



Japanese Technology since 1912

## EVMS - Vertical Multistage Pumps


Data Book 50Hz



**EVMS**




1-3-5-10-15-20-32-45-64-90



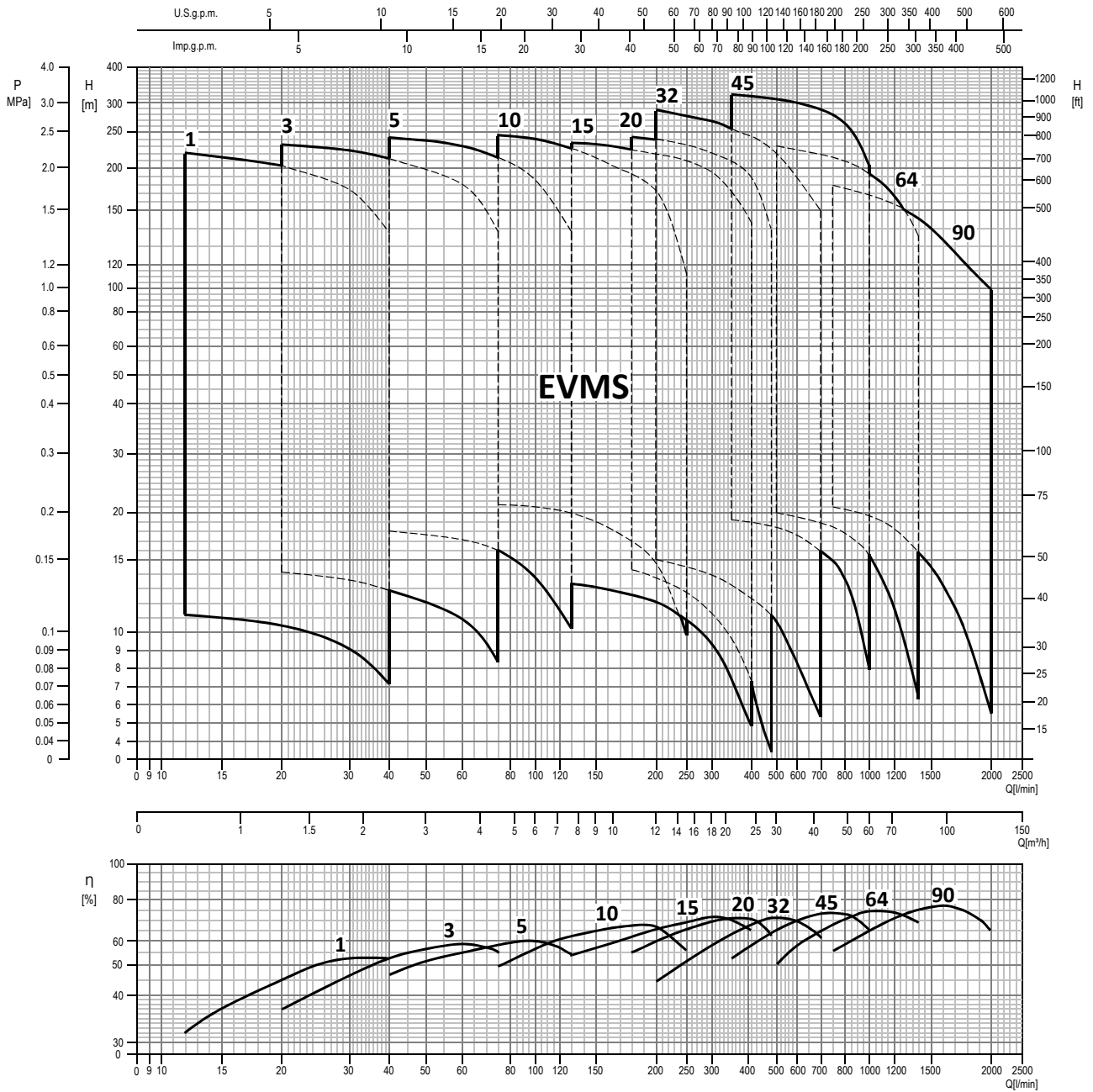
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## VERTICAL MULTISTAGE PUMPS

## TYPICAL APPLICATIONS

INDUSTRY	BUILDING SERVICE	WATER SUPPLY
		
<ul style="list-style-type: none"> <li>• <b>Water treatment</b> reverse osmosis ultra-filtration water purification micro-filtration softening, ionizing and demineralising systems swimming pools separators</li> <li>• <b>Boiler feeding</b> steam systems condensate systems</li> <li>• <b>Wash and clean</b> vehicle washing systems industrial part washing laundry systems supply of liquids with acids and bases supply of chemical liquids</li> <li>• <b>Chilling</b> handling of refrigerants for cooling thermal control systems industrial cooling laser cooling</li> <li>• <b>Machine tooling</b> cooling lubricant supply for tooling machines</li> <li>• <b>Pressure boosting</b> pressure boosting for industrial use</li> <li>• <b>Food &amp; Beverage</b> food washing systems bottle wash systems</li> <li>• <b>Pharmaceutical industries</b></li> <li>• <b>Marine applications</b> freshwater, deckwash, high fog and fire fighting on ships</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Pressure boosting</b> pressure boosting for buildings pressure boosting for high rise buildings/hotels</li> <li>• <b>Sprinkler systems</b></li> <li>• <b>Fire fighting systems</b> jockey pump</li> <li>• <b>District heating</b></li> <li>• <b>Heat exchangers / fan heaters</b></li> <li>• <b>Air conditioning systems</b></li> <li>• <b>Heating systems</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Water treatment</b> water treatment plants filtration water treatment plants transfer</li> <li>• <b>Pressure boosting</b> transfer from water treatment plants (mains)</li> <li>• <b>Irrigation</b> golf course / sport fields irrigation</li> <li>• <b>Agriculture</b> sprinkler irrigation drip irrigation</li> </ul>

PERFORMANCE RANGE  
EVMS(.)1-3-5-10-15-20-32-45-64-90



### PRODUCT FEATURES

**[General]**

**1. Pump Type**

The EVMS is Non-self-priming, vertical multistage in line, centrifugal pumps.

**2. Model range**

The EVMS comes in **1,3,5,10,15,20,32,45,64 and 90 m³/h** flow sizes for the majority market needs.

**3. Maximum operating pressure**

The EVMS can be operated at **16, 25, 30 bar or 35 bar as maximum.**

**4. Operating liquid temperature range**

The EVMS can be operated **from - 30°C to + 140°C** as the maximum.  
(please contact EBARA in case of -30°C to -15°C, or 120-140°C)







**5. Material options**

**AISI 304, AISI 316L and Cast iron** versions are available.

**6. Motor**

The EVMS can be coupled with **the commercial motors** that are acquired in the markets.  
The EVMS is provide as the electric pumps with IE3 motors for the over 0.75 kW.  
**PTC sensor** pre-installed for motors of 1.5 kW and above.  
Unlosable screw and sealing from 0.75 kW to 45 kW are standard for terminal box fixing.

**7. Certifications**

	Drinking water approval					Atmospheres explosibles approval
	DM174/2004 	ACS 	DVGW * 	WRAS 	PZH 	ATEX 2014/34/UE 
<u>Mechanical seal</u>	SiC/Carbon_ EPDM	SiC/Carbon_ EPDM	All variations with EPDM on page 6-7	SiC/Carbon_ EPDM	All variations with EPDM on page 6-7	All variations on page 6-7
EVMSG	●	-	-	-	●	●
EVMS	**	●	●	●	●	●
EVMSL	**	●	●	●	●	●

Note: \* DVGW W270 is certified for elastomers. Reg. Nr. DW-5253CR0217  
KTW is certified for organic components.

\*\* only for EVMS(.)1-20

● Available

**8. Conform to the provisions of the European directives**



**[Main Product Features]**

**1. Innovative hydraulic solutions**

- The **Commercial motors** can be fitted to all of the pump models without any modifications thanks to low pump axial thrust load.
- The low axial thrust load impellers can ensure **long life of the motor bearings**.
- **High pump efficiency** classified in MEI > 0.7 for all models.

**2. Energy saving**

- The **high efficiency IE3 motors** starting from 0.75 kW complied with the EuP 2005/32/EC and ErP 2009/125/EC directives.
- The **VFD (Variable frequency drive)** and the **commercial sensor** can be directly mounted on EVMS to **maintain physical constant operations** such as pumping pressure depending on the conditions of use.

**3. Piping connection options**

- The various pipe connections are available depending on the application requirements **Oval flange / Round flange / Loose flange / Victaulic® connection / Clamp connection.**
- The external dimensions can be adjusted to the replacement of the existing pump in the wide majority.

**4. Shaft seal solutions**

- Silicon carbide inclusions with graphite can be used as **dry lubricant to reduce friction.**
- It's conforming to EN12756 (ex DIN 24960)

**5. Easy maintenance**

- The **cartridge mechanical seal** enables the **plug in replacement** of the shaft seal without disassembling the motor bracket.
- The **spacer coupling** allows easy maintenance without having to remove heavy motors over 5.5 kW

**6. Smart plug solutions**

Air ventilation plug / Water filling & sensor plug / Commercial sensor fitting / Measurements for suction and discharge pressure / drain.

**PRODUCT SPECIFICATIONS**  
**EVMS(.)1-3-5-10-15-20**

PUMP																			
Version		EVMSG						EVMS						EVMSL					
Operating range	Nominal flow rate (m <sup>3</sup> /h)	1	3	5	10	15	20	1	3	5	10	15	20	1	3	5	10	15	20
	Maximum working pressure	1.6 / 2.5 MPa (16 / 25 bar)																	
	Liquid temperature range	-30°C to 140°C (please contact EBARA in case of -30°C to -15°C, or 120-140°C)																	
Key Components Material	Impeller	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)											
	Intermediate casing	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)											
	Liner ring	EN 1.4301 (AISI 304) + PPS						EN 1.4404 (AISI 316L) + PPS											
	Bottom casing	Cast Iron			EN 1.4301 (AISI 304)			EN 1.4301 (AISI 304)			EN 1.4404 (AISI 316L)								
	Casing cover	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)											
	Shaft	EN 1.4301 (AISI 304)	EVMSG / EVMS 1-3-10, EVMSG / EVMS 5-15-20 (depend on models)																
		EN 1.4404 (AISI 316L)	EVMSL 1-3-10, EVMSL 5-15-20 (depend on models)																
		EN 1.4462 (AISI 329A)	EVMSG / EVMS / EVMSL 5-15-20 (depend on models)																
	Shaft sleeve bearing	Tungsten carbide																	
	Shaft Seal	See the shaft seal options																	
	O-ring	EPDM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		FPM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Outer casing	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)											
	Motor Bracket	Cast Iron																	
	Tie rod	EN 1.4057 (AISI 431)																	
Coupling	up to 4.0 kW	Die cast aluminium																	
	from 5.5 kW	Cast Iron																	
Base	Cast Iron						Die cast aluminium												
Pipe connection	Oval flange up to 16 bar	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	Round flange (DIN)	up to 16 bar	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		from 16 bar to 25 bar	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	Loose round flange (DIN)	up to 16 bar							●	●	●	●	●	●	●	●	●		
		from 16 bar to 25 bar							●	●	●	●	●	●	●	●	●		
	Victaulic® up to 16/25 bar							●	●	●	●	●	●	●	●	●	●		
Clamp up to 16/25 bar							●	●	●	●	●	●	●	●	●	●			

● Available

MOTOR			
Power Source	Frequency	50 Hz	
	Phase	Single Phase	Three Phase
	Power rating	0.37 ÷ 2.2 kW	0.37 ÷ 18.5 kW
		0.5 ÷ 3.0 HP	0.5 ÷ 25 HP
Voltage	230 ± 10% V	230/400 ± 10% V (up to 4.0 kW) 400/690 ± 10% V (above 5.5 kW)	
Type	Type	IC411 - TEFC	
	Efficiency Level	from 0.37 kW up to 2.2 kW	- : from 0.37 kW up to 0.55 kW IE3 : above 0.75 kW
	No° of poles	2	
	Protection degree	IP55 : up to 11 kW IP56 : above 15 kW	
	Insulation Class	F (temperature rise class B)	
Others	Thermal Protection	-	PTC sensor pre-installed for motors of 1.5 kW and above
	Casing Material	Aluminium	
	Flange mount (IEC motor)	IM B14 : up to 4.0 kW IM B5 : above 5.5 kW	
	Terminal Box fixing	-	Unlosable screw and sealing from 0.75 kW to 18.5 kW

