26	DOL SLEEVE	S.S. 410	01
27	CABLE CLIP	S.S. 202	REQ
28	SCREW WASHER	S.S.304	10
29	SCREW	S.S.304	10
30	KEY	S.S. 410	REQ
31	PUMP SHAFT	S.S.410	01
32	STRAINER	S.S. 202	01
33	BOWL SLEEVE	S.S. 410	REQ
34	TOP SLEEVE	S.S. 410	01
35	NRV NECKRING	M.S. / N.B.R.	01
36	STAGE CASING	C.I. (FG 200)	REQ.
37	ALLEN BOLT	S.S.304	01



6RF 61B, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



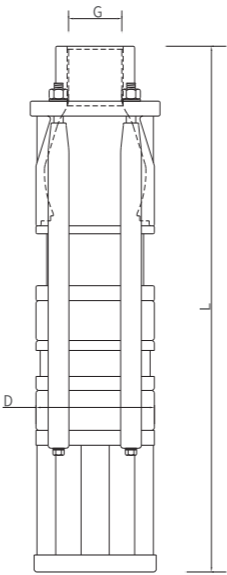
6RF 61B, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge							
Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	25	50	90	110	120	130	
					0	1.5	3.0	5.4	6.6	7.2	7.8	

6RF 61B-08	8	2.20	3.00	HEAD IN Mtrs.	82	78	76	69	62	58	48
6RF 61B-10	10	3.00	4.00		102	98	95	86	78	72	60
6RF 61B-13	13	4.00	5.50		133	127	124	112	101	94	78
6RF 61B-16	16	4.50	6.00		163	157	152	138	125	115	96
6RF 61B-20	20	5.50	7.50		204	196	190	172	156	144	120
6RF 61B-24	24	7.50	10.00		245	235	228	206	187	173	144
6RF 61B-30	30	9.30	12.50		306	294	285	258	234	216	180
6RF 61B-32	32	9.30	12.50		326	314	304	275	250	230	192
6RF 61B-36	36	11.00	15.00		367	353	342	310	281	259	216

Dimensions & Weights

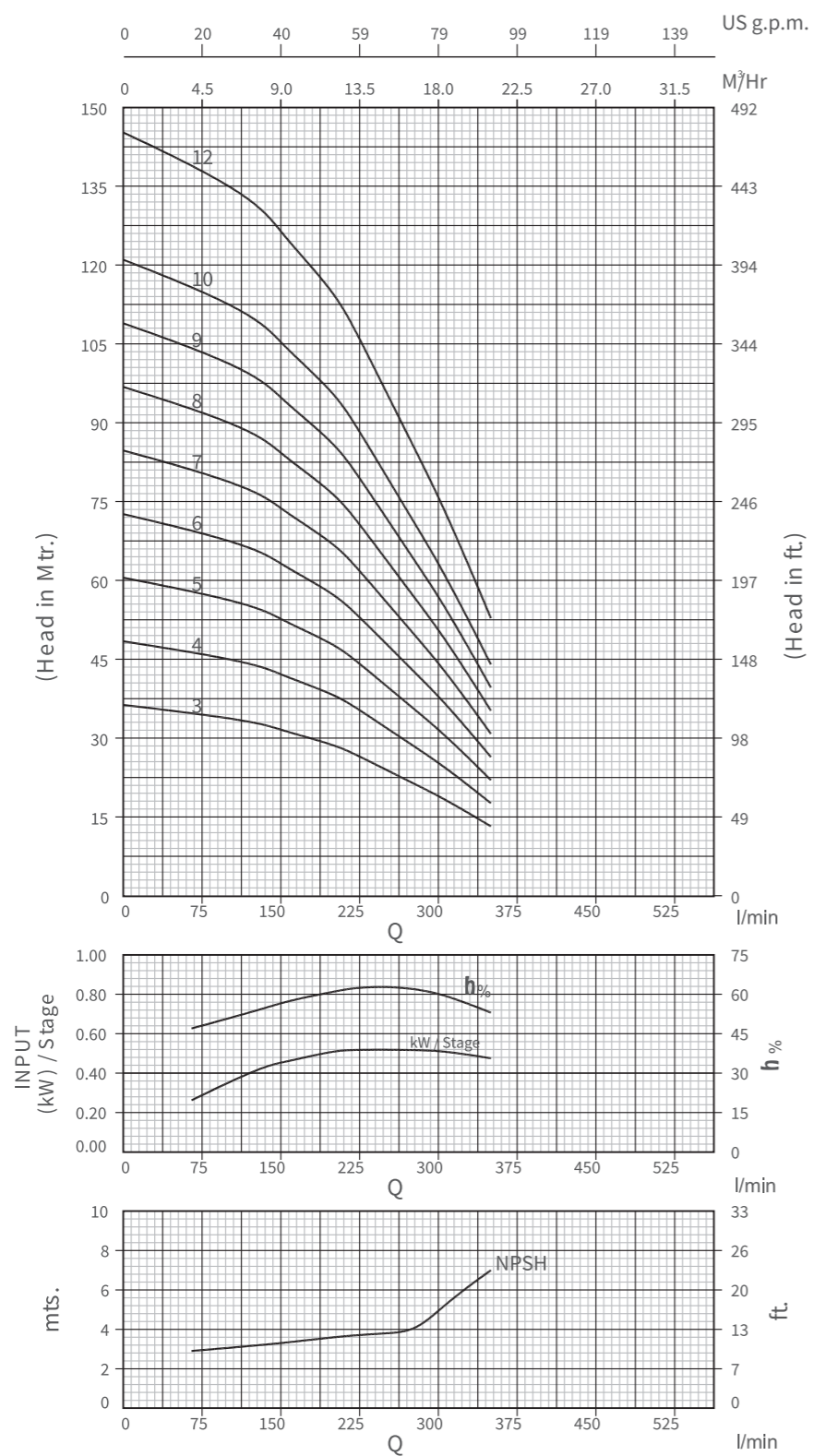


Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
6RF-61B/08	142	677	26.0	34.0
6RF-61B/10	142	807	32.0	40.0
6RF-61B/13	142	927	36.0	44.0
6RF-61B/16	142	1047	41.0	49.0
6RF-61B/20	142	1207	47.0	55.0
6RF-61B/24	142	1417	55.0	63.0
6RF-61B/30	142	1657	65.0	73.0
6RF-61B/32	142	1787	68.0	76.0
6RF-61B/36	142	2047	74.0	82.0

\*G:Available Outlet Size 2"  
\*D:With Cable Guard

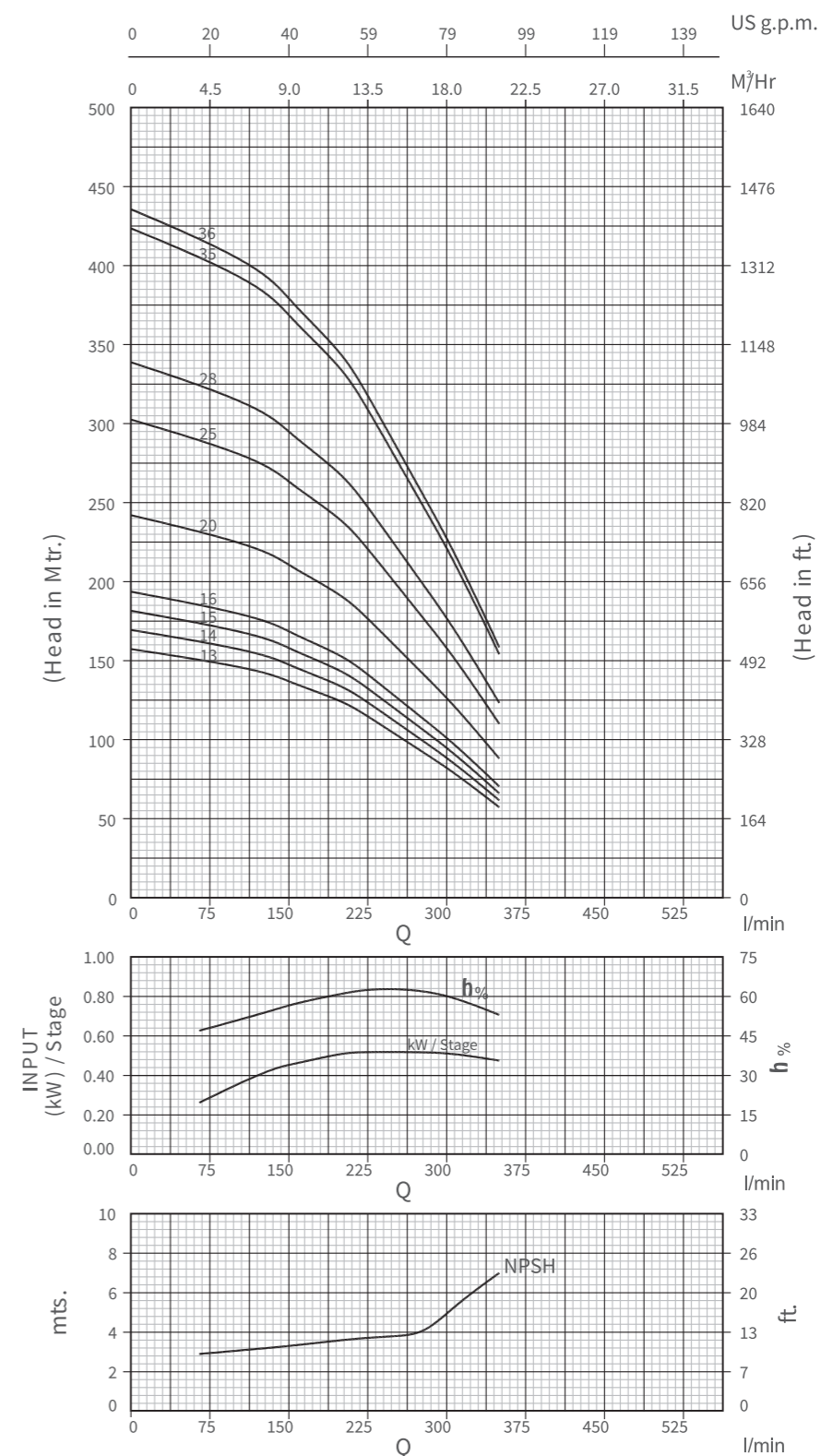
**6RF 64B, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



**6RF 64B, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



6RF 64B, 50Hz

ISO 9906 Annexure A

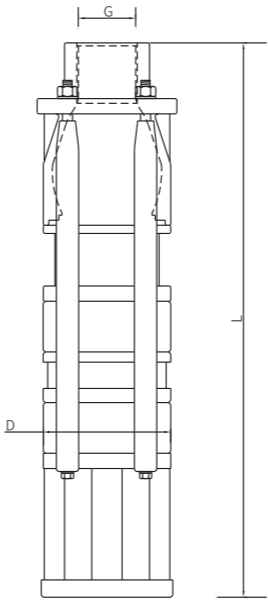
PERFORMANCE CHART

Model Name		Rating			Discharge										
Three Phase	Stage	kW	HP	l/min m³/h	0	65	130	150	200	220	250	280	310	350	
					0	3.9	7.8	9.0	12.0	13.2	15.0	16.8	18.6	21.0	
6RF 64B-03	3	2.20	3.00	HEAD IN Mtrs.	36	35	33	32	29	27	24	21	18	13	
6RF 64B-04	4	2.20	3.00		48	46	44	42	38	36	32	28	24	18	
6RF 64B-05	5	3.00	4.00		60	58	55	52	48	45	40	35	30	22	
6RF 64B-06	6	4.00	5.50		73	70	66	63	58	54	48	42	36	26	
6RF 64B-07	7	4.00	5.50		85	81	77	74	67	63	56	49	42	31	
6RF 64B-08	8	4.50	6.00		97	93	88	84	77	72	64	56	48	35	
6RF 64B-09	9	5.50	7.50		109	104	99	94	86	81	72	63	54	40	
6RF 64B-10	10	5.50	7.50		121	116	110	105	96	90	80	70	60	44	
6RF 64B-12	12	7.50	10.00		145	139	132	126	115	108	96	84	72	53	
6RF 64B-13	13	7.50	10.00		157	151	143	136	125	117	104	91	78	57	
6RF 64B-14	14	9.30	12.50		169	162	154	147	134	126	112	98	84	62	
6RF 64B-15	15	9.30	12.50		182	174	165	158	144	135	120	105	90	66	
6RF 64B-16	16	9.30	12.50		194	186	176	168	154	144	128	112	96	70	
6RF 64B-20	20	11.00	15.00		242	232	220	210	192	180	160	140	120	88	
6RF 64B-25	25	15.00	20.00		302	290	275	262	240	225	200	175	150	110	
6RF 64B-28	28	18.50	25.00		339	325	308	294	269	252	224	196	168	123	
6RF 64B-35	35	22.00	30.00		424	406	385	368	336	315	280	245	210	154	
6RF 64B-36	36	22.00	30.00		436	418	396	378	346	324	288	252	216	158	

6RF 64B, 50Hz

ISO 9906 Annexure A

Dimensions & Weights

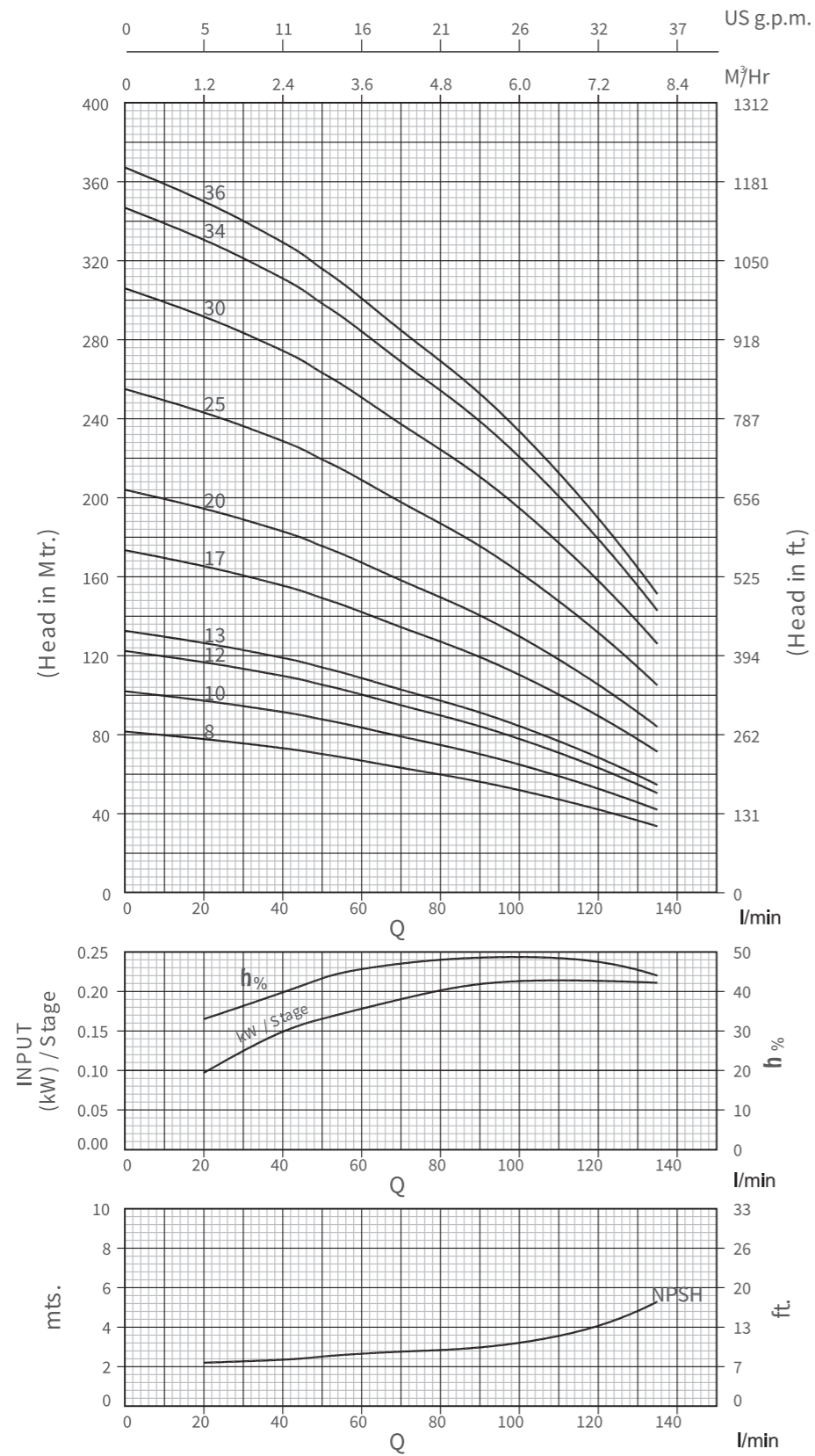


Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
6RF-64B/03	142	565	20.0	28.0
6RF-64B/04	142	615	22.0	30.0
6RF-64B/05	142	665	24.0	32.0
6RF-64B/06	142	715	25.0	33.0
6RF-64B/07	142	765	27.0	35.0
6RF-64B/08	142	815	29.0	37.0
6RF-64B/09	142	865	31.0	39.0
6RF-64B/10	142	915	34.5	42.5
6RF-64B/12	142	1065	38.0	46.0
6RF-64B/13	142	1115	40.0	48.0
6RF-64B/14	142	1165	42.0	50.0
6RF-64B/15	142	1215	44.0	52.0
6RF-64B/16	142	1265	45.0	53.0
6RF-64B/20	142	1465	52.0	60.0
6RF-64B/25	142	1765	63.0	71.0
6RF-64B/28	142	1915	69.0	77.0
6RF-64B/35	142	2415	84.0	92.0
6RF-64B/36	142	2465	85.0	93.0

\*G:Available Outlet Size 2"  
\*D:With Cable Guard

**6RF 610, 50Hz**  
ISO 9906 Annexure A

# PERFORMANCE CURVES



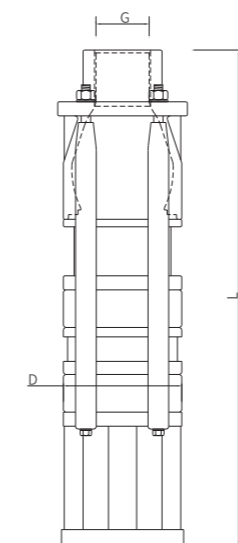
**6RF 610, 50Hz**  
ISO 9906 Annexure A

# PERFORMANCE CHART

Model Name	Stage	Rating			Discharge												
Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	20	35	45	49	55	72	92	122	135			
					0	1.2	2.1	2.7	2.94	3.3	4.5	5.52	7.32	8.1			

Model Name	Stage	kW	HP	l/min m <sup>3</sup> /h	0	20	35	45	49	55	72	92	122	135
6RF 610-08	8	2.20	3.00		82	78	74	72	70	69	62	56	42	34
6RF 610-10	10	2.20	3.00		102	98	93	90	88	86	78	70	52	42
6RF 610-12	12	3.00	4.00		122	117	112	108	106	103	94	84	62	50
6RF 610-13	13	3.00	4.00		133	127	121	117	114	112	101	91	68	55
6RF 610-17	17	4.00	5.50		173	166	158	153	150	146	133	119	88	71
6RF 610-20	20	4.50	6.00		204	195	186	180	176	172	156	140	104	84
6RF 610-25	25	5.50	7.50		255	244	232	225	220	215	195	175	130	105
6RF 610-30	30	7.50	10.00		306	292	279	270	264	258	234	210	156	126
6RF 610-34	34	9.30	12.50		347	332	316	306	299	292	265	238	177	143
6RF 610-36	36	9.30	12.50		367	351	335	324	317	310	281	252	187	151

## Dimensions & Weights

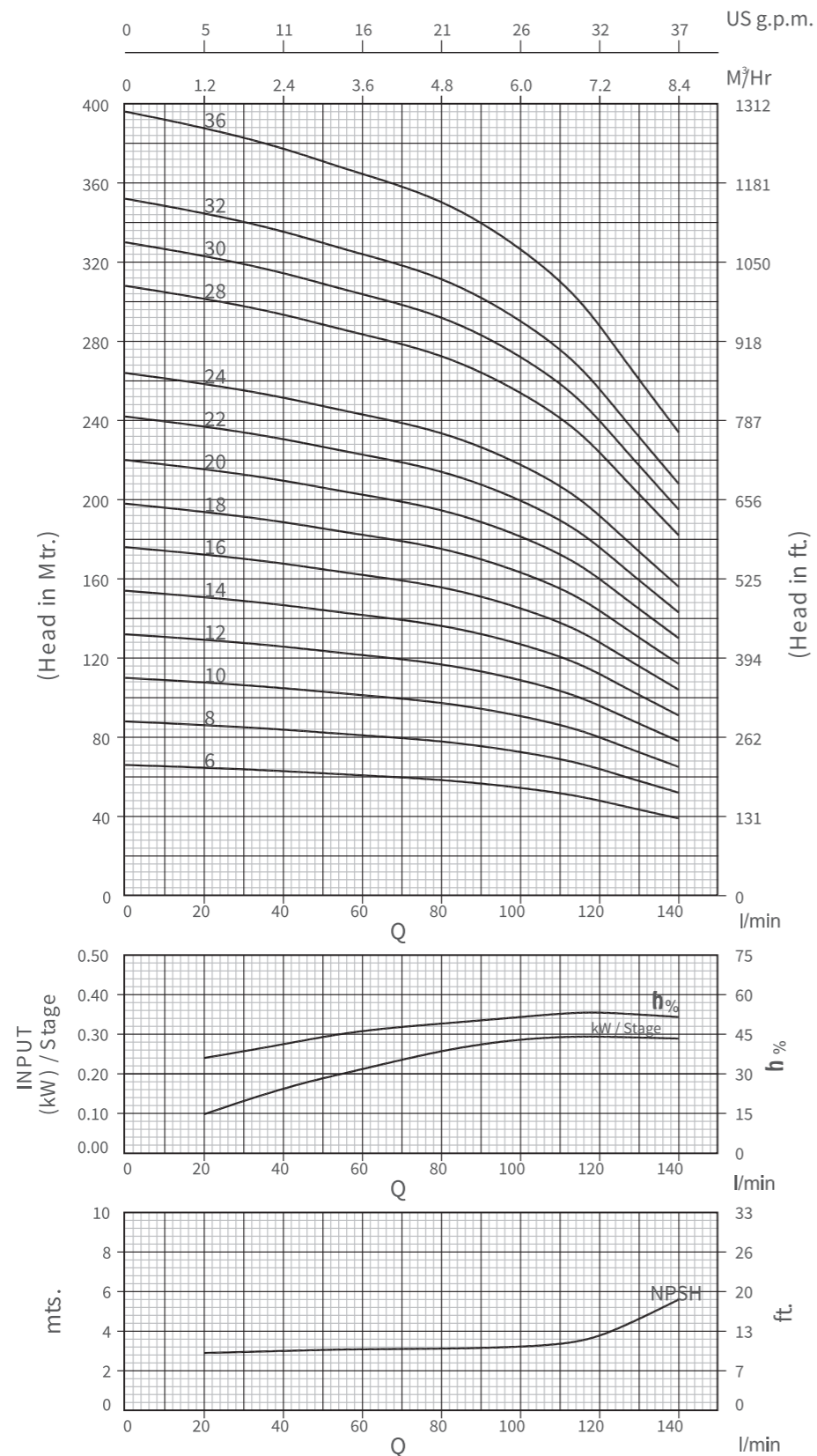


Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
6RF-610/08	142	677	26.0	34.0
6RF-610/10	142	807	32.0	40.0
6RF-610/12	142	887	35.0	43.0
6RF-610/13	142	927	36.0	44.0
6RF-610/17	142	1087	42.0	50.0
6RF-610/20	142	1207	47.0	55.0
6RF-610/25	142	1457	57.0	65.0
6RF-610/30	142	1657	65.0	73.0
6RF-610/34	142	1917	71.0	79.0
6RF-610/36	142	2047	74.0	82.0

\*G:Available Outlet Size 2"  
\*D:With Cable Guard

**6RF 620, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



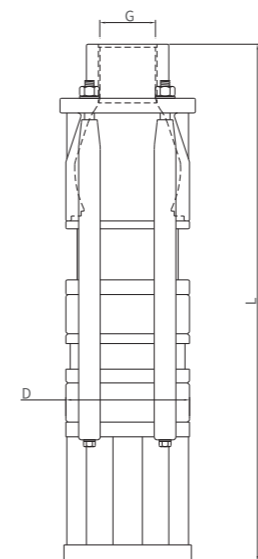
**6RF 620, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge								
Three Phase	Stage	kW	HP	l/min	0	20	40	55	80	100	115	125	140
				m <sup>3</sup> /h	0	1.2	2.4	3.3	4.8	6.0	6.9	7.5	8.4

6RF 620-06	6	2.20	3.00	HEAD IN Mtrs.	66	65	63	61	59	55	50	46	39
6RF 620-08	8	3.00	4.00		88	86	84	82	78	73	67	61	52
6RF 620-10	10	4.00	5.50		110	108	105	102	98	91	84	76	65
6RF 620-12	12	4.00	5.50		132	129	126	122	118	109	101	91	78
6RF 620-14	14	4.50	6.00		154	151	147	143	137	127	118	106	91
6RF 620-16	16	5.50	7.50		176	172	168	163	157	146	134	122	104
6RF 620-18	18	7.50	10.00		198	194	189	184	176	164	151	137	117
6RF 620-20	20	7.50	10.00		220	216	210	204	196	182	168	152	130
6RF 620-22	22	9.30	12.50		242	237	231	224	216	200	185	167	143
6RF 620-24	24	9.30	12.50		264	259	252	245	235	218	202	182	156
6RF 620-28	28	9.30	12.50		308	302	294	286	274	255	235	213	182
6RF 620-30	30	11.00	15.00		330	323	315	306	294	273	252	228	195
6RF 620-32	32	13.00	17.50		352	345	336	326	314	291	269	243	208
6RF 620-36	36	15.00	20.00		396	388	378	367	353	328	302	274	234

**Dimensions & Weights**

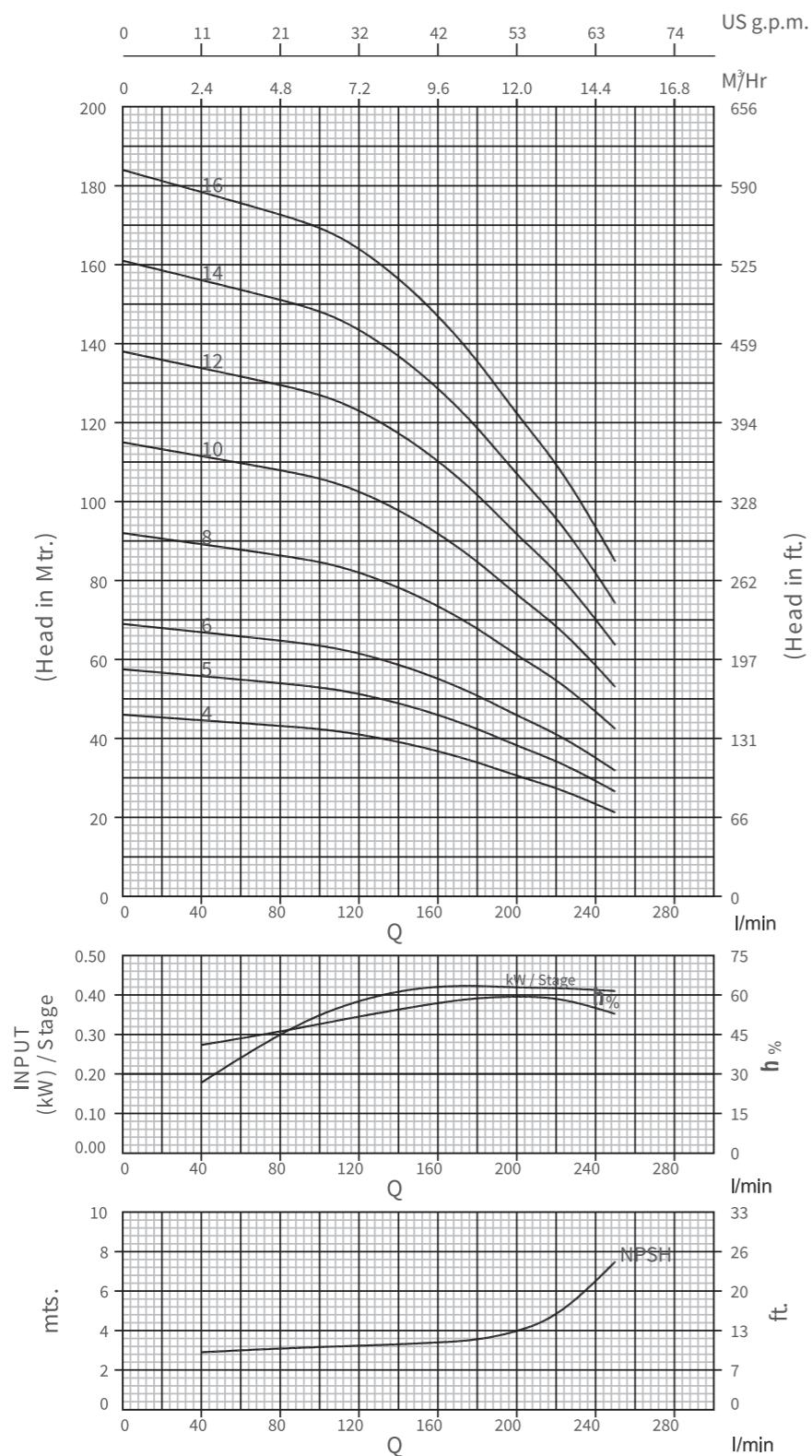


Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
6RF-620/06	142	637	23.0	31.0
6RF-620/08	142	677	26.0	34.0
6RF-620/10	142	807	32.0	40.0
6RF-620/12	142	887	35.0	43.0
6RF-620/14	142	967	38.0	46.0
6RF-620/16	142	1047	41.0	49.0
6RF-620/18	142	1127	44.0	52.0
6RF-620/20	142	1207	47.0	55.0
6RF-620/22	142	1337	51.0	59.0
6RF-620/24	142	1417	56.0	64.0
6RF-620/28	142	1577	62.0	70.0
6RF-620/30	142	1657	65.0	73.0
6RF-620/32	142	1787	70.0	78.0
6RF-620/36	142	2047	75.0	83.0

