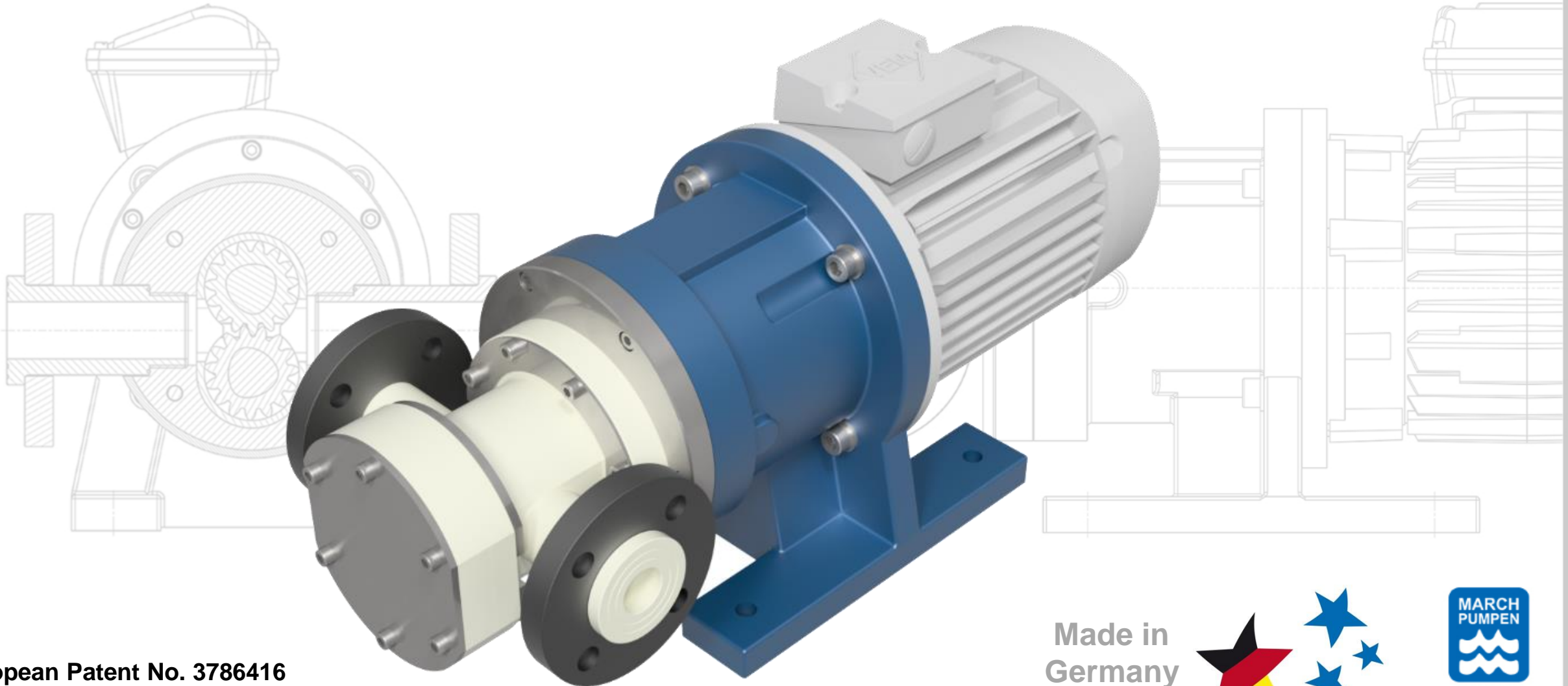


MAGNETICALLY COUPLED GEAR PUMPS

Series: **TEF-MAG**[®]

chemical resistant, non-metallic gear pump for harshest industrial applications



European Patent No. 3786416
USA Patent No. US 10,189,005 B2

Made in
Germany



Series: **TEF-MAG®**

PRODUCT DESCRIPTION

MARCH Series TEF-MAG® pumps are magnetically coupled, rotating positive displacement pumps, external gear type.

Gear pumps generate low flows with middle to high discharge pressures and approximately no pulsation.

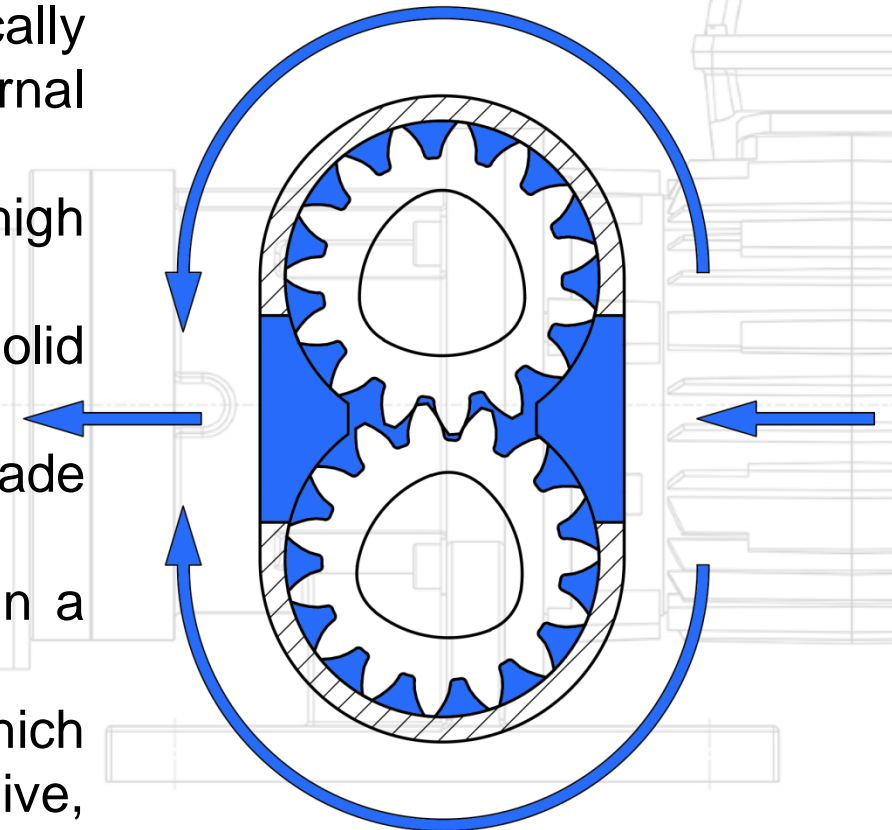
The pump housing is machined of chemical resistant solid block plastics like PP, PE, PVC, PVDF or PEEK.

The hydraulic parts, gears, shafts and bearings are made of non-metallic materials also.

The power transmission of drive and pump happens in a contactless way with strong permanent magnets.

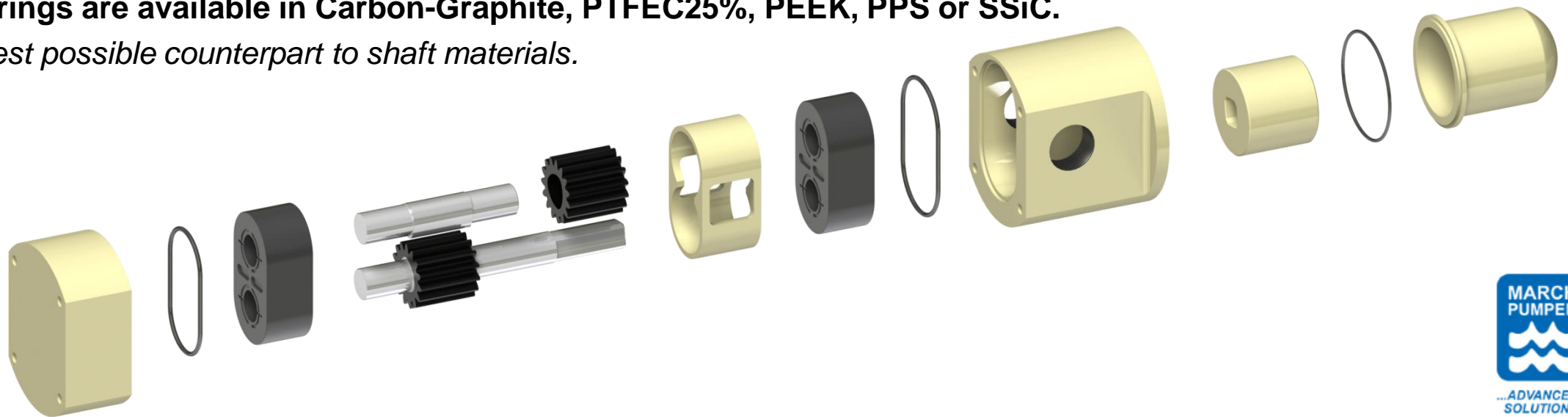
So the pump is able to work without any shaft seals, which guarantees safe supplies without any leakage of corrosive, toxic and explosive fluids.

Pumps for potentially explosive areas in zone 1 and 2 are available.