### PRODUCT SPECIFICATIONS EVMS(.).32-45-64-90

PUMP														
Version		EVMSG				EVMS				EVMSL				
Nominal flow rate (m³/h )		32	45	64	90	32	45	64	90	32	45	64	90	
<b>Operating range</b>	Maximum working pressure	1.6 / 2.5 / 3.0 / 3.5 MPa (16 / 25 / 30 / 35 bar)												
	Liquid temperature range	-30°C to 140°C (please contact EBARA in case of -30°C to -15°C, or 120-140°C)												
<b>Key Components Material *</b>	Impeller	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)						
	Intermediate casing	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)						
	Liner ring	EN 1.4301 (AISI 304) + PPS						EN 1.4404 (AISI 316L) + PPS						
	Bottom casing	Cast Iron EN GJL-250 EN 1561 (for EVMSG32 and EVMSG45-90 up to 16 bar) Cast Iron EN GJS 400-15 EN 1563 (for EVMSG45-90 above 25 bar)				EN 1.4308 (ASTM CF8)				EN 1.4408 (ASTM CF8M)				
	Casing cover	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)						
	Shaft	EN 1.4301 (AISI 304)	EVMSG / EVMS 32-45-64-90 (depend on models)											
		EN 1.4404 (AISI 316L)	EVMSL 32-45-64 (depend on models)											
		EN 1.4462 (AISI 329A)	EVMSL 45-64-90 (depend on models)											
	Shaft sleeve bearing	Tungsten carbide												
	Shaft Seal	See the shaft seal options												
	O-ring	EPDM	●	●	●	●	●	●	●	●	●	●	●	●
		FPM	●	●	●	●	●	●	●	●	●	●	●	●
	Outer casing	EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)						
	Motor Bracket	Cast Iron EN GJS 400-15 EN 1563												
	Tie rod	EN 1.4057 (AISI 431)												
Coupling	up to 4.0 kW	Die cast Aluminium EN AB-AISI11 Cu2 (Fe)												
	from 5.5 kW to 30 kW	Cast Iron EN GJL250 EN 1561												
	above 37 kW	Carbon Steel												
Base	Cast Iron EN GJL200 EN 1561													
<b>Pipe connection</b>	Round flange (DIN)	●	●	●	●									
	Louse round flange (DIN)					●	●	●	●	●	●	●	●	

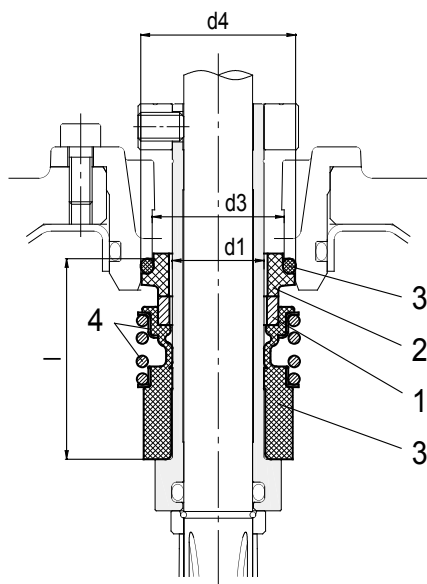
● Available

MOTOR		
<b>Power Source</b>	Frequency	50 Hz
	Phase	Three Phase
	Power rating	1.5 ÷ 45 kW
		2.0 ÷ 60 HP
Voltage	230/400 ± 10% V (up to 4.0 kW) 400/690 ± 10% V (above 5.5 kW)	
<b>Type</b>	Type	IC411 - TEFC
	Efficiency Level	IE3
	No° of poles	2
	Protection degree	IP55 : up to 11 kW IP56 : above 15 kW
	Insulation Class	F (temperature rise class B)
<b>Others</b>	Thermal Protection	PTC
	Casing Material	Aluminium : up to 30 kW Cast Iron : above 37 kW
		Flange mount (IEC motor)
	Terminal Box fixing	Unlosable screw and sealing from 1.5 kW to 45 kW

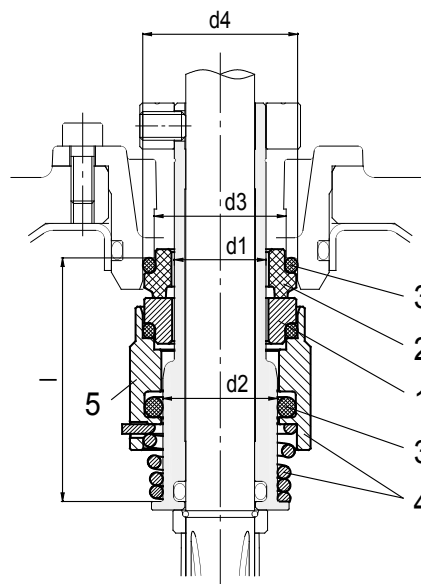


SHAFT SEAL  
EVMS(.)1-3-5-10-15-20

1. Shaft Seal



up to 16 bar  
Cartridge Unbalanced type



up to 25 bar  
Cartridge Balanced type

2. Type of Shaft Seal and Dimensions [mm]

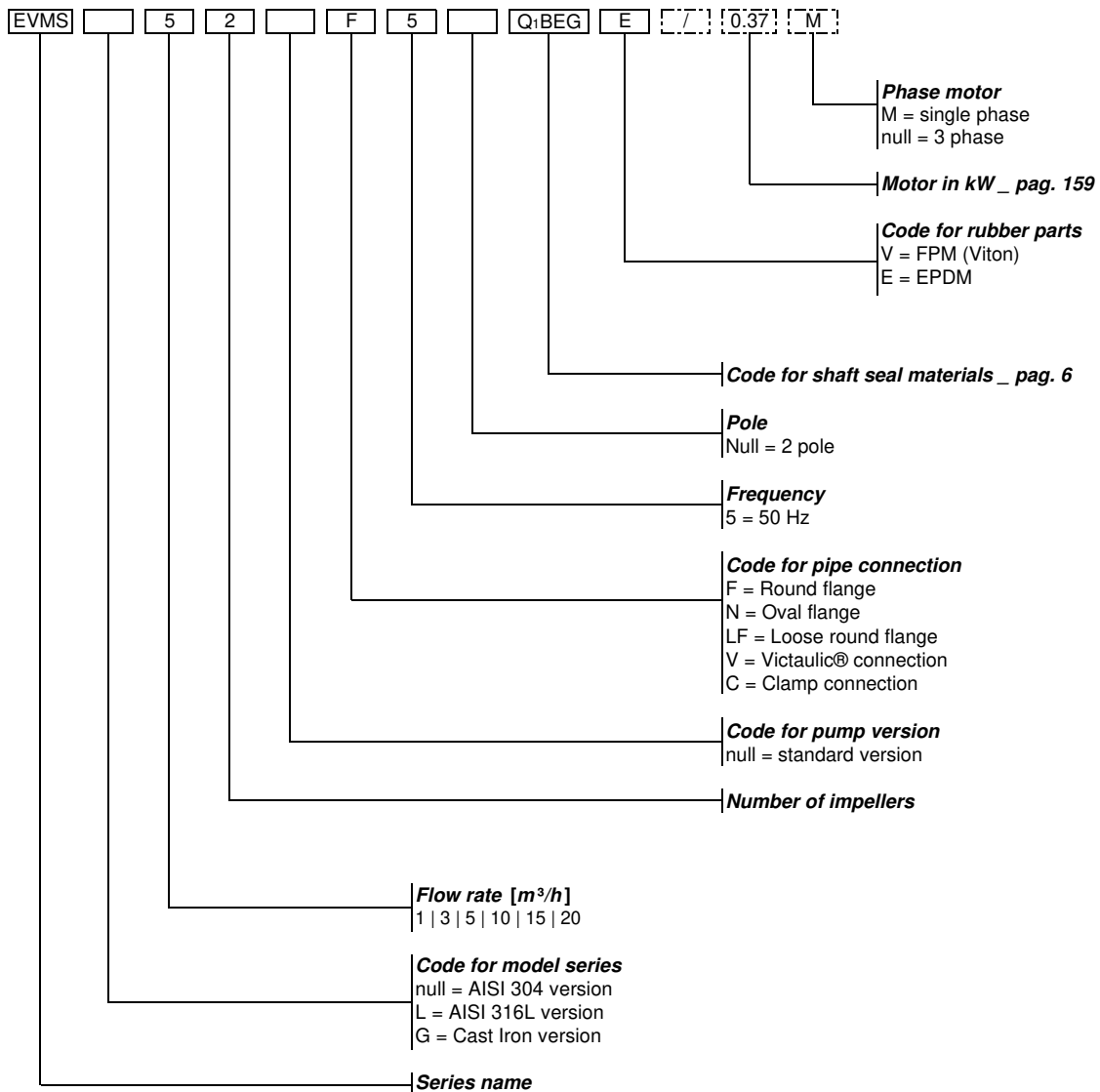
Type key	Availability	Max operating pressure	Max operating temperature	Shaft seal type		Shaft seal material								
				Cartridge		1		2		3		4		5
				Type	Code	Rotating part	Code	Stationary part	Code	Elastomers	Code	Compression spring	Collar	Code
Q1BEG	●	16 bar	- 30°C to + 120°C	Unbalanced	(-)	SiC	(Q1)	Carbon	(B)	EPDM	(E)	AISI 316		(G)
BQ1VG	●	16 bar	- 30°C to + 80°C	Unbalanced	(-)	Carbon	(B)	SiC	(Q1)	FPM	(V)	AISI 316		(G)
HQ1BEG	●	25 bar	- 30°C to + 140°C	Balanced	(H)	SiC	(Q1)	Carbon	(B)	EPDM	(E)	AISI 316		(G)
HQ1BVG	●	25 bar	- 30°C to + 80°C	Balanced	(H)	SiC	(Q1)	Carbon	(B)	FPM	(V)	AISI 316		(G)
HQgQ1EG	●	25 bar	- 30°C to + 140°C	Balanced	(H)	SiC with graphite	(Qg)	SiC	(Q1)	EPDM	(E)	AISI 316		(G)
HQgQ1VG	●	25 bar	- 30°C to + 80°C	Balanced	(H)	SiC with graphite	(Qg)	SiC	(Q1)	FPM	(V)	AISI 316		(G)

● Available

Pump model	Shaft seal type		Max operating pressure	d1 [mm]	d2 [mm]	d3 [mm]	d4 [mm]	l [mm]
EVMS 1/3/5	Cartridge	Unbalanced	16 bar	16	-	23	27	35
		Balanced	25 bar		20			42.5
EVMS 10/15/20	Cartridge	Unbalanced	16 bar	20	-	29	35	37.5
		Balanced	25 bar		24			45





TYPE KEY  
EVMS(.)1-3-5-10-15-20



Example for **pump without motor**:  
EVMS5 2F5Q1BEG E

Example for **pump with motor**:  
EVMS5 2F5Q1BEG E/0.37M

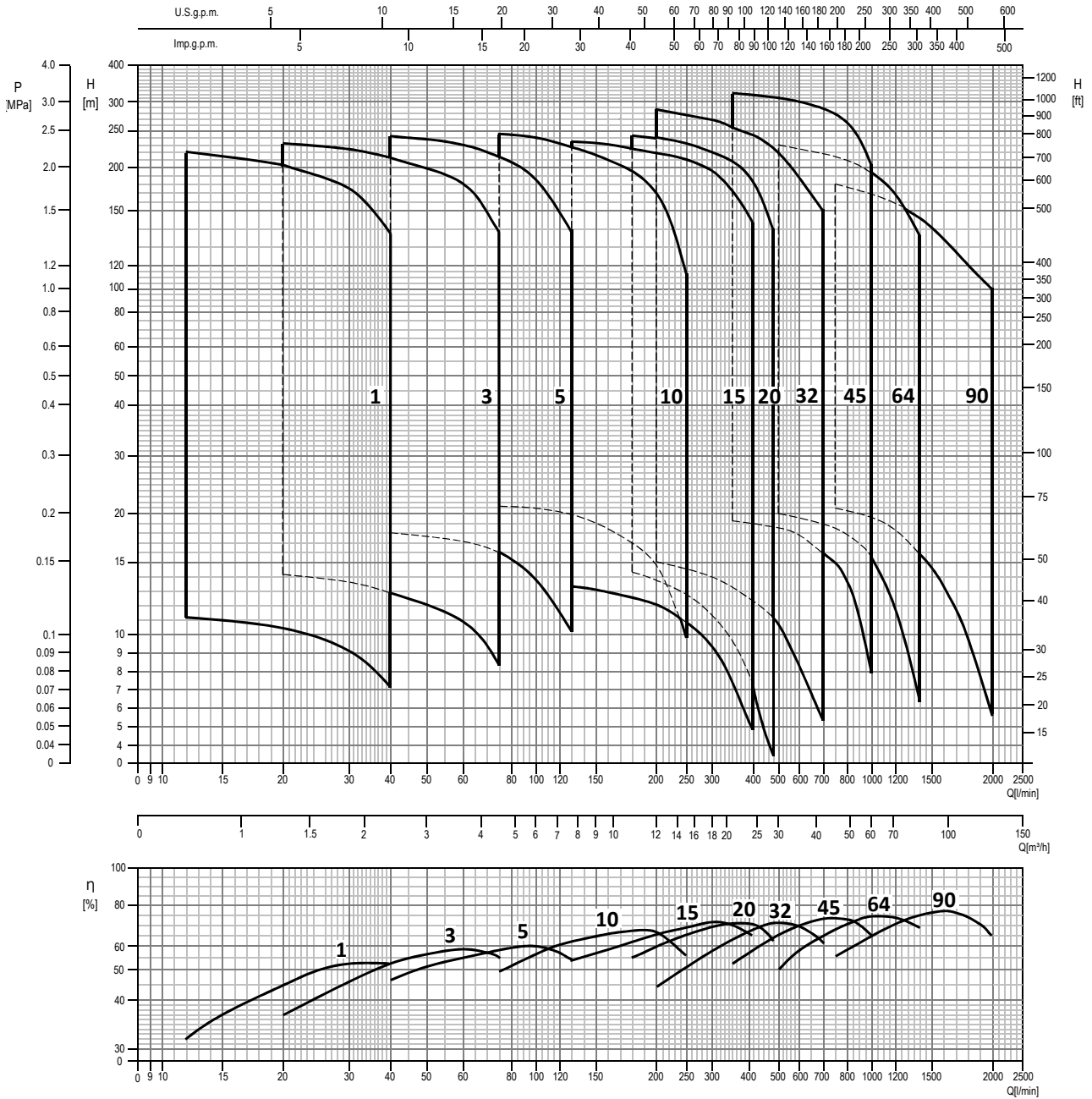
NAMEPLATE

 EBARA Pompe Europe S.p.A. Via Campo Sportivo, 30 36020 Cles (TN) Italy Phone +39 0444 708111 V.A.T. 01258680201		 MADE IN ITALY	
TYPE			
⊕ P/N		⊕	
Hmax	m	Hmin	m
Q	l/min	H	m
P2	kW	HP	
Hz		min <sup>-1</sup>	
MEI >		Hyd. eff.	%

- "TYPE" Pump model
- "P/N" Pump item number
- "Hmax" Maximum head
- "Hmin" Minimum head
- "Q" Indicates upper and lower flow rate limits
- "H" Indicates head limits corresponding to minimum and maximum flow rate
- "P2" Rated power of the motor (output at shaft)
- "HP" Rated power of the motor expressed in HP (Horse Power)
- "Hz" Frequency
- "min-1" Speed of rotation
- "MEI" Index of the pump's quality in relation to its efficiency
- "Hyd. Eff." Hydraulic efficiency of the pump

PERFORMANCE RANGE  
EVMS(.)1-3-5-10-15-20-32-45-64-90

PERFORMANCE RANGE



### CURVE SPECIFICATIONS

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

Tolerances according to ISO 9906:2012 - Grade 3B.

