



Japanese Technology since 1912

EVMS - Vertical Multistage Pumps

Product Catalogue





Japanese Technology since 1912

www.ebara-europe.com

Built like a Katana

A Katana is a Japanese product, it's made with a traditional know-how started in 300 a.C.. Katana is manufactured with care and precision of details. Only years of experience can give the necessary capacity to build a masterpiece.

This is what we do with our pumps. Our 100 years of Japanese experience in pumps manufacturing are the base to project and realize pumps with high quality performance, reliability and cutting-edge mechanical parts.

We look forward not forgetting the past.

EBARA new vertical multistage pumps named "EVMS" are manufactured with the highest standards of quality, to achieve reliable operating performance by means of strict technical evaluation criteria and control programs that involve the whole manufacturing process.

We listen to the market. Our design is unique. EVMS can offer the exceptional values through the cutting-edge solutions that best suits your needs.



Precision, Quality, Cutting-Edge



■ Pump Type

EBARA vertical multistage in line pumps EVMS

■ Model range

1, 3, 5, 10, 15, 20 m³/h flow sizes

■ Maximum operating range (Pressure/Liquid temperature)

16 bar or 25 bar / - 30 to + 140 °C

■ Material version (bottom casing)

EVMS (AISI 304), EVMSL (AISI 316L), EVMSG (Cast iron)

■ Pipe connections

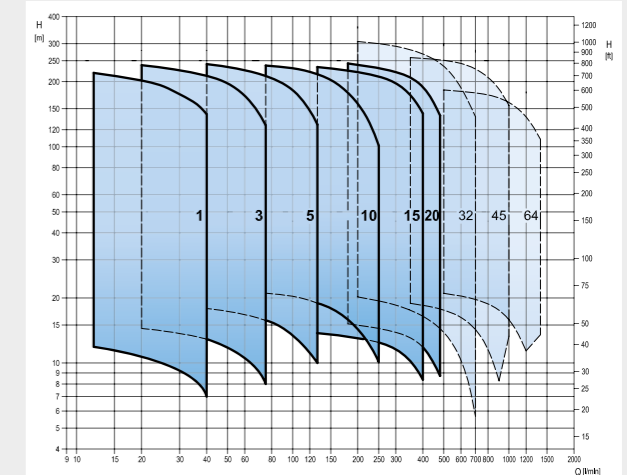
Round flange / Loose Flange / Oval flange / Victaulic® / Clamp






■ Motor

High Efficiency motor IE3 over 0.75 kW, 50 Hz / 60Hz,
Single phase / Three phase
PTC as standard for the above 1.5 kW

EBARA three phase motors (model name: ETM) are available from 0.75 up to 11 kW for both 50 and 60 Hz.

EVMS 1-3-5-10-15-20
EVM 32-45-64 50 Hz



	Drinking water approval				Atmosferes explosibles approval
	DM174/2004 	ACS 	KTW* 	WRAS 	ATEX 2014/34/UE 
Mechanical seal	SiC/Carbon_EPDM	SiC/Carbon_EPDM	SiC with graphite/ SiC_EPDM	SiC/Carbon_EPDM	All variations on page 18
EVMSG	•	-	-	-	•
EVMS	•	•	•	•	•
EVMSL	•	•	•	•	•

Note: * KTW is certified for components.

• Available

Main product features



Innovative hydraulic solutions

Any motor, anywhere.

- **Commercial motors** can be fitted to all of the pump models without any modifications thanks to low pump axial thrust load
- **Long life of the motor bearing**
- **High pump efficiency** classified in MEI > 0.7 as the most efficient models
- **Patent Pending**

2

ETM
MOTORS



EBARA standard motor solutions

- IE3 efficiency for both 50 and 60 Hz* operation, according IEC 60034-30 standard.
- ETM motors are available from 0.75 up to 11 kW for both 50 and 60 Hz**
- Downsized motor frame with compact unique design
- PTC sensors (thermistors) are standard from 1.5 kW upwards for motor protection at 150°C
- Unloosable screws and sealing are standard for terminal box fixing from 0.75 kW upwards
- Stable inverter mounting on fan covers made of pressed steel

* IE3 for 60Hz is depending on motor size and voltage.

** All other sizes including single phase motors are available with commercial IEC standard motors

3

Piping connection options

- The various pipe connections are available depending on the application requirements
- The external dimensions can be adjusted to the replacement of the existing pump in the wide majority

Material	Round flange DIN <small>(incl. ANSI depending on models)</small>	Loose Flange DIN <small>(incl. ANSI depending on models)</small>	Oval Flange	Plug-In connection (Victaulic®, Clamp)
AISI304/ AISI316				
Cast Iron				

4



Shaft seal solutions

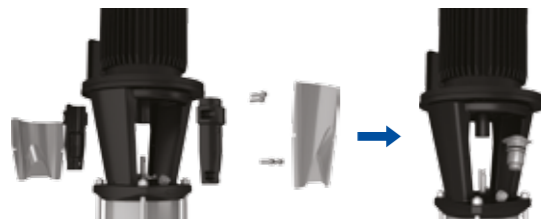
Shaft seal material:

- B: Resin impregnated carbon graphite
- Q: Sintered silicon carbide
- Qg: Silicon carbide with carbon graphite

Carbon or graphite inclusions with silicon carbide can be used as **dry lubricant to reduce friction.**

- It's conforming to EN12756 (ex DIN 24960)

5



Easy maintenance

- **The cartridge shaft 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



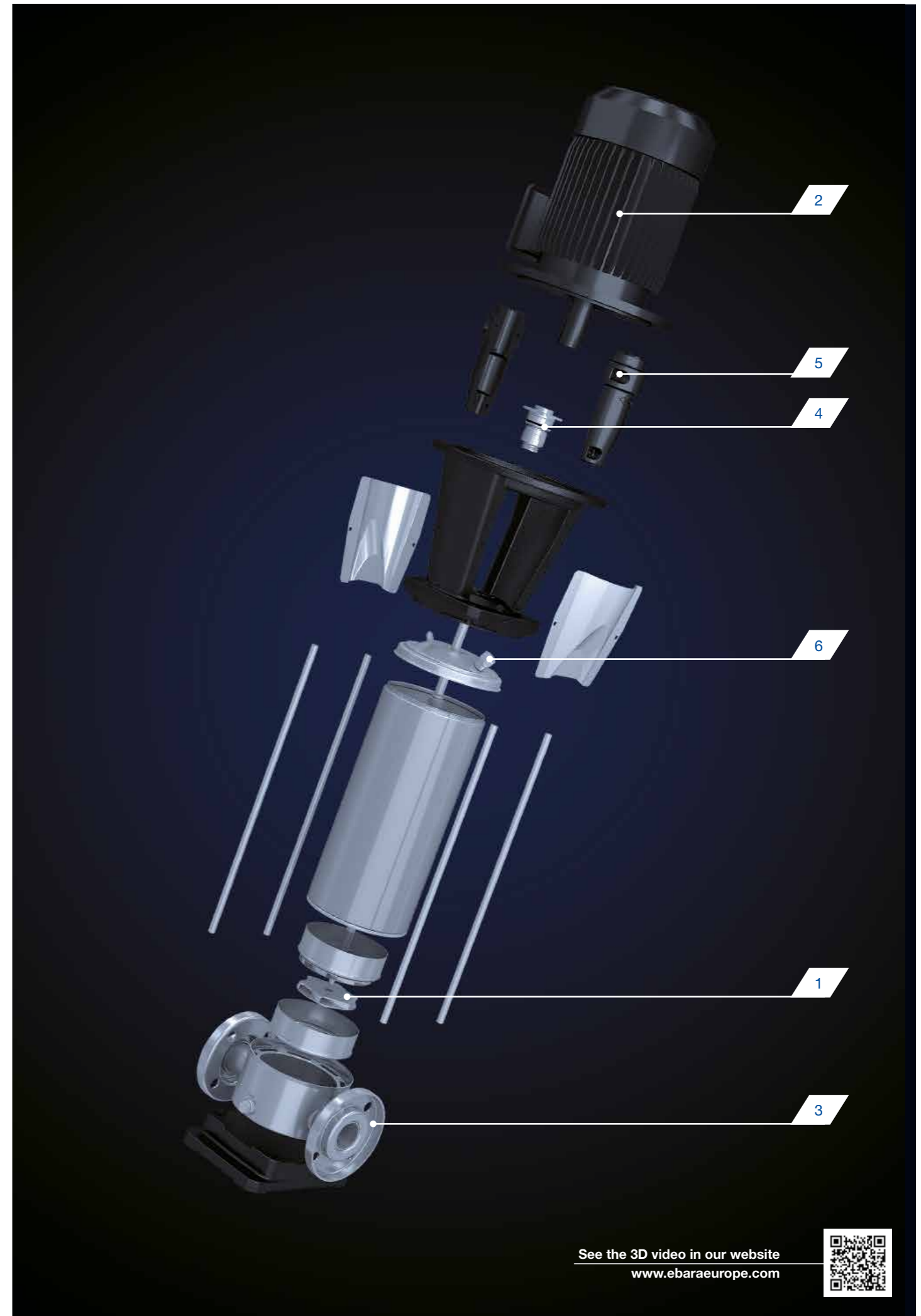
Water filling & sensor plug



Commercial sensor fitting



Measurements for suction and discharge pressure / drain



See the 3D video in our website
www.ebaraurope.com





Reliability is made by numbers

1
Million

Cycles of the endurance test*

2
Times

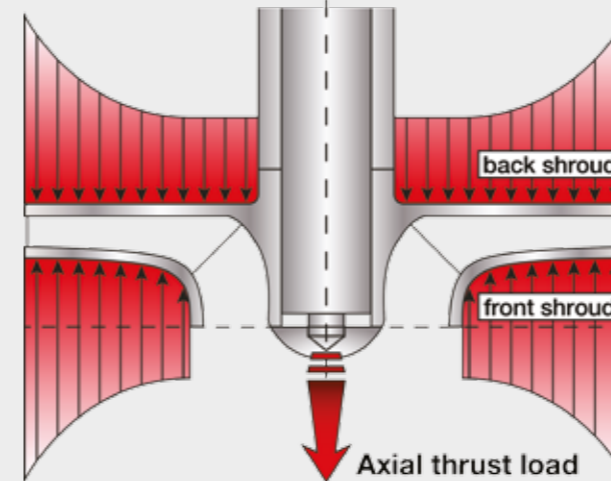
Higher test criteria than nominal operating conditions*