\*G:Available Outlet Size 2"  
\*D:With Cable Guard

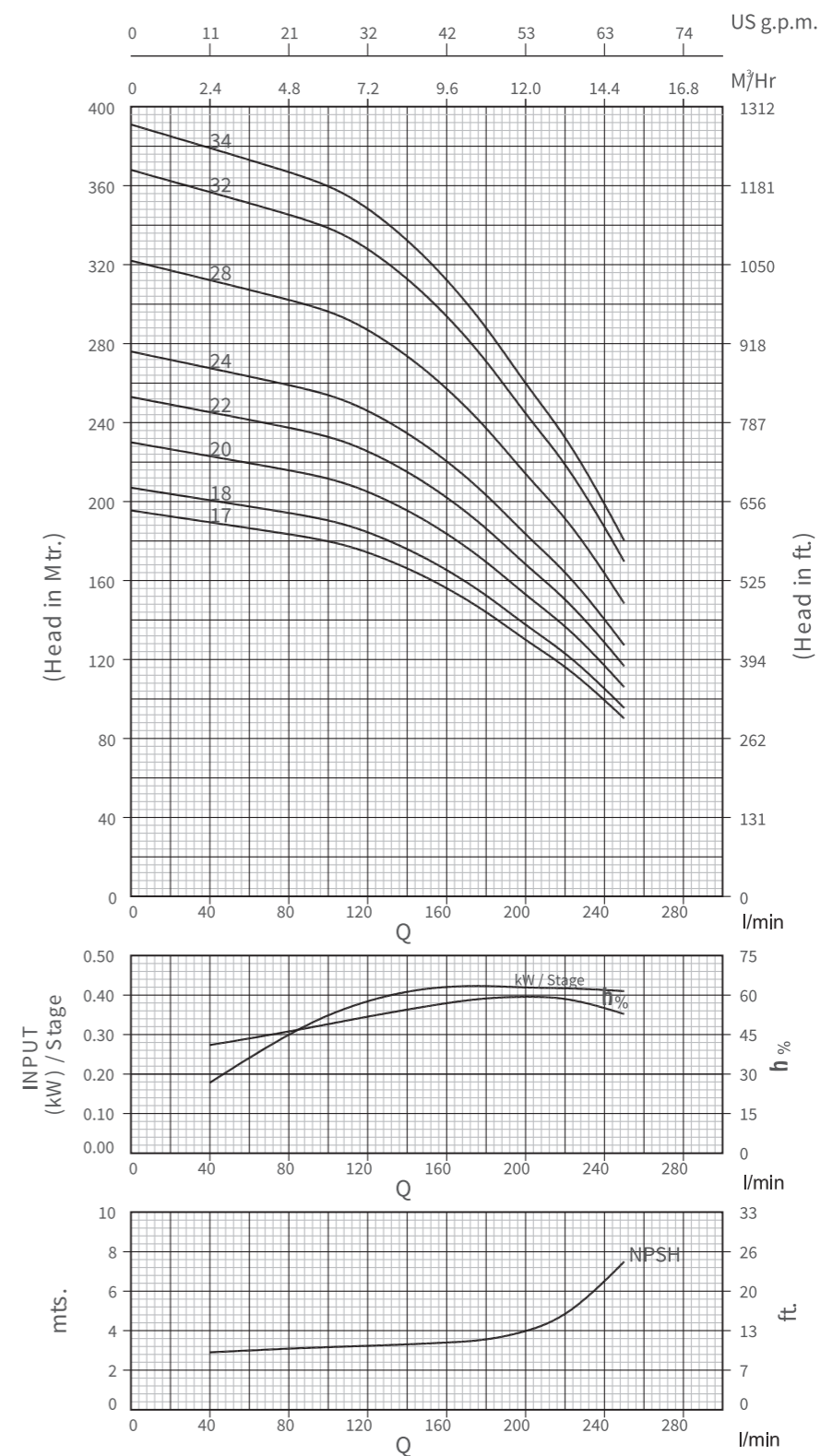
**6RF 640, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



**6RF 640, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



6RF 640, 50Hz

ISO 9906 Annexure A

PERFORMANCE CHART

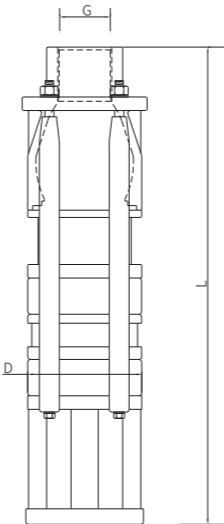
Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min	0	40	80	110	140	160	180	203	225	250
				m <sup>3</sup> /h	0	2.4	4.8	6.6	8.4	9.6	10.8	12.18	13.5	15.0

6RF 640-04	4	2.20	3.00	HEAD IN Mtrs.	46	45	43	42	39	37	34	30	27	21
6RF 640-05	5	2.20	3.00		58	56	54	52	49	46	42	38	34	26
6RF 640-06	6	3.00	4.00		69	67	65	63	59	55	51	45	40	32
6RF 640-08	8	4.00	5.50		92	89	86	84	78	74	68	60	54	42
6RF 640-10	10	4.50	6.00		115	112	108	105	98	92	85	75	67	53
6RF 640-12	12	5.50	7.50		138	134	130	126	118	110	102	90	80	64
6RF 640-14	14	7.50	10.00		161	156	151	147	137	129	119	105	94	74
6RF 640-16	16	7.50	10.00		184	178	173	168	157	147	136	120	107	85
6RF 640-17	17	9.30	12.50		196	190	184	178	167	156	144	128	114	90
6RF 640-18	18	9.30	12.50		207	201	194	189	176	166	153	135	121	95
6RF 640-20	20	9.30	12.50		230	223	216	210	196	184	170	150	134	106
6RF 640-22	22	11.00	15.00		253	245	238	231	216	202	187	165	147	117
6RF 640-24	24	11.00	15.00		276	268	259	252	235	221	204	180	161	127
6RF 640-28	28	13.00	17.50		322	312	302	294	274	258	238	210	188	148
6RF 640-32	32	15.00	20.00		368	357	346	336	314	294	272	240	214	170
6RF 640-34	34	18.50	25.00		391	379	367	357	333	313	289	255	228	180

6RF 640, 50Hz

ISO 9906 Annexure A

Dimensions & Weights



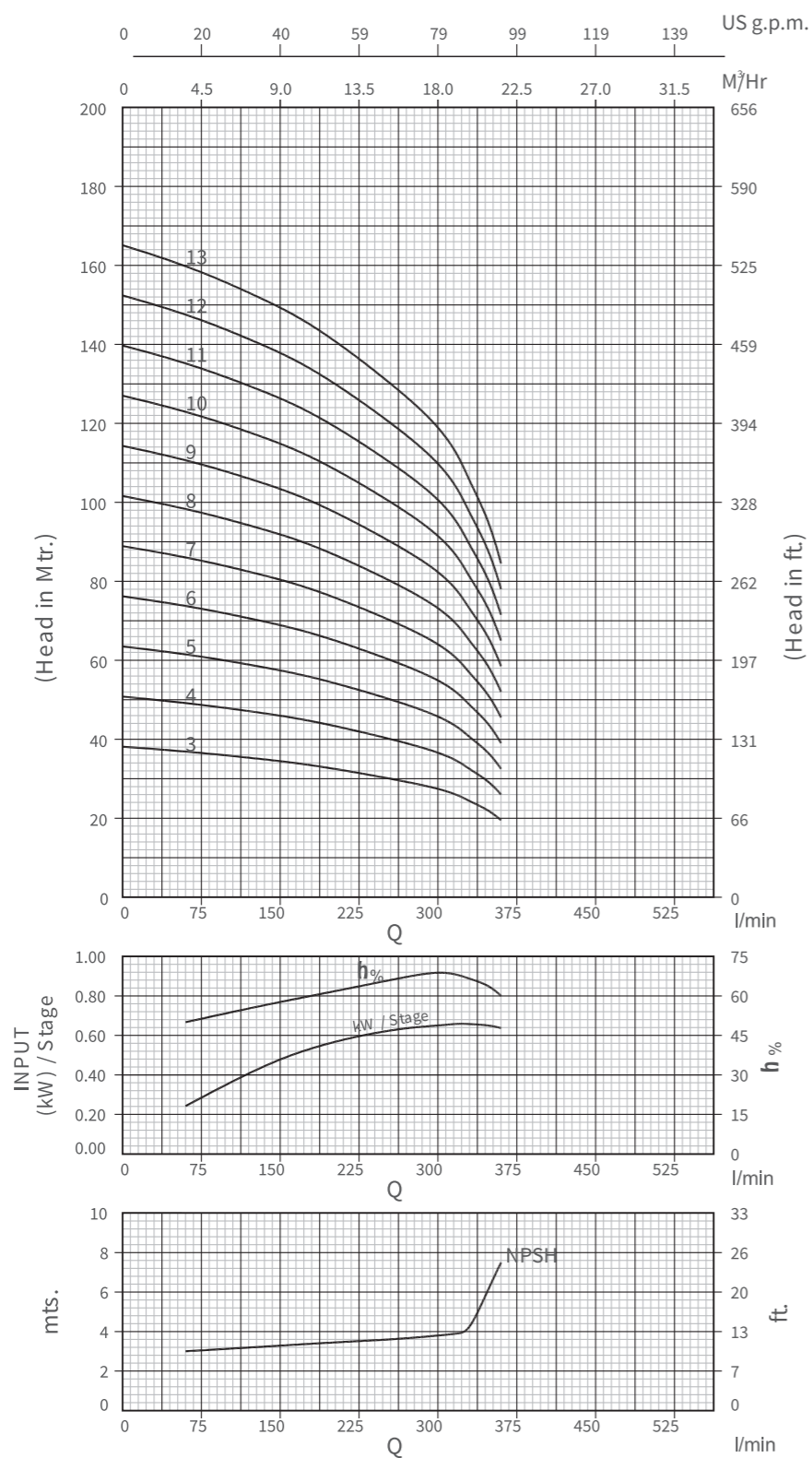
Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg.)(kg)
6RF-640/04	142	615	20.0	28.0
6RF-640/05	142	665	22.0	30.0
6RF-640/06	142	715	23.0	31.0
6RF-640/08	142	815	26.0	34.0
6RF-640/10	142	915	32.0	40.0
6RF-640/12	142	1065	35.0	43.0
6RF-640/14	142	1165	38.0	45.0
6RF-640/16	142	1265	41.0	49.0
6RF-640/17	142	1315	43.0	51.0
6RF-640/18	142	1365	45.0	53.0
6RF-640/20	142	1465	47.0	55.0
6RF-640/24	142	1715	56.0	64.0
6RF-640/28	142	1915	62.0	70.0
6RF-640/32	142	2165	67.0	75.0
6RF-640/34	142	2365	71.0	79.0

\*G:Available Outlet Size 2"

\*D:With Cable Guard

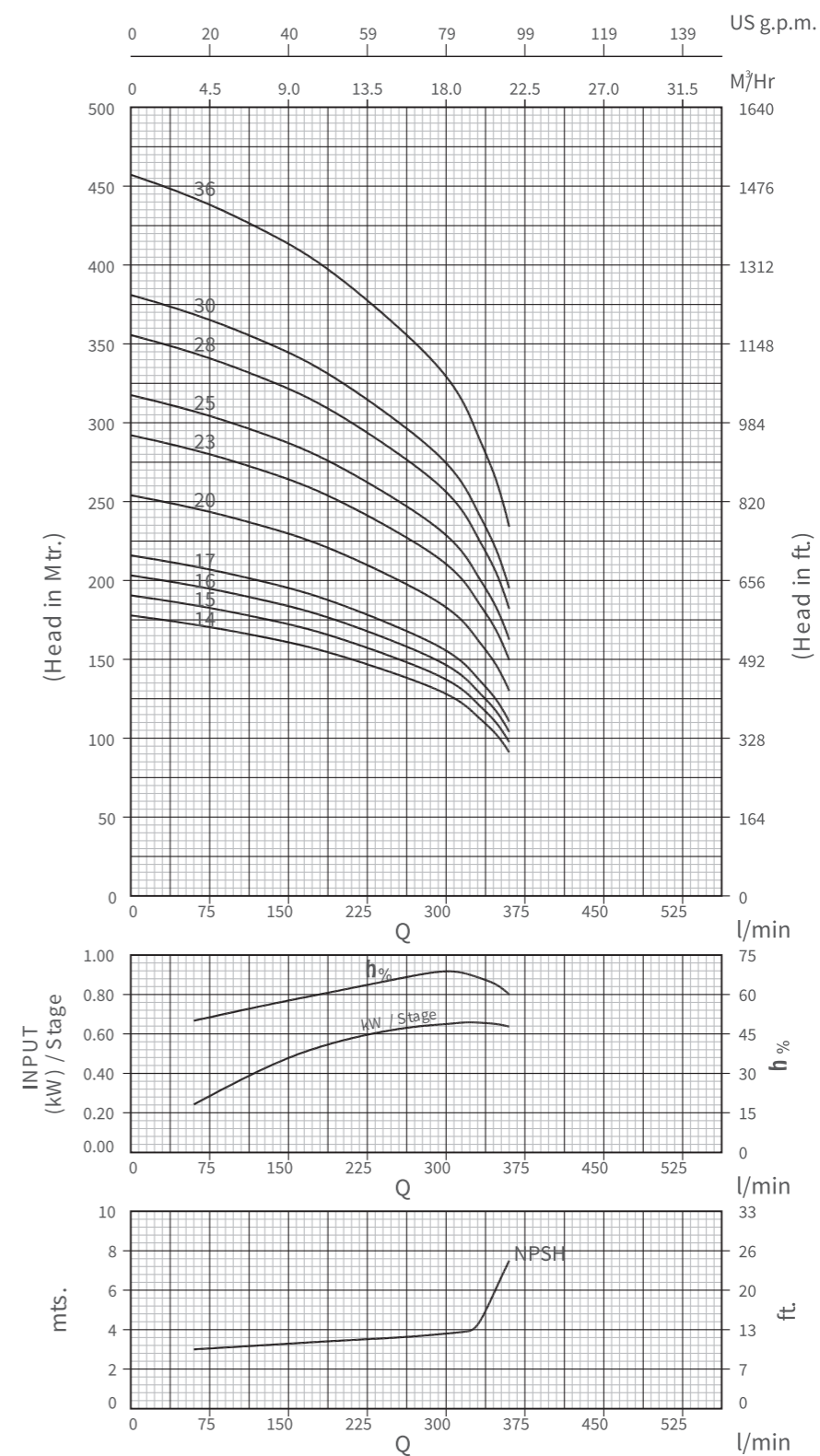
**6RF 650 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



**6RF 650, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



6RF 650, 50Hz

ISO 9906 Annexure A

PERFORMANCE CHART

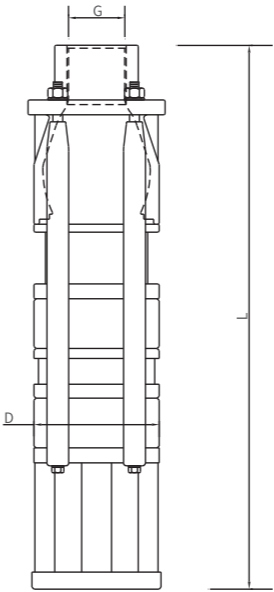
Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	60	125	180	260	300	320	330	350	360

6RF 650-03	3	2.20	3.00	HEAD IN Mtrs.	38	37	35	34	30	28	26	24	22	20
6RF 650-04	4	3.00	4.00		51	49	47	45	40	37	34	32	29	26
6RF 650-05	5	4.00	5.50		64	62	59	56	50	46	43	40	36	32
6RF 650-06	6	4.50	6.00		76	74	70	67	60	55	52	49	44	39
6RF 650-07	7	5.50	7.50		89	86	82	78	70	64	60	57	51	46
6RF 650-08	8	5.50	7.50		102	99	94	90	80	74	69	65	58	52
6RF 650-09	9	7.50	10.00		114	111	106	101	90	83	77	73	66	58
6RF 650-10	10	7.50	10.00		127	123	117	112	100	92	86	81	73	65
6RF 650-11	11	9.30	12.50		140	136	129	123	109	101	95	89	80	72
6RF 650-12	12	9.30	12.50		152	148	141	134	119	110	103	97	88	78
6RF 650-13	13	9.30	12.50		165	160	153	146	129	120	112	105	95	84
6RF 650-14	14	11.00	15.00		178	173	164	157	139	129	120	113	102	91
6RF 650-15	15	11.00	15.00		190	185	176	168	149	138	129	122	110	98
6RF 650-16	16	13.00	17.50		203	197	188	179	159	147	138	130	117	104
6RF 650-17	17	13.00	17.50		216	210	200	190	169	156	146	138	124	110
6RF 650-20	20	15.00	20.00		254	247	235	224	199	184	172	162	146	130
6RF 650-23	23	18.50	25.00		292	284	270	258	229	212	198	186	168	150
6RF 650-25	25	18.50	25.00		318	308	294	280	249	230	215	203	182	162
6RF 650-28	28	22.00	30.00		356	345	329	314	279	258	241	227	204	182
6RF 650-30	30	22.00	30.00		381	370	352	336	298	276	258	243	219	195
6RF 650-36	36	30.00	40.00		457	444	423	403	358	331	310	292	263	234

6RF 650, 50Hz

ISO 9906 Annexure A

Dimensions & Weights



Model name	Specification			
	D	L	Weight (Kg)	Weight (incl.pkg.)(kg)
6RF-650/03	142	565	20.0	28.0
6RF-650/04	142	615	22.0	30.0
6RF-650/05	142	665	24.0	32.0
6RF-650/06	142	715	25.0	33.0
6RF-650/07	142	765	27.0	35.0
6RF-650/08	142	815	29.0	37.0
6RF-650/09	142	865	31.0	39.0
6RF-650/10	142	915	35.0	43.0
6RF-650/11	142	1015	36.5	44.5
6RF-650/12	142	1065	38.0	46.0
6RF-650/13	142	1115	40.0	48.0
6RF-650/14	142	1165	42.0	50.0
6RF-650/15	142	1215	43.5	51.5
6RF-650/16	142	1265	45.0	53.0
6RF-650/17	142	1315	47.0	55.0
6RF-650/20	142	1465	53.0	61.0
6RF-650/23	142	1665	59.0	67.0
6RF-650/25	142	1765	63.5	71.5
6RF-650/28	142	1915	70.0	78.0
6RF-650/30	142	2015	73.0	81.0
6RF-650/36	142	2465	85.0	93.0

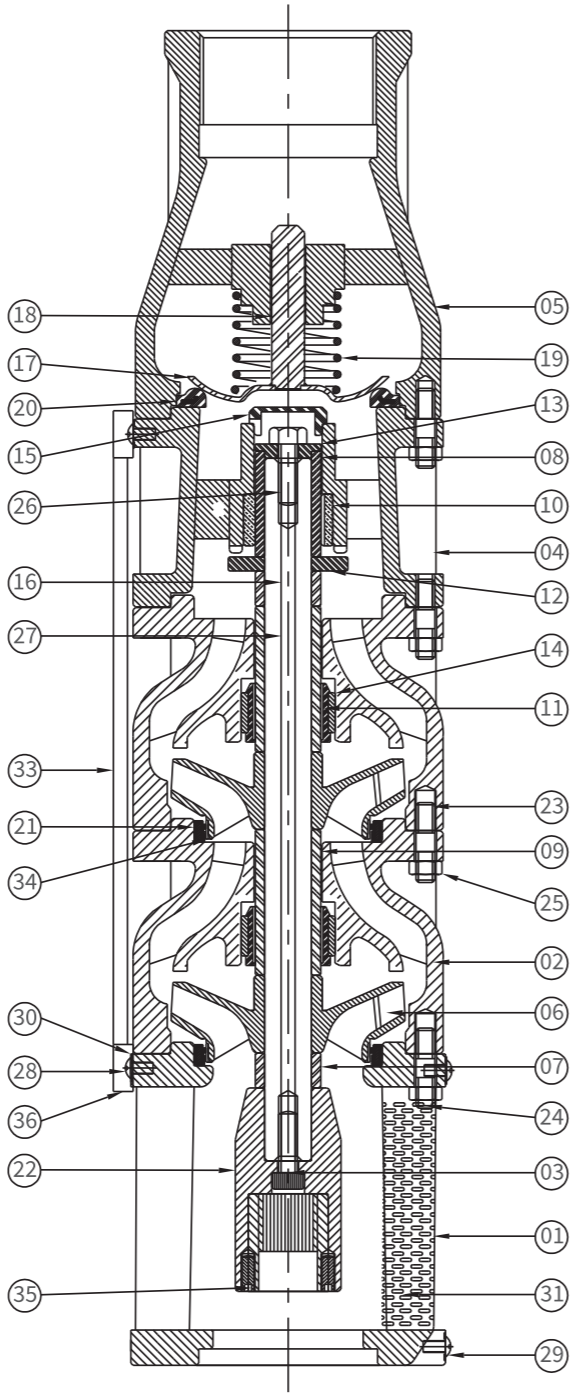
\*G:Available Outlet Size 2"  
\*D:With Cable Guard

# SUBMERSIBLE PUMPS

## 6MF 600, 6MF 610, 6MF 630, 6MF 640, 6MF 650, 6MF 670 SERIES PUMP DESIGN

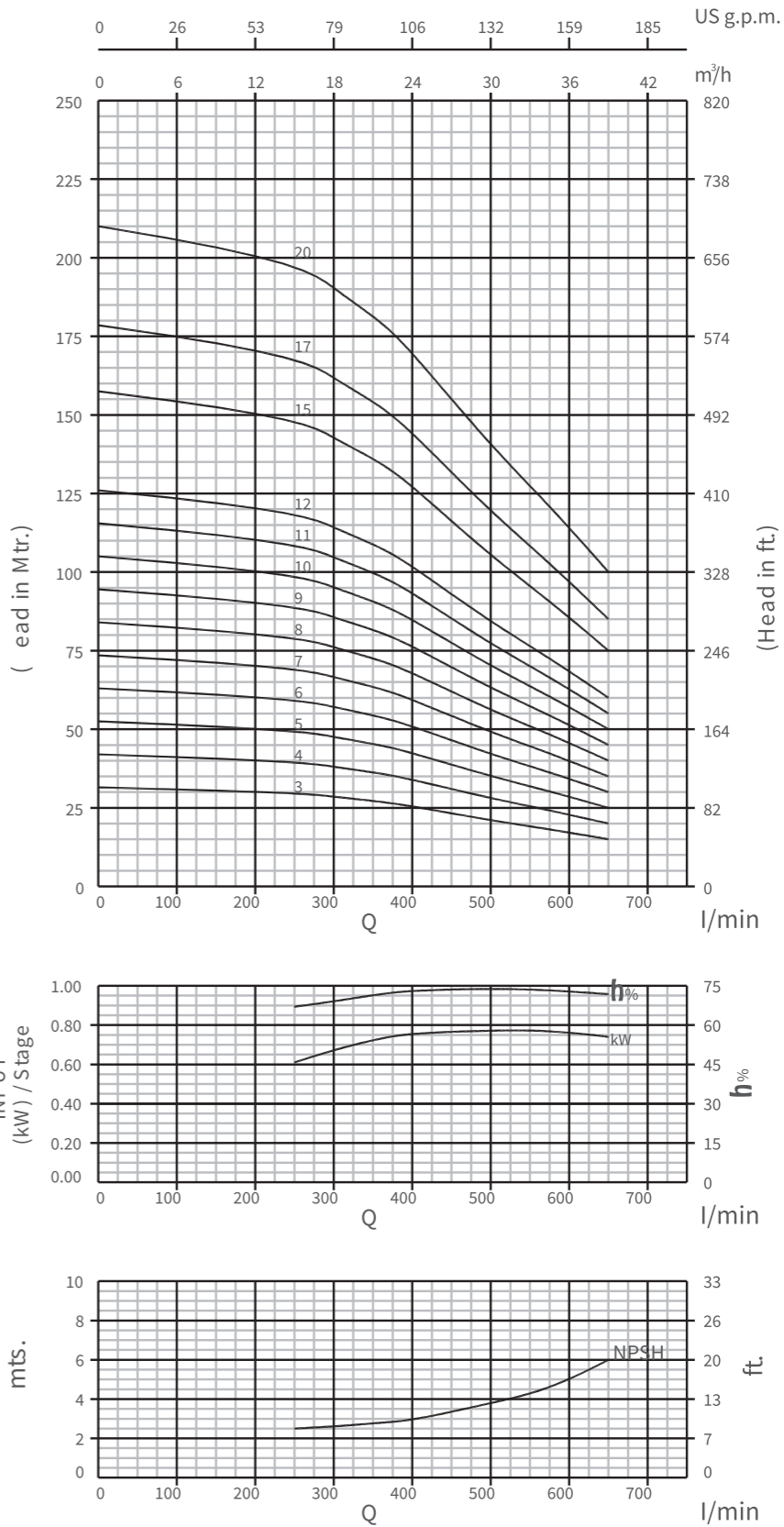
### Material Specification

NO	PARTS NAME	MATERIAL
1	SUCTION	CAST IRON
2	STAGE CASING	CAST IRON
3	ALLEN BOLT	S.S. 304
4	D.O.L.	CAST IRON
5	DELIVERY CASING	CAST IRON
6	IMPELLER (G.M.)	G.M.
	IMPELLER (S.S. 410)	S.S. 410
7	SLEEVE (DIST.)	S.S. 410
8	SLEEVE (TOP)	S.S. 410
9	SLEEVE (STAGE CASING)	S.S. 410
10	BEARING BUSH	L.T.B 4 (2% NI)
11	BOWL BUSH	N.B.R.
12	THRUST COLLAR	S.S. 410
13	TOP COLLAR	S.S. 304
14	BUSH COLLAR	P.P.O (20% GF)
15	DOL CAP	P.P.O.
16	SHAFT	LEAN DUPLEX
17	N.R.V. CONE PLATE	S.S. 202
18	N.R.V. CONE ROD	S.S. 304
19	N.R.V. CONE SPRING	S.S. 304
20	N.R.V. NECKRING	M.S. / N.B.R.
21	BOWL NECKRING	M.S./N.B.R.
22	COUPLING(EXPORT)	S.S.304
23	STUD (STAGE CASING & DOL)	S.S.304
24	STUD (SUCTION)	S.S.304
25	HEX NUT	S.S.304
26	HEX BOLT	S.S.304
27	KEY	S.S. 304
28	SCREW(CABLE GUARD)	S.S. 304
29	SCREW(STRAINER)	S.S. 304
30	SCREW WASHER	S.S. 304
31	STRAINER	S.S.202
32	PAPER GASKET	PAPER
33	CABLE GUARD	S.S. 202
34	IMPELLER NECKRING	S.S. 202
35	GRUB SCREW	S.S. 304
36	CABLE CLIP	S.S. 202



### 6MF 600, 50Hz ISO 9906 Annexure A

### PERFORMANCE CURVES



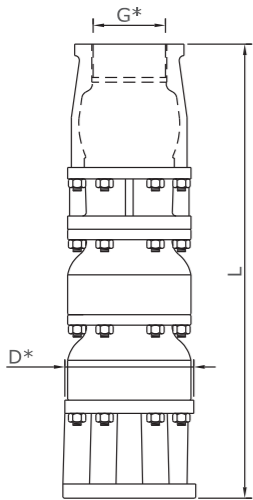
**6MF 600, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge							
Three Phase	Stage	kW	HP	l/min	0	250	300	360	400	500	580	650
				m³/h	0	15.0	18.0	21.6	24.0	30.0	34.8	39.0

6MF 600-03	3	2.20	3.00	HEAD IN Mtrs.	32	30	28	27	26	21	18	15
6MF 600-04	4	3.00	4.00		42	40	38	36	34	28	24	20
6MF 600-05	5	4.00	5.50		52	50	48	45	42	35	30	25
6MF 600-06	6	4.50	6.00		63	60	57	54	51	42	36	30
6MF 600-07	7	5.50	7.50		74	70	66	63	60	49	42	35
6MF 600-08	8	5.50	7.50		84	80	76	72	68	56	48	40
6MF 600-09	9	7.50	10.00		94	90	86	81	76	63	54	45
6MF 600-10	10	7.50	10.00		105	100	95	90	85	70	60	50
6MF 600-11	11	7.50	10.00		116	110	104	99	94	77	66	55
6MF 600-12	12	9.30	12.50		126	120	114	108	102	84	72	60
6MF 600-15	15	11.00	15.00		158	150	142	135	128	105	90	75
6MF 600-17	17	13.00	17.50		178	170	162	153	144	119	102	85
6MF 600-20	20	15.00	20.00		210	200	190	180	170	140	120	100

