SAER®
ELETTROPOMPE

TM-TMB - MULTISTAGE CENTRIFUGAL PUMPS

50-60 Hz

ATTESTATION DE CONFORMITÉ SANITAIRE
ACS

TM40-65

TMBX80-125

TMBX200-250

SAER ELETTROPOMPE

TMXZ125-200

Codification

-	TM	X	Z	-	100	150	/4	-	510	400	50	IE3	E
1	2	3	4	5	6	7	8	9	10	11	12	13	14

1	Feeling frequency	-	50 Hz
		6	60 Hz
2	Series	TM	Multistage horizontal pump with axial suction
		TMB	Multistage horizontal pump with radial suction
		TMV	Multistage horizontal pump with radial suction
3	Material of wet parts	-	Standard version • Standardversion
		X	Wet parts in AISI316, OR in VITON
4	Motor	-	Bare shaft pump
		Z	Pump coupled with electric motor
		S	Pump coupled with Diesel engine
5	Poles	-	2-poles operation (3000/3600 rpm)
		4P	4-poles operation (1500/1800 rpm)
6	DN delivery	40	DN 40 PN40
		50	DN50 PN40
		65	DN65 PN40
		80	DN80 PN40
		100	DN100 PN40
		125	DN125 PN40
		150	DN150 PN40
		200	DN200 PN40
7	DN suction	65	DN65 PN16
		80	DN80 PN16
		100	DN100 PN16
		125	DN125 PN16
		150	DN150 PN16
		200	DN200 PN16
		250	DN250 PN16
8	Number of stages	/2..../13	
9	Special versions	-	Standard version • Standardversion
		R	Reinforced Version: Nozzles and stage bodies in cast iron EN-GJS-500, Shaft in AISI630 (1.4542), PN63 nozzles
10	Nominal power in HP		
11	Nominal tension		
12	Frequency	50	50 Hz
		60	60 Hz
13	Motor efficiency class	IE1	Motor efficiency class according to IEC 60034-30 Motor in efficiency class IE1 are intended for export outside the European Economic Area. Make reference to the regulation (EC) 640/2009
		IE2	
		IE3	
14	Motor origin	E	SAER motor (up to 55kW), European motor for higher powers (ABB or equivalent)
		|	**Motore di importazione** • Imported motor • Motor importado • Moteur d'importation • импортированы двигателя •Importierter Motor

For operational reasons some information may sometimes be omitted or espressed in a different way

Operation limits - Standard versions

TM-TMB-TMV

			40-65											
			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min			50 Hz ▶ 3000 1/min			60 Hz ▶ 3600 1/min		
			TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	20÷45			24÷54			30÷85			35÷95		
2	**H (Q=0)**	m	99	138	99	99	141	99	275	550	275	287	574	287
3	**PN**	bar	40÷63 (T=20°C)											
4	**P_2max**	kW	11	15	11	15	18,5	15	75	132	75	75	160	75
5	**T**	°C	90 (120)											
6		g/m^3	65											
7		min	2											

			50-80											
			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min			50 Hz ▶ 3000 1/min			60 Hz ▶ 3600 1/min		
			TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	20÷55			25÷62			40÷110			47÷125		
2	**H (Q=0)**	m	120	156	108	123	158	123	288	623	288	279	627	279
3	**PN**	bar	40÷63 (T=20°C)											
4	**P_2max**	kW	18,5	30	18,5	22	30	22	90	200	90	110	250	110
5	**T**	°C	90 (120)											
6		g/m^3	65											
7		min	2											

			65-100											
			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min			50 Hz ▶ 3000 1/min			60 Hz ▶ 3600 1/min		
			TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	30÷110			30÷130			60÷160			70÷170		
2	**H (Q=0)**	m	83	198	165	123	245	147	340	544	340	392	588	392
3	**PN**	bar	40÷63 (T=20°C)											
4	**P_2max**	kW	22	55	45	37	75	45	160	250	160	200	280	200
5	**T**	°C	90 (120)											
6		g/m^3	65											
7		min	2											

			80-125											
			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min			50 Hz ▶ 3000 1/min			60 Hz ▶ 3600 1/min		
			TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	40÷145			50÷175			100÷230			122÷282		
2	**H (Q=0)**	m	210	210	210	202	202	202	403	564	403	349	581	349
3	**PN**	bar	40÷63 (T=20°C)											
4	**P_2max**	kW	75	75	75	75	75	75	250	400	250	280	450	280
5	**T**	°C	90 (120)											
6		g/m^3	65											
7		min	2											