CORROSION RESISTANT DESIGN

- **All wetted pump parts are completely non-metallic.**
 - *best possible resistance against corrosive chemicals.*
- **Pump housings are made of machined solid block plastic materials like PP, PE, PVC, PVDF or PEEK.**
 - *excellent range of materials and availability.*
 - *no need for expensive high alloys prone to corrosion damage.*
- **External gears are made of PEEK, PVDF, PPS or PTFE compounds.**
 - *self-lubricating effect, low-wear, low friction, best chemical resistance*
- **Shafts are made of alumina ceramic Al₂O₃ >99% or sintered silicon carbide SiC.**
 - *best possible chemical resistance and very low wear.*
- **Bearings are available in Carbon-Graphite, PTFE25%, PEEK, PPS or SiC.**
 - *best possible counterpart to shaft materials.*



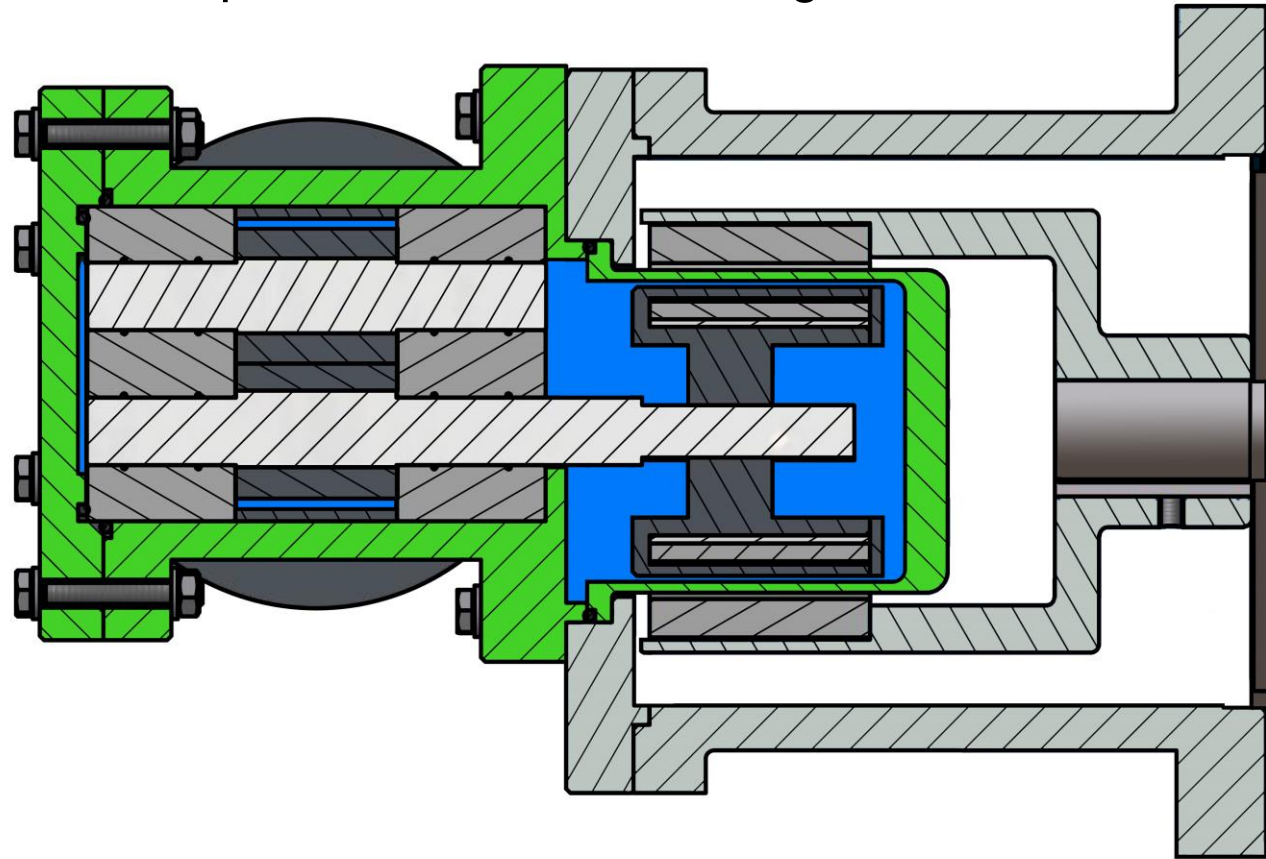
Series: **TEF-MAG®**

LEAK-FREE, MAGNETIC COUPLED

TEF-MAG® Series pumps are magnetically coupled, meaning there is no mechanical seal with contacting seal faces that are prone to wear and leakage.

Zero leakage, no emissions of hazardous or regulated chemicals.

A non-metallic containment can eliminate energy loss and heat rise due to magnetic losses common in metallic pumps.



Series: **TEF-MAG®**

APPLICATIONS

TEF-MAG® Series pumps are built for use in the harshest industrial environments. Designed to be structurally rugged with corrosion-resistant materials, the **TEF-MAG®** is an ideal fit for many medium to highly corrosive liquids used in the chemical processing, petro- and oleochemical industries and environment engineering. Conductive materials are available also, for usage in harzardous ATEX areas. FDA compliant materials are also available upon request.



Series: **TEF-MAG**[®]

APPLICATIONS

HIGH HEAD / LOW FLOW APPLICATIONS

- Chemical waste water treatment or water treatment, such as precipitation, flocculation, coagulation, chlorination, neutralization.
- Metering of highly corrosive catalysts in Bio-Diesel-Production-Plants
- Linear metering applications and transfer of alkalines and pickling agents in surface finishing
- Self-priming suction out of subgrounded tanks of solvents, corrosives, toxic, explosive or environmentally threatening liquids.

- **Sulfuric Acid**
- **Sodium Hydroxide**
- **Sodium Hypochlorite**
- **Feric(III)-chloride**
- **Aluminium Salts**
- **Hydrochloric Acid**
- **Hydrofluoric Acid**

- **Fatty Acids**
- **Nitric Acid**
- **Phosphoric Acid**
- **Formic Acid**
- **Boric Acid**
- **Urea**
- **Acetic Acid**

- **Hexafluorosilic Acid**
- **Sodium Hydroxide**
- **Sodium Disphosphate**
- **Chluordioxide**
- **Chluoros**
- **Toluene**
- **and so on...**

Series: **TEF-MAG**[®]

ADVANTAGES

No need for...

- Pulsation dampeners
- Expensive steel alloys like Hastelloy C, Duplex or Titanium

Potential for savings...

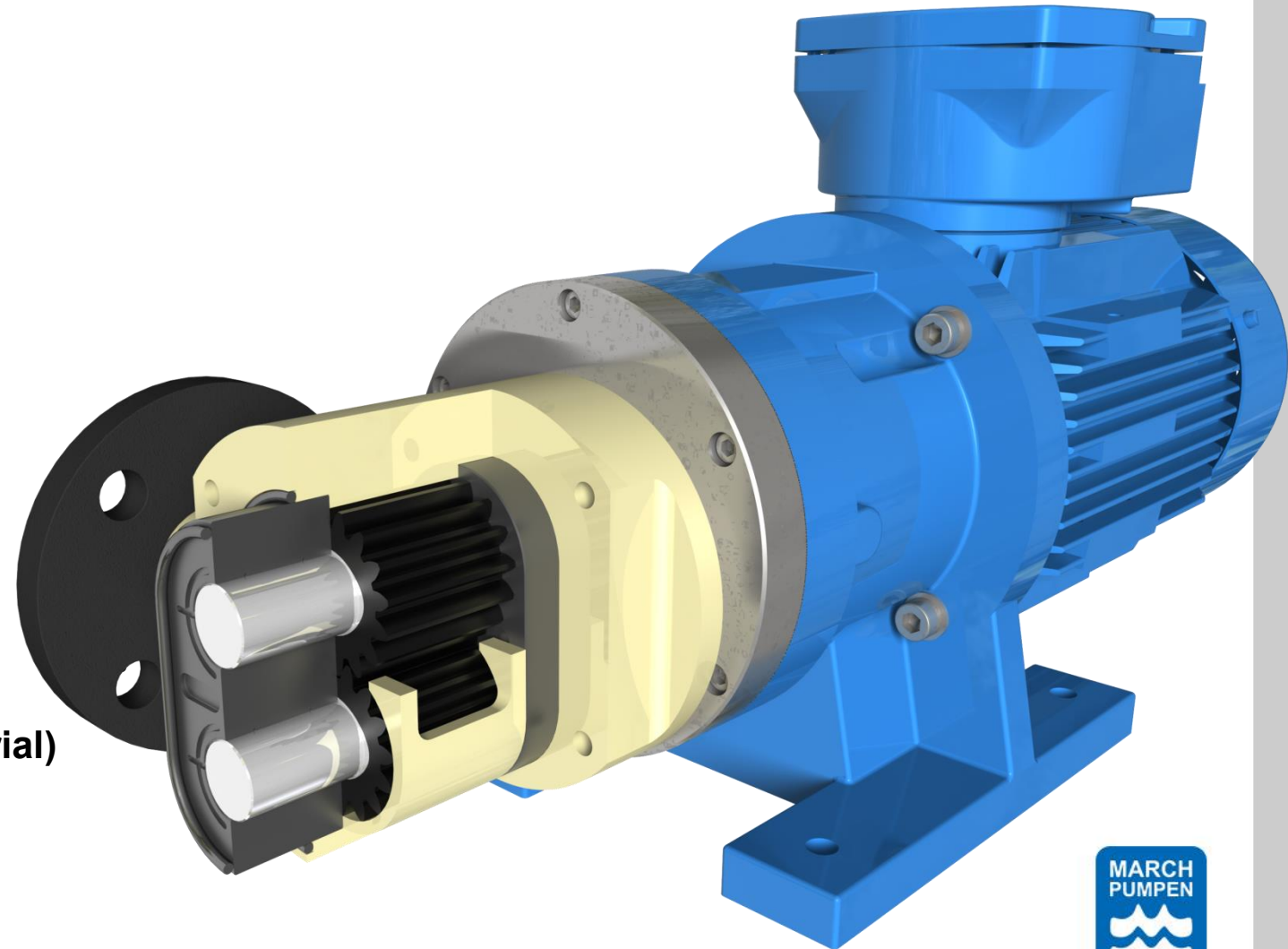
- Low maintenance and personnel costs
- Long service life
- Few spare and wear parts, good availability, short lead times
- Optimum efficiency through frequency converter control
- Damage prevention through pump monitoring



Series: **TEF-MAG**[®]

