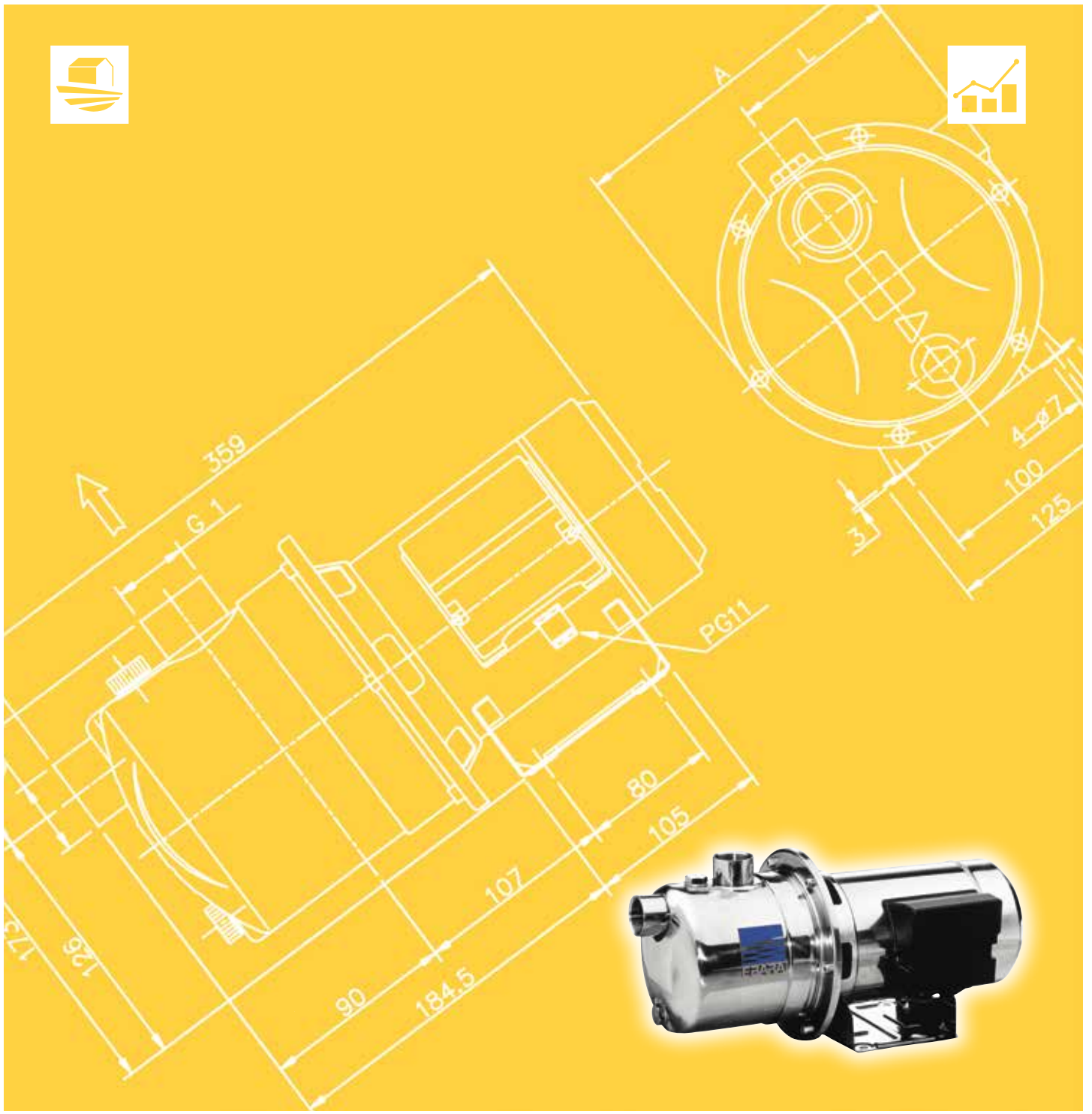




Japanese Technology since 1912

JE

Data Book 50Hz



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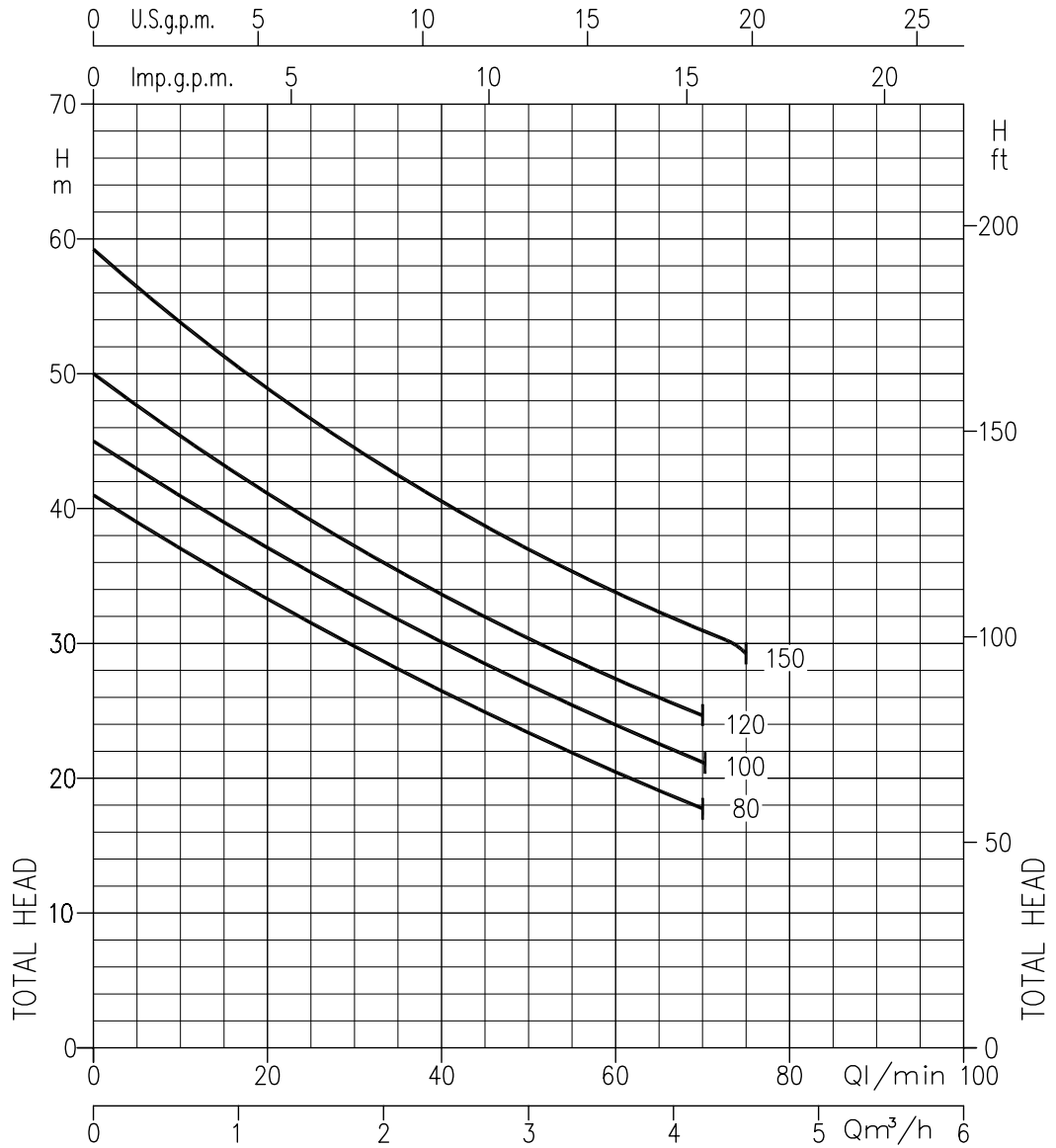
## SPECIFICATION

50Hz

Rev. I

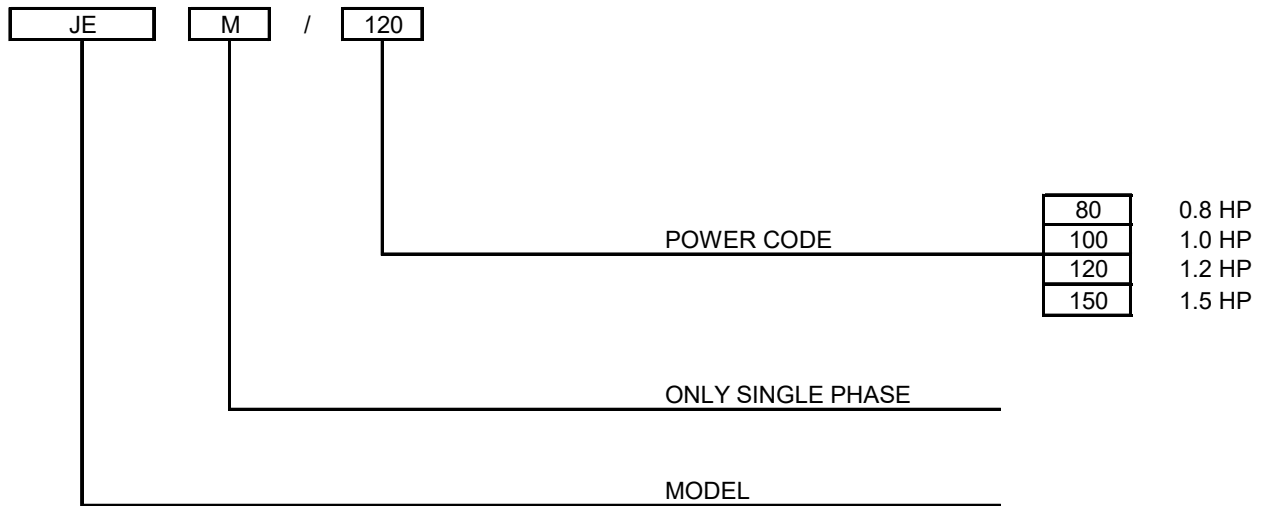
PUMP		
Liquid Handled	Type of liquid	Clean water
	Temperature [°C]	min. +5 max. +45
Maximum working pressure	[MPa]	0.6
Maximum suction depth	[m]	8
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction [inch]	G 1¼ UNI ISO 228
	Discharge [inch]	G 1 UNI ISO 228
Material	Casing	AISI 304
	Impeller	AISI 304
	Shaft seal	Ceramic/Carbon/NBR
	Casing cover	AISI 304
	Shaft	AISI 303 (Wet extension)
	Bracket	AISI 304
	Ejector	PPE+PS glass fibre reinforced
	Diffuser	PPE+PS glass fibre reinforced
Applicable standard of test		ISO 9906 – Annex A

