



e-MP Series

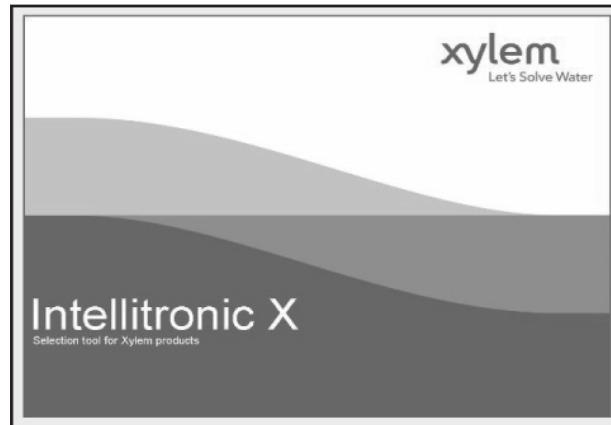
MPA, MPR, MPD, MPV - 60 Hz

HIGH PRESSURE MULTISTAGE PUMPS ACCORDING TO ISO 5199

Intellitronic X

Intellitronic X is pump solution software with multiple search options and helpful project management facilities.

Intellitronic X can be available: at www.gouldsintellitronic.com

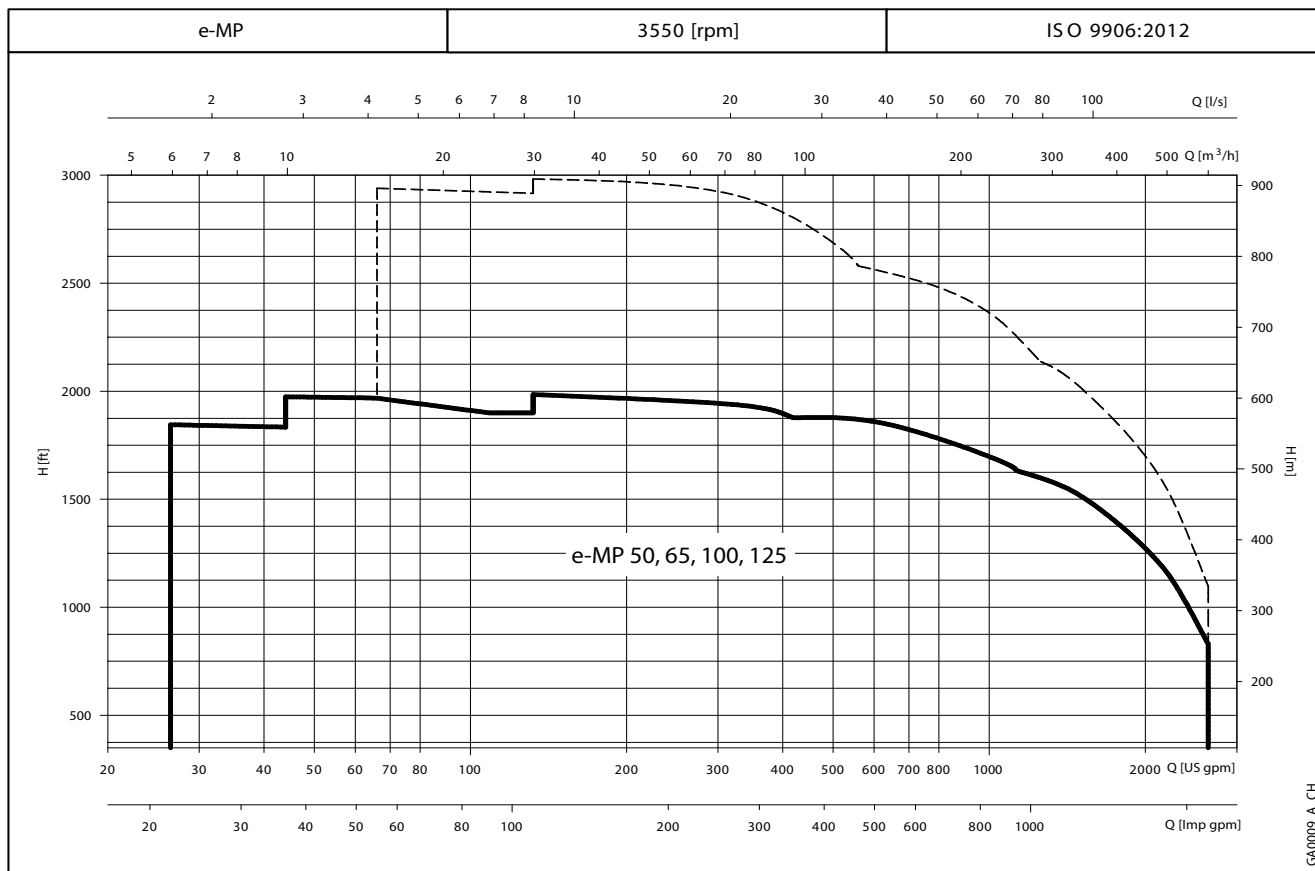


For more information, please, see page 118.

CONTENTS

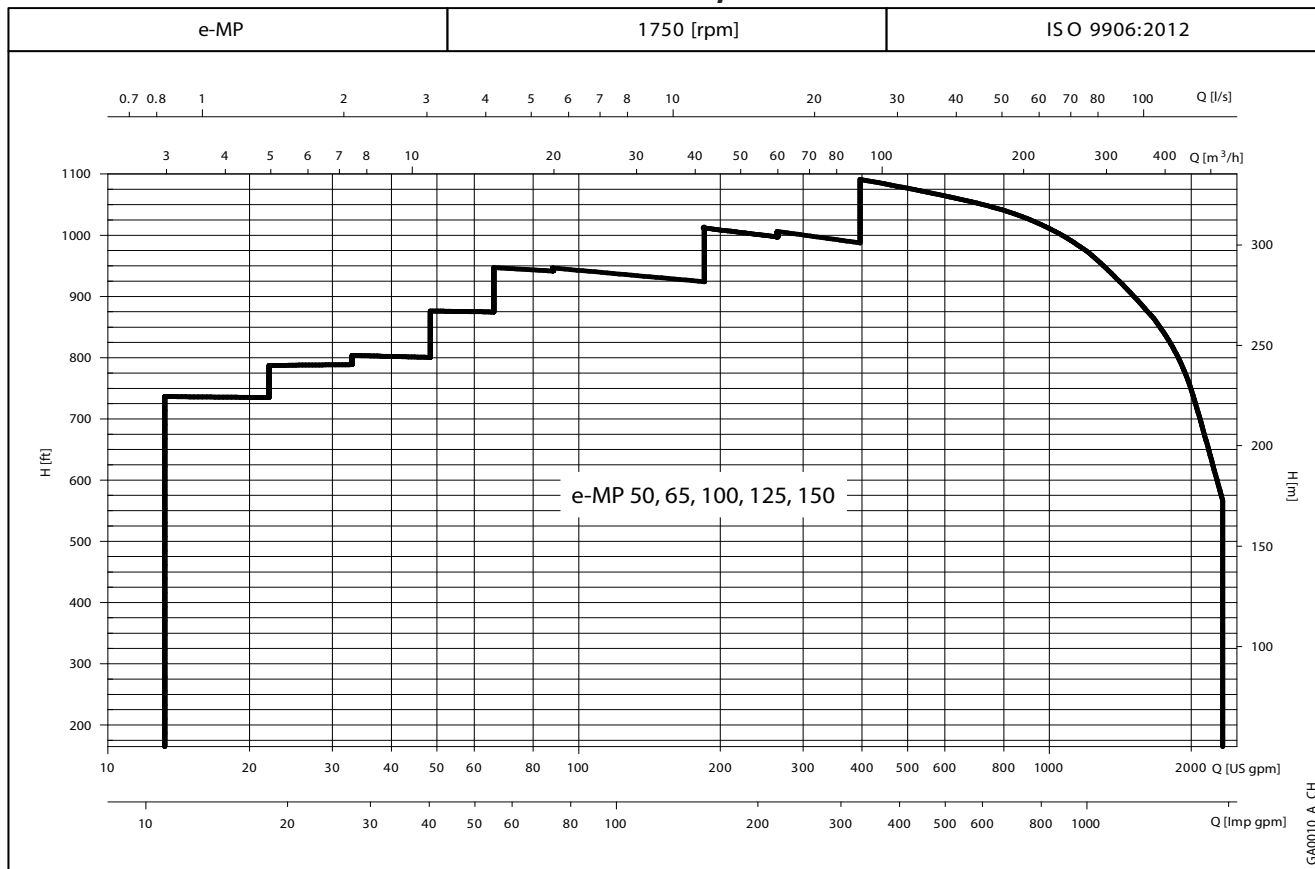
General introduction	5
Design version	6
General characteristics	7
Identification code	9
Identification code and design overview	10
Rating plate	11
Pump cross-section and main components	12
Table of materials	16
Nozzle position	20
Mechanical seals	22
Pressure/temperature limit	24
Motors	25
Minimum Efficiency Levels.....	30
Hydraulic performance range at 60 Hz	31
e-MP50.. SERIES	
Operating characteristics at 60 Hz - Dimensions and weights	32
e-MP65.. SERIES	
Operating characteristics at 60 Hz - Dimensions and weights	49
e-MP100.. SERIES	
Operating characteristics at 60 Hz - Dimensions and weights	66
e-MP125.. SERIES	
Operating characteristics at 60 Hz - Dimensions and weights	85
Flange dimensions	102
Accessories	104
Report and declarations.....	107
Technical appendix	108

HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES



--- G&L 100 bar version. Contact factory for more information.

HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 4 POLES



HIGH PRESSURE MULTISTAGE, RADIALY SPLIT, SEGMENTED CASING PUMPS

Markets and applications:

➤ General industry

All productive industries, i.e.: steel, sugar, timber, tire and rubber, pulp and paper, car, food and beverage

Applications: cooling and heating circuits for industrial processes, sprinkler systems, washing/cleaning systems, firefighting systems, filter systems, water transport, booster systems, water treatment systems

➤ Oil and gas

On-Shore platform, off-shore platforms, refineries, fracking.

Applications: sea water/water injection, firefighting systems, water transport, water treatment

➤ Power plants

i.e.: renewable energy, hydropower, biomass, geothermal, fossil power

Applications: boiler feed, condensate pumping, deaerator, water injection, water transport, auxiliary systems, firefighting systems, cooling and heating circuits, district cooling and heating systems

➤ Mining

Applications: dewatering (filtered water), water transport, firefighting systems

➤ Agriculture

Applications: water transport, irrigation.

➤ Leisure industry

i.e.: ski resorts, amusement parks

Applications: snow making water transport, water boosting

➤ Public utilities

Municipal water, desalination plants, drainage and flood protection

Applications: district cooling and heating systems, water transport, water treatment systems, desalinization, reverse osmosis, nanofiltration, firefighting systems, booster systems

➤ Commercial building service

Applications: water transport, booster systems, firefighting systems, HVAC systems

➤ Others

Auxiliary applications in chemical industry, all water boosting applications

Pumpable fluids:

- Water
- Grey/used water
- Ground water
- Potable water
- Sea water
- Feed water
- Hot water
- Condensate
- Cooling/heating water
- Thermal water
- Brackish water

Pumpable fluids:

The **e-MP** series is a highly efficient **multistage, radially split, segmented casing** pump.

4 mechanical models build the basic platform for various horizontal and vertical configurations to meet requirements for the defined markets, applications and liquids.

DESIGN VERSIONS

CONFIGURATION	DESCRIPTION
<p>Model MPA</p> 	<p>Closed radial Impeller and U-turn diffuser design</p> <ul style="list-style-type: none"> • Horizontal shaft design • Axial suction nozzle • Radial discharge nozzle (left, top, right) • Drive on discharge side • Radial/Axial roller bearing on drive side • Plain bearing on suction side • Axial thrust balancing by drum design • Shaft sealing on discharge side only • Bare shaft or pump unit • Driver: NEMA motor standard, IEC available • Temperature Range: -13°F to +284°F (356°F) or -25°C to 140°C (180°C) • Inlet pressure: up to 145 psi (10 bar)
<p>Model MPR</p> 	<p>Closed radial Impeller and U-turn diffuser design</p> <ul style="list-style-type: none"> • Horizontal shaft design • Axial suction nozzle • Radial suction nozzle (left, top, right) • Radial discharge nozzle (left, top, right) • Drive on discharge side • Radial/Axial roller bearing on drive side • Plain bearing on suction side • Axial thrust balancing by drum design • Shaft sealing on discharge side only • Bare shaft or pump unit • Driver: NEMA motor standard, IEC available • IC-engine, turbine • Temperature Range: -13°F to +284°F (356°F) or -25°C to 140°C (180°C) • Inlet pressure: up to 145 psi (10 bar)
<p>Model MPD</p> 	<p>Closed radial Impeller and U-turn diffuser design</p> <ul style="list-style-type: none"> • Horizontal shaft design • Axial suction nozzle • Radial suction nozzle (left, top, right) • Radial discharge nozzle (left, top, right) • Drive on discharge side (optional suction side) • Radial/Axial roller bearing on drive side • Radial roller bearing on suction side • Axial thrust balancing by drum design • Shaft sealing on suction and discharge side • Bare shaft or pump unit • Driver: NEMA motor standard, IEC available • IC-engine, turbine • Temperature Range: -13°F to +284°F (356°F) or -25°C to 140°C (180°C) • Inlet pressure: up to 580 psi (40 bar)
<p>Model MPV</p> 	<p>Closed radial Impeller and U-turn diffuser design</p> <ul style="list-style-type: none"> • Vertical shaft design • Radial suction nozzle (0°-90°-180°-270°) • Radial discharge nozzle (0°-90°-180°-270°) • Drive on discharge side • Radial/Axial roller bearing on drive side • Plain bearing on suction side • Axial thrust balancing by drum design • Shaft sealing on discharge side only • Bare shaft or pump unit • Driver: NEMA motor standard up to 500HP, IEC available up to 400kW • Temperature Range: -13°F to +248°F (284°F) or -25°C to 120°C (140°C) • Inlet pressure: up to 145 psi (10 bar)

GENERAL CHARACTERISTICS

STAGE NUMBERS & POWER LIMITS AT 60Hz										
SIZE	HYDRAULIC	DESIGN	MPA		MPR		MPD		MPV	
		Nr of poles	2	4	2	4	2	4	2	4
50	A	Max. Stages	11	16	11	16	11	16	11	16
	B	Max. Stages	10	16	10	16	10	16	9	16
65	A	Max. Stages	7	13	7	13	7	13	4	11
	B	Max. Stages	6	12	6	12	6	12	3	7
100	A	Max. Stages	5	7	5	7	5	7	4	7
	B	Max. Stages	5	7	5	7	5	7	3	7
125	A	Max. Stages	4	7	4	7	4	7	3	7
	B	Max. Stages	3	7	3	7	3	7	2	7
150	A	Max. Stages	--	6	--	6	--	6	--	6
	B	Max. Stages	--	6	--	6	--	6	--	6

MP_models-60-us_a_sc

OPERATING DATA

DATA	VALUE
Discharge Flange Size	2" to 6"
Power	2-pole operation: 10 HP to 800 HP / 7.5 kW to 630 kW 4-pole operation: 3 HP to 500 HP / 2.2 kW to 400 kW
Heads*	up to approx. 2,000 ft / 610 m
Flows*	up to approx. 2,600 GPM / 590 m ³ /h
Temperature	-13°F to +284°F (optional to 356°F**) / -25°C to 140°C (optional to 180°C**)
Operating pressures	up to 914 psi / 63 bar

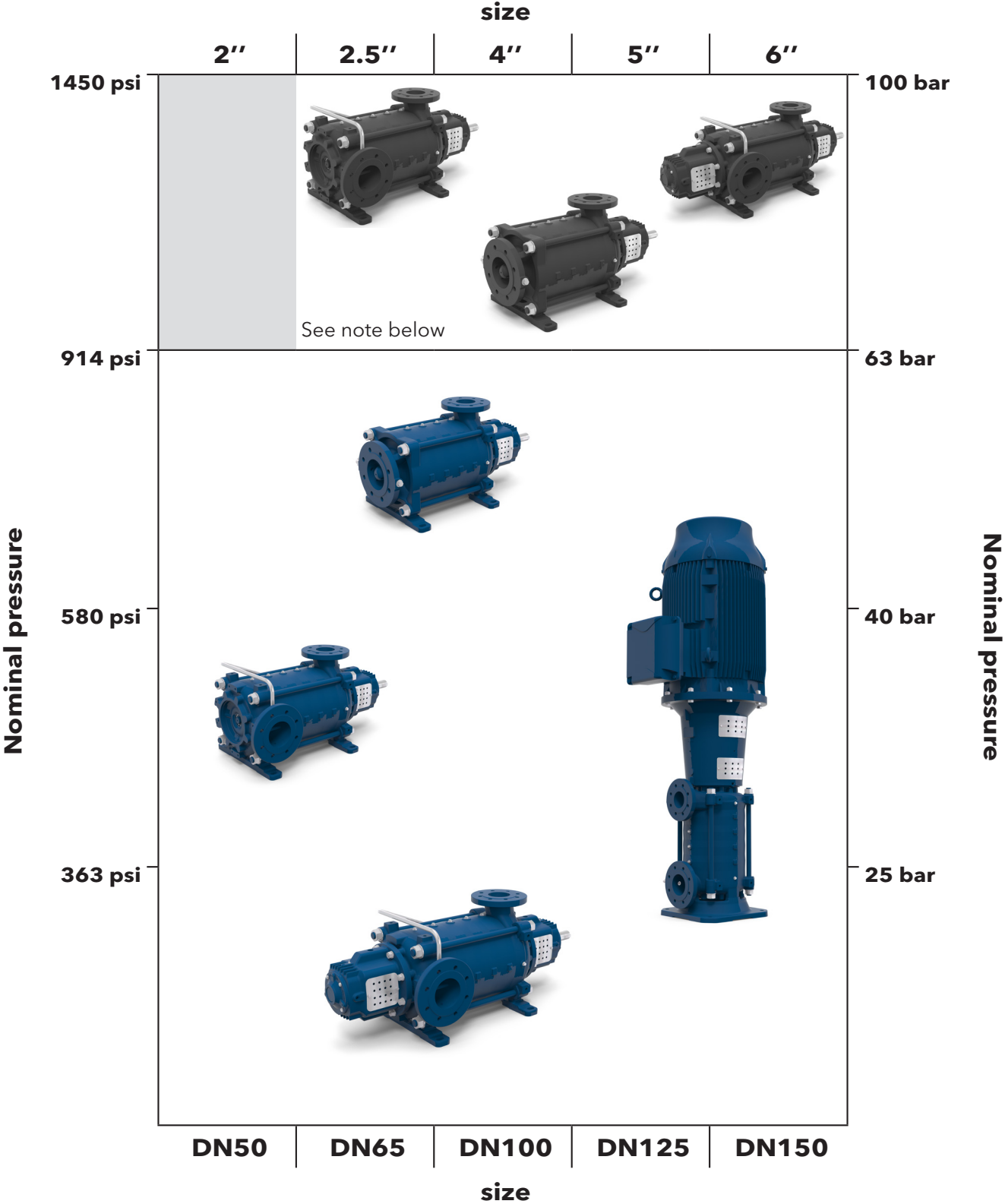
* G&L versions available with heads up to 3,100 ft / 950 m and flows up to 3,750 gpm / 850 m³/h. Consult factory for more information.

Us-Rev_A

** G&L 100 bar version

GENERAL CHARACTERISTICS

Operating range by size and design



Note: G&L 100 bar version; consult factory for more information

IDENTIFICATION CODE

M P V 1 2 5 B - 0 2 A B R S - 0 5 0 0 T T F 2 6 B - N N N 4

Pump Type [2 characters]
 [MP] = Highly efficient and flexible Multistage, radially split, segmented casing Pump, the new member of Xylem's e-product range

Configuration [1 character]
 [A] = Horizontal design
 Axial suction, radial discharge
 1 Roller bearing discharge side
 1 Slide bearing suction side
 [R] = Horizontal design
 Radial suction and discharge
 1 Roller bearing discharge side
 1 Slide bearing suction side
 [V] = Vertical design
 Radial suction and discharge
 1 Roller bearing discharge side
 1 Slide bearing suction side
 [D] = Horizontal design
 Radial suction and discharge
 2 Roller bearings
 Double bearing

Pump size [3 to 4 characters]
 [50A] [65A] [100A] [125A] [150A]
 [50B] [65B] [100B] [125B] [150B]

Number of stages/impellers [2 characters], e.g.:
 [04] = 4 stages

Combination of full and trimmed impellers [1 character]:
 [A] = all impeller full diameter
 [B] = trimmed/full impellers combination 1
 [C] = trimmed/full impellers combination 2
 [D] = trimmed/full impellers combination 3
 [E] = trimmed/full impellers combination 4
 [X] = duty point trimmed

Flange Orientation [1 character]
MPA
 [A] = End Suction, Top Discharge (code AO)
 [B] = End Suction, Left Discharge (code AL)
 [C] = End Suction, Right Discharge (code AR)
MPD and MPR
 [A] = Left Suction, Top Discharge (code LO)
 [B] = Right Suction, Top Discharge (code RO)
 [C] = Top Suction, Top Discharge (code OO)
 [D] = Left Suction, Right Discharge (code LR)
 [E] = Top Suction, Right Discharge (code OR)
 [F] = Right Suction, Right Discharge (code RR)
 [G] = Right Suction, Left Discharge (code RL)
 [H] = Top Suction, Left Discharge (code OL)
 [J] = Left Suction, Left Discharge (code LL)
MPD shaft driven from the suction end
 [1] = Left Suction, Top Discharge (code LOS)
 [2] = Right Suction, Top Discharge (code ROS)
 [3] = Top Suction, Top Discharge (code OOS)
 [4] = Left Suction, Right Discharge (code LRS)
 [5] = Top Suction, Right Discharge (code ORS)
 [6] = Right Suction, Right Discharge (code RRS)
 [7] = Right Suction, Left Discharge (code RLS)
 [8] = Top Suction, Left Discharge (code OLS)
 [9] = Left Suction, Left Discharge (code LLS)
MPV
 [A] = Left Suction, Left Discharge (code OO)
 [B] = Left Suction, Rear Discharge (code OR)
 [C] = Left Suction, Front Discharge (code OL)
 [D] = Left Suction, Right Discharge (code OG)

ANSI discharge flange class [1 character]
 [R] = 150
 [S] = 300
 [T] = 600

ANSI suction flange class [1 character]
 [R] = 150
 [S] = 300

Motor HP [2 to 4 characters]
 e.g. [0500] = 500HP

Motor enclosure [1 character]
 [D] = ODPE
 [T] = TEPE
 [W] = WDPE
 [X] = XPE

Frame size [1 character]
 [B] = 182TD/184TD
 [C] = 213TD/215TD
 [D] = 254TD/256TD
 [E] = 284TSD/286TSD
 [F] = 284TD/286TD
 [G] = 324TSD/326TSD
 [H] = 324TD/326TD
 [J] = 364TSD/365TSD
 [K] = 364TD/365TD
 [L] = 404TSD/405TSD
 [M] = 404TD/405TD
 [N] = 444TSD/445TSD
 [P] = 444TD/445TD
 [R] = 447TSD/449TSD
 [S] = 447TD/449TD
 [T] = 5007SD/5008SD
 [U] = 5009SD/5010SD
 [V] = 5011DZ/5012DZ
 [W] = G40S

Motor type [1 character]
 [F] = Factory choice
 [X] = Other
 [A] = Motor not part of scope

No. of poles [1 character]
 [2] = 2 poles
 [4] = 4 poles

Seal Type [1 character]
 [] = Mechanical seal, standard
 [C] = Cartridge seal
 [P] = Soft packing

Mechanical Seal and O-Ring materials [1 character]
 [4] = Carbon/SiC/EPDM
 [2] = Carbon/SiC/FPM
 [Z] = SiC/SiC/EPDM
 [W] = SiC/SiC/FPM
 [N] = Tungsten carbide/ SiC/FPM
 [X] = Others
 [-] = Soft packing

Material diffuser [1 character]
 [C] = Cast iron
 [N] = Stainless steel
 [R] = Duplex
 [T] = Super duplex
 [X] = Others

Impeller material [1 character]
 [C] = Cast iron
 [B] = Bronze
 [N] = Stainless steel
 [R] = Duplex
 [T] = Super duplex
 [X] = Others

Casing material [1 character]
 [C] = Cast iron
 [D] = Ductile iron
 [F] = Cast steel
 [N] = Stainless steel
 [R] = Duplex
 [T] = Super duplex
 [X] = Others

Motor frequency and voltage [2 characters]
 50 Hz
 [5B] = 190/380-415V
 [5C] = 190/380V
 [5D] = 220V
 [5E] = 380V
 [5F] = 415V
 [5X] = Other Voltage
 60 Hz
 [6B] = 208-230/460V
 [6C] = 230/460V
 [6D] = 200V
 [6E] = 230V
 [6F] = 460V
 [6G] = 575V
 [6X] = Other voltage

EXAMPLES:

Pump coupled with motor
 MPV125B-02ABRS-0500TTF26B-NNN4
 Series eMP, vertical configuration, radial suction and discharge, size DN125, hydraulic B, 2 stages/impellers, all impellers with full diameter, flange orientation: left suction and rear discharge, ANSI suction flange class 150, ANSI discharge flange class 300, 500HP factory choice motor with TEPE enclosure, 5009SD frame size, 2 poles, 60Hz at 208-230/460V, stainless steel casings, stainless steel impeller, stainless steel diffusers, mechanical seal Carbon/SiC/EPDM.

Pump mounted on frame, with coupling, motor not part of scope
 MPV125B-02ABRS-0500TTA26B-NNN4
 Series eMP, vertical configuration, radial suction and discharge, size DN125, hydraulic B, 2 stages/impellers, all impellers with full diameter, flange orientation: left suction and rear discharge, ANSI suction flange class 150, ANSI discharge flange class 300, to be used with motor frame size 5009SD, 2 poles (motor not part of scope), stainless steel casings, stainless steel impeller, stainless steel diffusers, mechanical seal Carbon/SiC/EPDM.

Bare shaft pump (only for horizontal configurations)
 MPA125B-02AARS-NNN4
 Series eMP, vertical configuration, radial suction and discharge, size DN125, hydraulic B, 2 stages/impellers, all impellers with full diameter, flange orientation: end suction and top discharge, ANSI suction flange class 150, ANSI discharge flange class 300, motor and coupling not part of scope, stainless steel casings, stainless steel impeller, stainless steel diffusers, mechanical seal Carbon/SiC/EPDM (of scope), stainless steel casings, stainless steel impeller, stainless steel diffusers, mechanical seal Carbon/SiC/EPDM.

NOTE:

- "e-" in front of MP is used for all marketing materials and in the selection tools.
- "e-" in front of MP is NOT used on the name plate and NOT in denomination of pumps.
- Not used nomenclature characters, e.g. if the character description is [] are skipped and the next used character is shifted to the left.

IDENTIFICATION CODE AND DESIGN OVERVIEW

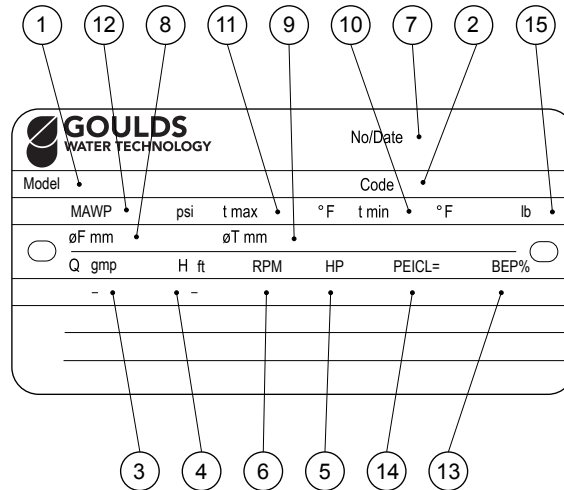
Example: **MPV125B-02ABRS-0500TTF26B-NNN4**

Characters	Description
e-MP	Highly efficient and flexible multistage, radially split, segmented casing pump Various design features for optimized efficiency values over the complete performance range offering configuration flexibility for a wide range of applications in different markets.
V	Configuration Total 4 models to meeting different installation requirements 3 horizontal models: e-MPA, e-MPR, e-MPD 1 vertical model: e-MPV <u>Suction and Discharge casings:</u> Suction casings are available with radial and axial arranged nozzles Discharge casings are available with radial arranged nozzles Radial casing nozzles (suction and discharge) can be turned in 90° steps Sealing: O-rings <u>Bearings:</u> depending on mechanical model: Drive end: roller bearing (grease or oil lubricated) Non-drive end: roller bearing (grease or oil lubricated) or plain bearing (lubricated by pumped liquid) <u>Coupling and Coupling Guard:</u> Horizontal models: flexible coupling with and without spacer Vertical model: flexible coupling
125B	Pump size Total 5 mechanical sizes: DN50, DN65, DN100, DN125, to cover best efficiencies points (BEP) over the flow performance range. Hydraulic identifier (combine with above) Total 10 hydraulics: 2 hydraulics (A,B) by size to increase the coverage of best efficiency points (BEP) over the flow performance range
02A	Number of stages and combination of full diameter and trimmed impellers Up to 18 stages (mechanical size 50) 4 standard impeller trims and optional trims of impellers exactly to the required duty point for an optimized efficiency. Impeller design: radial flow impeller, enclosed
B	Flange orientation
RS	ANSI class for suction and discharge flanges Flange ratings available: ANSI B16.5 Class 150, 300 and 600
0500	Motor HP
T	Motor enclosure
T	Frame size NEMA frame sizes
F	Motor type Factory of customer choice
2	Number of poles 2 or 4 poles
6B	Motor frequency and voltage 50Hz and 60Hz 3 phase power supply for various voltages
NNN	Material identification for casings (suction, discharge and stage casing), impeller and diffuser Casings: cast iron, ductile iron, steel, stainless steel (AISI 316), duplex stainless steel, super duplex stainless steel Impeller: cast iron, bronze, stainless steel (AISI 316), duplex stainless steel, super duplex stainless steel Diffuser: cast iron, stainless steel (AISI 316), duplex stainless steel, super duplex stainless steel
4()	Material identification for mechanical seal and O-ring and type of seal Elastomers: EPM, FKM Shaft sealing: mechanical seal (EN 12756), cartridge seal (single, single quench, double), packing.

Us-Rev_A

RATING PLATE

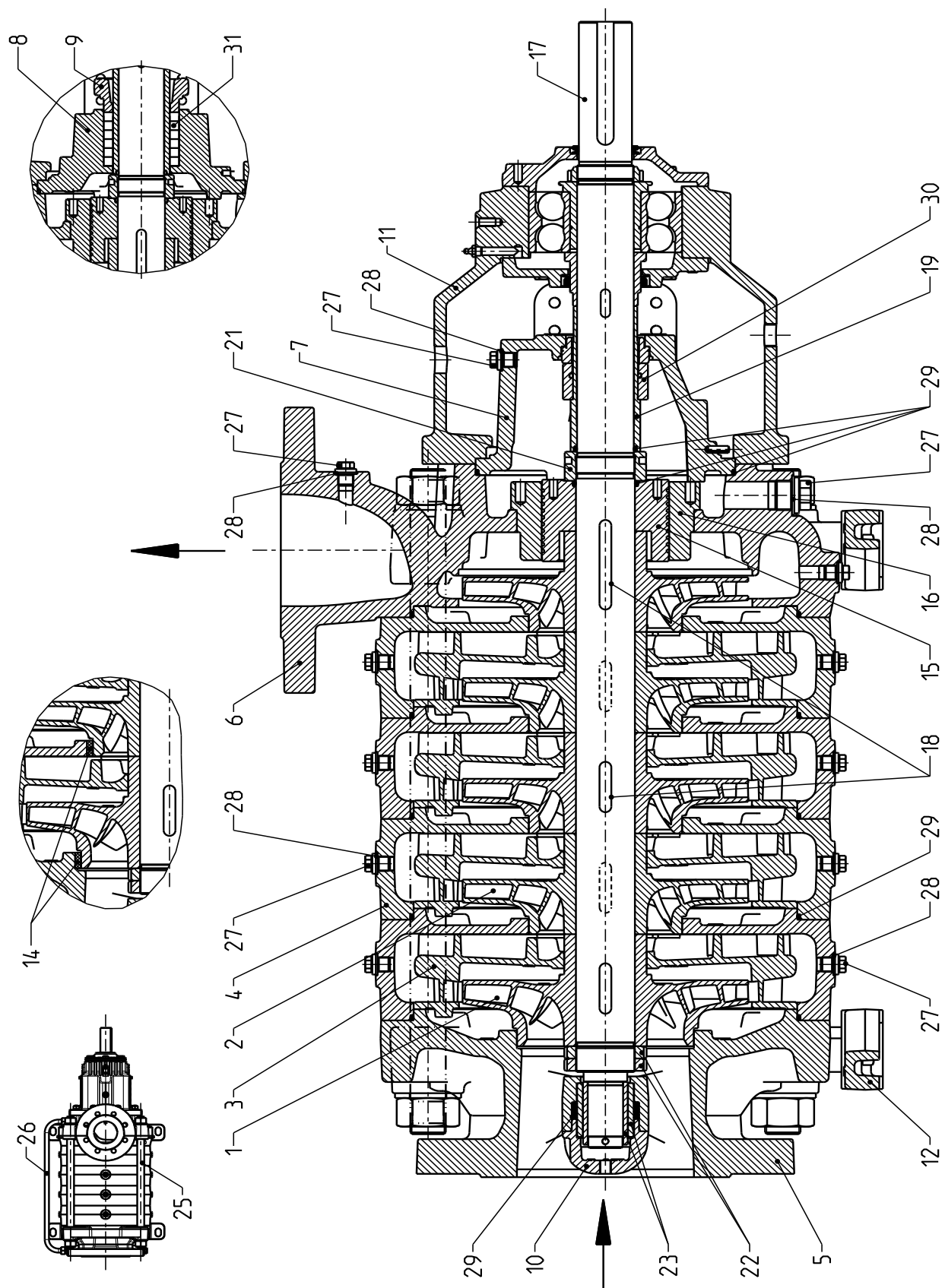
PUMP ONLY



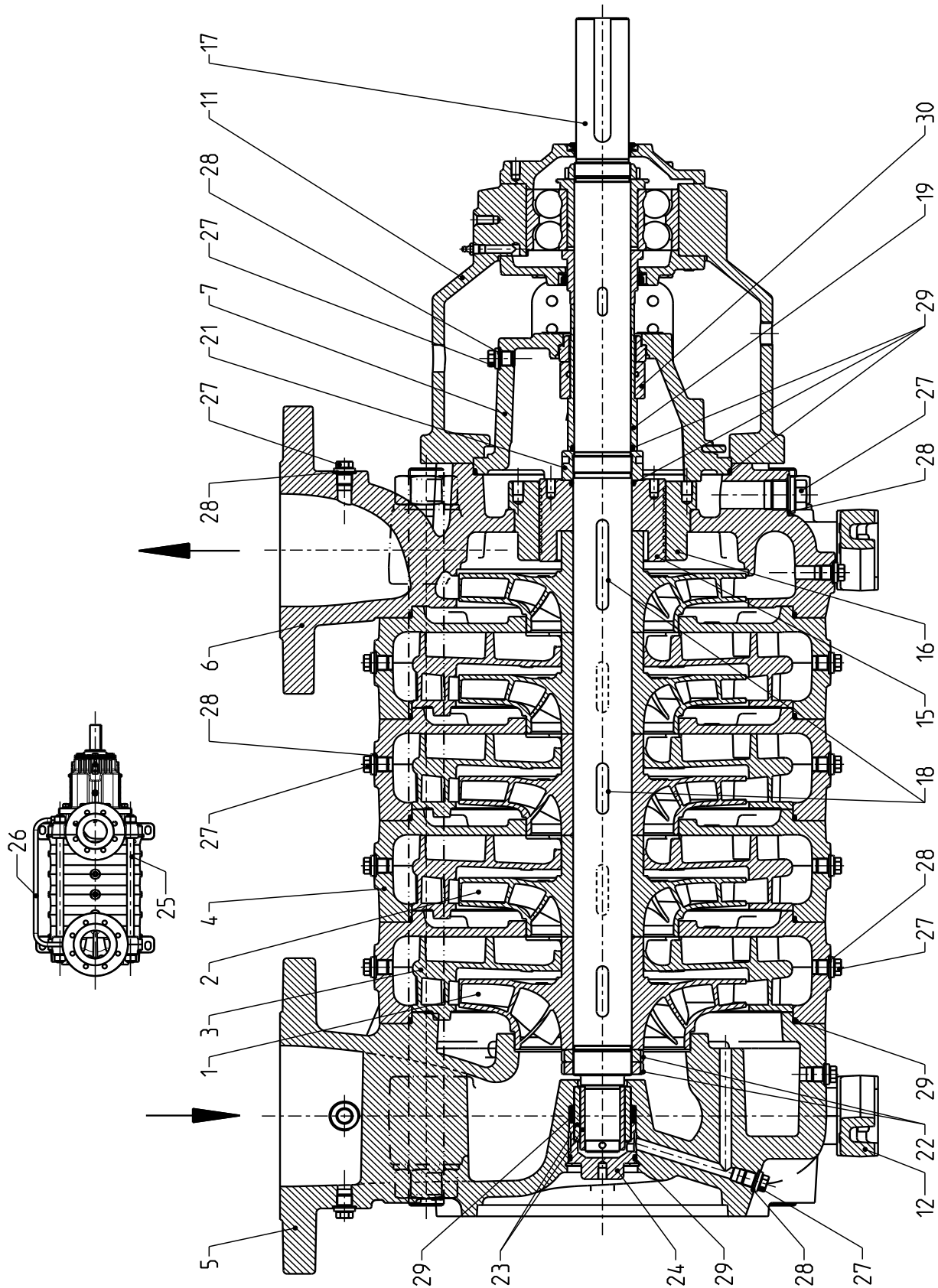
LEGEND

- 1 - Pump model
- 2 - Pump code
- 3 - Rated Flow
- 4 - Rated Head
- 5 - Input power at rated conditions
- 6 - Speed
- 7 - Serial number, or order number + order position number
- 8 - Full impeller diameter (only filled in for full impeller diameter)
- 9 - Trimmed impeller diameter (only filled in for trimmed impellers)
- 10 - Minimum operating liquid temperature
- 11 - Maximum operating liquid temperature basis for MAWP
- 12 - Maximum allowable working pressure
- 13 - Pump efficiency at BEP (60 Hz)
- 14 - Pump Energy Index as defined by 2016 DOE Energy Conservation Standards for Pump (only for e-MPV)
- 15 - Bare Pump Weight