DESIGN FEATURES

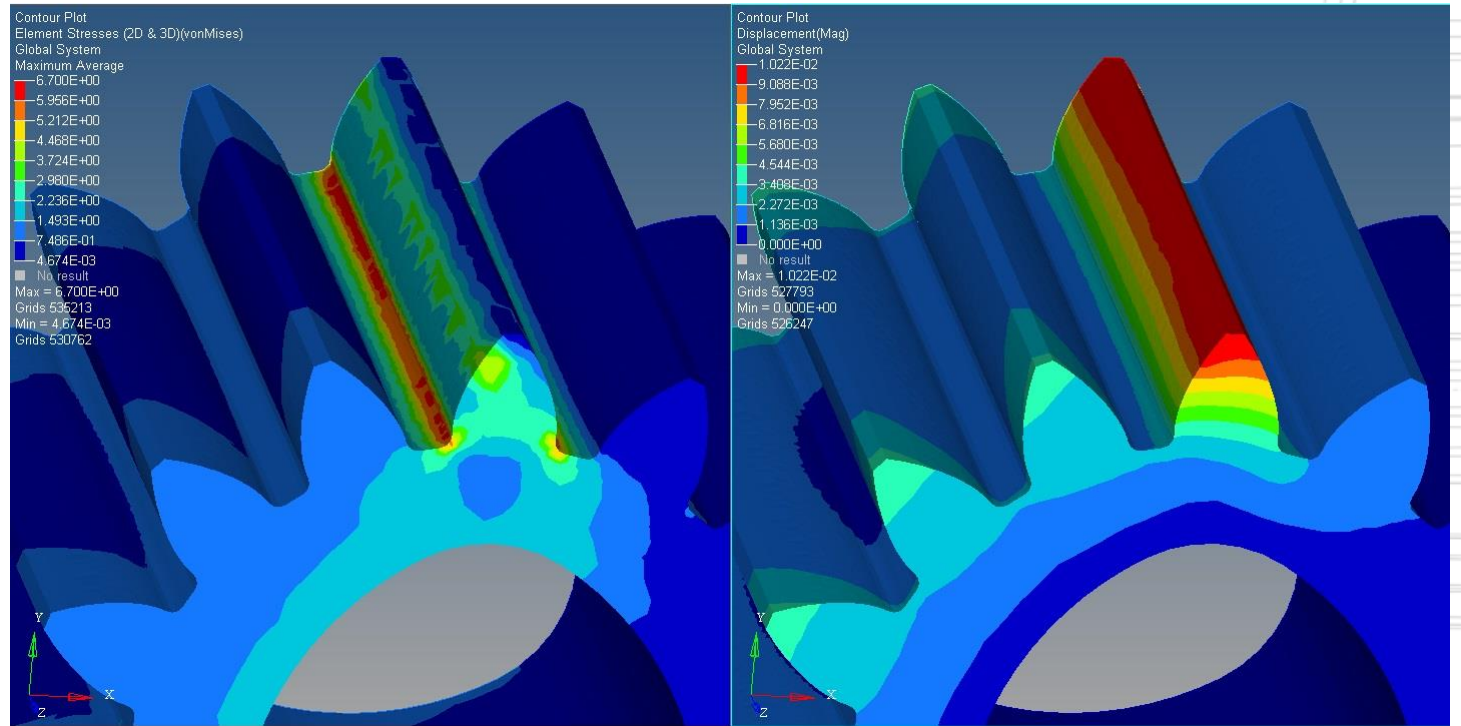
- Rotary positive displacement pump
- External gear pump
- Wetted parts completely non-metallic
- Chemical resistant
- Magnetically coupled
- Low flow
- High head
- Almost pulsation free
- Self-priming (wet)
- Dry running capable (depends on material)
- Most suitable for VFD



Series: TEF-MAG®

MADE IN GERMANY

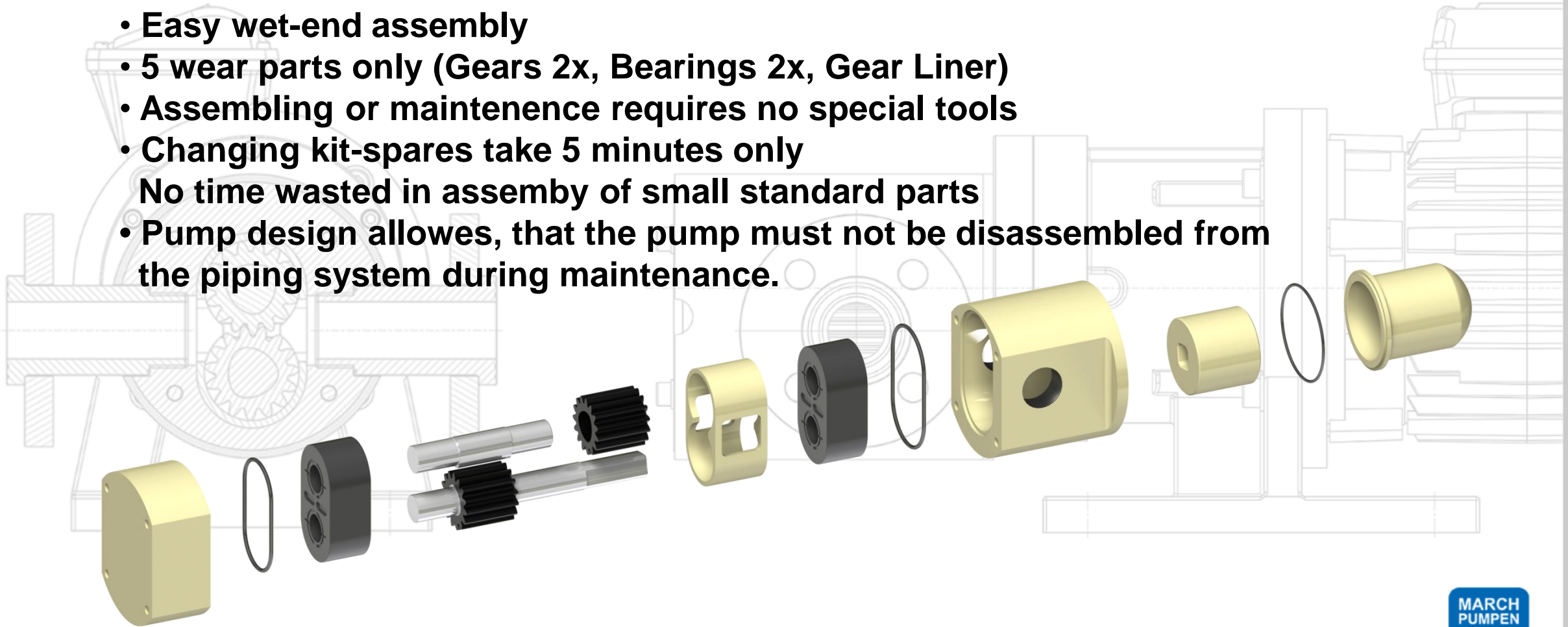
- Research and development
- 3D CAD construction
- FEM and CFD analysis
- Materials and sub-suppliers
- Assembly and test
- 100% made in Germany



Series: **TEF-MAG**[®]

SIMPLE DESIGN

- **Easy wet-end assembly**
- **5 wear parts only (Gears 2x, Bearings 2x, Gear Liner)**
- **Assembling or maintenance requires no special tools**
- **Changing kit-spares take 5 minutes only**
- **No time wasted in assembly of small standard parts**
- **Pump design allows, that the pump must not be disassembled from the piping system during maintenance.**



Series: **TEF-MAG®**

AVAILABLE MATERIALS

- **Housings:** PP, PE, PVC, PVDF, PEEK
- **Gears:** PTFEC25%, PEEK, PVDF, PPS
- **Shafts:** SSiC
- **Bearings:** Pure-Graphite, PTFE C25%, PEEK, PPS, SSiC
- **Magnets:** encapsulated NdFeB
- **O-Rings:** NBR, EPDM, FKM, FFKM

Other materials available upon request!

(for example: FDA compliant materials, non stated housing materials)



...ADVANCED SOLUTIONS...

Series: **TEF-MAG®**

PERFORMANCE DATA

Volumetric flow: from 10 l/h up to 4,5 m³/h [2,64 ... 1188 usgpm]

Differential pressure, max.: 10 bar [145.04 psi]

Design pressure: 16 bar [232 psi] (Hybrid containment can up to 25 bar [362 psi])

Temperature: 65 °C [149 °F] (PEEK max. 120°C [248 °F])

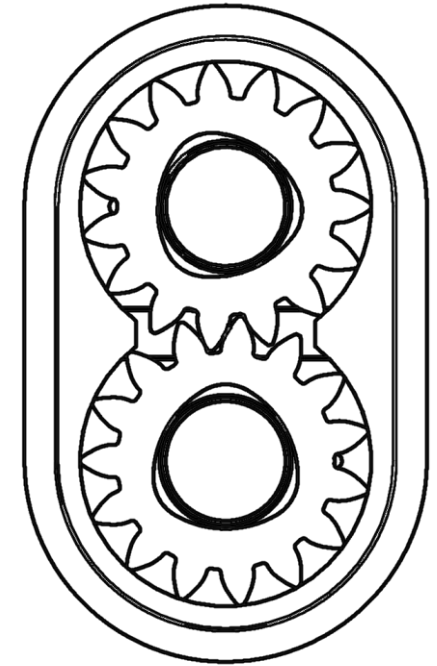
Self-priming (wet), max.: 8 meter [26,25 ft]

Different pump sizes: TM200, TM800, TM1500 und TM3500

Almost pulsation free

Dry running capable (depends on materials)