**Dimensions & Weights**

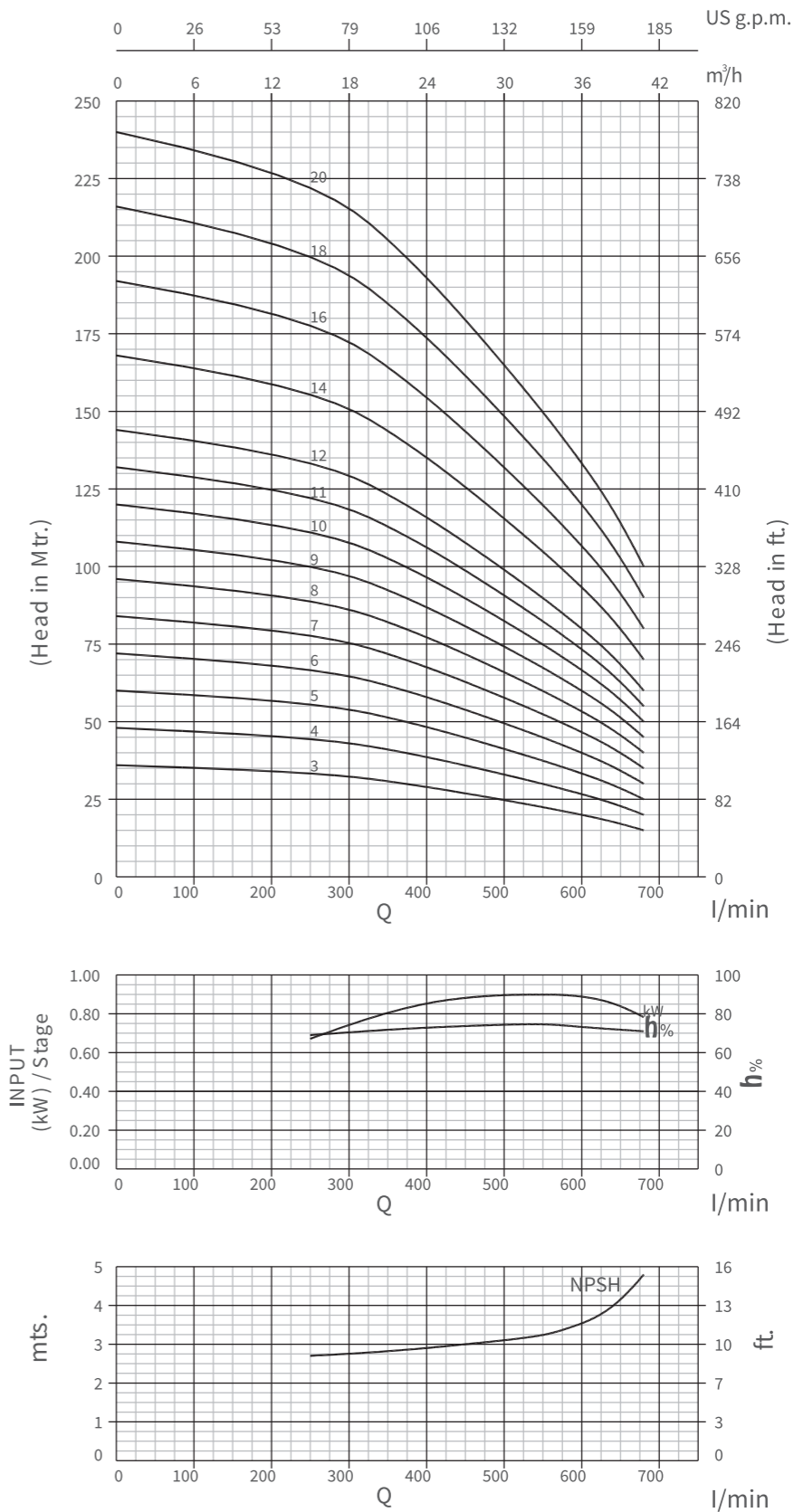


Model name	Specification				
	D (mm) Single Cable Guard	D (mm) Double Cable Guard	L (mm)	Weight (kg)	Weight (incl.pkg kg)
6MF 600-03	144	146	630	26.0	34.0
6MF 600-04	144	146	720	30.0	38.0
6MF 600-05	144	146	810	34.0	42.0
6MF 600-06	144	146	900	38.0	46.0
6MF 600-07	144	146	990	42.0	49.0
6MF 600-08	144	146	1080	45.0	53.0
6MF 600-10	144	146	1260	53.0	61.0
6MF 600-11	144	146	1350	57.0	65.0
6MF 600-12	144	146	1440	61.0	69.0
6MF 600-15	144	146	1710	73.0	81.0
6MF 600-17	144	146	1890	81.0	89.0
6MF 600-20	144	146	2160	92.0	100.0

\*G: Available Outlet Size 2.5" & 3"  
\*D: With Cable Guard

**6MF 610, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



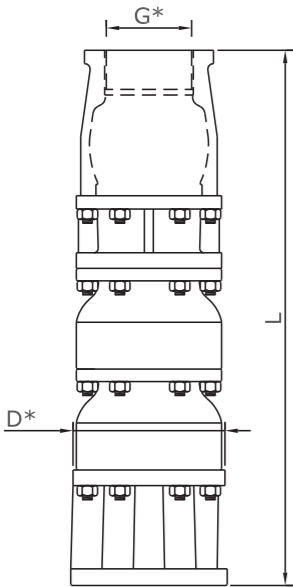
6MF 610, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge							
Three Phase	Stage	kW	HP	l/min m³/h	0	250	350	450	550	580	640	680

6MF 610-03	3	3.00	4.00	HEAD IN Mtrs.	36	34	31	27	22	21	18	15
6MF 610-04	4	4.00	5.50		48	45	41	36	30	28	24	20
6MF 610-05	5	4.50	6.00		60	57	52	45	38	35	30	25
6MF 610-06	6	5.50	7.50		72	68	62	54	45	42	36	30
6MF 610-07	7	7.50	10.00		84	79	72	63	52	49	42	35
6MF 610-08	8	7.50	10.00		96	91	83	72	60	56	48	40
6MF 610-09	9	9.30	12.50		108	102	93	81	68	63	54	45
6MF 610-10	10	9.30	12.50		120	113	103	90	75	70	60	50
6MF 610-11	11	11.00	15.00		132	125	114	99	82	77	66	55
6MF 610-12	12	11.00	15.00		144	136	124	108	90	84	72	60
6MF 610-14	14	13.00	17.50		168	159	145	126	105	98	84	70
6MF 610-16	16	15.00	20.00		192	181	165	144	120	112	96	80
6MF 610-18	18	18.50	25.00		216	204	186	162	135	126	108	90
6MF 610-20	20	18.50	25.00		240	227	207	180	150	140	120	100

Dimensions & Weights

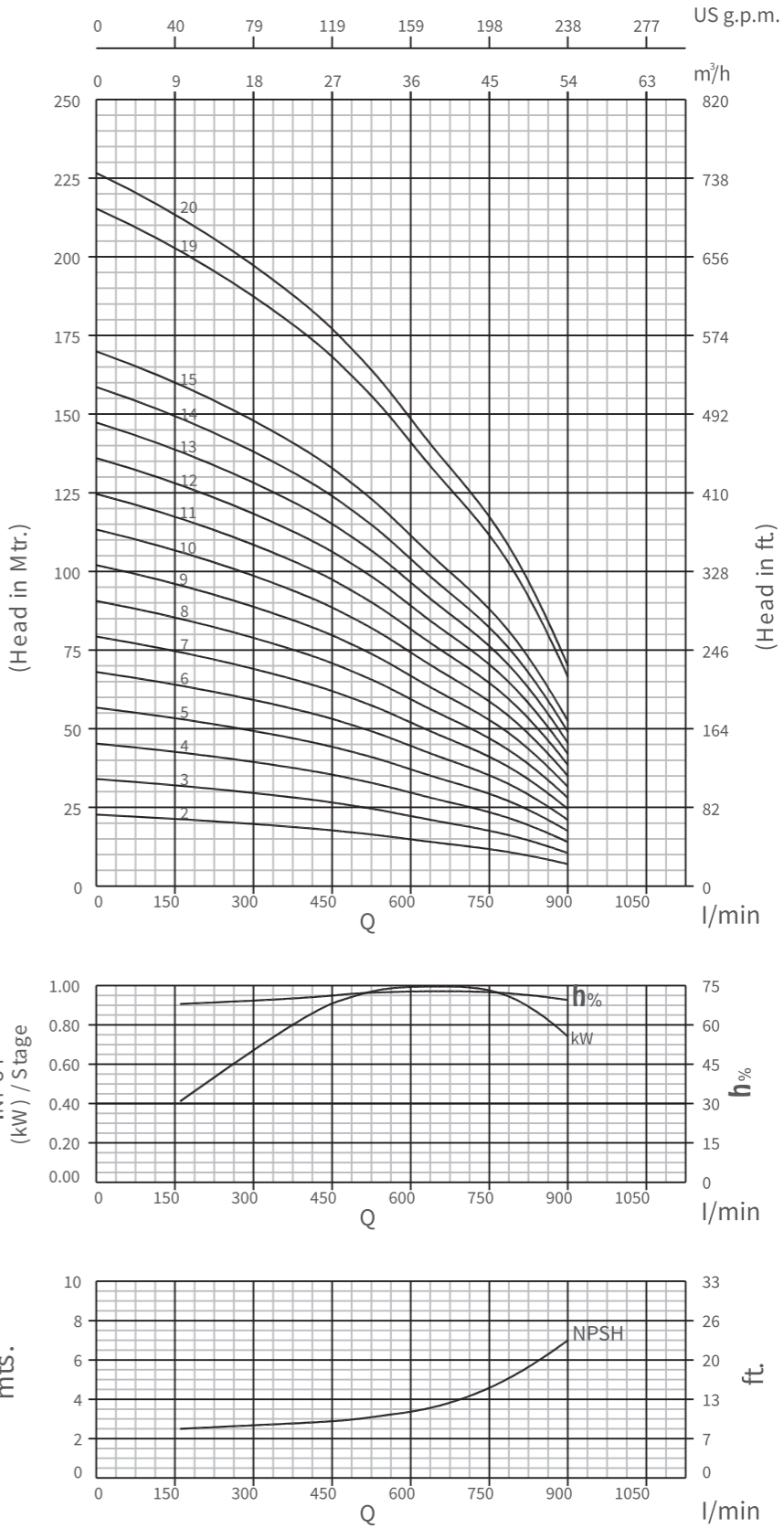


Model Name	Specification				
	D (mm) Single Cable Guard	D (mm) Double Cable Guard	L (mm)	Weight (kg)	Weight (incl.pkg kg)
6MF 610-03	142	145	663	28.0	36.0
6MF 610-04	142	145	758	33.0	41.0
6MF 610-05	142	145	853	38.0	46.0
6MF 610-06	142	145	948	43.0	51.0
6MF 610-07	142	145	1043	48.0	56.0
6MF 610-08	142	145	1138	52.0	60.0
6MF 610-09	142	145	1233	57.0	65.0
6MF 610-10	142	145	1328	62.0	70.0
6MF 610-11	142	145	1423	67.0	75.0
6MF 610-12	142	145	1518	72.00	79.0
6MF 610-14	142	145	1708	81.0	89.0
6MF 610-16	142	145	1898	91.0	99.0
6MF 610-18	142	145	2088	101.0	109.0
6MF 610-20	142	145	2278	110.0	118.0

\*G:Available Outlet Size 2.5" & 3"  
\*D:With Cable Guard

6MF 630, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



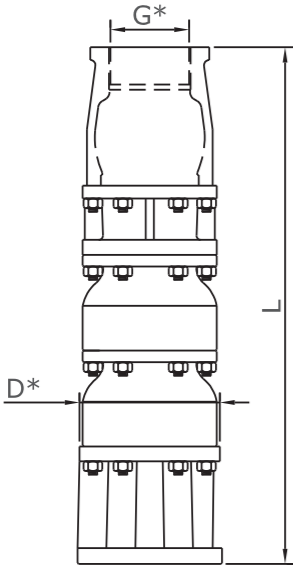
6MF 630, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating		l/min m <sup>3</sup> /h	Discharge							
Three Phase	Stage	kW	HP		0	160	400	480	550	650	800	900

6MF 630-02	2	3.00	4.00	HEAD IN Mtrs.	23	21	19	17	16	14	11	7
6MF 630-03	3	4.00	5.50		34	32	28	26	24	21	16	10
6MF 630-04	4	4.50	6.00		45	43	37	34	32	27	22	14
6MF 630-05	5	5.50	7.50		57	54	46	43	40	34	28	18
6MF 630-06	6	7.50	10.00		68	64	56	52	48	41	33	21
6MF 630-07	7	9.30	12.50		79	75	65	60	56	48	38	24
6MF 630-08	8	9.30	12.50		91	86	74	69	64	55	44	28
6MF 630-09	9	11.00	15.00		102	96	84	77	72	62	50	32
6MF 630-10	10	11.00	15.00		113	107	93	86	80	68	55	35
6MF 630-11	11	13.00	17.50		125	118	102	95	88	75	60	38
6MF 630-12	12	15.00	20.00		136	128	112	103	96	82	66	42
6MF 630-13	13	15.00	20.00		147	139	121	112	104	89	72	46
6MF 630-14	14	15.00	20.00		159	150	130	120	112	96	77	49
6MF 630-15	15	18.50	25.00		170	160	140	129	120	103	82	52
6MF 630-19	19	22.00	30.00		215	203	177	163	152	130	104	66
6MF 630-20	20	22.00	30.00		227	214	186	172	160	137	110	70

Dimensions & Weights

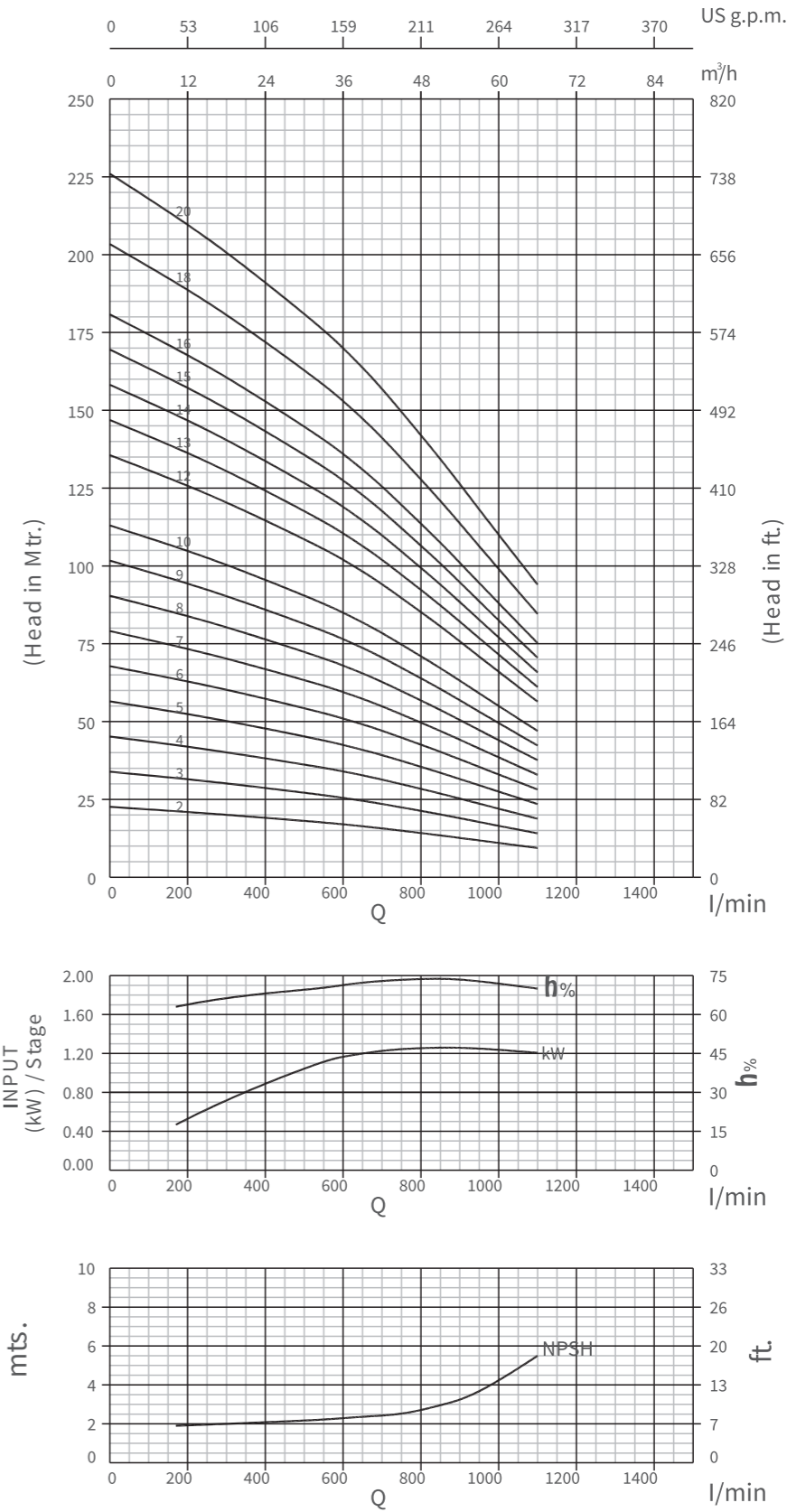


Model name	Specification				
	D (mm) Single Cable Guard	D (mm) Double Cable Guard	L (mm)	Weight (kg)	Weight (incl.pkg kg)
6MF 630-02	142	145	578	24.0	32.0
6MF 630-03	142	145	678	29.0	37.0
6MF 630-04	142	145	778	34.0	42.0
6MF 630-05	142	145	878	39.0	47.0
6MF 630-06	142	145	978	44.0	52.0
6MF 630-07	142	145	1078	49.0	57.0
6MF 630-08	142	145	1178	54.0	62.0
6MF 630-09	142	145	1278	59.0	67.0
6MF 630-10	142	145	1378	64.0	72.0
6MF 630-11	142	145	1478	69.0	77.0
6MF 630-12	142	145	1578	74.0	82.0
6MF 630-13	142	145	1678	79.0	87.0
6MF 630-14	142	145	1778	84.0	92.0
6MF 630-15	142	145	1878	89.0	97.0
6MF 630-19	142	145	2278	109.0	117.0
6MF 630-20	142	145	2378	114.0	121.0

\*G:Available Outlet Size 2.5" & 3"  
\*D:With Cable Guard

6MF 640, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



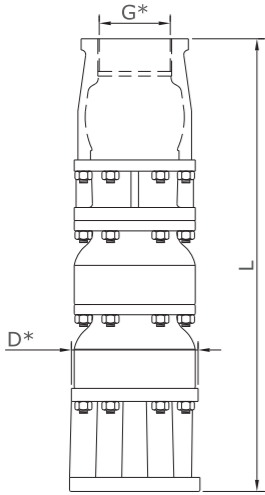
6MF 640, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	170	300	550	600	680	760	860	950	1100

6MF 640-02	2	4.00	5.50	HEAD IN Mtrs.	23	21	20	18	17	16	15	13	12	9
6MF 640-03	3	4.50	6.00		34	32	30	26	26	24	22	20	18	14
6MF 640-04	4	5.50	7.50		45	42	40	35	34	32	30	27	24	19
6MF 640-05	5	7.50	10.00		56	53	50	44	42	40	37	33	30	24
6MF 640-06	6	9.30	12.50		68	64	60	53	51	48	44	40	35	28
6MF 640-07	7	9.30	12.50		79	74	70	62	60	56	52	47	41	33
6MF 640-08	8	11.00	15.00		90	85	80	70	68	64	59	53	47	38
6MF 640-09	9	13.00	17.50		102	96	91	79	76	72	67	60	53	42
6MF 640-10	10	15.00	20.00		113	106	101	88	85	80	74	66	59	47
6MF 640-12	12	18.50	25.00		136	127	121	106	102	96	89	80	71	56
6MF 640-13	13	18.50	25.00		147	138	131	114	110	104	96	86	77	61
6MF 640-14	14	22.00	30.00		158	149	141	123	119	112	104	93	83	66
6MF 640-15	15	22.00	30.00		170	159	151	132	128	120	111	100	88	70
6MF 640-16	16	22.00	30.00		181	170	161	141	136	128	118	106	94	75
6MF 640-18	18	30.00	40.00		203	191	181	158	153	144	133	120	106	85
6MF 640-20	20	30.00	40.00		226	212	201	176	170	160	148	133	118	94

Dimensions & Weights

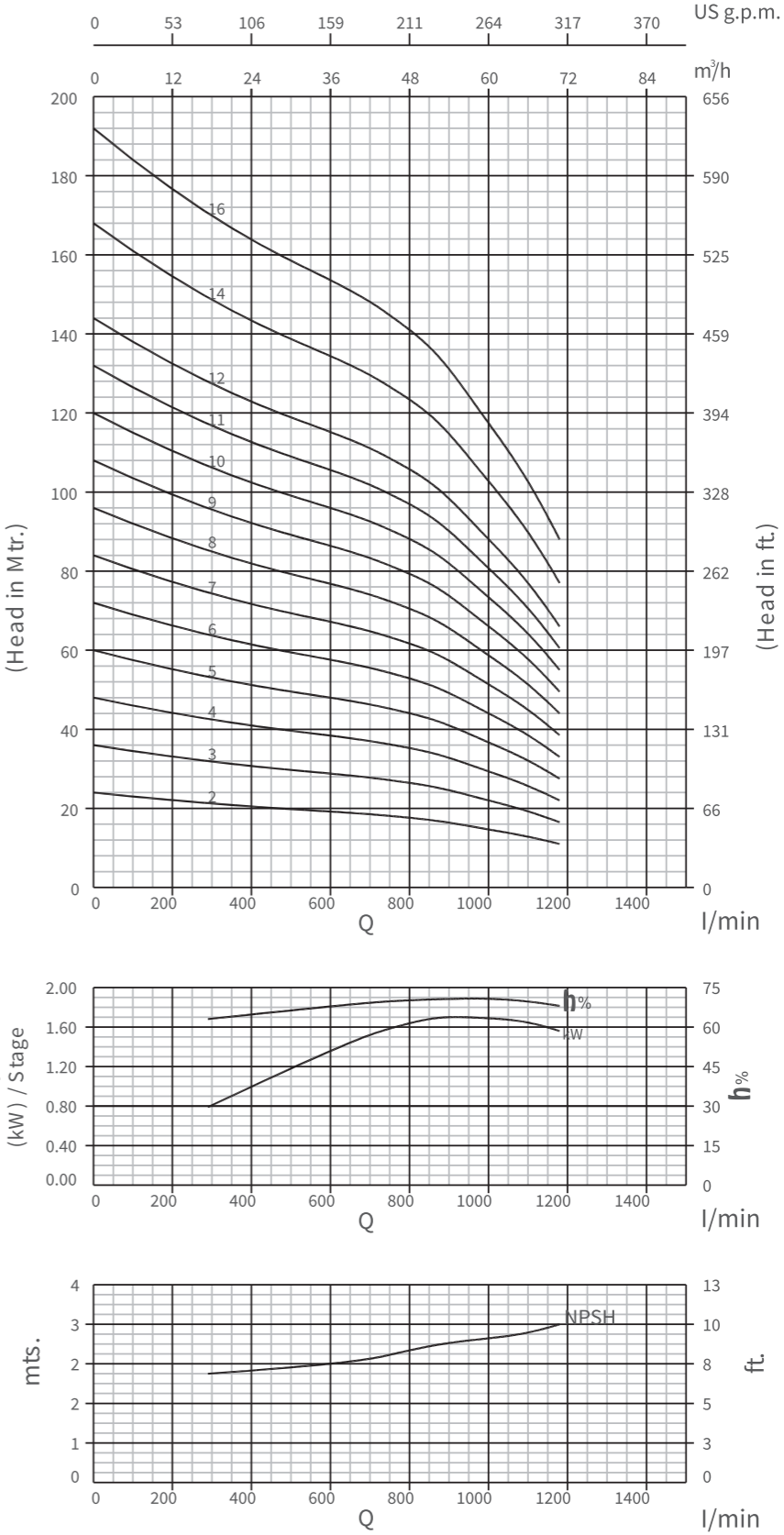


Model name	Specification				
	D (mm) Single Cable Guard	D (mm) Double Cable Guard	L (mm)	Weight (kg)	Weight (incl.pkg kg)
6MF 640-02	144	146	583	24.0	32.0
6MF 640-03	144	146	688	30.0	38.0
6MF 640-04	144	146	793	35.0	43.0
6MF 640-05	144	146	898	40.0	48.0
6MF 640-06	144	146	1003	45.0	53.0
6MF 640-07	144	146	1108	50.0	58.0
6MF 640-08	144	146	1213	55.0	63.0
6MF 640-09	144	146	1318	60.0	68.0
6MF 640-10	144	146	1423	66.0	74.0
6MF 640-12	144	146	1633	76.0	84.0
6MF 640-13	144	146	1738	81.0	89.0
6MF 640-14	144	146	1843	86.0	94.0
6MF 640-15	144	146	1948	92.0	100.0
6MF 640-16	144	146	2053	97.0	105.0
6MF 640-18	144	146	2263	107.0	115.0
6MF 640-20	144	146	2473	117.0	125.0

\*G:Available Outlet Size 3" & 4"  
\*D:With Cable Guard

6MF 650, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



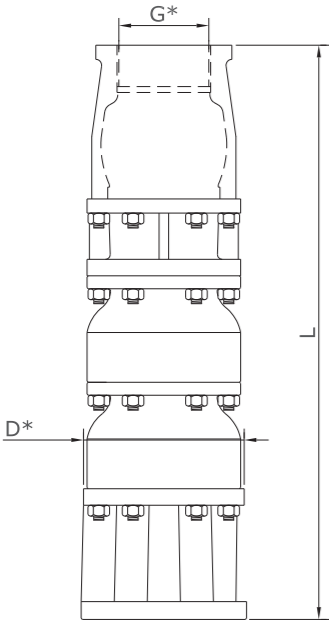
6MF 650, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge							
Three Phase	Stage	kW	HP	l/min	0	290	650	760	870	980	1100	1180
				m <sup>3</sup> /h	0	17.4	39.0	45.6	52.2	58.8	66.0	70.8

6MF 650-02	2	4.50	6.00	HEAD IN Mtrs.	24	21	19	18	17	15	13	11
6MF 650-03	3	5.50	7.50		36	32	28	27	26	22	20	16
6MF 650-04	4	7.50	10.00		48	42	38	36	34	30	26	22
6MF 650-05	5	9.30	12.50		60	52	48	45	42	38	32	28
6MF 650-06	6	11.00	15.00		72	63	57	54	51	45	39	33
6MF 650-07	7	13.00	17.50		84	74	66	63	60	52	46	38
6MF 650-08	8	15.00	20.00		96	84	76	72	68	60	52	44
6MF 650-09	9	18.50	25.00		108	94	86	81	76	68	58	50
6MF 650-10	10	18.50	25.00		120	105	95	90	85	75	65	55
6MF 650-11	11	22.00	30.00		132	116	104	99	94	82	72	60
6MF 650-12	12	22.00	30.00		144	126	114	108	102	90	78	66
6MF 650-14	14	26.00	35.00		168	147	133	126	119	105	91	77
6MF 650-16	16	30.00	40.00		192	168	152	144	136	120	104	88

Dimensions & Weights

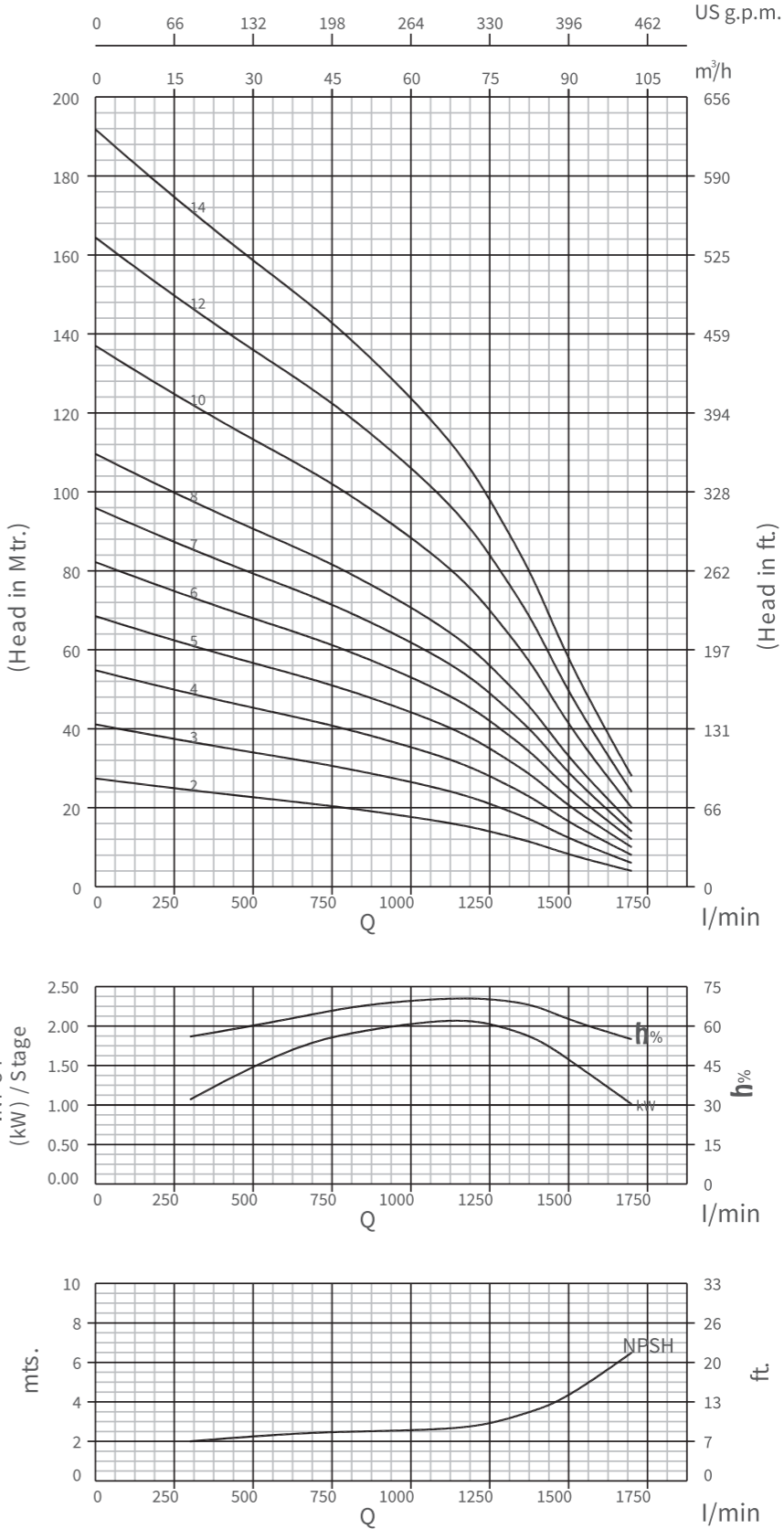


Model name	Specification				
	D (mm) Single Cable Guard	D (mm) Double Cable Guard	L (mm)	Weight (kg)	Weight (incl.pkg kg)
6MF 650-02	144	146	583	25.0	33.0
6MF 650-03	144	146	688	30.0	38.0
6MF 650-04	144	146	793	35.0	43.0
6MF 650-05	144	146	898	40.0	48.0
6MF 650-06	144	146	1003	45.0	53.0
6MF 650-07	144	146	1108	50.0	58.0
6MF 650-08	144	146	1213	55.0	63.0
6MF 650-09	144	146	1318	60.0	68.0
6MF 650-10	144	146	1423	66.0	74.0
6MF 650-11	144	146	1528	71.0	79.0
6MF 650-12	144	146	1633	76.0	84.0
6MF 650-14	144	146	1843	86.0	94.0
6MF 650-16	144	146	2053	96.0	104.0