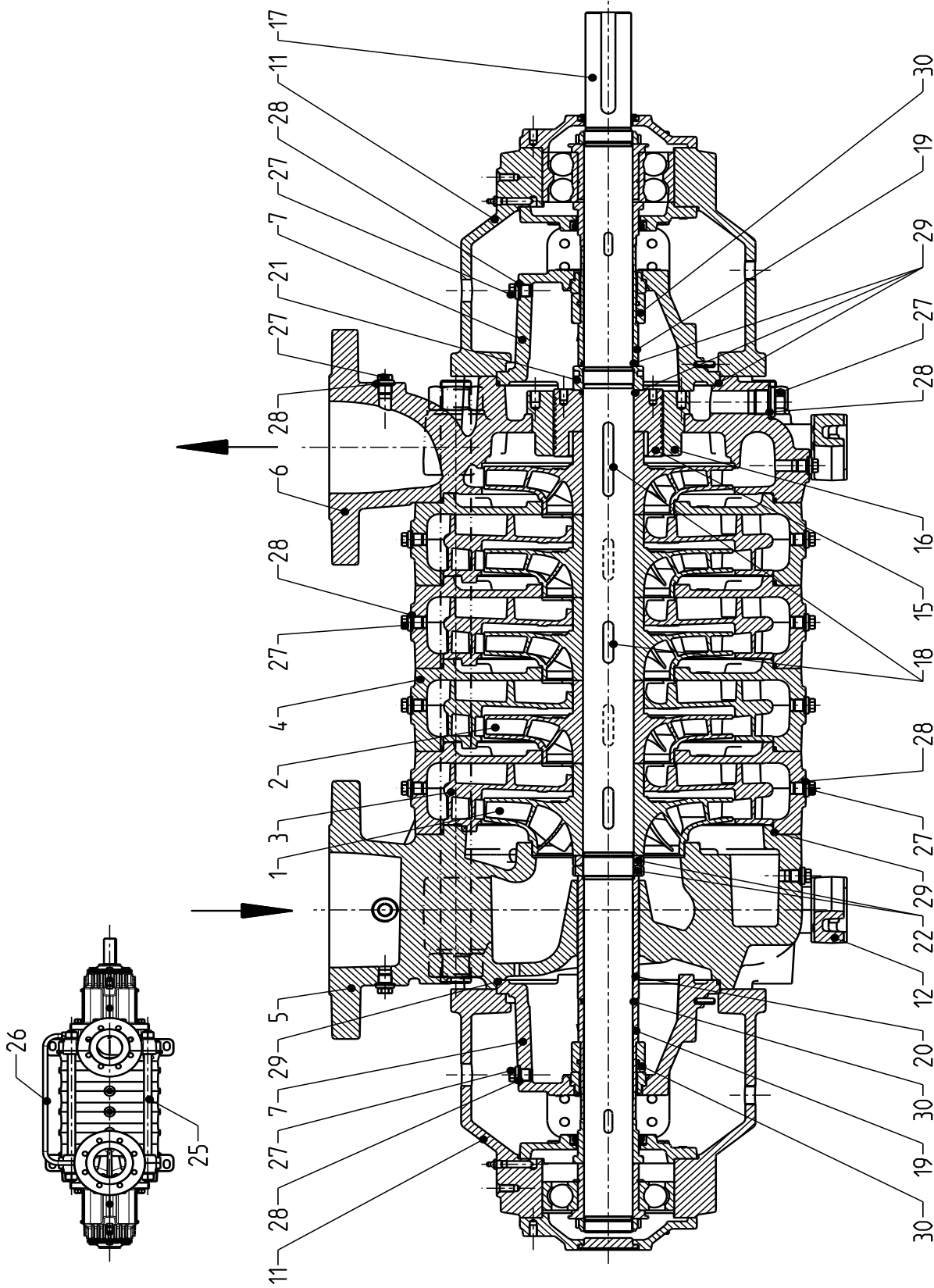
MPA SERIES PUMP END CROSS-SECTION AND MAIN COMPONENTS



MPR SERIES PUMP END CROSS-SECTION AND MAIN COMPONENTS



MPD SERIES PUMP END CROSS-SECTION AND MAIN COMPONENTS



MPV SERIES PUMP END CROSS-SECTION AND MAIN COMPONENTS

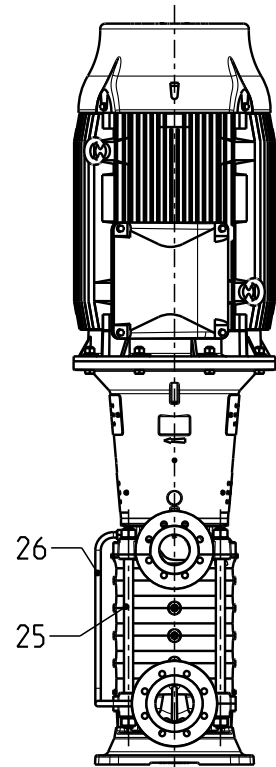
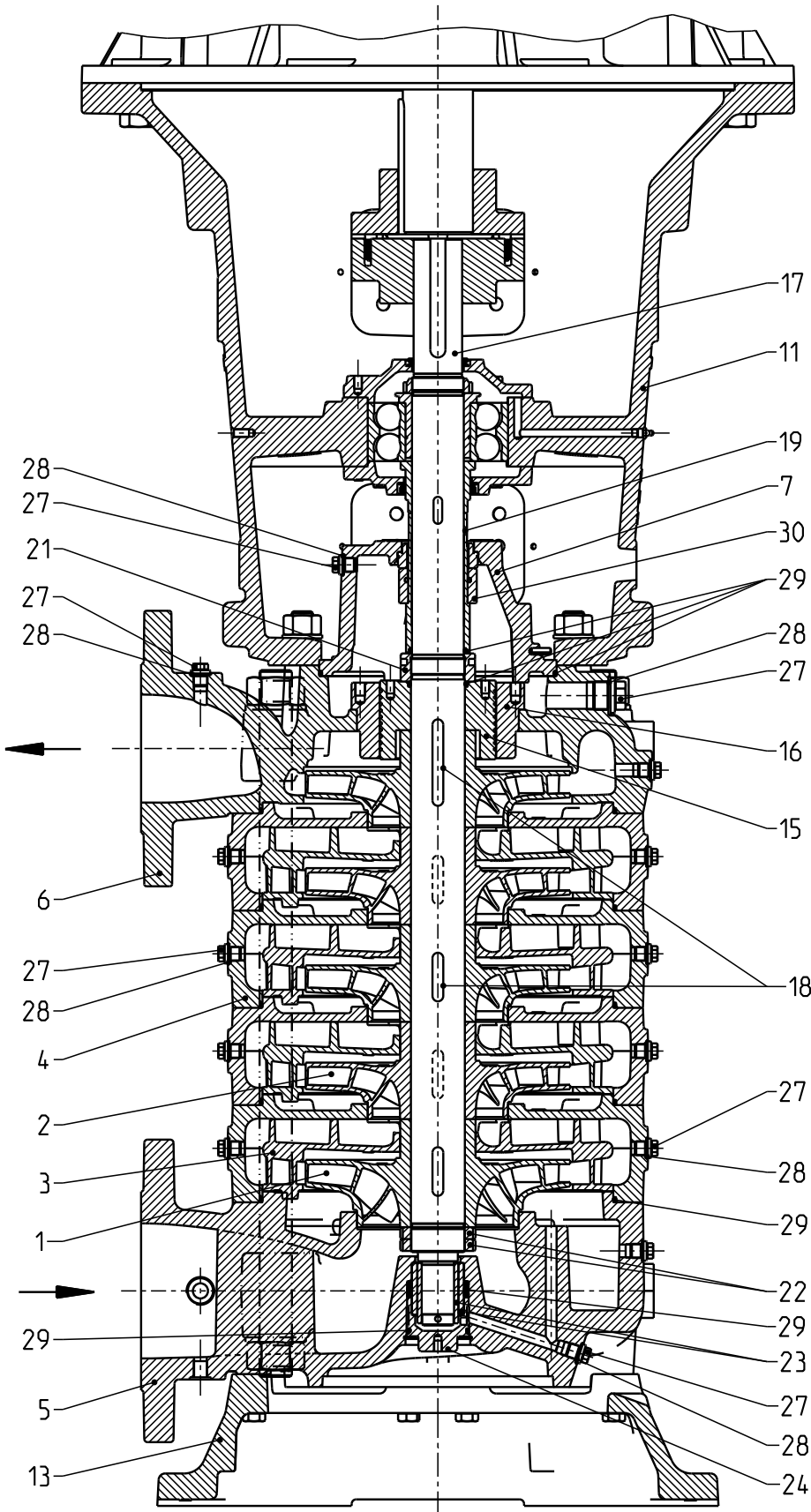


TABLE OF MATERIAL REFERENCE STANDARDS

COMPONENTS	MATERIALS	REFERENCE STANDARDS	
		EUROPE	USA ^{*)}
JL1020	Cast Iron	EN 1561 - GJL-150	ASTM Class 25
JL1030	Cast Iron	EN 1561 - GJL-200	ASTM Class 30
JL1040	Cast Iron	EN 1561 - GJL-250	ASTM Class 35
JS1030	Ductile Iron	EN 1563 - GJS-400-15	ASTM 65-45-12
CC480K	Bronze	EN 1982 - CuSn10-C	ASTM C90700
1.4408	Austenitic Stainless Steel	EN 10213-4 - GX5CrNiMo19-11-2	ASTM CF8M
1.4517	Duplex Stainless Steel	EN 10213-4 - GX2CrNiMoCuN25-6-3-3	ASTM CD4MCuN
1.4469	Super Duplex Stainless Steel	EN 10213-4 - GX2CrNiMoCuN26-7-4	ASTM CE3MN
1.0038	Carbon Steel	EN 10025 - S235JR	ASTM Grade C, D
1.4057	Stainless Steel	EN 10088-1 - X17CrNiMo16-2	ASTM 431
1.4571	Stainless Steel	EN 10088-1 - X6CrNiMo17-12-2	ASTM 316Ti
1.4539	Austenitic Stainless Steel	EN 10088-1 - X1CrNiMo25-20-5	ASTM 904L
1.4462	Duplex Stainless Steel	EN 10088-1 - X2CrNiMo22-5-3	ASTM F51
1.4410	Super Duplex Stainless Steel	EN 10088-1 - X2CrNiMo25-7-4	ASTM F53
EPDM	Ethylen-Propylen-Dien-Elastomer	-	-
FKM/FPM	Fluoro-Elastomer	-	-
AFM34	Asbestos free synthetic fiber	-	-

*) ... Similar Grade

MP_materials-50-en_b_tc

TABLE OF MATERIAL CODE

COMPONENTS	Material Code									
	CCC	CBC	CNC	DCC	DBC	DNC	NNN	R N N	R R R	TTT
Impeller	Cast Iron	Bronze	Stainless Steel	Cast Iron	Bronze	Stainless Steel	Stainless Steel	Stainless Steel	Duplex	Super Duplex
Diffuser	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Stainless Steel	Stainless Steel	Duplex	Super Duplex
Casing	Cast Iron	Cast Iron	Cast Iron	Ductile Iron	Ductile Iron	Ductile Iron	Stainless Steel	Duplex	Duplex	Super Duplex
Shaft	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Duplex	Super Duplex
Shaft Sleeve	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Duplex	Super Duplex
Relief Pipe	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Austenitic Steel	Austenitic Steel
Plain Bearing	Tungsten Carbide									

MP_material-en_a_tc

TABLE OF MATERIALS CAST IRON VERSION

REF. N.	PART	PUMP MATERIAL CODE (STANDARD)		
		CCC	CBC	CNC
	MAXIMAL WORKING PRESSURE [psi]	580	580	580
1	IMPELLER 1 st STAGE	JL1030	CC480K	1.4408
2	IMPELLER (SERIES)	JL1030	CC480K	1.4408
3	DIFFUSER		JL1020	
4	STAGE CASING		JL1040	
5	SUCTION CASING		JL1040	
6	DISCHARGE CASING		JL1040	
7	SEAL COVER		JL1040	
8	STUFFING BOX COVER		JL1040	
9	STUFFING BOX GLAND		JL1040	
10	SLIDE BEARING CAP		JL1040	
11	BEARING BRACKET / MOTOR ADAPTER		JL1040	
12	PUMP FOOT HORIZONTAL		JL1040 ¹⁾	
13	PUMP FOOT VERTICAL		JL1040	
14	WEAR RING		optional (1.4462)	
15	BALANCE DRUM		1.4057	
16	BALANCE DRUM STATOR		JL1040	
17	SHAFT		1.4057	
18	KEY		1.4571	
19	SHAFT SLEEVE		1.4057	
20	SPACER SLEEVE		1.4057	
21	SHAFT NUT		1.4057	
22	IMPELLER NUT		A4 ²⁾	
23	PLAIN BEARING (SLEEVE & BUSHING)		Tungsten Carbide (9% Ni-Binder)	
24	PLAIN BEARING COVER		1.4057	
25	TIE ROD		ETG100	
26	BALANCE LINE		1.4571	
27	PLUG		Galvanized Steel	
28	GASKET		AFM34 ³⁾	
29	O-RING		EPDM (FPM/FKM)	
30	MECHANICAL SEAL		CARBON/SIC/EP	
31	SOFT PACKING		ramie fibre packing with special PTFE-impregnation	
	NUT, WASHER & SCREW		Galvanized Steel	

1) ... 1.0038 for Size 125 and 150

2) ... 1.4401 / 1.4404 / 1.4571

3) ... Asbestos free synthetic fiber AFM34

TABLE OF MATERIALS DUCTILE IRON VERSION

REF. N.	PART	PUMP MATERIAL CODE (STANDARD)		
		D C C	D B C	D N C
	MAXIMAL WORKING PRESSURE [psi]	914	914	914
1	SUCTION IMPELLER	JL1030	CC480K	1.4408
2	IMPELLER (SERIES)	JL1030	CC480K	1.4408
3	DIFFUSER		JL1020	
4	STAGE CASING		JS1030	
5	SUCTION CASING		JS1030	
6	DISCHARGE CASING		JS1030	
7	SEAL COVER		JS1030	
8	STUFFING BOX COVER		JS1030	
9	STUFFING BOX GLAND		JL1040	
10	SLIDE BEARING CAP		JL1040	
11	BEARING BRACKET / MOTOR ADAPTER		JL1040	
12	PUMP FOOT HORIZONTAL		JL1040 ¹⁾	
13	PUMP FOOT VERTICAL		JL1040	
14	WEAR RING		optional (1.4462)	
15	DRUM		1.4057	
16	DRUM BUSH		JL1040	
17	SHAFT		1.4057	
18	KEY		1.4571	
19	SHAFT SLEEVE		1.4057	
20	SPACER SLEEVE		1.4057	
21	SHAFT NUT		1.4057	
22	IMPELLER NUT		A4 ²⁾	
23	PLAIN BEARING (SLEEVE & BUSH)		Tungsten Carbide (9% Ni-Binder)	
24	PLAIN BEARING COVER		1.4057	
25	TIE ROD		ETG100	
26	CIRCULATION PIPE		1.4571	
27	PLUG		Galvanized Steel	
28	GASKET		AFM34 ³⁾	
29	O-RING		EPDM (FPM/FKM)	
30	MECHANICAL SEAL		CARBON/SIC/EP	
31	SOFT PACKING		ramie fibre packing with special PTFE-impregnation	
	NUT, WASHER & SCREW		Galvanized Steel	

1) ... 1.0038 for Size 125 and 150

2) ... 1.4401 / 1.4404 / 1.4571

3) ... Asbestos free synthetic fiber AFM34

TABLE OF MATERIALS STAINLESS STEEL VERSION

REF. N.	PART	PUMP MATERIAL CODE (STANDARD)			OPTIONAL
		N N N	R N N	R R R	TTT
	MAXIMAL WORKING PRESSURE [psi]	580	914	914	914
1	IMPELLER 1 ST STAGE	1.4408	1.4408	1.4517	1.4469
2	IMPELLER (SERIES)	1.4408	1.4408	1.4517	1.4469
3	DIFFUSER	1.4408	1.4408	1.4517	1.4469
4	STAGE CASING	1.4408	1.4408	1.4517	1.4469
5	SUCTION CASING	1.4408	1.4517	1.4517	1.4469
6	DISCHARGE CASING	1.4408	1.4517	1.4517	1.4469
7	SEAL COVER	1.4408	1.4408	1.4517	1.4469
8	STUFFING BOX COVER	1.4408	1.4408	n/a	n/a
9	STUFFING BOX GLAND	1.4408 ¹⁾	1.4408 ¹⁾	n/a	n/a
10	SLIDE BEARING CAP	1.4462	1.4462	1.4462	1.4410
11	BEARING BRACKET / MOTOR ADAPTER	JL1040			
12	PUMP FOOT HORIZONTAL	JL1040 ²⁾			
13	PUMP FOOT VERTICAL	JL1040			
14	WEAR RING	1.4462	1.4462	1.4462	1.4410
15	BALANCE DRUM	1.4057	1.4057	1.4462	1.4410
16	BALANCE DRUM STATOR	1.4462	1.4462	1.4462	1.4410
17	SHAFT	1.4462	1.4462	1.4462	1.4410
18	KEY	1.4571	1.4571	1.4462	1.4410
19	SHAFT SLEEVE	1.4462	1.4462	1.4462	1.4410
20	SPACER SLEEVE	1.4462	1.4462	1.4462	1.4410
21	SHAFT NUT	1.4410	1.4410	1.4410	1.4410
22	IMPELLER NUT	A4 ³⁾	A4 ³⁾	1.4410	1.4410
23	PLAIN BEARING (SLEEVE & BUSHING)	Tungsten Carbide (9% Ni-Binder)			
24	PLAIN BEARING COVER	1.4462	1.4462	1.4462	1.4410
25	TIE ROD	ETG100			
26	BALANCE LINE	1.4571	1.4571	1.4539	
27	PLUG	1.4571	1.4571	1.4462	1.4410
28	GASKET	AFM34 ⁴⁾			
29	O-RING	EPDM (FPM/FKM)			
30	MECHANICAL SEAL	CARBON/SIC/EP		CARBON/SIC/EP ⁵⁾	CARBON/SIC/EP ⁶⁾
31	SOFT PACKING	ramie fibre / PTFE-impregnation		n/a	n/a
	NUT, WASHER & SCREW	Galvanized Steel			

1) ... 1.4571 for Size 100, 125 and 150

2) ... 1.0038 for Size 125 and 150

3) ... 1.4401 / 1.4404 / 1.4571

4) ... Asbestos free synthetic fiber AFM34

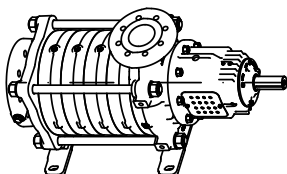
5) ... Metal parts Duplex Steel

6) ... Metal parts Hastelloy C4

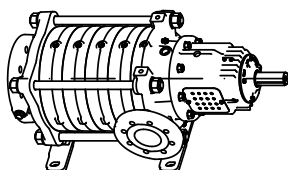
MPA, MPD AND MPR SERIES NOZZLE POSITION

for MPA:

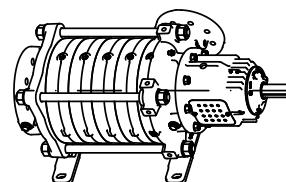
Code: A0



Code: AL

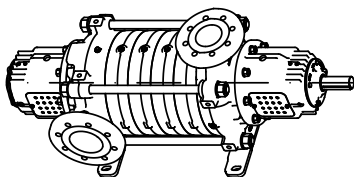


Code: AR

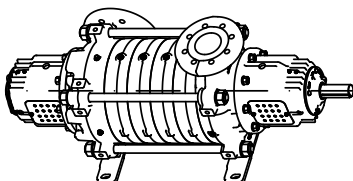


for MPD and MPR:

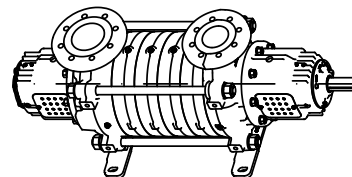
Code: L0



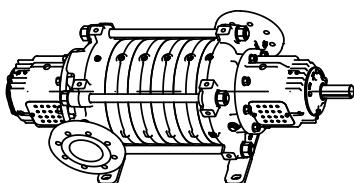
Code: R0



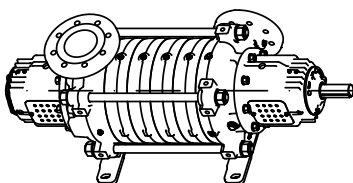
Code: 00



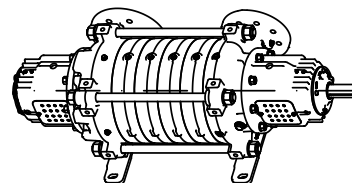
Code: LR



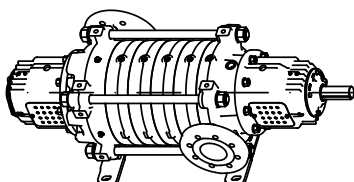
Code: OR



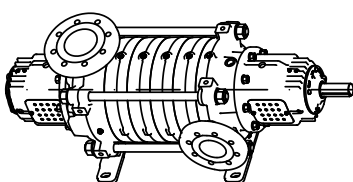
Code: RR



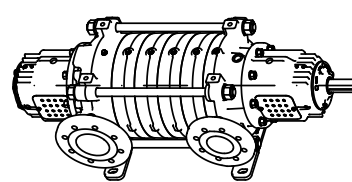
Code: RL



Code: 0L



Code: LL



Note: Nozzle position LL, 00, RR is not possible for pumps with 1 and 2 stages

e-MP-NOZ-EN_a_DD

MPV SERIES NOZZLE POSITION

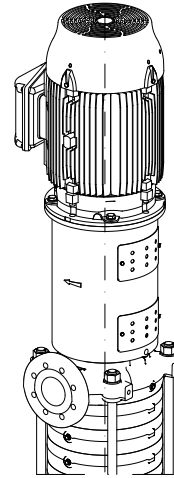
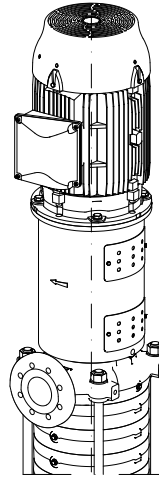
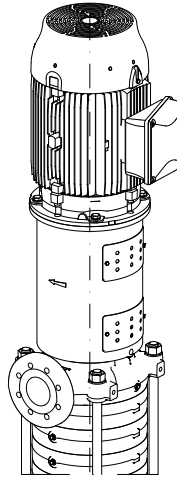
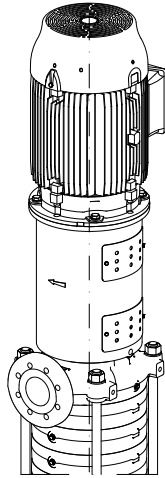
terminal box position

code-K1

code-K2

code-K3

code-K4



standard

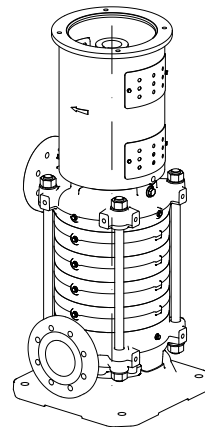
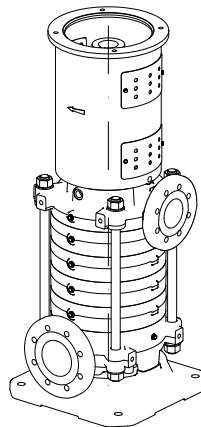
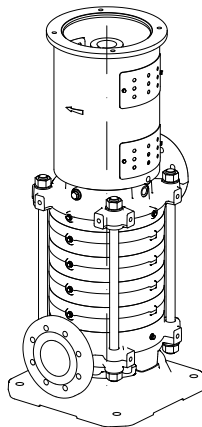
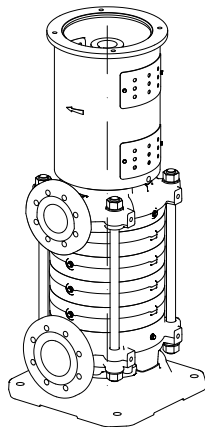
nozzle position

code-00

code-0G

code-0L

code-0R

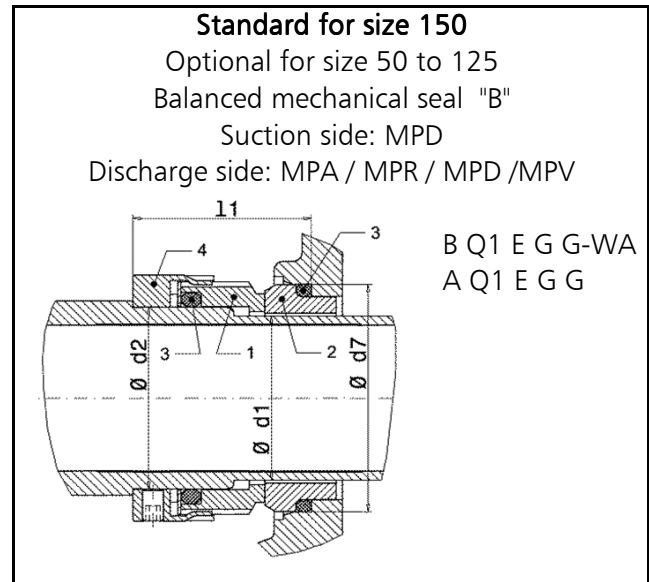
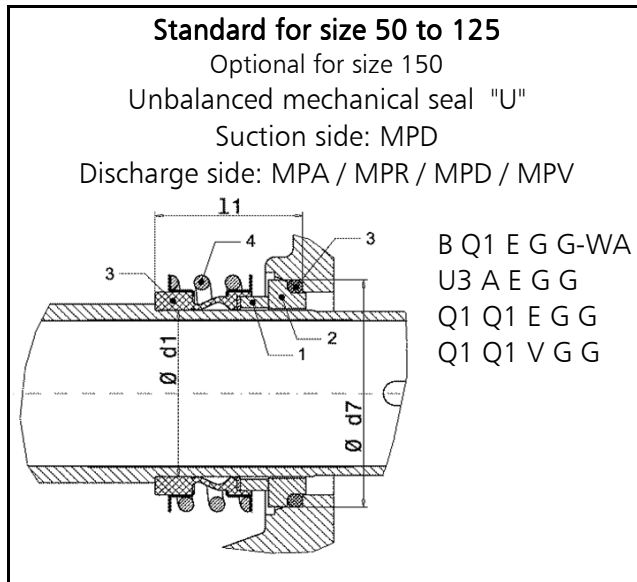


design 0G: standard for 1 and 2 stages (00 not possible)
design 00: standard for 3 or more stages

e-MPV_a_DD

MECHANICAL SEALS

(Mechanical seal with mounting dimensions according to EN 12756 and ISO 3069 WITH L_{1k})



A0036_A_SC

LIST OF MATERIALS

POSITION 1 - 2	POSITION 3	POSITION 4
B : Resin impregnated carbon	E : EPDM	G : AISI 316
A : Antimony impregnated carbon	V : FKM (FPM)	
Q₁ : Silicon carbide		
U₃ : Tungsten carbide		

MP_Mech_Seal-en_a_tm

TYPE OF SEAL

TYPE	POSITION			
	1 ROTATING FACE	2 STATIONARY FACE	3 ELASTOMERS	4 SPRINGS
B Q1 E G G - WA	B	Q1	E	G
U3 A E G G	U3	A	E	G
Q1 Q1 E G G	Q1	Q1	E	G
Q1 Q1 V G G	Q1	Q1	V	G
A Q1 E G G	A	Q1	E	G

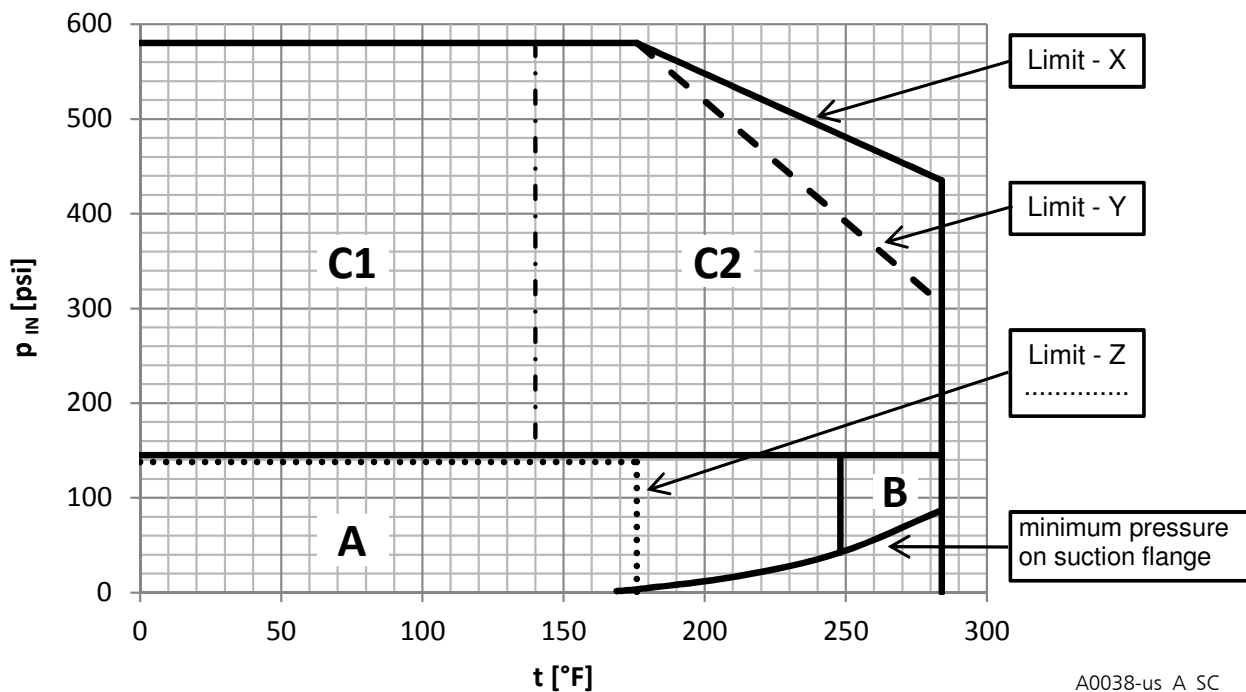
MP_Mech_Seal-us_a_tc

TABLE OF DIMENSIONS

PUMP SIZE	DIMENSIONS [inch]			
	\varnothing d1	\varnothing d2	\varnothing d7	l1 (=l _{1k})
50	1.50	1.69	2.20	1.77
65	1.69	1.89	2.40	1.77
100	2.17	2.36	2.95	1.87
125	2.56	2.76	3.35	2.07
150	2.95	3.15	3.82	2.36

MP_MS_dim-us_a_td

MECHANICAL SEAL SELECTION DIAGRAM



A0038-us_A_SC

P_{IN}Pump inlet pressure at suction flange [psi]

AREA	DESCRIPTION	TYPE OF MECHANICAL SEAL
A	Up to 145 psi inlet pressure at maximum 248°F Standard mechanical seal: Carbon/SiC/EPDM with drinking water approval	B Q1 E G G-WA (UNBALANCED) *
B	Up to 145 psi inlet pressure and more than 248°F (maximum 284°F) Standard mechanical seal: Tungsten Carbide/Carbon/EPDM	U3 A E G G (UNBALANCED) *
C1	Up to 580 psi inlet pressure at maximum 140°F Standard mechanical seal: Carbon/SiC/EPDM with drinking water approval	B Q1 E G G-WA (BALANCED)
C2	Up to 580 psi inlet pressure at maximum 176°F (up to 435 psi inlet pressure at maximum 284°F). Standard mechanical seal: Carbon/SiC/EPDM	A Q1 E G G (BALANCED)

*) ... only for size 50 to 125

MP_Mech_Seal-us_a_td

LIMIT CURVES DEPENDING ON PUMP HYDRAULICS AND MOTOR SPEED

Pump size	Speed (rpm)			
	3550	2900	1750	1450
50	X	X	X	X
65	X	X	X	X
100	Y	X	X	X
125	Y	Y	X	X
150	n/a	Y	X	X

NOTE: Limit - Z ... Limit for material combination SiC/SiC/EPDM (Q1 Q1 E G G) or SiC/SiC/FKM (FPM) (Q1 Q1 V G G)

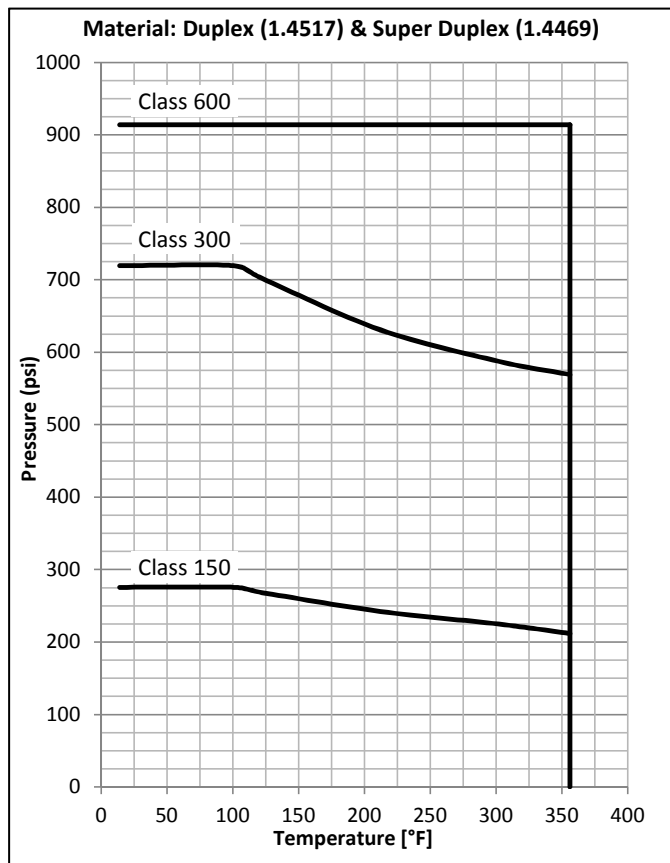
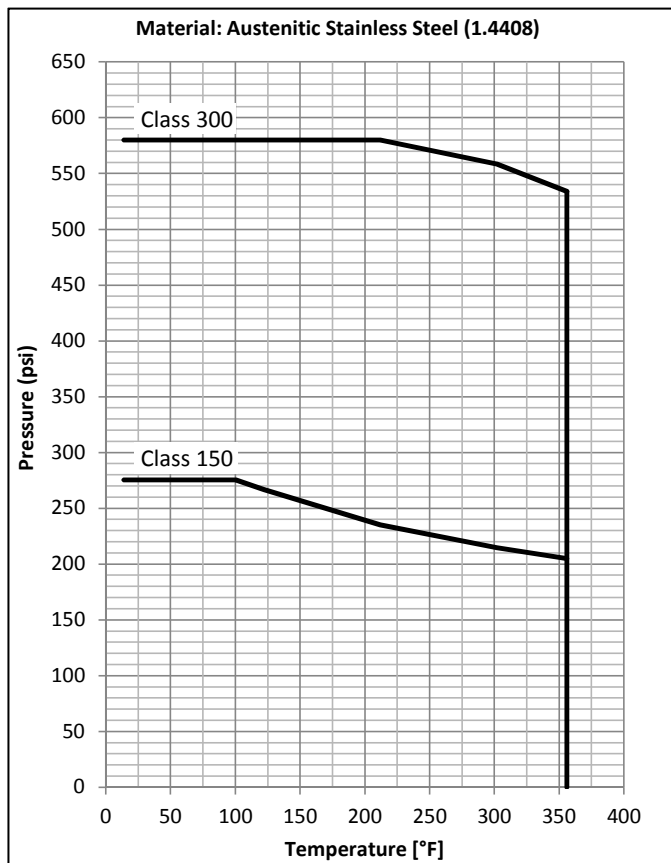
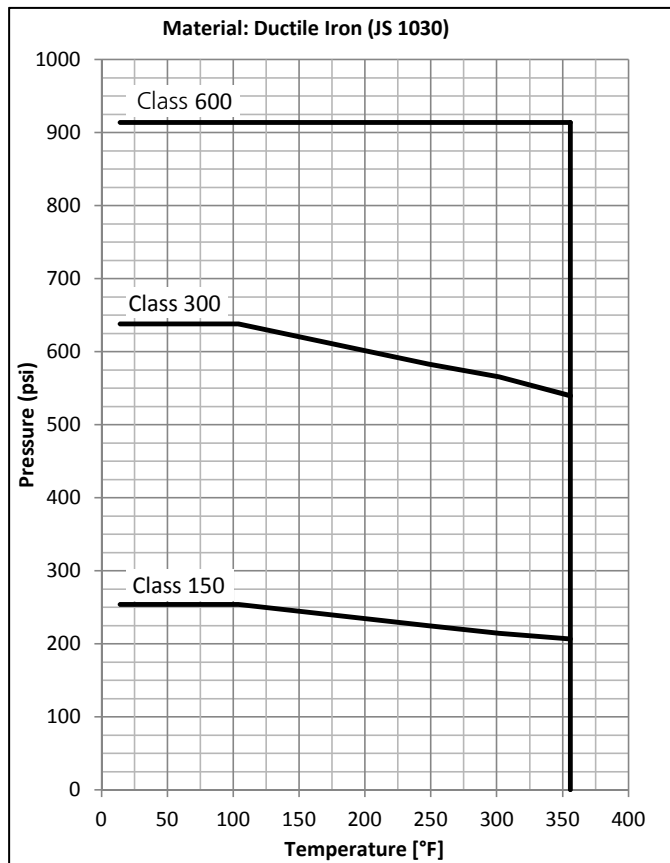
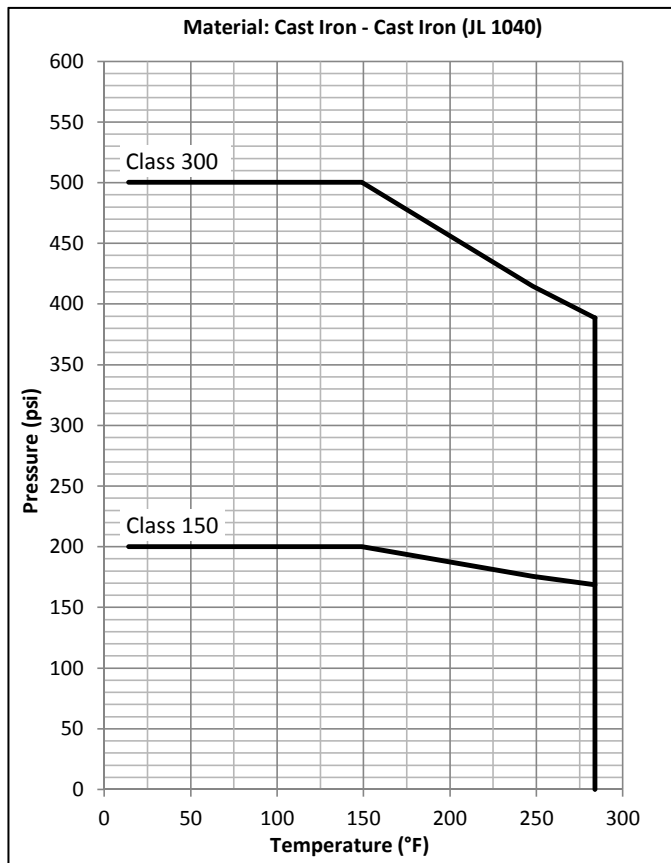
MP_Limit_Mech_Seal-en_a_td

GENERAL CONSIDERATIONS

This diagram and selection table is valid for clean water (solids < 0.0013 oz/US gallon) or water for feeding boilers, partially or totally demineralized.