100-150

			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min			50 Hz ▶ 3000 1/min			60 Hz ▶ 3600 1/min		
			TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	60÷210			100÷220			160÷310			160÷300		
2	**H (Q=0)**	m	140	280	196	200	400	280	428	642	321	304	608	-
3	**PN**	bar	40÷63 (T=20°C)											
4	**P_2max**	kW	75	132	110	110	250	160	400	560	200	315	630	-
5	**T**	°C	90 (120)											
6		g/m^3	65											
7		min	2											

125-200

			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min		
			TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	120÷300			130÷330		
2	**H (Q=0)**	m	205	327	205	236	354	236
3	**PN**	bar	40÷63 (T=20°C)					
4	**P_2max**	kW	160	250	160	200	280	200
5	**T**	°C	90 (120)					
6		g/m^3	65					
7		min	2					

150-200

			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min		
			TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	160÷425			190÷510		
2	**H (Q=0)**	m	208	311		225	299	
3	**PN**	bar	40÷63 (T=20°C)					
4	**P_2max**	kW	250	355		315	400	
5	**T**	°C	90 (120)					
6		g/m^3	65					
7		min	2					

200-250

			50 Hz ▶ 1500 1/min			60 Hz ▶ 1800 1/min		
			TM	TMB	TMV	TM	TMB	TMV
1	**Qmin – Qmax**	m^3/h	300÷850			360÷1020		
2	**H (Q=0)**	m		328			354	
3	**PN**	bar	40÷63 (T=20°C)					
4	**P_2max**	kW		710			900	
5	**T**	°C	90 (120)					
6		g/m^3	65					
7		min	2					

1. Flow range

2. Max. head (Q=0)

3. Max operation pressure (max allowed pressure in consideration of the sum of max. suction pressure and of the head with null flow rate [Temperature of the pumped liquid 20°C])

4. Max. power

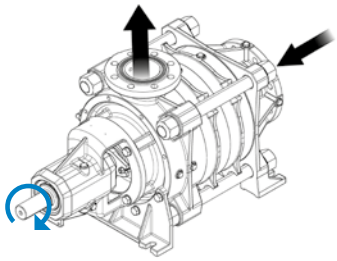
5. Temperature of the pumped liquid

6. Max solids content

7. Max working time with closed delivery

SERIE TM

Nozzle orientation: possible configurations



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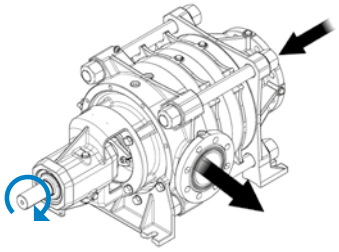

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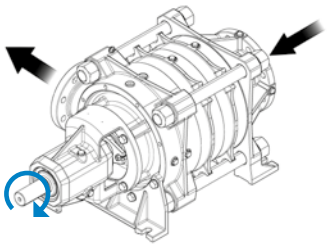
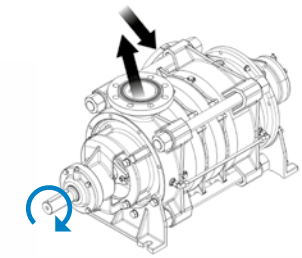


3

SERIE TMB

Nozzle orientation: possible configurations



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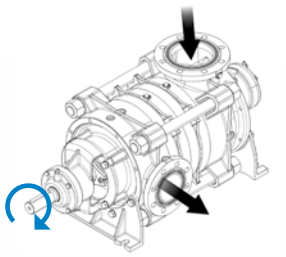

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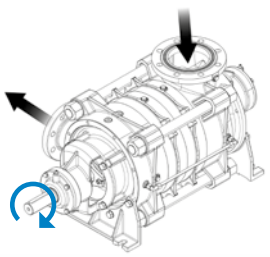

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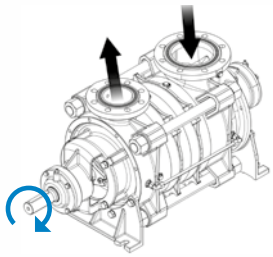