Performance curves are defined with the following rotation speed (nominal rotation speed of the motor):

- up to 15 kW: 2900 rpm
- from 18.5 kW up to 30 kW: 2950 rpm
- 37 kW and 45 kW: 2975 rpm

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.

During the pump selection, consider to get a safety margin of at least 0.5 m.

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
- $P_2$  - pump power input (shaft power)
- $\eta$  - pump efficiency
- NPSH - net positive suction head required by the pump
- MEI - minimum efficiency index
- $\varnothing D_2$  -  $P_2$  with full diameter
- $\varnothing D_2^*$  -  $P_2$  with reduced diameter

The minimum efficiency index (MEI) is a measure of the quality of a pump size in respect to its mean efficiency. The minimum efficiency index is based on the hydraulic efficiency and on the head at the best efficiency point.

The efficiency of a pump with trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller will adapt the pump to a fixed duty point, leading to a reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.

The operation of these water pumps with variable duty points may be more efficient and economical when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.

Information on benchmark efficiency is available at: [www.europump.org](http://www.europump.org) (Ecodesign section)

Information on benchmark efficiency graph for MEI = 0.7 for the pump are available at: [www.europump.org/efficiencycharts](http://www.europump.org/efficiencycharts) (refer to "Multistage Vertical 2900 rpm")

Minimum efficiency index (MEI)

Pump type	MEI
EVMS(.)1	> 0.70
EVMS(.)3	> 0.70
EVMS(.)5	> 0.70
EVMS(.)10	> 0.70
EVMS(.)15	> 0.70
EVMS(.)20	> 0.70
EVMS(.)32	> 0.60
EVMS(.)45	> 0.70
EVMS(.)64	> 0.40
EVMS(.)90	> 0.50

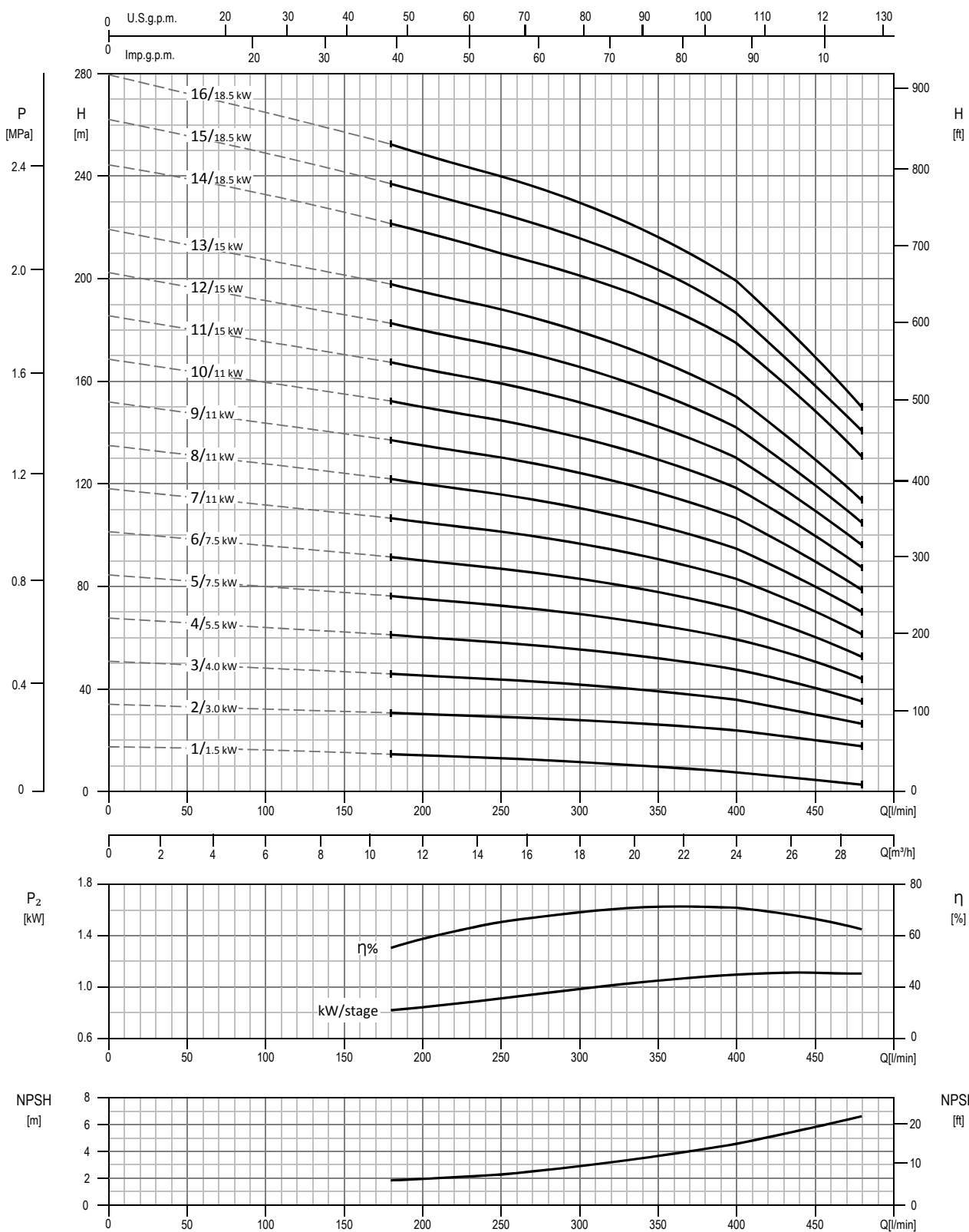
### SELECTION CHART EVMS(.)10-15-20

Pump Type		Motor			Maximum working pressure [MPa]	Q=Capacity															
		kW	HP	Size		H=Total manometric head in metres															
Single phase	Three phase							l/min	0	75	100	130	150	180	200	250	300	350	400	450	480
						m³/h	0	4.5	6	7.8	9	10.8	12	15	18	21	24	27	28.8		
10	EVMS(.)10 2/0.75M	EVMS(.)10 2/0.75	0.75	1	80	1.6	21.8	21.2	20.8	19.7	18.7	16.6	14.9	9.8	-	-	-	-	-		
	EVMS(.)10 3/1.5M	EVMS(.)10 3/1.5	1.5	2	90	1.6	32.7	31.8	31.2	29.6	28.0	24.9	22.4	14.7	-	-	-	-	-		
	EVMS(.)10 4/2.2M	EVMS(.)10 4/2.2	2.2	3	90	1.6	43.6	42.4	41.7	39.5	37.3	33.2	29.8	19.6	-	-	-	-	-		
	EVMS(.)10 5/2.2M	EVMS(.)10 5/2.2	2.2	3	90	1.6	54.5	53	52	49.3	46.7	41.5	37.3	24.6	-	-	-	-	-		
	EVMS(.)10 6/2.2M	EVMS(.)10 6/2.2	2.2	3	90	1.6	65.5	63.5	62.5	59	56	50	45	29.5	-	-	-	-	-		
	-	EVMS(.)10 7/3.0	3.0	4	100	1.6	76.5	74	73	69	65.5	58	52	34.4	-	-	-	-	-		
	-	EVMS(.)10 8/3.0	3.0	4	100	1.6	87.0	84.5	83.5	79	74.5	66.5	59.5	39.3	-	-	-	-	-		
	-	EVMS(.)10 9/4.0	4.0	5.5	112	1.6	98	95.5	93.5	89	84	74.5	67	44	-	-	-	-	-		
	-	EVMS(.)10 10/4.0	4.0	5.5	112	1.6	109	106	104	98.5	93.5	83	74.5	49	-	-	-	-	-		
	-	EVMS(.)10 11/4.0	4.0	5.5	112	1.6	120	116	115	109	103	91.5	82	54	-	-	-	-	-		
	-	EVMS(.)10 12/5.5	5.5	7.5	132	1.6	131	127	125	118	112	99.5	89.5	59	-	-	-	-	-		
	-	EVMS(.)10 14/5.5	5.5	7.5	132	1.6	153	148	146	138	131	116	104	68.5	-	-	-	-	-		
	-	EVMS(.)10 15/5.5	5.5	7.5	132	1.6	163	159	156	148	140	124	112	73.5	-	-	-	-	-		
	-	EVMS(.)10 16/7.5	7.5	10	132	2.5	174	169	167	158	149	133	119	78.5	-	-	-	-	-		
	-	EVMS(.)10 18/7.5	7.5	10	132	2.5	196	191	187	178	168	149	134	88.5	-	-	-	-	-		
	-	EVMS(.)10 19/7.5	7.5	10	132	2.5	207	201	198	188	177	158	142	93.5	-	-	-	-	-		
	-	EVMS(.)10 21/7.5	7.5	10	132	2.5	229	222	219	207	196	174	157	103	-	-	-	-	-		
	-	EVMS(.)10 22/11	11	15	160	2.5	240	233	229	217	205	183	164	108	-	-	-	-	-		
-	EVMS(.)10 23/11	11	15	160	2.5	251	244	240	227	215	191	172	113	-	-	-	-	-			
15	EVMS(.)15 1/1.1M	EVMS(.)15 1/1.1	1.1	1.5	80	1.6	14.9	-	-	13.3	13	12.4	12.1	10.8	9.5	7.5	4.8	-	-		
	EVMS(.)15 2/2.2M	EVMS(.)15 2/2.2	2.2	3	90	1.6	29.5	-	-	27.5	27.1	26	26.1	24.9	23.1	20.4	16.8	-	-		
	-	EVMS(.)15 3/3.0	3.0	4	100	1.6	44.5	-	-	41.5	40.5	39.7	39.1	37.3	34.7	30.6	25.2	-	-		
	-	EVMS(.)15 4/4.0	4.0	5.5	112	1.6	59	-	-	55	54.5	53	52	50	46.5	41	33.6	-	-		
	-	EVMS(.)15 5/5.5	5.5	7.5	132	1.6	73.5	-	-	69	68	66	65	62	58	51	42	-	-		
	-	EVMS(.)15 6/5.5	5.5	7.5	132	1.6	88.5	-	-	82.5	81.5	79.5	78	74.5	69.5	61	50.5	-	-		
	-	EVMS(.)15 7/7.5	7.5	10	132	1.6	103	-	-	96.5	95.0	92.5	91	87	81	71.5	58.5	-	-		
	-	EVMS(.)15 8/7.5	7.5	10	132	1.6	118	-	-	110	109	106	104	99.5	92.5	81.5	67	-	-		
	-	EVMS(.)15 9/11	11	15	160	1.6	133	-	-	124	122	119	117	112	104	92	75.5	-	-		
	-	EVMS(.)15 10/11	11	15	160	1.6	147	-	-	138	136	132	130	124	116	102	84	-	-		
	-	EVMS(.)15 11/11	11	15	160	1.6	162	-	-	151	149	146	143	137	127	112	92.5	-	-		
	-	EVMS(.)15 12/11	11	15	160	2.5	177	-	-	165	163	159	156	149	139	122	101	-	-		
-	EVMS(.)15 13/11	11	15	160	2.5	191	-	-	179	176	172	169	162	150	133	109	-	-			
-	EVMS(.)15 15/15	15	20	160	2.5	221	-	-	206	203	199	195	187	174	153	126	-	-			
-	EVMS(.)15 17/15	15	20	160	2.5	250	-	-	234	231	225	221	211	197	173	143	-	-			
20	EVMS(.)20 1/1.5M	EVMS(.)20 1/1.5	1.5	2	90	1.6	17.2	-	-	-	-	14.3	13.9	12.8	11.3	9.6	7.3	4.3	2.4		
	-	EVMS(.)20 2/3.0	3.0	4	100	1.6	33.7	-	-	-	-	30.4	29.9	28.9	27.7	26.2	23.6	19.9	17.4		
	-	EVMS(.)20 3/4.0	4.0	5.5	112	1.6	50.5	-	-	-	-	46	45	43.4	41.6	39.2	35.5	29.9	26.2		
	-	EVMS(.)20 4/5.5	5.5	7.5	132	1.6	67.4	-	-	-	-	61	60	58	55.4	52.3	47.3	39.8	34.9		
	-	EVMS(.)20 5/7.5	7.5	10	132	1.6	84.2	-	-	-	-	76.0	75	72.3	69.3	65.4	59	49.8	43.6		
	-	EVMS(.)20 6/7.5	7.5	10	132	1.6	101	-	-	-	-	91.2	90	87	83.1	78.5	71	59.7	52.3		
	-	EVMS(.)20 7/11	11	15	160	1.6	118	-	-	-	-	106	105	101	97	91.5	82.7	70	61.1		
	-	EVMS(.)20 8/11	11	15	160	1.6	135	-	-	-	-	122	120	116	111	105	95	80	70		
	-	EVMS(.)20 9/11	11	15	160	1.6	152	-	-	-	-	137	135	130	125	118	106	89.6	79		
	-	EVMS(.)20 10/11	11	15	160	2.5	168	-	-	-	-	152	150	145	139	131	118	100	87		
	-	EVMS(.)20 11/15	15	20	160	2.5	185	-	-	-	-	167	165	159	152	144	130	110	96		
	-	EVMS(.)20 12/15	15	20	160	2.5	202	-	-	-	-	182	179	173	166	157	142	119	105		
	-	EVMS(.)20 13/15	15	20	160	2.5	219	-	-	-	-	198	194	188	180	170	154	129	113		
	-	EVMS(.)20 14/18.5	18.5	25	160	2.5	244	-	-	-	-	221	217	210	202	191	175	149	130		
-	EVMS(.)20 15/18.5	18.5	25	160	2.5	262	-	-	-	-	237	232	225	216	205	186	159	141			
-	EVMS(.)20 16/18.5	18.5	25	160	2.5	279	-	-	-	-	252	248	240	231	218	199	170	150			