ATEX Version available acc. to ATEX2014/34/EU, II2G, Ex h IIC Tx(65°C) Gb



TEF-MAG 200

TEF-MAG 800

TEF-MAG 1500

PERFORMANCE DATA

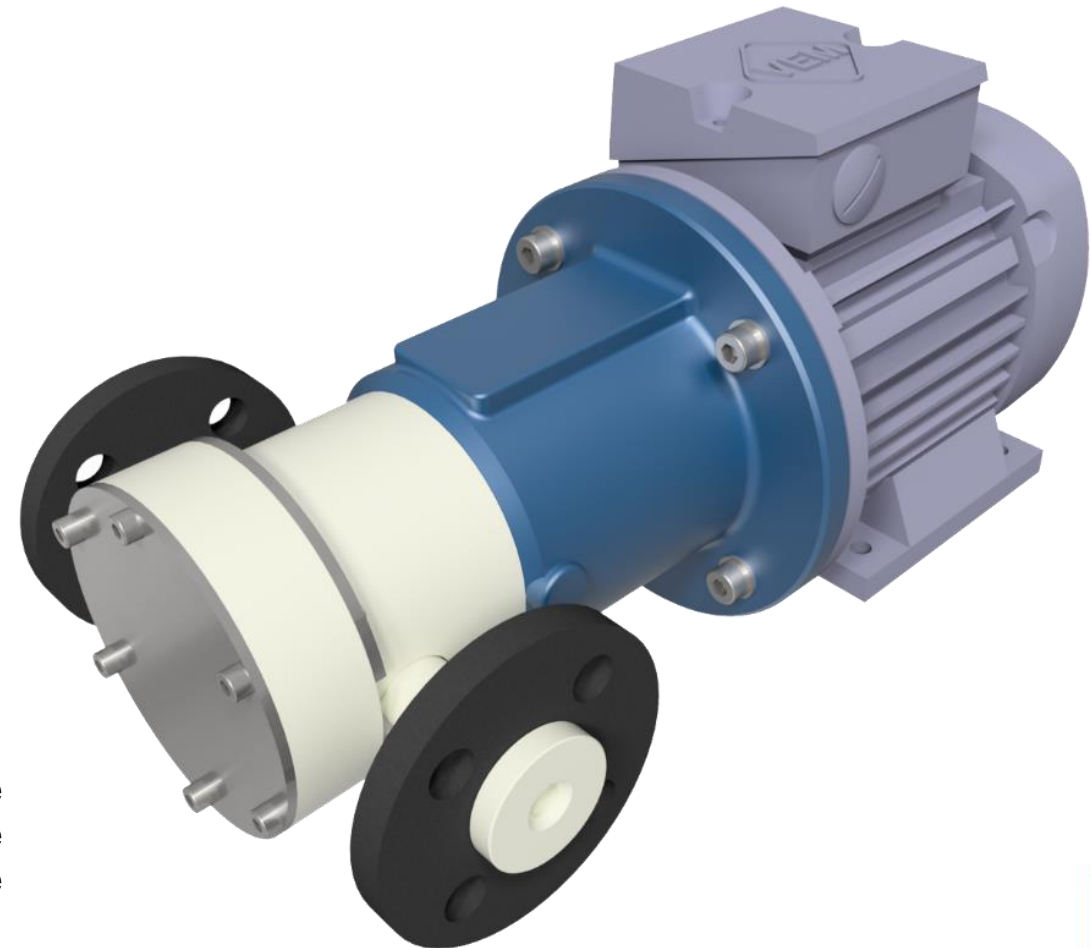
Nominal speed:	1450 1/min (50Hz) 1750 1/min (60Hz)
Nominal flow:	260 l/h (68.68 us gph) 330 l/h (87.18 us gph)
Discharge pressure, max.:	10 bar (145 psi)
Design pressure:	PN 16 bar (232 psi)
Temperature, max.:	65°C (149°F)
Density, max.:	1,9 kg/dm ³
Viscosity, max.:	5000 cP
NPSHR:	0,5 m
Drive power:	0,25 ... 0,55 kW

CONNECTIONS

Threaded:	G3/8" IG
Flanged:	DN15 PN10/16 ANSI 1/2"

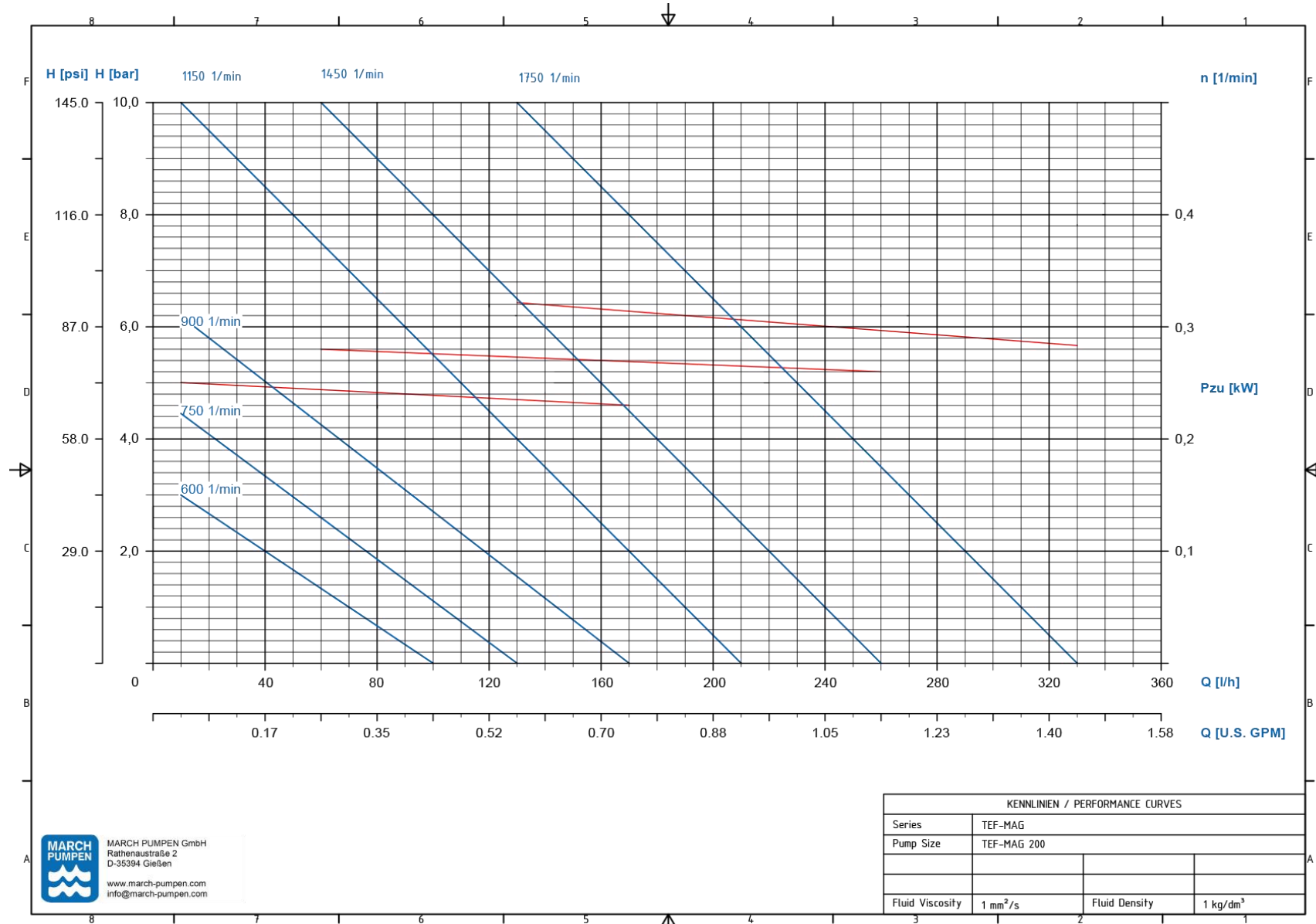
MOTOR ADAPTION

IEC:	Size 71 B35, 0,25 kW, 6-pole Size 71 B35, 0,37 kW, 4-pole Size 80 B35, 0,55 kW, 4-pole
NEMA:	Size 56C, 0.5HP, 4-pole



Series: TEF-MAG®

PERFORMANCE CURVES TEF-MAG 200



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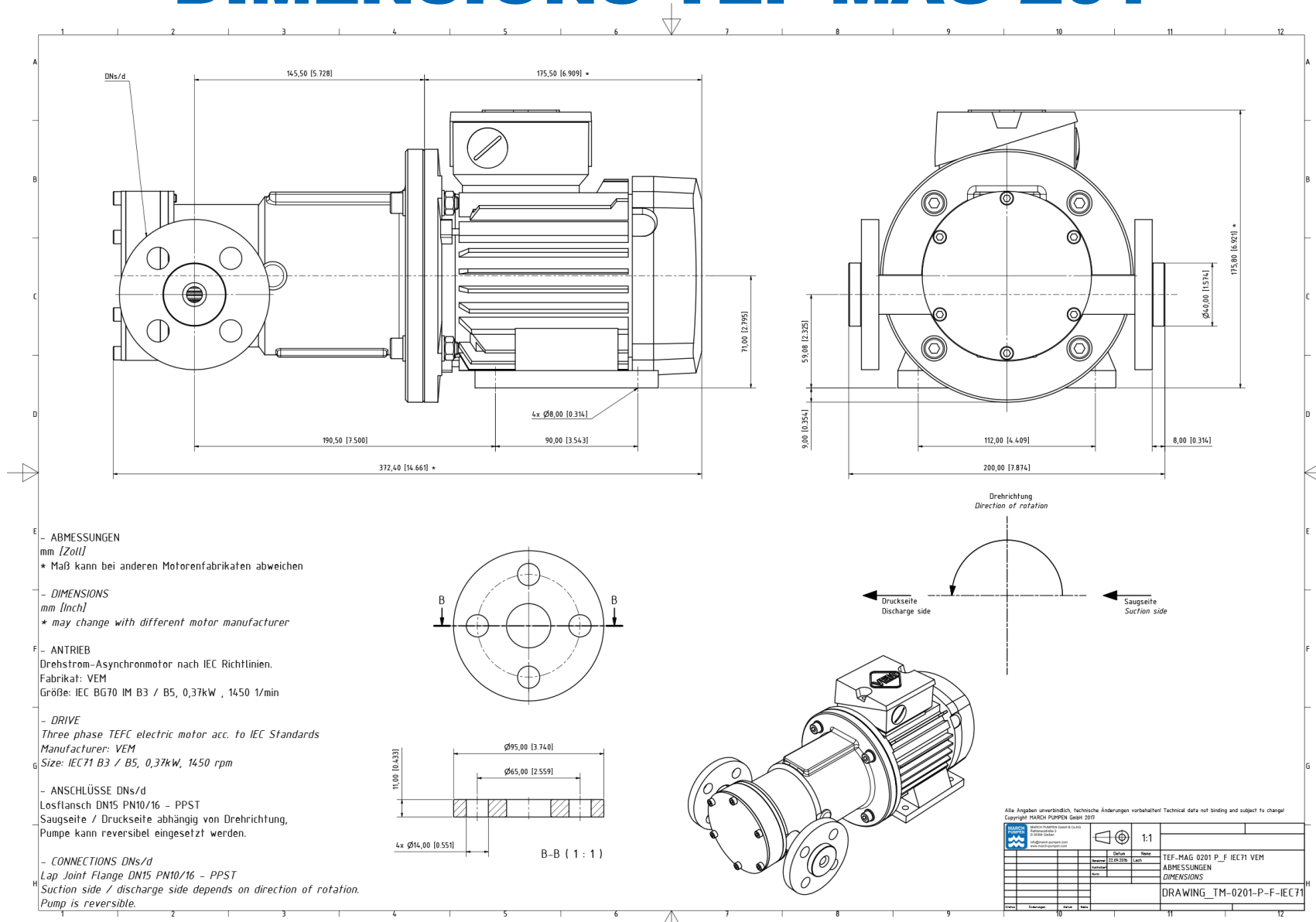
KENNLIENEN / PERFORMANCE CURVES			
Series	TEF-MAG		
Pump Size	TEF-MAG 200		
Fluid Viscosity	1 mm ² /s	Fluid Density	1 kg/dm ³



...ADVANCED SOLUTIONS...