If the water temperature exceeds 176 °F, minimum inlet pressure must be guaranteed.

PRESSURE / TEMPERATURE CHARTS FOR PUMP FLANGES ACCORDING TO ANSI B16.5 AND CASING MATERIAL



MOTORS

- Standard NEMA frame motors in totally enclosed fan cooled or open drip proof.
- Motor Canopies (vertical type) must be ordered separately from the list below when the motor is ordered.
- Typical 4 week lead times, consult factory for actual lead times. Goolds Water Technology's choice of manufacturer.

VERTICAL "D" FLANGE MOTORS, 2 POLES

Vertical "D" Flange Motors						
HP	Phase	Voltage	Enclosure	Order No.	60 Hz, 2-Pole	
					Frame	Wt. (lbs.)
15	3	230/460	ODPE	O13A32F4BE2S	215TD	140
			TEPE	O13A32F5BK2S	254TD	160
20		208-230/460	ODPE	O14A32F4BK2S	254TD	235
			TEPE	O14A32F5BK2S	256TD	270
25		230/460	ODPE	O15A32F4BK2S	256TD	235
			TEPE	L15A32F5BL2S	284TSD	395
30		230/460	ODPE	L16A32F4BL2S	284TSD	295
			208-230/460	TEPE	L16A32F5BL2S	286TSD
40		230/460	ODPE	L17A32F4BL2S	286TSD	293
			TEPE	L17A32F5BM2S	324TSD	430
50		208-230/460	ODPE	L18A32F4BM2S	324TSD	520
			230/460	TEPE	L18A32F5BM2S	320TSD
60		230/460	ODPE	L19A32F4BM2S	326TSD	480
			208-230/460	TEPE	L19A32F5BP2S	364TSD
75		230/460	ODPE	L20A32F4BP2S	364TSD	730
			208-230/460	TEPE	L20A32F5BP2S	365TSD
100		230/460	ODPE	L21A32F4BP2S	365TSD	730
			TEPE	L21A32F5BQ2S	405TSD	1150
125		460	ODPE	L22A32G4BQ2S	404TSD	950
			TEPE	L22A32G5BR2S	444TSD	1615
150	230/460	ODPE	L23A32F4BQ2S	405TSD	950	
		460	TEPE	L23A32G5BR2S	445TSD	1630
200	460	ODPE	L24A32G4BR2S	444TSD	1250	
		TEPE	L24A32G5BR2S	447TSD	2260	
250	230/460	ODPE	L25A32F4BR2S	445TSD	1250	
		460	TEPE	L25A32G5BR2S	447TSD	2300
300	230/460	ODPE	L26A32F4BR2S	445TSD	1250	
		460	TEPE	L26A32G5BR2S	449TSD	2300
350	230/460	ODPE	L27A32F4BR2S	445TSD	1250	
		TEPE	L27A32F5BR2S	449TSD	2550	
400	230/460	ODPE	L28A32F4BR2S	449TSD	1850	
		460	TEPE	L28A32G5BR2S	449TSD	2300
450	230/460	ODPE	L29A32F4BS2S	5009SD	2050	
500	460	TEPE	L30A32G5BR2S	5009SD	2300	

eMP-mot_V2_us_a_te

VERTICAL "D" FLANGE MOTORS, 4 POLES

Vertical "D" Flange Motors						
HP	Phase	Voltage	Enclosure	Order	60 Hz, 4-Pole Frame	Wt. (lbs.)
15	3	230/460	ODPE	O13A34F4BK2S	254TD	235
			TEPE	O13A34F5BK2S		270
20		208-230/460	ODPE	O14A34F4BK2S	256TD	235
			TEPE	O14A34F5BK2S		270
25		230/460	ODPE	O15A34F4BL2S	284TD	295
			TEPE	O15A34F5BL2S		395
30		230/460	ODPE	O16A34F4BL2S	286TD	295
			TEPE	O16A34F5BL2S		395
40		230/460	ODPE	O17A34F4BM2S	324TD	480
			TEPE	O17A34F5BM2S		560
50		208-230/460	ODPE	O18A34F4BM2S	326TD	480
			TEPE	O18A34F5BM2S		600
60		230/460	ODPE	O19A34F4BP2S	364TD	730
			TEPE	O19A34F5BP2S		820
75		230/460	ODPE	O20A34F4BP2S	365TD	730
			TEPE	O20A34F5BP2S		820
100		230/460	ODPE	L21A34F4BQ2S	404TSD	950
			TEPE	O21A34F5BQ2S	405TD	1150
125		460	ODPE	O22A34G4BQ2S		950
			TEPE	O22A34G5BR2S	444TD	1615
150	230/460	ODPE	O23A34F4BR2S		1250	
		TEPE	O23A34G5BR2S	445TD	1615	
200	460	ODPE	O24A34G4BR2S		1250	
		TEPE	O24A34G5BR2S	447TD	2260	
250	230/460	ODPE	O25A34F4BR2S	445TD	1250	
		TEPE	O25A34G5BR2S	449TD	2550	

eMP-mot_V4_us_a_te

HORIZONTAL "T" FRAME MOTORS , 2 POLES

Horizontal "T" Frame Motors						
HP	Phase	Voltage	Enclosure	Order No.	60 Hz, 2-Pole	
					Frame	Wt. (lbs.)
10	3	230/460	TEPE	H12A32F5BE2S	215TD	120
			ODPE	H12A32F4BE2S	213TD	121
15		230/460	TEPE	H13A32F5BE2S	215TD	172
			ODPE	H13A32F4BE2S	215TD	124
20		230/460	TEPE	H14A32F5BK2S	256TD	262
			ODPE	H14A32F4BK2S	254TD	191
25		230/460	TEPE	H15A32F5BL2S	284TSD	327
			ODPE	H15A32F4BK2S	256TD	222
30		230/460	TEPE	H16A32F5BL2S	286TSD	347
			ODPE	H16A32F4BL2S	284TSD	308
40		230/460	TEPE	H17A32F5BM2S	324TSD	551
			ODPE	H17A32F4BL2S	286TSD	329
50		230/460	TEPE	H18A32F5BM2S	326TSD	575
			ODPE	H18A32F4BM2S	324TSD	394
60		230/460	TEPE	H19A32F5BP2S	364TSD	810
			ODPE	H19A32F4BM2S	326TSD	458
75		230/460	TEPE	H20A32F5BP2S	365TSD	980
			ODPE	H20A32F4BP2S	364TSD	502
100		230/460	TEPE	H21A32F5BQ2S	405TSD	1187
			ODPE	H21A32F4BP2S	365TSD	562
125	460	TEPE	H22A32G5BR2S	444TSD	1901	
		ODPE	H22A32G4BQ2S	404TSD	894	
150	460	TEPE	H23A32G5BR2S	445TSD	1995	
		ODPE	H23A32G4BQ2S	405TSD	980	
200	460	TEPE	H24A32G5BR2S	447TSD	2355	
		ODPE	H24A32G4BR2S	444TSD	1364	
250	460	TEPE	H25A32G5BR2S	449TSD	2595	
		ODPE	H25A32G4BR2S	445TSD	1389	
300	460	TEPE	H26A32G5BR2S	449TSD	2743	
		ODPE	H26A32G4BR2S	445TSD	1539	
350	460	TEPE	H27A32G5BR2S	449TSD	2922	
		ODPE	H27A32G4BR2S	445TSD	2100	
400	460	TEPE	H28A32G5BR2S	449TSD	2994	
		ODPE	H28A32G4BR2S	449TSD	2413	
450	460	TEPE	H29A32G5BS2S	5010SD	5500	
		ODPE	H29A32G4BR2S	449TSD	2479	
500	460	TEPE	H30A32G5BS2S	5010SD	5500	
		ODPE	H30A32G4BS2S	5008SD	5500	
600	460	TEPE	H31A32G5BS2S	5010SD	5650	
		ODPE	H31A32G4BS2S	5010SD	5500	
700	460	TEPE	H32A32G5BS2S	G400SD	6600	
		ODPE	H32A32G4BS2S	5010SD	5500	
800	460	TEPE	H33A32G5BS2S	G40S	6600	

eMP-mot_H2_us_a_te

HORIZONTAL "T" FRAME MOTORS , 4 POLES

Horizontal "T" Frame Motors						
HP	Phase	Voltage	Enclosure	Order No.	60 Hz, 4-Pole	
					Frame	Wt. (lbs.)
3	3	230/460	TEPE	H09A34F5BD2S	182TD	75
			ODPE	H09A34F4BD2S	182TD	71
5		230/460	TEPE	H10A34F5BD2S	184TD	93
			ODPE	H10A34F4BD2S	184TD	87
7.5		230/460	TEPE	H11A34F5BE2S	213TD	134
			ODPE	H11A34F4BE2S	213TD	118
10		230/460	TEPE	H12A34F5BE2S	215TD	191
			ODPE	H12A34F4BE2S	215TD	128
15		230/460	TEPE	H13A34F5BK2S	254TD	270
			ODPE	H13A34F4BK2S	254TD	211
20		230/460	TEPE	H14A34F5BK2S	256TD	289
			ODPE	H14A34F4BK2S	256TD	225
25		230/460	TEPE	H15A34F5BL2S	284TD	388
			ODPE	H15A34F4BL2S	284TD	331
30		230/460	TEPE	H16A34F5BL2S	286TD	430
			ODPE	H16A34F4BL2S	286TD	335
40		230/460	TEPE	H17A34F5BM2S	324TD	570
			ODPE	H17A34F4BM2S	324TD	396
50		230/460	TEPE	H18A34F5BM2S	326TD	650
			ODPE	H18A34F4BM2S	326TD	467
60	230/460	TEPE	H19A34F5BP2S	364TD	912	
		ODPE	H19A34F4BP2S	364TD	615	
75	230/460	TEPE	H20A34F5BP2S	365TD	955	
		ODPE	H20A34F4BP2S	365TD	744	
100	230/460	TEPE	H21A34F5BQ2S	405TD	1203	
		ODPE	H21A34F4BQ2S	404T	930	
125	460	TEPE	H22A34G5BR2S	444TD	1969	
		ODPE	H22A34G4BR2S	405TD	955	
150	460	TEPE	H23A34G5BRE2S	445TD	2071	
		ODPE	H23A34G4BR2S	444TD	1528	
200	460	TEPE	H24A34G5BR2S	447TD	2497	
		ODPE	H24A34G4BR2S	447TD	1625	
250	460	TEPE	H25A34G5BR2S	447TD	2545	
		ODPE	H25A34G4BR2S	447TD	2036	
300	460	TEPE	H26A34G5BR2S	449TD	2888	
		ODPE	H26A34G4BR2S	449TD	2151	
350	460	TEPE	H27A34G5BR2S	449TD	3130	
		ODPE	H27A34G4BR2S	449TD	2332	
400	460	TEPE	H28A34G5BR2S	449TD	3680	
		ODPE	H28A34G4BR2S	449TD	2413	
450	460	TEPE	H29A34G5BS2S	5010SD	5500	
		ODPE	H29A34G4BR2S	449TD	2479	
500	460	TEPE	H30A34G5BS2S	5010SD	6600	
		ODPE	H30A34G4BS2S	5008SD	5500	
600	460	TEPE	H31A34G5BS2S	5012SD	6600	
		ODPE	H31A34G4BS2S	5010SD	5500	
700	460	TEPE	H32A34G5BS2S	5012SD	6600	
		ODPE	H32A34G4BSE2S	5010SD	5500	
800	460	TEPE	H33A34G5BS2S	5012SD	6600	
		ODPE	H33A34G4BSE2S	5012SD	6600	

NOISE

- The tables below show the mean sound pressure levels (Lp) measured at 1 meter's distance in a free field according to the A curve (ISO 1680 standard).
- The noise values are indicated with a tolerance of 3 dB (A).

NOISE LEVEL OF PUMP WITHOUT MOTOR

SOUND PRESSURE LEVEL LpA [dB(A)]		
POWER [HP]	3550	1750
3	57.4	56.5
5	60.2	59.3
7.5	61.7	60.8
10	63.2	62.3
15	65.0	64.1
20	66.5	65.6
25	67.5	66.6
30	68.3	67.4
40	69.8	68.9
50	70.8	69.9
60	71.7	70.8
75	72.6	71.7
100	74.1	73.2
125	75.0	74.1
150	75.9	75.0
200	77.6	76.7
250	78.7	77.8
300	79.8	78.8
35	80.9	79.9
400	81.4	80.5
500	82.0	81.1
600	82.6	
700	83.1	
800	83.6	

eMP-noise-us_a_tr

MINIMUM EFFICIENCY LEVELS

As part of the Energy Conservation Program, in 2016 the US Department of Energy issued the **Energy Conservation Standards for Pumps** and **Test Procedure for Pumps** (10 CFR Parts 429 and 431), which establish minimum efficiency levels for certain categories of pumps and test criteria for confirming these efficiency levels.

These new standards, that will become effective in **January 27, 2020**, define a **Pump Energy Index (PEI)** for several pump equipment classes manufactured in, or imported into, the United States. The PEI for a certain pump model is the ratio between the Pump Efficiency Rating (PER) of that model and a calculated minimally compliant PER. The minimally compliant PER is determined based on specific speed, flow at BEP and a specified constant (C-value). A compliant pump model will have a PEI of less than or equal to 1.

While the MPA, MPD and MPR are not covered by this regulation, the minimum efficiency levels for the e-MPV pumps are established under the RSV (radially split, multi-stage, vertical, in-line, diffuser casing) equipment class (for basic models that have a head of less than 459ft and require less than 200HP at BEP). The standard level for the RSV pumps was set at the same level as the one established by the EU regulation.

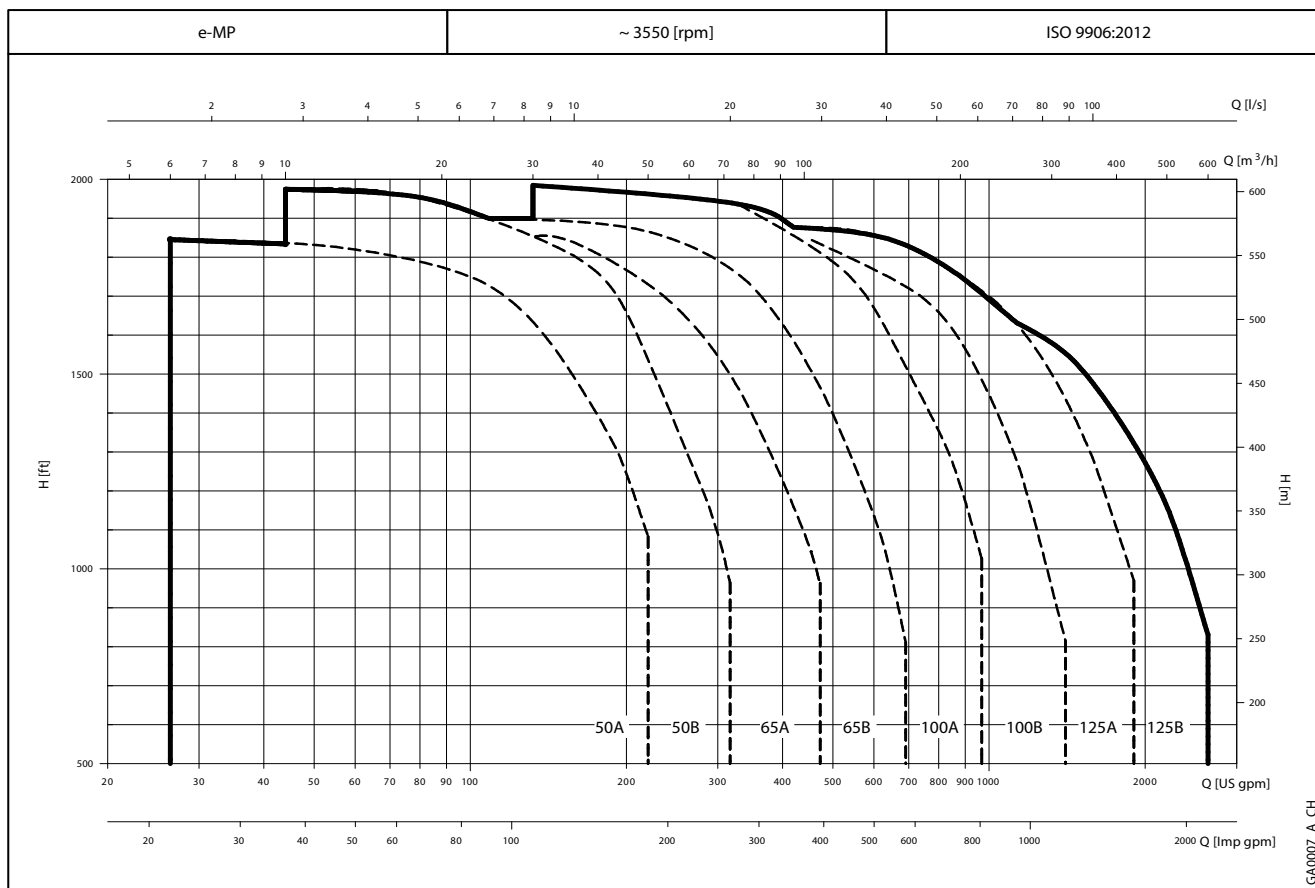
Test Procedure

DOE Energy Conservation Program: Test Procedure for Pumps specifies **HI 40.6 "Methods for Rotodynamic Pump Efficiency Standard"** as the official testing standard to be used in order to determine the PEI for a certain pump model.

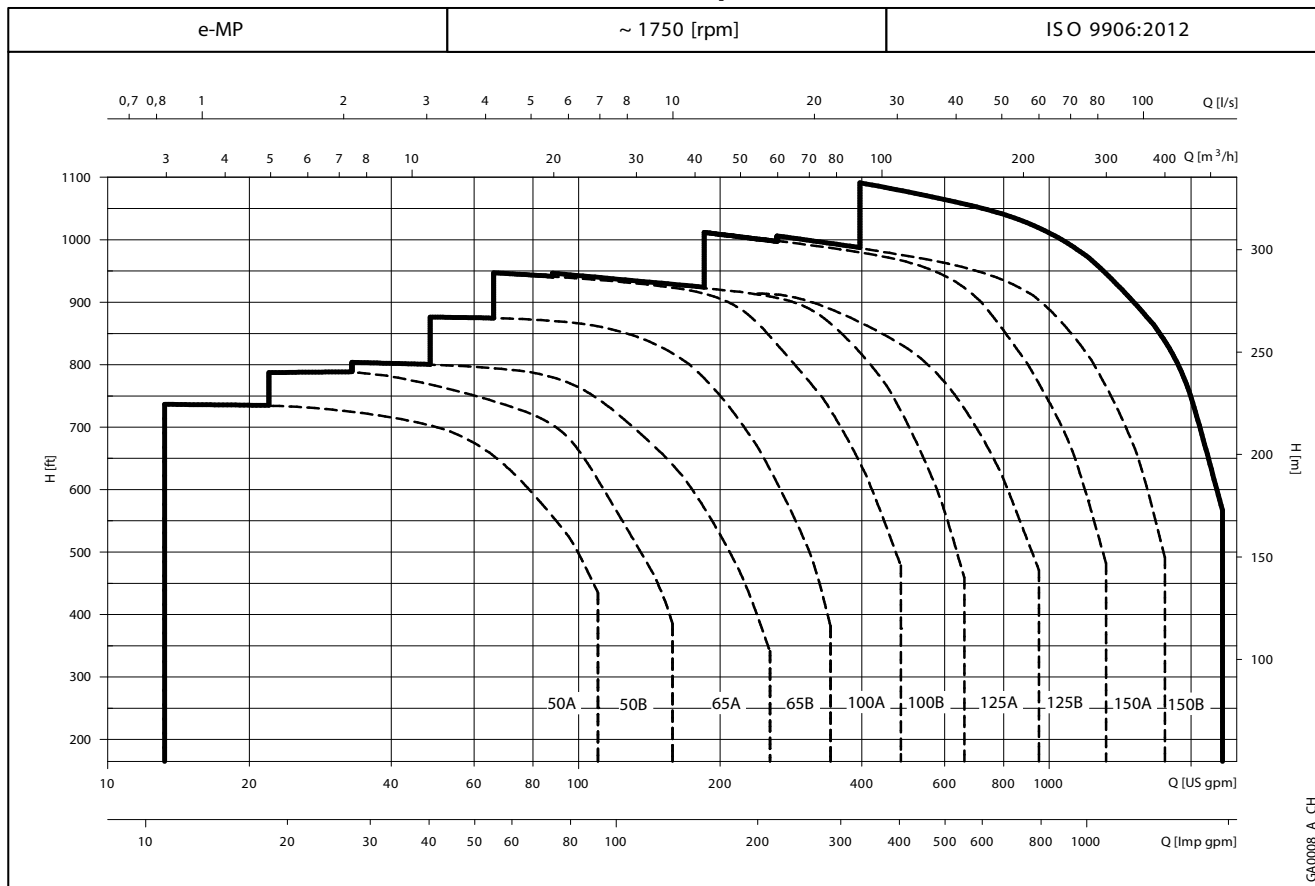
PEI values for e-MPV at 2 pole

PUMP SIZE	PEI
MPV50A	0.92
MPV50B	0.90
MPV65A	0.91
MPV65B	0.89

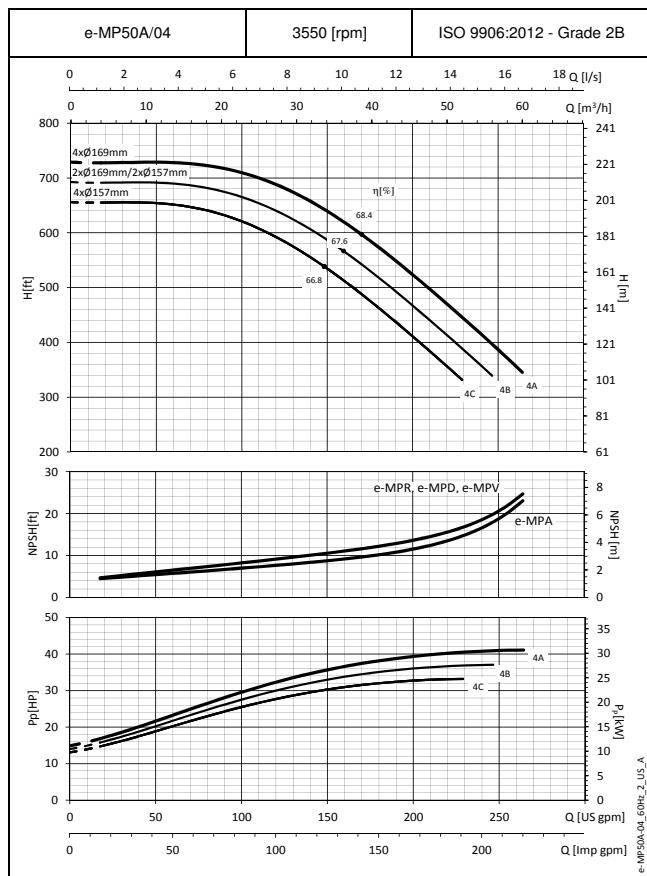
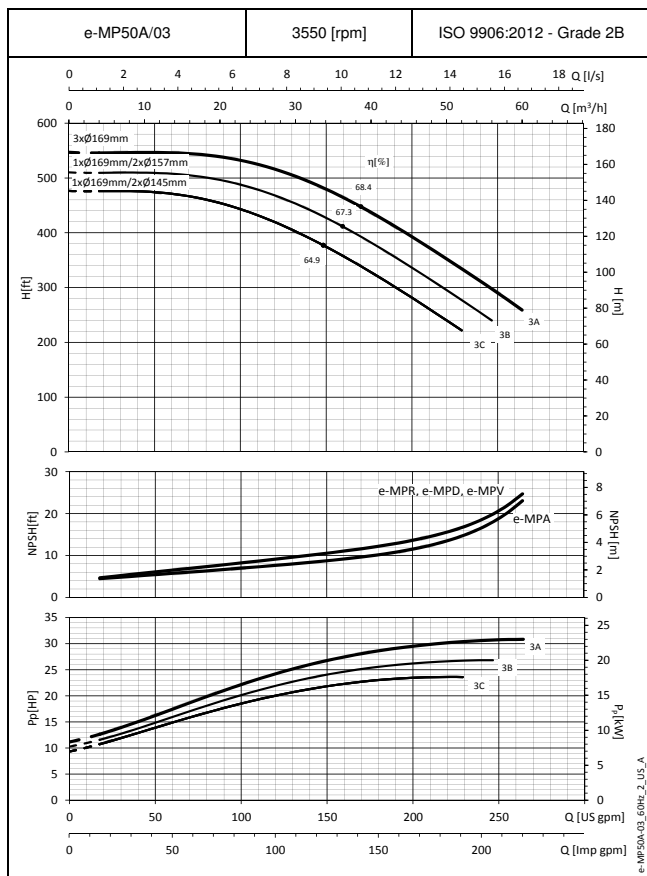
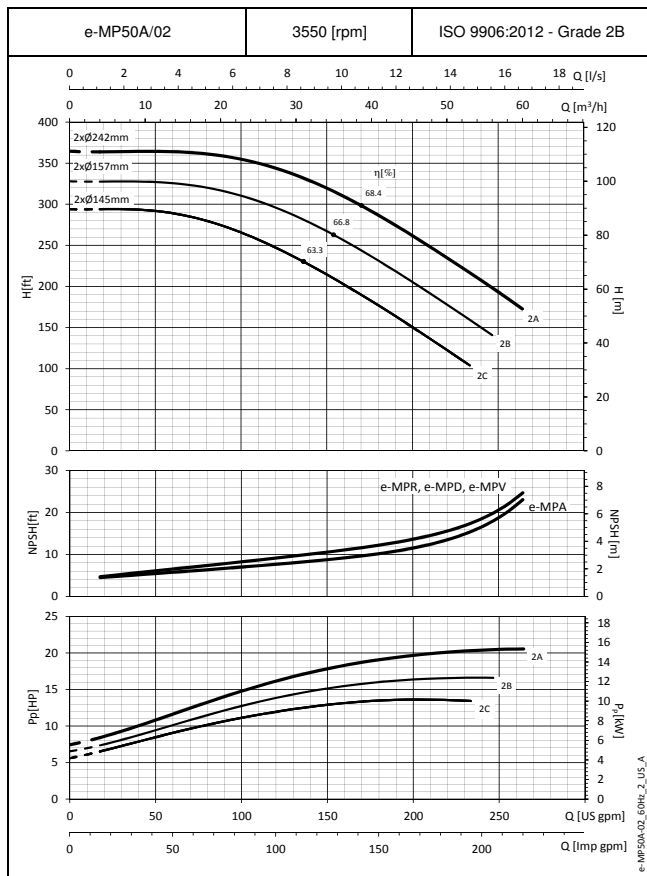
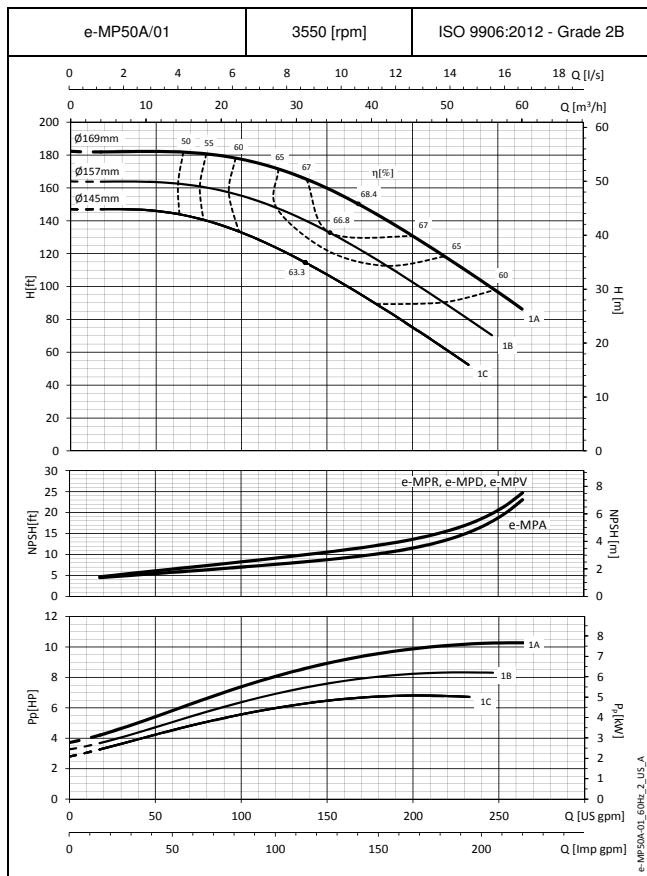
HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 2 POLES