1.6 MPa=16 bar;      2.5 MPa=25 bar

PERFORMANCE CURVE  
EVMS(L)20

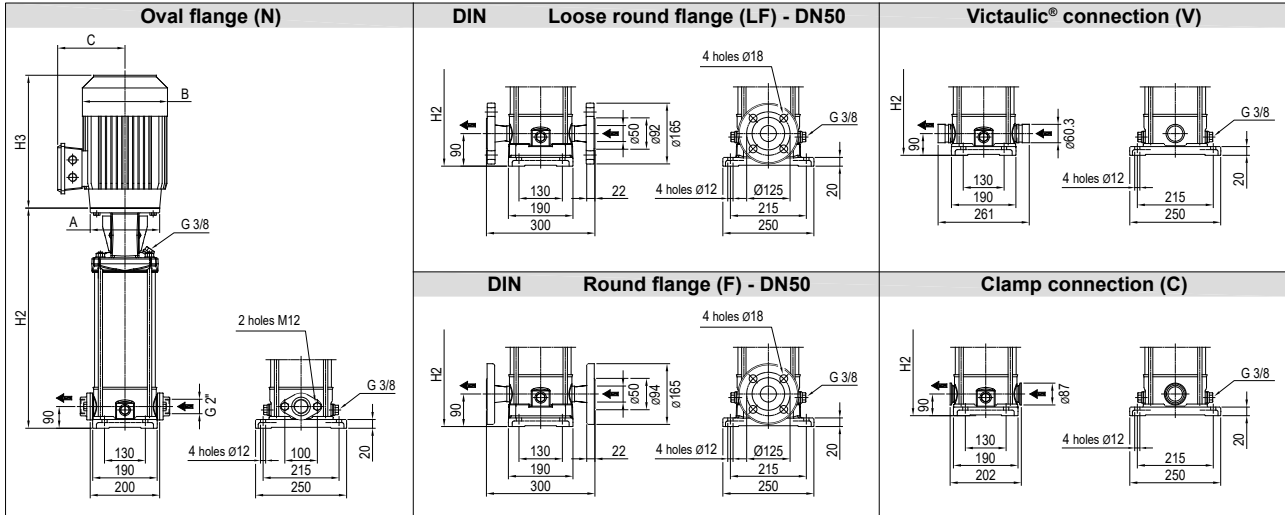
EVMS(L)20



Test standard: ISO 9906:2012 - Grade 3B

### TECHNICAL DATA EVMS(L)20

#### Dimensional sketch



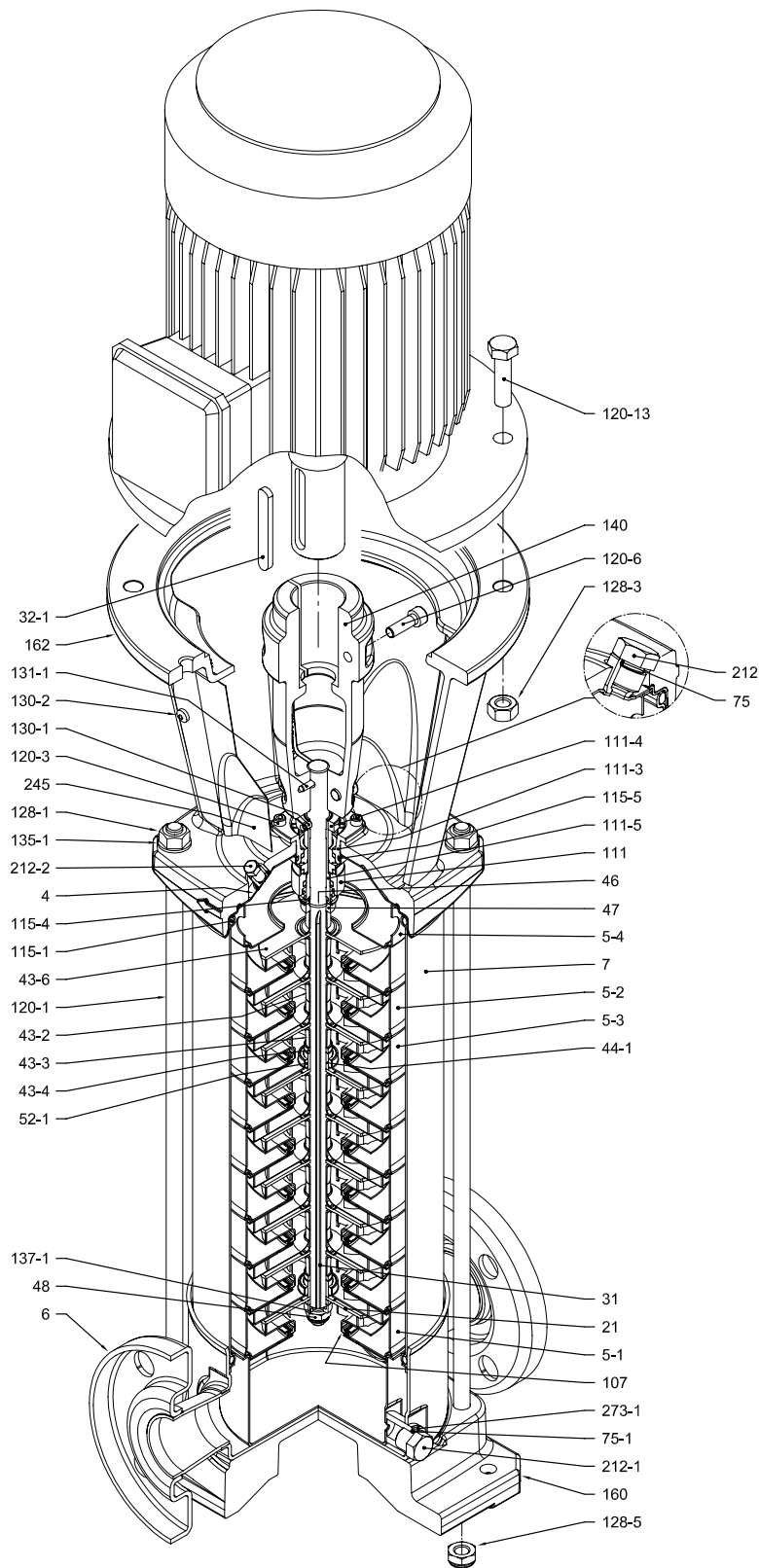
#### Dimensions [mm] and Weights [Kg]

Pump Type	P <sub>max</sub> [MPa]	kW	Motor				Oval flange (N)				Loose round flange (LF) Round flange (F)				Victaulic® connection (V) Clamp connection (C)											
			Size	1~		3~		H2	H2+H3		Weight Pump	Weight Pump + Motor		H2	H2+H3		Weight Pump	Weight Pump + Motor								
				A	B	C	B		C	1~		3~	1~		3~	1~		3~	1~	3~	1~	3~				
EVMS(L)20 1/1.5	1.6	1.5	90	140	172	140	160	119	387	665	678	18.2	36.0	31.7	387	665	678	20.0	37.8	33.5	387	665	678	17.1	34.9	30.6
EVMS(L)20 2/3.0	1.6	3.0	100	160	-	-	176	123	397	-	739	18.3	-	40.3	397	-	739	19.1	-	41.1	397	-	739	17.2	-	39.2
EVMS(L)20 3/4.0	1.6	4.0	112	160	-	-	193	138	437	-	801	19.7	-	48.2	437	-	801	20.5	-	49.0	437	-	801	18.6	-	47.1
EVMS(L)20 4/5.5	1.6	5.5	132	300	-	-	220	152	574	-	973	25.6	-	64.6	574	-	973	26.4	-	65.4	574	-	973	24.5	-	63.5
EVMS(L)20 5/7.5	1.6	7.5	132	300	-	-	220	152	614	-	1033	26.9	-	72.9	614	-	1033	27.7	-	73.7	614	-	1033	25.8	-	71.8
EVMS(L)20 6/7.5	1.6	7.5	132	300	-	-	220	152	654	-	1073	28.1	-	74.1	654	-	1073	28.9	-	74.9	654	-	1073	27.0	-	73.0
EVMS(L)20 7/11	1.6	11	160	350	-	-	259	180	724	-	1164	30.4	-	92.9	724	-	1164	31.2	-	93.7	724	-	1164	29.3	-	91.8
EVMS(L)20 8/11	1.6	11	160	350	-	-	259	180	764	-	1204	42.2	-	104.7	764	-	1204	43.0	-	105.5	764	-	1204	41.1	-	103.6
EVMS(L)20 9/11	1.6	11	160	350	-	-	259	180	804	-	1244	43.5	-	106.0	804	-	1244	44.3	-	106.8	804	-	1244	42.4	-	104.9
EVMS(L)20 10/11	2.5	11	160	350	-	-	259	180	-	-	-	-	-	844	-	1284	45.7	-	108.2	844	-	1284	43.8	-	106.3	
EVMS(L)20 11/15	2.5	15	160	350	-	-	311	240	-	-	-	-	-	884	-	1379	47.0	-	148.0	884	-	1379	45.1	-	146.1	
EVMS(L)20 12/15	2.5	15	160	350	-	-	311	240	-	-	-	-	-	924	-	1419	48.3	-	149.3	924	-	1419	46.4	-	147.4	
EVMS(L)20 13/15	2.5	15	160	350	-	-	311	240	-	-	-	-	-	964	-	1459	49.6	-	150.6	964	-	1459	47.7	-	148.7	
EVMS(L)20 14/18.5	2.5	18.5	160	350	-	-	311	240	-	-	-	-	-	1004	-	1499	51.0	-	160.0	1004	-	1499	49.1	-	158.1	
EVMS(L)20 15/18.5	2.5	18.5	160	350	-	-	311	240	-	-	-	-	-	1044	-	1539	52.3	-	161.3	1044	-	1539	50.4	-	159.4	
EVMS(L)20 16/18.5	2.5	18.5	160	350	-	-	311	240	-	-	-	-	-	1084	-	1579	53.6	-	162.6	1084	-	1579	51.7	-	160.7	

1.6 MPa=16 bar;      2.5 MPa=25 bar  
- not available model

SECTIONAL VIEW  
EVMS(L)20

EVMS(L)20

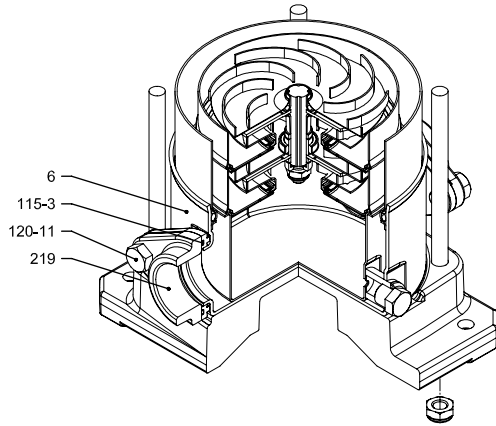


with Round flange (F)