3
Times

Much less axial thrust load than common pumps

* for main components

Solve axial thrust load



The pump axial thrust load is caused by the unbalance of the static pressure between a front shroud and a back shroud of an impeller. That always causes **the reduction of the bearing life of the motor.**

General methods to work with the axial thrust load are as below.

- Increasing the size of motor bearing or using enhanced motor bearings.
- Mounting additional ball bearings on the pump bracket. These measurements are historically known to cause complicated mechanical structures.

EBARA new designed impeller "Shurricane" can reduce the pump axial thrust load with high pump efficiency by means of the innovative hydraulic design method.

EVMS can accept the commercial motors without any modifications and improve the maintenance cycles of motor bearing.

Any motor, anywhere.



In harmony
with our
customers

Fields of applications



INDUSTRY

- **Water treatment**
reverse osmosis
ultra-filtration
water purification
micro-filtration
softening, ionizing
and demineralising systems
swimming pools
separators
- **Boiler feeding**
steam systems
condensate systems

- **Wash and clean**
vehicle washing systems
industrial part washing
laundry systems
supply of liquids with acids and
bases
supply of chemical liquids
- **Chilling**
handling of refrigerants for cooling
thermal control systems
industrial cooling
laser cooling

- **Machine tooling**
cooling lubricant supply for tooling
machines
- **Pressure boosting**
pressure boosting for industrial use
- **Food & beverage**
food washing systems
bottle wash systems
- **Pharmaceutical industries**
- **Marine applications**
freshwater, deckwash, high fog and
fire fighting on ships



BUILDING SERVICE

- **Pressure boosting**
pressure boosting for buildings
pressure boosting for high rise
buildings/hotels
- **Sprinkler systems**
- **Fire fighting systems**
jockey pump
- **District heating**
- **Heat exchangers / fan heaters**
- **Air conditioning systems**
- **Heating systems**