HYDRAULIC PERFORMANCE RANGE AT 60 Hz, 4 POLES

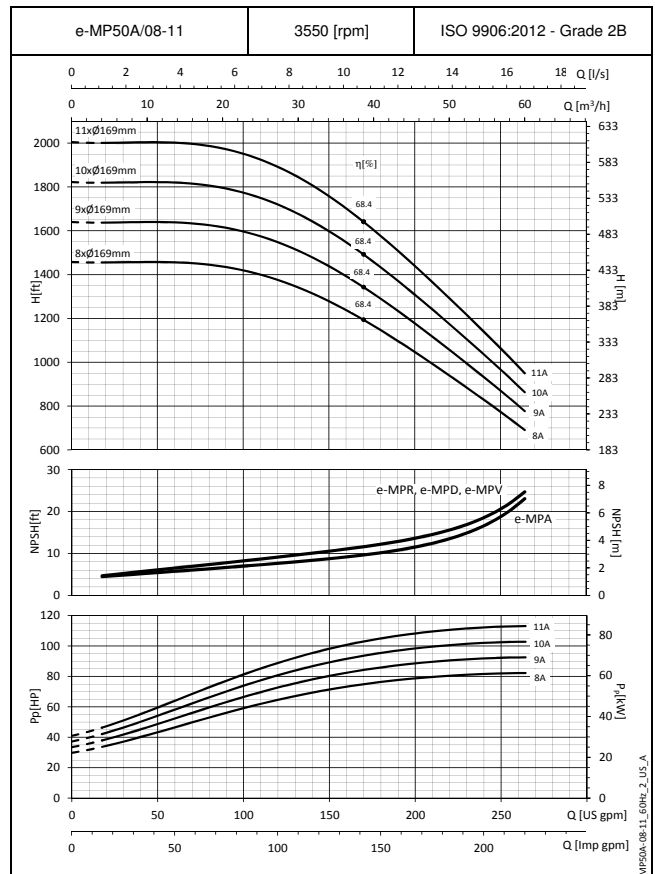
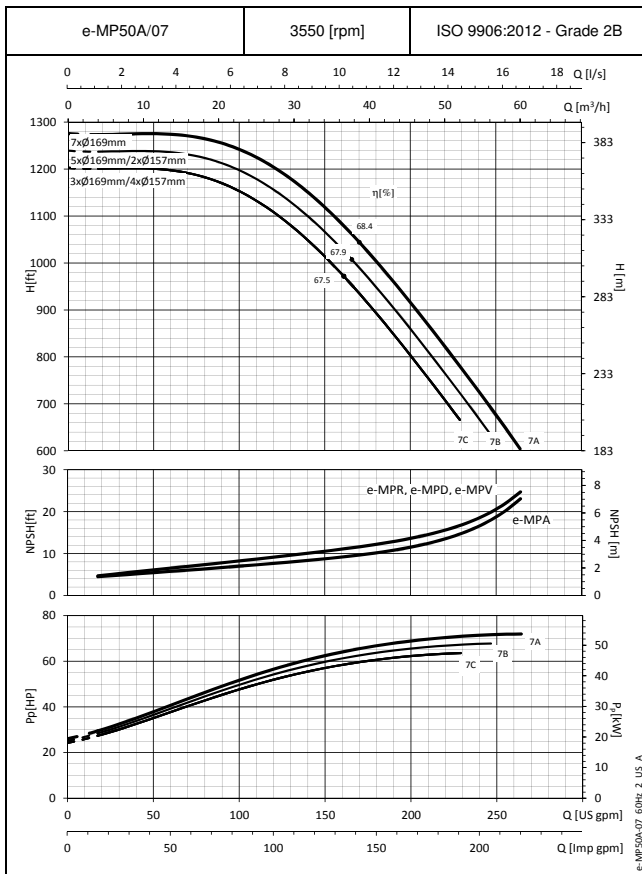
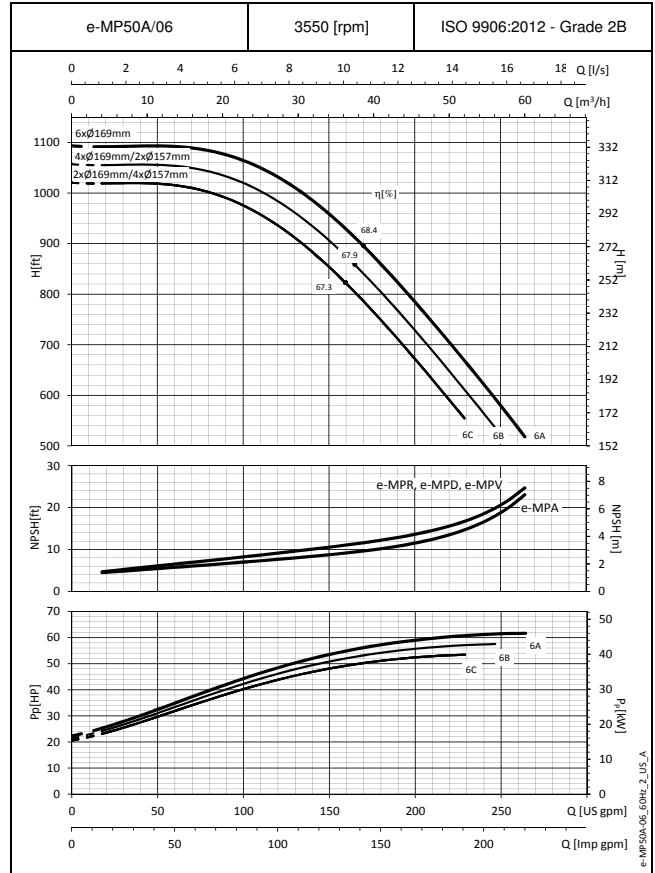
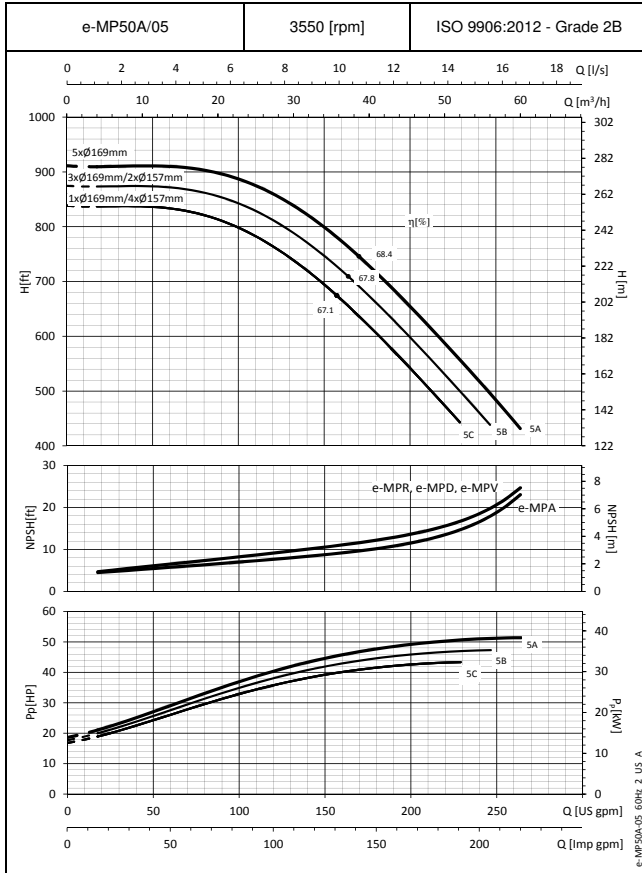


e-MP50A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



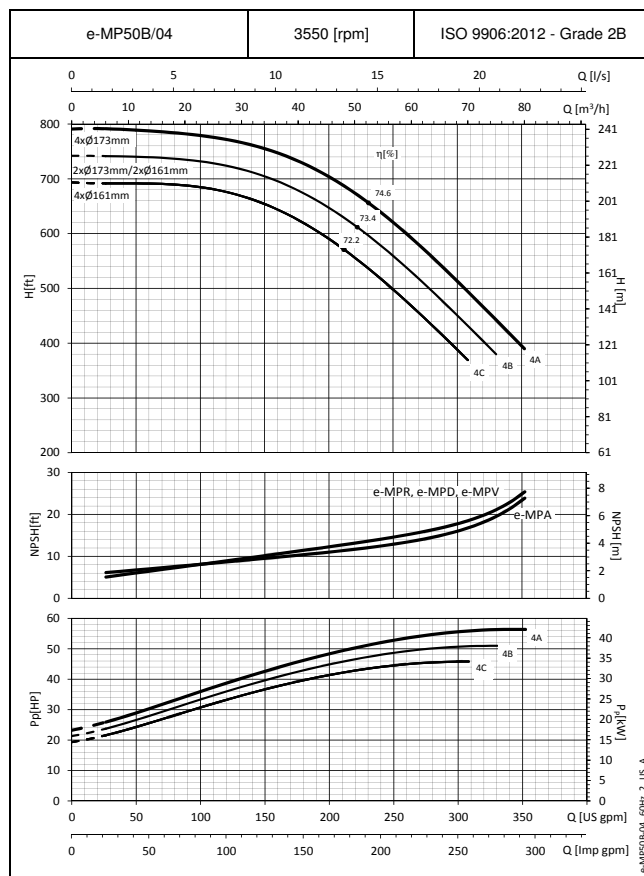
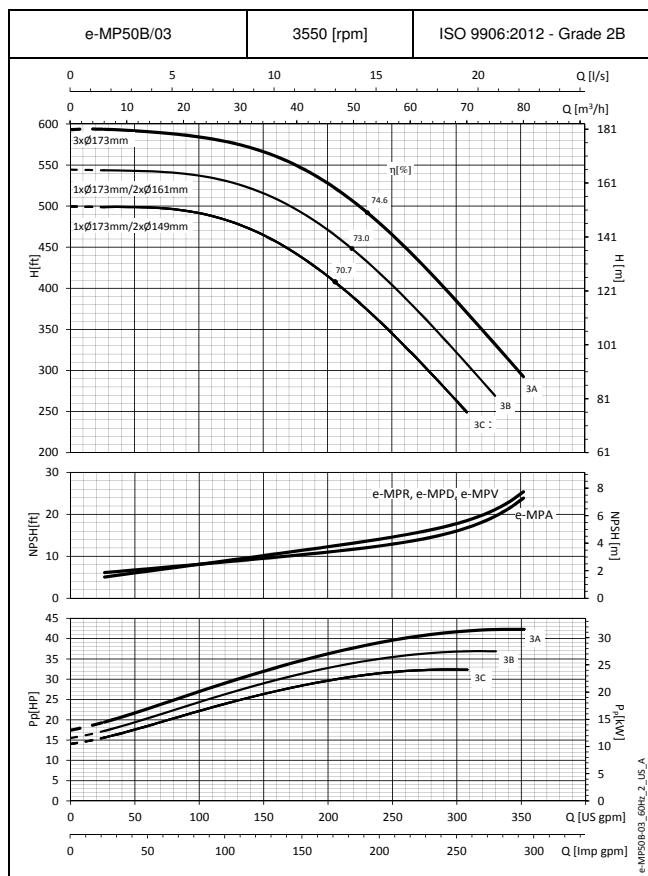
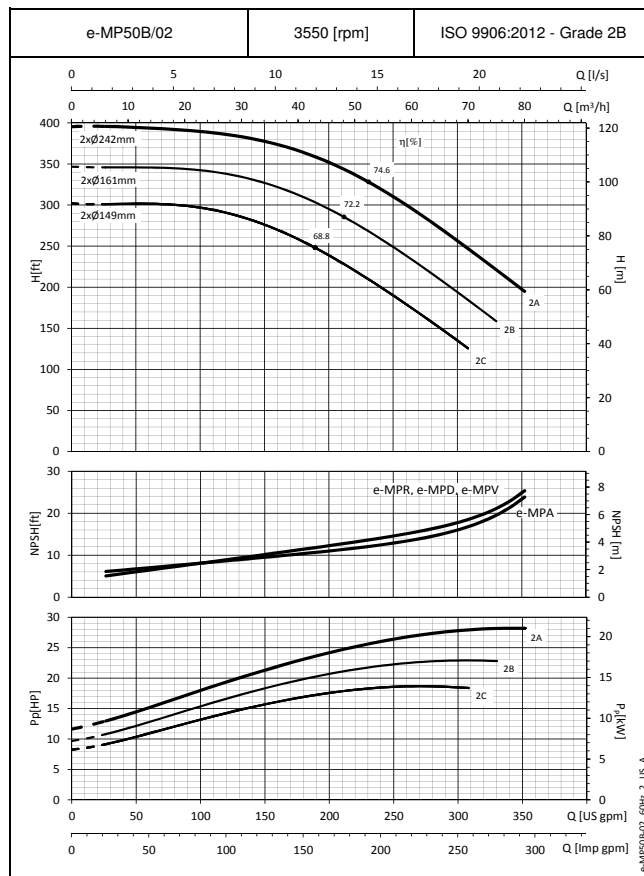
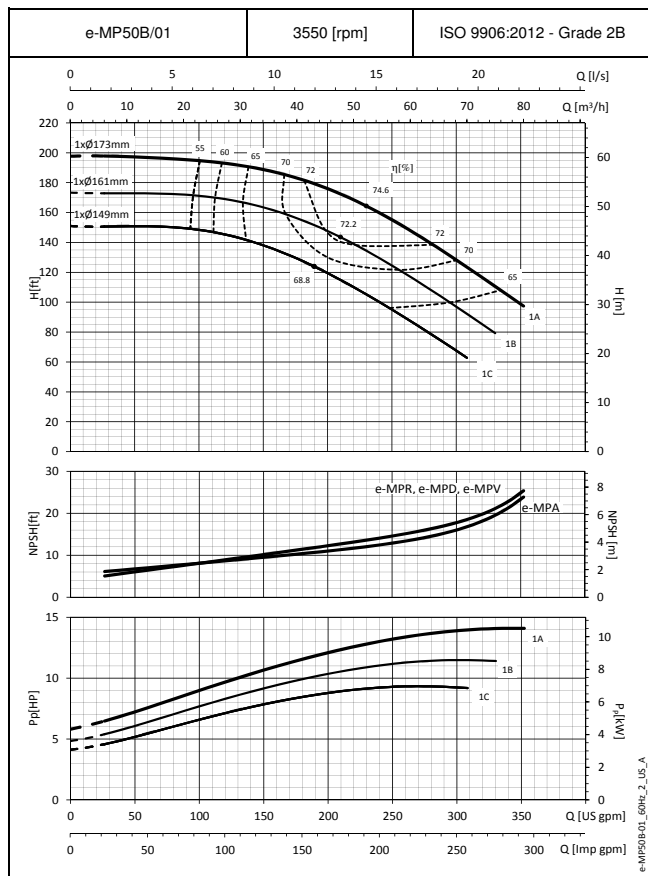
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP50A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



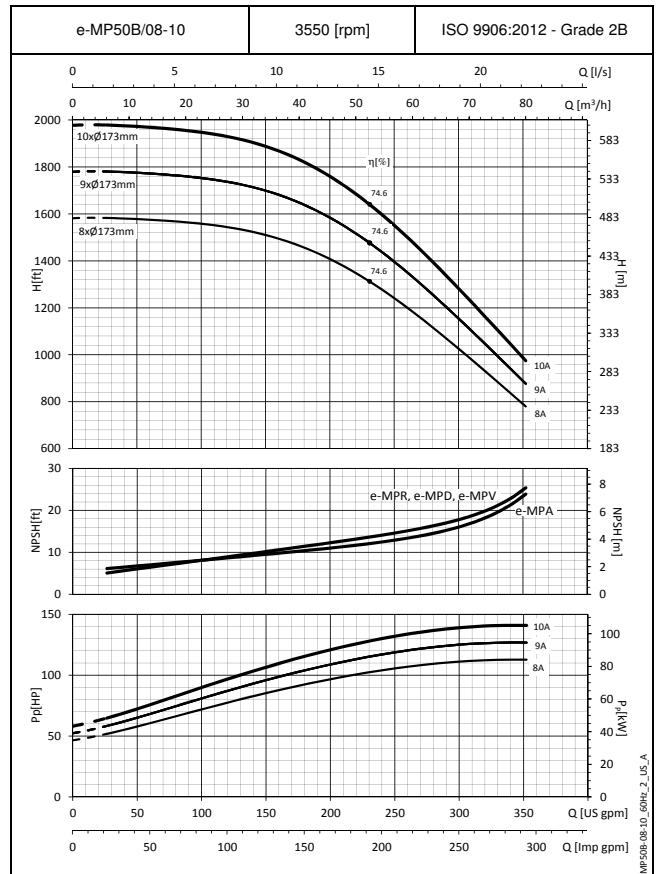
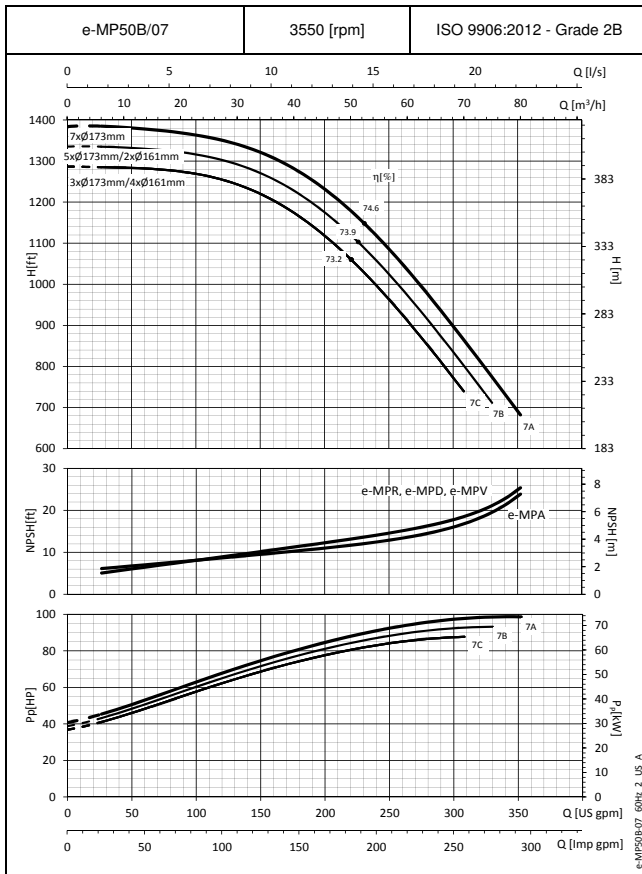
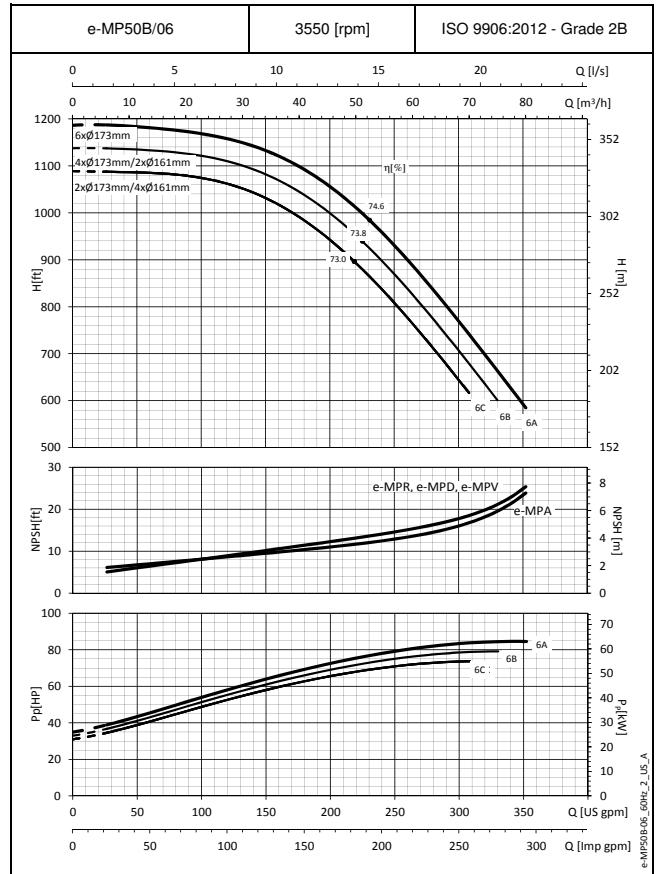
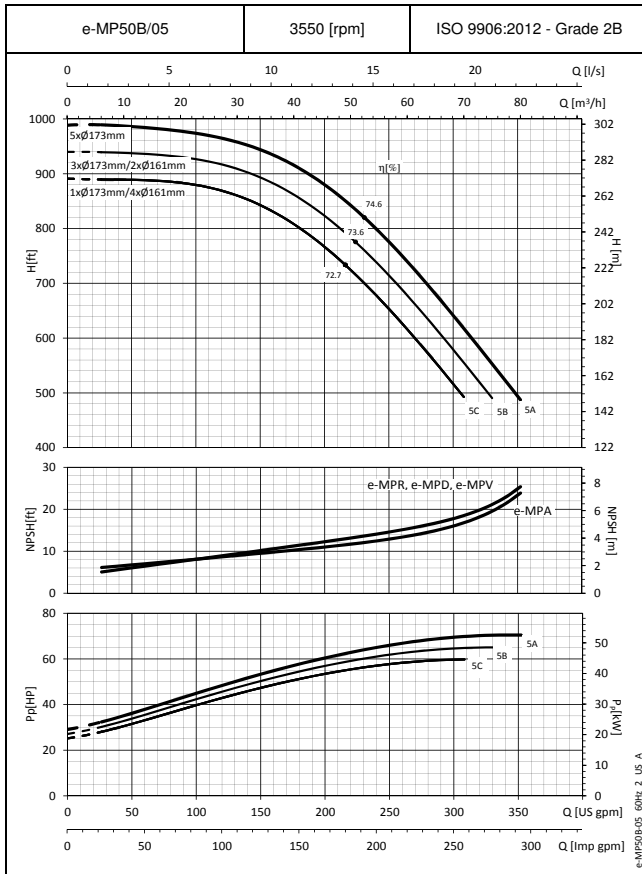
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP50B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



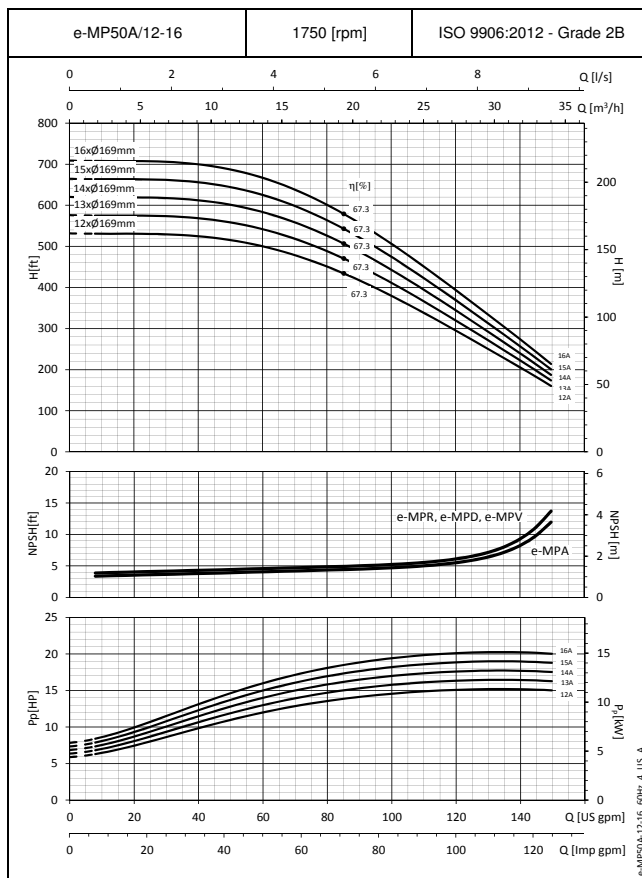
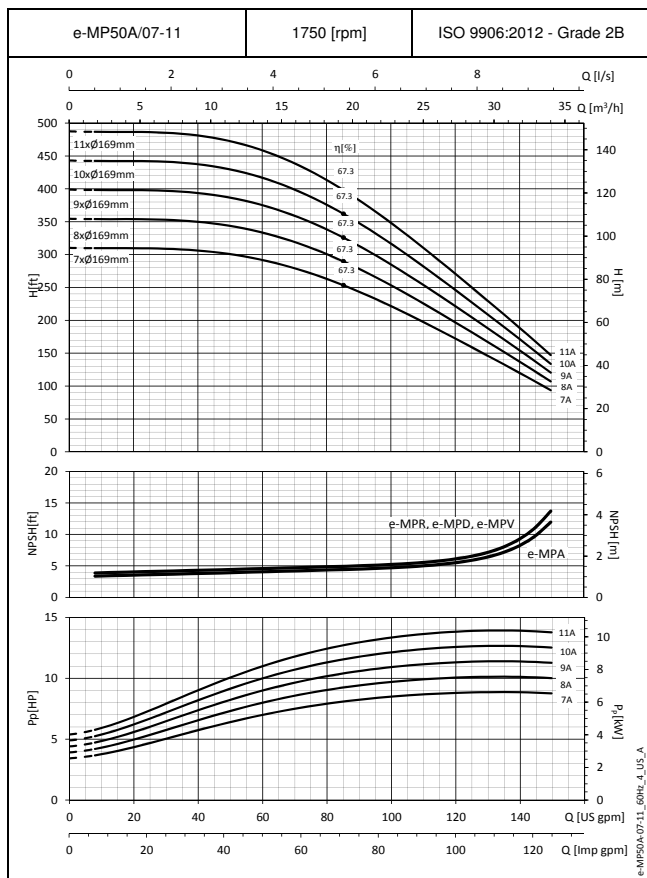
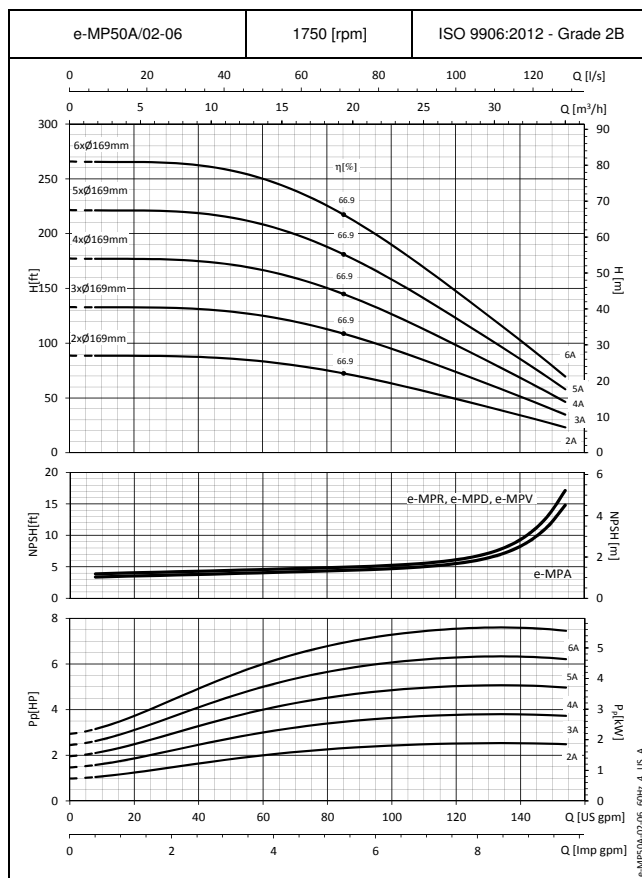
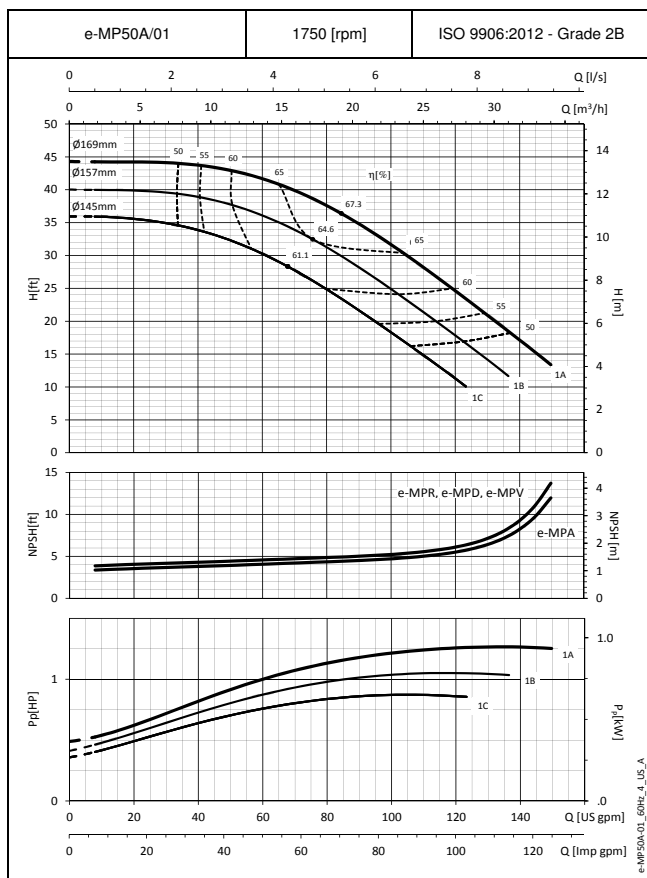
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP50B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



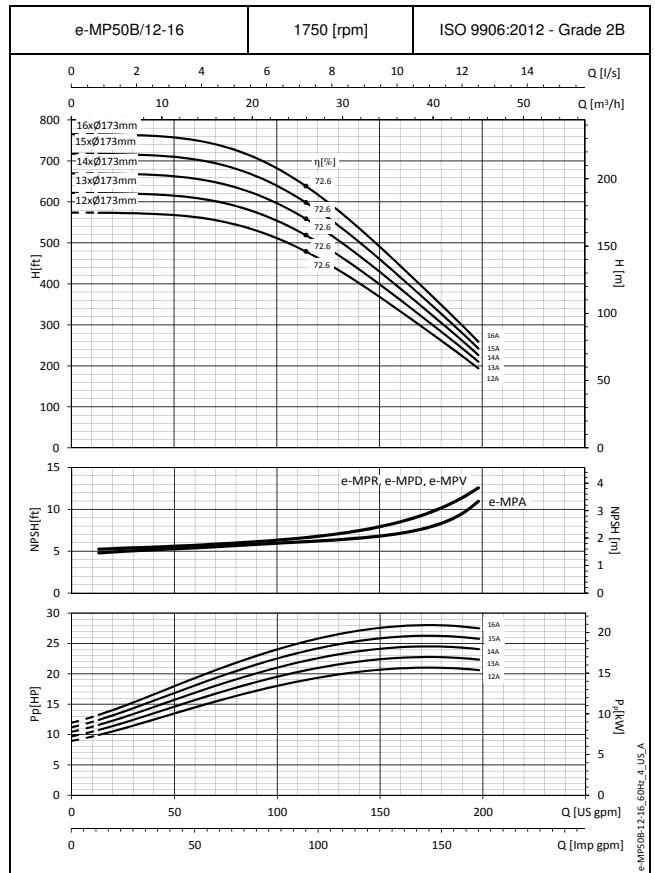
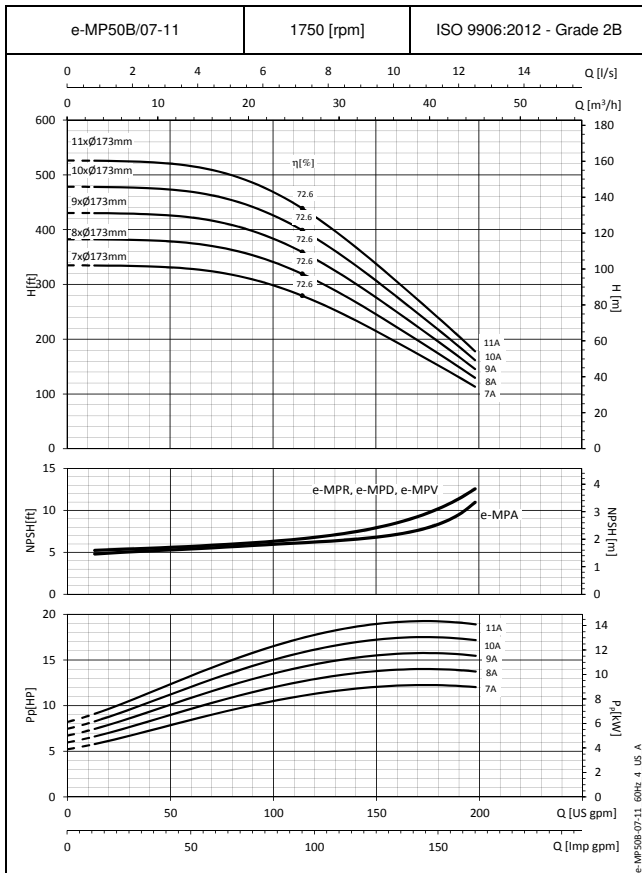
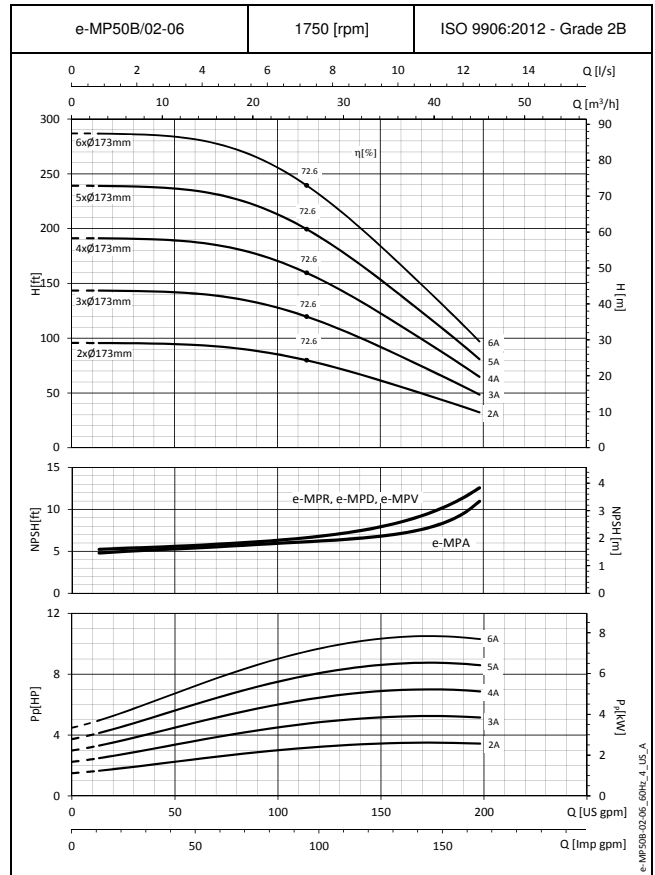
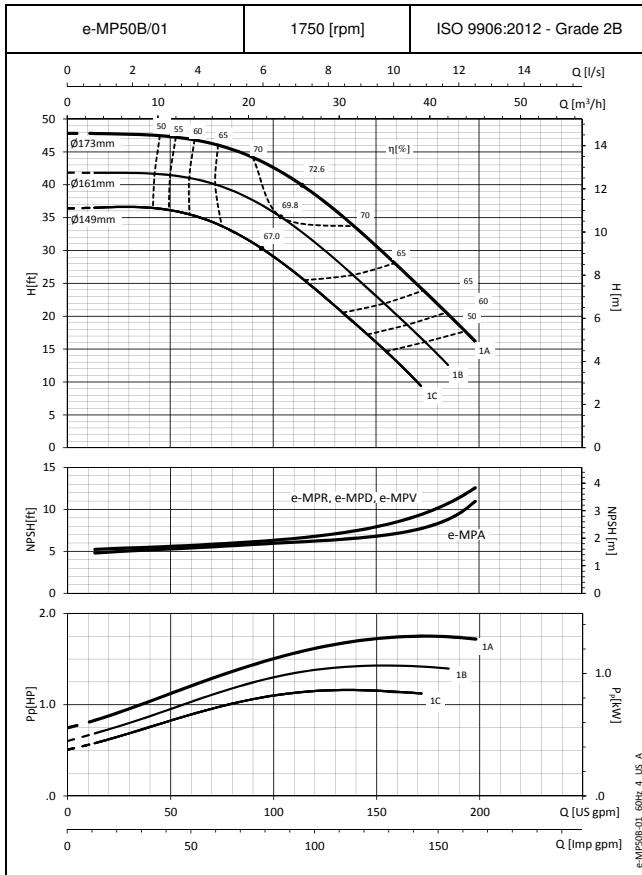
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP50A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



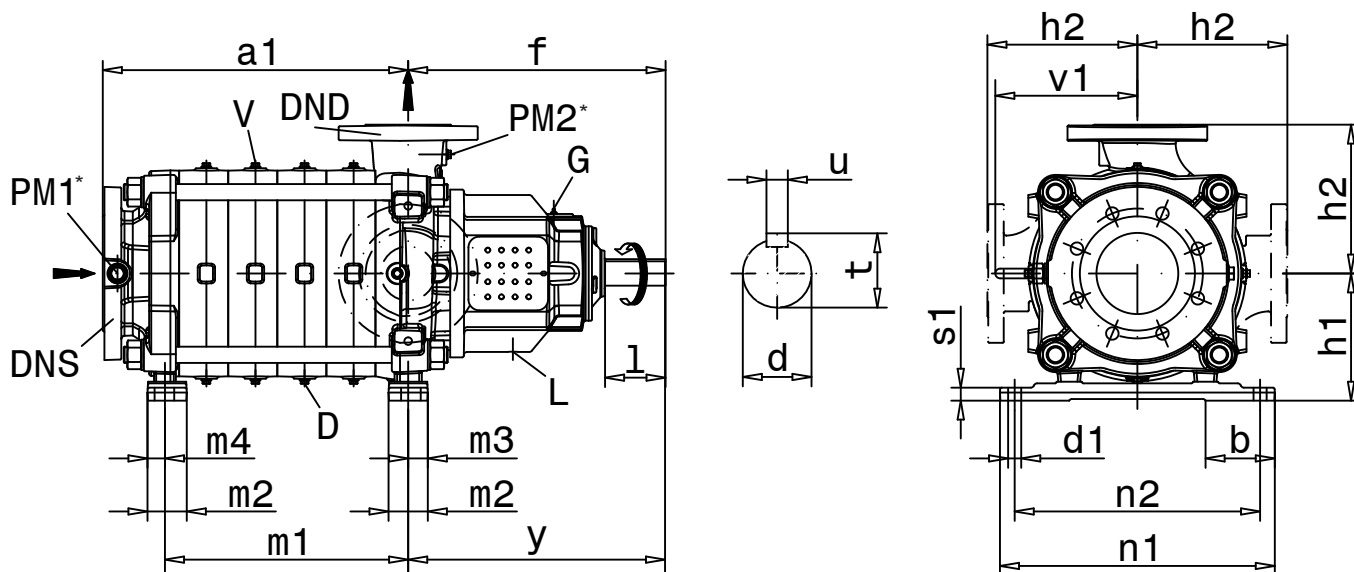
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP50B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

MPA SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPA-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																			
	MPA Size	Pump dimensions						Feet dimensions							Shaft end					
		DNS	DND	f	h1	h2	v1	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
50	4"	2"	13.8	5.9	7.9	7.9	13.8	2.1	0.9	1.1	13.1	11.4	3.5	0.6	0.8	1.1	1.2	0.3	2.8	

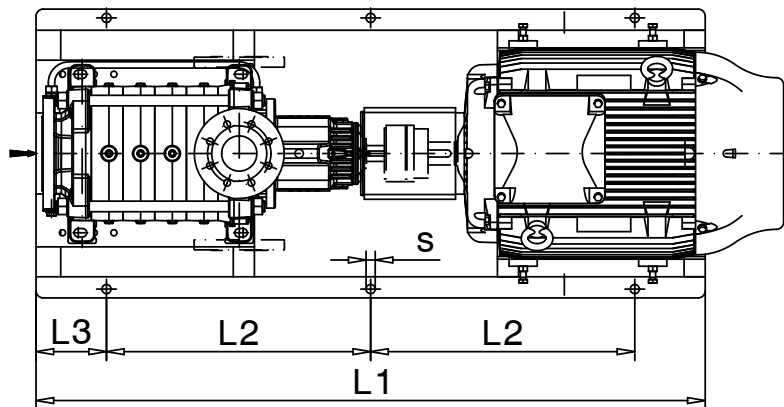
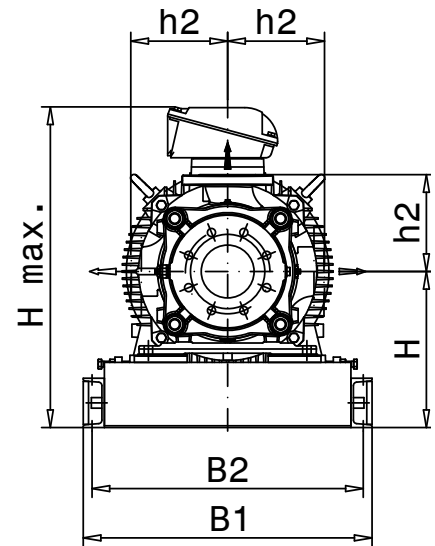
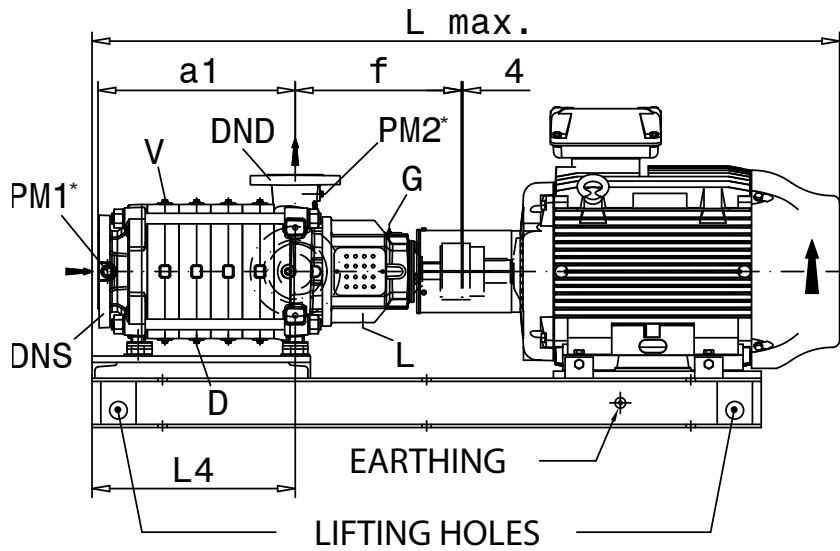
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPA-60-50-us_a_td

Size	Number of stages	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
50	a1 (inch)	7.87	10.31	12.76	15.20	17.64	20.08	22.52	24.96	27.40	29.84	32.28	34.72	37.17	39.61	42.05
	m1 (inch)	4.57	7.01	9.45	11.89	14.33	16.77	19.21	21.65	24.09	26.54	28.98	31.42	33.86	36.30	38.74
	G (lb)	40	46	51	57	62	68	73	78	84	89	95	100	106	111	117

e-MPA-60-50_stage_a_td

MPA SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz

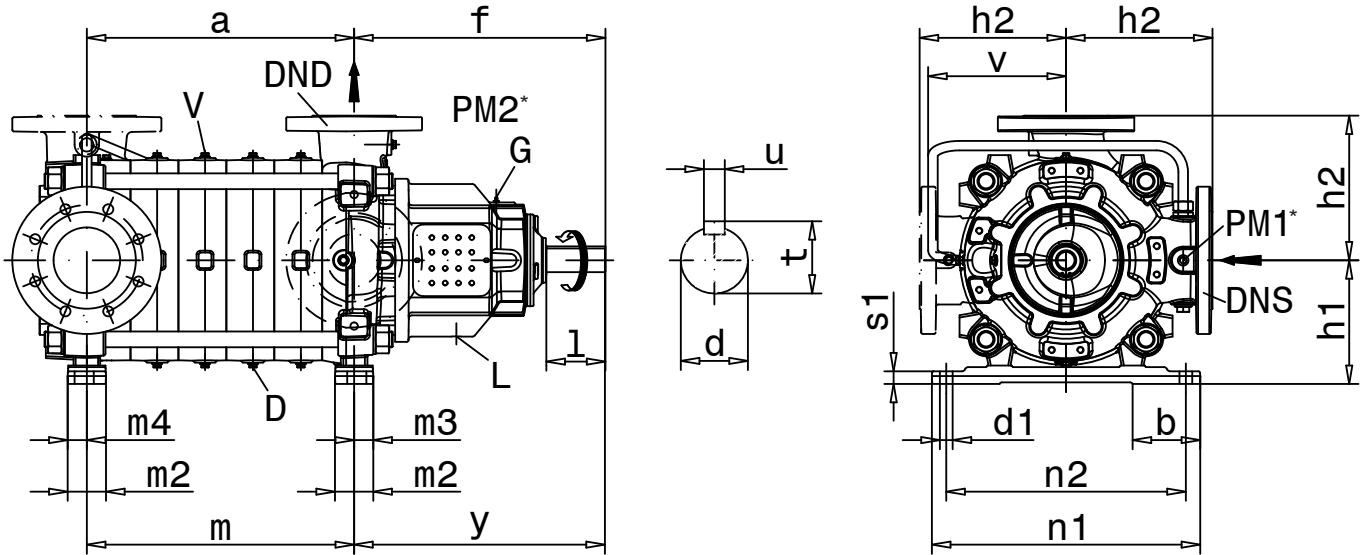


Position	Connection	Size
PM1	Vacuum gauge	G $\frac{1}{4}$
PM2	Pressure gauge	G $\frac{1}{4}$
D	Drain	G $\frac{1}{4}$
G	Grease nipple	M8
L	Leakage	G $\frac{1}{2}$
V	Vent	G $\frac{1}{4}$

e-MPA-AS-EN a DD

* Adaptors for US dimensions outlets are available upon request.