MOTOR		
Type	Electric - TEFC	
	Single Phase	Three Phase
Efficiency level (Reg. 1781/2019)	-	IE3
No. of Poles	2	
Rotation speed [min <sup>-1</sup> ]	≈ 2800	
Insulation Class	F	
Protection degree (CEI EN 60034-5)	IP 44	
	IP 55 (on request)	
Power rating	[kW]	0.6 ÷ 1.1
	[HP]	0.8 ÷ 1.5
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	AISI 304	
Base material/motor support	AISI 304	
Dimensions of cable entry	PG11 - (see dimensions page 400)	



Pump type		Power		Q=Capacity								
Single Phase	Three Phase	[kW]	[HP]	l/min	0	20	30	40	50	60	70	75
				m³/h	0	1.2	1.8	2.4	3	3.6	4.2	4.5
JEM 80	JE 80	0.6	0.8	41	33	29	26.5	23.5	20.5	18	-	-
JEM 100	JE 100	0.75	1	45	37	33.5	30	27	24	21	-	-
JEM 120	JE 120	0.88	1.2	50	41	37	34	30.5	27.5	24.5	-	-
JEM 150	JE 150	1.1	1.5	59	49	44.5	40.5	37	34	31	29.5	-

**TYPE KEY**



**PERFORMANCE CURVE SPECIFICATIONS**

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A

The curves refer to effective speed of asynchronous motors at 50 Hz

Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

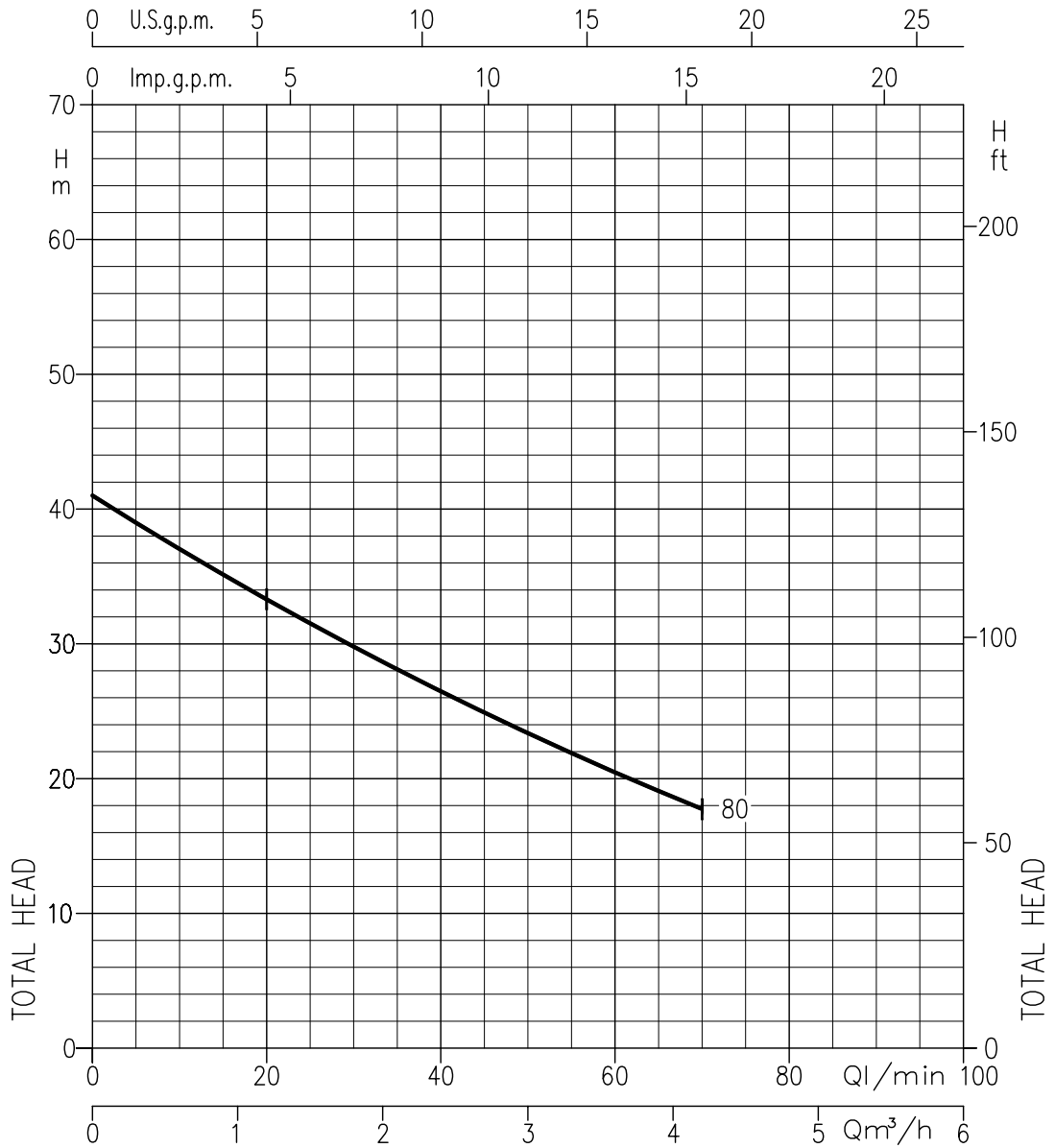
The continuous curves indicate the recommended working range. The dotted curve is only a guide.