\*G:Available Outlet Size 3" & 4"  
\*D:With Cable Guard

6MF 670, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



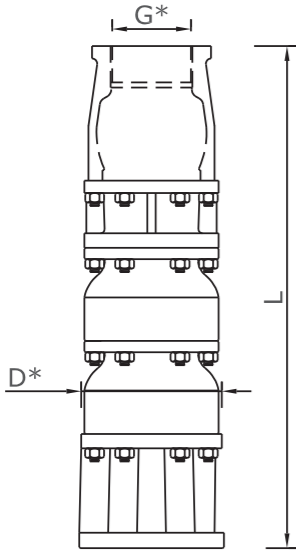
6MF 670, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name	Three Phase	Stage	Rating		l/min m³/h	Discharge								
			kW	HP		0	300	600	800	1150	1280	1400	1500	1700

6MF 670-02	2	5.50	7.50	HEAD IN Mtrs.	27	24	22	20	16	13	11	8	4
6MF 670-03	3	7.50	10.00		41	37	33	30	24	20	16	12	6
6MF 670-04	4	9.30	12.50		55	49	44	40	32	27	22	16	8
6MF 670-05	5	11.00	15.00		68	61	54	50	40	34	28	20	10
6MF 670-06	6	13.00	17.50		82	73	65	60	48	40	33	24	12
6MF 670-07	7	15.00	20.00		96	85	76	70	56	47	38	28	14
6MF 670-08	8	18.50	25.00		110	98	87	80	64	54	44	32	16
6MF 670-10	10	22.00	30.00		137	122	109	100	80	67	55	40	20
6MF 670-12	12	26.00	35.00		164	146	131	120	96	80	66	48	24
6MF 670-14	14	30.00	40.00		192	171	153	140	112	94	77	56	28

Dimensions & Weights



Model name	Specification				
	D (mm) Single Cable Guard	D (mm) Double Cable Guard	L (mm)	Weight (kg)	Weight (incl.pkg kg)
6MF 670-02	144	146	583	26.0	34.0
6MF 670-03	144	146	688	32.0	40.0
6MF 670-04	144	146	793	37.0	45.0
6MF 670-05	144	146	898	43.0	51.0
6MF 670-06	144	146	1003	48.0	56.0
6MF 670-07	144	146	1108	54.0	62.0
6MF 670-08	144	146	1213	59.0	67.0
6MF 670-10	144	146	1423	70.0	78.0
6MF 670-12	144	146	1633	81.0	89.0
6MF 670-14	144	146	1843	92.0	100.0

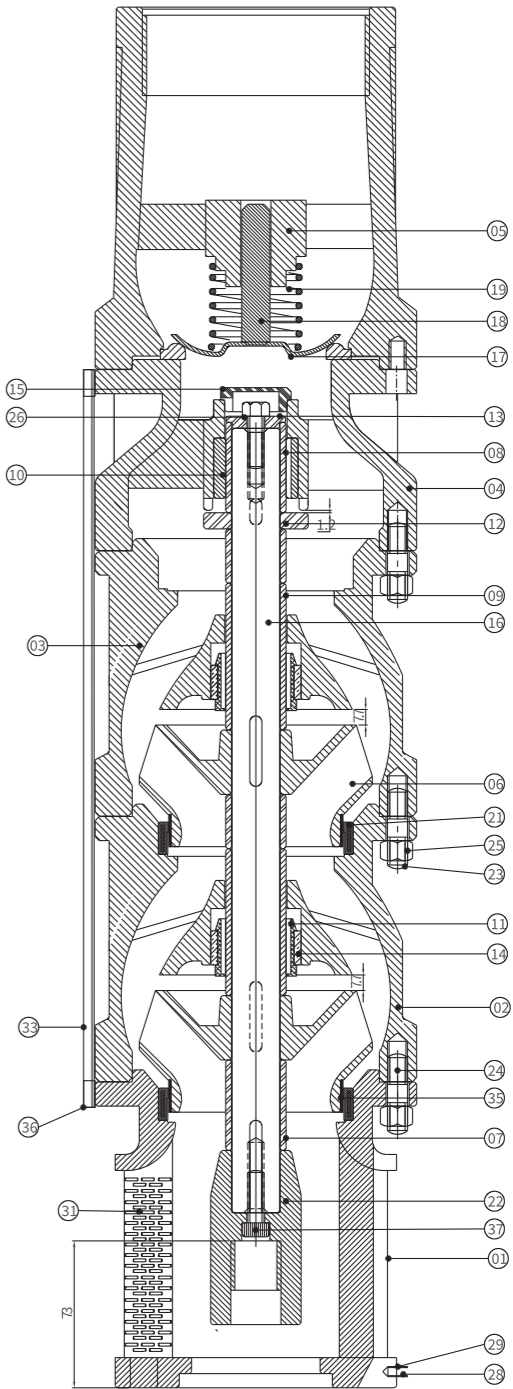
\*G:Available Outlet Size 3" & 4"  
\*D:With Cable Guard

SUBMERSIBLE PUMPS

7MF 250, 7MF 350, 7MF 500, 7MF 600, 7MF 660, 7MF 680  
SERIES PUMP DESIGN

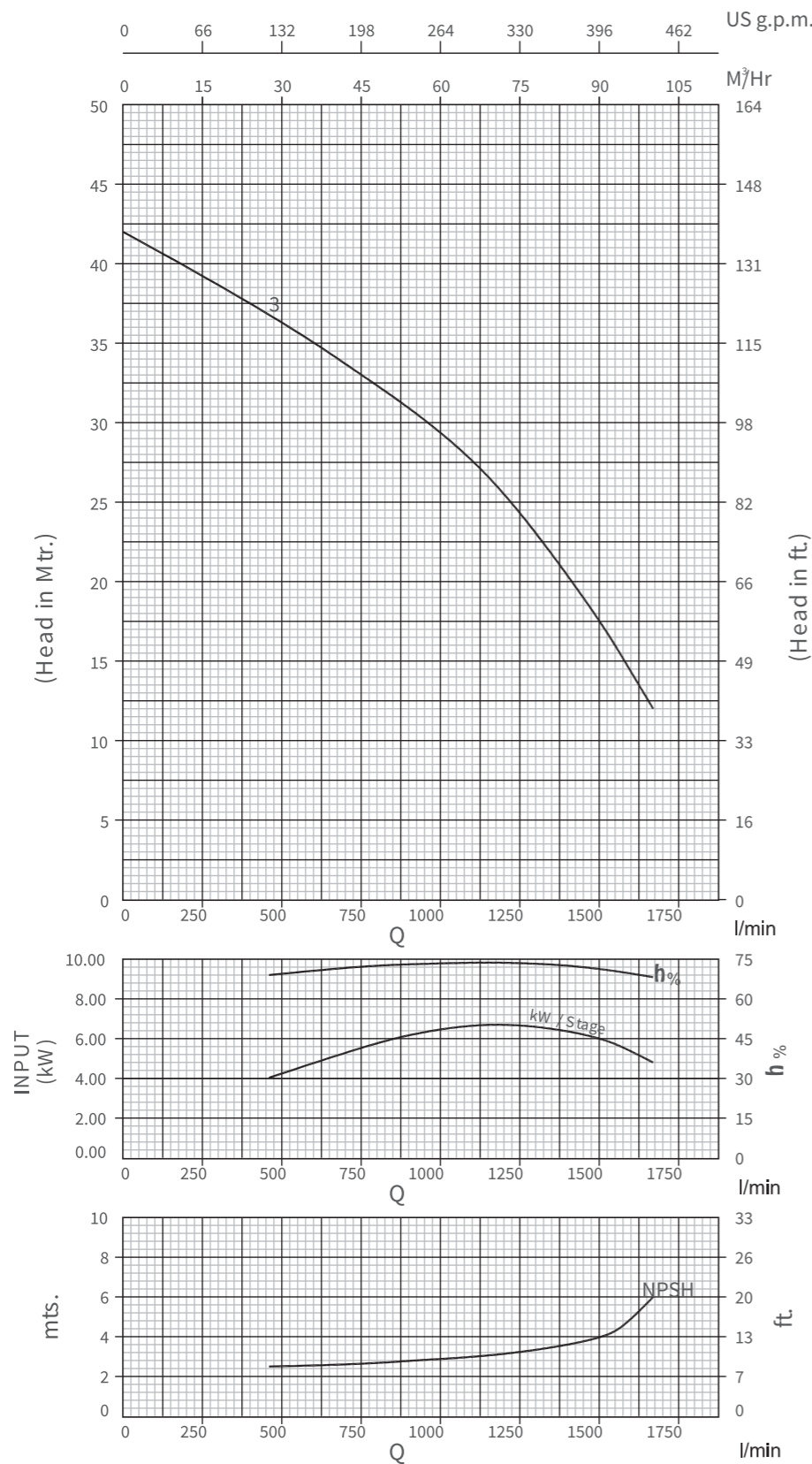
Material Specification

NO	PARTS NAME	MATERIAL	QTY
1	SUCTION (DOMESTIC)	C.I.(F.G. 200)	01
2	STAGE CASING	C.I.(F.G. 200)	REQ.
3	CASING (TOP)	C.I.(F.G. 200)	01
4	DOL	C.I.(F.G. 200)	01
5	DELIVERY CASING	C.I.(F.G. 200)	01
6	IMPELLER (G.M.)	G.M./C.I./S.S.410	REQ.
7	SLEEV (DIST.)	S.S. 410	01
8	SLEEVE (TOP)	S.S. 410	01
9	SLEEVE (BOWL)	S.S. 410	REQ.
10	BEARING BUSH	L.T.B 4 (2% NI)	01
11	BOWL BUSH	N.B.R.	REQ.
12	THRUST COLLAR	S.S. 410	01
13	TOP COLLAR	S.S. 410	01
14	BUSH COLLAR	P.P.O (20% GF)	REQ.
15	DOL CAP	P.P.O, (20% GF)	01
16	SHAFT	S.S. 410	01
17	N.R.V. CONE PLATE	S.S. 202	01
18	N.R.V. CONE ROD	S.S. 410	01
19	N.R.V. CONE SPRING	S.S. 304	01
20	N.R.V. NECKRING	M.S./N.B.R.	01
21	BOWL NECKRING	M.S./N.B.R.	REQ.
22	COUPLING(DOMESTIC)	S.S.410	01
23	STUD(BOWL & DOL)	S.S. 410	8/ST+8
24	STUD (SUCTION )	S.S. 410	08
25	HEX NUT	S.S. 202	REQ.
26	HEX BOLT	S.S. 304	01
27	KEY	S.S. 410	REQ
28	SCREW(CABLE GUARD)	BRASS	REQ
29	SCREW(STRAINER)	BRASS	02
30	SCREW WASHER	BRASS	10
31	STRAINER	S.S.202	01
32	PAPER GASKET	PAPER	REQ.
33	CABLE GUARD	S.S. 202	REQ.
34	IMPELLER NECKRING	S.S. 202	
35	GRUB SCREW (DOMESTIC)	S.S. 304	01
36	CABLE CLIP	S.S. 202	02
37	ALLEN BOLT	S.S.304	01



7MF 250, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES

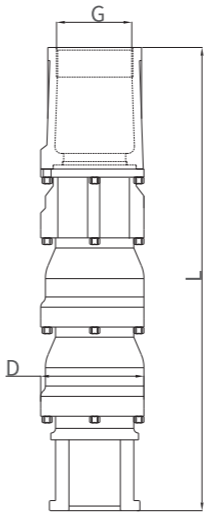


7MF 250, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min	0	460	750	900	1150	1380	1520	1580	1670	
				m³/h	0	27.6	45.0	54.0	69.0	82.8	91.2	94.8	100.2	
7MF 250-03	3	7.50	10.00	HEAD IN FT.	42	37	33	31	27	21	17	15	12	

Dimensions & Weights



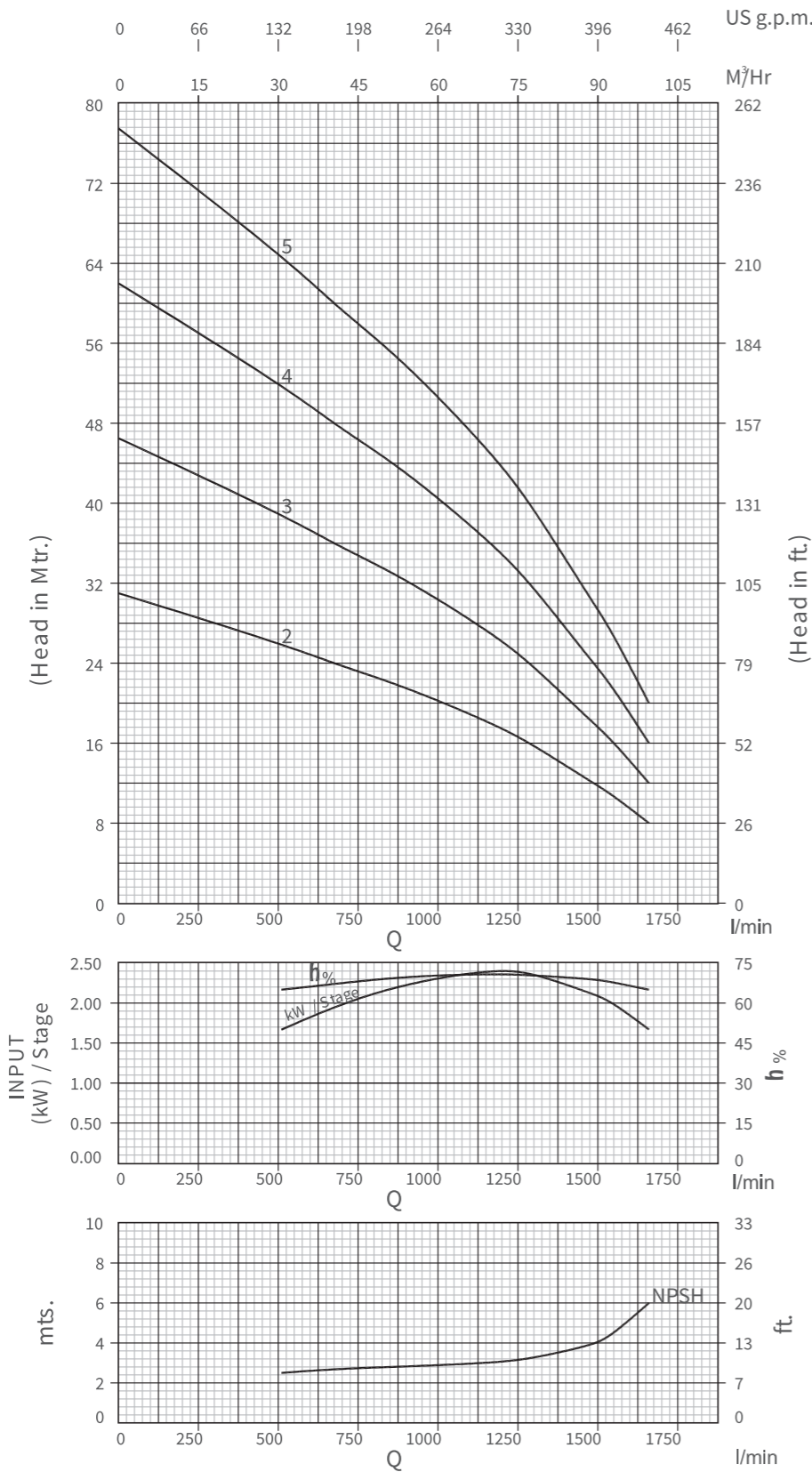
Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)
7MF-250/03	160	818	62.5	70.5

\*G:Available Outlet Size 3" & 4"  
\*D:With Cable Guard

7MF 350, 50Hz

ISO 9906 Annexure A

PERFORMANCE CURVES



7MF 350, 50Hz

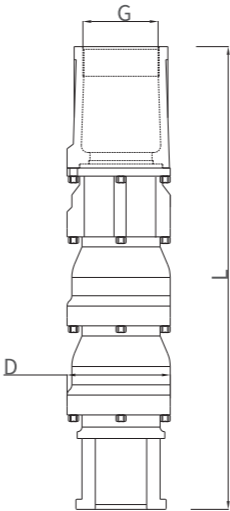
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min	0	510	665	870	1170	1290	1485	1540	1660	
				m <sup>3</sup> /h	0	30.6	39.9	52.2	70.2	77.4	89.1	92.4	99.6	

7MF-350/02	2	5.50	7.50	HEAD IN Mtrs.	31	26	24	22	18	16	12	11	8
7MF-350/03	3	9.30	12.50		46	39	36	33	27	24	18	16	12
7MF-350/04	4	11.00	15.00		62	52	48	44	36	32	24	22	16
7MF-350/05	5	15.00	20.00		78	65	60	55	45	40	30	28	20

Dimensions & Weights

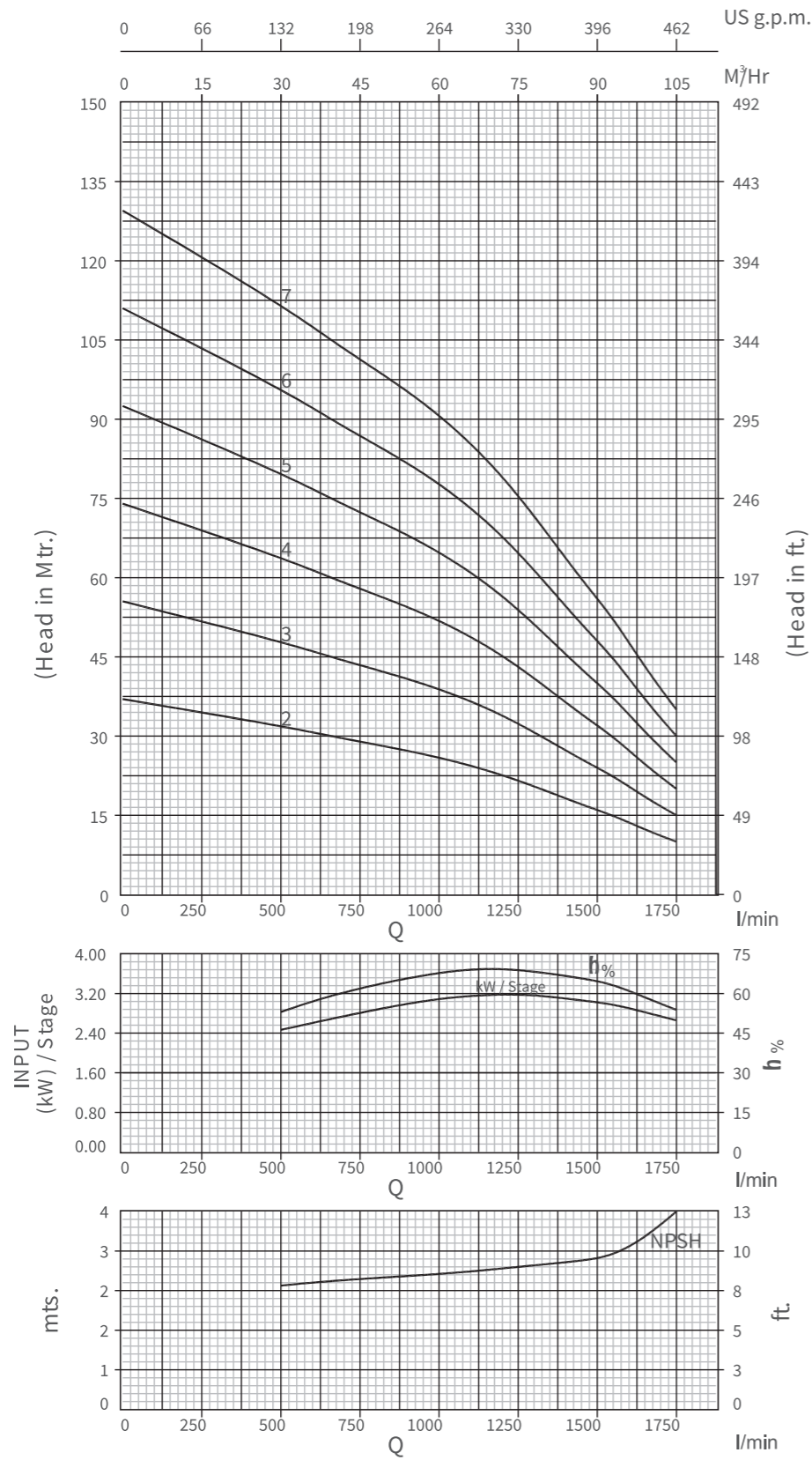


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)
7MF-350/02	160	686	51.5	59.5
7MF-350/03	160	818	62.5	70.5
7MF-350/04	160	950	73.5	81.5
7MF-350/05	160	1082	84.5	92.5

\*G:Available Outlet Size 3" & 4"  
\*D:With Cable Guard

7MF 500, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



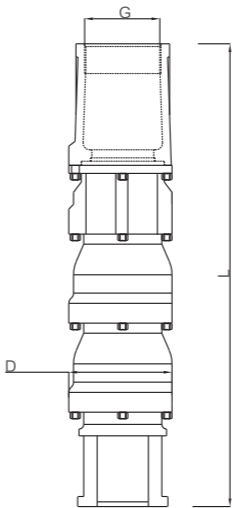
7MF 500, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge										
Three Phase	Stage	kW	HP	l/min	0	500	650	930	1130	1280	1450	1550	1660	1750	
				m³/h	0	30.0	39.0	55.8	67.8	76.8	87.0	93.0	99.6	105	

Model Name	Stage	kW	HP	HEAD IN Mtrs.	37	32	30	27	24	21	17	15	12	10
					56	48	45	40	36	32	26	22	18	15
7MF 500-02	2	7.50	10.00		74	64	60	54	48	42	34	30	24	20
7MF 500-03	3	11.00	15.00		92	80	75	68	60	52	42	38	30	25
7MF 500-04	4	15.00	20.00		111	96	90	81	72	63	51	45	36	30
7MF 500-05	5	18.50	25.00		130	112	105	94	84	74	60	52	42	35
7MF 500-06	6	22.00	30.00											
7MF 500-07	7	26.00	35.00											

Dimensions & Weights



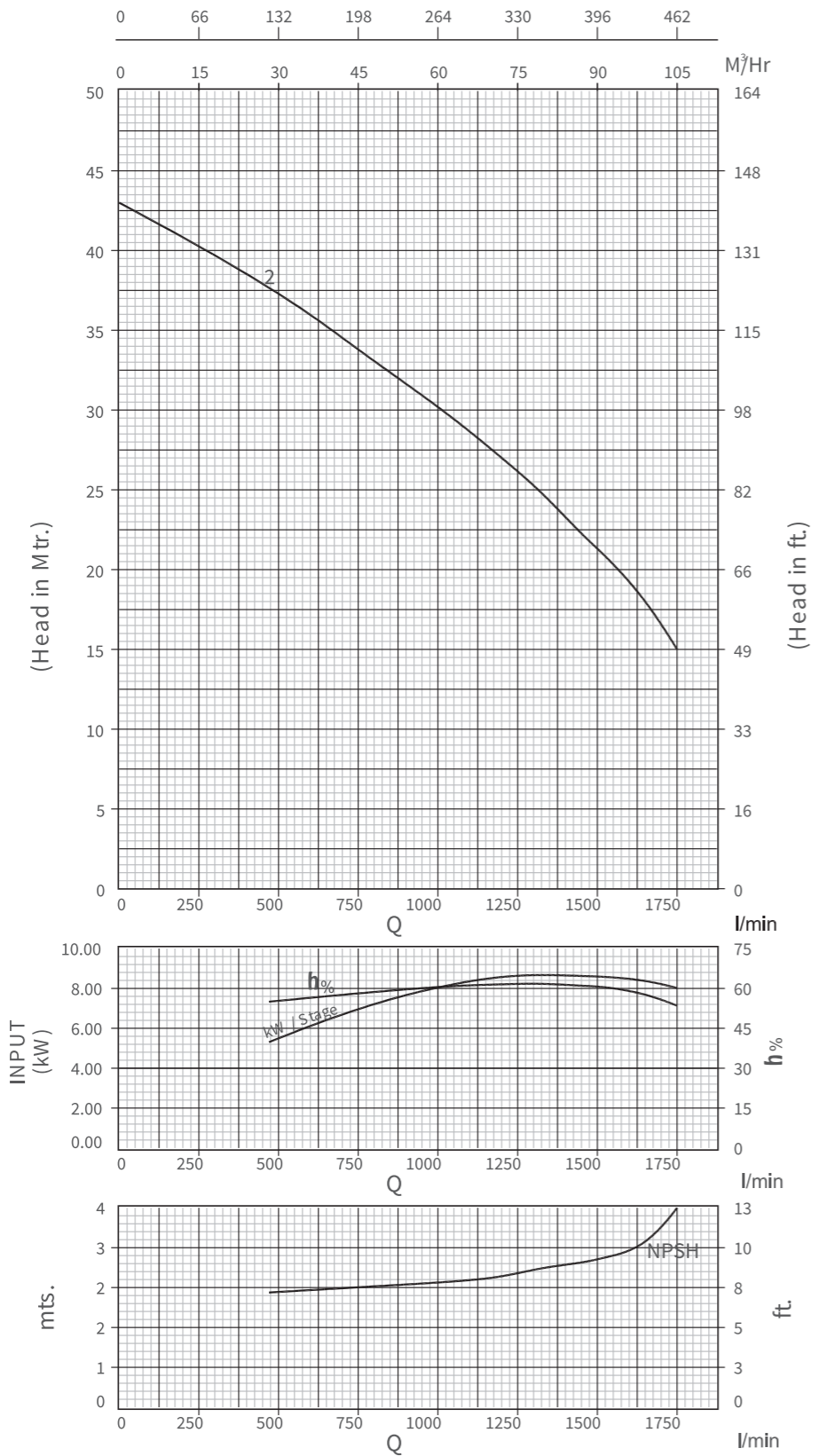
Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)
7MF- 500/02	160	686	52	59.5
7MF- 500/03	160	818	63	70.5
7MF- 500/04	160	950	74	81.5
7MF- 500/05	160	1082	84	92.5
7MF- 500/06	160	1214	94	103.5
7MF- 500/07	160	1346	104	114.5