MPR SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPR-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																			
	MPR Size	Pump dimensions					Feet dimensions										Shaft end			
		DNS	DND	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
50	3"	2"	13.8	5.9	7.9	7.9	13.8	2.1	0.9	1.1	13.1	11.4	3.5	0.6	0.8	1.1	1.2	0.3	2.8	

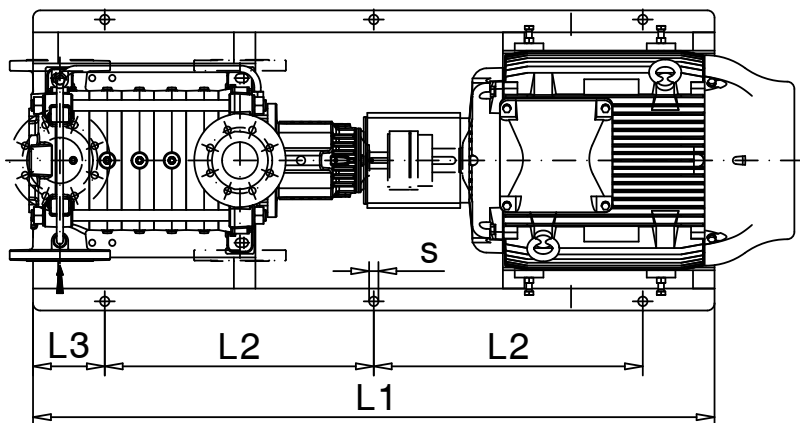
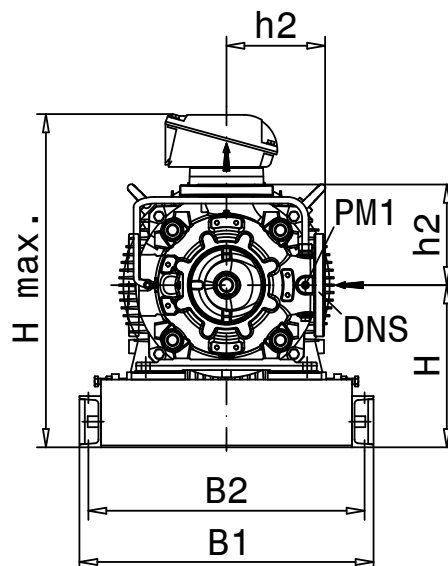
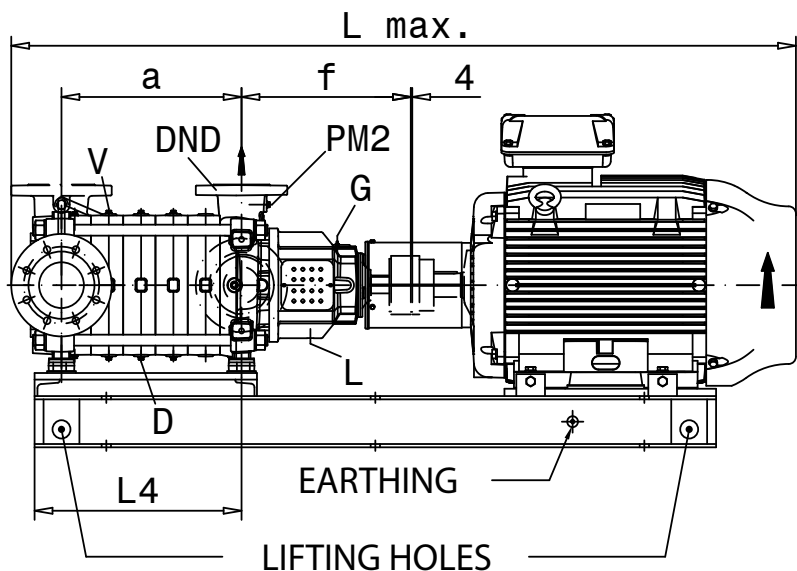
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPR-60-50-us a td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		50	a (inch)	3.43	5.87	8.31	10.75	13.19	15.63	18.07	20.51	22.95	25.39	27.83	30.28	32.72	35.16
m (inch)	3.43		5.87	8.31	10.75	13.19	15.63	18.07	20.51	22.95	25.39	27.83	30.28	32.72	35.16	37.60	40.04
G (lb)	185		212	238	265	291	317	344	370	397	423	450	476	503	529	556	582

e-MPR-60-50_stage_a_td

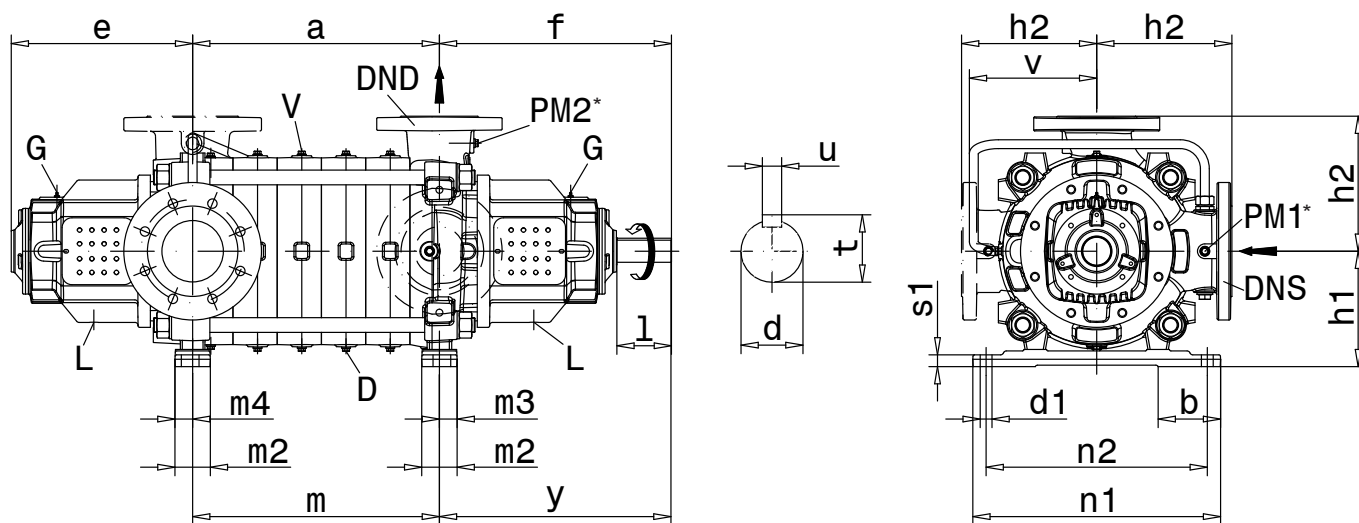
MPR SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPR-AS-EN_a_DD

MPD SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPD-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																				
	MPD Size	Pump dimensions							Feet dimensions								Shaft end				
		DNS	DND	e	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
50	3"	2"	11.1	13.8	5.9	7.9	7.9	13.8	2.1	0.9	1.1	13.1	11.4	3.5	0.6	0.8	1.1	1.2	0.3	2.8	

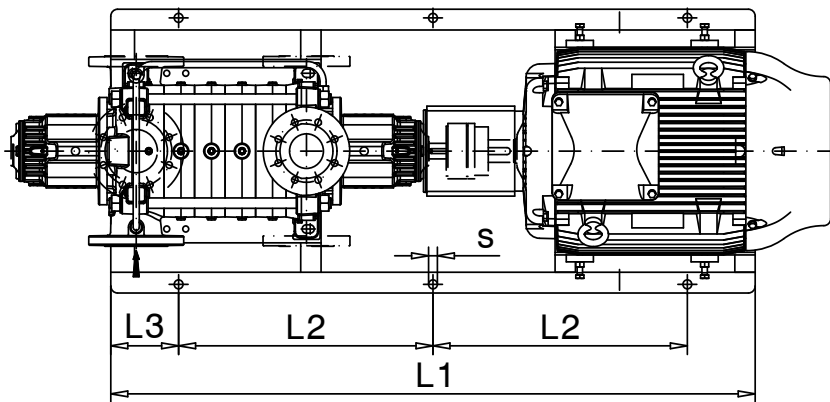
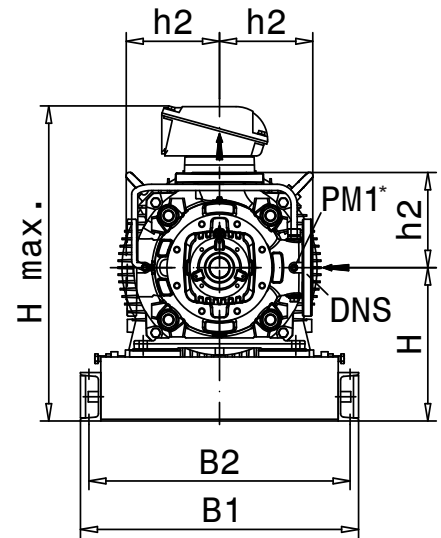
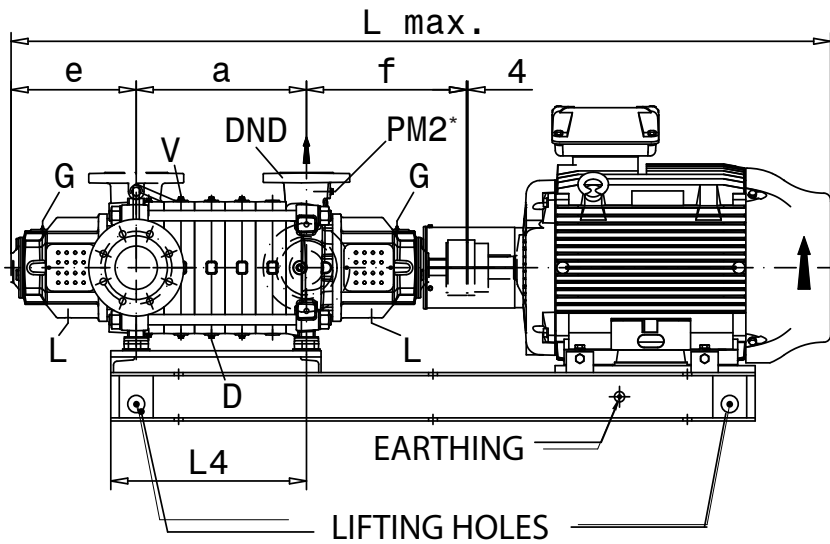
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPD-60-50-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		50	a (inch)	3.43	5.87	8.31	10.75	13.19	15.63	18.07	20.51	22.95	25.39	27.83	30.28	32.72	35.16
	m (inch)	3.43	5.87	8.31	10.75	13.19	15.63	18.07	20.51	22.95	25.39	27.83	30.28	32.72	35.16	37.60	40.04
	G (lb)	229	256	282	309	335	362	388	414	441	467	494	520	547	573	600	626

e-MPD-60-50_stage_a_td

MPD SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz

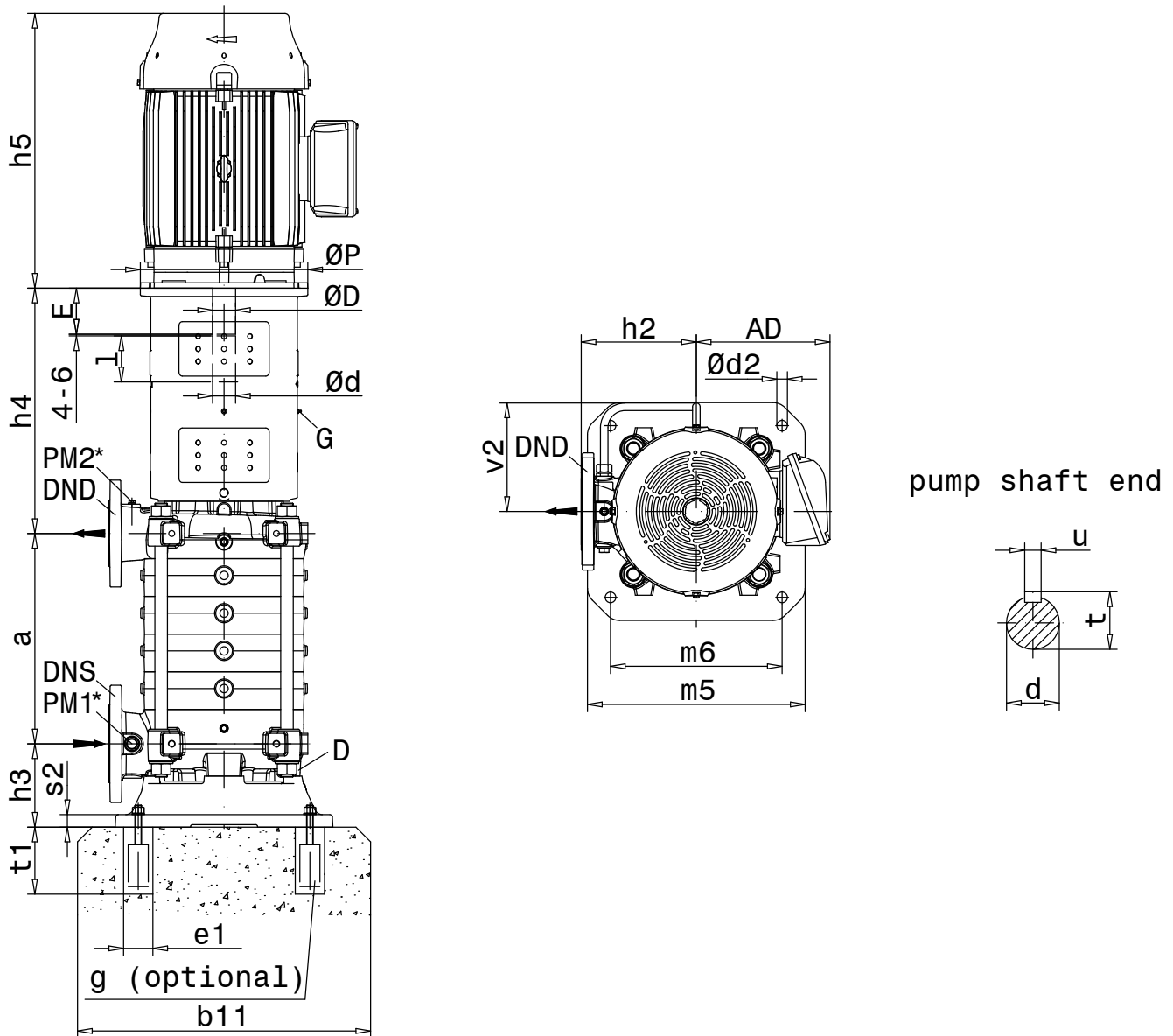


Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPD-AS-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

MPV SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz



* Adaptors for US dimensions outlets are available upon request.

e-MPV-US_a_DD

PUMP TYPE MPV Size	DIMENSIONS [inch]																
	Pump dimensions											Base dimensions					
	DNS	DND	h2	h3	d2	m5	m6	s2	v2	d	t	u	l	b11	e1	t1	g
50	3"	2"	7.9	5.4	0.8	14.8	11.0	0.9	7.9	1.1	1.2	0.3	2.8	22.8	3.1	11.8	0.8

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPV-60-50-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		50	a (inch)	3.43	5.87	8.31	10.75	13.19	15.63	18.07	20.51	22.95	25.39	27.83	30.28	32.72	35.16
	G1 (lb)	196	223	249	276	302	328	355	381	408	434	461	487	514	540	567	593

e-MPV-60-50_stage_a_td

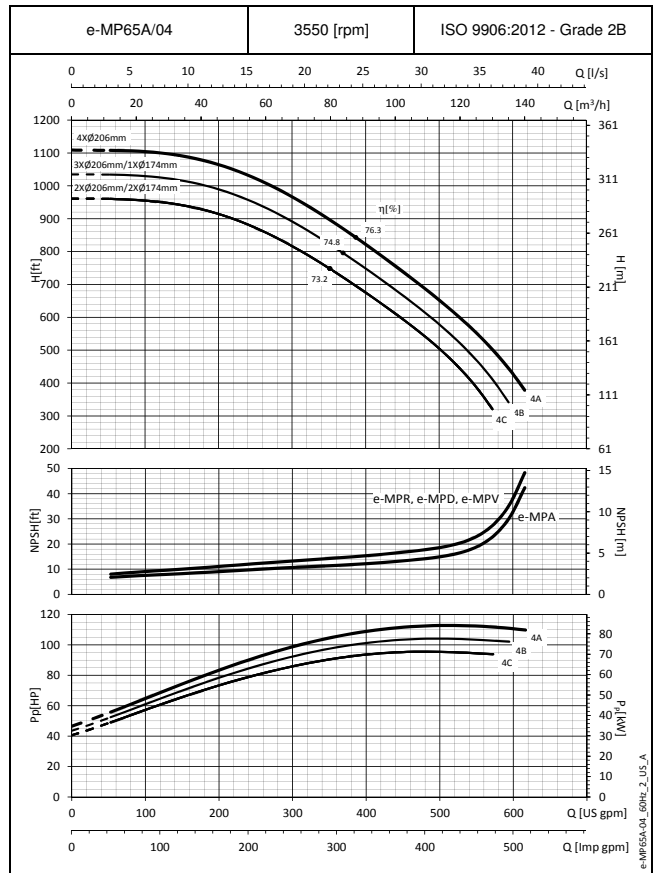
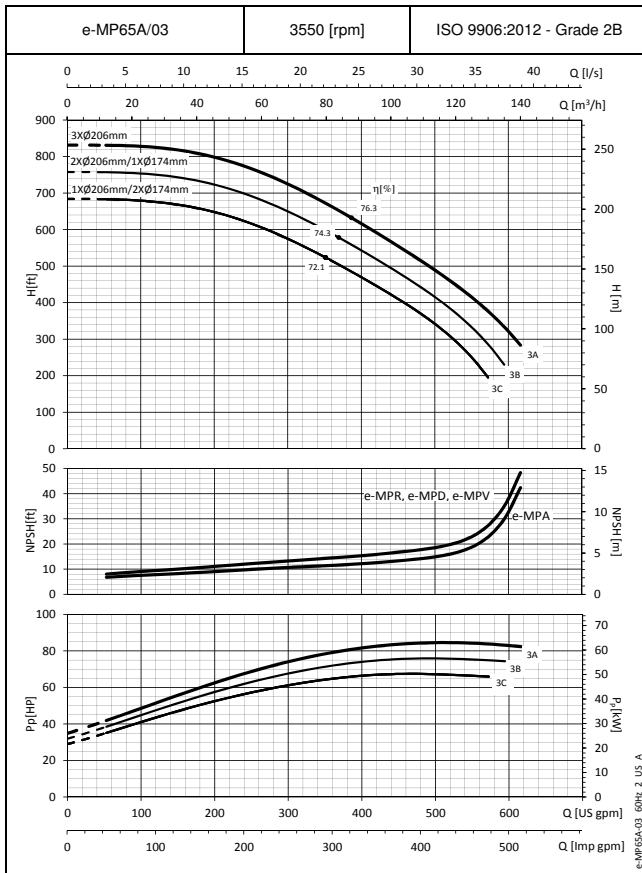
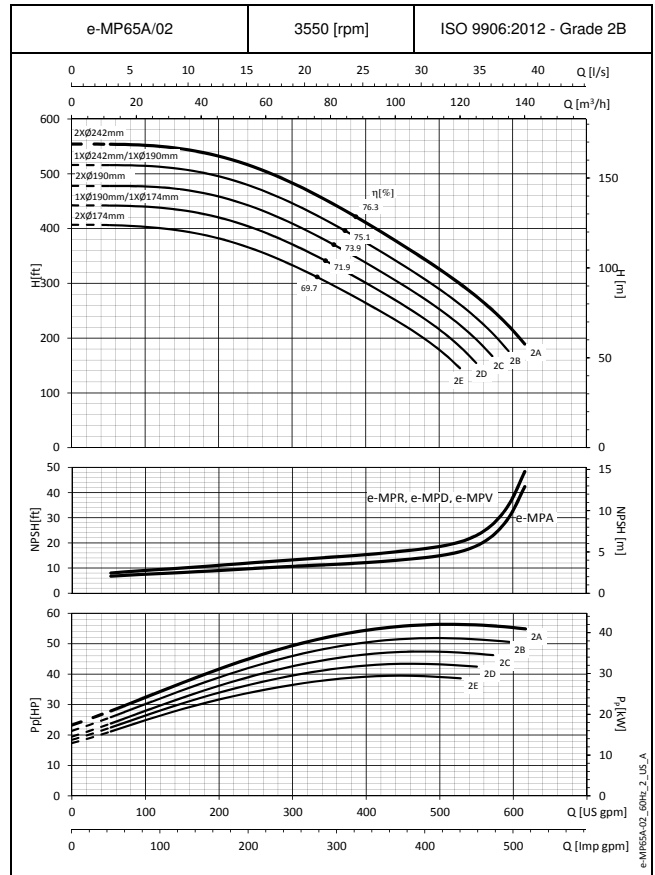
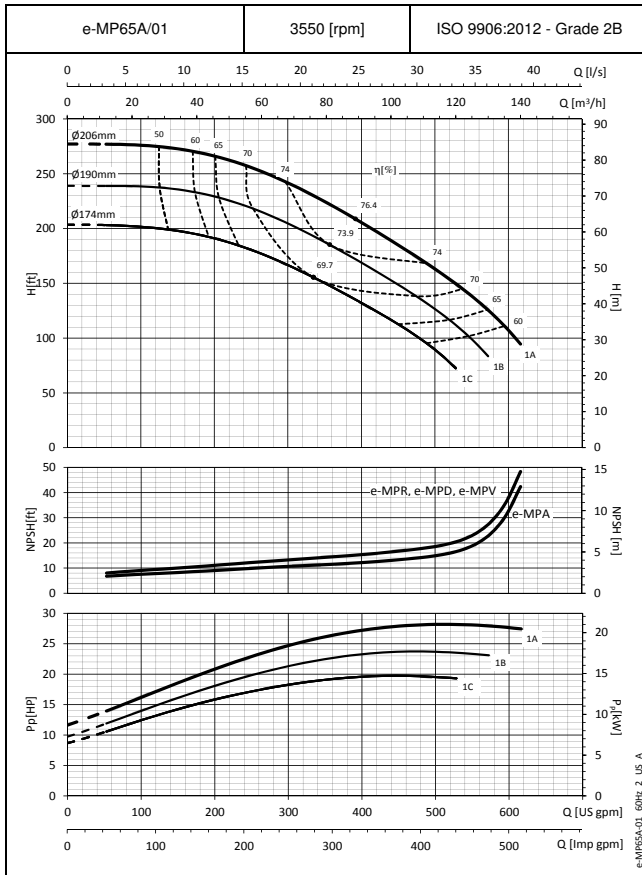
MPV SERIES - DN50 - DIMENSIONS AND WEIGHTS AT 60 Hz

NEMA Size	Speed		Pump dimensions		Motor dimensions				
	3600 [rpm]	1800 [rpm]	h4	G2	h5	P	D	E	AD
	[HP]	[HP]	[in]	[lb]	[in]	[in]	[in]	[in]	[in]
254 TD	15	15	18.27	77	22.09	14	1.625	4.00	9.49
256 TD	20	20	18.27	77	22.09	14	1.625	4.00	9.49
284 TD	-	25	18.27	77	25.93	14	1.875	4.38	13.11
284 TSD	25	-	18.27	77	21.99	14	1.625	3.25	11.52
286 TD	-	30	18.27	77	25.93	14	1.875	4.38	13.11
286 TSD	30	-	18.27	77	21.99	14	1.625	3.25	11.52
324 TD	-	40	-	-	28.35	18	2.125	5.25	14.13
324 TSD	40	-	18.27	95	27.78	18	1.875	3.75	14.11
326 TD	-	50	-	-	28.35	18	2.125	5.25	14.13
326 TSD	50	-	18.27	95	27.78	18	1.875	3.75	14.11
364 TD	-	60	-	-	30.34	18	2.375	5.88	18.06
364 TSD	60	-	18.27	95	27.35	18	1.875	3.75	18.06
365 TD	-	75	-	-	30.34	18	2.375	5.88	18.06
365 TSD	75	-	18.27	95	27.35	18	1.875	3.75	18.06
405 TD	-	100	-	-	33.83	22	2.875	7.25	19.31
405 TSD	100	-	19.45	127	33.83	22	2.125	4.25	19.31
444 TD	-	125	-	-	38.89	22	3.375	8.50	23.38
444 TSD	125	-	19.45	127	38.89	22	2.375	4.75	23.38
445 TD	-	150	-	-	38.89	22	3.375	8.50	23.38
445 TSD	150	-	19.45	127	38.89	22	2.375	4.75	23.38

Total pump unit weight G = weight G1 + weight G2 + weight G3 (±5%)

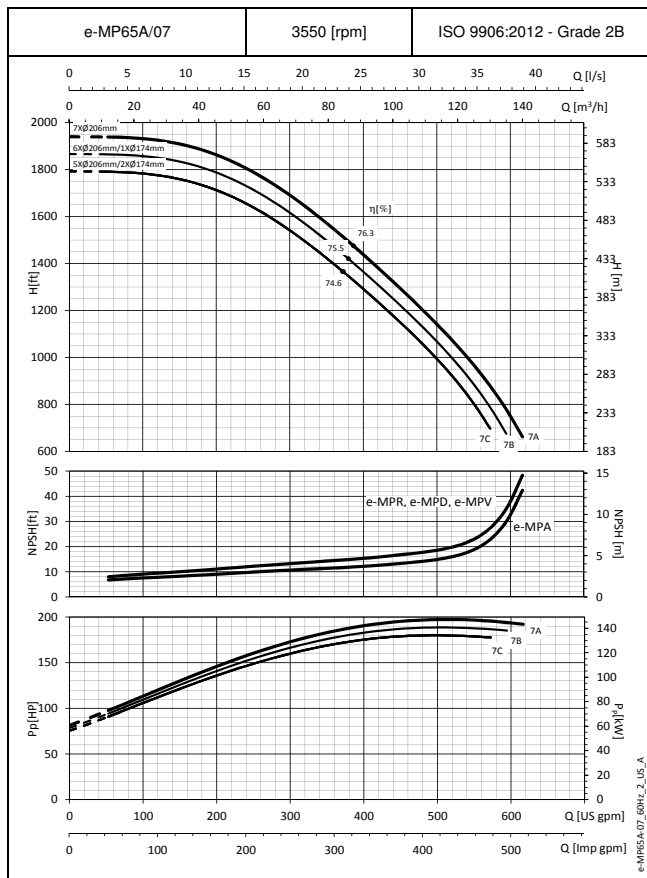
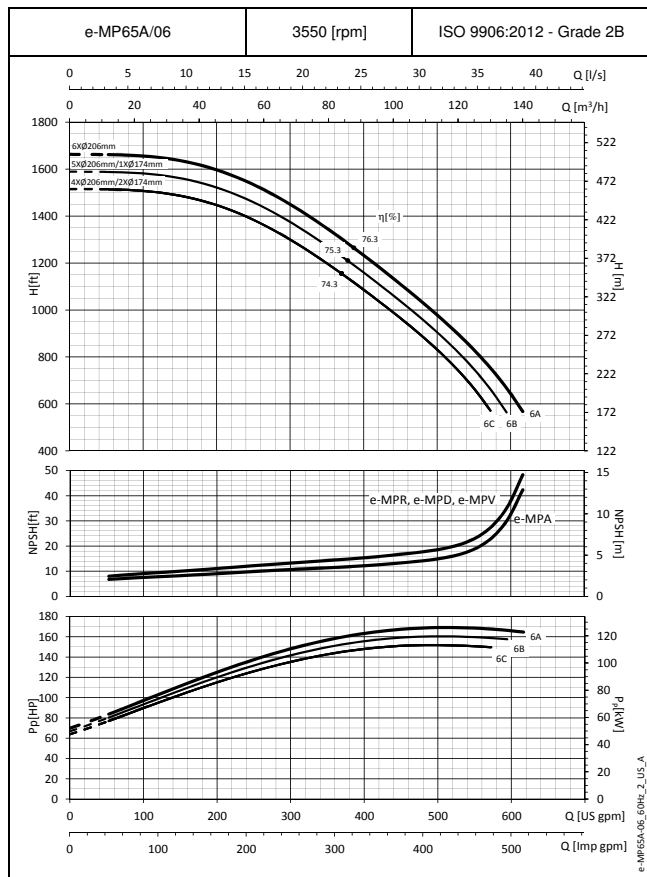
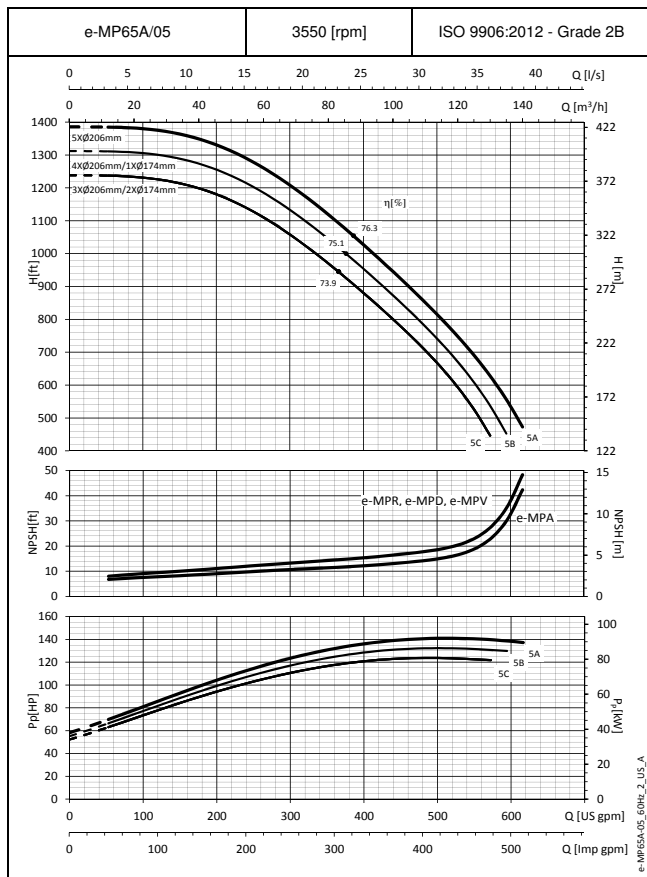
e-MPV-50-AS-us_a_td

e-MP65A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



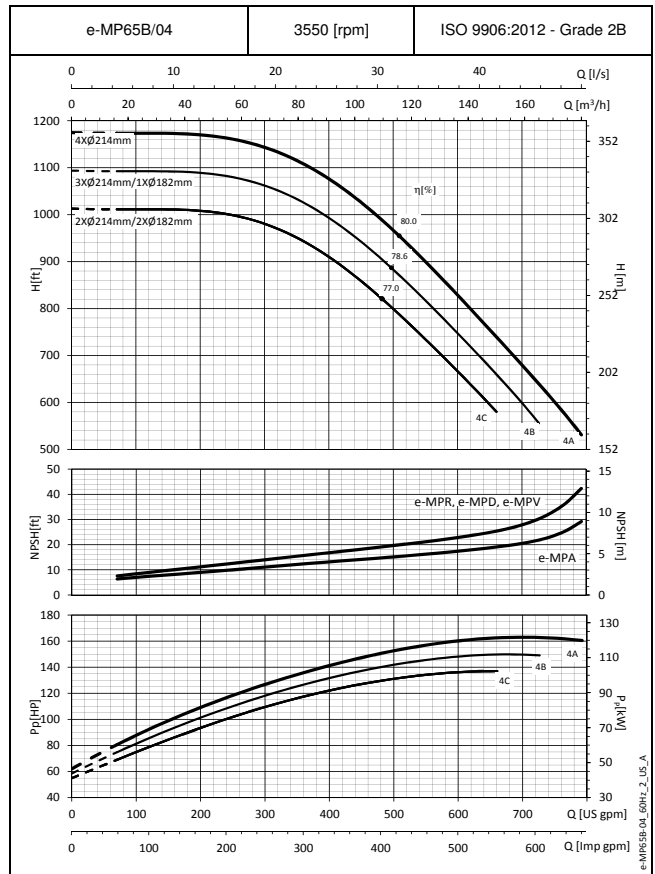
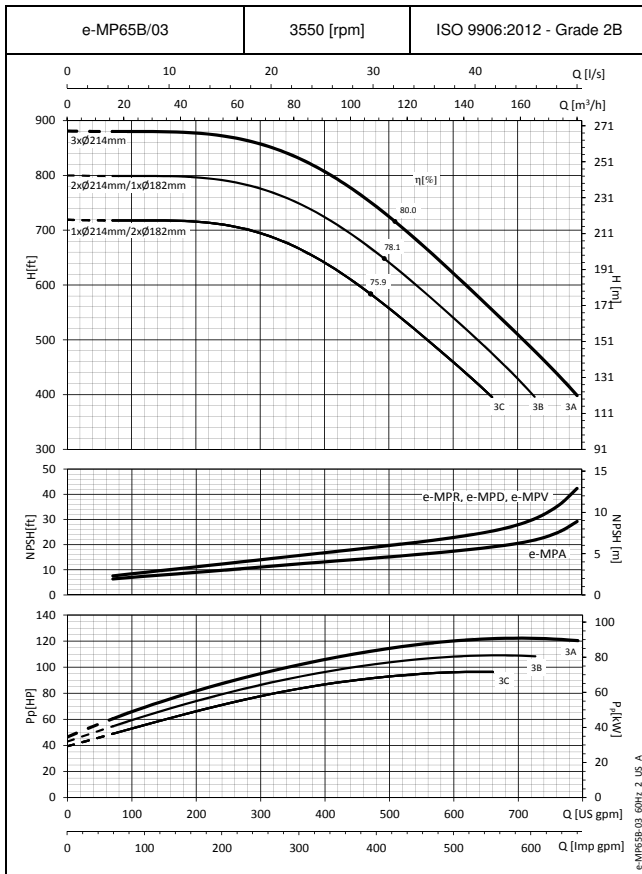
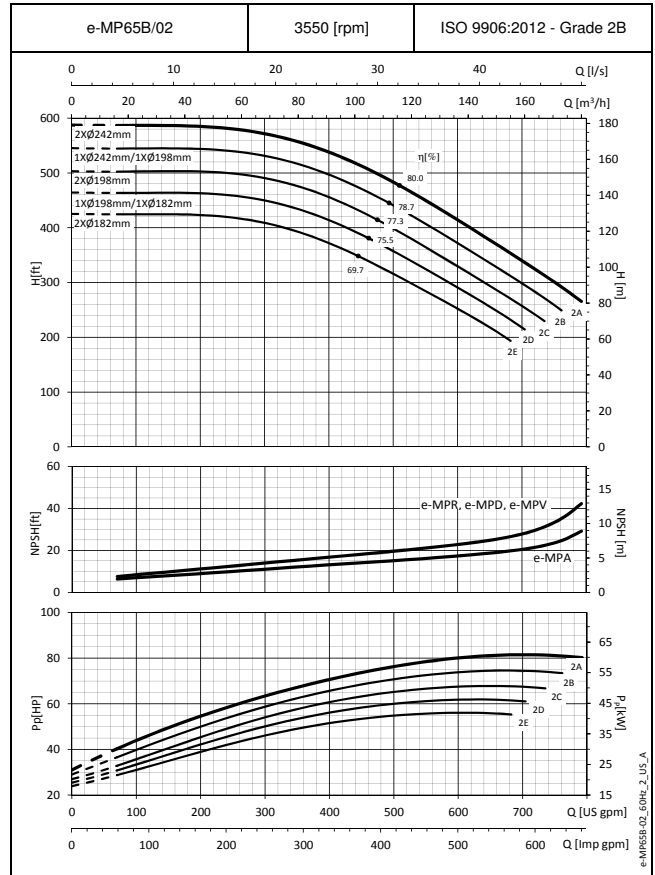
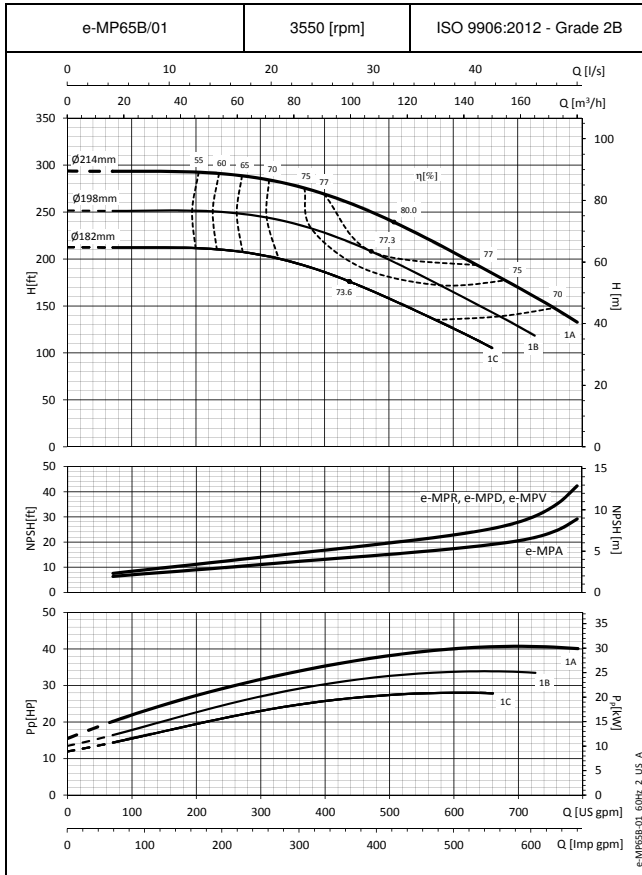
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP65A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