Series: TEF-MAG®

DIMENSIONS TEF-MAG 201



...ADVANCED SOLUTIONS...

Series: **TEF-MAG**[®]

TEF-MAG 200

TEF-MAG 800

TEF-MAG 1500

PERFORMANCE DATA

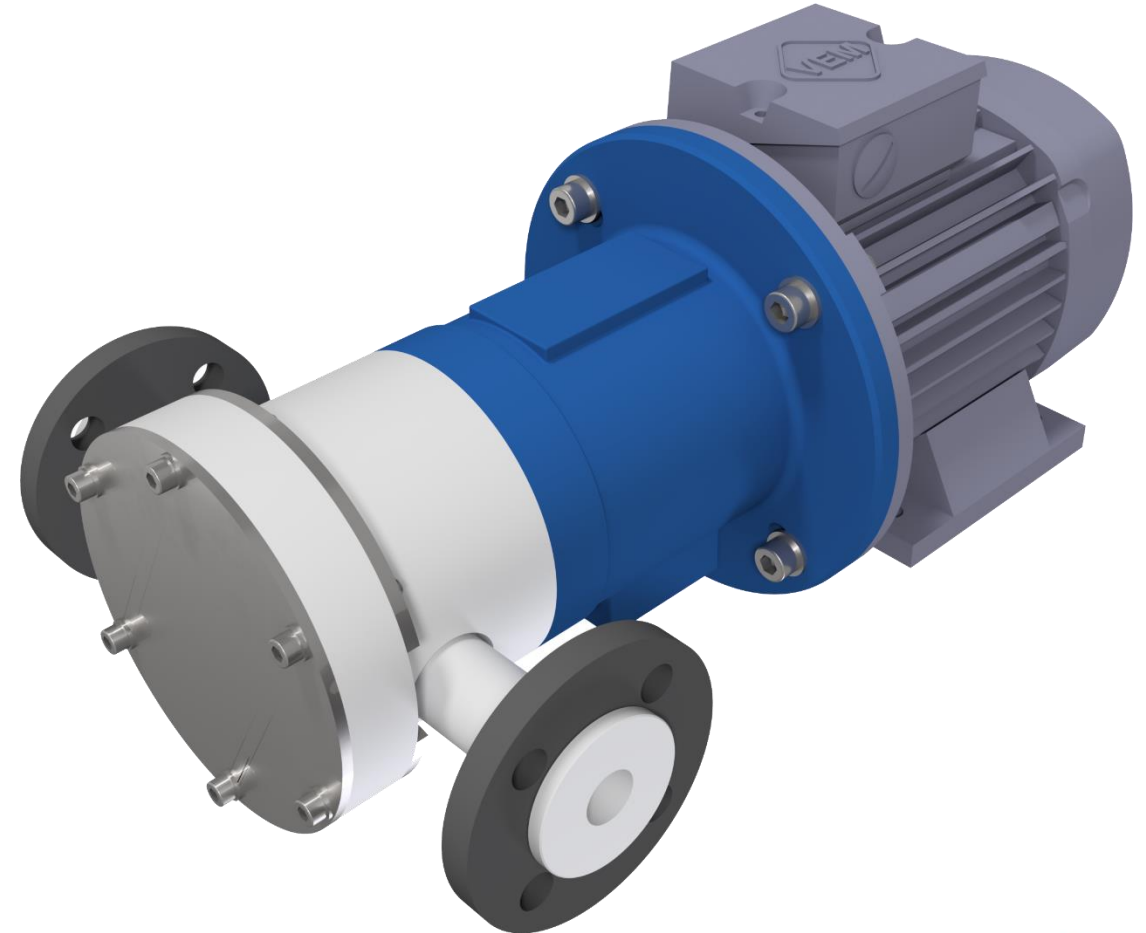
Nominal speed:	1450 1/min (50Hz) 1750 1/min (60Hz)
Nominal flow:	850 l/h (224.55 us gph) 1000 l/h (264.17 us gph)
Discharge pressure, max.:	10 bar (145 psi)
Design pressure:	PN 16 bar (232 psi)
Temperature, max.:	65°C (149°F)
Density, max.:	1,9 kg/dm ³
Viscosity, max.:	5000 cP
NPSHR:	0,5 m
Drive power:	0,75 kW

CONNECTIONS

Threaded:	G3/4" IG
Flanged:	DN20 PN16 ANSI 3/4"

MOTOR ADAPTION

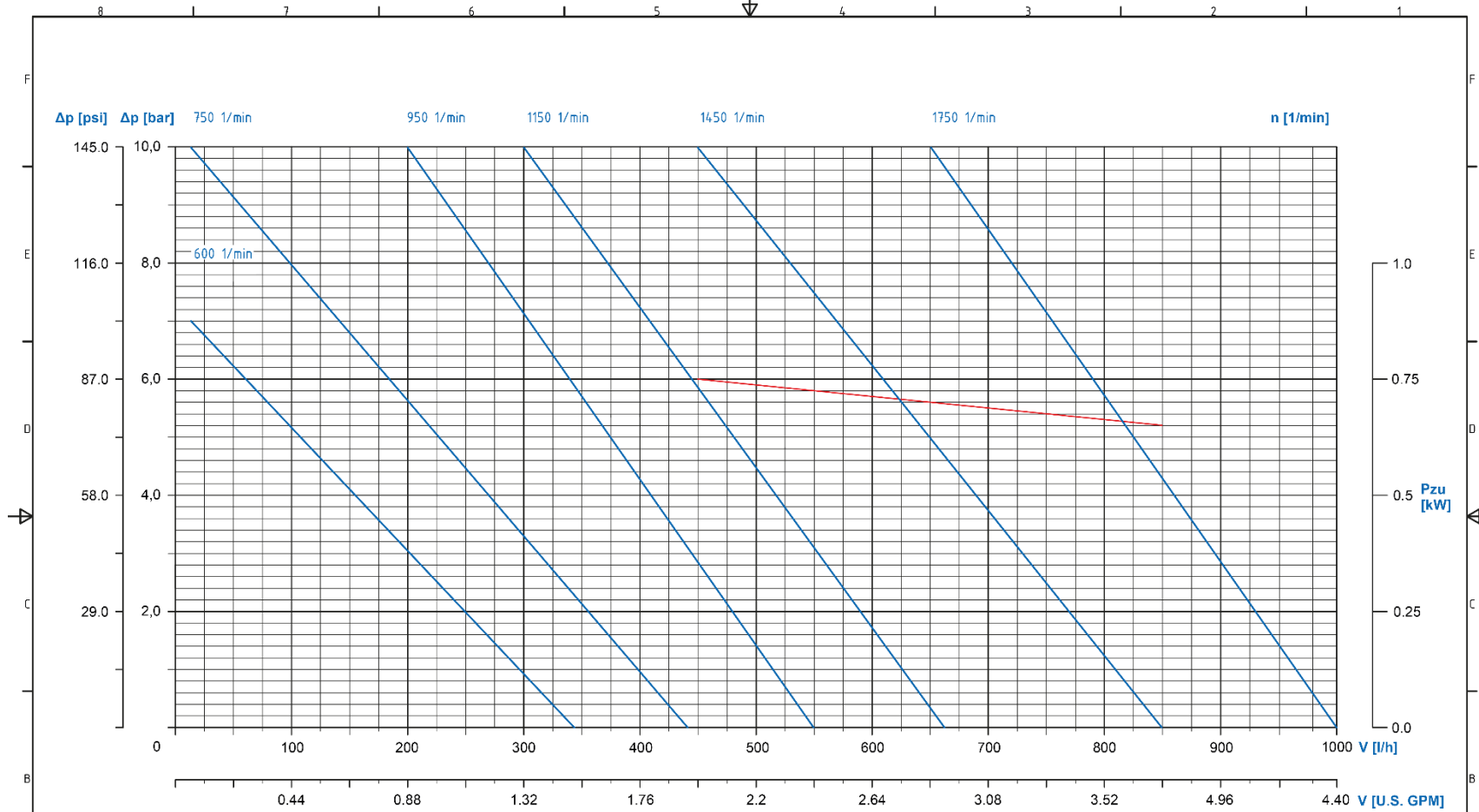
IEC:	Size 80 B35, 0,55 kW, 6-pole Size 80 B35, 0,75 kW, 4-pole
NEMA:	Size 143/145TC, 1.0 HP, 4-pole



...ADVANCED SOLUTIONS...