\*G:Available Outlet Size 4"  
\*D:With Cable Guard

7MF 600, 50Hz

ISO 9906 Annexure A

PERFORMANCE CURVES



7MF 600, 50Hz

ISO 9906 Annexure A

PERFORMANCE CHART

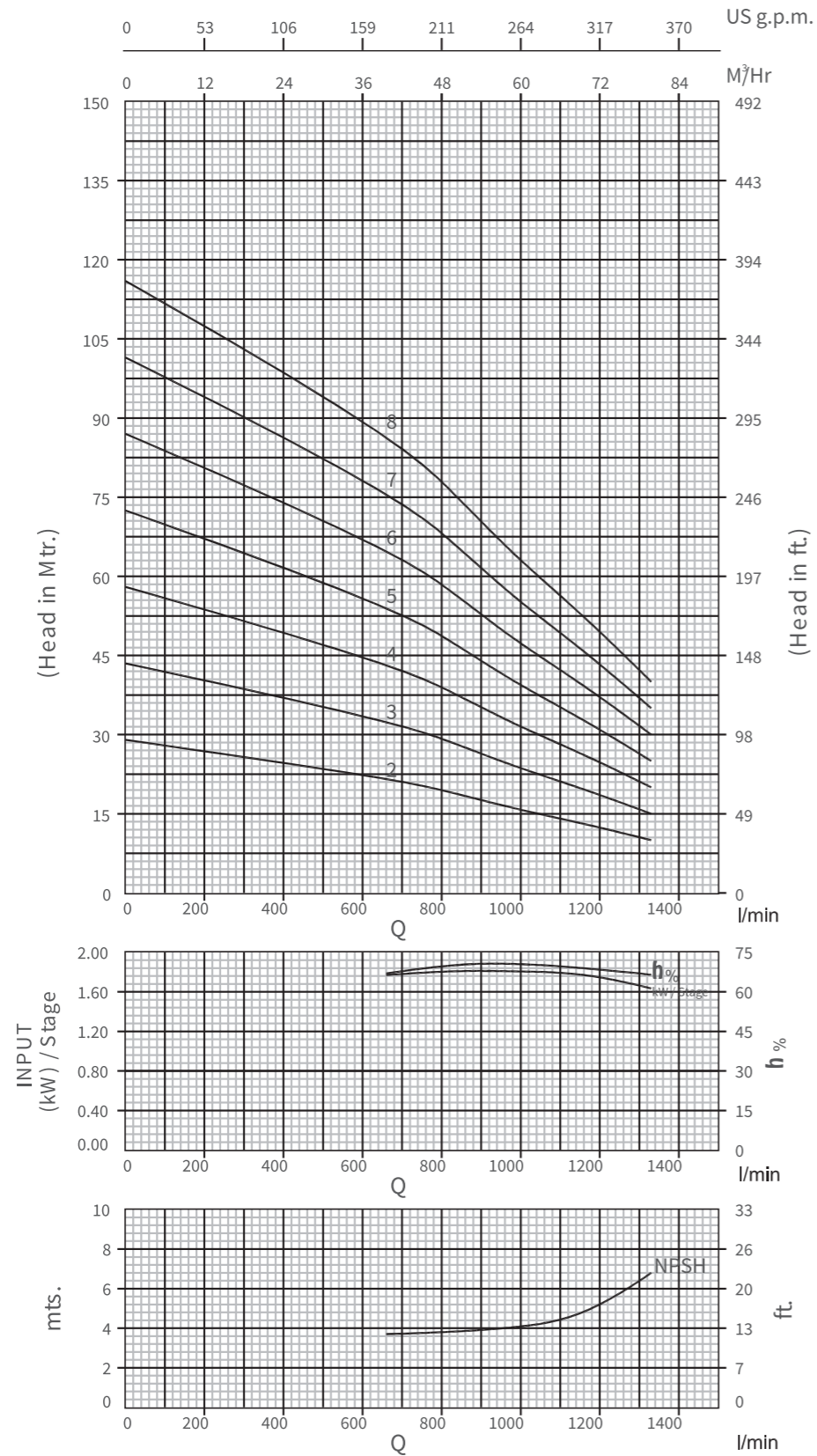
Model Name		Rating			Discharge										
Three Phase	Stage	kW	HP	l/min m³/h	0	470	730	1020	1200	1320	1460	1520	1660	1750	
					0	28.2	43.8	61.2	72.0	79.2	87.6	91.2	99.6	105	
7MF 600-02	2	9.30	12.50	HEAD M Mtrs.	43	38	34	30	27	25	22	21	18	15	

Dimensions & Weights



**7MF 660, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



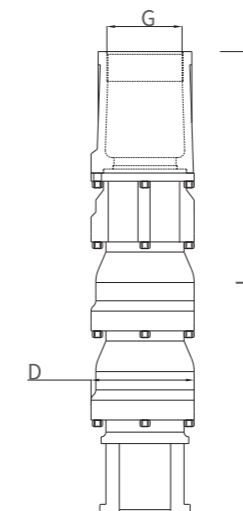
**7MF 660, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name	Stage	Rating		Discharge						
		kW	HP	l/min m <sup>3</sup> /h	0	660	830	980	1170	1330

Model Name	Stage	kW	HP	HEAD IN Mtrs.	29	22	19	16	13	10
					44	33	28	24	20	15

**Dimensions & Weights**

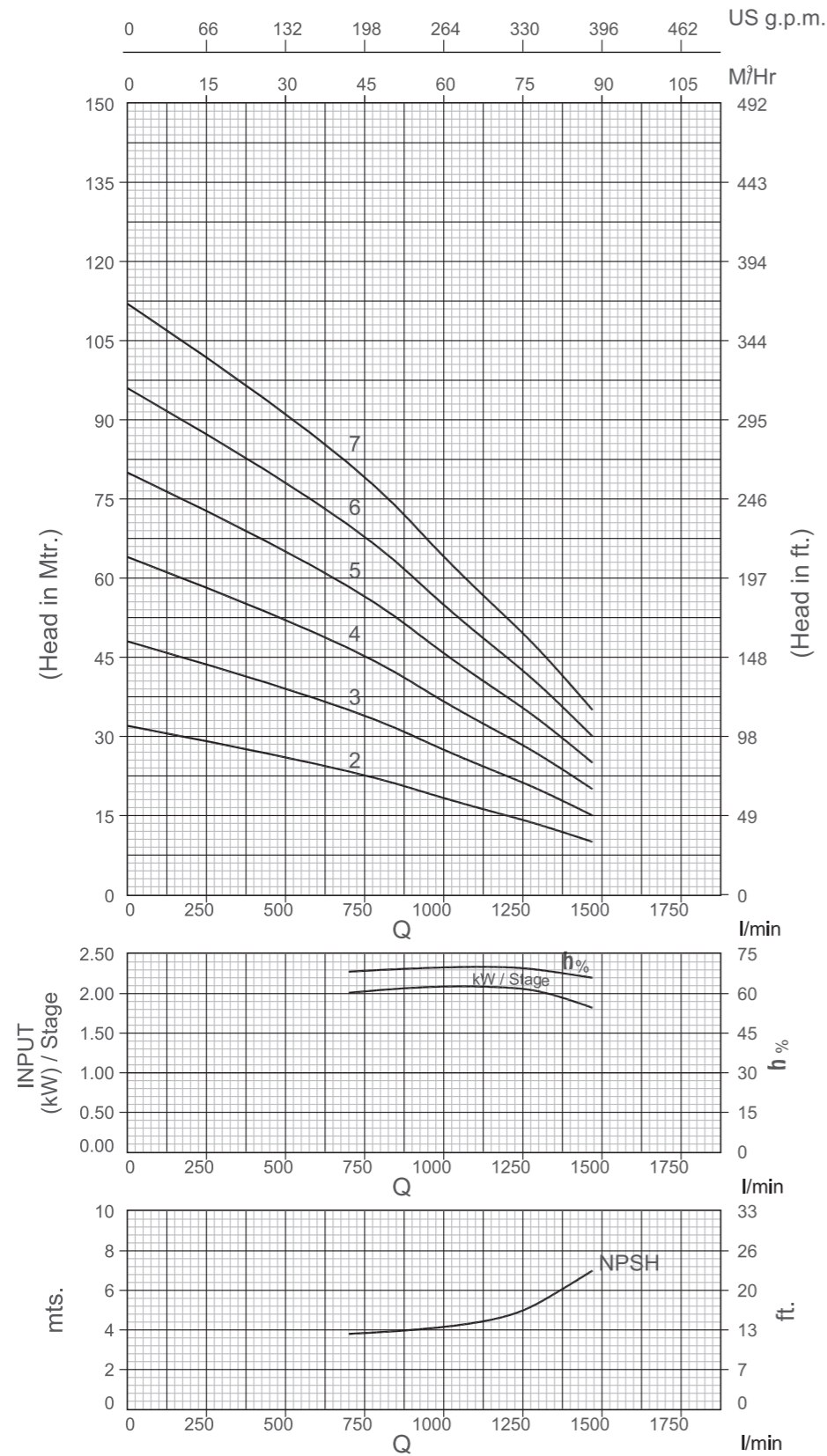


Model name	Specification			
	D	L	Weight (kg)	Weight (incl. pkg kg)

\*G:Available Outlet Size 4"  
\*D:With Cable Guard

**7MF 680, 50Hz**  
 ISO 9906 Annexure A

**PERFORMANCE CURVES**



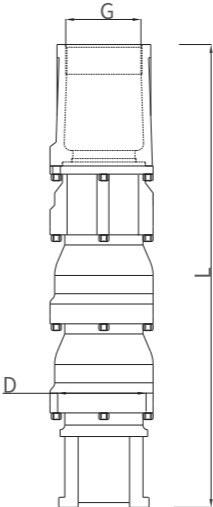
**7MF 680, 50Hz**  
 ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name	Three Phase	Stage	Rating		l/min m³/h	Discharge					
			kW	HP		0	700	950	1200	1320	1470

Model Name	Stage	kW	HP	HEAD IN Mtrs.	32	24	19	15	13	10
					48	36	28	22	20	15

**Dimensions & Weights**



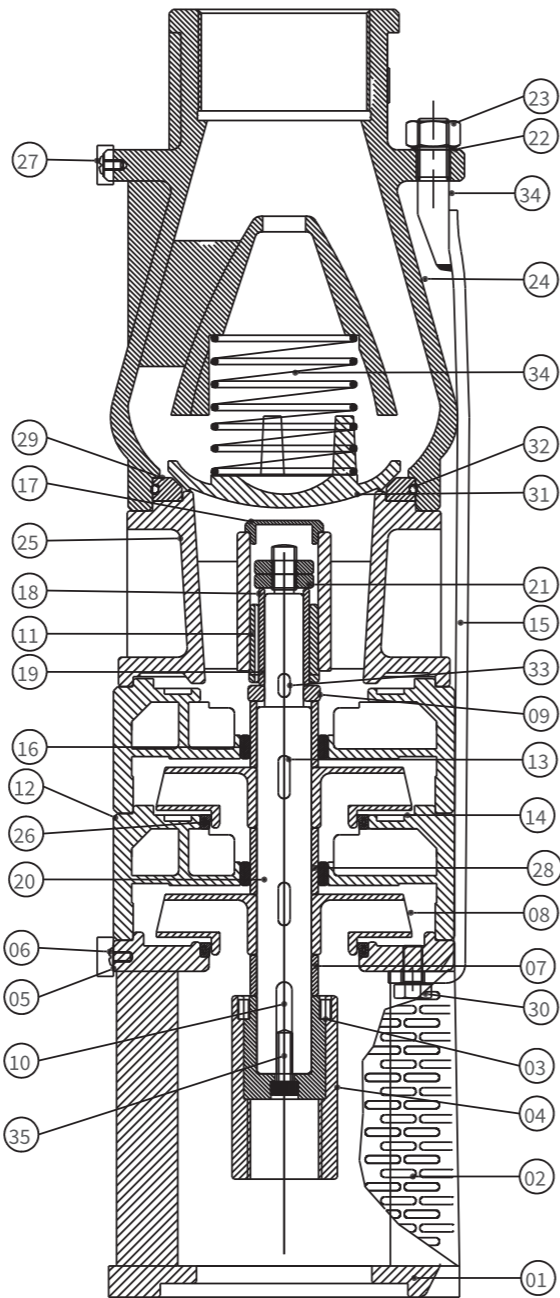
Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)

\*G:Available Outlet Size 4"  
 \*D:With Cable Guard

8RF 30A, 8RF 300, 8RF 500  
SERIES PUMP DESIGN

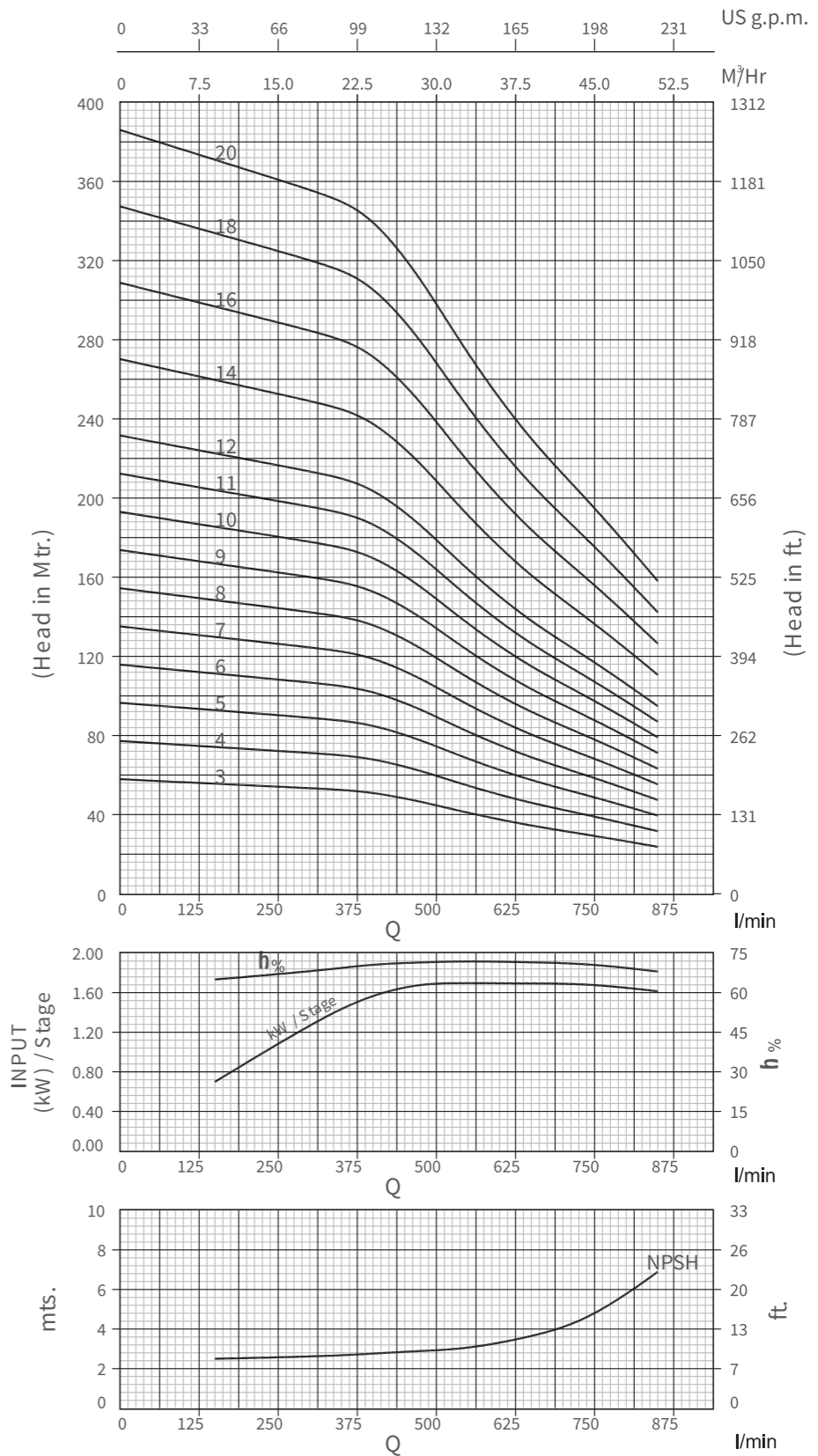
Material Specification

No	PART'S NAME	MATERIAL	REQ.
1	SUCTION	C.I (F.G200)	01
2	STRAINER	S.S.202	01
3	GRUB SCREW	S.S.304	01
4	COUPLING (EXPORT)	S.S.304	01
5	SCREW ( CABLE GUARD,STRAINER)	S.S.304	10
6	WASHER ( CABLE GUARD,STRAINER)	S.S.304	10
7	DISTANCE SLEEVE	S.S.410	01
8	IMPELLER	S.S.410	01/ST
9	THRUST PLATE	S.S.410	01
10	KEY (USE FOR COUPLING SIDE)	S.S.410	01
11	C.T. BEARING BUSH	L.T.B. 4 (2% NI.)	01
12	PAPER GASKET	PAPER	REQ.
13	KEY (USE FOR IMPELLER)	S.S.410	REQ.
14	STAGE CASING	C.I (F.G 200)	01/ST
15	PUMP PATTI	S.S.304	04
16	METAL RUBBER BUSH	M.S/ N.B.R	01/ST
17	D.O.L CAP	P.V.C	01
18	TOP SLEEVE	S.S.410	01
19	N.R.V CONE SPRING	SPRING STEEL	01
20	PUMP SHAFT	S.S.410	01
21	SHAFT LOCK NUT	S.S.304	01
22	NUT	S.S.304	04
23	WASHER (PUMP PATTI)	S.S.304	04
24	DELIVERY CASING	C.I (F.G 200)	01
25	D.O.L	C.I (F.G 200)	01
26	BOWL NECKRING	M.S/N.B.R	01/ST
27	CABLE CLIP	S.S.202	REQ.
28	BOWL SLEEVE	S.S.410	01/ST
29	N.R.V NECKRING	C.I (F.G 200)	01
30	HEX BOLT (FOR PUMP PATTI)	S.S.304	04
31	N.R.V CONE	C.I (F.G 200)	01
32	N.R.V NECKRING O-RING	N.B.R	01
33	KEY (USE FOR D.O.L)	S.S.410	01
34	PUMP PATTI STUD	S.S.304	04
35	ALLEN BOLT (FOR COUPLING)	S.S.304	01



8RF 30A, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



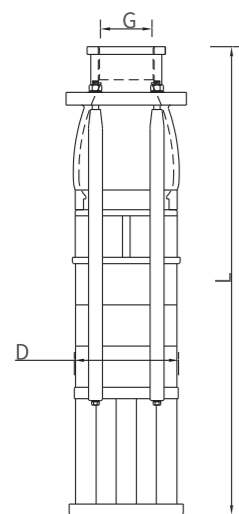
**8RF 30A, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name	Three Phase	Stage	Rating			Discharge											
			kW	HP		l/min m <sup>3</sup> /h	0	150	300	370	420	480	550	650	750	850	

8RF 30A-03	3	5.50	7.50	HEAD IN Mtrs.	58	56	53	52	50	46	41	34	29	24
8RF 30A-04	4	7.50	10.00		77	74	71	70	67	62	54	46	39	32
8RF 30A-05	5	9.30	12.50		96	93	89	87	84	77	68	57	49	40
8RF 30A-06	6	11.00	15.00		116	111	107	104	100	93	82	68	59	47
8RF 30A-07	7	13.00	17.50		135	130	125	122	117	108	95	80	69	55
8RF 30A-08	8	15.00	20.00		154	148	142	139	134	124	109	91	78	63
8RF 30A-09	9	18.50	25.00		174	167	160	157	150	139	122	103	88	71
8RF 30A-10	10	18.50	25.00		193	186	178	174	167	154	136	114	98	79
8RF 30A-11	11	22.00	30.00		212	204	196	191	184	170	150	125	108	87
8RF 30A-12	12	22.00	30.00		232	223	214	209	200	185	163	137	118	95
8RF 30A-14	14	26.00	35.00		270	260	249	244	234	216	190	160	137	111
8RF 30A-16	16	30.00	40.00		309	297	285	278	267	247	218	182	157	126
8RF 30A-18	18	37.00	50.00		347	334	320	313	301	278	245	205	176	142
8RF 30A-20	20	37.00	50.00		386	371	356	348	334	309	272	228	196	158

**Dimensions & Weights**

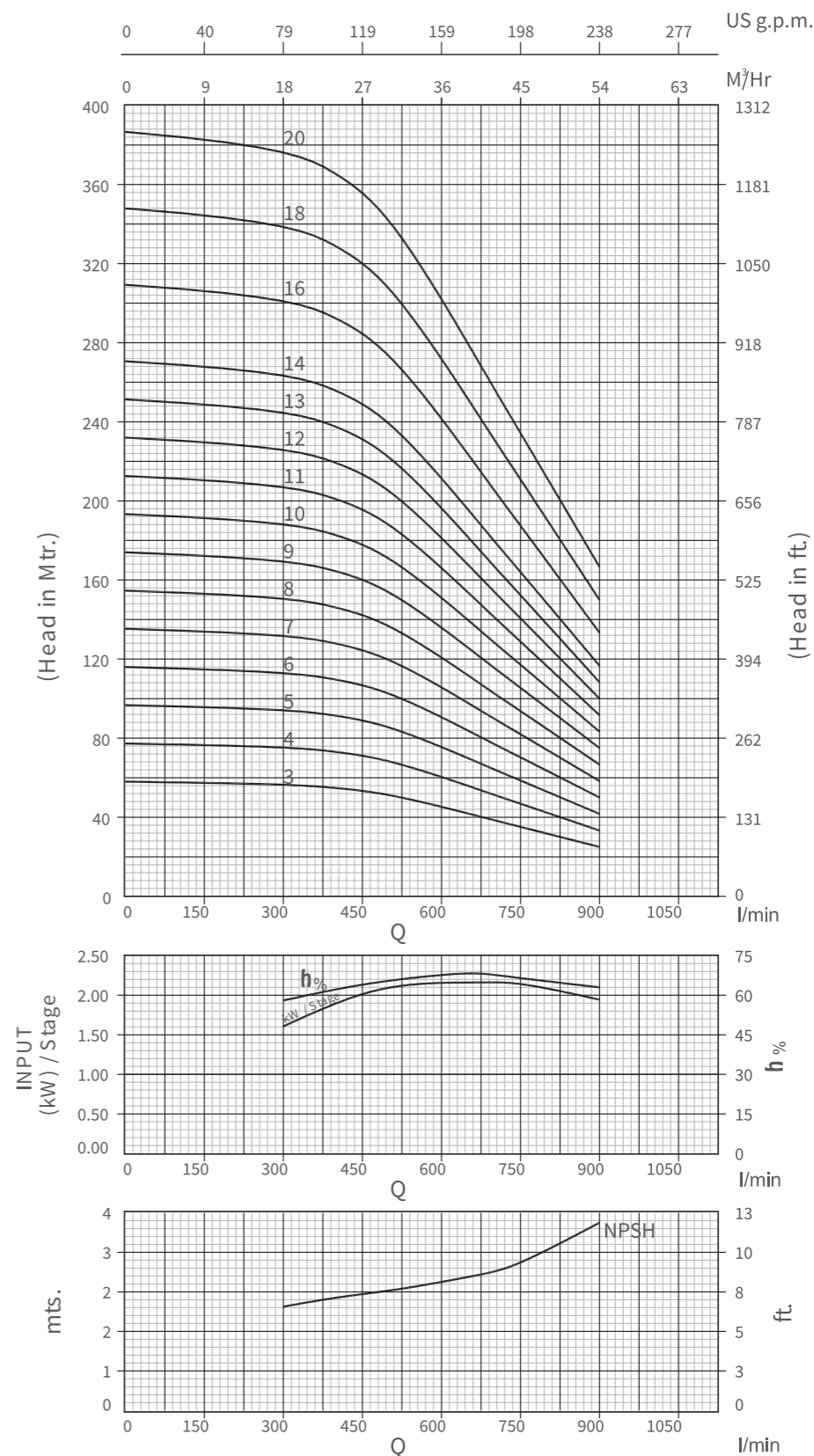


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)
8RF-30A/03	188	725	52.0	60.0
8RF-30A/04	188	790	58.0	66.0
8RF-30A/05	188	855	63.5	71.5
8RF-30A/06	188	920	69.5	77.5
8RF-30A/07	188	985	75.5	83.5
8RF-30A/08	188	1050	81.5	89.5
8RF-30A/09	188	1115	87.0	95.0
8RF-30A/10	188	1180	93.0	101.0
8RF-30A/11	188	1245	100.0	108.0
8RF-30A/12	188	1310	105.0	113.0
8RF-30A/14	188	1440	115.0	123.0
8RF-30A/16	188	1570	125.0	133.0
8RF-30A/18	188	1700	135.0	143.0
8RF-30A/20	188	1830	145.0	153.0

\*G:Available Outlet Size 3"  
\*D:With Cable Guard

**8RF 300, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



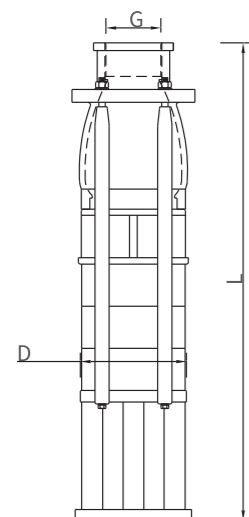
8RF 300, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name	Three Phase	Stage	Rating		l/min m <sup>3</sup> /h	Discharge							
			kW	HP		0	300	400	500	650	700	760	900

8RF 300-03	3	7.50	10.00	HEAD IN Mtrs.	58	57	55	52	42	38	34	25
8RF 300-04	4	9.30	12.50		77	76	73	69	56	51	46	33
8RF 300-05	5	11.00	15.00		97	95	92	87	70	64	58	42
8RF 300-06	6	13.00	17.50		116	114	110	104	84	77	69	50
8RF 300-07	7	15.00	20.00		135	133	128	121	98	90	80	58
8RF 300-08	8	18.50	25.00		155	152	147	139	112	103	92	67
8RF 300-09	9	22.00	30.00		174	171	165	156	126	115	104	75
8RF 300-10	10	22.00	30.00		193	190	183	173	140	128	115	83
8RF 300-11	11	26.00	35.00		213	209	202	191	154	141	126	92
8RF 300-12	12	26.00	35.00		232	228	220	208	168	154	138	100
8RF 300-13	13	30.00	40.00		251	247	238	225	182	167	150	108
8RF 300-14	14	33.00	45.00		271	266	257	243	196	180	161	117
8RF 300-16	16	37.00	50.00		309	304	293	277	224	205	184	133
8RF 300-18	18	45.00	60.00		348	342	330	312	252	231	207	150
8RF 300-20	20	45.00	60.00		387	380	367	347	280	257	230	167

Dimensions & Weights

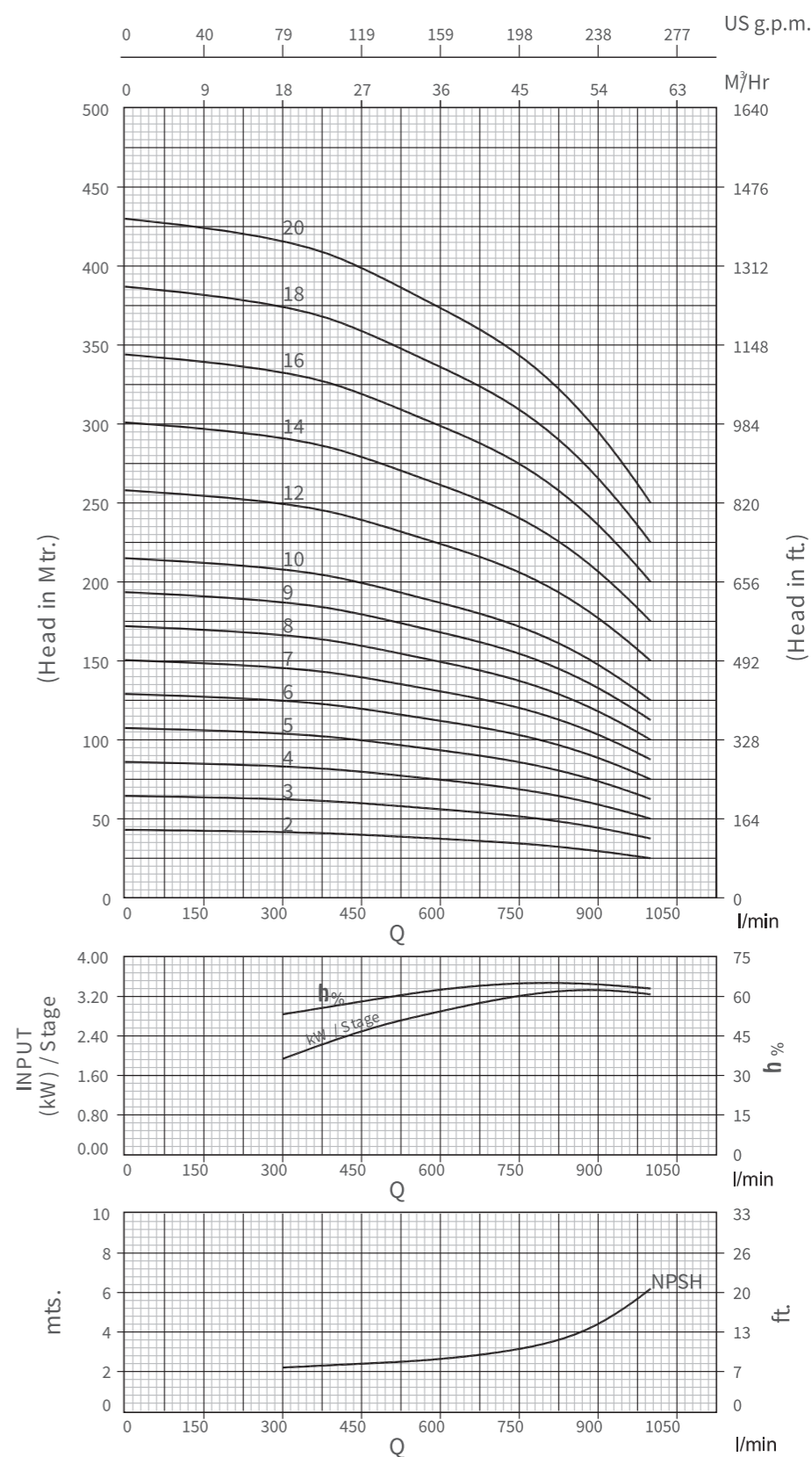


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)
8RF-300/03	188	725	45.5	53.5
8RF-300/04	188	790	50.0	58.0
8RF-300/05	188	855	54.0	62.0
8RF-300/06	188	920	58.5	66.5
8RF-300/07	188	985	63.0	71.0
8RF-300/08	188	1050	67.5	75.5
8RF-300/09	188	1115	72.0	80.0
8RF-300/10	188	1180	76.5	84.5
8RF-300/11	188	1245	81.0	89.0
8RF-300/12	188	1310	85.5	93.5
8RF-300/13	188	1375	94.5	102.5
8RF-300/14	188	1440	103.5	111.5
8RF-300/16	188	1570	112.5	120.5
8RF-300/18	188	1700	121.5	129.5
8RF-300/20	188	1830	130.0	139.5