In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

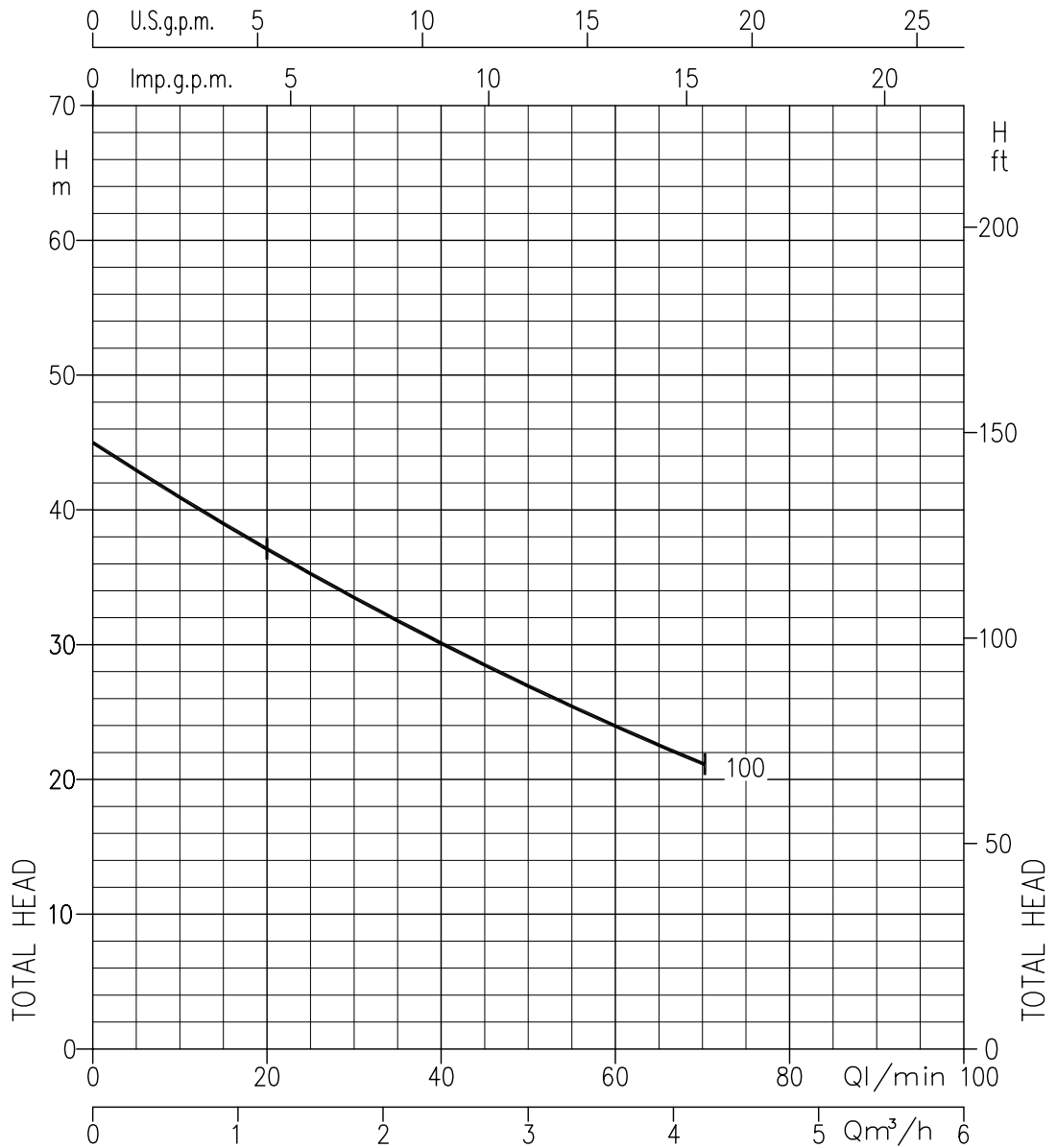
- Q = volume flow rate
- H = total head

JE 80 (0.6 kW) - Impeller diameter = 132 mm



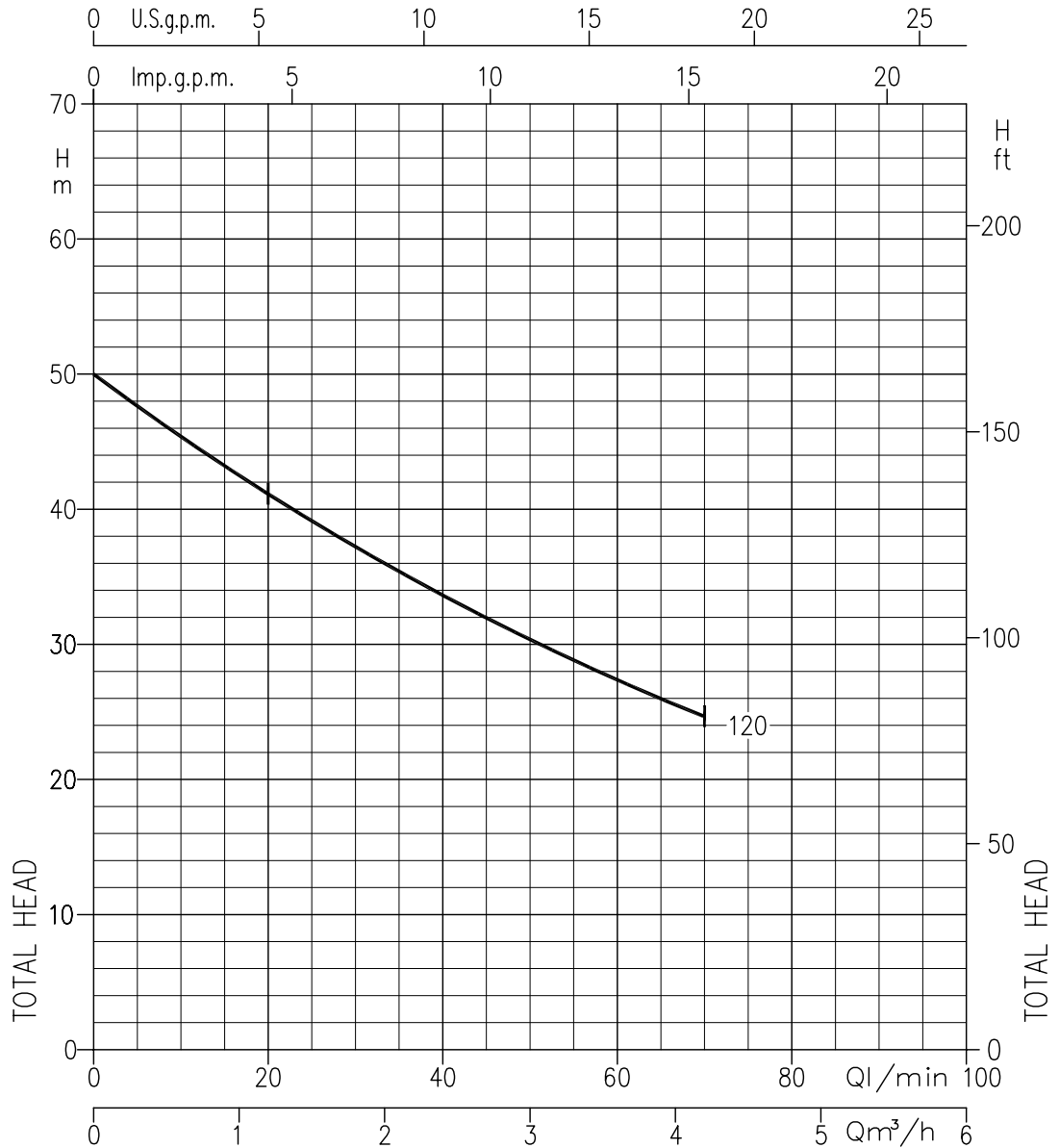
Rotation speed  $\approx$  2800 min<sup>-1</sup>  
Test standard: ISO 9906 – Annex A

JE 100 (0.75 kW) - Impeller diameter = 141 mm



Rotation speed  $\approx$  2800 min<sup>-1</sup>  
Test standard: ISO 9906 – Annex A

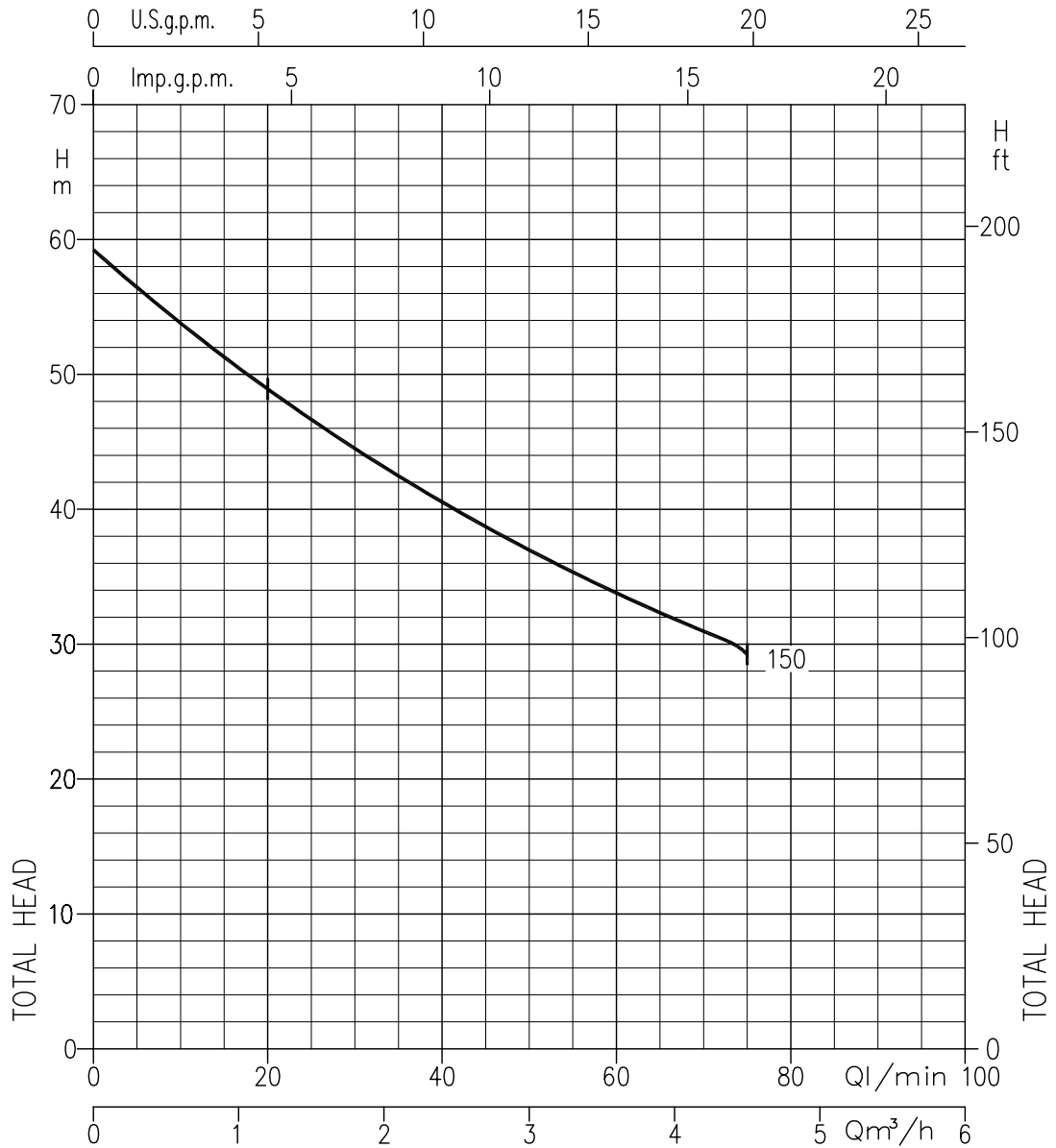
JE 120 (0.88 kW) - Impeller diameter = 141 mm



Rotation speed  $\approx$  2800 min<sup>-1</sup>  
Test standard: ISO 9906 – Annex A

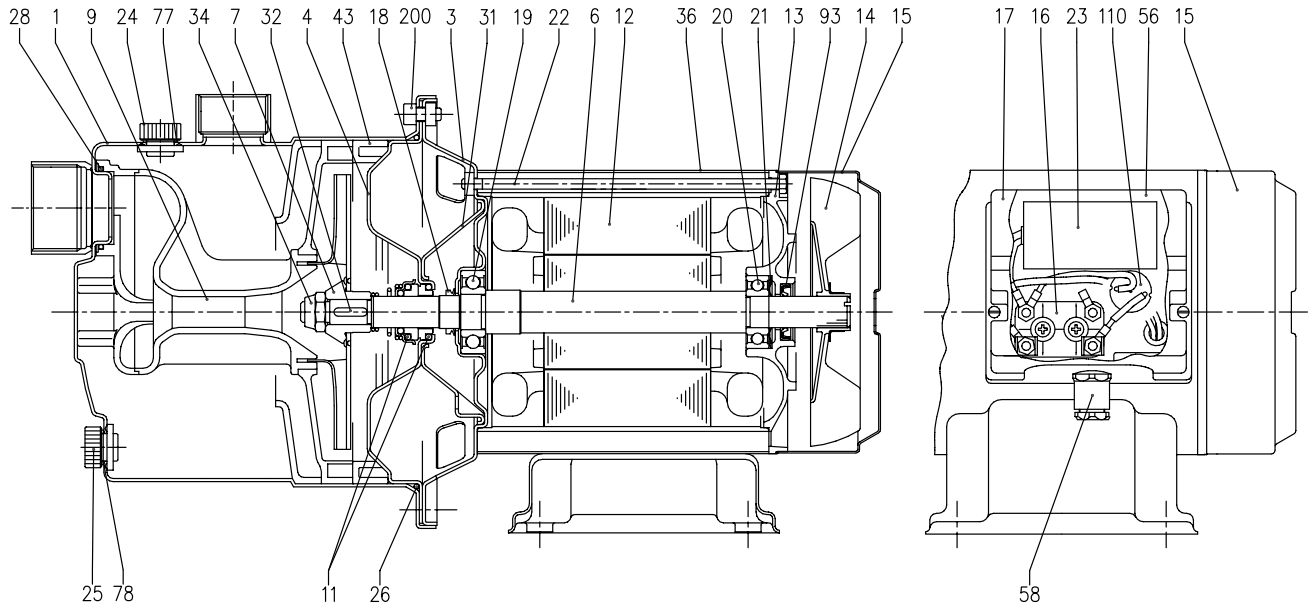


JE 150 (1.1 kW) - Impeller diameter = 141 mm



Rotation speed  $\approx$  2800 min<sup>-1</sup>  
Test standard: ISO 9906 – Annex A