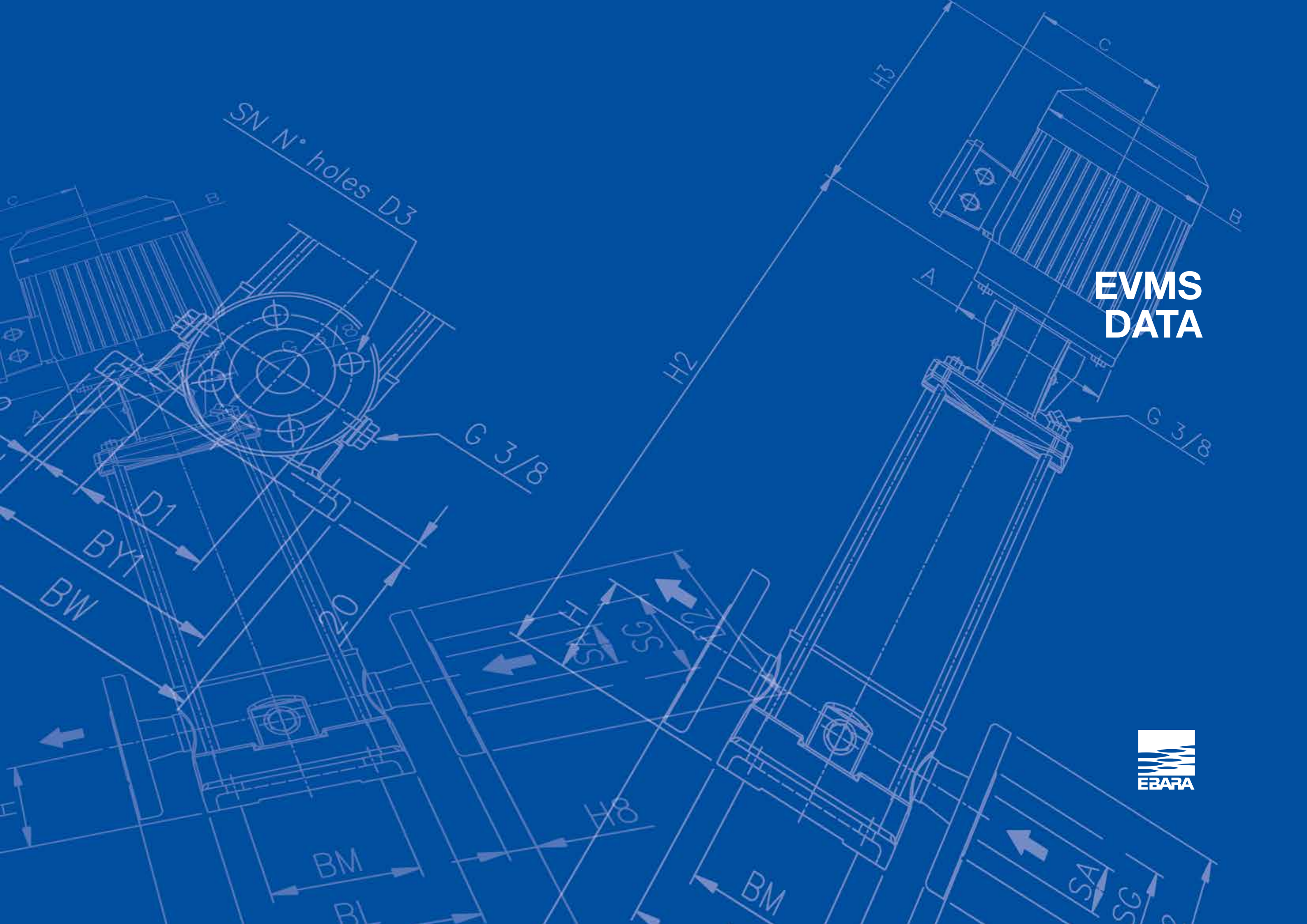
WATER SUPPLY

- **Water treatment**
water treatment plants filtration
water treatment plants transfer
- **Pressure boosting**
transfer from water treatment plants (mains)
- **Irrigation**
golf course / sport fields irrigation
- **Agriculture**
sprinkler irrigation
drip irrigation

EBARA worldwide service points



please see the contact list on page 21.



EVMS
DATA

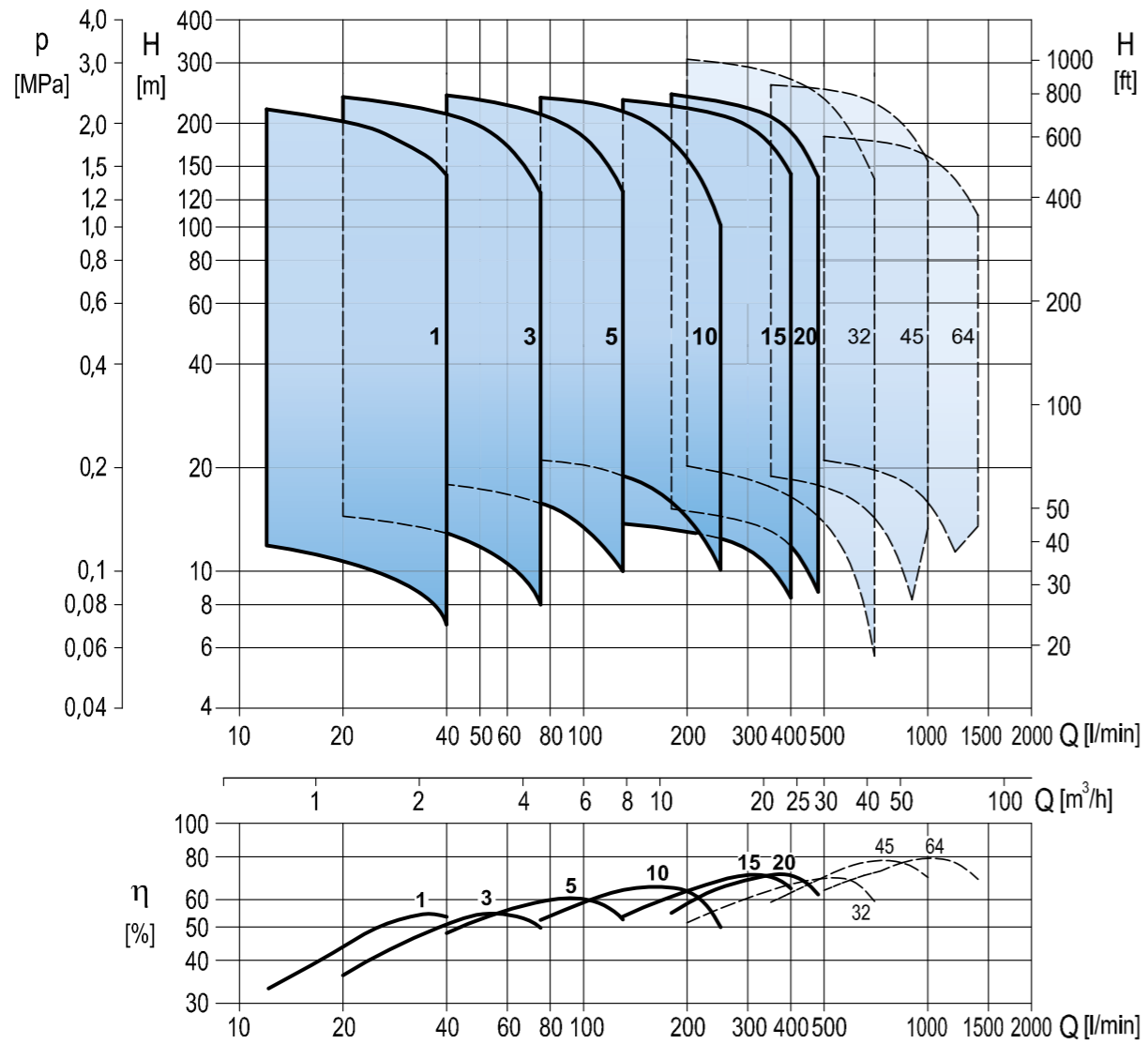


Performance Range

50Hz

EVMS 1-3-5-10-15-20

EVM 32-45-64



Minimum efficiency index (MEI)