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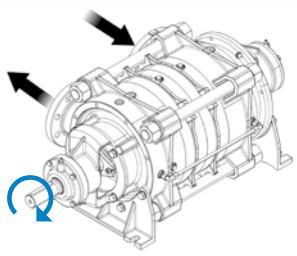

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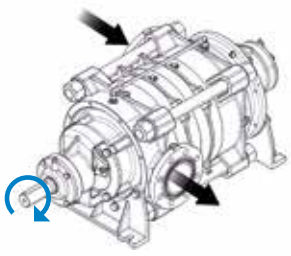

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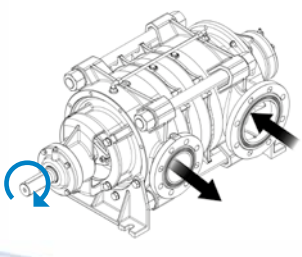

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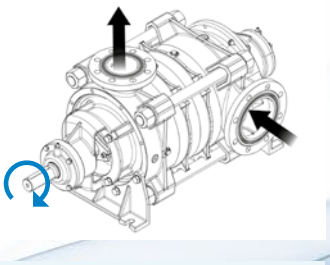

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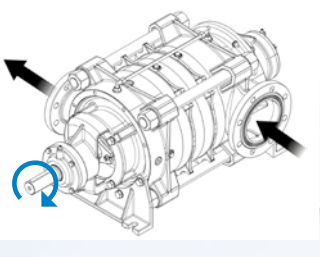

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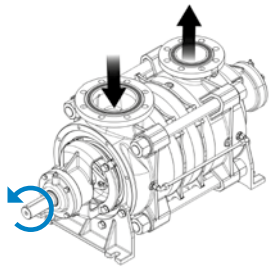

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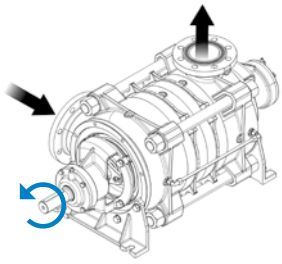

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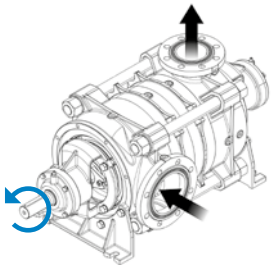

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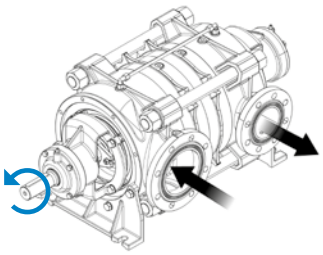

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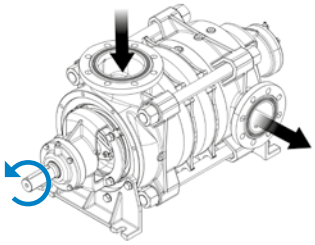

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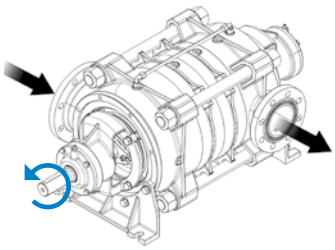

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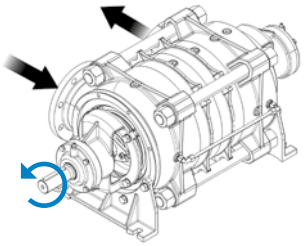

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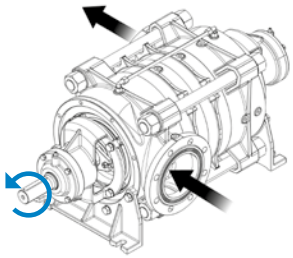

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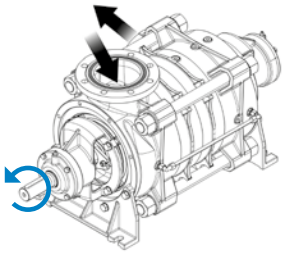