### SECTIONAL VIEW

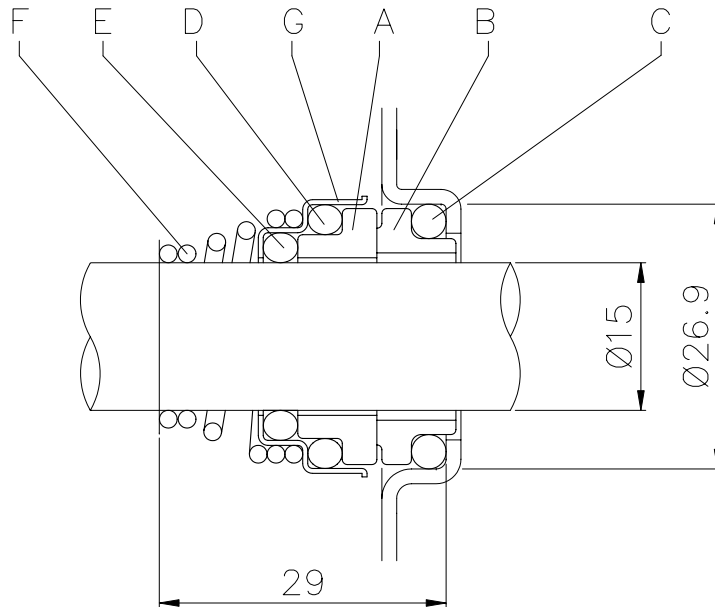


N°	PART NAME	MATERIAL	Q.TY	N°	PART NAME	MATERIAL	Q.TY
1	Casing	AISI 304	1	23	Capacitor [1]	-	1
3	Motor bracket	AISI 304	1	24	Priming plug	PA	1
4	Casing cover	AISI 304	1	25	Drain plug	PA	1
6	Shaft with rotor	AISI 303 (Wet extension)	1	26	O-ring	NBR	1
7	Impeller	AISI 304	1	28	O-ring	NBR	1
9	Diffuser Venturi tube	PPE+PS glass fibre reinforced	1	31	Thrust flange	AISI 304	1
11	Mechanical seal	Ceramic/Carbon/NBR	1	32	Key	AISI 304	1
12	Motor frame with stator	-	1	34	Impeller nut	AISI 304	1
13	Motor cover	Aluminium	1	36	External motor casing	AISI 304	1
14	Fan	PA	1	43	Space diffuser	PPE+PS glass fibre reinforced	1
15	Fan cover	AISI 304	1	56	Box gasket	NBR	1
16	Terminal board	-	1	58	Cable entry	-	1
17	Terminal box cover	PA66 glass fibre reinforced class V-0	1	77	O-ring	NBR	1
18	Splash ring	NBR	1	78	O-ring	NBR	1
19	Pump side ball bearing	-	1	93	Lip seal [2]	NBR	1
20	Fan side ball bearing	-	1	110	Protector [1]	-	1
21	Adjusting ring	Steel C70	1	200	Screw	Stainless steel A2 UNI7323	8
22	Tie rod	Fe 420 Zincate	4	-	-	-	-

[1] Only for single phase

[2] Only for IP55

**MECHANICAL SEAL**

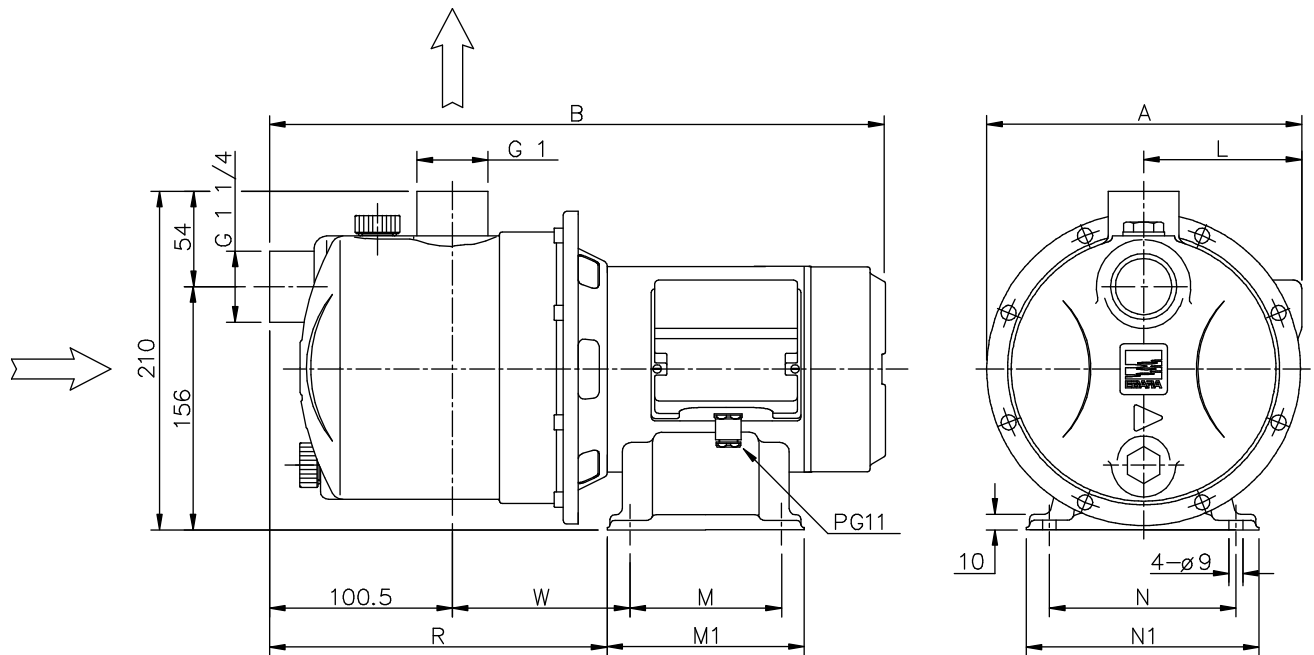


REF	PART NAME	MATERIAL
A	Rotary seal ring	Ceramic
B	Stationary seal ring	Carbon graphite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

**BEARINGS**

Pump type			
Single Phase	Three Phase	Pump side	Fan side
JEM 80	JE 80	6203 2DW C3	6202 2DW C3
JEM 100	JE 100	6203-ZZ C3	6202-ZZ C3
JEM 120	JE 120	6203-ZZ C3	6202-ZZ C3
JEM 150	JE 150	6204-ZZ C3	6203-ZZ C3

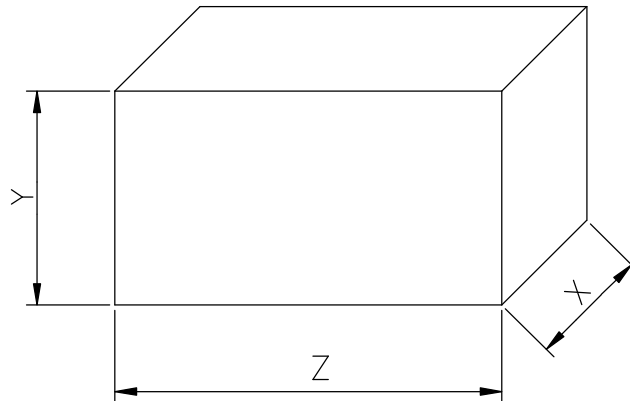
### PUMP



Pump type	Dimensions [mm]											Weight [kgf]		
	A		B		L		M	M1	N	N1	R	W	(*)	
	[1~]	[3~]	[1~]	[3~]	[1~]	[3~]							[1~]	[3~]
80	211	208	396	426	107	103	100	131	120	150	213	128	10,5	12
100	211	208	426	426	107	103	100	131	120	150	228	143	12	12
120	211	208	426	426	107	103	100	131	120	150	228	143	12,5	12,5
150	215,5	215,5	433,5	443,5	111,5	111,5	120	150	140	170	231	145,5	14,1	17,3

[1~] Single phase  
[3~] Three phase

PACKING



Pump type		Packing [mm]				Weight [kgf]		
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]		
		(*)	(*)					
JEM 80	JE 80	240	-	240	-	440	12	13,5
JEM 100	JE 100	240	240	240	240	440	13,5	13,5
JEM 120	JE 120	240	240	240	240	440	13,5	13,5
JEM 150	JE 150	240	239	240	225	440	15,5	18,3

[1~] Single phase  
 [3~] Three phase

### MOTOR DATA

Pump type		Power		Efficiency		Capacitor		Efficiency (% load)			Input		Full load current			Locked rotor current		
Single Phase	Three Phase	[kW]	[HP]	Single Phase	Three Phase	Single Phase		Three phase			Single Phase	Three Phase	[A]			[A]		
						[μF]	[V]	50%	75%	100%			230 V	230 V	400 V	230 V	230 V	400 V
JEM 80	JE 80	0,6	0,8	-	IE3	16	450	80,2	82,8	82,9	1,05	0,97	4,7	3,0	1,7	16,1	20,5	11,8
JEM 100	JE 100	0,75	1,0	-	IE3	20	450	80,9	82,3	82,1	1,33	0,91	6,4	3,0	1,7	22,7	19,7	11,4
JEM 120	JE 120	0,88	1,2	-	IE3	20	450	80,9	82,3	82,1	1,39	0,91	6,7	3,0	1,7	22,7	19,7	11,4
JEM 150	JE 150	1,1	1,5	-	IE3	35	450	83,0	85,8	85,6	1,70	1,77	7,6	5,8	3,3	41	47,4	27,4