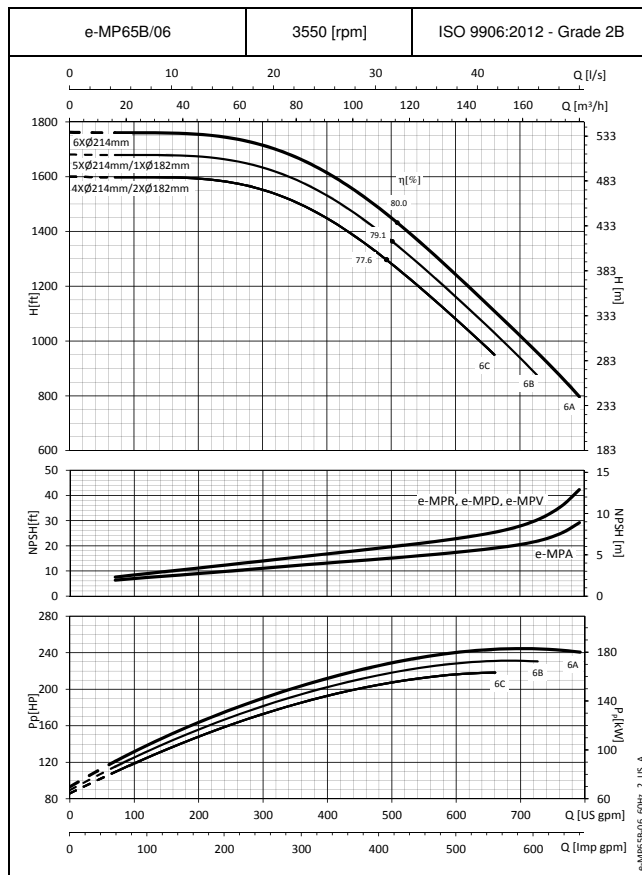
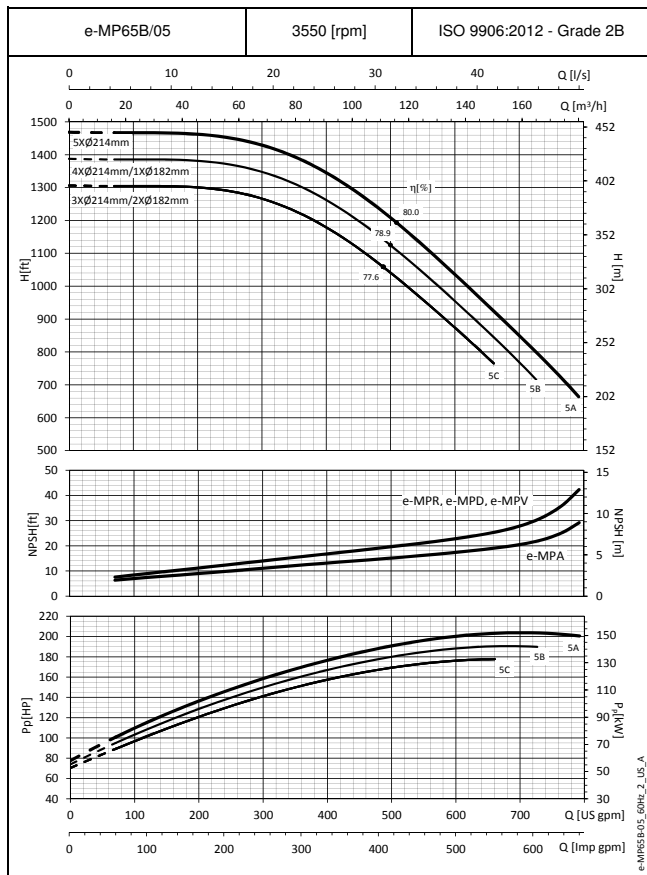
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP65B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



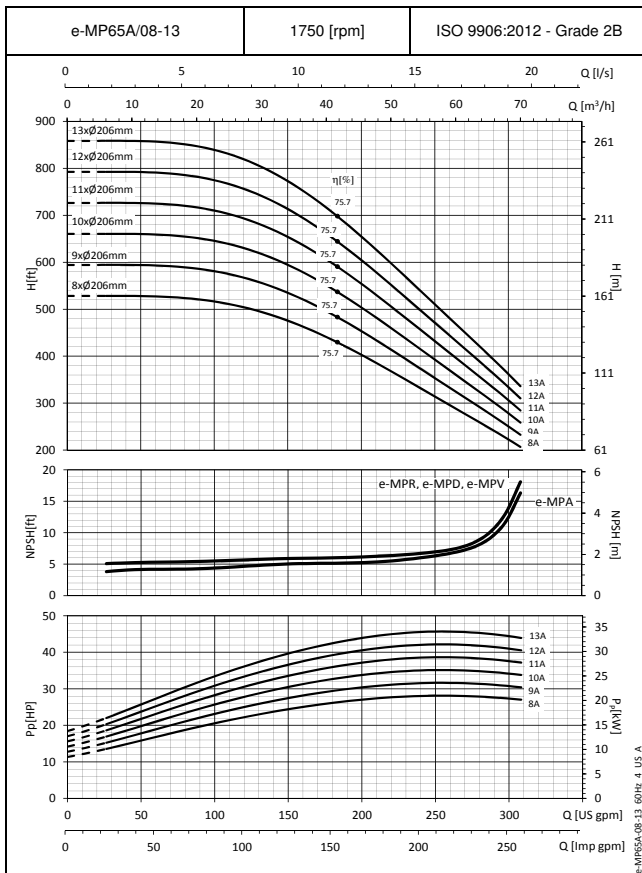
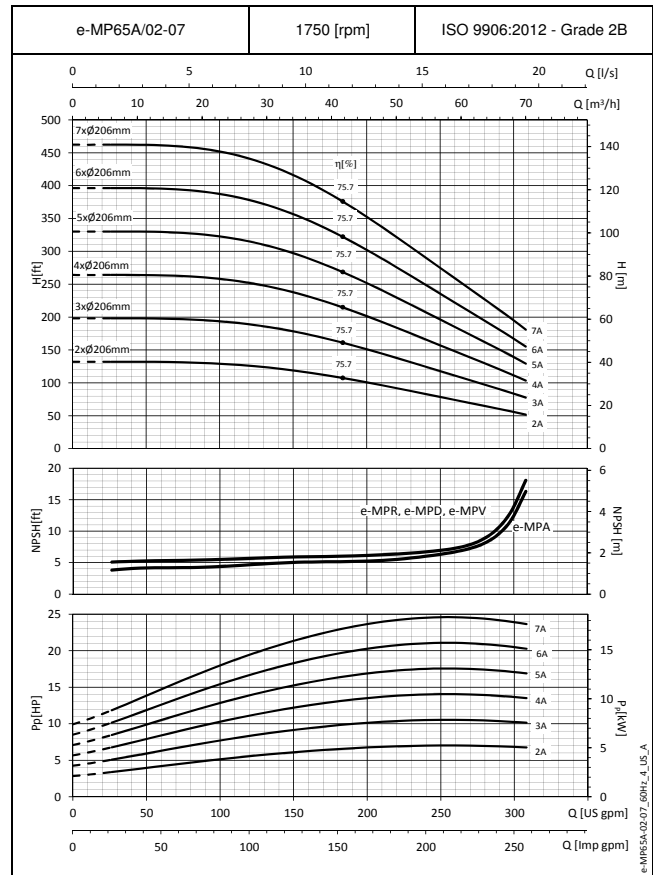
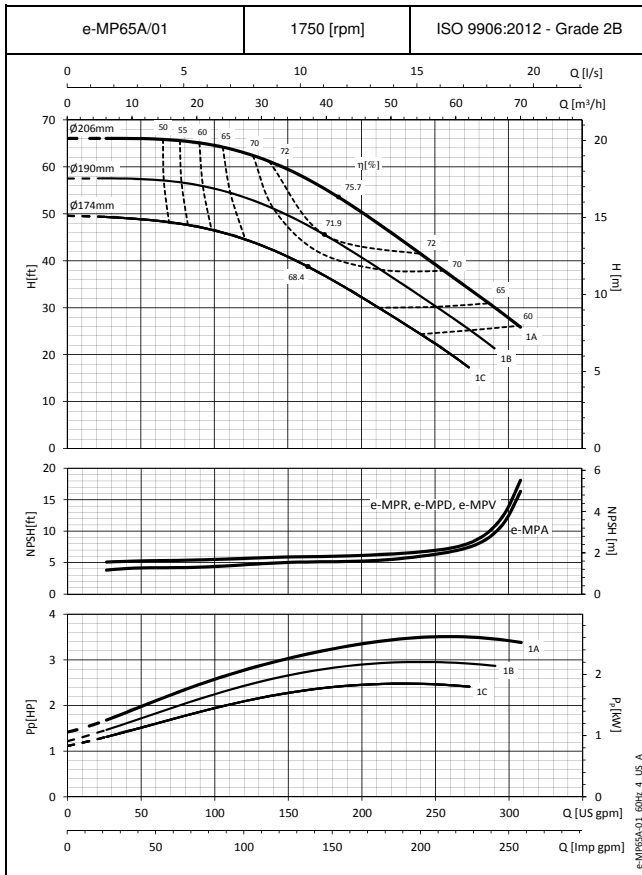
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP65B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



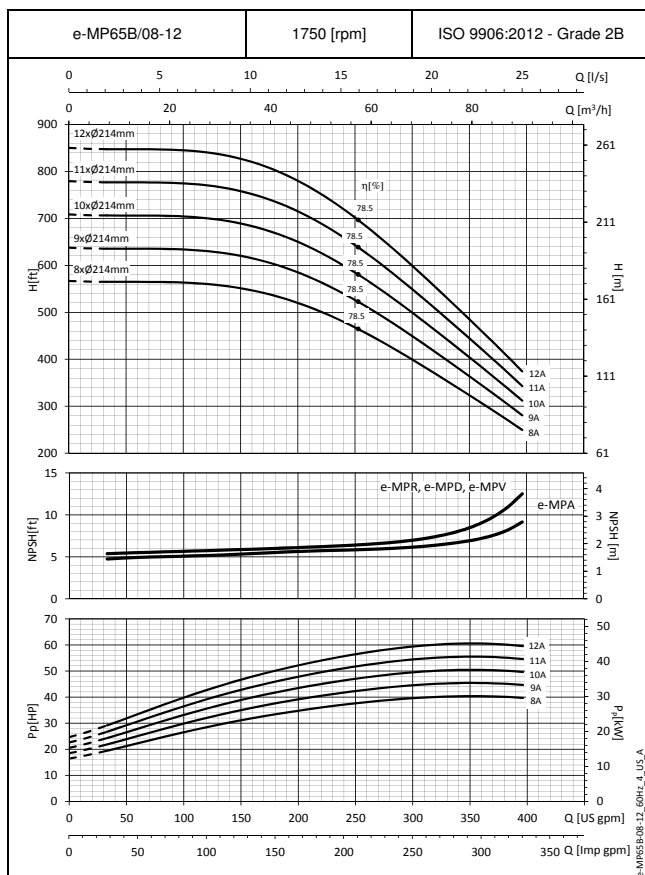
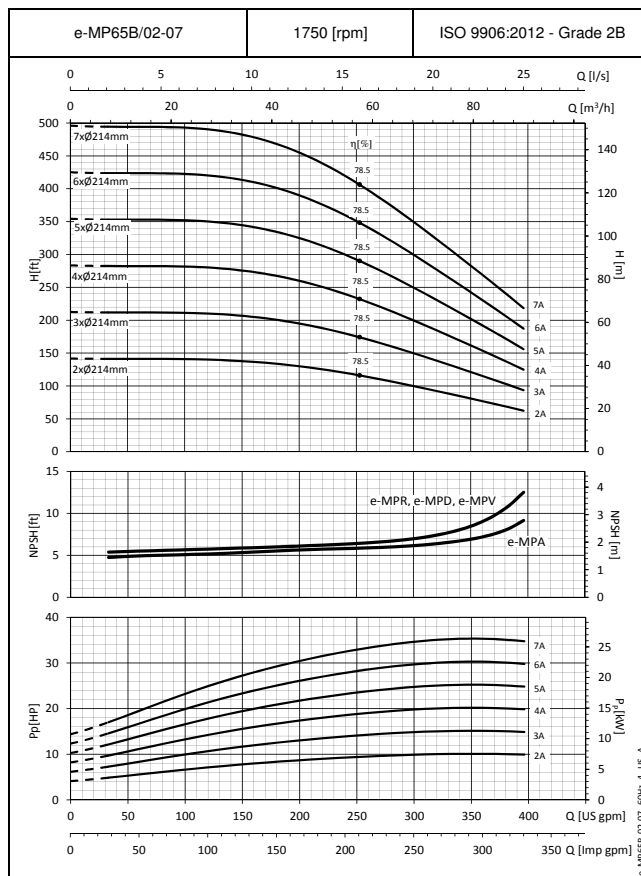
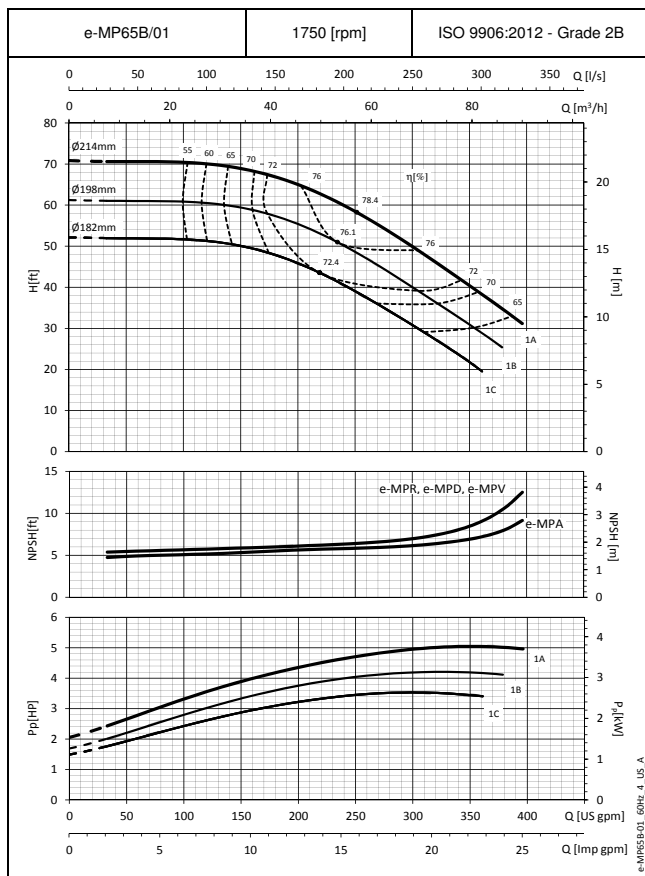
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP65A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



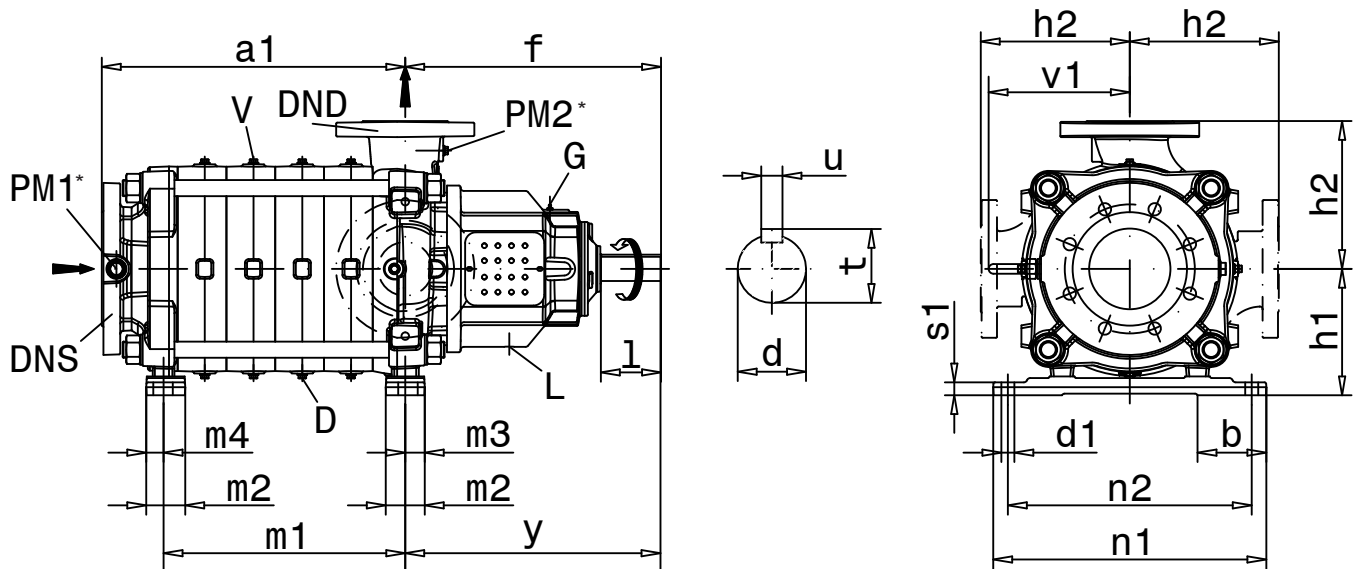
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP65B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

MPA SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPA-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																			
	MPA Size	Pump dimensions						Feet dimensions							Shaft end					
		DNS	DND	f	h1	h2	v1	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
65	5"	2" 1/2	15.5	7.5	8.9	8.9	15.5	2.4	1.2	1.2	16.1	14.4	3.9	0.7	0.8	1.4	1.5	0.4	3.1	

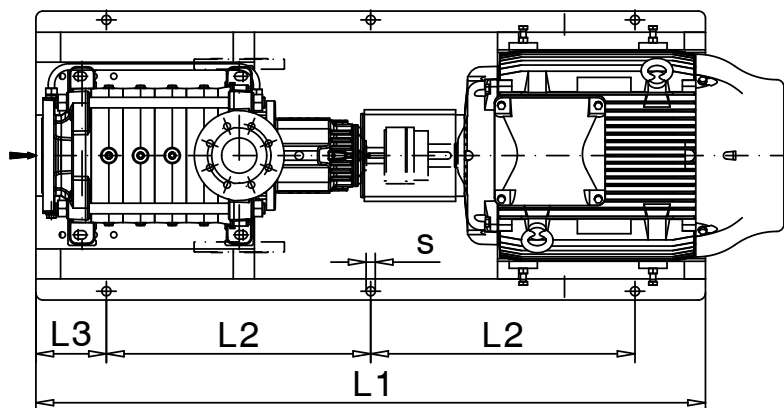
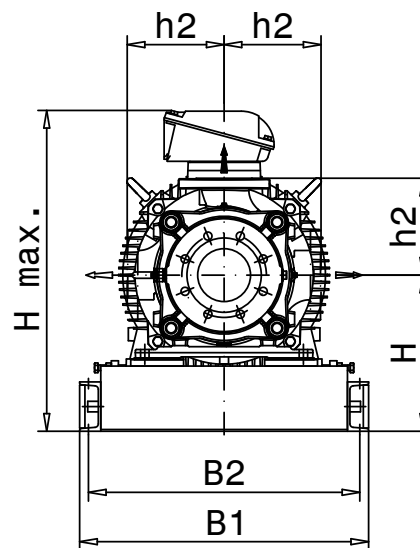
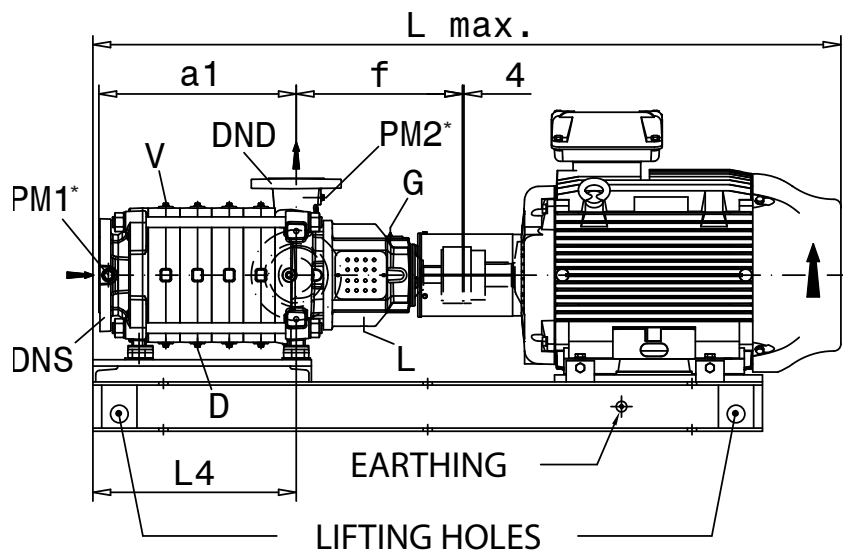
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPA-60-65-us_a_td

Size	Number of stages	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
65	a1 (inch)	9.76	12.83	15.91	18.98	22.05	25.12	28.19	31.26	34.33	37.40	40.47	43.54			
	m1 (inch)	5.71	8.78	11.85	14.92	17.99	21.06	24.13	27.20	30.28	33.35	36.42	39.49			
	G (lb)	64	75	86	97	108	118	129	140	151	162	173	184			

e-MPA-60-65_stage_a_td

MPA SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz

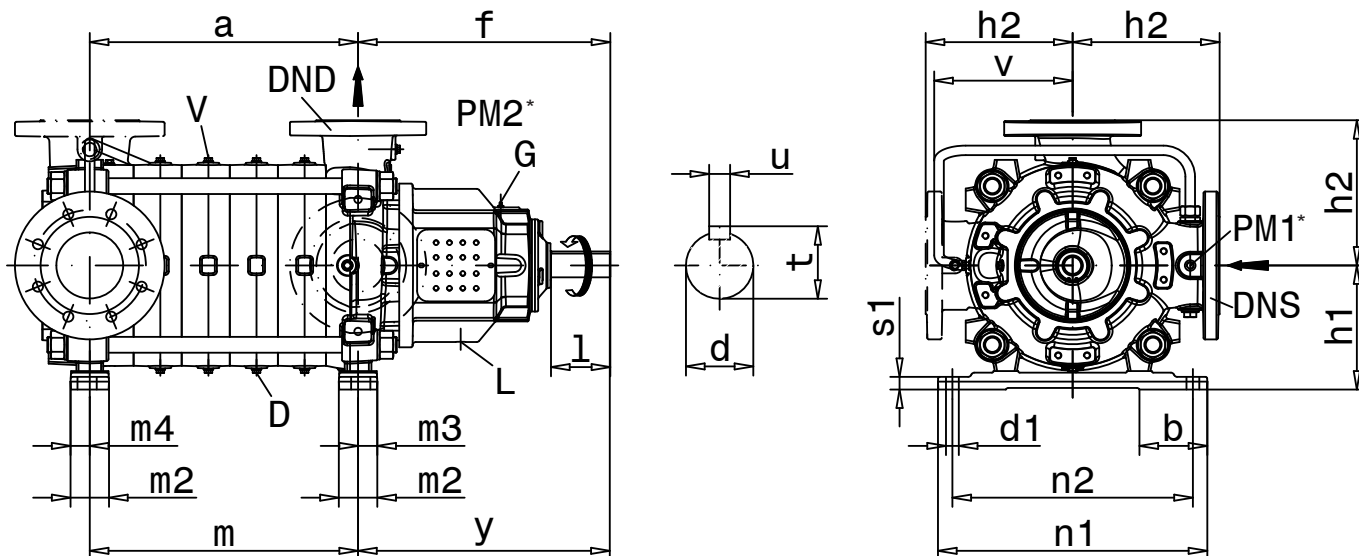


Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPA-AS-EN a DD

* Adaptors for US dimensions outlets are available upon request.

MPR SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPR-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																		
	MPR Size	Pump dimensions					Feet dimensions								Shaft end				
		DNS	DND	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u
65	4"	2"1/2	15.5	7.5	8.9	8.9	15.5	2.4	1.2	1.2	16.1	14.4	3.9	0.7	0.8	1.4	1.5	0.4	3.1

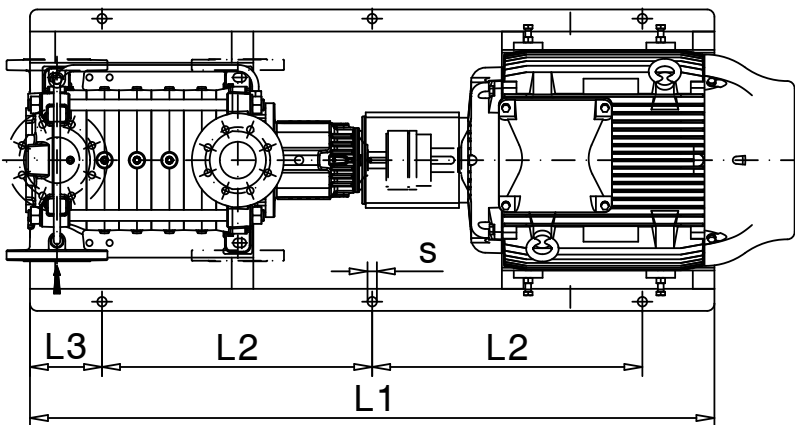
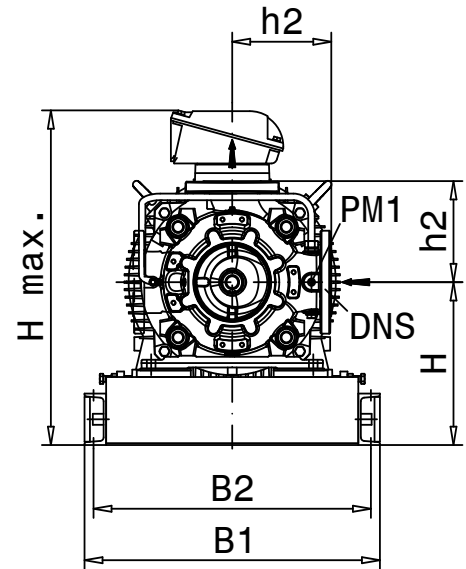
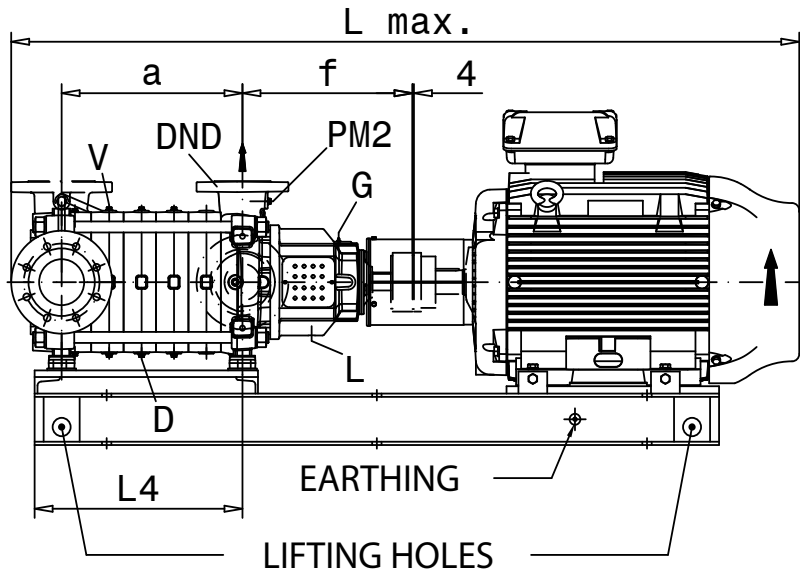
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPR-60-65-us a td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		65	a (inch)	4.33	7.40	10.47	13.54	16.61	19.69	22.76	25.83	28.90	31.97	35.04	38.11	41.18	
m (inch)	4.33		7.40	10.47	13.54	16.61	19.69	22.76	25.83	28.90	31.97	35.04	38.11	41.18			
G (lb)	276		328	381	434	487	540	593	646	699	752	805	858	911			

e-MPR-60-65_stage_a_td

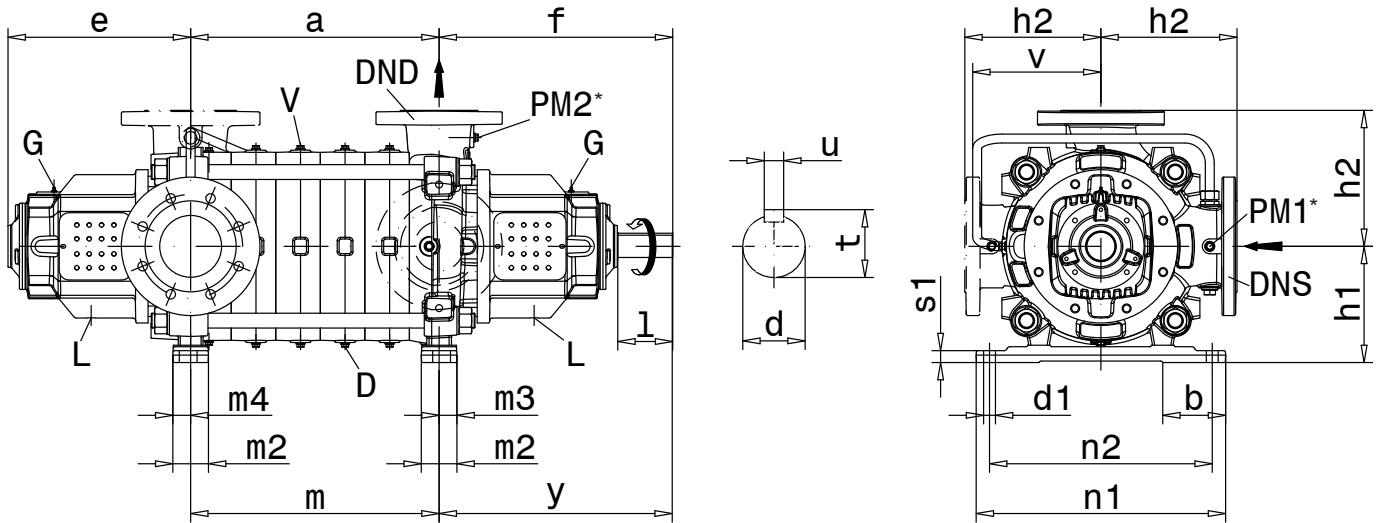
MPR SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G $\frac{1}{4}$
PM2	Pressure gauge	G $\frac{1}{4}$
D	Drain	G $\frac{1}{4}$
G	Grease nipple	M8
L	Leakage	G $\frac{1}{2}$
V	Vent	G $\frac{1}{4}$

e-MPR-AS-EN_a_DD

MPD SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPD-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

PUMP TYPE MPD Size	DIMENSIONS [inch]																			
	Pump dimensions							Feet dimensions								Shaft end				
	DNS	DND	e	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
65	4"	2*1/2	12.6	15.5	7.5	8.9	8.9	15.5	2.4	1.2	1.2	16.1	14.4	3.9	0.7	0.8	1.4	1.5	0.4	3.1