18*

(*)On request

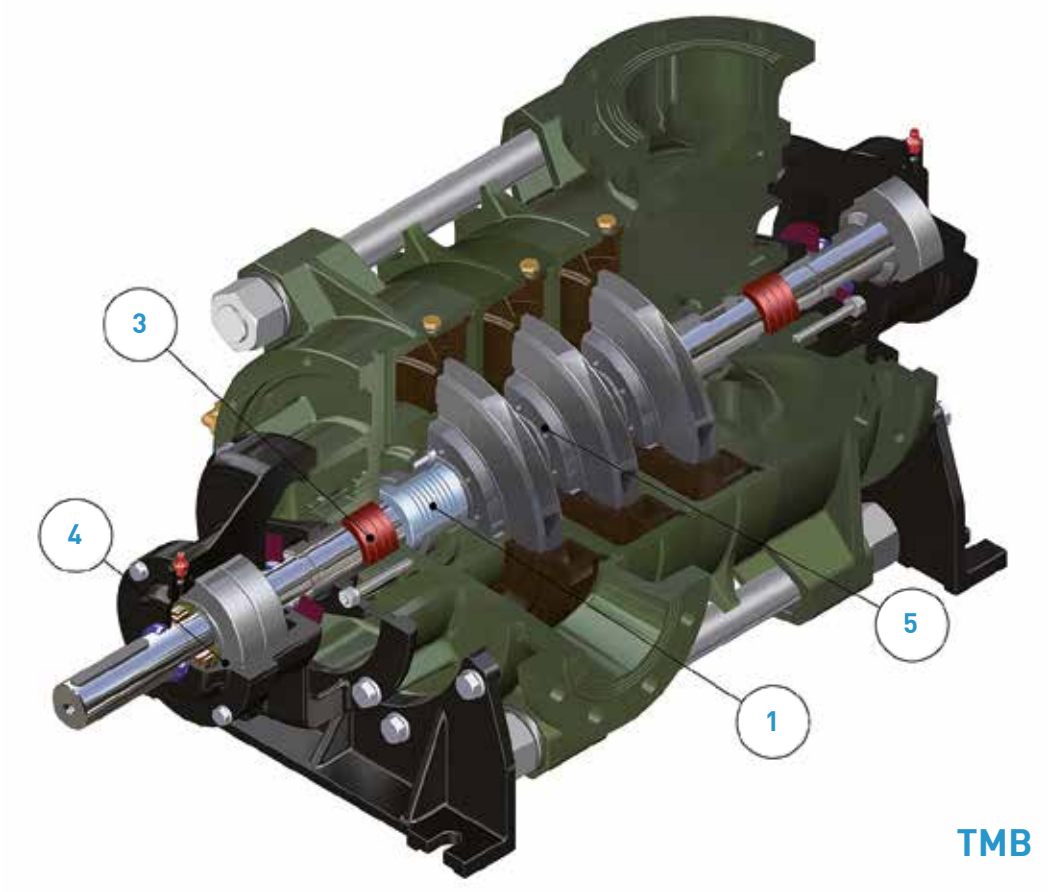
TMB-TM

The advantages of TMB-TM series

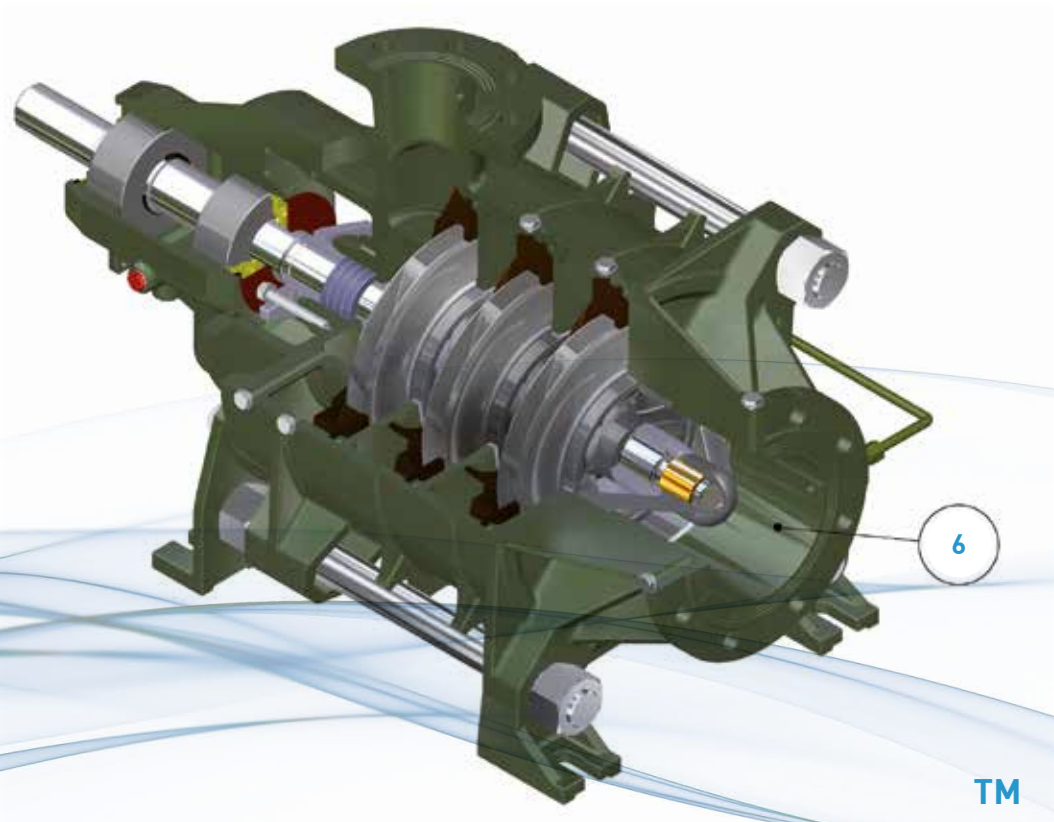
EN

Components designed with suitable thickness to guarantee greater resistance and life to the exercise pressures.
A wide range of materials (cast iron EN-GJL-250, spheroidal cast iron EN-GJS-500, stainless steel AISI 316).
Suction flanges in PN 16, delivery flanges in PN 40 (PN 63 on request). Maximum working pressure: PN40 o PN63 depending from versions.
Three possible configurations: TM (axial suction), TMB (double support and lateral suction), TMV (vertical), all with the possibilità of orienting the nozzle.
Hydrauli design developed with CFD systems and optimized in order to obtain the best hydraulic efficiency levels, combined with a wide range of Capacity-Discharge Head curves. Standard with stainless steel AISI 431 shaft designed to resist to the bending-torsion load generated and protected by anti-wear systems (stainless steel shaft sleeves). On demand, shafts made with different materials (Duplex, AISI 630).