### NOISE DATA

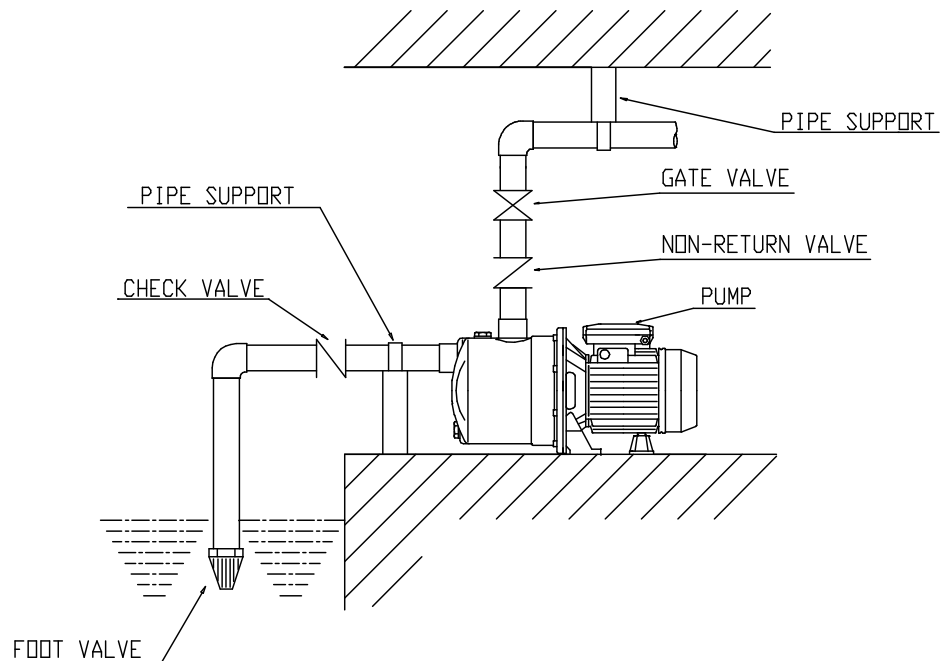
Pump type		Power		L <sub>pA</sub> - dB(A) *
Single Phase	Three Phase	[kW]	[HP]	
JEM 80	JE 80	0.6	0.8	71
JEM 100	JE 100	0.75	1.0	
JEM 120	JE 120	0.88	1.2	
JEM 150	JE 150	1.1	1.5	76

\* Mean value of several measures at 1m distance around the pump.  
Tolerance ± 2.5 dB.

If you use this pump on suction condition , it tends to breath the air from outside because the pressure in pump becomes vaccum condition when it stopped. So water in the pump sometimes fall down to breath the air from pipe connection. If it is used to operate continuously under this condition, this is the cause of breakdown to overheat inside the pump.



**So please install foot valve or check valve at suction pipe in order to prevent the pump from such a condition. And moreover will you please support the suction pipe and the delivery one to prevent the pump from leaning the weight of pipe.**

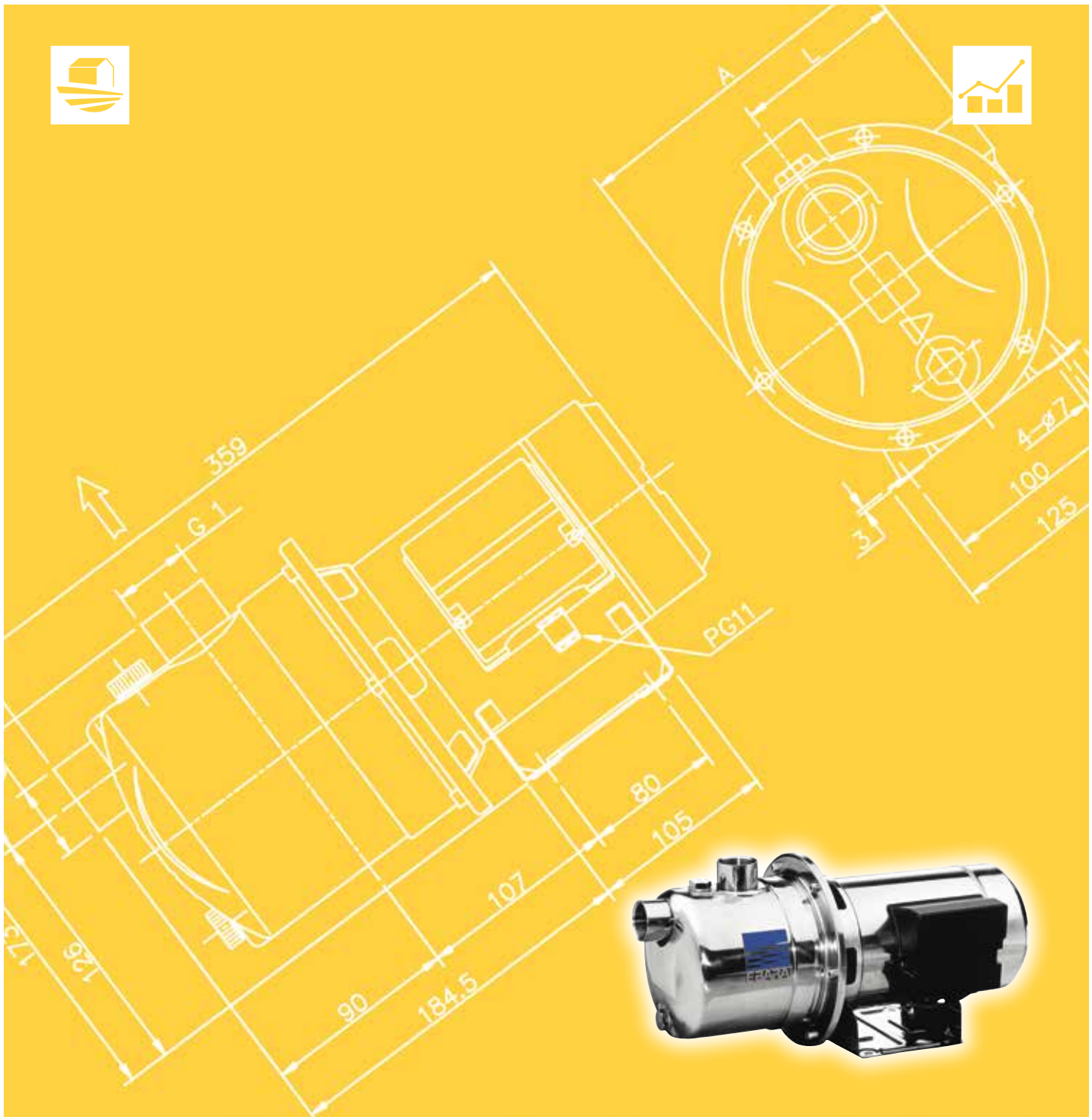




Japanese Technology since 1912

JES

Data Book 50Hz





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**SPECIFICATION**

50Hz

Rev. F

<b>PUMP</b>		
Liquid Handled	Type of liquid	Clean water
	Max temperature [°C]	45
Maximum working pressure	[MPa]	0.6
Maximum suction depth	[m]	8
Construction	Impeller	Closed centrifugal type
	Shaft seal type	Mechanical seal
	Bearing	Sealed ball bearing
Pipe Connection	Suction [inch]	G 1 UNI ISO 228
	Discharge [inch]	G 1 UNI ISO 228
Material	Casing	AISI 304
	Impeller	PPO mod. Glass fibre reinforced
	Casing cover	AISI 304
	Shaft seal	Ceramic/Carbon/NBR
	Shaft	AISI 303 (Wet extension)
	Ejector	PPO mod. glass fibre reinforced
	Bracket	AISI 304
	Diffuser	PPO mod. glass fibre reinforced
Applicable standard of test		ISO 9906:2012 – Grade 3B

<b>MOTOR</b>		
Type	Electric – TEFC	
	Single Phase	Three Phase
No. of Poles	2	
Rotation speed [min <sup>-1</sup> ]	≈ 3000	
Insulation Class	Class F	
Protection degree (CEI EN 60034-5)	IP 44 IP 55 (on request)	
Power rating [kW]	0.37 ÷ 0.6	
[HP]	0.5 ÷ 0.8	
Frequency [Hz]	50	
Voltage [V]	230 ±10%	230/400 ±10%
Capacitor	Built in	-
Over load protection	Built in	Provided by the user
Casing material	AISI 304	
Motor support	AISI 304	
Dimensions of cable entry	PG 11	