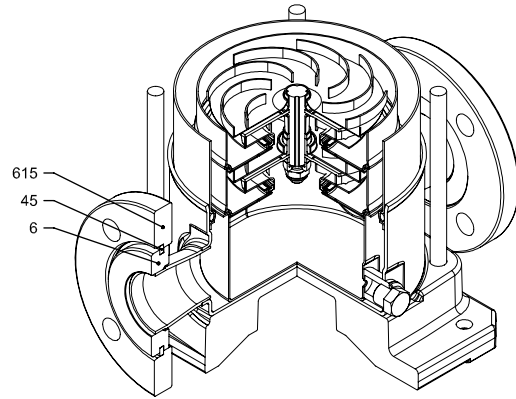


### PIPE CONNECTION EVMS(L)20

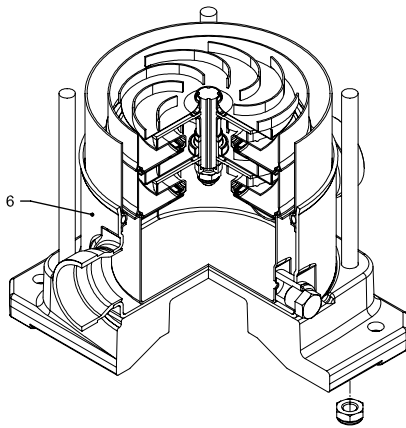
EVMS(L)20



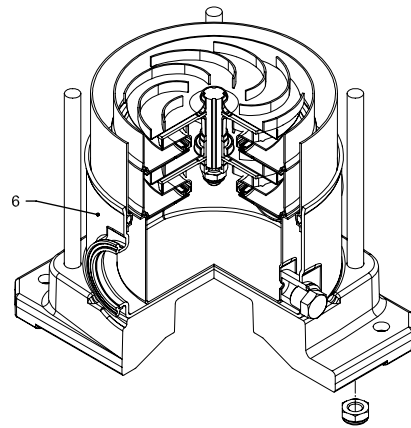
with Oval flange (N)



with Loose round flange (LF)



with Victaulic® connection (V)



with Clamp connection (C)

SECTIONAL TABLE  
EVMS(L)20

N°	PART NAME	MATERIAL		DIMENSIONS	STANDARD
		EVMS	EVMSL		
4	Casing cover	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
5-1	Suction casing	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
5-2	Intermediate casing	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
5-3	Intermediate casing with bearing	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
5-4	Discharge casing	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
6	Bottom casing	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
7	Outer casing	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
21	Impeller	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
31	Shaft	EN 1.4301 (AISI 304) - EN 1.4462 (AISI 329A)	EN 1.4404 (AISI 316L) - EN 1.4462 (AISI 329A)		
32-1	Adjuster key	EN 1.4301 (AISI 304)			
43-2	Shaft sleeve (intermediate)	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
43-3	Shaft sleeve (bearing + discharge casing)	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
43-4	Shaft sleeve (adjustment)	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
43-6	Washer	EN 1.4404 (AISI 316L)		Ø26x2.5	
44-1	Shaft sleeve bearing	Tungsten carbide			
45	Flange holder	EN 1.4301 (AISI 304)			
46	Ring (mechanical seal)	EN 1.4404 (AISI 316L)			
47	Ring holder	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
48	Impeller nut	EN 1.4301 (AISI 304) with inox insert	EN 1.4401 (AISI 316) with inox insert	M10	
52-1	Sleeve bearing	Tungsten carbide			
75	O-Ring (priming plug)	EPDM / FPM		Ø12.37x2.62	OR 3050
75-1	O-Ring (drainage plug)	EPDM / FPM			
107	Liner ring	EN 1.4301 (AISI 304) + PPS	EN 1.4404 (AISI 316L) + PPS		
111	Mechanical seal	see pages 6-7			
111-3	Mechanical seal seat	EN 1.4308 (ASTM CF8)	EN 1.4408 (ASTM CF8M)		
111-4	Seal holder	EN 1.4301 (AISI 304)			
111-5	Mechanical seal cartridge sleeve	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
115-1	O-Ring (outer casing)	EPDM / FPM		Ø164.46x5.34	OR 6945
115-3	O-Ring	EPDM / FPM			
115-4	O-Ring (cartridge sleeve)	EPDM / FPM		Ø15.88x2.62	OR 4093
115-5	O-Ring (seal flange)	EPDM / FPM		Ø37.77x2.62	OR 4175
120-1	Tie-rod	EN 1.4057 (AISI 431)		M12	
120-3	Screw (seal flange)	A2-70		M5x12	ISO 4762
120-6	Screw (pump coupling)	up to 4.0 kW	Galvanized steel	M6x25	ISO 4762
		from 5.5 kW to 7.5 kW		M8x20	ISO 4762
		above 11 kW		M10x30	ISO 4762
120-11	Screw (counterflange)	A2-70			
120-13	Screw for motor	MEC 90-100-112	Galvanized steel 8.8 strength class ISO 898/1	M8x20	ISO 4017
		MEC 132		M12x40	ISO 4017
		MEC 160		M16x50	ISO 4017
128-1	Nut (tie rod)	A2-70		M12	ISO 4032
128-3	Nut (motor)	MEC 132	Galvanized steel	M12	ISO 4032
		MEC 160		M16	ISO 4032
128-5	Nut (tie rod)	A2-70		M12	UNI 7474
128-6	Nut (aluminium coupling)	MEC 71-80-90-100-112	Galvanized steel	M6	ISO 4032
130-1	Set screw	EN 1.4301 (AISI 304)		M5x8	ISO 4026
130-2	Screw for coupling guard	A2-70		M5x6	UNI 7687
131-1	Pin for shaft	Carbon Steel		Ø5x35	ISO 2338
135-1	Washer (tie rod)	EN 1.4301 (AISI 304)		Ø13x24x2.5	ISO 7089
135-6	Washer (aluminium coupling)	up to 4.0 kW	Carbon Steel	Ø6	
137-1	Impeller spacer	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
140	Coupling	up to 4.0 kW above 5.5 kW	Die cast Aluminium EN AB-AISI11 Cu2 (Fe) Cast Iron		
160	Base	Die cast Aluminium EN AB-AISI11 Cu2 (Fe)			
162	Motor bracket	Cast iron EN-GJL-250			
212	Priming plug	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	G 3/8	
212-1	Drainage plug	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	G 3/8	
212-2	Venting plug	EN 1.4404 (AISI 316L)			
219	Counter flange	flange type: N	EN 1.4308 (ASTM CF8)	EN 1.4408 (ASTM CF8M)	
		flange type: LF-F-V-C	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)	
245	Coupling guard	EN 1.4301 (AISI 304)			
273-1	Washer (drainage plug)	EN 1.4301 (AISI 304)	EN 1.4404 (AISI 316L)		
615	Flange	Carbon Steel			

### QUANTITY FOR MODEL EVMS(L)20

Pump Type	N°																														
	4	5-1	52	53	54	6	7	21	31***	32-1	43-2	43-3	43-4	43-6	44-1	45**	46	47	48	52-1	75	75-1	107	111	111-3	111-4	111-5	115-1	115-3*	115-4	115-5
EVMS(L)20 1/1.5	1	1	/	1	1	1	1	1	1	1	1	1	1	1	1	4	2	1	1	1	1	2	1	1	1	1	1	2	2	1	1
EVMS(L)20 2/3.0	1	1	/	1	1	1	1	2	1	1	1	1	1	/	1	4	2	1	1	1	1	2	2	1	1	1	1	2	2	1	1
EVMS(L)20 3/4.0	1	1	1	1	1	1	1	3	1	1	3	1	1	/	1	4	2	1	1	1	1	2	3	1	1	1	1	2	2	1	1
EVMS(L)20 4/5.5	1	1	2	1	1	1	1	4	1	1	5	1	1	/	1	4	2	1	1	1	1	2	4	1	1	1	1	2	2	1	1
EVMS(L)20 5/7.5	1	1	3	1	1	1	1	5	1	1	7	1	1	/	1	4	2	1	1	1	1	2	5	1	1	1	1	2	2	1	1
EVMS(L)20 6/7.5	1	1	4	1	1	1	1	6	1	1	9	1	1	/	1	4	2	1	1	1	1	2	6	1	1	1	1	2	2	1	1
EVMS(L)20 7/11	1	1	4	2	1	1	1	7	1	1	9	2	2	/	2	4	2	1	1	2	1	2	7	1	1	1	1	2	2	1	1
EVMS(L)20 8/11	1	1	5	2	1	1	1	8	1	1	11	2	2	/	2	4	2	1	1	2	1	2	8	1	1	1	1	2	2	1	1
EVMS(L)20 9/11	1	1	6	2	1	1	1	9	1	1	13	2	2	/	2	4	2	1	1	2	1	2	9	1	1	1	1	2	2	1	1
EVMS(L)20 10/11	1	1	7	2	1	1	1	10	1	1	15	2	2	/	2	4	2	1	1	2	1	2	10	1	1	1	1	2	/	1	1
EVMS(L)20 11/15	1	1	8	2	1	1	1	11	1	1	17	2	2	/	2	4	2	1	1	2	1	2	11	1	1	1	1	2	/	1	1
EVMS(L)20 12/15	1	1	9	2	1	1	1	12	1	1	19	2	2	/	2	4	2	1	1	2	1	2	12	1	1	1	1	2	/	1	1
EVMS(L)20 13/15	1	1	10	2	1	1	1	13	1	1	21	2	2	/	2	4	2	1	1	2	1	2	13	1	1	1	1	2	/	1	1
EVMS(L)20 14/18.5	1	1	11	2	1	1	1	14	1	1	23	2	2	/	2	4	2	1	1	2	1	2	14	1	1	1	1	2	/	1	1
EVMS(L)20 15/18.5	1	1	12	2	1	1	1	15	1	1	25	2	2	/	2	4	2	1	1	2	1	2	15	1	1	1	1	2	/	1	1
EVMS(L)20 16/18.5	1	1	13	2	1	1	1	16	1	1	27	2	2	/	2	4	2	1	1	2	1	2	16	1	1	1	1	2	/	1	1

Pump Type	N°																								
	120-1	120-3	120-6	120-11*	120-13	128-1	128-3	128-5	128-6	130-1	130-2	131-1	135-1	135-6	137-1	140	160	162	212	212-1	212-2	219*	245	273-1	615**
EVMS(L)20 1/1.5	4	4	4	4	4	4	/	4	4	3	4	1	4	4	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 2/3.0	4	4	4	4	4	4	/	4	4	3	4	1	4	4	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 3/4.0	4	4	4	4	4	4	/	4	4	3	4	1	4	4	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 4/5.5	4	4	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 5/7.5	4	4	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 6/7.5	4	4	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 7/11	4	4	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 8/11	4	4	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 9/11	4	4	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	2	2	2	2
EVMS(L)20 10/11	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2
EVMS(L)20 11/15	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2
EVMS(L)20 12/15	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2
EVMS(L)20 13/15	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2
EVMS(L)20 14/18.5	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2
EVMS(L)20 15/18.5	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2
EVMS(L)20 16/18.5	4	4	4	/	4	4	4	4	/	3	4	1	4	/	1	2	1	1	1	2	1	/	2	2	2

\* only for Oval flange (N)

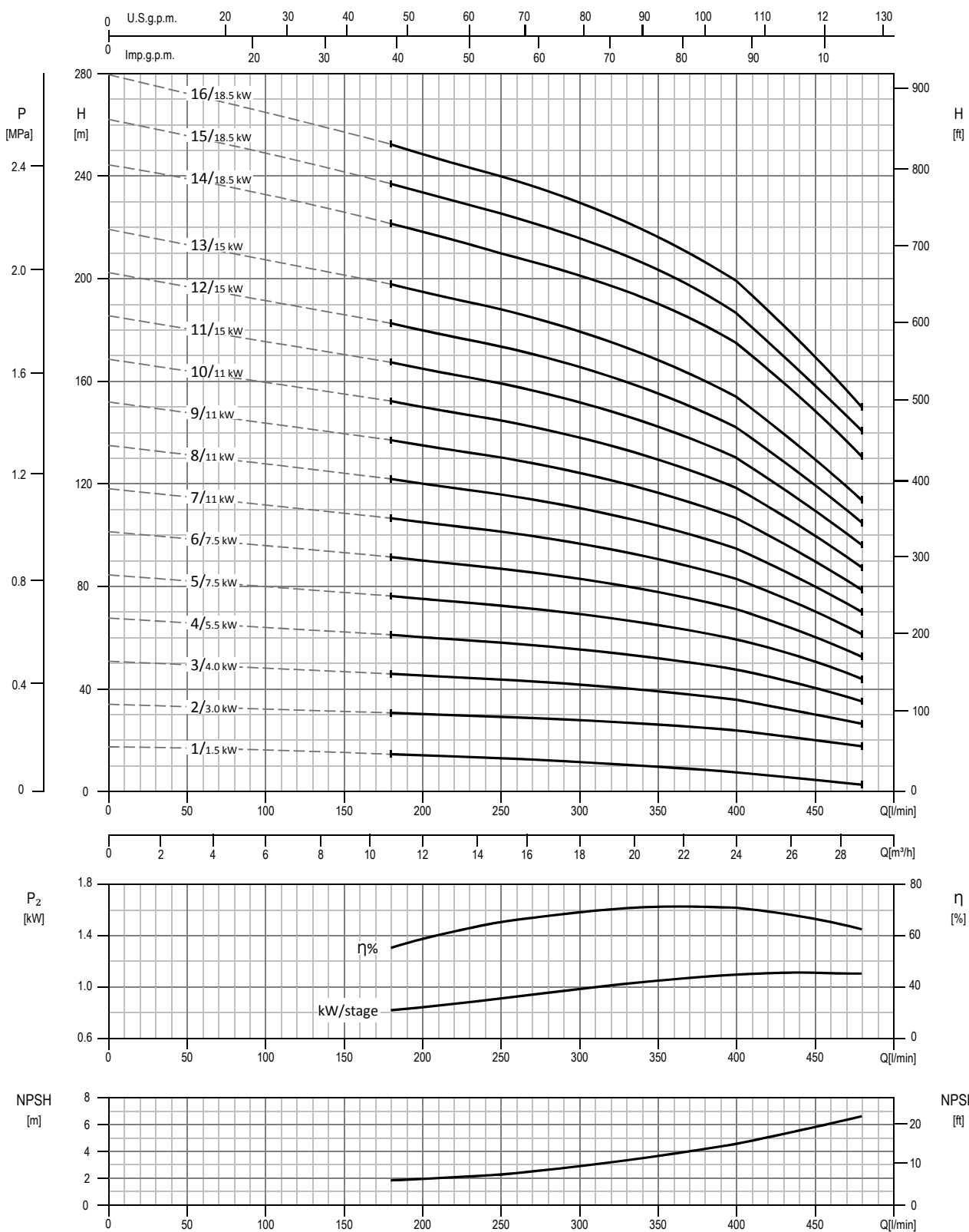
\*\* only for Loose round flange (LF)