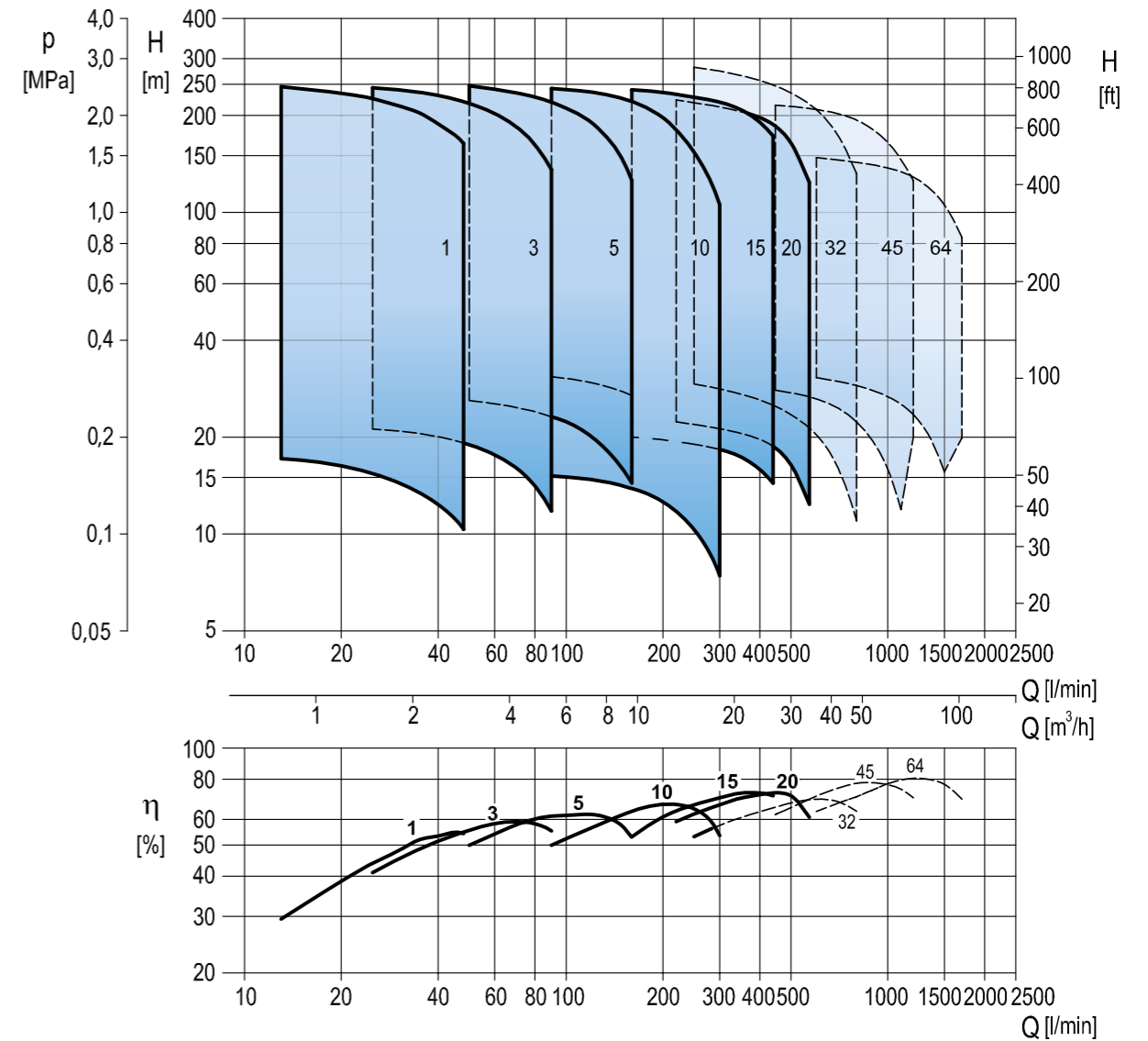
Pump type	MEI
EVMS(.)1	> 0.70
EVMS(.)3	> 0.70
EVMS(.)5	> 0.70
EVMS(.)10	> 0.70
EVMS(.)15	> 0.70
EVMS(.)20	> 0.70