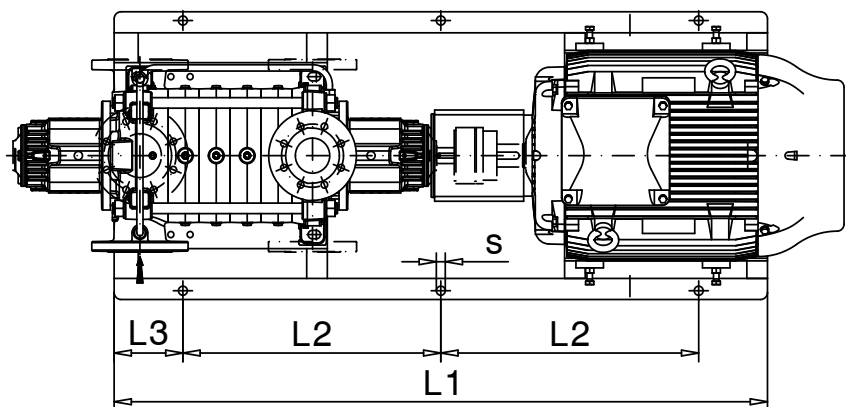
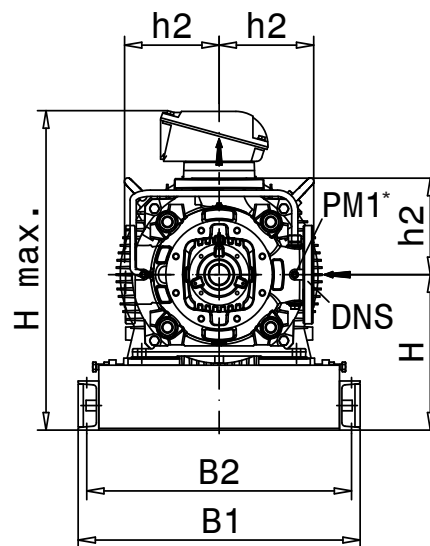
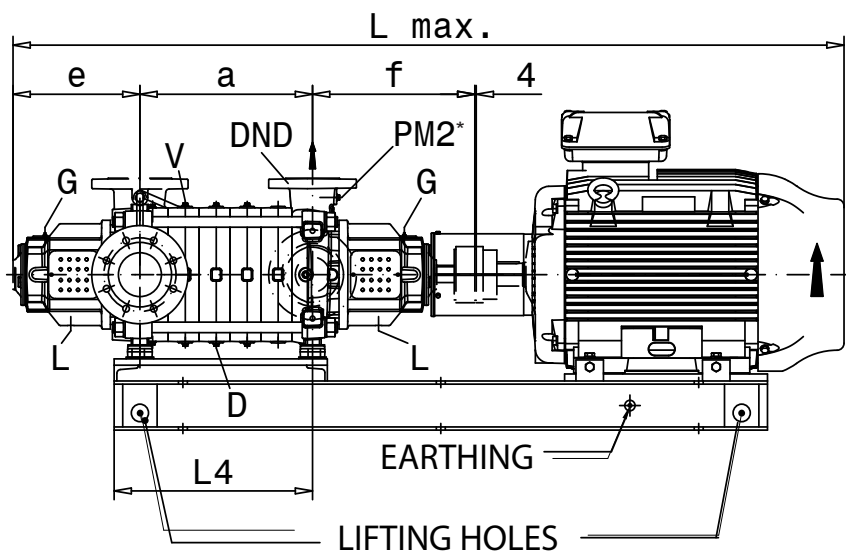
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPD-60-65-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		65	a (inch)	4.33	7.40	10.47	13.54	16.61	19.69	22.76	25.83	28.90	31.97	35.04	38.11	41.18	
m (inch)	4.33		7.40	10.47	13.54	16.61	19.69	22.76	25.83	28.90	31.97	35.04	38.11	41.18			
G (lb)	342		395	448	500	553	606	659	712	765	818	871	924	977			

e-MPD-60-50_stage_a_td

MPD SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz

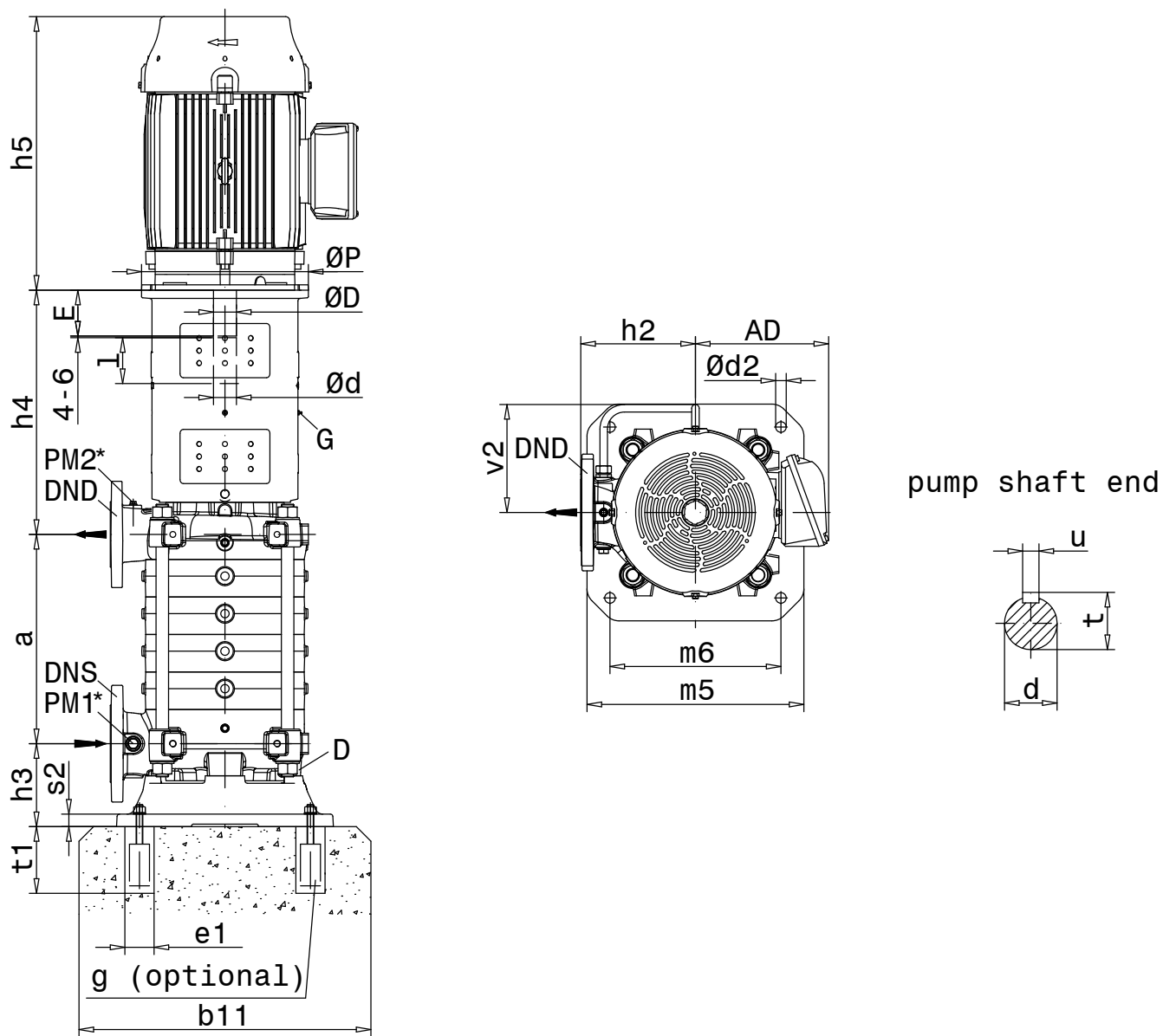


Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPD-AS-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

MPV SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz



* Adaptors for US dimensions outlets are available upon request.

e-MPV-US_a_DD

PUMP TYPE MPV Size	DIMENSIONS [inch]																
	Pump dimensions											Base dimensions					
	DNS	DND	h2	h3	d2	m5	m6	s2	v2	d	t	u	l	b11	e1	t1	g
65	4"	2"1/2	8.9	6.5	0.8	17.3	13.4	1.1	8.9	1.4	1.5	0.4	3.1	25.2	3.1	11.8	0.8

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPV-60-65-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		65	a (inch)	4.33	7.40	10.47	13.54	16.61	19.69	22.76	25.83	28.90	31.97	41.02			
	G1 (lb)	328	381	434	487	540	593	646	699	752	805	1355					

e-MPV-60-65_stage_a_td

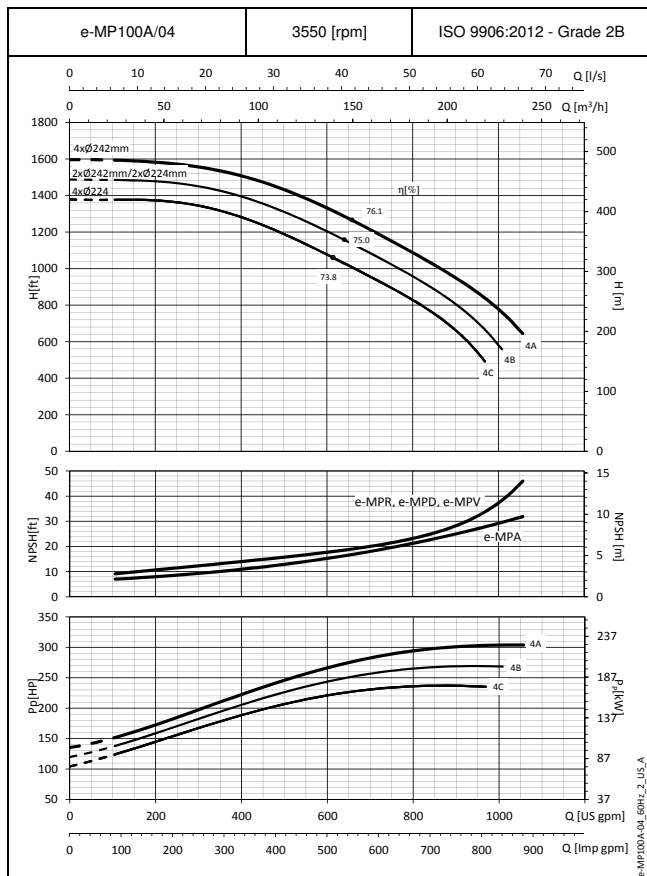
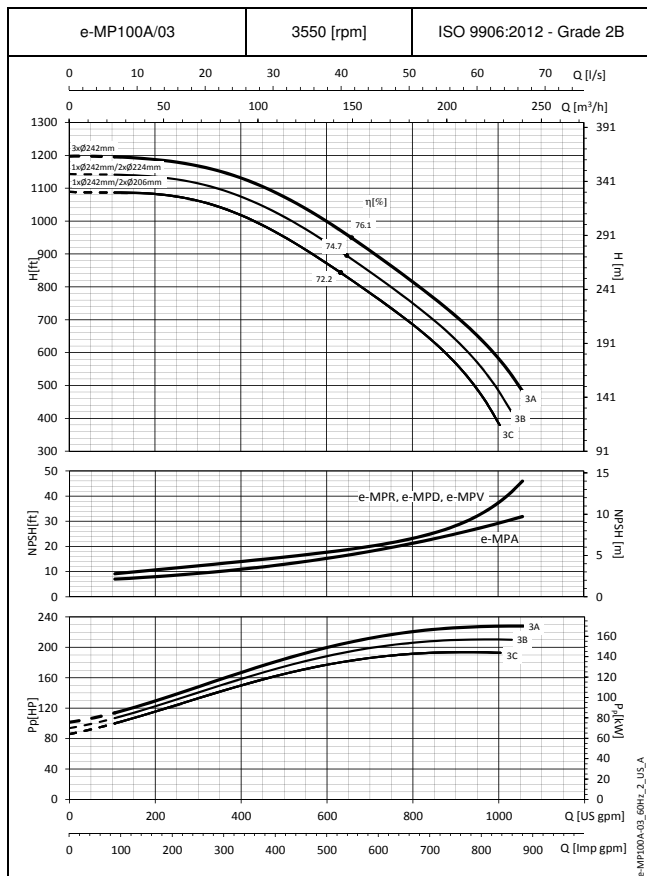
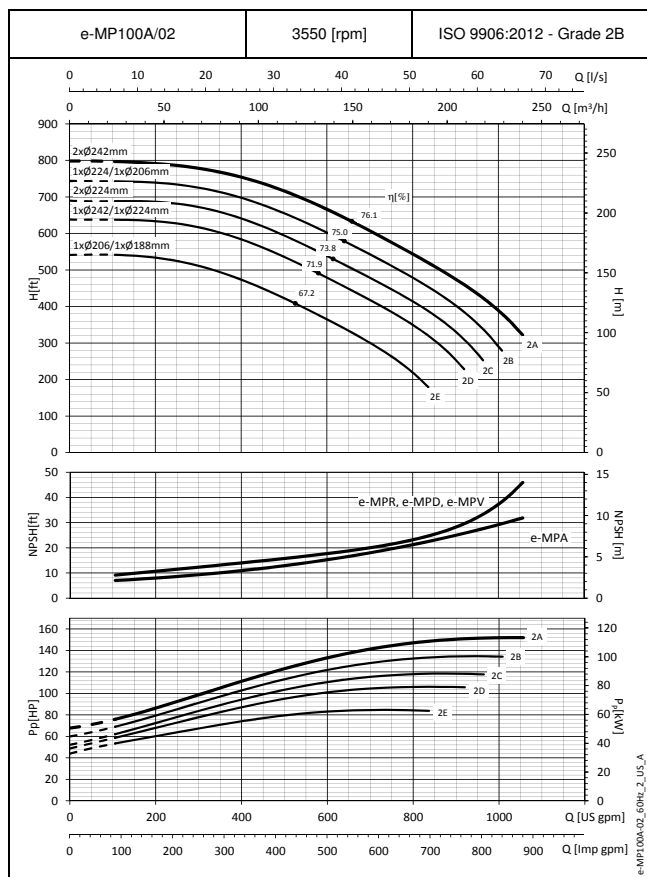
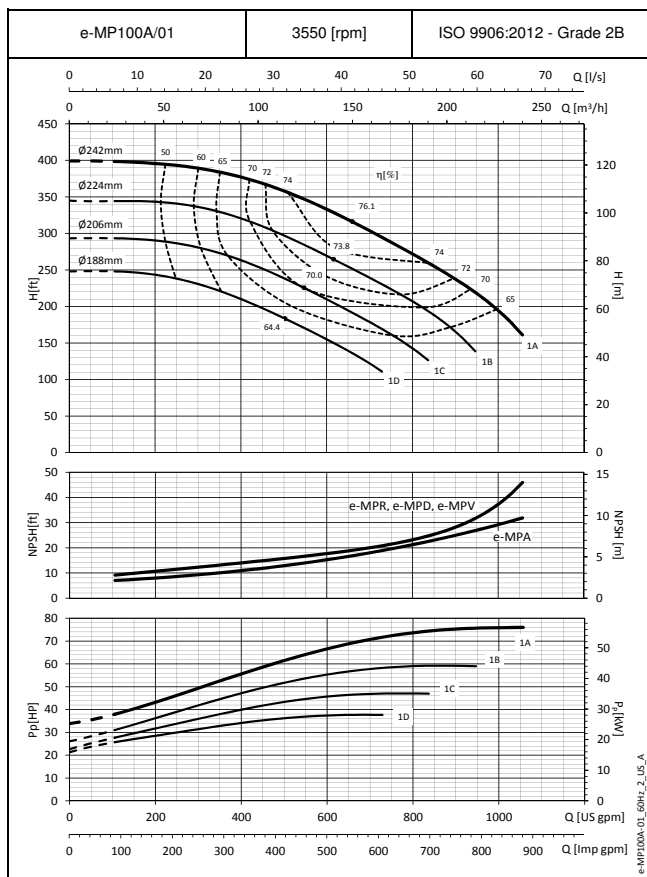
MPV SERIES - DN65 - DIMENSIONS AND WEIGHTS AT 60 Hz

NEMA Size	Speed		Pump dimensions		Motor dimensions				
	3600 [rpm]	1800 [rpm]	h4	G2	h5	P	D	E	AD
	[HP]	[HP]	[in]	[lb]	[in]	[in]	[in]	[in]	[in]
254 TD	15	15	19.96	104	22.09	14	1.625	4.00	9.49
256 TD	20	20	19.96	104	22.09	14	1.625	4.00	9.49
284 TD	-	25	19.96	104	25.93	14	1.875	4.38	13.11
284 TSD	25	-	19.96	104	21.99	14	1.625	3.25	11.52
286 TD	-	30	19.96	104	25.93	14	1.875	4.38	13.11
286 TSD	30	-	19.96	104	21.99	14	1.625	3.25	11.52
324 TD	-	40	21.22	159	28.35	18	2.125	5.25	14.13
324 TSD	40	-	19.96	120	27.78	18	1.875	3.75	14.11
326 TD	-	50	21.22	159	28.35	18	2.125	5.25	14.13
326 TSD	50	-	19.96	120	27.78	18	1.875	3.75	14.11
364 TD	-	60	21.22	159	30.34	18	2.375	5.88	18.06
364 TSD	60	-	19.96	120	27.35	18	1.875	3.75	18.06
365 TD	-	75	21.22	159	30.34	18	2.375	5.88	18.06
365 TSD	75	-	19.96	120	27.35	18	1.875	3.75	18.06
405 TD	-	100	-	-	33.83	22	2.875	7.25	19.31
405 TSD	100	-	21.14	152	33.83	22	2.125	4.25	19.31
444 TD	-	125	-	-	38.89	22	3.375	8.50	23.38
444 TSD	125	-	21.14	152	38.89	22	2.375	4.75	23.38
445 TD	-	150	-	-	38.89	22	3.375	8.50	23.38
445 TSD	150	-	21.14	152	38.89	22	2.375	4.75	23.38
447 TD	-	200	-	-	41.77	22	3.375	8.50	23.37
447 TSD	200	-	21.14	152	41.77	22	2.375	4.75	23.37

Total pump unit weight G = weight G1 + weight G2 + weight G3 (±5%)

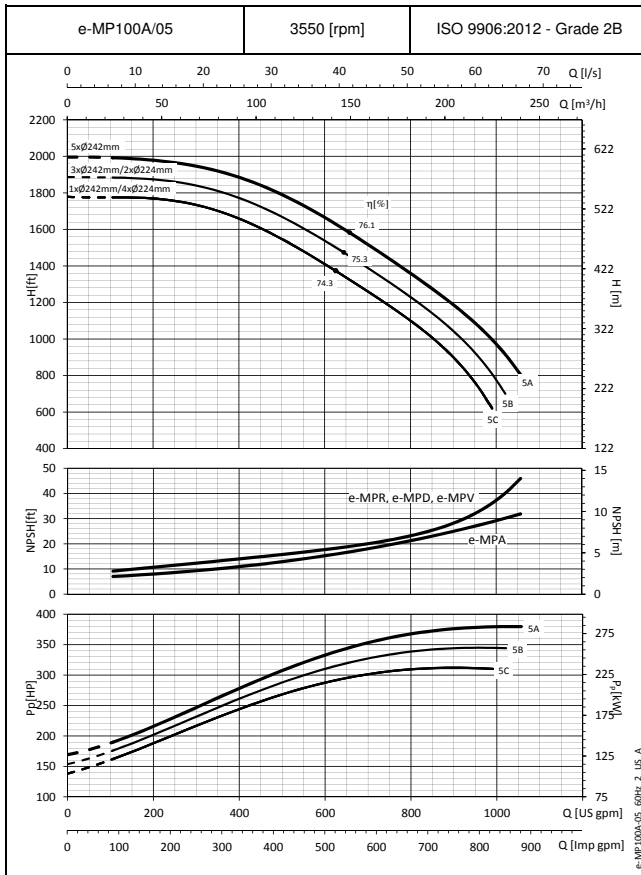
e-MPV-65-AS-us_a_td

e-MP100A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



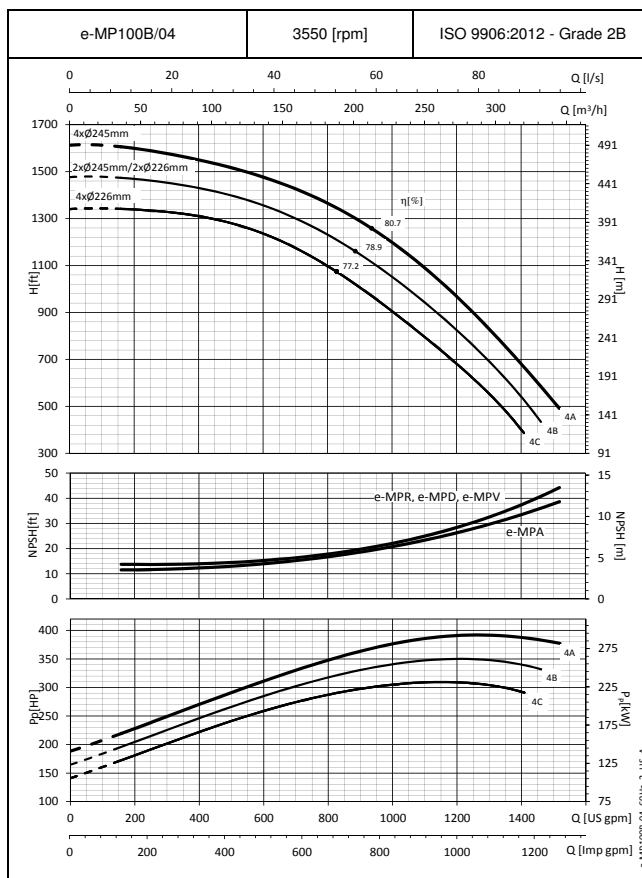
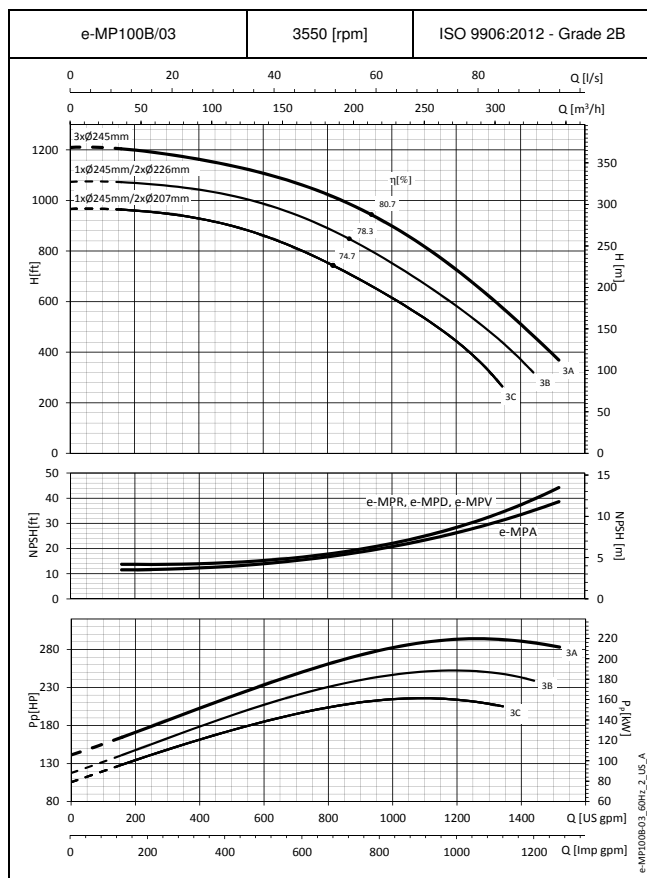
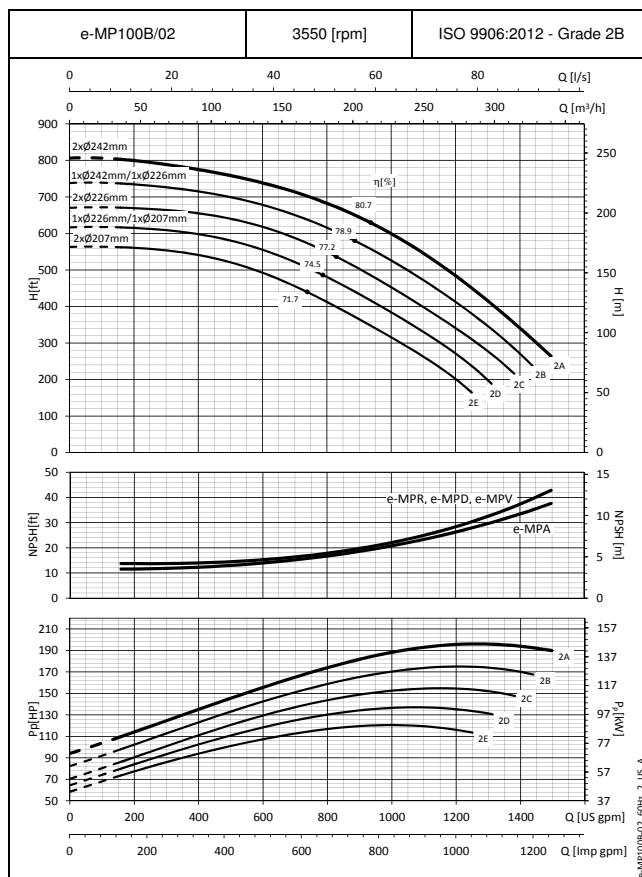
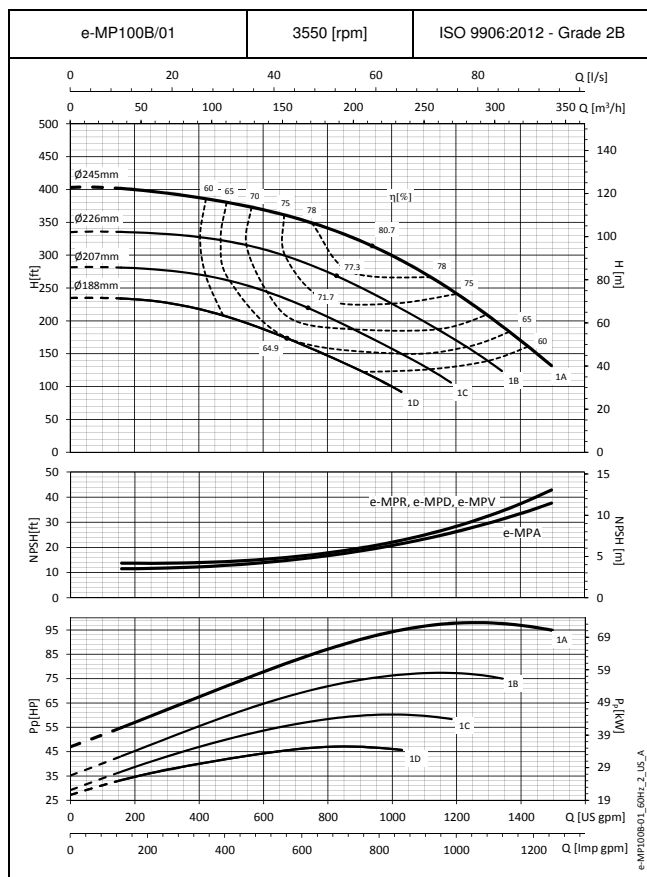
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP100A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



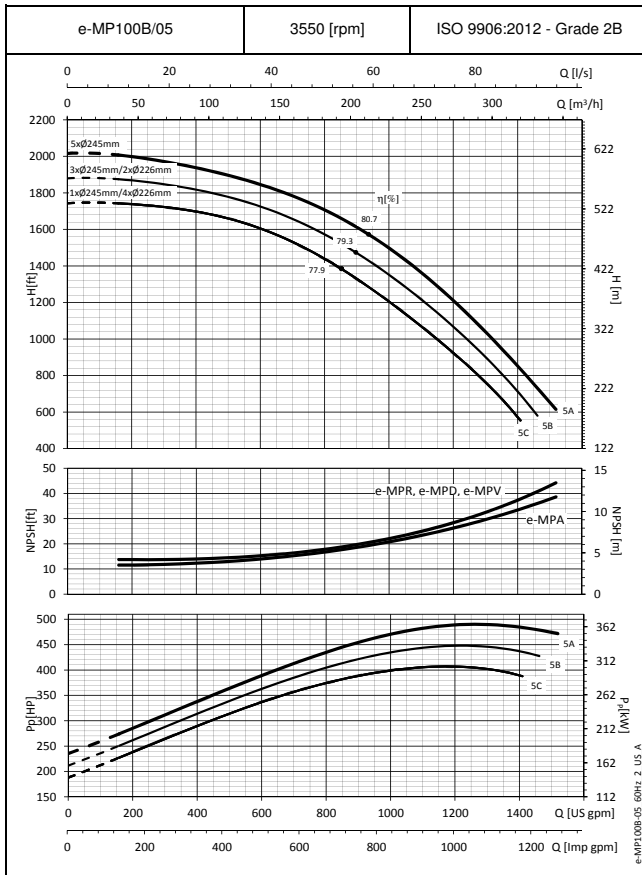
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP100B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



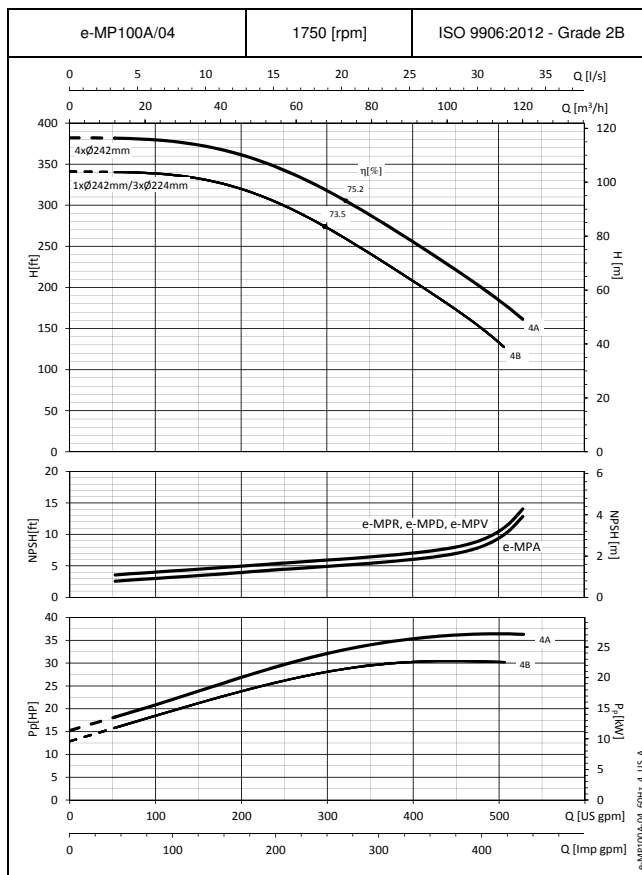
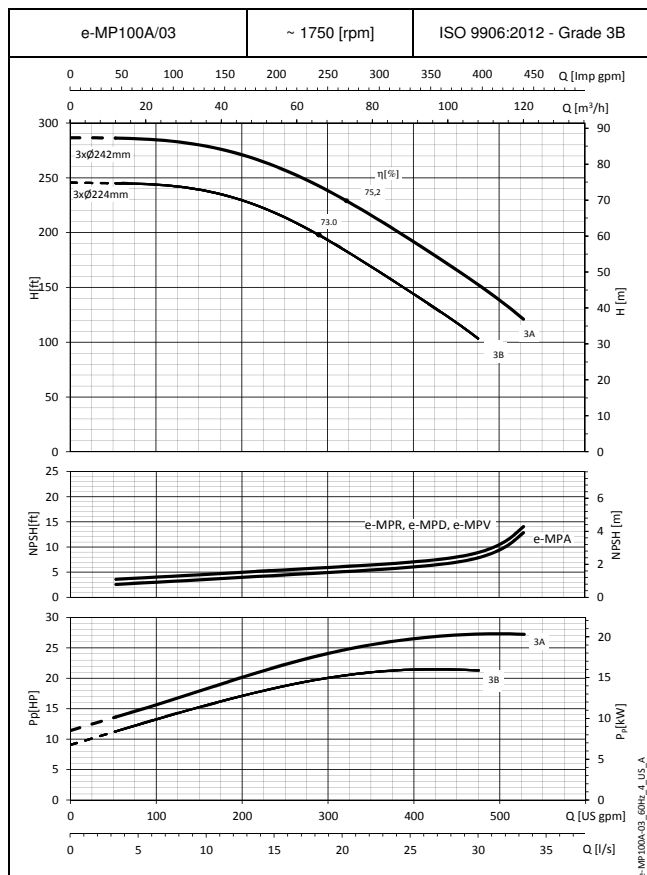
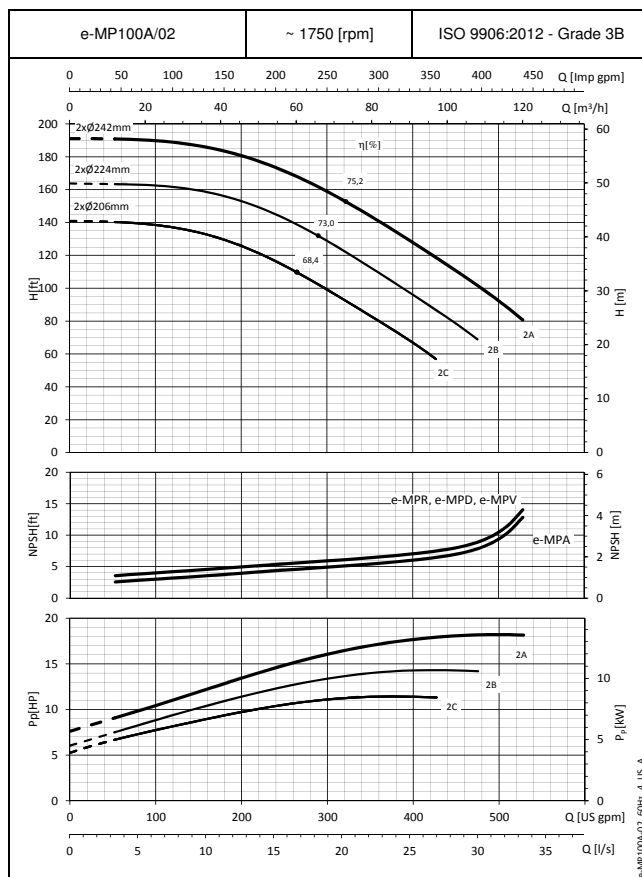
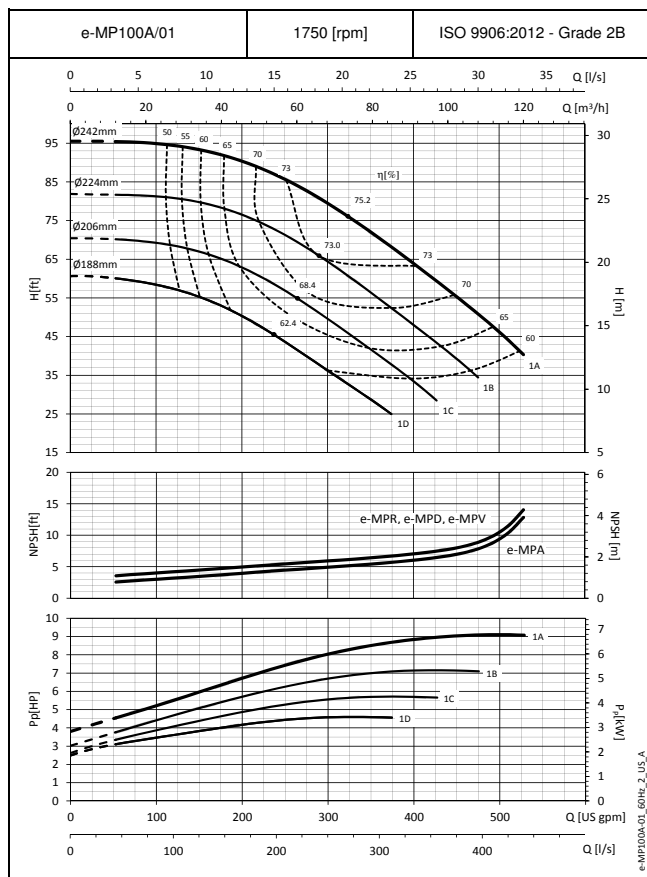
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP100B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