\*\*\*  shaft in EN 1.4462 (AISI 329A)

128-6 / 135-6: with Aluminium coupling (see drawing pag.18)

PERFORMANCE CURVE  
EVMSG20

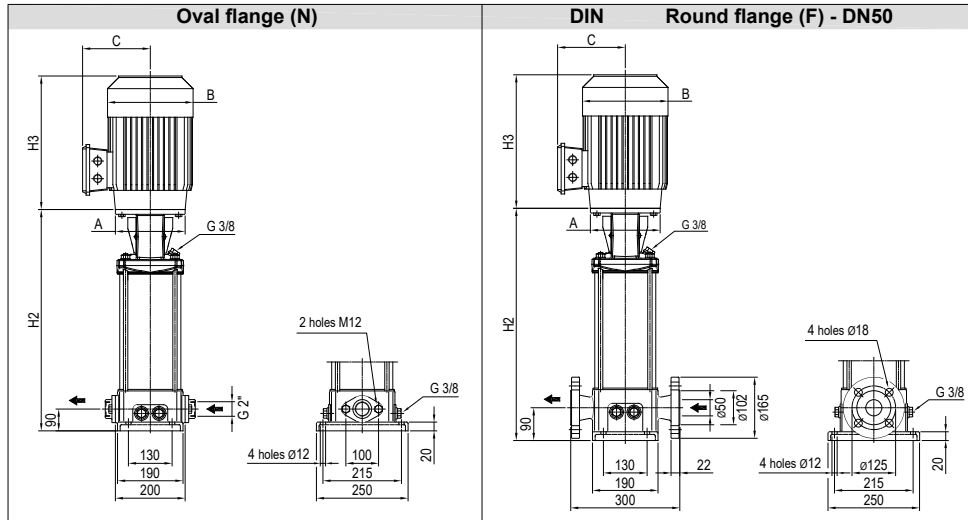
EVMSG20



Test standard: ISO 9906:2012 - Grade 3B

### TECHNICAL DATA EVMSG20

#### Dimensional sketch



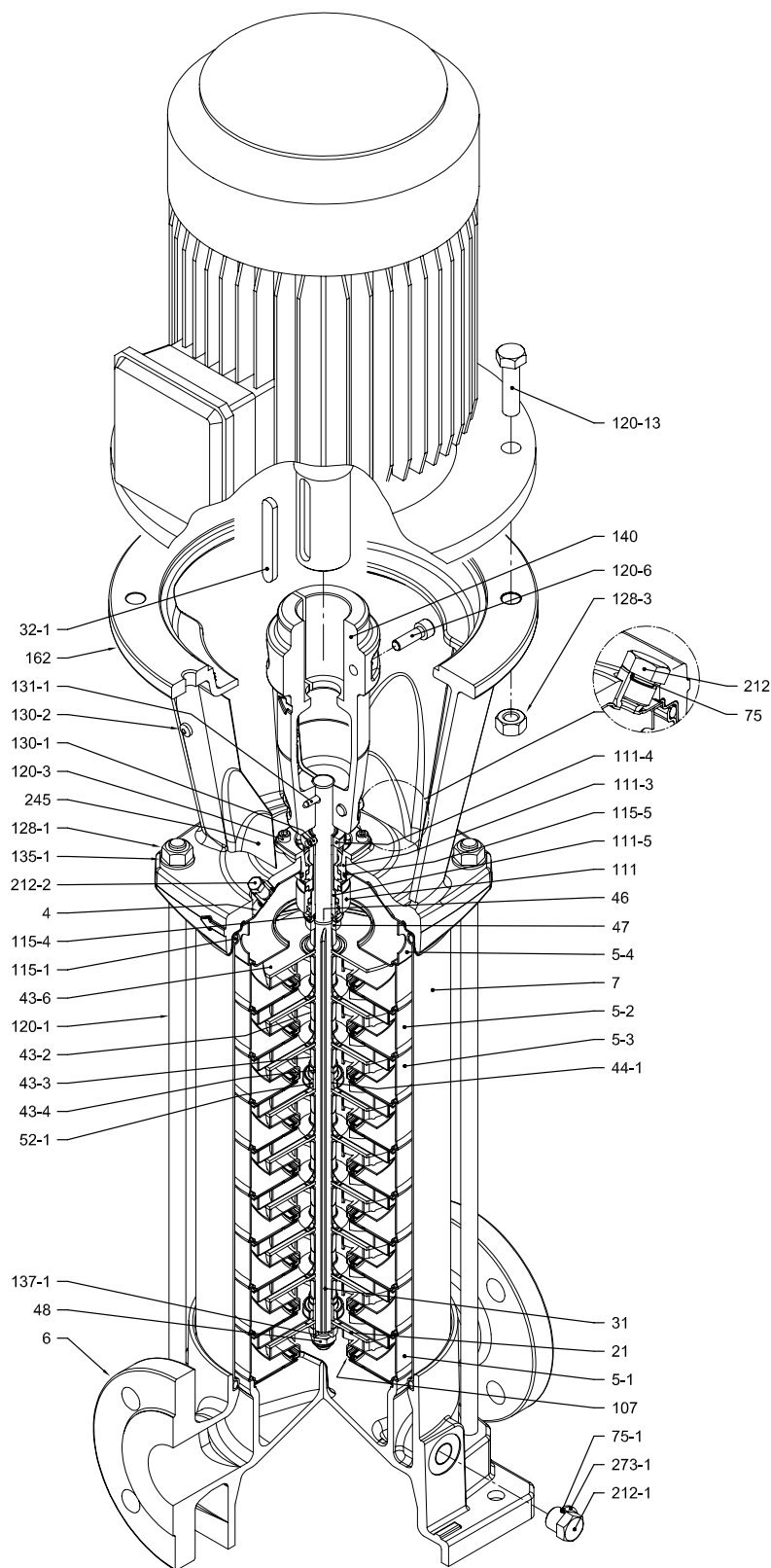
#### Dimensions [mm] and Weights [Kg]

Pump Type	P <sub>max</sub> [MPa]	Motor				Oval flange (N)				Round flange (F)										
		kW	Size	1~		3~		H2	H2+H3		Weight Pump	Weight Pump + Motor		H2	H2+H3		Weight Pump	Weight Pump + Motor		
				A	B	C	B		C	1~		3~	1~		3~	1~		3~		
EVMSG20 1/1.5	1.6	1.5	90	140	172	140	160	119	387	665	678	22.6	40.4	36.1	387	665	678	27.2	45	40.7
EVMSG20 2/3.0	1.6	3.0	100	160	-	-	176	123	397	-	739	22.7	-	44.7	397	-	739	27.3	-	49.3
EVMSG20 3/4.0	1.6	4.0	112	160	-	-	193	138	437	-	801	24.1	-	52.6	437	-	801	28.7	-	57.2
EVMSG20 4/5.5	1.6	5.5	132	300	-	-	220	152	574	-	973	30.0	-	69.0	574	-	973	34.6	-	73.6
EVMSG20 5/7.5	1.6	7.5	132	300	-	-	220	152	614	-	1033	31.2	-	77.2	614	-	1033	35.9	-	81.9
EVMSG20 6/7.5	1.6	7.5	132	300	-	-	220	152	654	-	1073	32.5	-	78.5	654	-	1073	37.1	-	83.1
EVMSG20 7/11	1.6	11	160	350	-	-	259	180	724	-	1164	34.8	-	97.3	724	-	1164	39.4	-	101.9
EVMSG20 8/11	1.6	11	160	350	-	-	259	180	764	-	1204	46.6	-	109.1	764	-	1204	51.2	-	113.7
EVMSG20 9/11	1.6	11	160	350	-	-	259	180	804	-	1244	47.9	-	110.4	804	-	1244	52.5	-	115.0
EVMSG20 10/11	2.5	11	160	350	-	-	259	180	-	-	-	-	-	-	844	-	1284	53.9	-	116.4
EVMSG20 11/15	2.5	15	160	350	-	-	311	240	-	-	-	-	-	-	884	-	1379	55.2	-	156.2
EVMSG20 12/15	2.5	15	160	350	-	-	311	240	-	-	-	-	-	-	924	-	1419	56.5	-	157.5
EVMSG20 13/15	2.5	15	160	350	-	-	311	240	-	-	-	-	-	-	964	-	1459	57.9	-	158.9
EVMSG20 14/18.5	2.5	18.5	160	350	-	-	311	240	-	-	-	-	-	-	1004	-	1499	59.2	-	168.2
EVMSG20 15/18.5	2.5	18.5	160	350	-	-	311	240	-	-	-	-	-	-	1044	-	1539	60.5	-	169.5
EVMSG20 16/18.5	2.5	18.5	160	350	-	-	311	240	-	-	-	-	-	-	1084	-	1579	61.8	-	170.8

1.6 MPa=16 bar;      2.5 MPa=25 bar  
- not available model

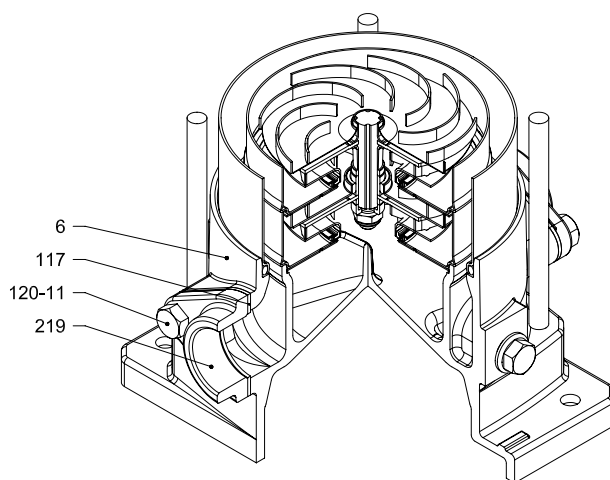
SECTIONAL VIEW  
EVMSG20

EVMSG20



with Round flange (F)

### PIPE CONNECTION EVMSG20



with Oval flange (N)