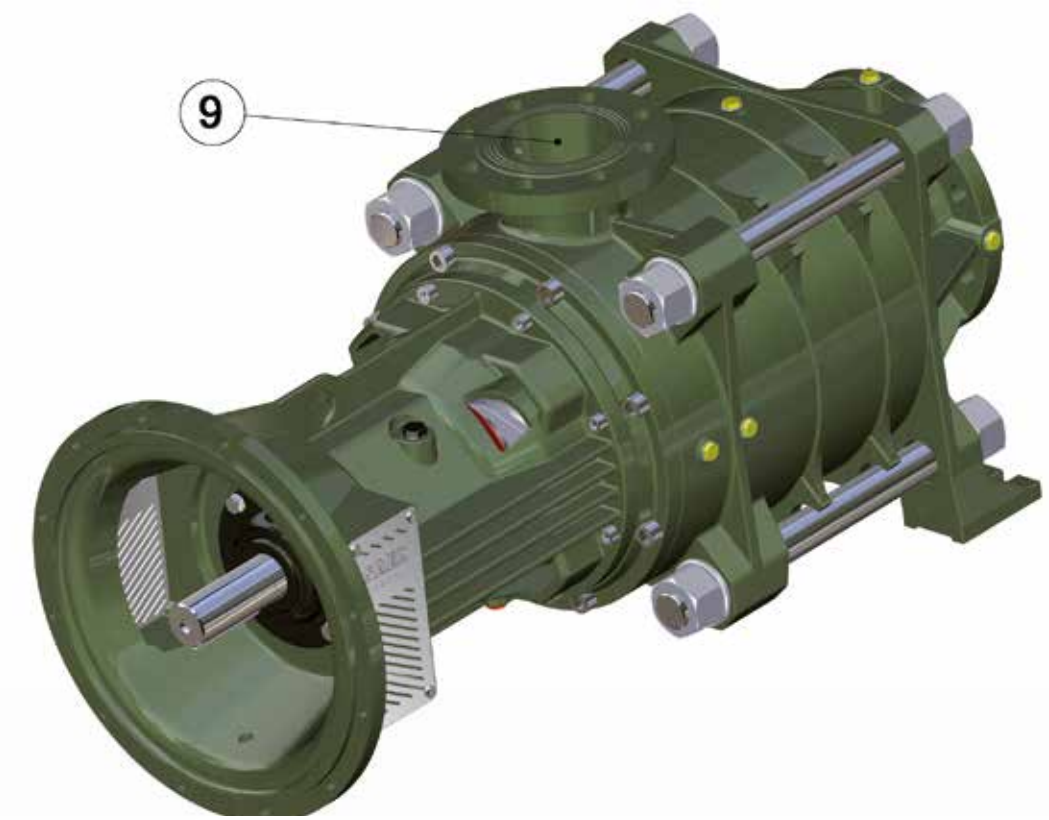
1. Reduction system of axial loads on all versions : balance drum, impellers with holes and return pipe.
2. Last stage diffuser for radial loads removal.
3. Different configurations of mechanical seal or gland packing according to the user's requirements, based on the fluid characteristics and the use conditions.
4. Oversized ball bearings and protected from outer agents to offer a reduced working noise and a long service life. Available versions with oil soaked bearings and with a constant-level oil feeder on demand.
5. Wear ring front and rear, easy to replace, to protect diffusers, stage bodies and impellers.
6. TM series: suction profile conceived to increase the suction capacity and to reduce the NPSH and the possibility of cavitation.
7. Thrust bearings used to support axial residual loads.
8. TM and TMV series: Bushings made of antifriction materials.
9. TM80 – TM 100: Avaible also in TMS version, with coupling flange according to SAE3 for diesel engine.