\*G:Available Outlet Size 3"  
\*D:With Cable Guard

8RF 500, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES

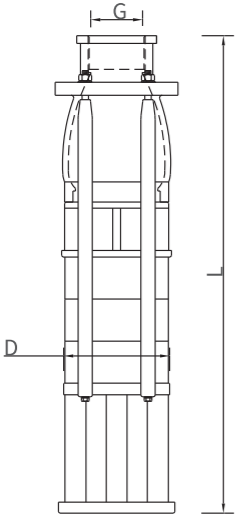


8RF 500, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating		Discharge								
Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	300	450	560	740	900	1000	
					0	18.0	27.0	33.6	44.4	54.0	60.0	
8RF 500-02	2	7.50	10.00	HEAD IN Mtrs.	43	42	40	38	35	30	25	
8RF 500-03	3	11.00	15.00		64	63	60	57	52	45	38	
8RF 500-04	4	15.00	20.00		86	84	80	76	70	60	50	
8RF 500-05	5	18.50	25.00		108	105	100	95	88	75	62	
8RF 500-06	6	22.00	30.00		129	126	120	114	105	90	75	
8RF 500-07	7	26.00	35.00		150	147	140	133	122	105	88	
8RF 500-08	8	30.00	40.00		172	168	160	152	140	120	100	
8RF 500-09	9	33.00	45.00		194	189	180	171	158	135	112	
8RF 500-10	10	37.00	50.00		215	210	200	190	175	150	125	
8RF 500-12	12	45.00	60.00		258	252	240	228	210	180	150	
8RF 500-14	14	52.00	70.00		301	294	280	266	245	210	175	
8RF 500-16	16	60.00	80.00		344	336	320	304	280	240	200	
8RF 500-18	18	67.00	90.00		387	378	360	342	315	270	225	
8RF 500-20	20	75.00	100.0		430	420	400	380	350	300	250	

Dimensions & Weights



Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg kg)
8RF-500/02	188	660	46.5	54.5
8RF-500/03	188	725	52.5	60.5
8RF-500/04	188	790	58.5	66.5
8RF-500/05	188	855	64.5	72.5
8RF-500/06	188	920	70.0	78.0
8RF-500/07	188	985	76.0	84.0
8RF-500/08	188	1050	82.0	90.0
8RF-500/09	188	1115	88.0	96.0
8RF-500/10	188	1180	94.0	102.0
8RF-500/12	188	1310	106.0	114.0

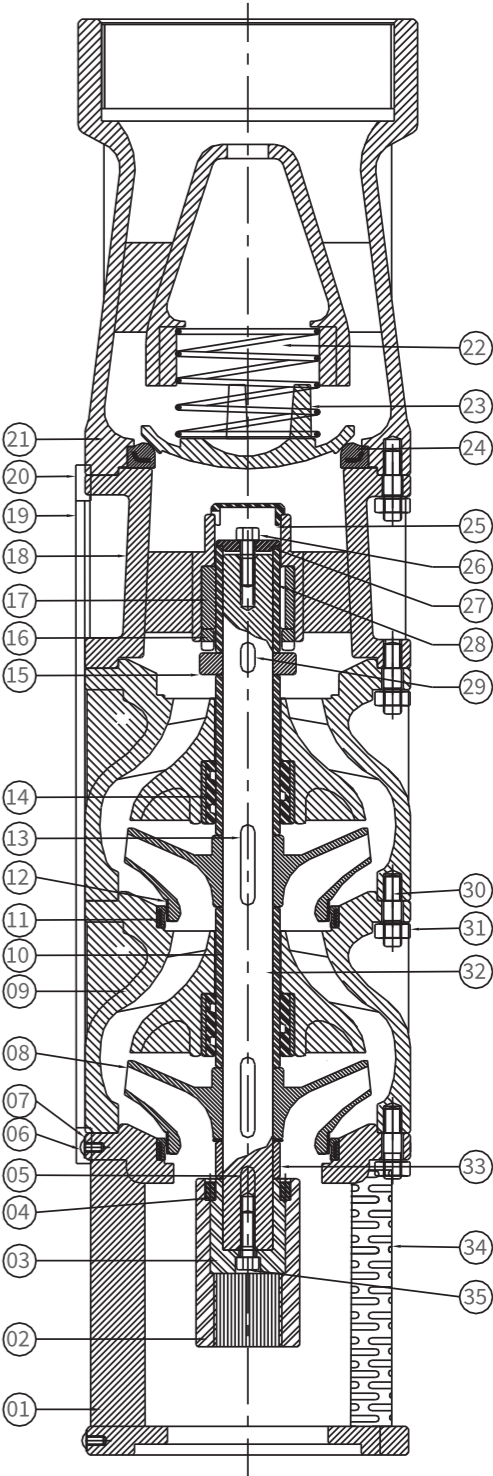
\*G:Available Outlet Size 3"  
\*D:With Cable Guard

SUBMERSIBLE PUMPS

8MF 250, 8MF 350, 8MF 500, 8MF 600, 8MF 700, 8MF 800, 8MF 810, 8MF 1000, 8MF 1250, 8MF 1500 SERIES PUMP DESIGN

Material Specification

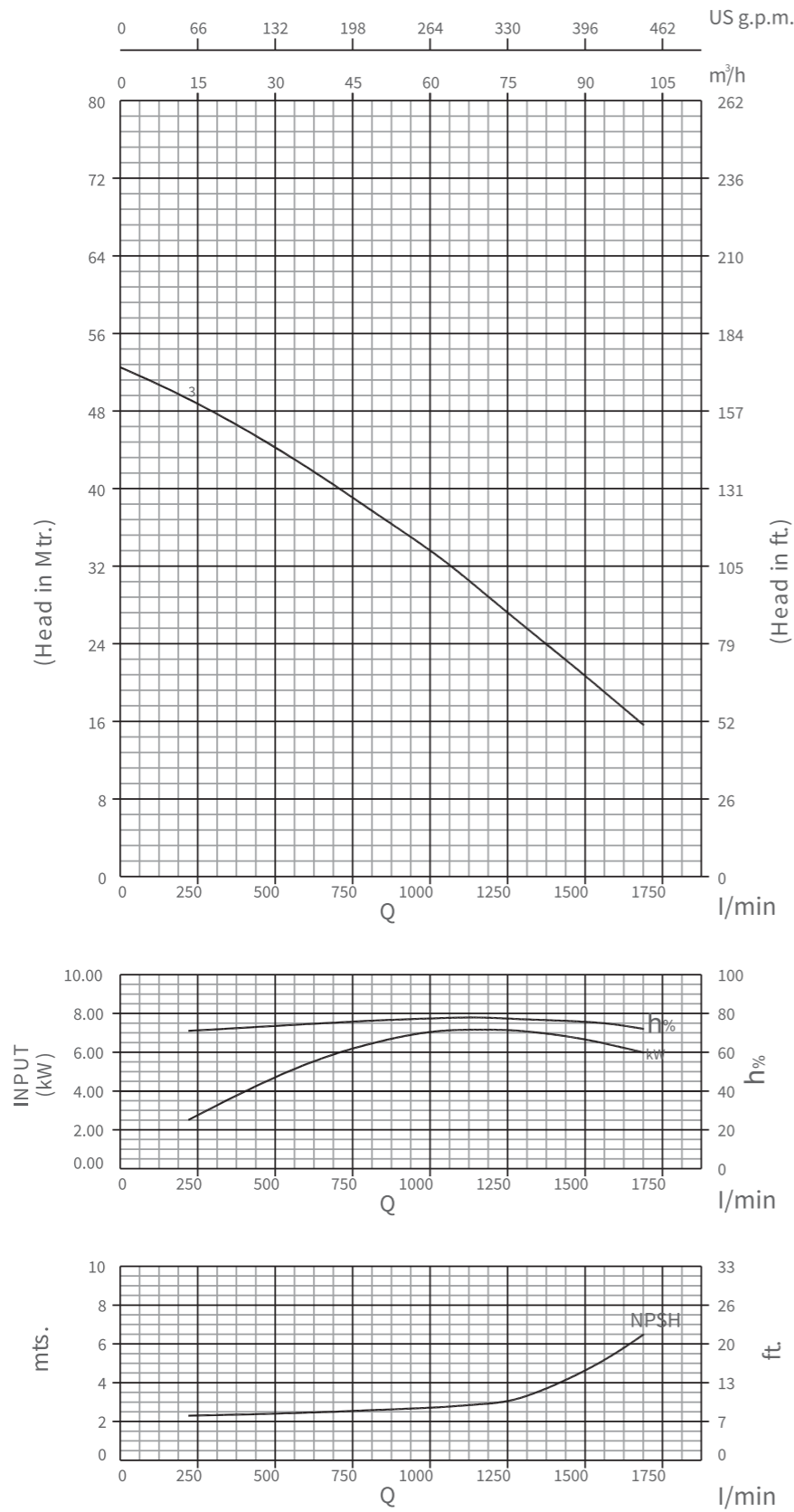
NO	DESCRIPTION	MATERIAL
1	SUCTION	CAST IRON
2	NEMA COUPLING SLEEVE	S.S.304
3	NEMA SLEEVE	S.S.304
4	GRUB SCREW	S.S.304
5	COUPLING KEY	S.S.304
6	SCREW	S.S.304
7	STRAINER SCREW WASHER	S.S.304
8	IMPELLER (G.M)	G.M
	IMPELLER (S.S.410)	S.S.410
9	STAGE CASING	CAST IRON
10	SLEEVE (STAGE CASING)	S.S.410
11	NECKRING (STAGE CASING)	M.S/N.B.R
12	IMPELLER NECKRING	S.S.202
13	IMPELLER KEY	S.S.304
14	METAL RUBBER BUSH	M.S/N.B.R
15	THRUST PLATE	S.S.410
16	COUNTER THRUST RING	G.M
17	BEARING BUSH	L.T.B-4 (2%Ni)
18	DOL	CAST IRON
19	CABLE GUARD	S.S.202
20	CABLE CLIP	S.S.202
21	DELIVERY CASING	CAST IRON
22	N.R.V CONE SPRING	SPRING STEEL
23	N.R.V CONE	CAST IRON
24	N.R.V NECKRING	M.S/N.B.R
25	P.V.C CAP	PLASTIC
26	HEX BOLT (TOP SIDE)	S.S.202
27	TOP COLLER	S.S.410
28	TOP SLEEVE	S.S.410
29	D.O.L KEY	S.S.304
30	STUD	S.S.410
31	NUT	S.S.202
32	PUMP SHAFT	LEAN DUPLEX
33	DISTANCE SLEEVE	S.S.410
34	STRAINER	S.S.202
35	ALLEN BOLT	S.S.304



8MF 250, 50Hz

ISO 9906 Annexure A

PERFORMANCE CURVES



8MF 250, 50Hz

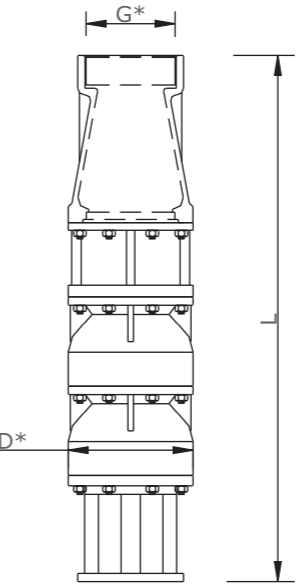
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name	Three Phase	Stage	Rating		l/min m³/h	Discharge											
			kW	HP		0	220	550	820	1020	1160	1280	1490	1600	1690		
						0	13.2	33.0	49.2	61.2	69.6	76.8	89.4	96.0	101.4		

8MF 250-03	3	7.50	10.00	HEAD IN MTR.	52	50	44	38	33	30	26	21	18	16			
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Dimensions & Weights



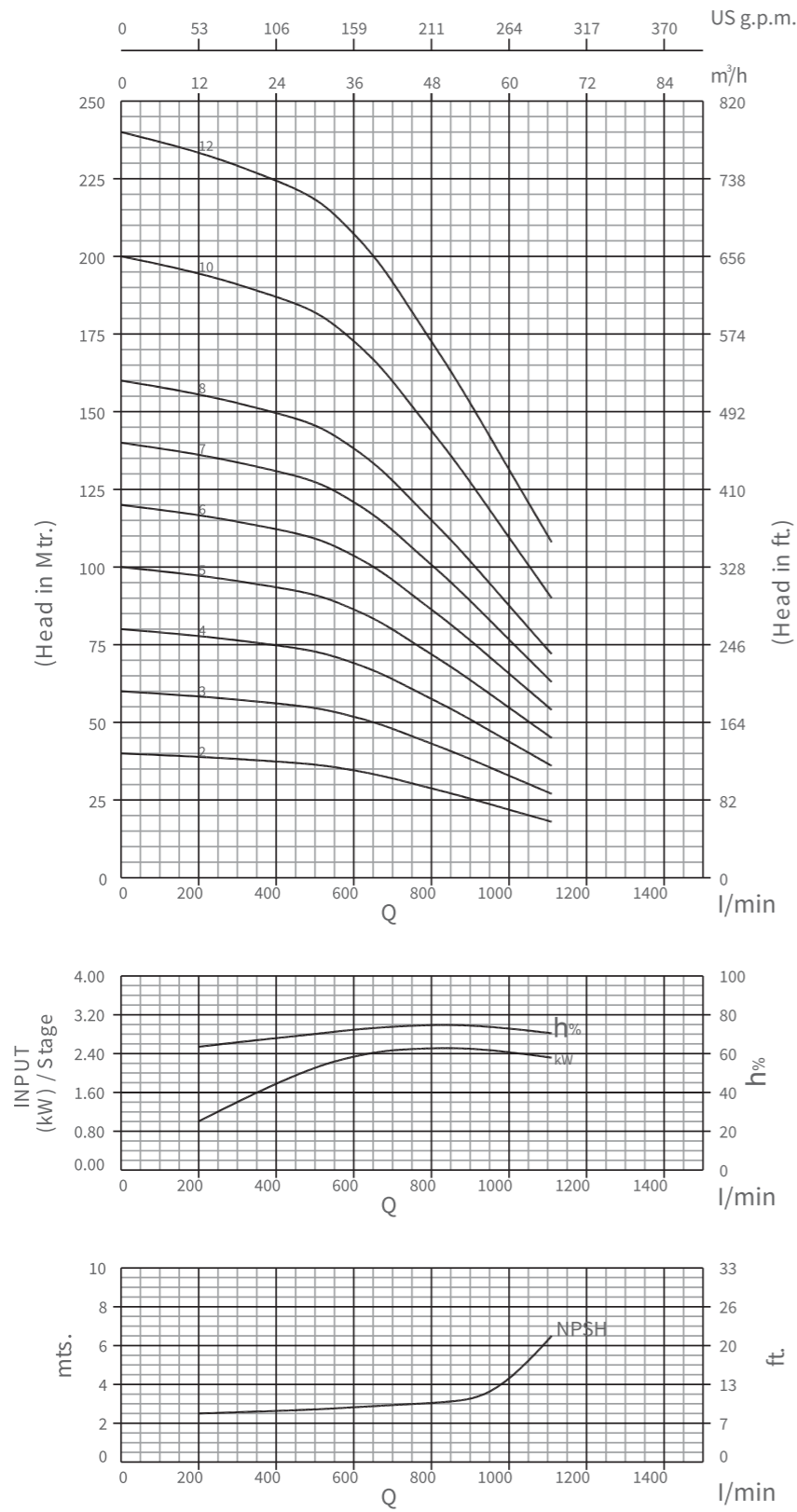
Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg) (kg)
8MF 250-03	182	885	62.5	70.5

\*G: Available Outlet Size 3.0" & 4.0"

\*D: With Cable Guard

**8MF 350, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



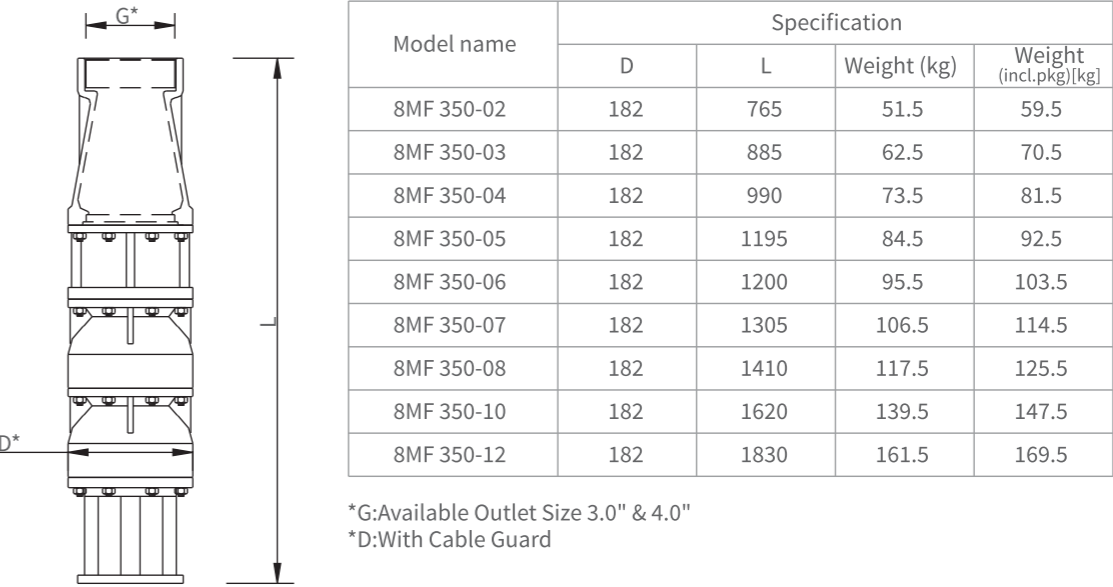
**8MF 350, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge										
		kW	HP		l/min m <sup>3</sup> /h	0	200	350	500	580	670	760	860	980	1110
Three Phase	Stage					0	12.0	21.0	30.0	34.8	40.2	45.6	51.6	58.8	66.6

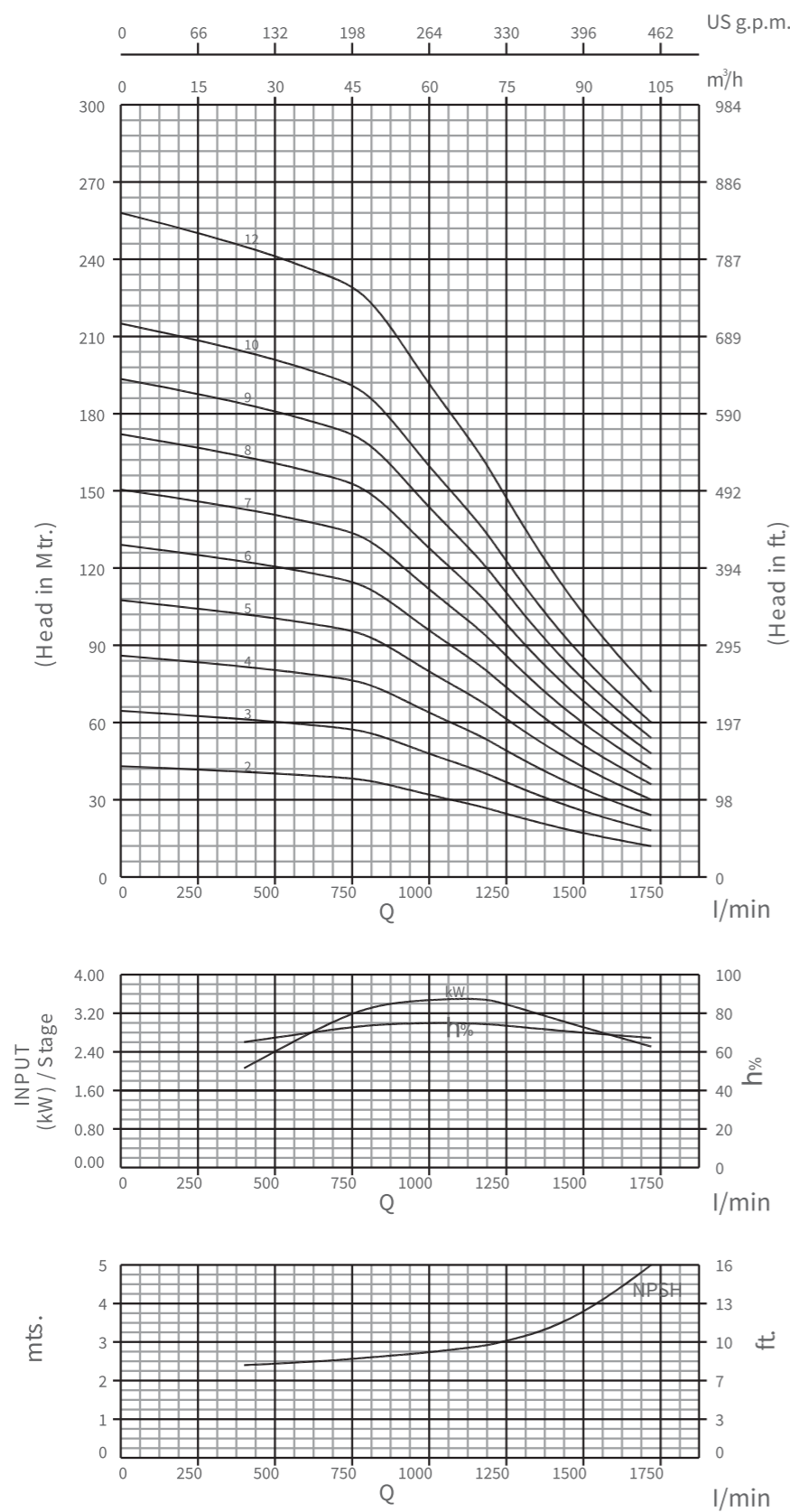
8MF 350-02	2	5.50	7.50	HEAD IN Mtrs.	40	39	38	37	35	33	30	27	23	18
8MF 350-03	3	9.30	12.50		60	58	57	55	52	50	45	40	34	27
8MF 350-04	4	11.00	15.00		80	78	76	73	70	66	60	54	45	36
8MF 350-05	5	15.00	20.00		100	98	94	92	88	82	75	67	56	45
8MF 350-06	6	18.50	25.00		120	117	113	110	105	99	90	81	68	54
8MF 350-07	7	22.00	30.00		140	136	132	128	122	116	105	94	79	63
8MF 350-08	8	26.00	35.00		160	156	151	146	140	132	120	108	90	72
8MF 350-10	10	30.00	40.00		200	195	189	183	175	165	150	135	113	90
8MF 350-12	12	37.00	50.00		240	234	227	220	210	198	180	162	136	108

**Dimensions & Weights**



8MF 500, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



8MF 500, 50Hz  
ISO 9906 Annexure A

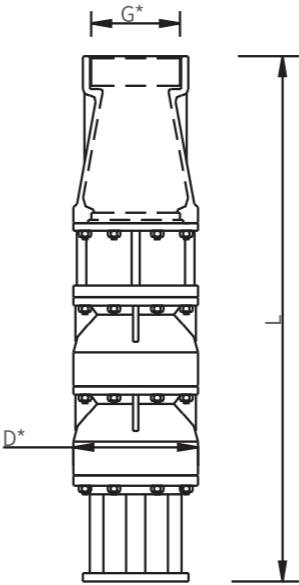
PERFORMANCE CHART

Model Name	Stage	Rating		l/min m³/h	Discharge									
		kW	HP		0	400	660	800	960	1070	1180	1235	1480	1720
Three Phase	Stage				0	24.0	39.6	48.0	57.6	64.2	70.8	74.1	88.8	103.2

8MF 500-02	2	7.50	10.00	HEAD IN Mtrs.	43	41	39	38	33	30	27	25	17	12
8MF 500-03	3	11.00	15.00		64	62	58	57	50	45	40	38	26	18
8MF 500-04	4	15.00	20.00		86	82	78	76	66	60	54	50	34	24
8MF 500-05	5	18.50	25.00		108	102	98	95	82	75	68	62	42	30
8MF 500-06	6	22.00	30.00		129	123	117	114	99	90	81	75	51	36
8MF 500-07	7	26.00	35.00		150	144	136	133	116	105	94	88	60	42
8MF 500-08	8	30.00	40.00		172	164	156	152	132	120	108	100	68	48
8MF 500-09	9	33.00	45.00		194	184	176	171	148	135	122	112	76	54
8MF 500-10	10	37.00	50.00		215	205	195	190	165	150	135	125	85	60
8MF 500-12	12	45.00	60.00		258	246	234	228	198	180	162	150	102	72

Dimensions & Weights

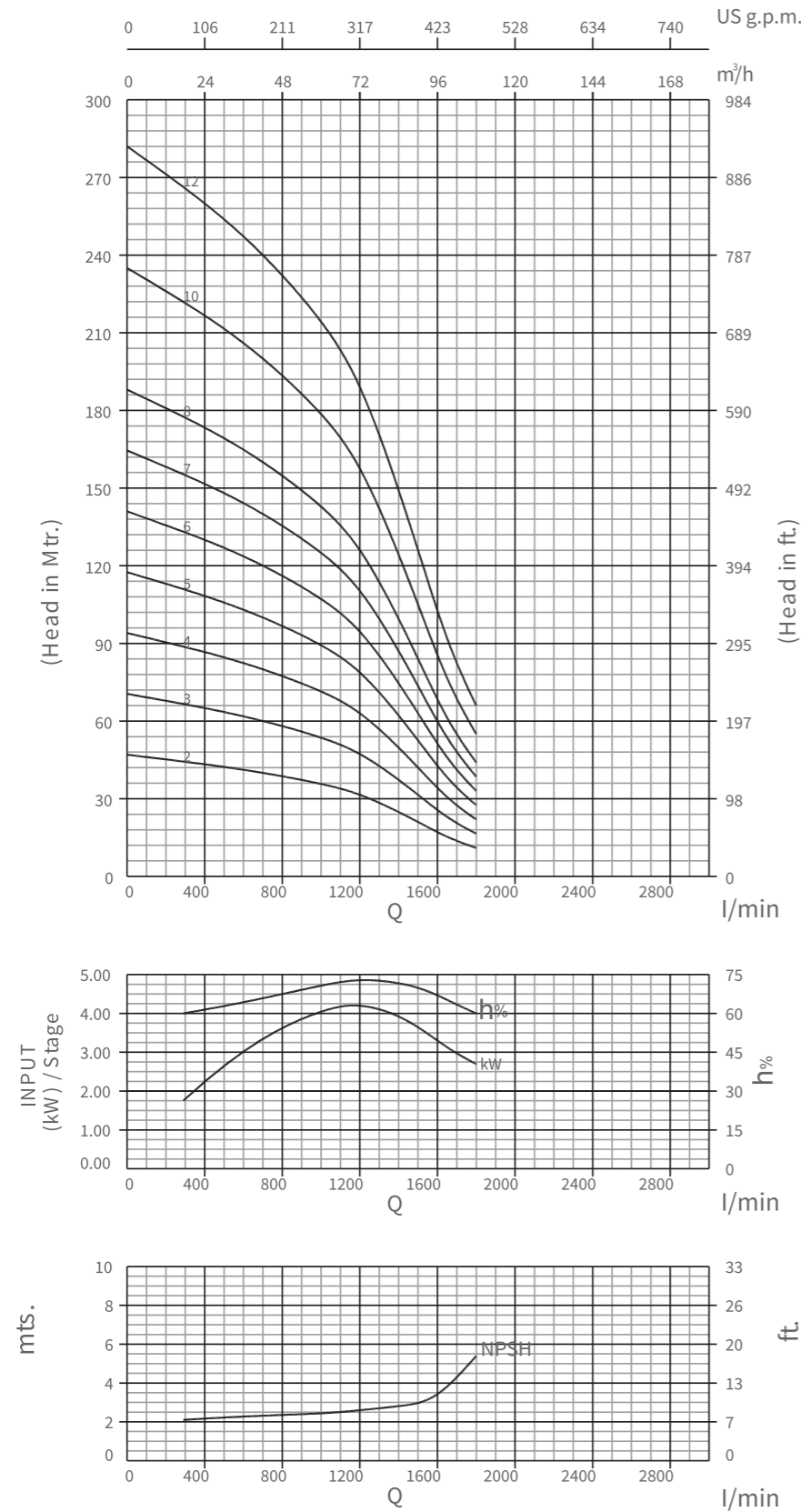


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)[kg]
8MF 500-02	199	803	52	59.5
8MF 500-03	199	933	63	70.5
8MF 500-04	199	1063	74	81.5
8MF 500-05	199	1193	85	92.5
8MF 500-06	199	1323	96	103.5
8MF 500-07	199	1453	107	114.5
8MF 500-08	199	1583	118	125.5
8MF 500-09	199	1713	129	136.5
8MF 500-10	199	1843	130	147.5
8MF 500-12	199	2103	152	169.5

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

**8MF 600, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



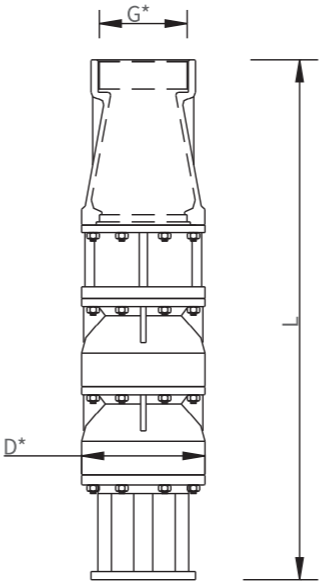
**8MF 600, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min	0	290	600	1000	1200	1400	1550	1680	1800	
				m³/h	0	17.4	36.0	60.0	72.0	84.0	93.0	100.8	108	