Series: TEF-MAG®

PERFORMANCE CURVES TEF-MAG 800



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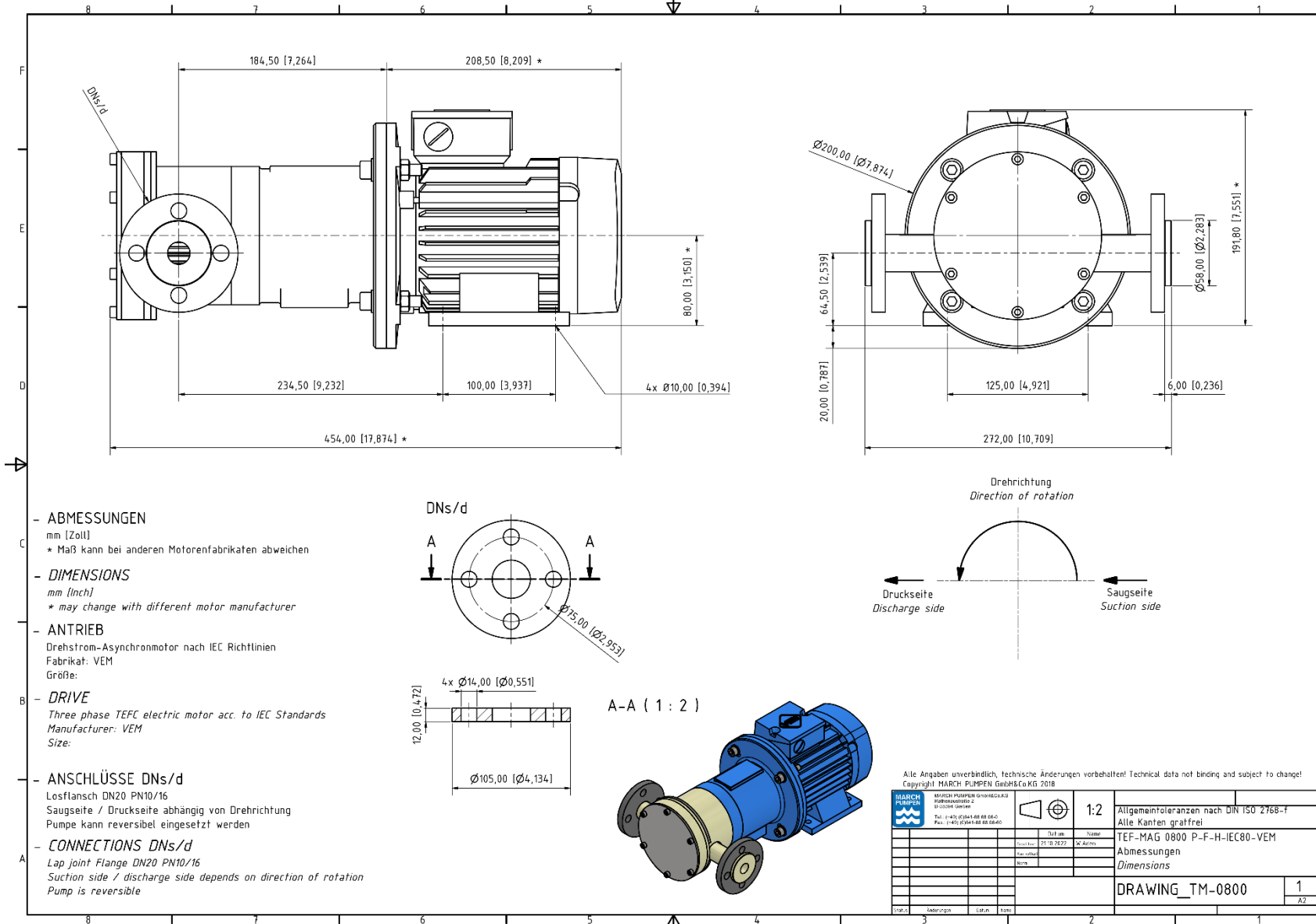
KENNLINIEN / PERFORMANCE CURVES			
Series	TEF-MAG		
Pump Size	TEF-MAG 800		
Fluid Viscosity	1 mm ² /s	Fluid Density	1 kg/dm ³



...ADVANCED SOLUTIONS...

Series: TEF-MAG®

DIMENSIONS TEF-MAG 800



Series: **TEF-MAG**[®]

TEF-MAG 800

TEF-MAG 1500

TEF-MAG 3500

PERFORMANCE DATA

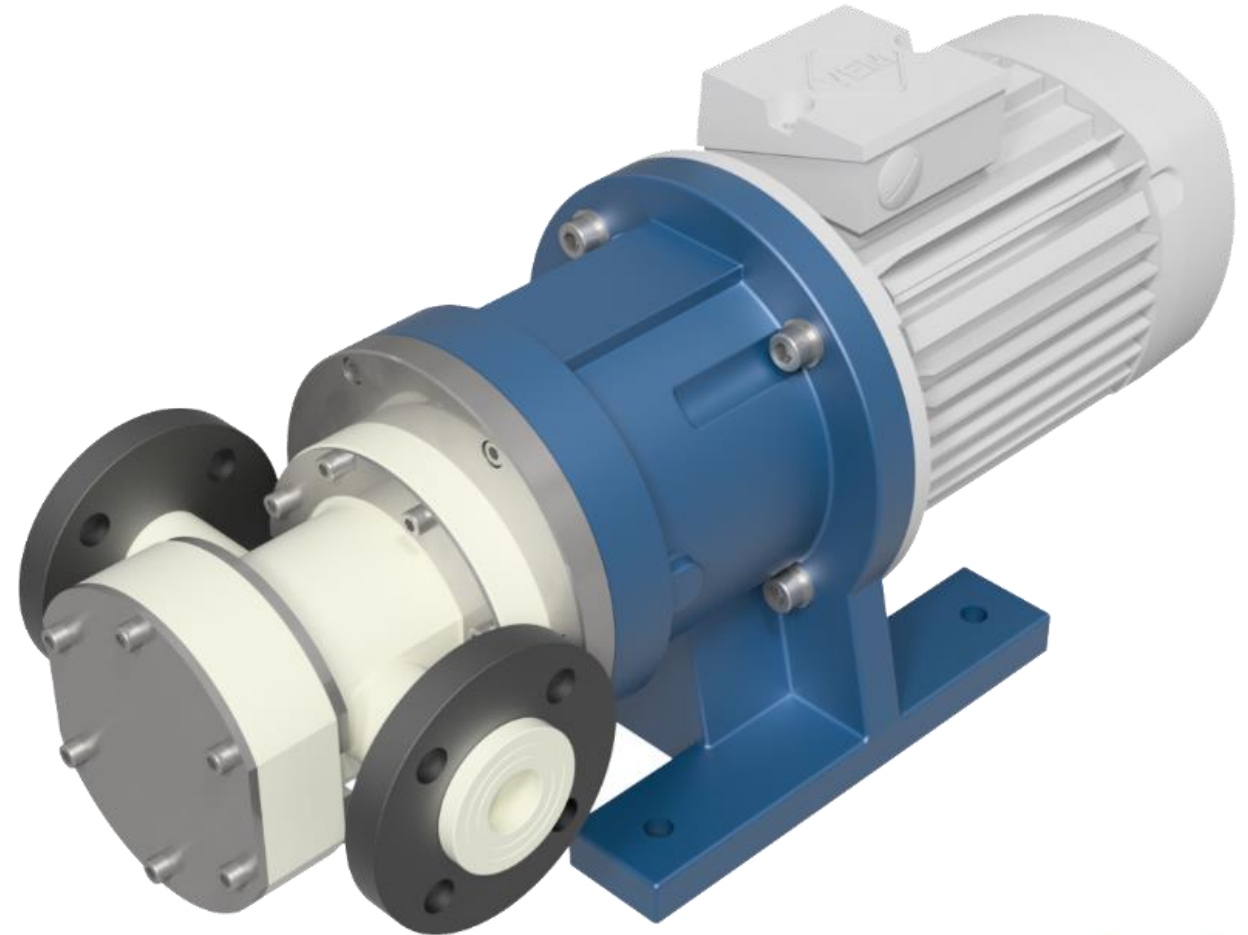
Nominal speed:	1450 1/min (50Hz) 1750 1/min (60Hz)
Nominal flow:	1350 l/h (356.63 us gph) 1650 l/h (435.88 us gph)
Discharge pressure, max.:	10 bar (145 psi)
Design pressure:	PN 16 bar (232 psi)
Temperature, max.:	65°C (149°F)
Density, max.:	1,9 kg/dm ³
Viscosity, max.:	5000 cP
NPSHR:	0,5 m
Drive power:	0,75 ... 2,2kW

CONNECTIONS

Threaded:	G1" IG
Flanged:	DN25 PN16 ANSI 1"

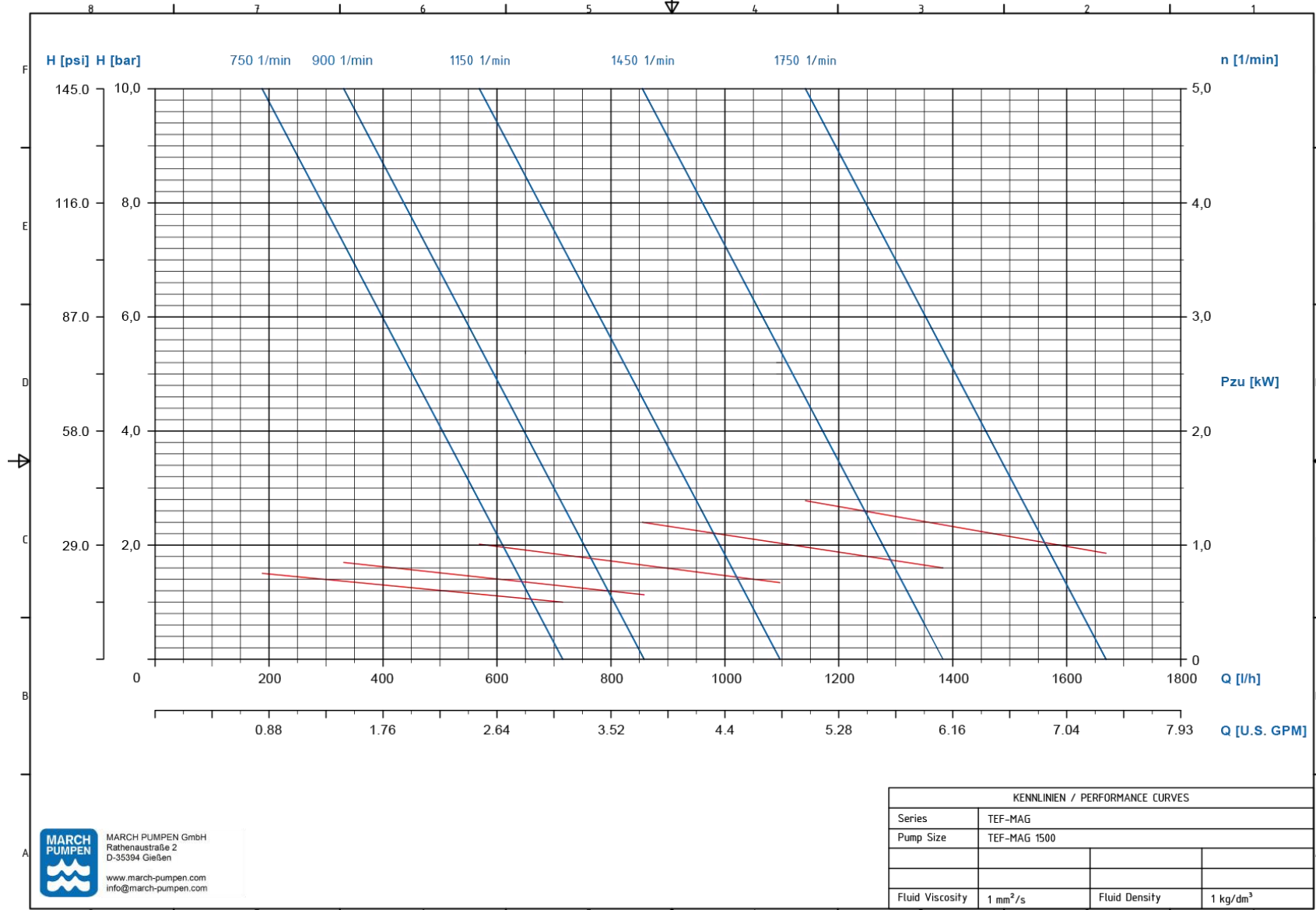
MOTOR ADAPTION

IEC:	Size 90 B5, 0,75 kW, 6-pole Size 90 B5, 1,55 kW, 4-pole Size 100 B5, 2,2 kW, 4-pole
NEMA:	Size 143/145TC, 1.0/1.5/2.0HP, 4-pole