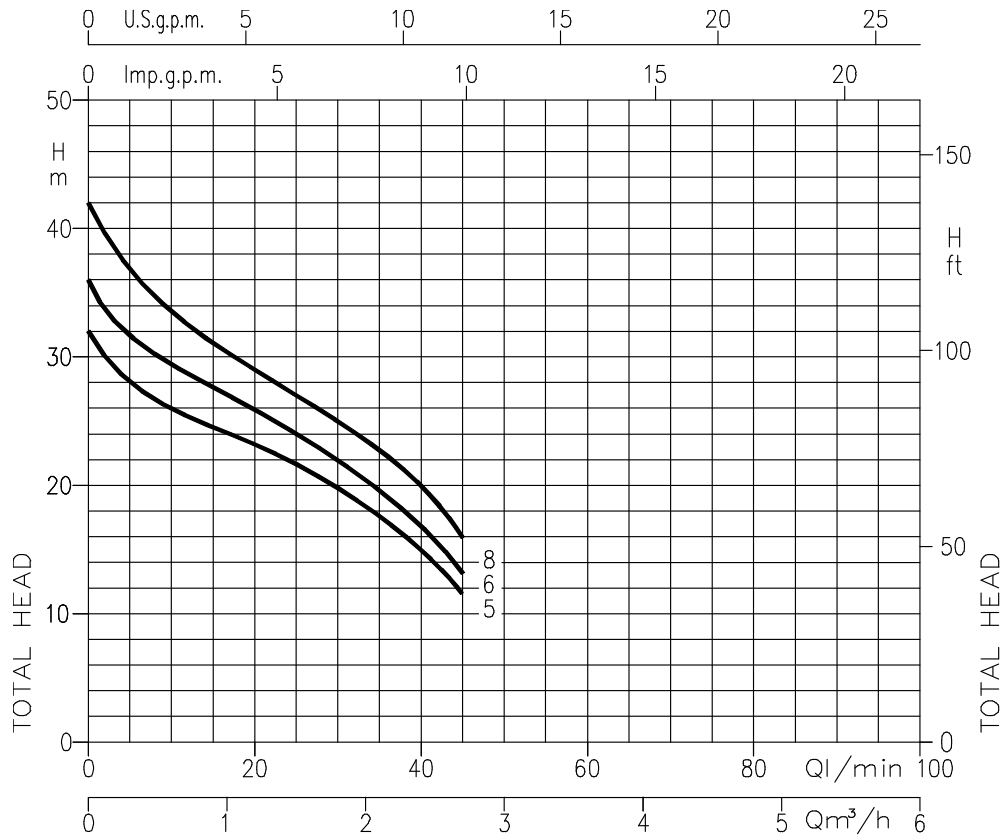
# CENTRIFUGAL PUMPS SELECTION CHART

# JES

50Hz

Rev. F

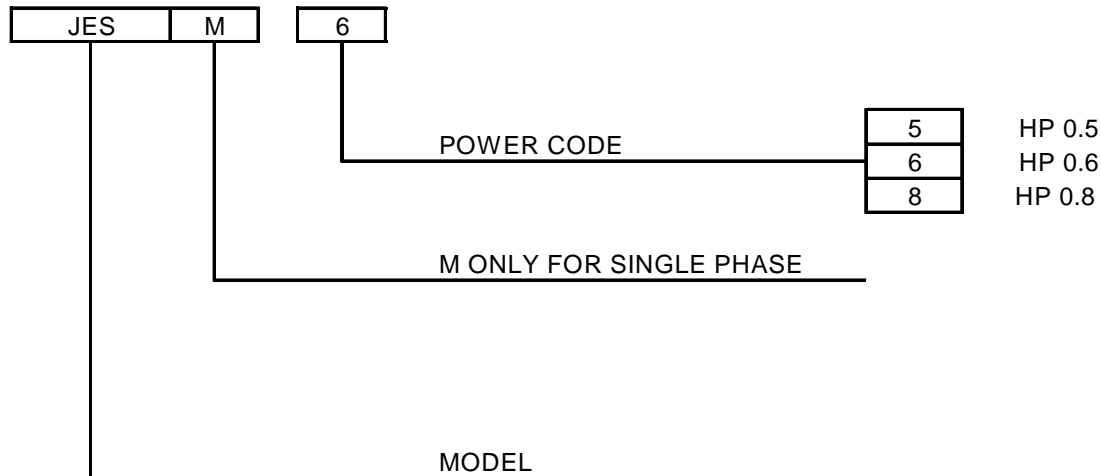
## PERFORMANCE RANGE



## SELECTION CHART

Pump Type		Power		Q=Capacity					
Single Phase	Three Phase	[kW]	[HP]	l/min	0	5	20	40	45
				m³/h	0	0.3	1.2	2.4	2.7
H=Total manometric head in meters									
JESM 5	JES 5	0.37	0.5		32	28	23	15	11.5
JESM 6	JES 6	0.44	0.6		36	31.5	26	17	13.5
JESM 8	JES 8	0.6	0.8		42	37	29	20	16

**TYPE KEY**



**PERFORMANCE CURVE SPECIFICATIONS**

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906:2012 – Grade 3B

The curves refer to effective speed of asynchronous motors at 50 Hz, 2 poles.

Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt)

The NPSH curve is an average curve obtained in the same conditions of performance curves.

The continuous curves indicate the recommended working range. The dotted curve is only a guide.

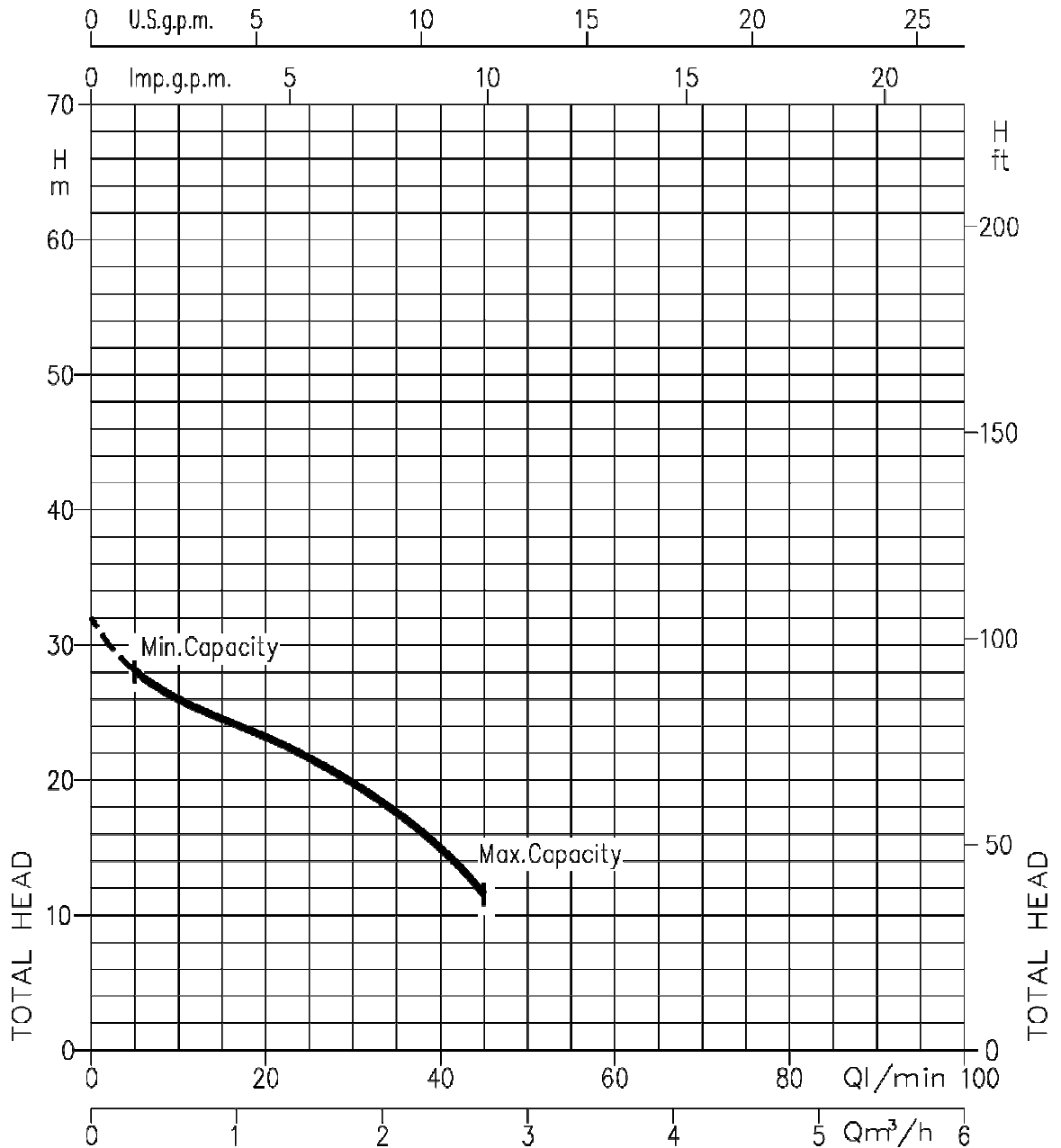
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