8MF 600-02	2	9.30	12.50	HEAD IN Mtrs.	47	44	42	36	32	25	19	14	11
					70	67	62	54	48	38	28	21	16
					94	89	83	72	64	50	38	28	22
					118	111	104	90	80	62	48	35	28
					141	133	125	108	96	75	57	42	33
					164	156	145	126	112	88	66	49	38
					188	178	166	144	128	100	76	56	44
					235	222	208	180	160	125	95	70	55
					282	267	249	216	192	150	114	84	66

**Dimensions & Weights**

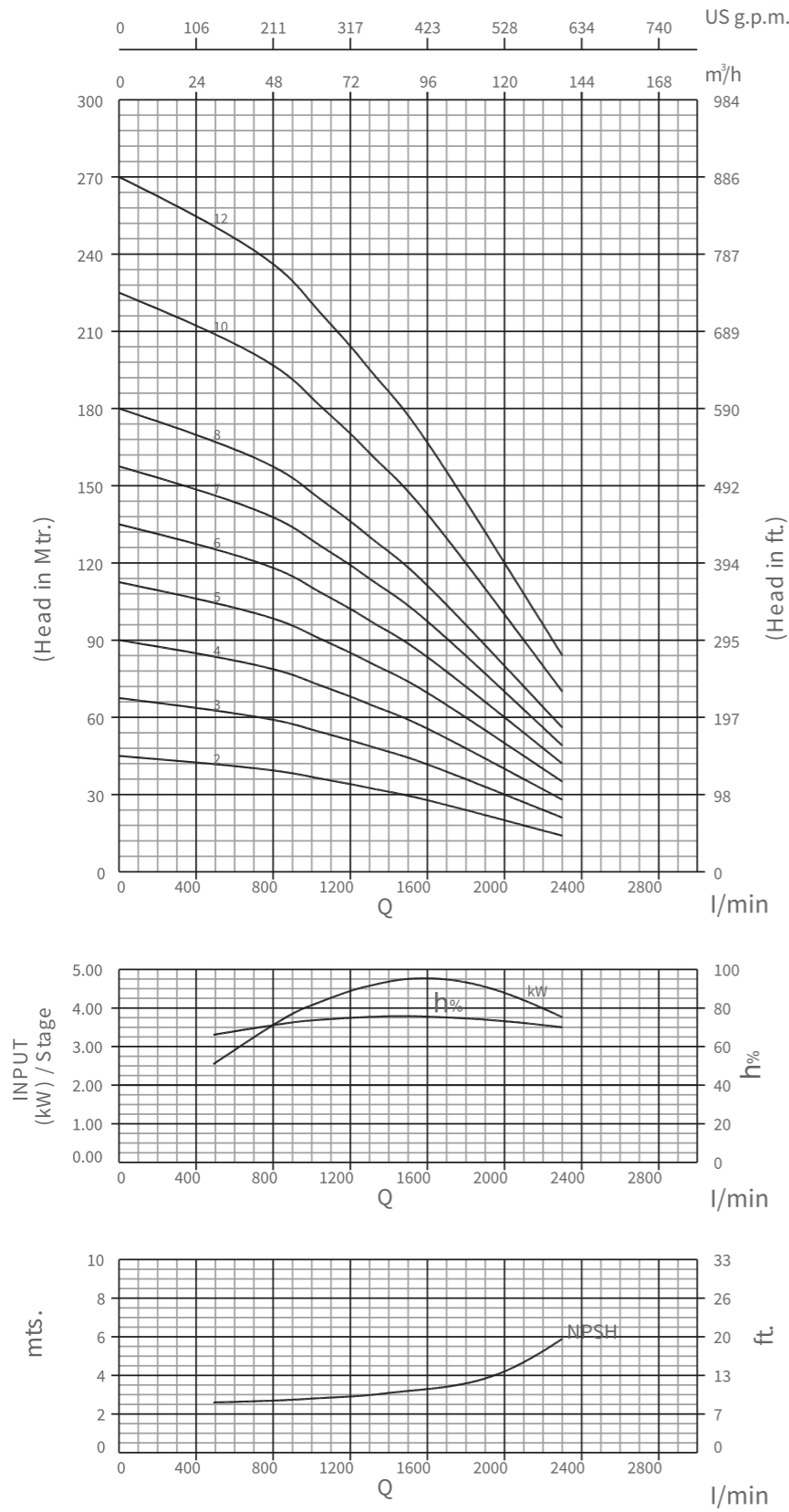


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)[kg]
8MF 600-02	199	803	51.0	59.0
8MF 600-03	199	933	62.0	70.0
8MF 600-04	199	1063	73.0	81.0
8MF 600-05	199	1193	83.5	91.5
8MF 600-06	199	1323	94.5	102.5
8MF 600-07	199	1453	105.0	113.0
8MF 600-08	199	1583	116.0	124.0
8MF 600-10	199	1843	138.0	146.0
8MF 600-12	199	2103	160.0	168.0

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

8MF 700, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



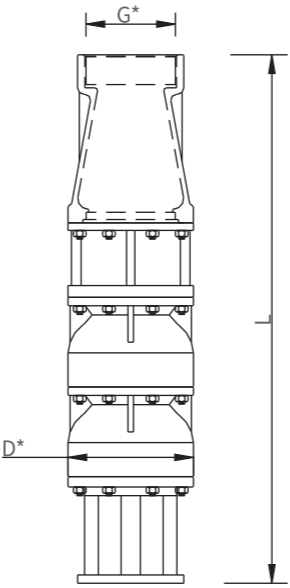
8MF 700, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min	0	490	870	980	1210	1330	1485	1750	2050	2300
				m³/h	0	29.4	52.2	58.8	72.6	79.8	89.1	105	123	138

Model Name	Stage	kW	HP	HEAD IN Mtrs.	45	42	39	37	34	32	30	25	19	14
					68	63	58	56	51	48	45	38	28	21
8MF 700-02	2	11.00	15.00		90	84	78	74	68	64	60	50	38	28
8MF 700-03	3	15.00	20.00		112	105	98	92	85	80	75	62	48	35
8MF 700-04	4	22.00	30.00		135	126	117	111	102	96	90	75	57	42
8MF 700-05	5	26.00	35.00		158	147	136	130	119	112	105	88	66	49
8MF 700-06	6	33.00	45.00		180	168	156	148	136	128	120	100	76	56
8MF 700-07	7	37.00	50.00		225	210	195	185	170	160	150	125	95	70
8MF 700-08	8	45.00	60.00		270	252	234	222	204	192	180	150	114	84
8MF 700-10	10	52.00	70.00											
8MF 700-12	12	67.00	90.00											

Dimensions & Weights

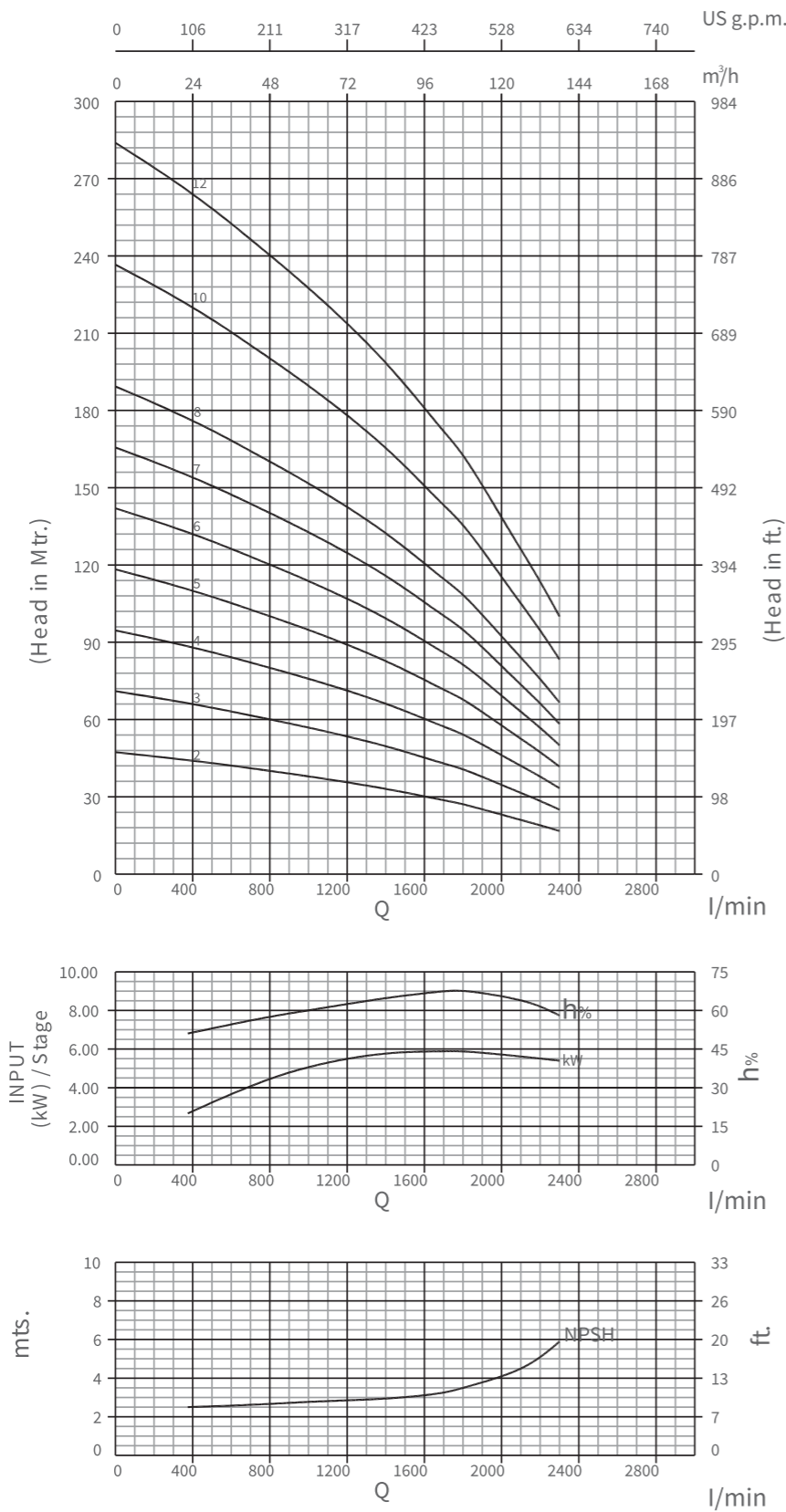


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)[kg]
8MF 700-02	199	806	51.5	59.5
8MF 700-03	199	936	62.0	70.0
8MF 700-04	199	1066	73.0	81.0
8MF 700-05	199	1196	84.0	92.0
8MF 700-06	199	1326	95.0	103.0
8MF 700-07	199	1456	106.0	114.0
8MF 700-08	199	1586	117.0	125.0
8MF 700-10	199	1846	139.0	147.0
8MF 700-12	199	2106	161.0	169.0

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

**8MF 800, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



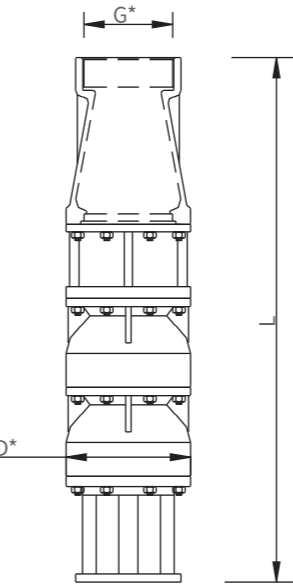
**8MF 800, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge									
Three Phase	Stage	kW	HP	l/min m <sup>3</sup> /h	0	375	710	1000	1400	1700	1800	2050	2200	2300

8MF 800-02	2	13.00	17.50	HEAD IN Mtrs.	47	44	41	38	33	29	27	22	19	17
8MF 800-03	3	18.50	25.00		71	67	61	57	50	43	41	33	28	25
8MF 800-04	4	26.00	35.00		95	89	82	76	67	57	55	44	38	33
8MF 800-05	5	30.00	40.00		118	111	102	95	83	71	68	55	48	42
8MF 800-06	6	37.00	50.00		142	133	123	114	100	86	82	66	57	50
8MF 800-07	7	45.00	60.00		166	155	143	133	117	100	96	77	66	58
8MF 800-08	8	52.00	70.00		189	178	164	152	133	114	109	88	76	67
8MF 800-10	10	60.00	80.00		237	222	205	190	167	143	137	110	95	83
8MF 800-12	12	75.00	100.0		284	266	246	228	200	171	164	132	114	100

**Dimensions & Weights**

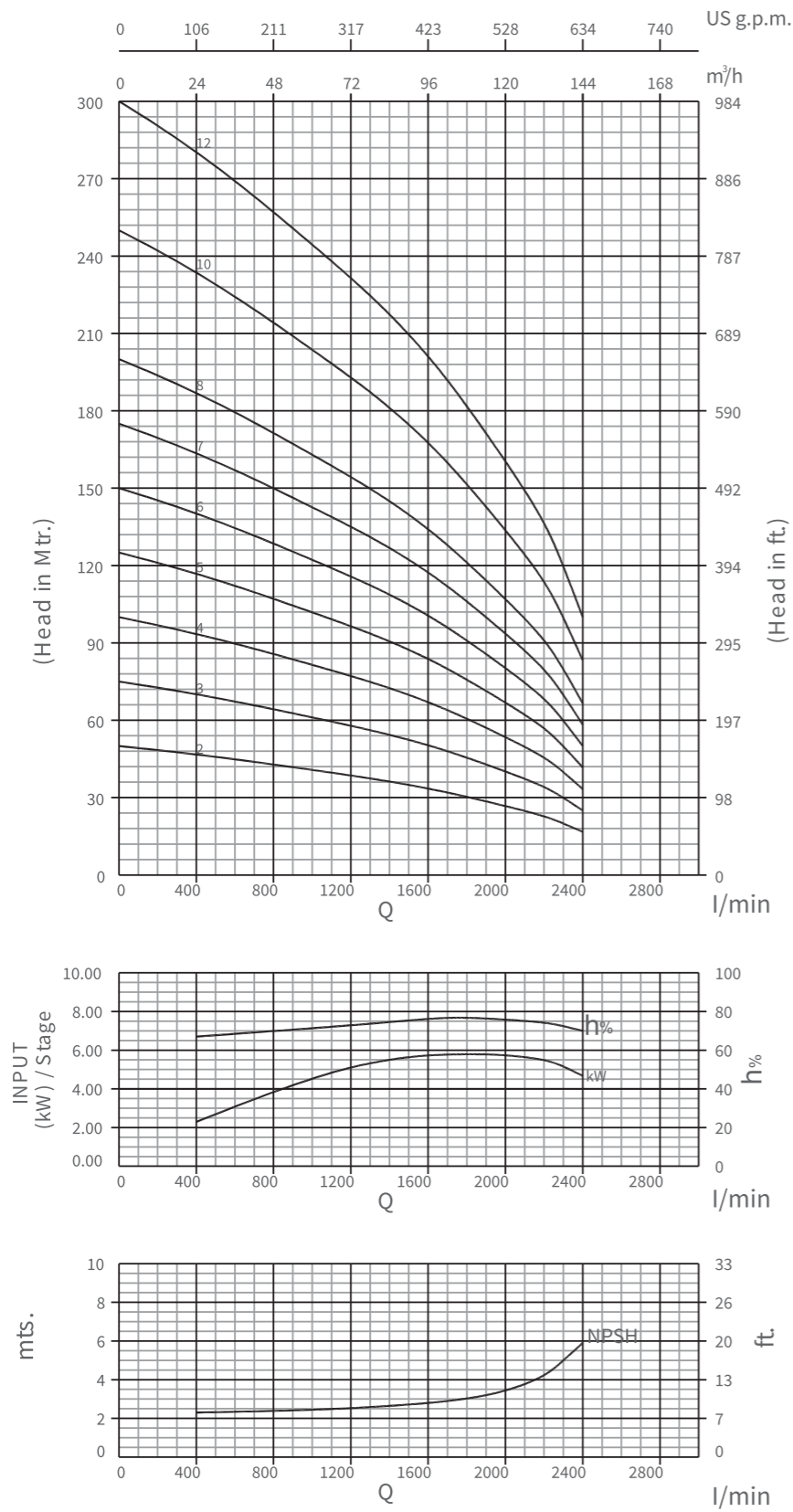


Model name	Specification			Weight (kg) (incl.pkg)[kg]
	D	L	Weight (kg)	
8MF 800-02	203	793	51.5	59.5
8MF 800-03	203	916	62.5	70.5
8MF 800-04	203	1046	73.5	81.5
8MF 800-05	203	1176	84.5	92.5
8MF 800-06	203	1306	96.0	104.0
8MF 800-07	203	1436	107.0	115.0
8MF 800-08	203	1566	118.0	126.0
8MF 800-10	203	1826	140.0	148.0
8MF 800-12	203	2086	162.0	170.0

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

**8MF 810, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CURVES**



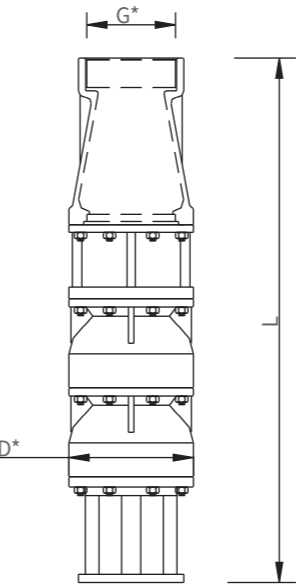
**8MF 810, 50Hz**  
ISO 9906 Annexure A

**PERFORMANCE CHART**

Model Name		Rating			Discharge											
Three Phase	Stage	kW	HP	l/min	0	400	960	1350	1620	1790	1970	2200	2300	2400		
				m <sup>3</sup> /h	0	24.0	57.6	81.0	97.2	107.4	118.2	132	138	144		

Model Name	Stage	kW	HP	HEAD IN Mtrs.	50	47	41	37	33	30	27	23	20	17
					75	70	62	56	50	46	41	34	30	25
8MF 810-02	2	13.00	17.50		100	94	82	74	67	61	55	46	40	33
8MF 810-03	3	18.50	25.00		125	118	103	92	83	76	68	58	50	42
8MF 810-04	4	26.00	35.00		150	141	124	111	100	92	82	69	60	50
8MF 810-05	5	30.00	40.00		175	164	144	130	117	107	96	80	70	58
8MF 810-06	6	37.00	50.00		200	188	165	148	133	122	109	92	80	67
8MF 810-07	7	45.00	60.00		250	235	206	185	167	152	137	115	100	83
8MF 810-08	8	52.00	70.00		300	282	247	222	200	183	164	138	120	100
8MF 810-10	10	60.00	80.00											
8MF 810-12	12	75.00	100.0											

**Dimensions & Weights**

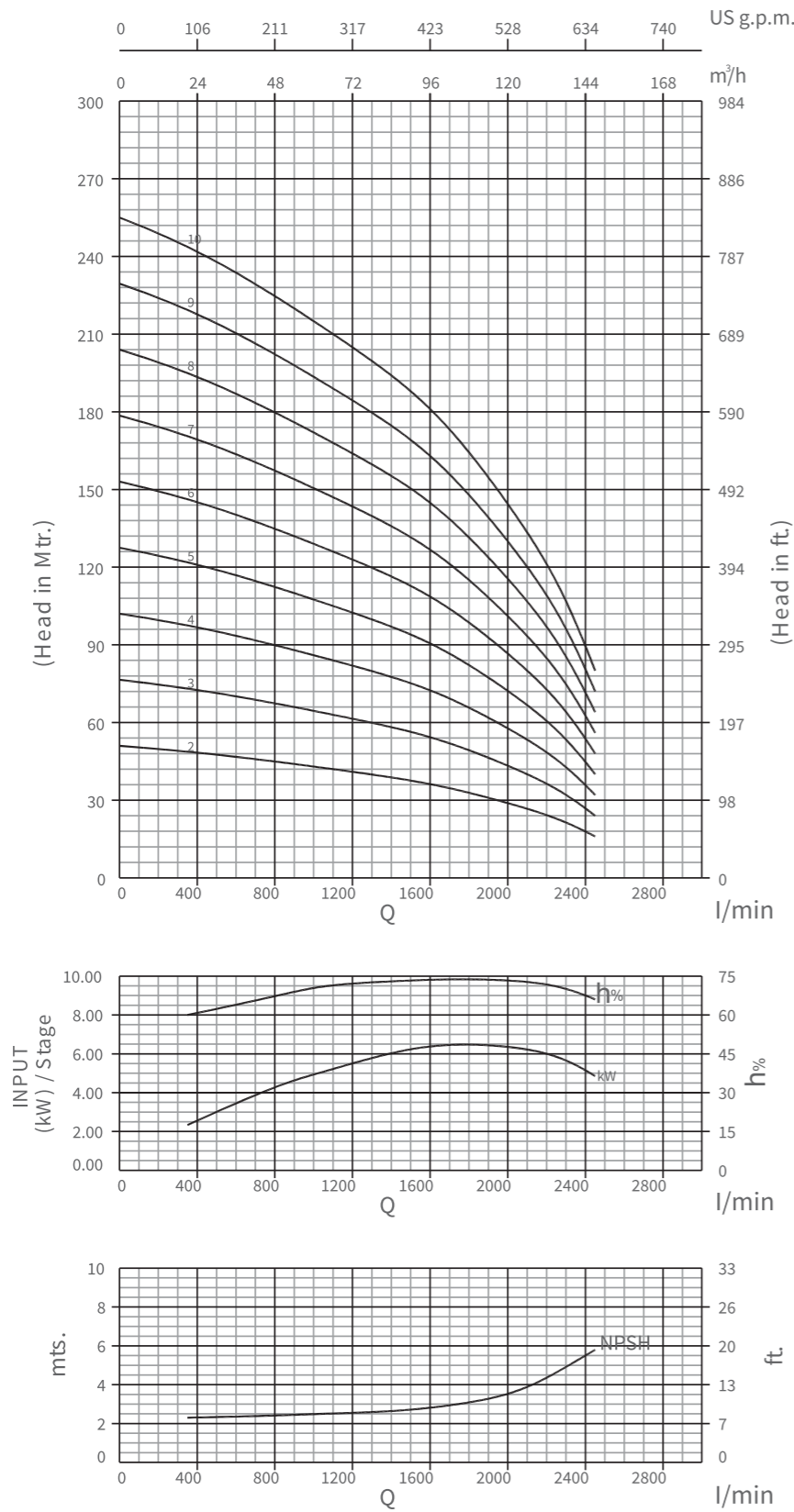


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)[kg]
8MF 810-02	203	793	51.5	59.5
8MF 810-03	203	916	63.0	71.0
8MF 810-04	203	1046	74.0	82.0
8MF 810-05	203	1176	85.0	93.0
8MF 810-06	203	1306	96.5	104.5
8MF 810-07	203	1436	108.0	116.0
8MF 810-08	203	1566	119.5	127.5
8MF 810-10	203	1826	142.5	150.5
8MF 810-12	203	2086	165.5	173.5

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

8MF 1000, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



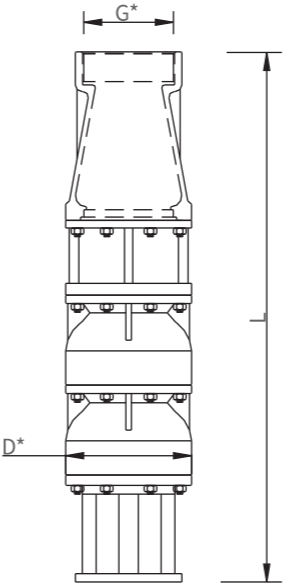
8MF 1000, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge								
Three Phase	Stage	kW	HP	l/min	0	350	800	1000	1400	1700	2050	2300	2450
				m³/h	0	21	48	60	84	102	123	138	147

Model Name	Stage	kW	HP	HEAD IN Mtrs.	51	49	45	43	39	35	28	22	16
					76	74	68	64	58	52	42	33	24
					102	98	90	86	78	70	56	44	32
					128	122	112	108	98	88	70	55	40
					153	147	135	129	117	105	84	66	48
					178	172	158	150	136	122	98	77	56
					204	196	180	172	156	140	112	88	64
					230	220	202	194	176	158	126	99	72
					255	245	225	215	195	175	140	110	80

Dimensions & Weights



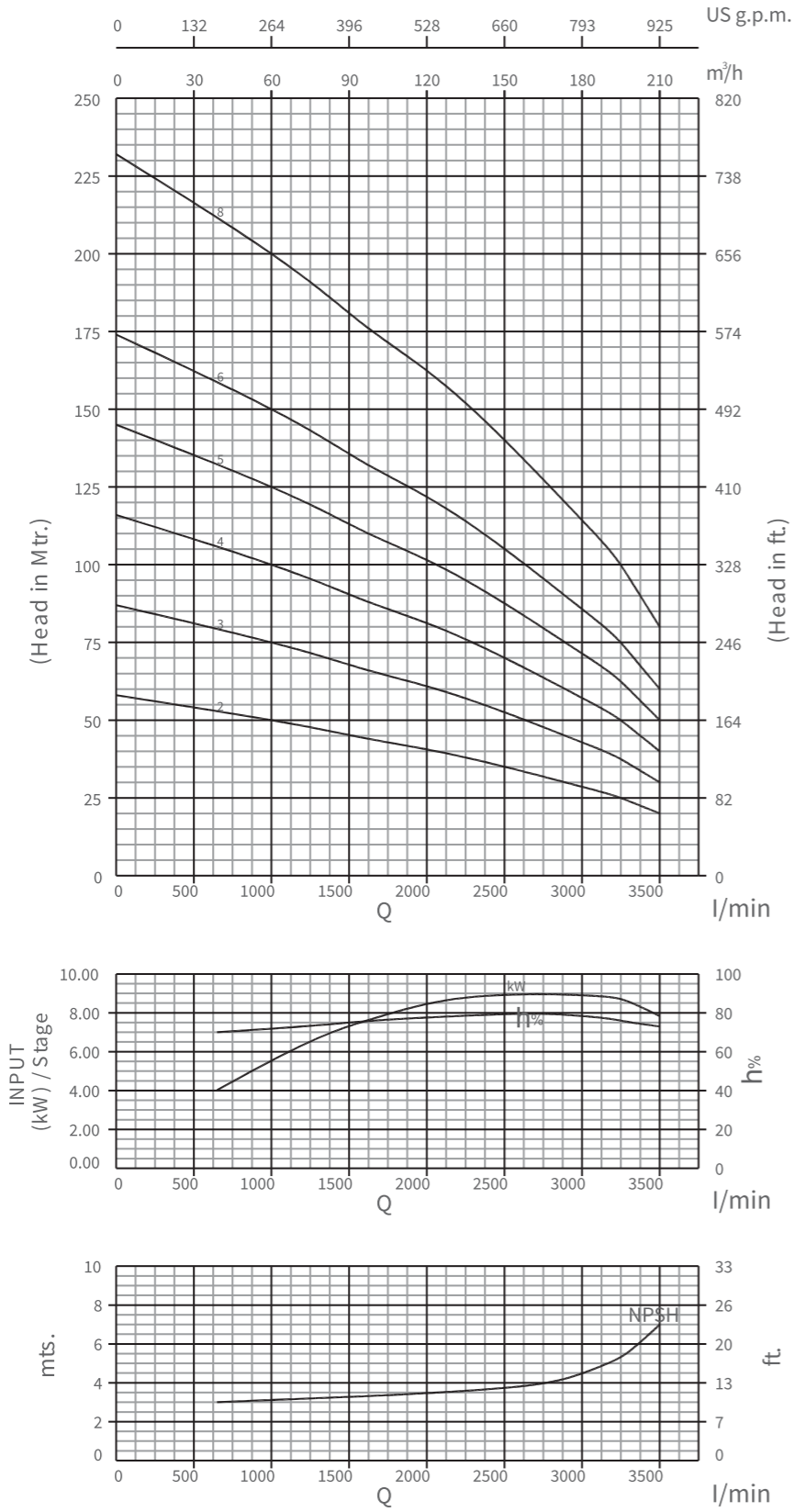
Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)(kg)
8MF 1000-02	203	793	51.5	59.5
8MF 1000-03	203	916	63.0	71.0
8MF 1000-04	203	1046	74.0	82.0
8MF 1000-05	203	1176	85.0	93.0
8MF 1000-06	203	1306	96.5	104.5
8MF 1000-07	203	1436	108.0	116.0
8MF 1000-08	203	1566	119.5	127.5
8MF 1000-09	203	1696	131.0	139.0
8MF 1000-10	203	1826	142.5	150.5

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

8MF 1250, 50Hz

ISO 9906 Annexure A

PERFORMANCE CURVES



8MF 1250, 50Hz

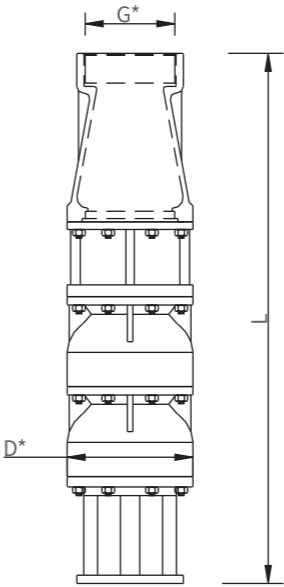
ISO 9906 Annexure A

PERFORMANCE CHART

Model Name		Rating			Discharge											
		kW	HP		l/min m³/h	0	650	1250	1600	2100	2650	2920	3200	3300	3500	
Three Phase	Stage					0	39	75	96	126	159	175.2	192	198	210	