Series: TEF-MAG®

PERFORMANCE CURVES TEF-MAG 1500



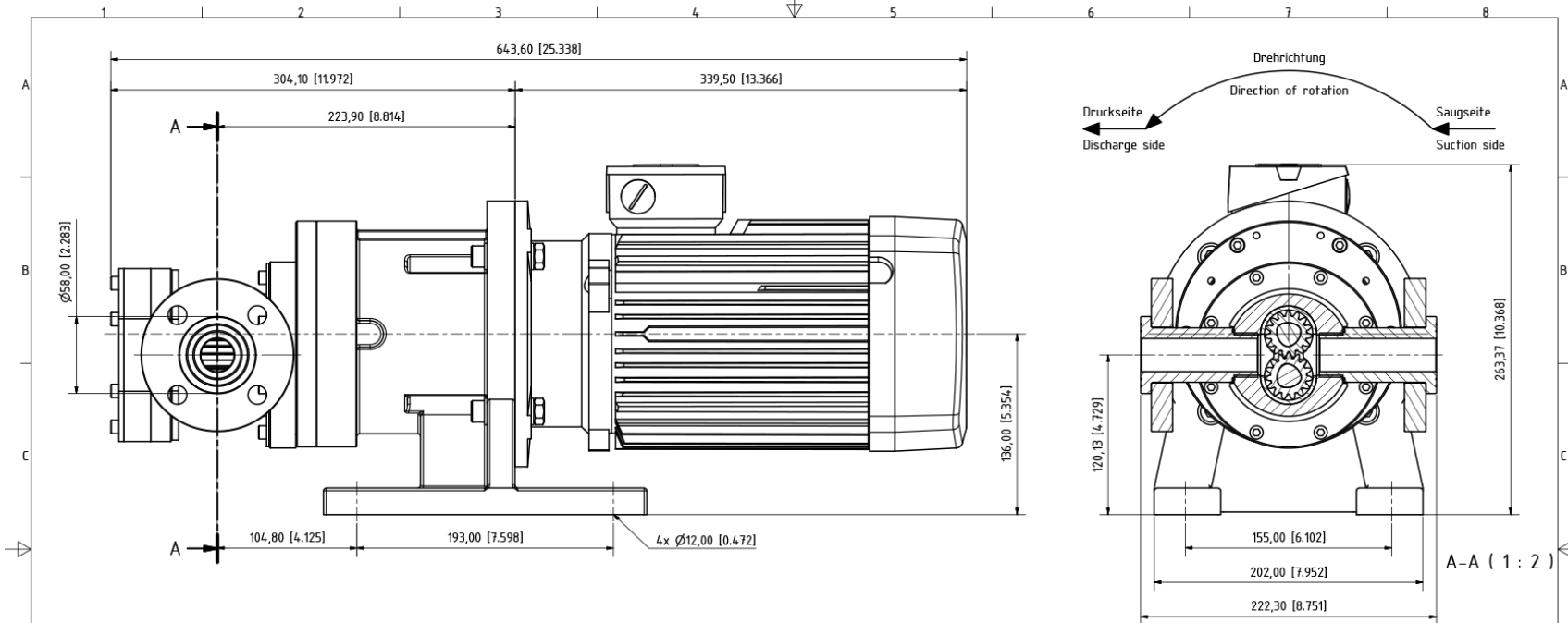

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...ADVANCED SOLUTIONS...

Series: TEF-MAG®

DIMENSIONS TEF-MAG 1500



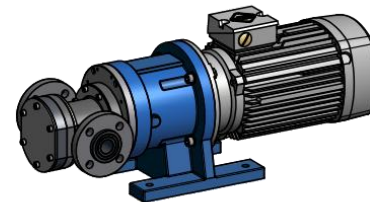
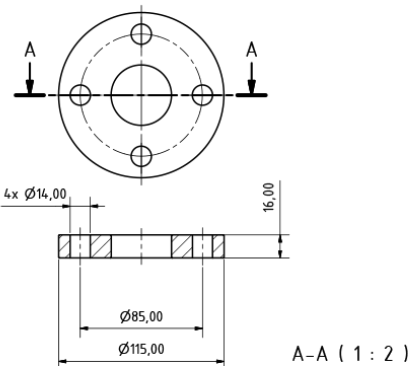
- ABMESSUNGEN
mm [Zoll]
* kann bei anderen Motorfabrikaten abweichen
- DIMENSIONS
mm [inch]
* may change with different motor manufacturer

- ANSCHLÜSSE
Losflansch DN25 PN10/16 - PP-ST oder G1" Innengewinde
Saug- und Druckseite abhängig von Drehrichtung.
Pumpe kann reversibel eingesetzt werden.

- CONNECTIONS
Loose Flange DN25 PN10/16 - PP-ST or threaded G1" female
Suction and discharge side depends on direction of rotation.
Pump is reversible.

- ANTRIEB
Drehstrom-Asynchronmotor mit Käfigläufer
Baugröße / Form: BG90 B5
Fabrikat: VEM

- DRIVE
TEFC three phase asynchronous squirrel cage electric motor
Size: IEC 90 B5
Type: VEM



Alle Angaben unverbindlich, technische Änderungen vorbehalten! Technical data not binding and subject to change!
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MARCH Pumpen		MARCH Engineering GmbH & Co. KG		1:2	
Mühlweg 2 31038 Garbsen www.marchpumpen.com		Tel: +49 51 2019 E-Mail: info@marchpumpen.com		Name: TEF-MAG 1500 P-F-H BG90 B5 VEM ABMESSUNGEN DIMENSIONS DRAWING_TM-1500-P-F-H-IEC90-VEM	
Revisoren	20.01.2019	Zeichner		Date: 20.01.2019	
Geprüft		Freigegeben			
Änderungen		Datum		Name	



...ADVANCED SOLUTIONS...

Series: **TEF-MAG**[®]

TEF-MAG 800

TEF-MAG 1500

TEF-MAG 3500

PERFORMANCE DATA

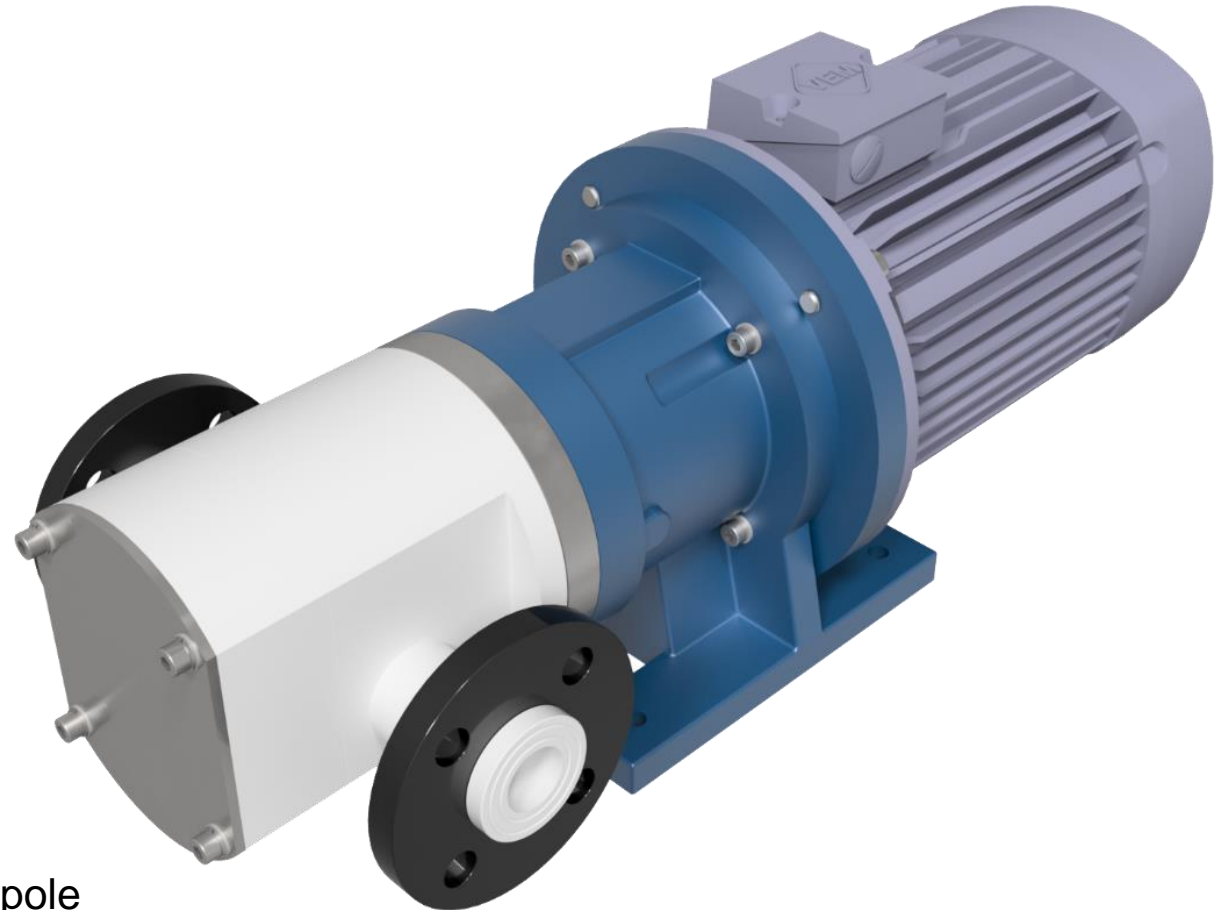
Nominal speed:	1450 1/min (50Hz) 1750 1/min (60Hz)
Nominal flow:	3650 l/h (965 us gph) 4650 l/h (1228 us gph)
Discharge pressure, max.:	10 bar (145 psi)
Design pressure:	PN 16 bar (232 psi)
Temperature, max.:	65°C (149°F)
Density, max.:	1,9 kg/dm ³
Viscosity, max.:	5000 cP
NPSHR:	0,5 m
Drive power:	2,2 ... 4,0 kW