SECTIONAL TABLE  
EVMSG20

N°	PART NAME	MATERIAL EVMSG	DIMENSIONS	STANDARD	
4	Casing cover	EN 1.4301 (AISI 304)			
5-1	Suction casing	EN 1.4301 (AISI 304)			
5-2	Intermediate casing	EN 1.4301 (AISI 304)			
5-3	Intermediate casing with bearing	EN 1.4301 (AISI 304)			
5-4	Discharge casing	EN 1.4301 (AISI 304)			
6	Bottom casing	Cast Iron EN-GJL-250			
7	Outer casing	EN 1.4301 (AISI 304)			
21	Impeller	EN 1.4301 (AISI 304)			
31	Shaft	EN 1.4301 (AISI 304) - EN 1.4462 (AISI 329A)			
32-1	Adjuster key	EN 1.4301 (AISI 304)			
43-2	Shaft sleeve (intermediate)	EN 1.4301 (AISI 304)			
43-3	Shaft sleeve (bearing + discharge casing)	EN 1.4301 (AISI 304)			
43-4	Shaft sleeve (adjustment)	EN 1.4301 (AISI 304)			
43-6	Washer	EN 1.4404 (AISI 316L)	Ø26x2.5		
44-1	Shaft sleeve bearing	Tungsten carbide			
46	Ring (mechanical seal)	EN 1.4404 (AISI 316L)			
47	Ring holder	EN 1.4404 (AISI 316L)			
48	Impeller nut	EN 1.4301 (AISI 304) with inox insert	M10		
52-1	Sleeve bearing	Tungsten carbide			
75	O-Ring (priming plug)	EPDM / FPM	Ø12.37x2.62	OR 3050	
75-1	O-Ring (drainage plug)	EPDM / FPM			
107	Liner ring	EN 1.4301 (AISI 304) + PPS			
111	Mechanical seal	see pages 6-7			
111-3	Mechanical seal seat	EN 1.4308 (ASTM CF8)			
111-4	Seal holder	EN 1.4301 (AISI 304)			
111-5	Mechanical seal cartridge sleeve	EN 1.4301 (AISI 304)			
115-1	O-Ring (outer casing)	EPDM / FPM	Ø164.46x5.34	OR 6945	
115-4	O-Ring (cartridge sleeve)	EPDM / FPM	Ø15.88x2.62	OR 4093	
115-5	O-Ring (seal flange)	EPDM / FPM	Ø37.77x2.62	OR 4175	
117	Flange gasket	EPDM / FPM			
120-1	Tie-rod	EN 1.4057 (AISI 431)	M12		
120-3	Screw (seal flange)	A2-70	M5x12	ISO 4762	
120-6	Screw (pump coupling)	Galvanized steel 6.8 strenght class ISO 898/1	up to 4.0 kW	M6x25	ISO 4762
			from 5.5 kW to 7.5 kW	M8x20	ISO 4762
			above 11 kW	M10x30	ISO 4762
120-11	Screw (counterflange)	A2-70			
120-13	Screw for motor	Galvanized steel 8.8 strength class ISO 898/1	MEC 90-100-112	M8x20	ISO 4017
			MEC 132	M12x40	ISO 4017
			MEC 160	M16x50	ISO 4017
128-1	Nut (tie rod)	A2-70	M12	ISO 4032	
128-3	Nut (motor)	Galvanized steel	MEC 132	M12	ISO 4032
			MEC 160	M16	ISO 4032
128-6	Nut (aluminium coupling)	Galvanized steel	M6	ISO 4032	
130-1	Set screw	EN 1.4301 (AISI 304)	M5x8	ISO 4026	
130-2	Screw for coupling guard	A2-70	M5x6	UNI 7687	
131-1	Pin for shaft	Carbon Steel	Ø5x35	ISO 2338	
135-1	Washer (tie rod)	EN 1.4301 (AISI 304)	Ø13x24x2.5	ISO 7089	
135-6	Washer (aluminium coupling)	Carbon Steel	Ø6		
137-1	Impeller spacer	EN 1.4301 (AISI 304)			
140	Coupling	Die cast Aluminium EN AB-AISI11Cu2 (Fe)	up to 4.0 kW		
			above 5.5 kW	Cast Iron	
162	Motor bracket	Cast iron EN-GJL-250			
212	Priming plug	EN 1.4301 (AISI 304)	G 3/8		
212-1	Drainage plug	EN 1.4301 (AISI 304)	G 3/8		
212-2	Venting plug	EN 1.4404 (AISI 316L)			
219	Counter flange	flange type: N	Galvanized steel		
		flange type: F	Cast Iron EN-GJL-250		
245	Coupling guard	EN 1.4301 (AISI 304)			
273-1	Washer (drainage plug)	EN 1.4301 (AISI 304)			

### QUANTITY FOR MODEL EVMSG20

Pump Type	N°																												
	4	5-1	52	53	54	6	7	21	31***	32-1	432	433	434	436	44-1	46	47	48	52-1	75	75-1	107	111	111-3	111-4	111-5	115-1	1154	1155
EVMSG20 1/1.5	1	1	/	1	1	1	1	1	1	1	/	2	1	1	1	2	1	1	1	1	4	1	1	1	1	1	2	1	1
EVMSG20 2/3.0	1	1	/	1	1	1	1	2	1	1	/	2	1	/	1	2	1	1	1	1	4	2	1	1	1	1	2	1	1
EVMSG20 3/4.0	1	1	1	1	1	1	1	3	1	1	1	2	1	/	1	2	1	1	1	1	4	3	1	1	1	1	2	1	1
EVMSG20 4/5.5	1	1	2	1	1	1	1	4	1	1	2	2	1	/	1	2	1	1	1	1	4	4	1	1	1	1	2	1	1
EVMSG20 5/7.5	1	1	3	1	1	1	1	5	1	1	3	2	1	/	1	2	1	1	1	1	4	5	1	1	1	1	2	1	1
EVMSG20 6/7.5	1	1	4	1	1	1	1	6	1	1	4	2	1	/	1	2	1	1	1	1	4	6	1	1	1	1	2	1	1
EVMSG20 7/11	1	1	4	2	1	1	1	7	1	1	4	3	2	/	2	2	1	1	2	1	4	7	1	1	1	1	2	1	1
EVMSG20 8/11	1	1	5	2	1	1	1	8	1	1	5	3	2	/	2	2	1	1	2	1	4	8	1	1	1	1	2	1	1
EVMSG20 9/11	1	1	6	2	1	1	1	9	1	1	6	3	2	/	2	2	1	1	2	1	4	9	1	1	1	1	2	1	1
EVMSG20 10/11	1	1	7	2	1	1	1	10	1	1	7	3	2	/	2	2	1	1	2	1	4	10	1	1	1	1	2	1	1
EVMSG20 11/15	1	1	8	2	1	1	1	11	1	1	8	3	2	/	2	2	1	1	2	1	4	11	1	1	1	1	2	1	1
EVMSG20 12/15	1	1	9	2	1	1	1	12	1	1	9	3	2	/	2	2	1	1	2	1	4	12	1	1	1	1	2	1	1
EVMSG20 13/15	1	1	10	2	1	1	1	13	1	1	10	3	2	/	2	2	1	1	2	1	4	13	1	1	1	1	2	1	1
EVMSG20 14/18.5	1	1	11	2	1	1	1	14	1	1	11	3	2	/	2	2	1	1	2	1	4	14	1	1	1	1	2	1	1
EVMSG20 15/18.5	1	1	12	2	1	1	1	15	1	1	12	3	2	/	2	2	1	1	2	1	4	15	1	1	1	1	2	1	1
EVMSG20 16/18.5	1	1	13	2	1	1	1	16	1	1	13	3	2	/	2	2	1	1	2	1	4	16	1	1	1	1	2	1	1

Pump Type	N°																						
	117*	120-1	120-3	120-6	120-11*	120-13	128-1	128-3	128-6	130-1	130-2	131-1	135-1	135-6	137-1	140	162	212	212-1	212-2	219*	245	273-1
EVMSG20 1/1.5	2	4	4	4	4	4	4	/	4	3	4	1	4	4	1	2	1	1	4	1	2	2	4
EVMSG20 2/3.0	2	4	4	4	4	4	4	/	4	3	4	1	4	4	1	2	1	1	4	1	2	2	4
EVMSG20 3/4.0	2	4	4	4	4	4	4	/	4	3	4	1	4	4	1	2	1	1	4	1	2	2	4
EVMSG20 4/5.5	2	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	4	1	2	2	4	
EVMSG20 5/7.5	2	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	4	1	2	2	4	
EVMSG20 6/7.5	2	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	4	1	2	2	4	
EVMSG20 7/11	2	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	4	1	2	2	4	
EVMSG20 8/11	2	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	4	1	2	2	4	
EVMSG20 9/11	2	4	4	4	4	4	4	/	3	4	1	4	/	1	2	1	1	4	1	2	2	4	
EVMSG20 10/11	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	
EVMSG20 11/15	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	
EVMSG20 12/15	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	
EVMSG20 13/15	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	
EVMSG20 14/18.5	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	
EVMSG20 15/18.5	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	
EVMSG20 16/18.5	/	4	4	4	/	4	4	/	3	4	1	4	/	1	2	1	1	4	1	/	2	4	

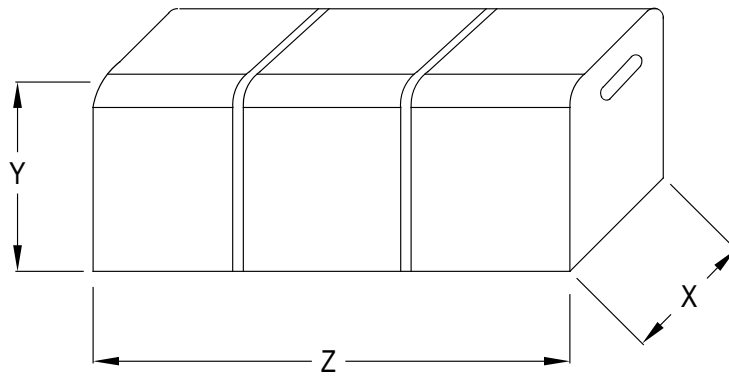
\* only for Oval flange (N)

\*\*\*  shaft in EN 1.4462 (AISI 329A)

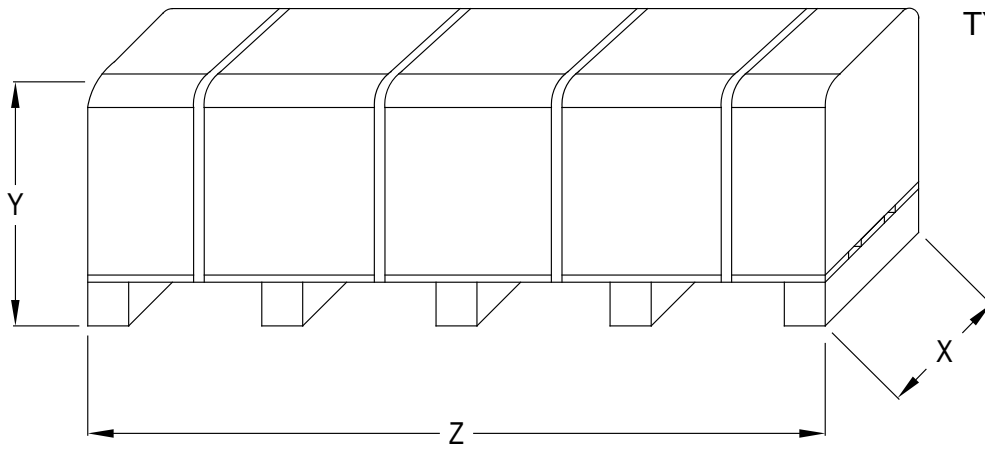
128-6 / 135-6: with Aluminium coupling (see drawing pag.18)

PACKING DRAWING  
EVMS(. )1-3-5-10-15-20-32-45-64-90

PACKING DRAWING

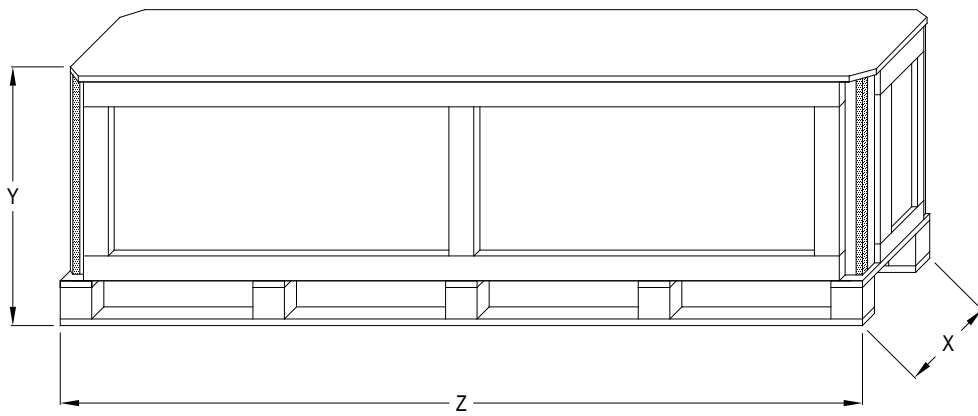
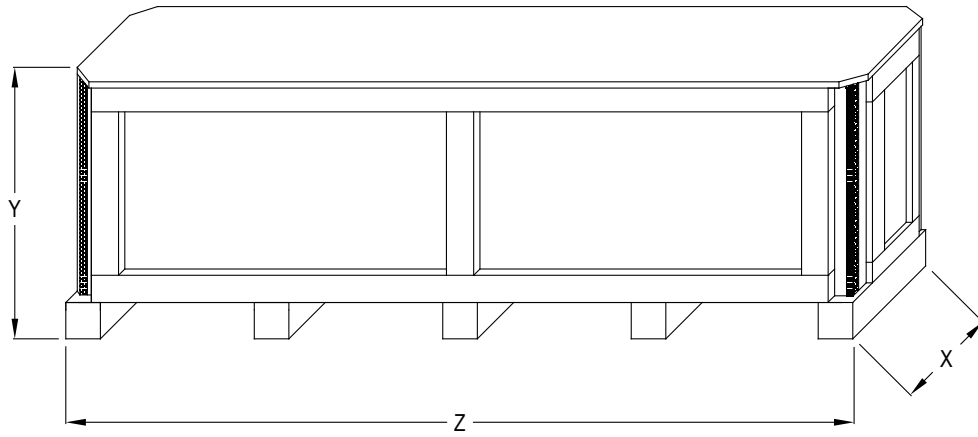