Model Name	Stage	kW	HP	HEAD IN Mtrs.	58	53	48	44	40	33	30	26	24	20
					87	80	72	66	60	50	44	39	36	30
					116	106	96	88	80	66	59	52	48	40
					145	132	120	110	100	83	74	65	60	50
					174	159	144	132	120	100	89	78	72	60
					232	212	192	176	160	133	118	104	96	80

Dimensions & Weights

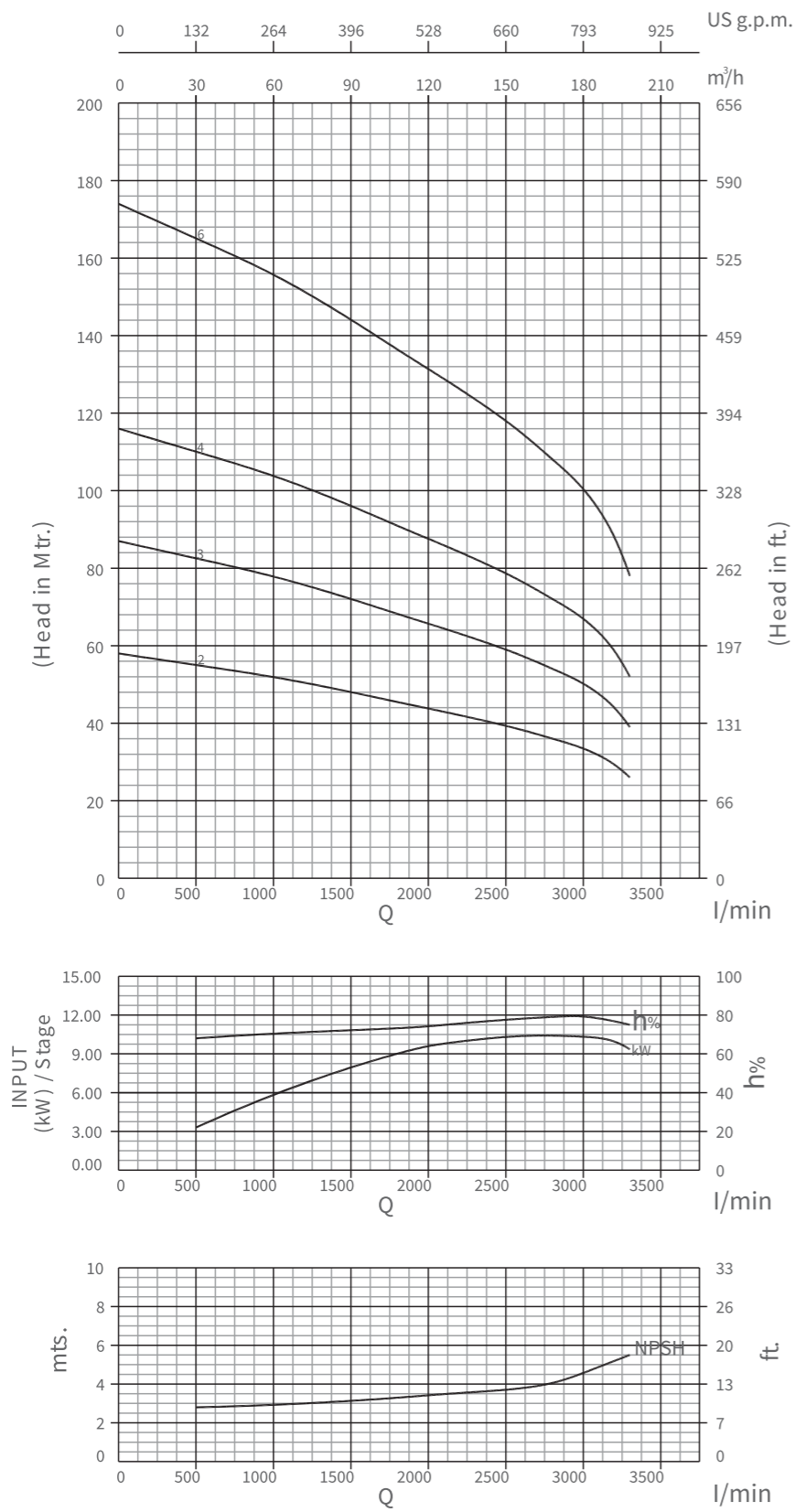


Model name	Specification			
	D	L	Weight (kg)	Weight (incl.pkg)[kg]
8MF 1250-02	207	812	56.5	64.5
8MF 1250-03	207	952	71.5	79.5
8MF 1250-04	207	1092	86.5	94.5
8MF 1250-05	207	1232	86.5	94.5
8MF 1250-06	207	1372	116.5	124.5
8MF 1250-08	207	1652	146.5	154.5

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

8MF 1500, 50Hz  
ISO 9906 Annexure A

PERFORMANCE CURVES



8MF 1500, 50Hz  
ISO 9906 Annexure A

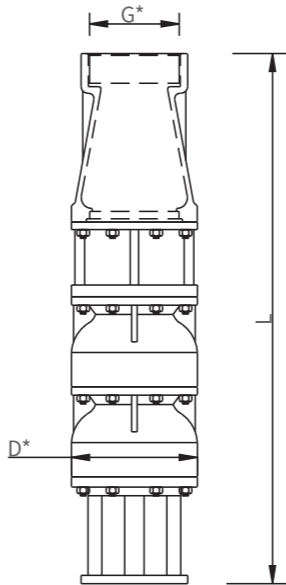
PERFORMANCE CHART

Model Name	Stage	Rating		l/min m³/h	Discharge									
		kW	HP		0	500	1050	1850	2100	2550	2800	2980	3200	3300
Three Phase	Stage				0	30	63	111	126	153	168	178.8	192	198

8MF 1500-02	2	22.00	30.00	HEAD IN Mtrs.	58	55	52	45	43	39	36	34	30	26
8MF 1500-03	3	33.00	45.00		87	82	78	68	64	58	54	51	45	39
8MF 1500-04	4	45.00	60.00		116	110	104	90	86	78	72	68	60	52
8MF 1500-06	6	67.00	90.00		174	165	156	135	129	117	108	102	90	78

Dimensions & Weights



Model name	Specification			Weight (incl.pkg)/[kg]
	D	L	Weight (kg)	
8MF 1500-02	207	812	56.5	64.5
8MF 1500-03	207	952	71.5	79.5
8MF 1500-04	270	1092	86.5	94.5
8MF 1500-06	207	1372	116.5	124.5

\*G:Available Outlet Size 4.0" & 5.0"  
\*D:With Cable Guard

# CONVERSION TABLES

Volume (Capacity)					
Cubic metre m³	Litre L	Millilitre mL	Imperial gallon Imp. gal	Us gallon USgal	Cubic feet ft³
1	1000	1 x 10 <sup>6</sup>	219.9692	264.1721	35.3147
0.001	1	1000	0.2200	0.2642	0.0353
1 x 10 <sup>-6</sup>	0.001	1	0.0002	0.0003	3.515 x 10 <sup>-7</sup>
0.0045	4.5461	4546.09	1	1.2009	0.1605
0.0038	3.7854	3785.4118	0.8327	1	0.1337
0.0283	28.3168	28316.8488	6.2288	7.4805	1

Volume (Flow)							
Litre per second l/s	Liter per minute l/min	Cubic metre per hour m³/hr	Cubic feet per hour ft³/hr	Cubic feet per minute ft³/min	Imp. gallon per minute lgpm	US gallon per minute USgpm	US barrel per day US barrel/day
1	60	3.600	127.1328	2.1189	13.1982	15.8504	543.4390
0.0167	1	0.0600	2.1189	0.0353	0.2200	0.2642	9.0570
0.2778	16.6667	1	35.3147	0.5886	3.6662	4.4029	150.9550
0.0079	0.4719	0.0283	1	0.0167	0.1038	0.1247	4.2750
0.4719	28.3168	1.6990	60.0000	1	6.2288	7.4805	265.4750
0.0758	4.5461	0.2728	9.6326	0.1605	1	1.2010	41.1750
0.0631	3.7854	0.2271	8.0208	0.1337	0.8327	1	34.2860
0.0020	0.1100	0.0060	0.2400	0.0040	0.0240	0.0310	1

Liquid head and pressure								
Newton per square metre N/m²	Kilo Pascal kPa	bar	Kilogram force per square centimetre kgf/cm²	Pound force per square inch psi	Feet of water ft H <sub>2</sub> O	Metere of water m H <sub>2</sub> O	Millimeter of mercury mm Hg	Inch of mercury in Hg
1	0.001	1 x 10 <sup>-5</sup>	1.02 x 10 <sup>-5</sup>	1.45 x 10 <sup>-4</sup>	3.35 x 10 <sup>-4</sup>	1.02 x 10 <sup>-4</sup>	0.0075	2.95 x 10 <sup>-4</sup>
1000	1	0.010	0.0102	0.1450	0.3346	0.1020	7.5	0.2953
1 x 10 <sup>5</sup>	100	1	1.0197	14.5038	33.4553	10.1973	750.0638	29.5300
98066.50	98.0665	0.9807	1	14.2233	32.8084	10	735.5613	28.9590
6894.76	6.8949	0.0689	0.0703	1	2.3067	0.7031	51.7151	2.0360
2989.07	2.9891	0.0299	0.0305	0.4335	1	0.3048	22.4199	0.8827
9806.55	9.8066	0.0981	0.1000	1.4223	3.2808	1	73.5554	2.8959
133.32	0.1333	0.0013	0.0014	0.0193	0.0446	0.0136	1	0.0394
3386.39	3.3864	0.0339	0.0345	0.4912	1.1329	0.3453	25.4001	1

# CONVERSION TABLES

Power		
HP	W	kW
1 (SI)	746	0.746
1 (Metric)	736	0.736
1.34 x 10 <sup>-3</sup>	1 (SI)	0.001
1.36 x 10 <sup>-3</sup>	1 (Metric)	0.001
1.3405	1000	1 (SI)
1.3587	1000	1 (Metric)

Length					
Metre m	Feet ft	Yard yd	Centimetre cm	Millimeter mm	Inch in
1	3.2808	1.0936	100	1000	39.3701
0.3048	1	0.3333	30.48	304.8	12
0.9144	3	1	91.14	914.4	36
0.01	0.0328	0.0109	1	10	0.3937
0.001	0.0033	0.0011	0.1	1	0.0394
0.0254	0.0833	0.0278	2.54	25.4	1

Mass			
Kilogram kg	Pound lb	Hundred weight (long)	Tonne t
1	2.2046	0.0199	0.001
0.4536	1	0.009	0.0005
50.3592	111.02	1	0.0504
1000	2204.6226	19.8573	1

Temperature		
To convert from	To	Use formula
Temperature Celsius (C) - tC	Temperature Kelvin (K) - tK	tK = tC + 273.15
Temperature Fahrenheit (F) - tF	Temperature Kelvin (K) - tK	tK = (tF + 459.67) / 1.8
Temperature Celsius (C) - tC	Temperature Fahrenheit (F) - tF	tF = 1.8tC + 32
Temperature Fahrenheit (F) - tF	Temperature Celsius (C) - tC	tC = (tF - 32) / 1.8
Temperature Kelvin (K) - tK	Temperature Celsius (C) - tC	tC = tK -273.15
Temperature Kelvin (K) - tK	Temperature Fahrenheit (F) - tF	tF = 1.8tK - 459.67

## Head losses in ordinary water pipes

Quantity of water		Head losses in ordinary water pipes											
Litres/min.	Litres/sec.	Nominal pipe diameter in inches and internal diameter in [mm]											
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"
10	0.16	15.75 0.855 9.910	21.25 0.470 2.407	27.00 0.292 0.784	35.75 0.438 0.249	41.25 0.416 0.249	52.50 0.584 0.331	68.00 0.677 0.346	80.25 0.730 0.415	92.50 0.832 0.312	105.0 0.914 0.510	130.0 1.004 0.510	155.5 1.174 0.677
15	0.25	20.11 1.282 2.407	27.00 0.470 2.407	35.75 0.438 0.249	41.25 0.416 0.249	52.50 0.584 0.331	68.00 0.677 0.346	80.25 0.730 0.415	92.50 0.832 0.312	105.0 0.914 0.510	130.0 1.004 0.510	155.5 1.174 0.677	
20	0.33	26.83 1.710 3.353	35.75 0.940 8.035	45.00 0.584 2.588	52.50 0.415 0.677	60.00 0.312 0.346	72.50 0.584 0.331	85.00 0.677 0.346	97.50 0.730 0.415	110.0 0.832 0.312	122.5 0.914 0.510	140.0 1.004 0.510	
25	0.42	33.53 2.138 4.993	45.00 1.174 11.91	56.25 0.730 3.834	63.75 0.415 1.004	71.25 0.312 0.510	83.75 0.584 0.331	96.25 0.677 0.346	108.75 0.730 0.415	121.25 0.832 0.312	133.75 0.914 0.510	151.25 1.004 0.510	
30	0.50	40.23 2.565 6.934	52.50 1.409 16.50	63.75 0.876 5.277	71.25 0.498 1.379	78.75 0.374 0.700	91.25 0.584 0.223	103.75 0.677 0.223	116.25 0.730 0.223	128.75 0.832 0.223	141.25 0.914 0.223	158.75 1.004 0.223	
35	0.58	46.93 2.993 9.154	60.00 1.644 21.75	71.25 1.022 6.949	78.75 0.581 1.811	86.25 0.438 0.914	98.75 0.584 0.291	111.25 0.677 0.291	123.75 0.730 0.291	136.25 0.832 0.291	148.75 0.914 0.291	166.25 1.004 0.291	
40	0.67	53.63 3.421 10.66	67.50 1.879 27.66	78.75 1.168 8.820	86.25 0.664 2.290	93.75 0.499 1.160	106.25 0.584 0.368	118.75 0.677 0.368	131.25 0.730 0.368	143.75 0.832 0.368	156.25 0.914 0.368	173.75 1.004 0.368	
50	0.83	67.53 4.289 13.14	82.50 2.349 41.40	93.75 1.460 13.14	101.25 0.830 3.403	108.75 0.623 1.719	121.25 0.584 0.544	133.75 0.677 0.544	146.25 0.730 0.544	158.75 0.832 0.544	171.25 0.914 0.544	188.75 1.004 0.544	
60	1.00	81.43 5.157 18.28	97.50 2.819 57.74	108.75 1.751 18.28	116.25 0.996 4.718	123.75 0.748 2.375	136.25 0.584 0.751	148.75 0.677 0.751	161.25 0.730 0.751	173.75 0.832 0.751	186.25 0.914 0.751	203.75 1.004 0.751	
70	1.12	95.33 5.888 24.18	112.50 3.288 76.49	123.75 2.043 24.18	131.25 1.162 6.231	138.75 0.873 3.132	151.25 0.539 0.988	163.75 0.677 0.988	176.25 0.730 0.988	188.75 0.832 0.988	201.25 0.914 0.988	218.75 1.004 0.988	
80	1.33	109.23 6.756 30.87	128.75 3.867 90.99	138.75 2.335 30.87	146.25 1.328 7.940	153.75 0.997 3.988	166.25 0.616 1.254	178.75 0.677 0.363	191.25 0.730 0.363	203.75 0.832 0.363	216.25 0.914 0.363	233.75 1.004 0.363	
90	1.50	123.13 7.624 38.30	144.75 4.449 38.30	153.75 2.627 38.30	161.25 1.494 9.828	168.75 1.122 4.927	181.25 0.693 1.551	193.75 0.677 0.449	206.25 0.730 0.449	218.75 0.832 0.449	231.25 0.914 0.449	248.75 1.004 0.449	
100	1.67	137.03 8.492 46.49	160.75 5.079 46.49	168.75 2.919 46.49	176.25 1.660 11.90	183.75 1.247 5.972	196.25 0.770 1.875	208.75 0.677 0.542	221.25 0.730 0.542	233.75 0.832 0.542	246.25 0.914 0.542	263.75 1.004 0.542	
125	2.08	171.43 10.66 70.41	206.25 12.50 70.41	216.25 3.649 70.41	223.75 2.075 17.93	231.25 1.558 8.967	238.75 0.982 2.802	251.25 0.574 0.809	263.75 0.677 0.365	276.25 0.730 0.195	288.75 0.832 0.101	306.25 0.914 0.101	
150	2.50	205.83 12.50 85.41	240.75 15.00 85.41	250.75 4.500 85.41	258.25 2.490 25.11	265.75 1.870 12.53	273.25 1.154 3.903	285.75 0.668 1.124	298.25 0.677 0.506	310.75 0.730 0.266	323.25 0.832 0.140	340.75 0.914 0.140	
175	2.92	240.23 14.38 100.41	285.00 17.50 100.41	295.00 5.417 100.41	302.50 2.904 33.32	310.00 2.182 16.66	317.50 1.347 5.179	330.00 0.803 1.488	342.50 0.677 0.670	355.00 0.730 0.338	367.50 0.832 0.184	385.00 0.914 0.184	
200	3.33	274.63 16.25 115.41	330.00 20.83 115.41	340.00 6.389 115.41	347.50 3.319 42.75	355.00 2.493 21.36	362.50 1.539 6.624	375.00 0.918 1.901	387.50 0.677 0.855	400.00 0.730 0.431	412.50 0.832 0.234	430.00 0.914 0.234	
250	4.17	343.03 20.00 143.81	407.50 25.00 143.81	417.50 8.542 143.81	425.00 4.149 64.86	432.50 3.117 32.32	440.00 1.924 10.03	452.50 1.147 2.860	465.00 0.823 1.282	477.50 0.677 0.646	490.00 0.832 0.350	507.50 0.914 0.126	
300	5.00	411.43 23.75 174.21	495.00 30.00 174.21	505.00 10.000 174.21	512.50 4.949 70.41	520.00 3.740 45.52	527.50 2.309 14.04	540.00 1.377 4.009	552.50 0.988 1.792	565.00 0.677 0.903	577.50 0.832 0.488	595.00 0.914 0.175	
400	6.67	548.23 30.00 224.21	652.50 37.50 224.21	662.50 13.333 224.21	670.00 6.583 88.41	677.50 4.987 58.82	685.00 3.078 18.17	697.50 1.836 6.828	710.00 1.137 3.053	722.50 0.677 1.530	735.00 0.832 0.829	752.50 0.914 0.294	
500	8.33	685.03 36.67 274.21	817.50 45.83 274.21	827.50 16.667 274.21	835.00 8.333 110.41	842.50 6.167 70.41	850.00 4.167 24.04	862.50 2.295 10.40	875.00 1.347 4.622	887.50 0.677 2.315	900.00 0.832 1.254	917.50 0.914 0.445	
600	10.0	821.83 43.33 324.21	982.50 55.00 324.21	992.50 20.000 324.21	1000.00 10.000 140.41	1007.50 7.500 90.41	1015.00 5.000 30.87	1027.50 2.753 14.62	1040.00 1.576 6.505	1052.50 0.677 3.261	1065.00 0.832 1.757	1082.50 0.914 0.623	
700	11.7	958.63 50.00 374.21	1137.50 66.67 374.21	1147.50 23.333 374.21	1155.00 11.667 150.41	1162.50 8.667 100.41	1170.00 5.667 36.41	1182.50 2.306 19.52	1195.00 1.376 8.693	1207.50 0.677 4.356	1220.00 0.832 2.345	1237.50 0.914 0.831	
800	13.3	1095.43 56.67 424.21	1297.50 75.00 424.21	1307.50 26.667 424.21	1315.00 13.333 170.41	1322.50 10.000 120.41	1330.00 7.500 90.41	1342.50 2.635 11.18	1355.00 1.582 5.582	1367.50 0.677 3.009	1380.00 0.832 1.666	1400.00 0.914 0.445	
900	15.0	1232.23 63.33 474.21	1452.50 83.33 474.21	1462.50 30.000 474.21	1470.00 15.000 190.41	1477.50 11.111 140.41	1485.00 8.333 100.41	1497.50 2.984 13.97	1510.00 1.732 6.983	1522.50 0.677 3.762	1535.00 0.832 2.130	1552.50 0.914 0.555	
1000	16.7	1369.03 70.00 524.21	1607.50 93.33 524.21	1617.50 33.333 524.21	1625.00 16.667 200.41	1632.50 12.500 150.41	1640.00 9.375 110.41	1652.50 3.284 17.06	1665.00 1.925 8.521	1677.50 0.677 4.595	1690.00 0.832 2.616	1707.50 0.914 0.674	
1250	20.8	1650.23 86.67 624.21	1937.50 112.50 624.21	1947.50 40.000 624.21	1955.00 20.000 240.41	1962.50 14.286 180.41	1970.00 10.000 130.41	1982.50 3.100 13.00	1995.00 2.406 7.010	2007.50 0.677 4.458	2020.00 0.832 2.458	2037.50 0.914 1.027	
1500	25.0	1931.43 100.00 724.21	2257.50 133.33 724.21	2267.50 46.667 724.21	2275.00 25.000 280.41	2282.50 18.182 220.41	2290.00 13.333 170.41	2302.50 3.720 18.42	2315.00 2.887 9.892	2327.50 0.677 5.882	2340.00 0.832 3.468	2357.50 0.914 1.444	
1750	29.2	2212.63 116.67 824.21	2597.50 158.33 824.21	2607.50 53.333 824.21	2615.00 30.000 330.41	2622.50 21.429 250.41	2630.00 15.000 200.41	2642.50 4.340 24.76	2655.00 3.368 13.30	2667.50 0.677 4.665	2680.00 0.832 2.197	2697.50 0.914 1.535	
2000	33.3	2493.83 133.33 924.21	2937.50 183.33 924.21	2947.50 60.000 924.21	2955.00 35.000 380.41	2962.50 25.000 300.41	2970.00 17.143 230.41	2982.50 4.960 31.94	2995.00 3.850 17.16	3007.50 0.677 5.995	3020.00 0.832 2.511	3037.50 0.914 1.754	
2500	41.7	3114.23 166.67 1124.21	3617.50 229.17 1124.21	3627.50 80.000 1124.21	3635.00 40.000 440.41	3642.50 28.571 340.41	3650.00 20.000 280.41	3662.50 4.812 26.26	3675.00 3.139 9.216	3687.50 0.677 6.332	3700.00 0.832 3.807	3717.50 0.914 2.496	
3000	50.0	3734.63 200.00 1324.21	4257.50 283.33 1324.21	4267.50 93.333 1324.21	4275.00 45.000 490.41	4282.50 31.250 390.41	4290.00 22.222 300.41	4302.50 5.023 22.72	4315.00 3.509 13.05	4327.50 0.677 8.926	4340.00 0.832 5.417	4357.50 0.914 2.509	
4000	66.7	4914.23 266.67 1724.21	5617.50 375.00 1724.21	5627.50 120.000 1724.21	5635.00 60.000 640.41	5642.50 40.000 480.41	5650.00 28.571 360.41	5662.50 4.386 14.42	5675.00 3.009 11.11	5687.50 0.677 10.000	5700.00 0.832 7.778	5717.50 0.914 3.009	
5000	83.3	6094.63 333.33 2124.21	6817.50 483.33 2124.21	6827.50 160.000 2124.21	6835.00 80.000 800.41	6842.50 53.333 600.41	6850.00 37.037 500.41	6862.50 5.023 22.72	6875.00 3.509 13.05	6887.50 0.677 11.111	6900.00 0.832 8.333	6917.50 0.914 3.509	
90° bends, slide valves		1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	2.0	2.5
T-pieces, non-return valves		4.0	4.0	4.0	5.0	5.0	5.0	6.0	6.0	6.0	7.0	8.0	9.0

The upper figures indicate the velocity of water in m/sec.

The lower figures indicate head loss in metres per 100 metres of straight pipes.

The table is calculated in accordance with H. Lang's new formula  $a=0.02$  and for a water temperature of 10 degree C. The head loss in bends, slide valves, T-pieces and non-return valves is equivalent to the metres of straight pipes states in the last two lines of the table.

To find the head loss in foot valves, multiply the loss in T-pieces by two.

## Head losses in plastic pipes

Upper figures indicate the velocity of in m/sec. Lower figures indicate head loss in metres per 100 metres of straight pipes.

Quantity of water		PELM/PEH PN 10											
Litres/min.	Litres/sec.	PELM						PEH					
		25 20.4	32 26.2	40 32.6	50 40.8	63 51.4	75 61.4	90 73.6	110 90.0	125 102.2	140 114.6	160 130.8	180 147.2
10	0.16	0.49 1.8	0.30 0.66	0.19 0.27	0.12 0.085								
15	0.25	0.76 4.0	0.46 1.14	0.3 0.6	0.19 0.18	0.12 0.63							
20	0.33	1.0 6.4	0.61 2.2	0.39 0.9	0.25 0.28	0.16 0.11							
25	0.42	1.3 10.0	0.78 3.5	0.5 1.4	0.32 0.43	0.2 0.17	0.14 0.074						
30	0.50	1.53 13.0	0.93 4.6	0.6 1.9	0.38 0.57	0.24 0.22	0.17 0.092						
35	0.58	1.77 16.0	1.08 6.0	0.69 2.0	0.44 0.70	0.28 0.27	0.2 0.12						
40	0.67	2.05 22.0	1.24 7.5	0.80 3.3	0.51 0.93	0.32 0.35	0.23 0.16	0.16 0.063					
50	0.83	2.54 37.0	1.54 11.0	0.99 4.8	0.63 1.40	0.4 0.50	0.28 0.22	0.2 0.09					
60	1.00	3.06 43.0	1.85 15.0	1.2 6.5	0.76 1.90	0.48 0.70	0.34 0.32	0.24 0.13	0.16 0.050				
70	1.12	3.43 50.0	2.08 18.0	1.34 8.0	0.86 2.50	0.54 0.83	0.38 0.38	0.26 0.17	0.18 0.068				
80	1.33		2.47 25.0	1.59 10.5	1.02 3.00	0.64 1.20	0.45 0.50	0.31 0.22	0.2 0.084				
90	1.50		2.78 30.0	1.8 12.0	1.15 3.50	0.72 1.30	0.51 0.57	0.35 0.26	0.24 0.092	0.18 0.05			
100	1.67		3.1 39.0	2.0 16.0	1.28 4.6	0.8 1.80	0.56 0.73	0.39 0.30	0.26 0.12	0.2 0.07			
125	2.08		3.86 50.0	2.49 24.0	1.59 6.6	1.00 2.50	0.70 1.10	0.49 0.50	0.33 0.18	0.25 0.10	0.20 0.055		
150	2.50			3.00 33.0	1.91 8.6	1.20 3.5	0.84 1.40	0.59 0.63	0.39 0.24	0.30 0.13	0.24 0.075		
175	2.92			3.5 38.0	2.23 11.0	1.41 4.3	0.99 1.80	0.69 0.78	0.46 0.30	0.36 0.18	0.28 0.09		
200	3.33			3.99 50.0	2.55 14.0	1.60 5.5	1.12 2.40	0.78 1.0	0.52 0.40	0.41 0.22	0.32 0.12	0.25 0.055	
250	4.17				3.19 21.0	2.01 8.0	1.41 3.70	0.98 1.50	0.66 0.57	0.51 0.34	0.40 0.18	0.31 0.105	0.25 0.06
300	5.00				3.82 28.0	2.41 10.5	1.69 4.60	1.18 1.95	0.78 0.77	0.61 0.45	0.48 0.25	0.37 0.13	0.29 0.085
400	6.67					3.21 19.0	2.25 8.0	1.57 3.60	1.05 1.40	0.81 0.78	0.65 0.44	0.50 0.23	0.39 0.15
500	8.33					4.01 28.0	2.81 11.5	1.96 5.0	1.31 2.0	1.02 1.20	0.81 0.63	0.62 0.33	0.49 0.21
600	10.0					4.82 37.0	3.38 15.0	2.35 6.6	1.57 2.60	1.22 1.50	0.97 0.82	0.74 0.45	0.59 0.28
700	11.7					5.64 47.0	3.95 24.0	2.75 8.0	1.84 3.50	1.43 1.90	1.13 1.10	0.87 0.60	0.69 0.40
800	13.3						4.49 26.0	3.13 11.0	2.09 4.5	1.62 2.60	1.29 1.40	0.99 0.81	0.78 0.48
900	15.0						5.07 33.0	3.53 13.5	2.36 5.5	1.83 3.20	1.45 1.70	1.12 0.95	0.08 0.58
1000	16.7						5.64 40.0	3.93 16.0	2.63 6.7	2.04 3.90	1.62 2.2	1.24 1.2	0.96 0.75
1250	20.8							4.89 25.0	3.27 9.0	2.54 5.0	2.02 3.0	1.55 1.6	1.22 0.95
1500	25.0							5.86 33.0	3.93 13.0	3.05 8.0	2.42 4.1	1.86 2.3	1.47 1.40
1750	29.2							6.86 44.0	4.59 17.5	3.56 9.7	2.83 5.7	2.17 3.2	1.72 1.9
2000	33.3								5.23 23.0	4.06 13.0	3.23 7.0	2.48 4.0	1.96 2.4
2500	41.7								6.55 34.0	5.08 18.0	4.04 10.5	3.10 6.0	2.45 3.5
3000	50.0								7.86 45.0	6.1 27.0	4.85 14.0	3.72 7.5	2.94 4.4
4000	66.7									8.13 43.0	6.47 24.0	4.96 13.0	3.92 7.5
5000	83.3										8.08 33.0	6.2 18.0	4.89 11.0

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