Performance Range

60Hz

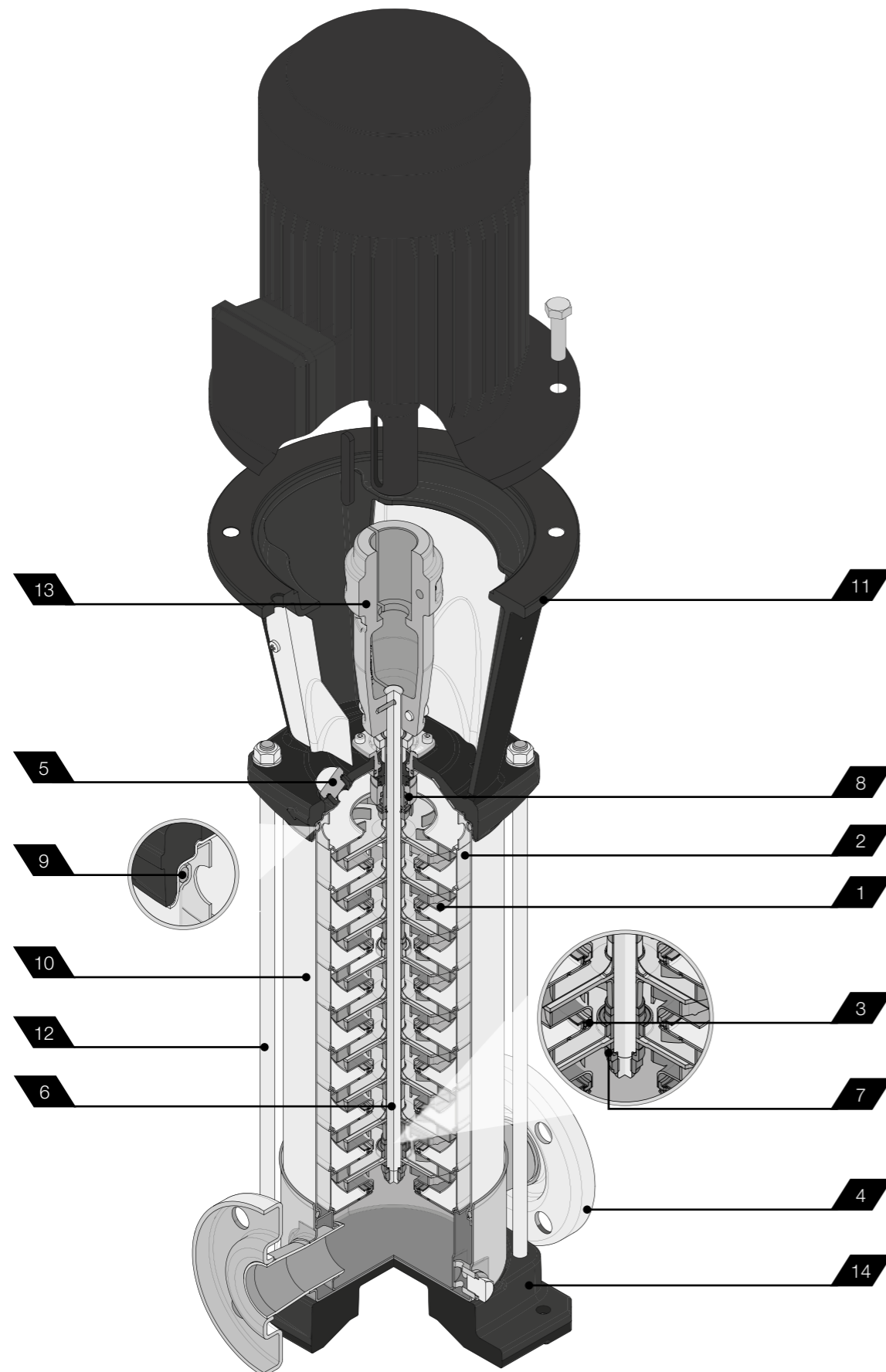
EVMS 1-3-5-10-15-20

EVM 32-45-64



Sectional Drawing

EVMS 1-3-5-10-15-20



Product Specifications

EVMS 1-3-5-10-15-20

Pump

Version		EVMSG					EVMS					EVMSL								
		1	3	5	10	15	20	1	3	5	10	15	20	1	3	5	10	15	20	
Operating range	Nominal flow rate (m³/h)																			
	Maximum working pressure	1.6/2.5 MPa (16 bar/25 bar)																		
	Maximum liquid temperature range	-30° to 140°C																		
Key Components Materials	1. Impeller	EN 1.4301 (AISI 304)					EN 1.4404 (AISI 316L)													
	2. Intermediate casing	EN 1.4301 (AISI 304)					EN 1.4404 (AISI 316L)													
	3. Liner ring	EN 1.4301 (AISI 304) + PPS					EN 1.4404 (AISI 316L) + PPS													
	4. Bottom casing	Cast Iron					EN 1.4301 (AISI 304)					EN 1.4404 (AISI 316L)								
	5. Casing cover	EN 1.4301 (AISI 304)					EN 1.4404 (AISI 316L)													
	6. Shaft	EN 1.4301 (AISI 304)	EVMS(G) 1-3-10 EVMSG 5-15-20 (depend on models)																	
		EN 1.4404 (AISI 316L)	EVMSL 1-3-10 EVMSL 5-15-20 (depend on models)																	
		EN 1.4460 (AISI 329A)	EVMS(G)(L) 5-15-20 (depend on models)																	
	7. Shaft sleeve bearing	Tungsten carbide																		
	8. Shaft seal	Please see the shaft seal options on page 18																		
	9. O ring	EPDM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		FPM	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	10. Outer casing	EN 1.4301 (AISI 304)					EN 1.4404 (AISI 316L)													
	11. Motor bracket	Cast Iron																		
12. Tie rod	Galvanized steel 6.8 strength class ISO 898/1																			
13. Coupling	Die cast aluminium (up to 4 kW), Cast iron (from 5.5 kW)																			
14. Base	Cast iron					Die cast aluminium														
Pipe Connection	Oval flange	up to 16 bar	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Round flange DIN (EVMS(L)1-3-5 DIN/ANSI)	up to 16 bar	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		from 16 bar to 25 bar	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Loose Flange DIN (EVMS(L)1-3-5 DIN/ANSI)	up to 16 bar									○	○	○	○	○	○	○	○	○	
		from 16 bar to 25 bar									○	○	○	○	○	○	○	○	○	
Victaulic®	up to 25 bar									○	○	○	○	○	○	○	○	○		
Clamp	up to 25 bar									○	○	○	○	○	○	○	○	○		