Q = volume flow rate

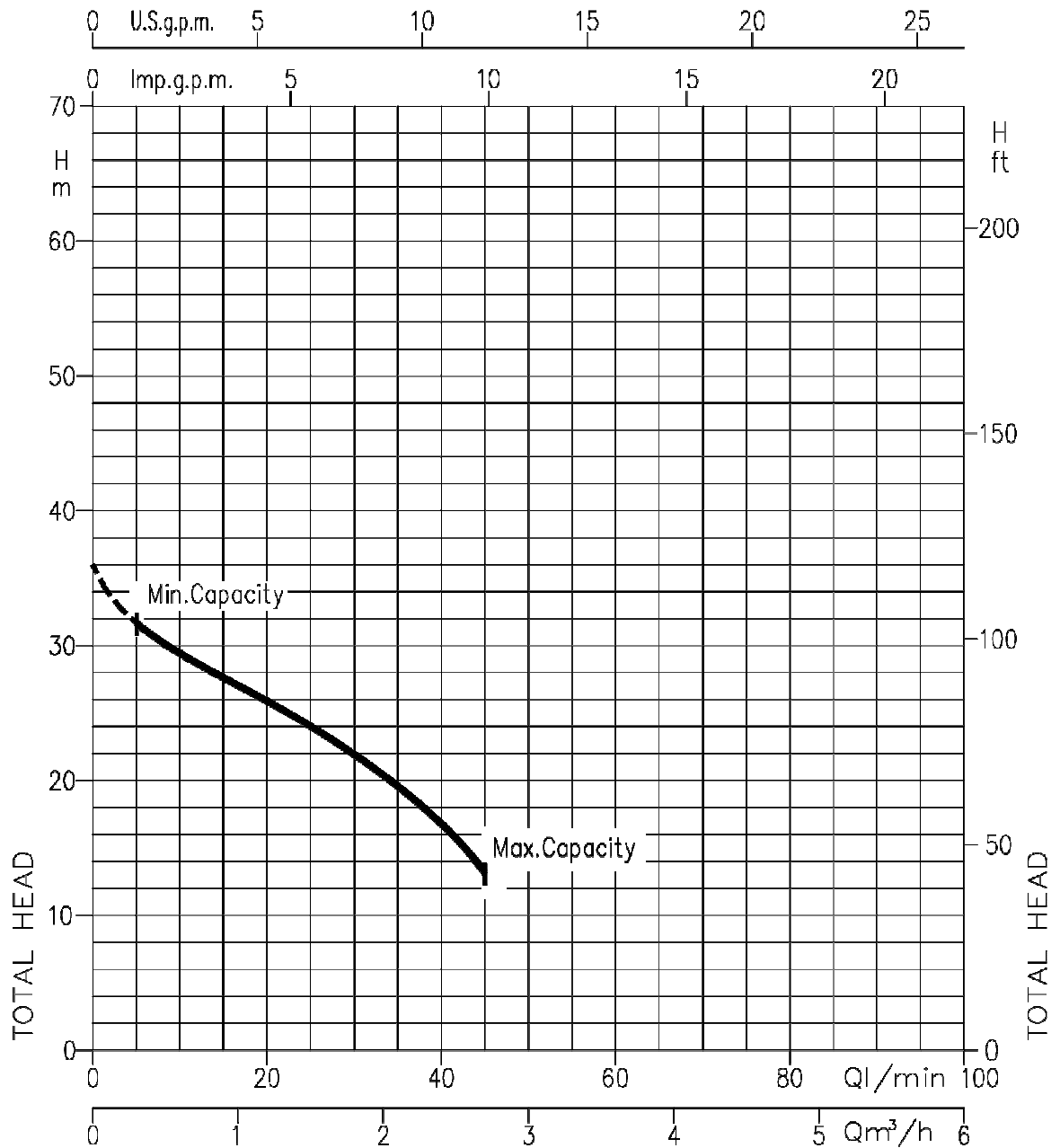
H = total head

JES 5 (0.37 kW) Impeller diameter = 104 mm



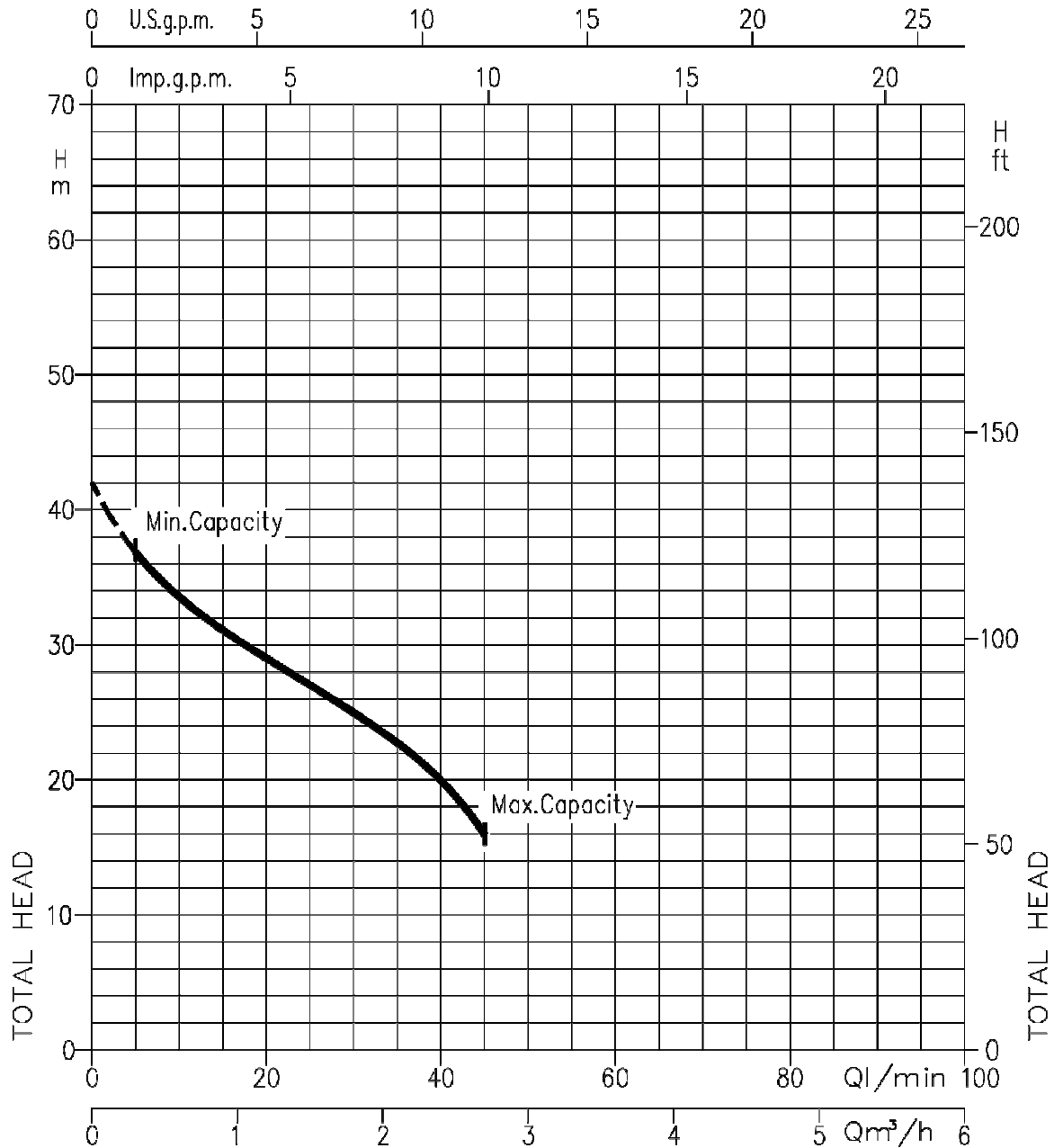
Rotation speed  $\approx 3000 \text{ min}^{-1}$   
 Test Standard: ISO 9906:2012 – Grade 3B  
 Temperature of water: 20°C

JES 6 (0.44 kW) Impeller diameter = 104 mm



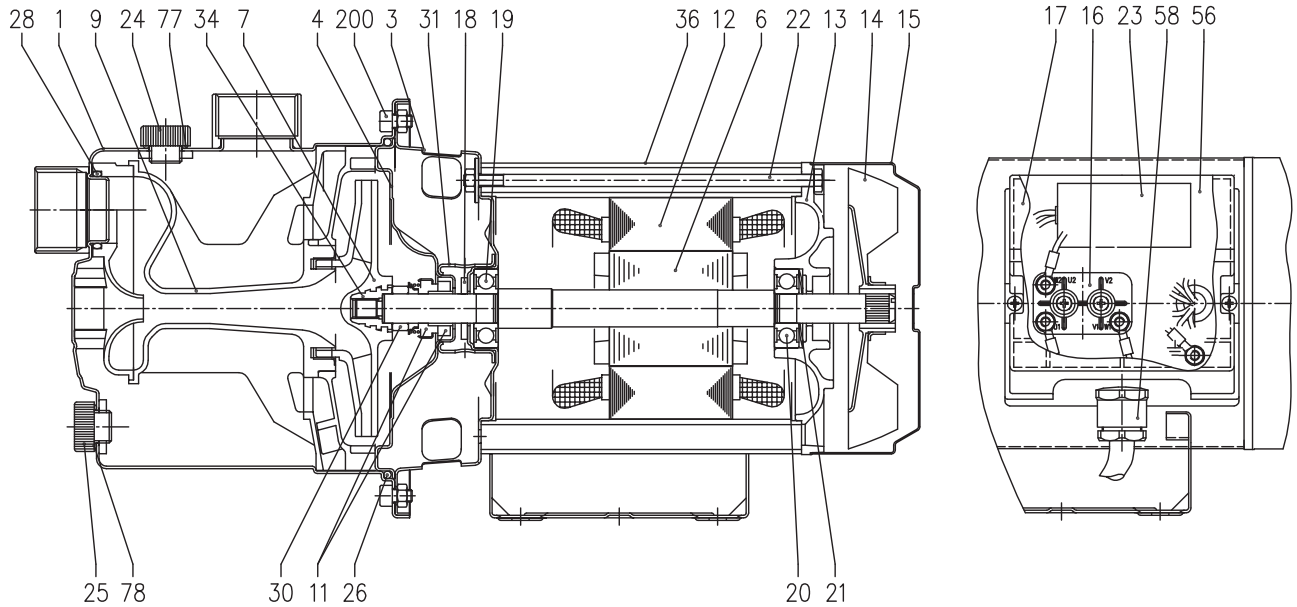
Rotation speed  $\approx 3000 \text{ min}^{-1}$   
Test standard: ISO 9906:2012 – Grade 3B  
Temperature of water: 20°C

JES 8 (0.6 kW) Impeller diameter = 110 mm



Rotation speed  $\approx 3000 \text{ min}^{-1}$   
 Test standard: ISO 9906:2012 – Grade 3B  
 Temperature of water: 20°C

### SECTIONAL VIEW



N°	PART NAME	MATERIAL	Q.TY
1	Casing	AISI 304	1
3	Motor bracket	Aluminium	1
4	Casing cover	AISI 304	1
6	Shaft with rotor	AISI 303 (Wet extension)	1
7	Impeller	PPE+PS glass fibre reinforced	1
9	Diffuser Venturi tube	PPE+PS glass fibre reinforced	1
11	Mechanical seal	[3] Carbon/Ceramic/NBR	1
12	Motor frame with stator	-	1
13	Motor cover	Aluminium	1
14	Fan	PA	1
15	Fan cover	Fe P04 Zincate	1
16	Terminal board	-	1
17	Terminal box cover	[2] Aluminium	1
18	Splash ring	NBR	1
19	Pump side ball bearing	6201 ZZ	1
20	Fan side ball bearing	6201 ZZ	1

N°	PART NAME	MATERIAL	Q.TY
21	Adjusting ring	Steel C70	1
22	Tie rod	Fe 42 Zincate	4
23	Capacitor	[1] -	1
24	Priming plug	PA	1
25	Drain plug	PA	1
26	O-ring	NBR	1
28	O-ring	NBR	1
30	Mechanical seal spacer	Brass	1
34	Impeller nut	[2] AISI 304	1
42	Motor support	Aluminium	1
52	Capacitor box	[1] ABS	1
53	Capacitor box cover with gasket	[1] ABS+NBR	1
56	Box gasket	NBR	1
77	O-ring	NBR	1
78	O-ring	NBR	1
200	Screw	Stainless steel A2 UNI7323	6

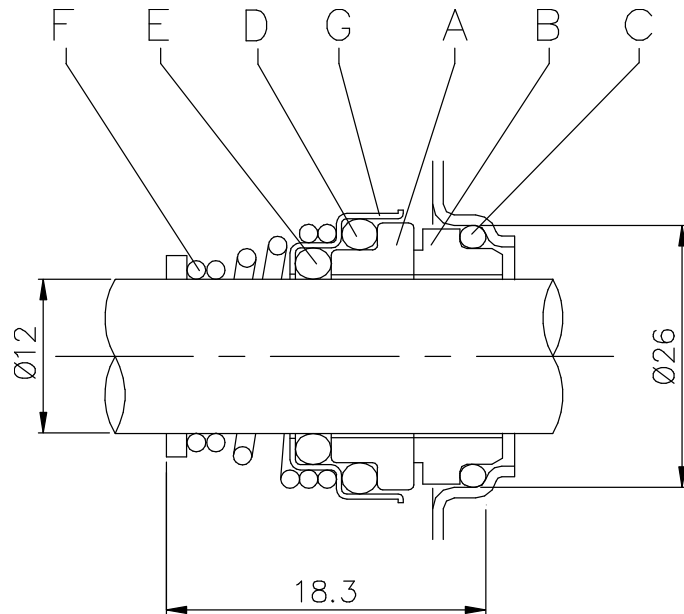
[1] Only for single phase

[2] Only for three phase

[3] See mechanical seal page. 301



**MECHANICAL SEAL**



REF	PART NAME	MATERIAL
A	Rotary seal ring	Ceramic
B	Stationary seal ring	Carbon graphite
C	O Ring	NBR
D	O Ring	NBR
E	O Ring	NBR
F	Self driving spring	AISI 316
G	Frame	AISI 304