TYPE 1



TYPE 2

### PACKING DRAWING EVMS(. )1-3-5-10-15-20-32-45-64-90



### PACKING DATA EVMS(.)10-15-20

Pump type	Pumps						Pumps with motor ~1						Pumps with motor ~3									
	Packing [mm]			Weight [kg] + Pack Type			Packing [mm]			Weight [kg] + Pack Type			Packing [mm]			Weight [kg] + Pack Type						
	X	Y	Z	EVMS(L)	EVMSG		X	Y	Z	EVMS(L)	EVMSG		X	Y	Z	EVMS(L)	EVMSG					
10	EVMS(.)10 2/0,75	385	400	585	21	1	27	1	400	430	800	41	2	48	2	400	430	800	41	2	48	2
	EVMS(.)10 3/1,5	385	400	585	22	1	28	1	400	430	800	48	2	55	2	400	430	800	48	2	55	2
	EVMS(.)10 4/2,2	385	400	585	22	1	30	1	400	430	800	51	2	58	2	400	430	800	51	2	58	2
	EVMS(.)10 5/2,2	385	400	585	23	1	30	1	400	430	1000	52	2	58	2	400	430	1000	52	2	58	2
	EVMS(.)10 6/2,2	385	400	585	24	1	31	1	400	430	1000	53	2	60	2	400	430	1000	53	2	60	2
	EVMS(.)10 7/3,0	385	400	585	25	1	33	1	-	-	-	-	-	-	-	400	430	1000	56	2	63	2
	EVMS(.)10 8/3,0	385	400	770	25	1	33	1	-	-	-	-	-	-	-	400	430	1000	57	2	64	2
	EVMS(.)10 9/4,0	385	400	770	27	1	34	1	-	-	-	-	-	-	-	400	430	1000	64	2	72	2
	EVMS(.)10 10/4,0	400	430	700	27	2	34	2	-	-	-	-	-	-	-	400	430	1200	65	2	73	2
	EVMS(.)10 11/4,0	400	430	800	38	2	45	2	-	-	-	-	-	-	-	400	430	1200	67	2	74	2
	EVMS(.)10 12/5,5	400	430	1000	48	2	55	2	-	-	-	-	-	-	-	500	430	1350	93	2	100	2
	EVMS(.)10 14/5,5	400	430	1000	50	2	57	2	-	-	-	-	-	-	-	500	430	1350	95	2	102	2
	EVMS(.)10 15/5,5	400	430	1000	52	2	57	2	-	-	-	-	-	-	-	500	430	1350	96	2	103	2
	EVMS(.)10 16/7,5	400	430	1000	52	2	58	2	-	-	-	-	-	-	-	500	430	1540	117	2	123	2
	EVMS(.)10 18/7,5	400	430	1200	54	2	61	2	-	-	-	-	-	-	-	500	430	1540	118	2	125	2
	EVMS(.)10 19/7,5	400	430	1200	55	2	62	2	-	-	-	-	-	-	-	500	430	1540	120	2	126	2
	EVMS(.)10 21/7,5	400	430	1200	57	2	64	2	-	-	-	-	-	-	-	500	430	1540	121	2	128	2
	EVMS(.)10 22/11	400	430	1200	60	2	66	2	-	-	-	-	-	-	-	610	430	1750	140	2	150	2
EVMS(.)10 23/11	400	430	1200	66	2	73	2	-	-	-	-	-	-	-	610	430	1750	147	2	156	2	
15	EVMS(.)15 1/1,1	385	400	585	23	1	30	1	385	400	770	43	1	52	1	400	430	800	43	2	52	2
	EVMS(.)15 2/2,2	385	400	585	24	1	31	1	385	400	770	51	1	60	1	400	430	800	51	2	60	2
	EVMS(.)15 3/3,0	385	400	585	25	1	32	1	-	-	-	-	-	-	-	400	430	1000	54	2	63	2
	EVMS(.)15 4/4,0	385	400	585	26	1	33	1	-	-	-	-	-	-	-	400	430	1000	62	2	70	2
	EVMS(.)15 5/5,5	400	430	800	43	2	52	2	-	-	-	-	-	-	-	400	430	1200	82	2	91	2
	EVMS(.)15 6/5,5	400	430	800	45	2	53	2	-	-	-	-	-	-	-	400	430	1200	84	2	93	2
	EVMS(.)15 7/7,5	400	430	800	47	2	55	2	-	-	-	-	-	-	-	400	430	1200	93	2	103	2
	EVMS(.)15 8/7,5	400	430	1000	48	2	56	2	-	-	-	-	-	-	-	400	430	1200	95	2	103	2
	EVMS(.)15 9/11	400	430	1000	50	2	58	2	-	-	-	-	-	-	-	500	430	1540	131	2	140	2
	EVMS(.)15 10/11	400	430	1000	52	2	60	2	-	-	-	-	-	-	-	500	430	1540	131	2	140	2
	EVMS(.)15 11/11	400	430	1000	60	2	67	2	-	-	-	-	-	-	-	500	430	1540	140	2	148	2
	EVMS(.)15 12/11	400	430	1000	60	2	68	2	-	-	-	-	-	-	-	500	430	1540	141	2	150	2
	EVMS(.)15 13/11	400	430	1200	62	2	70	2	-	-	-	-	-	-	-	500	430	1540	143	2	151	2
	EVMS(.)15 15/15	400	430	1200	65	2	73	2	-	-	-	-	-	-	-	610	430	1750	174	2	183	2
	EVMS(.)15 17/15	400	430	1200	68	2	76	2	-	-	-	-	-	-	-	610	430	1750	177	2	185	2
20	EVMS(.)20 1/1,5	385	400	585	23	1	30	1	385	400	770	50	1	57	1	400	430	800	50	2	57	2
	EVMS(.)20 2/3,0	385	400	585	24	1	31	1	-	-	-	-	-	-	-	400	430	1000	53	2	62	2
	EVMS(.)20 3/4,0	385	400	585	25	1	33	1	-	-	-	-	-	-	-	400	430	1000	62	2	70	2
	EVMS(.)20 4/5,5	400	430	800	38	2	47	2	-	-	-	-	-	-	-	400	430	1200	78	2	87	2
	EVMS(.)20 5/7,5	400	430	800	40	2	48	2	-	-	-	-	-	-	-	400	430	1200	86	2	95	2
	EVMS(.)20 6/7,5	400	430	800	42	2	50	2	-	-	-	-	-	-	-	400	430	1200	87	2	96	2
	EVMS(.)20 7/11	400	430	1000	43	2	52	2	-	-	-	-	-	-	-	500	430	1540	125	2	133	2
	EVMS(.)20 8/11	400	430	1000	55	2	63	2	-	-	-	-	-	-	-	500	430	1540	137	2	145	2
	EVMS(.)20 9/11	400	430	1000	56	2	65	2	-	-	-	-	-	-	-	500	430	1540	138	2	146	2
	EVMS(.)20 10/11	400	430	1000	58	2	66	2	-	-	-	-	-	-	-	500	430	1540	140	2	148	2
	EVMS(.)20 11/15	400	430	1000	60	2	67	2	-	-	-	-	-	-	-	500	430	1540	167	2	175	2
	EVMS(.)20 12/15	400	430	1000	60	2	70	2	-	-	-	-	-	-	-	500	430	1540	168	2	177	2
	EVMS(.)20 13/15	400	430	1200	63	2	71	2	-	-	-	-	-	-	-	500	430	1540	170	2	178	2
	EVMS(.)20 14/18,5	400	430	1200	64	2	73	2	-	-	-	-	-	-	-	610	430	1750	188	2	196	2
	EVMS(.)20 15/18,5	400	430	1200	65	2	74	2	-	-	-	-	-	-	-	610	430	1750	190	2	198	2
EVMS(.)20 16/18,5	400	430	1200	67	2	75	2	-	-	-	-	-	-	-	610	430	1750	191	2	200	2	

## GENERAL

Various regulatory authorities in many countries have introduced or are planning legislation to encourage the manufacture and use of higher efficiency motors, as part of a concerted effort worldwide to reduce energy consumption. Indeed, the International Electrotechnical Commission (IEC) has introduced a new standards relating to energy efficient motors. **IEC 60034-30** defines new efficiency classes for motors and harmonizes the currently different requirements for induction motor efficiency levels around the world.

The **Commission Regulation (EC) N. 640/2009** implementing EcoDesign Directive 2009/125/EC states that in the European Community, with the exception of some special applications, motors shall not be less efficient than the IE3 efficiency level as from 1 January 2015.

In detail:

IE3 by January 1, 2015 (for motors from 7.5 kW to 375 kW).

IE3 for all motors by January 1, 2017 (for motors from 0.75 kW to 375 kW).

		MOTOR	
Power Source	Frequency	50 Hz	
	Phase	Single Phase	Three Phase
	Power rating	0.37 ÷ 2.2 kW 0.5 ÷ 3.0 HP	0.37 ÷ 45 kW 0.5 ÷ 60 HP
	Voltage	230 ± 10% V	230/400 ± 10% V (up to 4.0 kW) 400/690 ± 10% V (above 5.5 kW)
Type	Type	IC411 - TEFC	
	Efficiency Level	from 0.37 kW up to 2.2 kW	IE2 : from 0.37 kW up to 0.55 kW IE3 : above 0.75 kW
	No° of poles	2	
	Protection degree	IP55 : up to 11 kW IP56 : above 15 kW	
	Insulation Class	F (temperature rise class B)	
Others	Thermal Protection	-	PTC sensor pre-installed for motors of 1.5 kW and above
	Casing Material	Aluminium	Aluminium : up to 30 kW Cast Iron : above 37 kW
	Flange mount (IEC motor)	IM B14 : up to 4.0 kW IM B5 : above 5.5 kW	
	Terminal Box fixing	-	Unlosable screw and sealing from 0.75 kW to 45 kW

## NOISE DATA

Motor Size	Power		Noise LpA - dB(A) *
	[kW]	[HP]	
71	0.37	0.5	52
	0.55	0.75	
80	0.75	1	52
	1.1	1.5	
90	1.5	2	60
	2.2	3	
100	3.0	4	62
112	4.0	5.5	66
132	5.5	7.5	68
	7.5	10	
160	11	15	73
	15	20	72
	18.5	25	70
180	22	30	70
200	30	40	70
	37	50	73
225	45	60	75

\* Noise values were measured with a tolerance of ± 2.5 dB (A).

### TECHNICAL MOTOR DATA EVMS 1-3-5-10-15-20-32-45-64-90

#### Single Phase Motor at 50Hz, 2 poles

(only for EVMS(.)1-3-5-10-15-20)

Motor Size	Power		Capacitor		Load efficiency and power-factor		Input [kW]	Full load current [A]		Locked rotor current [A]	
	[kW]	[HP]	[μF]	[V]	η % 100%	cos-φ 100%		230 V		230 V	
71	0.37	0.5	12	400	65.0	0.95	0.57	2.2		7.0	
	0.55	0.75	16	400	68.0	0.95	0.81	4.2		14.7	
80	0.75	1	20	400	67.0	0.94	1.12	5.0		20.0	
	1.1	1.5	30	400	74.8	0.98	1.49	6.8		31.0	
90 S	1.5	2	35	400	79.0	0.97	1.90	8.8		46.0	
90 L	2.2	3	40	400	78.0	0.97	2.82	12.9		61.0	

● Single phase motors manufactured by EBARA

#### Three Phase Motor at 50Hz, 2 poles

Motor Size	Power		Efficiency	Load efficiency and power-factor (400V)				Input [kW]	Full load current [A]			Locked rotor current [A]		
	[kW]	[HP]		η %		cos-φ			230 V	400V	690V	230 V	400V	690V
				50%	75%	100%	100%							
71	0.37	0.5	IE2	63.0	70.0	74.0	0.8	0.50	1.94	1.12	-	10.7	6.2	-
71	0.55	0.75	IE2	75.7	78.1	77.4	0.8	0.71	2.16	1.25	-	11.9	6.9	-
80	0.75	1	IE3	80.2	82.5	82.1	0.8	0.91	3.0	1.7	-	19.7	11.4	-
	1.1	1.5	IE3	81.3	82.8	82.7	0.8	1.33	4.3	2.5	-	28.8	16.6	-
90	1.5	2	IE3	83.5	84.3	84.6	0.8	1.77	5.8	3.3	-	44.1	25.5	-
	2.2	3	IE3	85.7	86.8	86.0	0.8	2.56	8.2	4.7	-	63.3	36.6	-
100	3.0	4	IE3	85.9	87.5	87.1	0.8	3.44	11.1	6.4	-	89.8	51.8	-
112	4.0	5.5	IE3	86.0	88.3	88.1	0.8	4.54	15.1	8.7	-	131.8	76.1	-
132	5.5	7.5	IE3	88.9	90.3	90.0	0.9	6.11	-	10.4	6.0	-	115.3	66.6
	7.5	10	IE3	89.0	90.7	90.4	0.9	8.30	-	13.6	7.9	-	144	83.1
160	11	15	IE3	90.1	91.4	91.2	0.8	12.06	-	21.3	12.3	-	184	106.2
160	15	20	IE3	91.5	92.0	91.9	0.9	16.32	-	26.2	15.2	-	215	124
160	18.5	25	IE3	90.9	92.4	92.4	0.9	20.02	-	32.8	19.0	-	299	173
180	22	30	IE3	92.5	92.9	92.7	0.9	23.73	-	38.5	22.3	-	347	201
200	30	40	IE3	93.1	93.4	93.3	0.9	32.15	-	51.0	29.6	-	459	266
200	37	50	IE3	92.0	93.4	93.7	0.9	39.49	-	64.0	37.1	-	524	303
225	45	60	IE3	93.8	93.9	94.0	0.9	47.87	-	77.0	44.5	-	601	347

◆ MOTOR DATA ETM