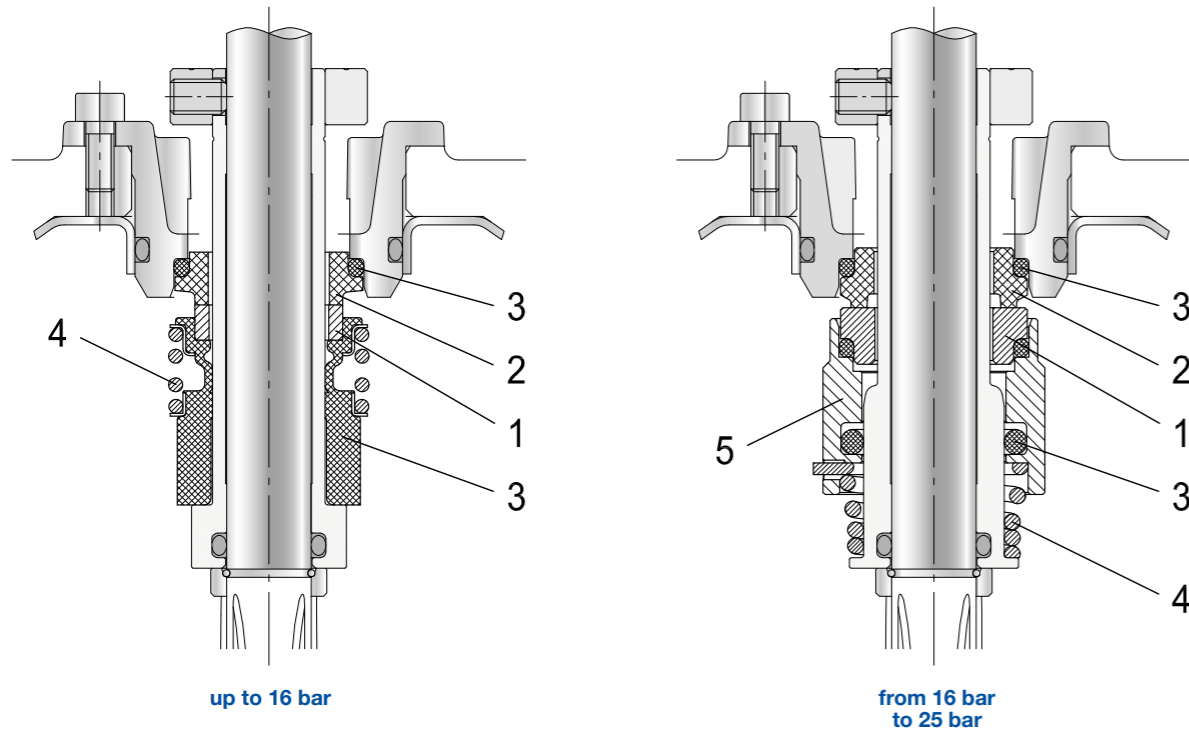
Legend: ● Standard ○ Options

Motor

		50 Hz		60 Hz
		Single Phase	Three Phase	Three Phase
Power Source	Frequency	50 Hz		60 Hz
	Phase	Single Phase	Three Phase	Three Phase
	Rotation Speed	~ 2900 min ⁻¹		~ 3500 min ⁻¹
	Power Rating	0.37 ÷ 2.2 kW 0.5 ÷ 3.0 HP	0.37 ÷ 18.5 kW 0.5 ÷ 25 HP	0.37 ÷ 18.5 kW 0.5 ÷ 25 HP
Voltage	Voltage	230 ± 10%	230/400 ± 10% (up to 4kW) 400/690 ± 10% (above 5.5 kW)	220/380 ± 10% V (up to 4kW) 265/460 ± 10% V (up to 4kW) 380/660 ± 10% V (above 5.5 kW) 460 ± 10% V (above 5.5 kW)
		Type	Type	Electric - TEFC
Efficiency	from 0.37 to 2.2 kW		from 0.37 to 0.55 kW IE3 from 0.75 to 18.5 kW	from 0.37 kW to 0.55 kW IE2/IE3 from 0.75 to 18.5 kW
No° of poles	2			
Protection Degree	IP 55			
Others	Insulation Class	F (temperature rise class B)		
	Thermal Protection	PTC as standard for the above 1.5 kW		
	Casing Material	Aluminium		
	Flange Mount (IEC motor)	IM B14 (up to 4 kW) IM B5 (above 5.5 kW)	IM B14 (up to 4 kW) IM B5 (above 5.5 kW)	
Terminal Box fixing	Unlosable screw and sealing from 0.75 kW to 11 kW		Unlosable screw and sealing from 0.75 kW to 11 kW	

Shaft seal data

EVMS 1-3-5-10-15-20



Legend: ● Standard ○ Options () Type key

Pump model	Max liquid temperature range	Shaft seal type Cartridge		Shaft seal material					Type key
		Unbalanced	Balanced	1 Rotating Part	2 Stationary Part	3 Elastomers	4 Spring	5 Collar	
up to 16 bar	- 30°C to + 120°C	●		SiC (Q ₁)	Carbon (B)	EPDM (E)	AISI316 (G)		Q ₁ BEG
	- 30°C to + 80°C	○		SiC (Q ₁)	Carbon (B)	FPM (V)	AISI316 (G)		Q ₁ BVG
	- 30°C to + 140°C		○	SiC with graphite (Q _g)	SiC (Q ₁)	EPDM (E)	AISI316 (G)		HQ _g Q ₁ EG
	- 30°C to + 80°C		○	SiC with graphite (Q _g)	SiC (Q ₁)	FPM (V)	AISI316 (G)		HQ _g Q ₁ VG
	- 30°C to + 140°C		○	SiC (Q ₁)	Carbon (B)	EPDM (E)	AISI316 (G)		HQ ₁ BEG