**BEARINGS**

Type pumps		Ball Bearing	
Single phase 230 V	Three phase 230/400 V	Pump side	Fan side
JESM 5	JES 5	6201 ZZ	6201 ZZ
JESM 6	JES 6	6201 ZZ	6201 ZZ
JESM 8	JES 8	6201 ZZ	6201 ZZ

DIAGRAM AND ELECTRIC CONNECTIONS

SINGLE PHASE MOTOR

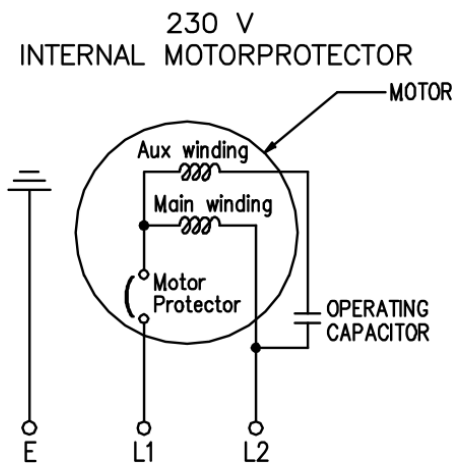
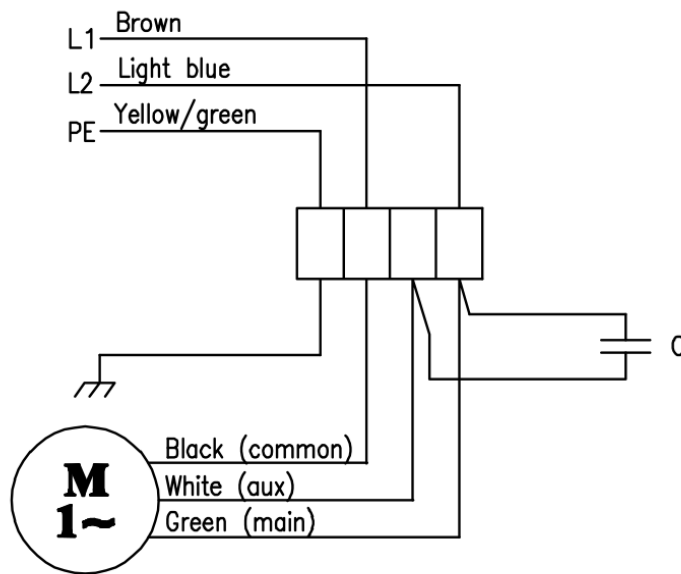
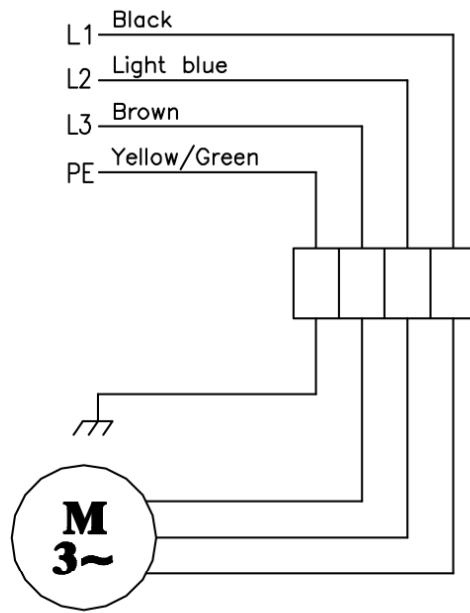


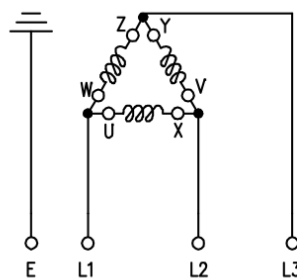
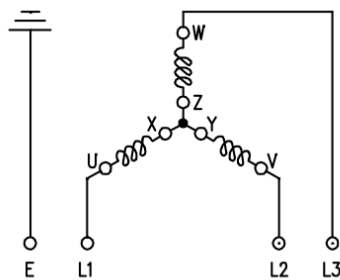
DIAGRAM AND ELECTRIC CONNECTIONS

THREE PHASE MOTOR

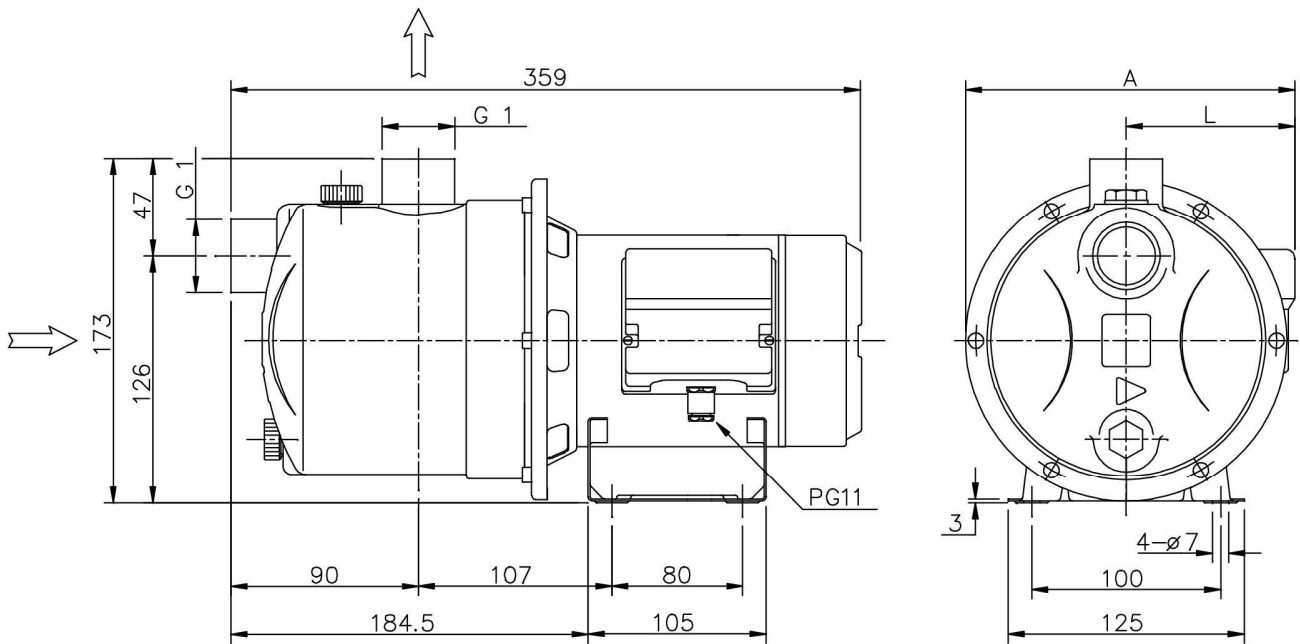


400 V  
STAR CONNECTION

230 V  
DELTA CONNECTION



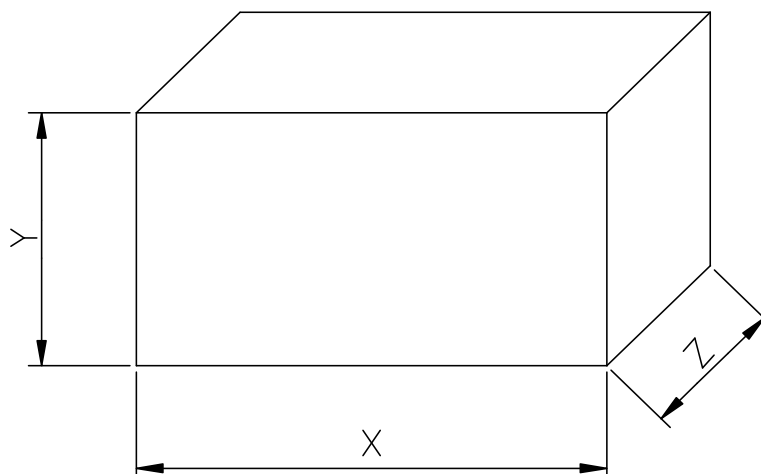
PUMP



Pump type	Dimensions [mm]			
	A		L	
JES	[1]	[2]	[1]	[2]
5	181	177	96	92
6	181	177	96	92
8	181	177	96	92

[1] = Three phase  
 [2] = Single phase

## PACKING



Pump type		Packing [mm]			Weight [kgf]	
Single Phase	Three Phase	X	Y	Z	[1~]	[3~]
JESM 5	JES 5	190	190	370	5.6	5.6
JESM 6	JES 6	190	190	370	5.8	5.8
JESM 8	JES 8	190	190	370	6	6

[1~] Single phase

[3~] Three phase

### MOTOR DATA

Pump type		Power		Capacitor		Input [kW]		Full load current [A]			Locked rotor current [A]		
Single Phase	Three Phase	[kW]	[HP]	Single Phase		Single Phase	Three Phase	Single Phase	Three Phase		Single Phase	Three Phase	
				[μF]	[V]			230 V	230 V	400 V	230 V	230 V	400 V
JESM 5	JES 5	0.37	0.5	10	450	0.44	0.43	2.1	1.5	0.85	6.3	6.4	3.7
JESM 6	JES 6	0.45	0.6	10	450	0.54	0.49	2.4	1.9	1.1	8.5	8.6	5.0
JESM 8	JES 8	0.6	0.8	12.5	450	0.63	0.58	3.0	2.25	1.3	10.6	10.7	6.2

If you use this pump on suction condition, it tends to breath the air from outside because the pressure in pump becomes vacuum condition when it stopped.  
So water in the pump sometimes fall down to breath the air from pipe connection.  
If it is used to operate continuously under this condition, this is the cause of breakdown to overheat inside the pump.



**So please install foot valve or check valve at suction pipe in order to prevent the pump from such a condition. And moreover will you please support the suction pipe and the delivery one to prevent the pump from leaning the weight of pipe.**