CONNECTIONS

Threaded:	G1 1/4" IG
Flanged:	DN32 PN16 ANSI 1 1/4"

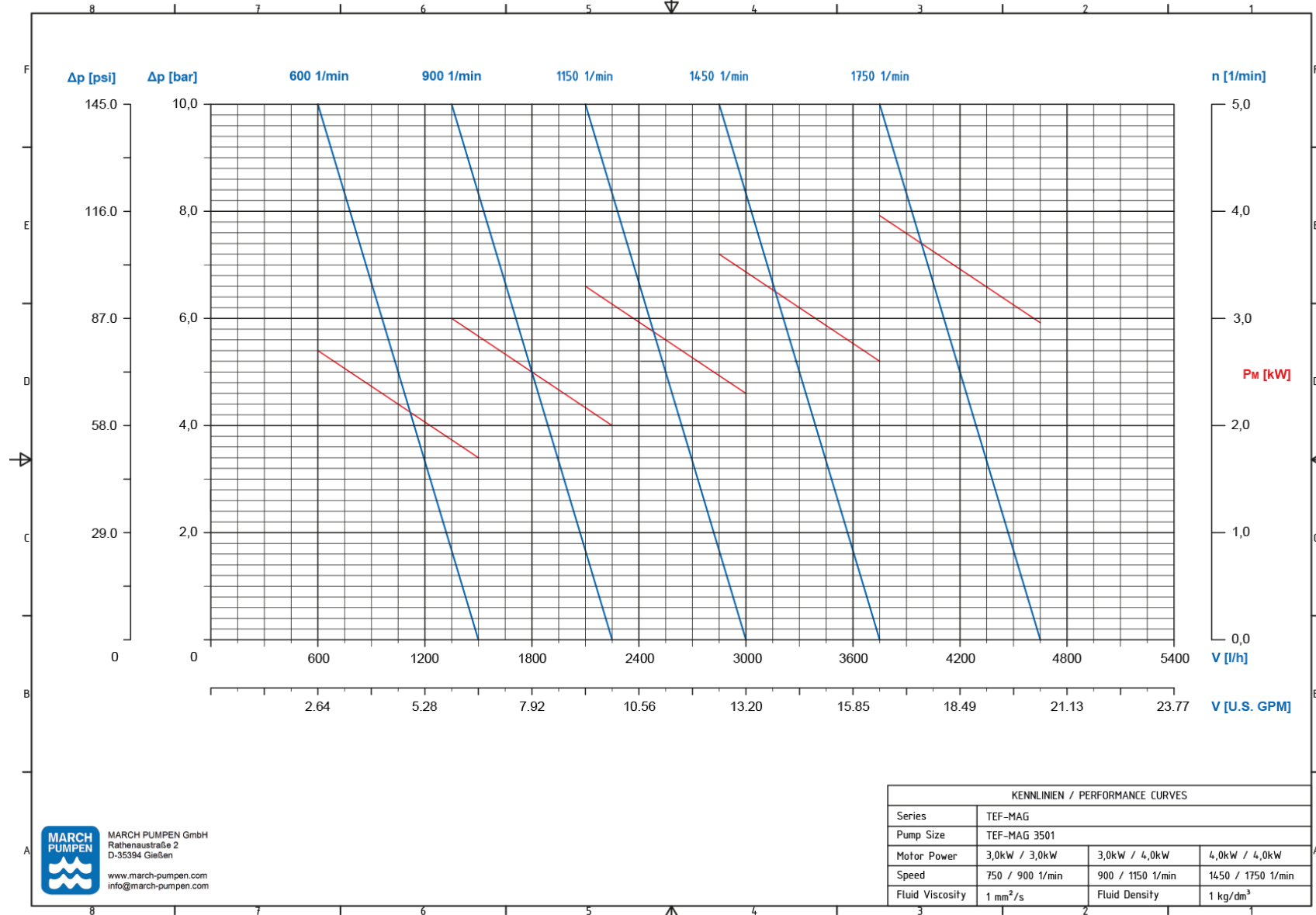
MOTOR ADAPTION

IEC:	Size 100 B5, 2,2kW, 6-pole Size 100/112 B5, 3,0...4,0 kW, 4-pole
NEMA:	Size 182/4TC, 3.0 ... 4.0 HP, 4-pole



Series: TEF-MAG®

PERFORMANCE CURVES TEF-MAG 3500



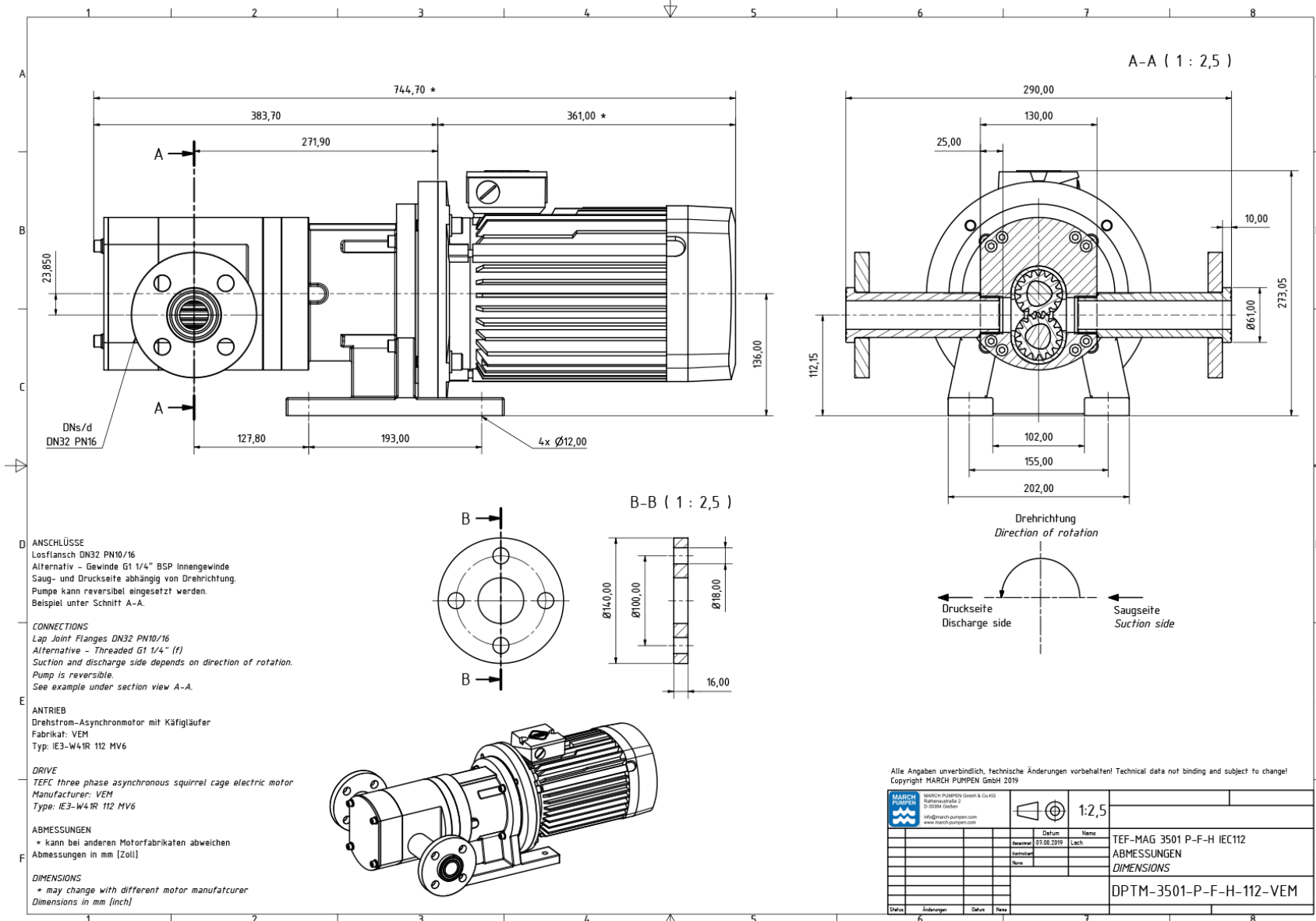
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...ADVANCED SOLUTIONS...

Series: TEF-MAG®

DIMENSIONS TEF-MAG 3500



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		MARCH Pumpen GmbH & Co KG Sulfbach 44344-2 51328 Soltau info@march-pumpen.com www.march-pumpen.com		Datum: 07.08.2019 Name: TEF-MAG 3501 P-F-H IEC112 Zeichner: [] Gezeichnet: [] Geprüft: [] Freigegeben: [] Status: []		1:2,5 Name: TEF-MAG 3501 P-F-H IEC112 Zeichner: [] Gezeichnet: [] Geprüft: [] Freigegeben: [] Status: []	
Datum: [] Änderungen: [] Datum: [] Name: []				ABMESSUNGEN DIMENSIONS DPTM-3501-P-F-H-112-VEM			



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