TMB



TM



TMS

TM-TMB

EN

APPLICATIONS
The centrifugal multistage horizontal electric pumps of series TM are used in water plants supply, irrigation systems, systems of high pressure lifting, refrigeration, heating, snowing, cleaning, in boiler systems, in condensed extraction.

CONSTRUCTIONAL FEATURES
Centrifugal multistage horizontal [TM, TMB] or vertical [TMV] pumps driven by elastic coupling, clock wise rotation or counter clock wise rotation as indicated in the configuration chart.
Combined axial thrust balancing system: impeller with holes, recirculation pipe and balance drum on the shaft.

COMPONENTS
Suction body with axial [TM] or radial [TMB, TMV] inlet; intermediate stage composed of stage body and corresponding diffuser with replaceable wearing rings.
Delivery body with upward outlet, with the possibility of turning in at 90°C, both directions.
Drive side bearing support with high rigidity.
Shaft in stainless steel completely protected.
Adjustable packing seal on the shaft, in alternative not balanced or balanced mechanical seal, according to the working pressure.
External tie rods for tightening of the intermediate stages.
TM, TMV: suction side support of sliding type, lubrificated by the pumped liquid.
TMB: double support.

OPERATING DATA
Maximum working pressure: 40 bar or 63 bar.
Temperature of pumped liquid: min: -15°C max: 120°C.
Ambient temperature [group electric pump]: max 40°C. [please, request verification for higher temperatures].
The pumped liquid has to be chemically and mechanically suitable for the utilized materials.

MATERIALS
Impellers, Suction body, delivery body and stage casing: cast iron EN-GJL-250, cast iron EN-GJS-500 or carbon steel.
Diffusers: cast iron EN-GJL-250 or carbon steel.
Shaft and protection bushes: stainless steel AISI 431.
Tie rods: carbon steel.
On request, precision cast stainless steel AISI 316 versions or bronze G-CuSn10 impellers.
Standard pumps ACS approved for use with drinking water.

Motor, TMZ – TMBZ – TMVZ:
asynchronous with external ventilation (TEFC)
Protection: IP55
Insulation: class F
Standard tensions, Frequency 50 Hz, 220-240V up to 4 kW, 380-415V / 660-720V starting from 5,5 kW.
Motors with efficiency class IE2 according to IEC 60034-30, different versions on request.

PERFORMANCES
Guaranteed performances with tolerances admitted by Standards UNI EN ISO 9906:2012 – grade 3B (on request other grade).