from 16 bar to 25 bar	- 30°C to + 140°C		●	SiC (Q ₁)	Carbon (B)	EPDM (E)	AISI316 (G)		HQ ₁ BEG
	- 30°C to + 80°C		○	SiC (Q ₁)	Carbon (B)	FPM (V)	AISI316 (G)		HQ ₁ BVG
	- 30°C to + 140°C		○	SiC with graphite (Q _g)	SiC (Q ₁)	EPDM (E)	AISI316 (G)		HQ _g Q ₁ EG
	- 30°C to + 80°C		○	SiC with graphite (Q _g)	SiC (Q ₁)	FPM (V)	AISI316 (G)		HQ _g Q ₁ VG

Pipe Connection data

EVMS 1-3-5-10-15-20

Flange Type	Maximum operating pressure	Dimensions	EVMS (AISI 1.4301) EVMSL (AISI 1.4401)				
			1/3	5	10	15/20	
Oval Flange (N)	PN16		D	G1	G1¼	G1½	G2
			L	160	160	200	200
			B1 / B2	100/180	100/180	130/215	130/215
			H	50	50	80	90
Oval Flange (N)	PN16		EVMSG (Cast Iron)				
			D	G1	G1¼	G1½	G2
			L	160	160	200	200
			B1 / B2	100/180	100/180	130/215	130/215
Round Flange (F)	PN25		EVMS (AISI 1.4301) EVMSL (AISI 1.4401)				
			D	DN25	DN32	DN40	DN50
			L	250	250	280	300
			B1 / B2	100/180	100/180	130/215	130/215
Round Flange (F)	PN25		EVMSG (Cast Iron)				
			D	DN25	DN32	DN40	DN50
			L	250	250	280	300
			B1 / B2	100/180	100/180	130/215	130/215
Loose Flange (LF)	PN25		EVMS (AISI 1.4301) EVMSL (AISI 1.4401)				
			D	DN25	DN32	DN40	DN50
			L	250	250	280	300
			B1 / B2	100/180	100/180	130/215	130/215
Victaulic® (V)	PN25		EVMS (AISI 1.4301) EVMSL (AISI 1.4401)				
			D	DN32	DN32	DN50	DN50
			L	210	210	261	261
			B1 / B2	100/180	100/180	130/215	130/215
Clamp (C)	PN25		EVMS (AISI 1.4301) EVMSL (AISI 1.4401)				
			D	Φ59	Φ59	Φ87	Φ87
			L	162	162	202	202
			B1 / B2	100/180	100/180	130/215	130/215

EBARA worldwide service points

For further information



Data book



Instruction Manual



Kensaku
system for spare parts selection



Pump Selector
www.ebara.com

Please visit our website
www.ebara.com

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