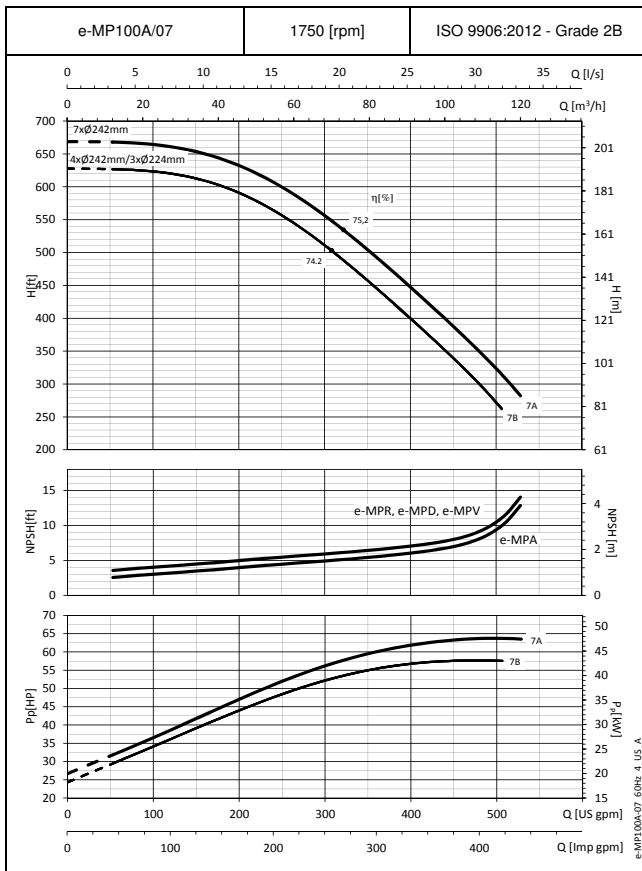
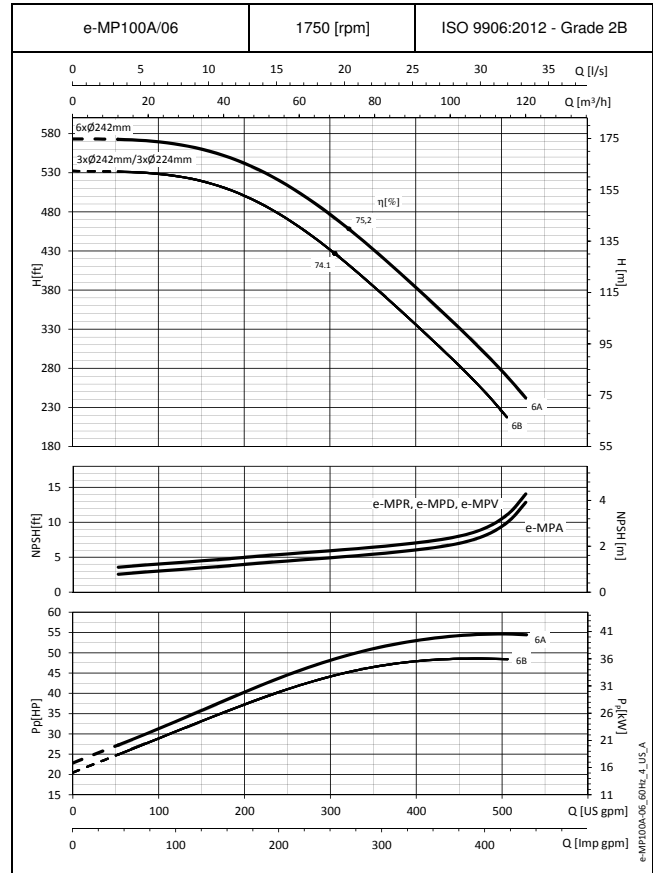
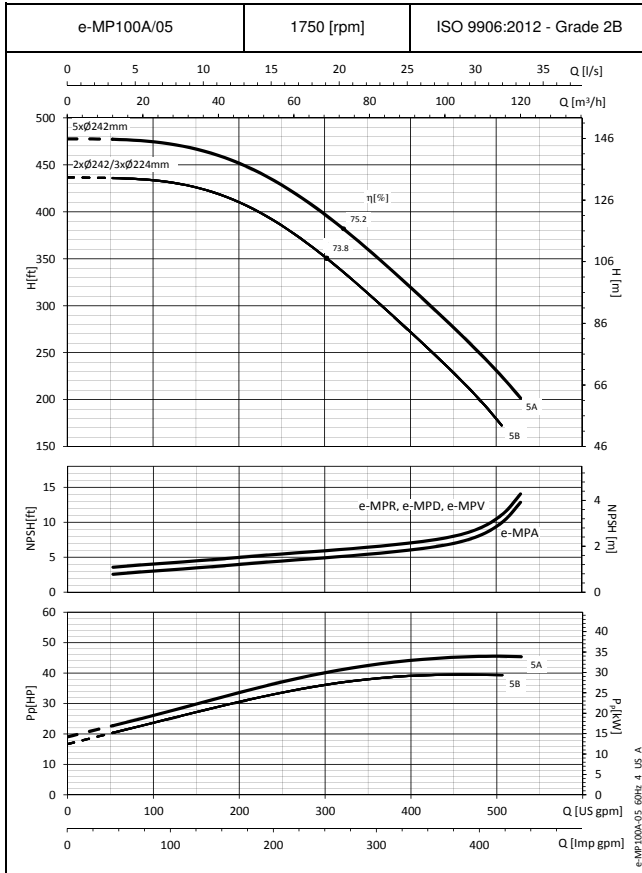
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP100A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



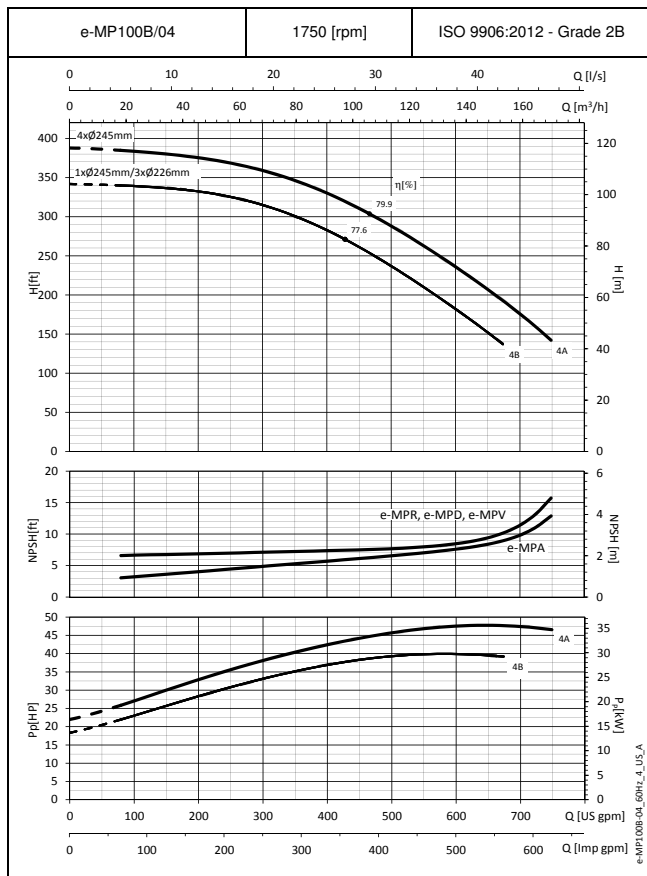
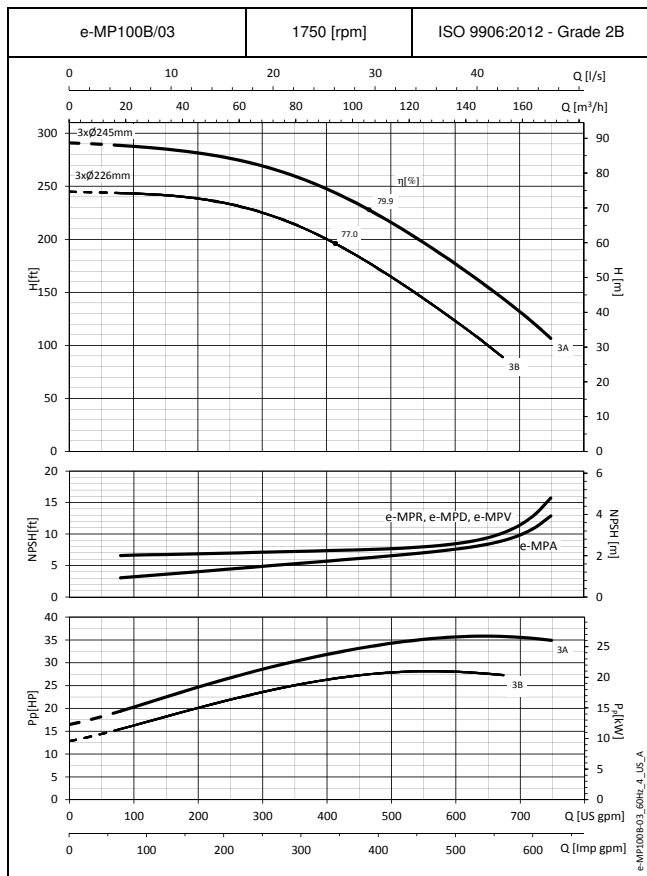
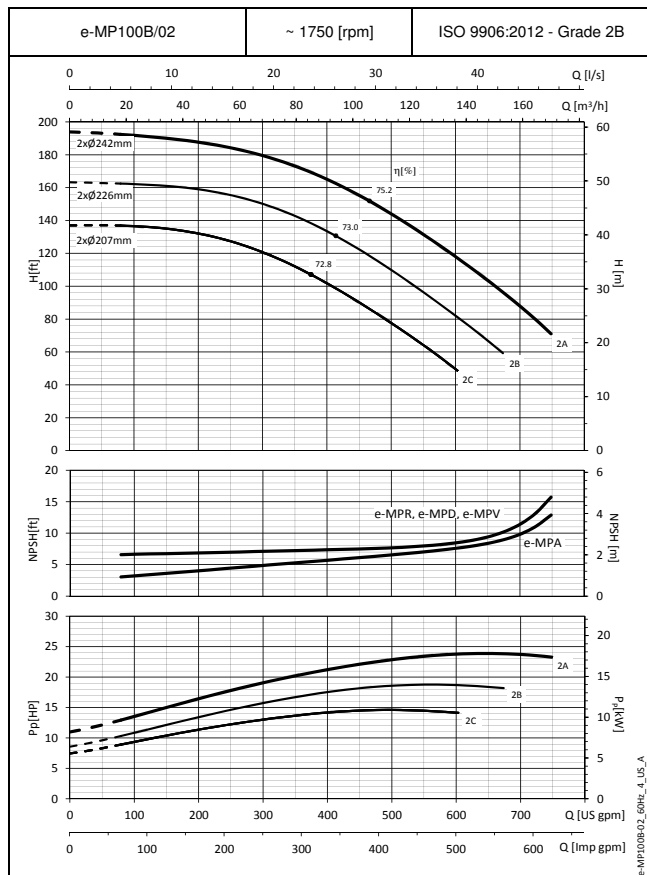
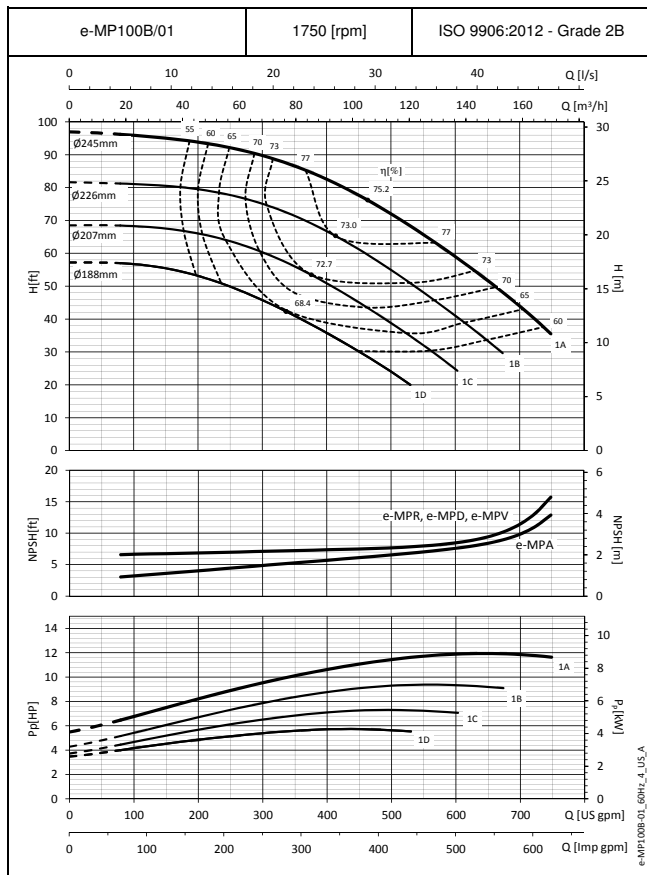
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP100A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



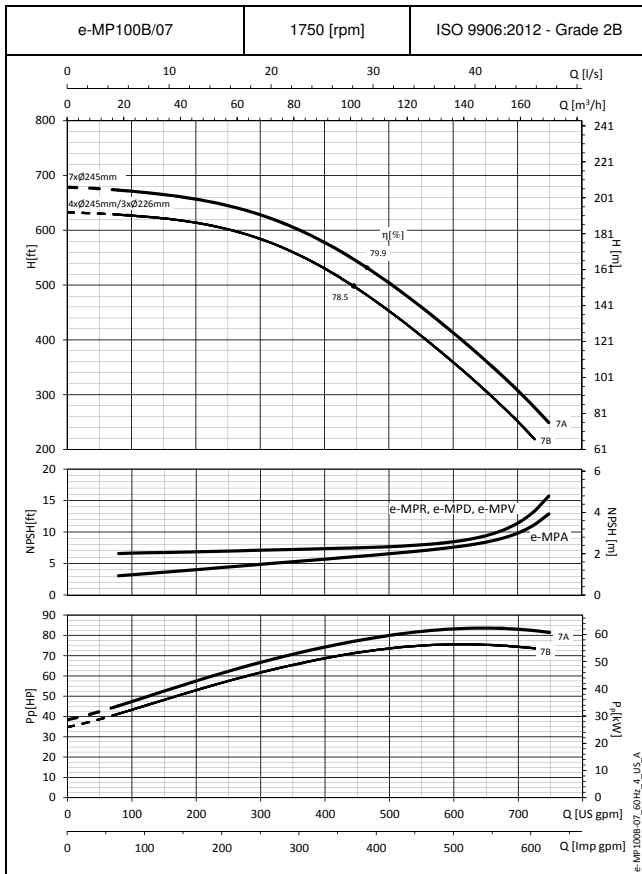
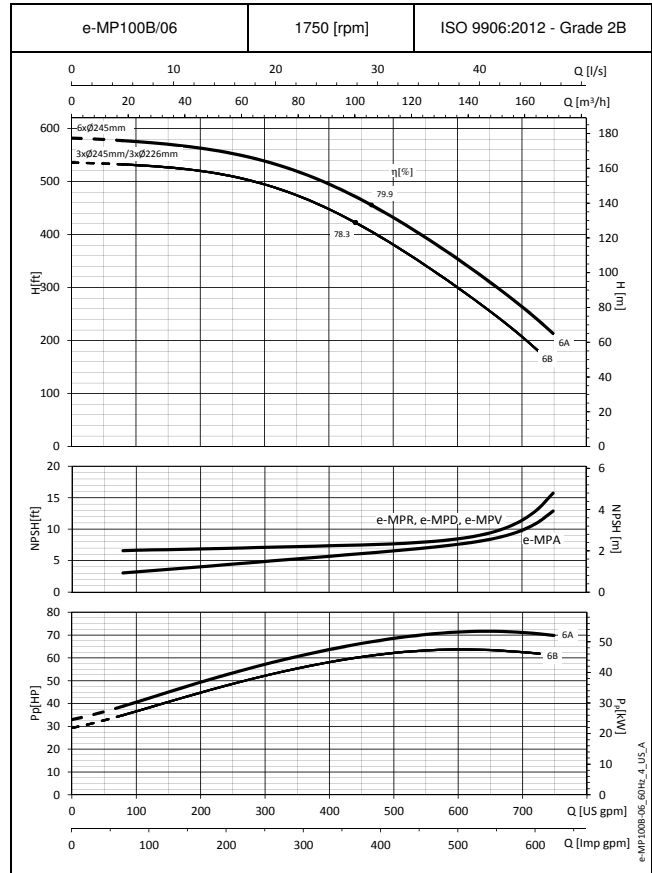
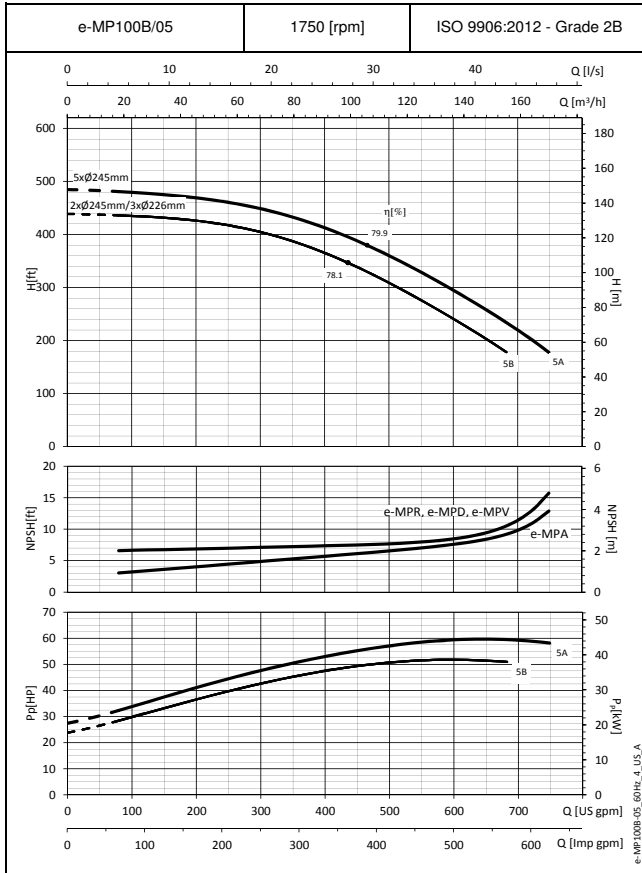
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP100B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



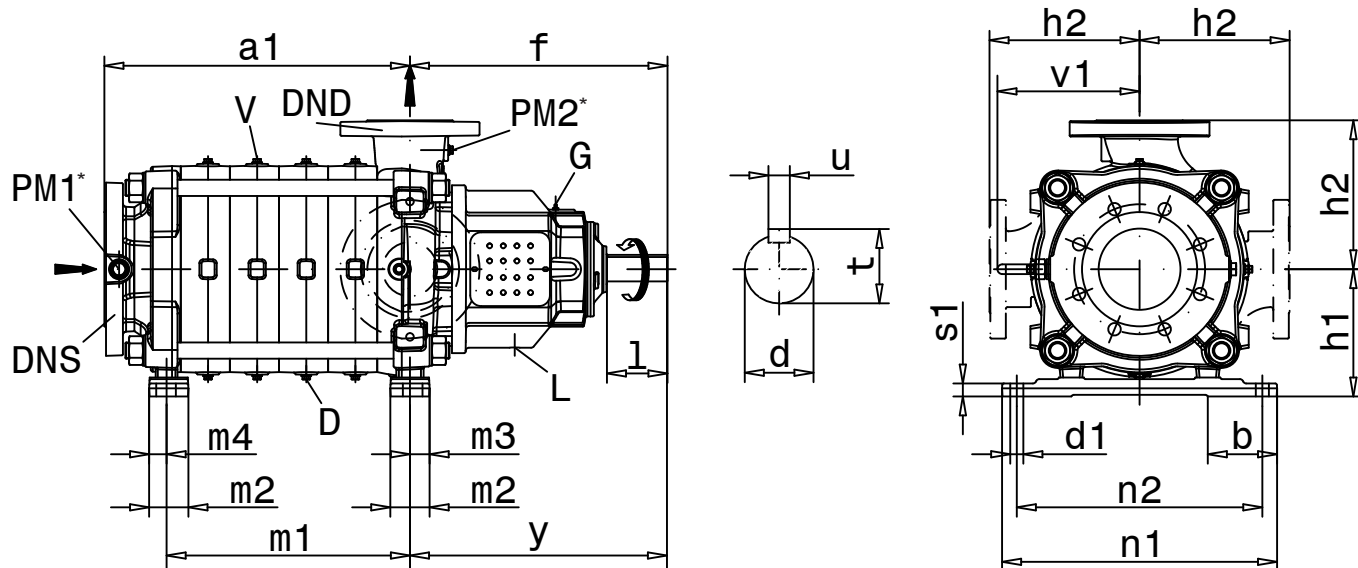
These performances are valid for cold water with density $\rho = 62.42$ lb/ft³ and viscosity $\nu = 1$ cSt.

e-MP100B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

MPA SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPA-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																				
	MPA Size	Pump dimensions						Feet dimensions								Shaft end					
		DNS	DND	f	h1	h2	v1	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l	
100	6"	4"	18.6	9.3	10.8	10.8	18.6	2.8	1.4	1.4	19.8	17.7	4.9	0.9	0.9	1.8	1.9	0.6	4.3		

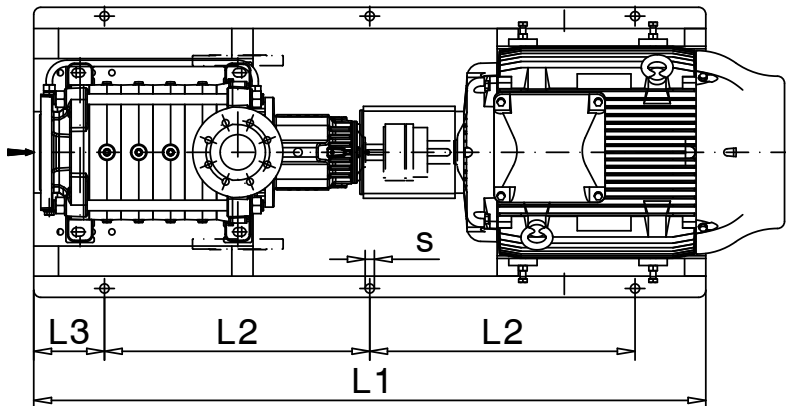
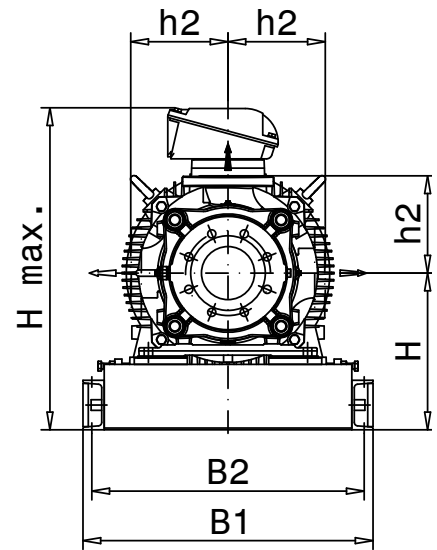
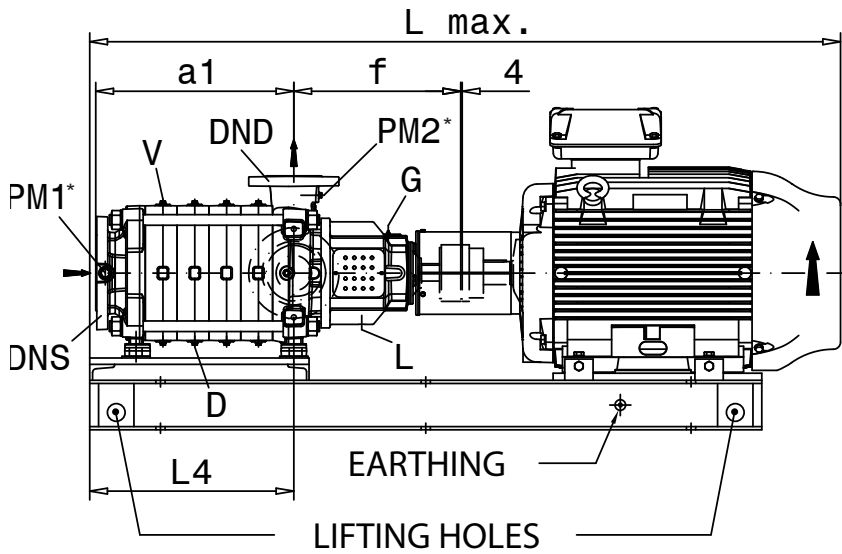
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPA-60-100-us_a_td

Size	Number of stages	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
100	a1 (inch)	11.42	14.96	18.50	22.05	25.59	29.13									
	m1 (inch)	6.93	10.47	14.02	17.56	21.10	24.65									
	G (lb)	110	127	144	161	179	196									

e-MPA-60-100_stage_a_td

MPA SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPA-AS-EN a DD

* Adaptors for US dimensions outlets are available upon request.

MPA SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz

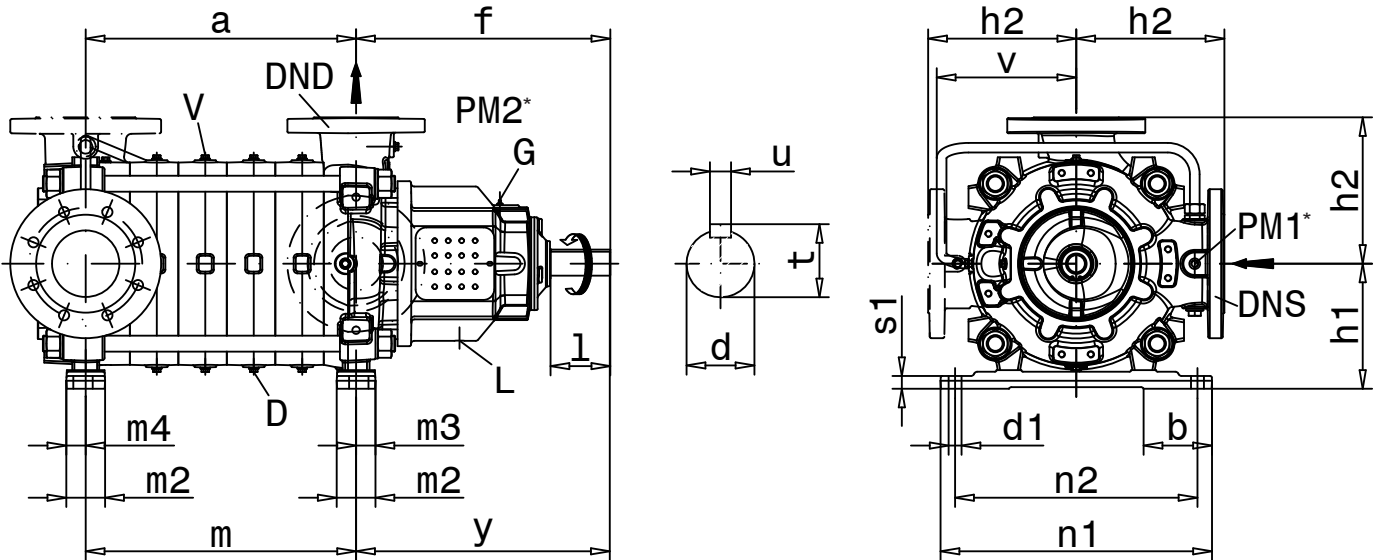
Dimensions and weights in the next table are for reference only and correspond to IEC motor frames. NEMA corresponding dimensions and weights to be published soon. Please contact factory for more information.

PUMP-TYPE MPA Size	NUMBER OF STAGES	IEC MOTOR FRAME	3550 [rpm]	1750 [rpm]	DIMENSIONS [inch]														WEIGHT G [lb]	COUPLING TYPE	
					DNS	DND	a1	f	B1	B2	L1	L2	L3	L4	H	h2	s	Hmax			Lmax
100	2	280S/M	100		6"	4"	11.4	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	73.0	2399	B160C
		280S/M	125		6"	4"	11.4	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	73.0	2465	B160C
		315S/M	150		6"	4"	11.4	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3100	B160C
		315S/M	180		6"	4"	11.4	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3210	B160C
		315S/M	220		6"	4"	11.4	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3497	B160C
		160M	15	6"	4"	11.4	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	54.6	955	B110F	
		160L	20	6"	4"	11.4	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	54.6	1052	B110F	
	180L	30	6"	4"	11.4	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	62.0	1206	B110G		
	3	315S/M	220		6"	4"	15.0	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3580	B160C
		315L	270		6"	4"	15.0	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	42.4	87.6	3854	B180D
		315L	340		6"	4"	15.0	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	42.4	87.6	4184	B180D
		180M	25	6"	4"	15.0	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	60.5	1252	B110G	
		180L	30	6"	4"	15.0	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	62.0	1290	B110G	
		200L	10	6"	4"	15.0	18.6	28.0	26.4	63.0	23.6	7.9	19.2	14.3	10.8	6xØ0,75 (M16)	26.9	68.1	1400	B125C	
	4	315L	270		6"	4"	18.5	18.6	33.9	31.9	82.7	33.5	7.9	22.7	19.8	10.8	6xØ1 (M20)	42.4	94.7	4039	B180D
		315L	340		6"	4"	18.5	18.6	33.9	31.9	82.7	33.5	7.9	22.7	19.8	10.8	6xØ1 (M20)	42.4	94.7	4370	B180D
		355M/L	430		6"	4"	18.5	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	97.0	5955	RWN198B
		200L	40	6"	4"	18.5	18.6	28.0	26.4	63.0	23.6	7.9	19.2	14.3	10.8	6xØ0,75 (M16)	26.9	68.1	1484	B125C	
		225S/M	50	6"	4"	18.5	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	72.8	1828	B140C	
		225S/M	60	6"	4"	18.5	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	72.8	1905	B140C	
	5	355M/L	430		6"	4"	22.0	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	97.0	6038	RWN198B
		355M/L	480		6"	4"	22.0	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	97.0	6038	RWN198B
		355A/B	540		6"	4"	22.0	18.6	39.4	36.6	92.5	36.4	9.8	22.7	23.0	10.8	6xØ1,14 (M24)	51.5	104.7	6720	RWN198B
		225S/M	50	6"	4"	22.0	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	75.7	1911	B140C	
		225S/M	60	6"	4"	22.0	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	75.7	1989	B140C	
		250S/M	75	6"	4"	22.0	18.6	28.3	26.4	68.9	26.6	7.9	19.2	15.7	10.8	6xØ0,75 (M16)	31.3	78.8	2229	B160C	
	6	225S/M	60	6"	4"	25.6	18.6	28.3	26.4	76.8	30.5	7.9	29.8	14.9	10.8	6xØ0,75 (M16)	30.0	83.4	2105	B140C	
		250S/M	75	6"	4"	25.6	18.6	28.3	26.4	78.7	31.5	7.9	29.8	15.7	10.8	6xØ0,75 (M16)	31.3	86.5	2346	B160C	
		280S/M	100	6"	4"	25.6	18.6	32.3	30.3	80.7	32.5	7.9	29.8	17.4	10.8	6xØ1 (M20)	35.7	90.7	2716	B180E	
	7	250S/M	75	6"	4"	29.1	18.6	28.3	26.4	78.7	31.5	7.9	29.8	15.7	10.8	6xØ0,75 (M16)	31.3	86.5	2429	B160C	
280S/M		100	6"	4"	29.1	18.6	32.3	30.3	80.7	32.5	7.9	29.8	17.4	10.8	6xØ1 (M20)	35.7	90.7	2800	B180E		

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPA-AS-60-100-us_a_td

MPR SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPR-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

PUMP TYPE	DIMENSIONS [inch]																			
	MPR Size	Pump dimensions						Feet dimensions							Shaft end					
		DNS	DND	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
100	5"	4"	18.6	9.3	10.8	10.8	18.6	2.8	1.4	1.4	19.8	17.7	4.9	0.9	0.9	1.8	1.9	0.6	4.3	

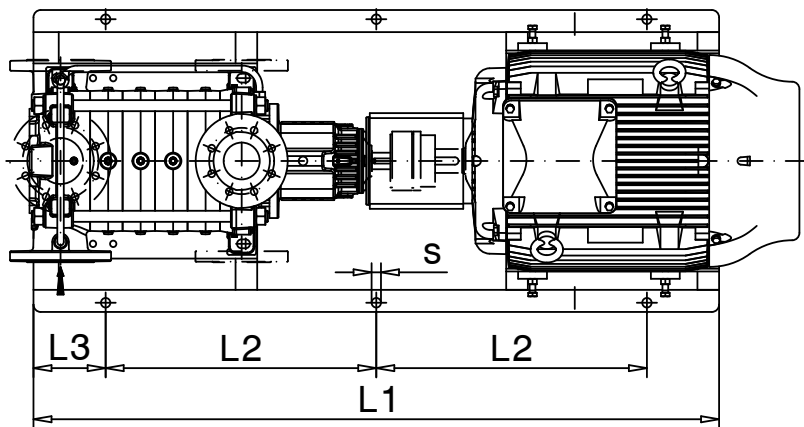
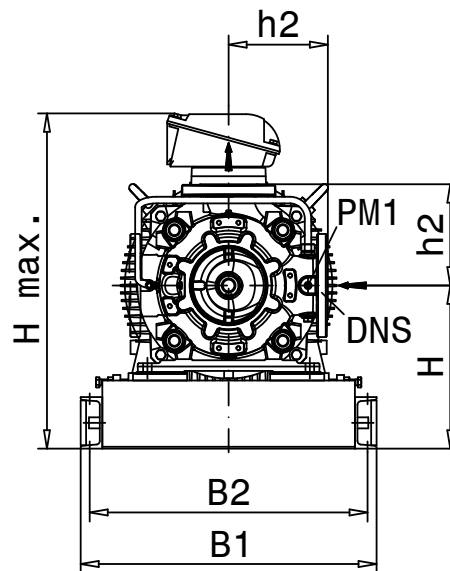
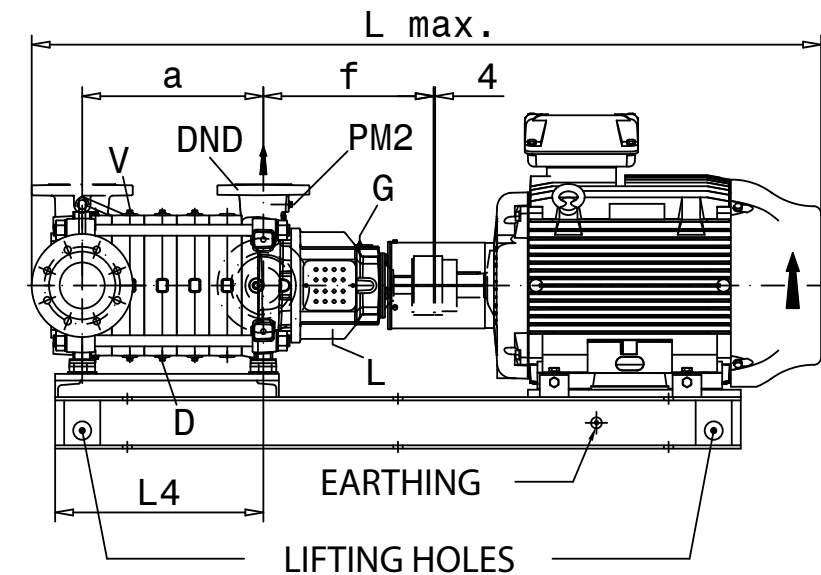
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPR-60-100-us a td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		100	a (inch)	5.59	9.13	12.68	16.22	19.76	23.31	26.85							
m (inch)	5.59		9.13	12.68	16.22	19.76	23.31	26.85									
G (lb)	498		582	666	750	833	917	1001									

e-MPR-60-100_stage_a_td

MPR SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPR-AS-EN_a_DD

MPR SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz

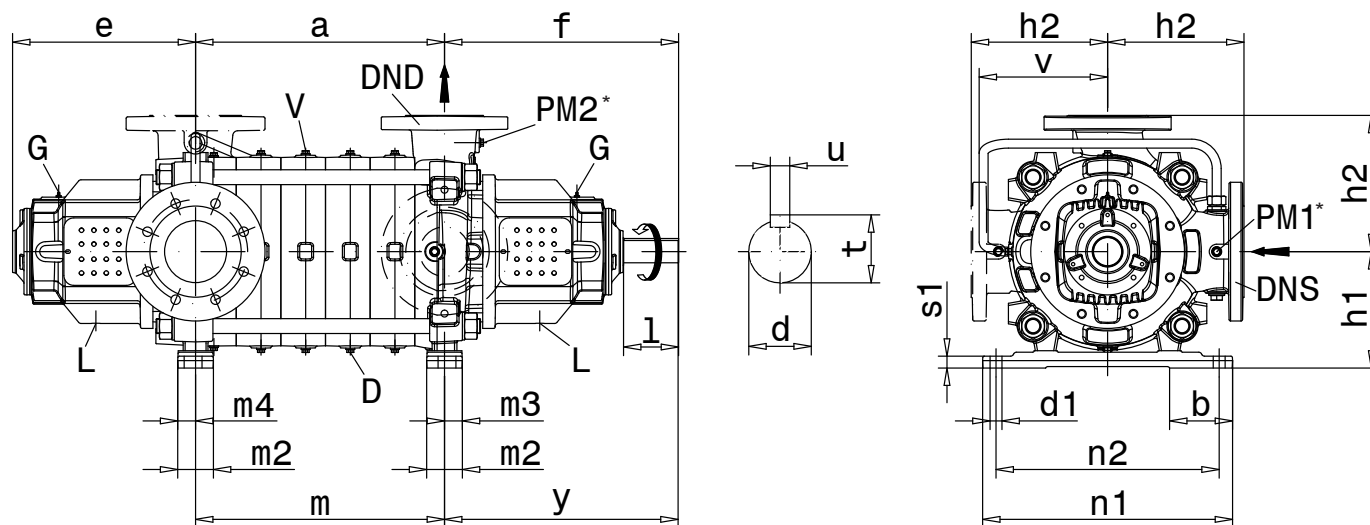
Dimensions and weights in the next table are for reference only and correspond to IEC motor frames. NEMA corresponding dimensions and weights to be published soon. Please contact factory for more information.

PUMP-TYPE MPR Size	NUMBER OF STAGES	IEC MOTOR FRAME	3550 [rpm] [hp]	1750 [rpm] [hp]	DIMENSIONS [inch]															WEIGHT G [lb]	COUPLING TYPE
					DNS	DND	a	f	B1	B2	L1	L2	L3	L4	H	h2	s	Hmax	Lmax		
100	1	280S/M	100		5"	4"	5.6	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	73.0	2363	B160C
		280S/M	125		5"	4"	5.6	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	73.0	2429	B160C
		132S/M		10	5"	4"	5.6	18.6	28.0	26.4	47.2	15.7	7.9	12.1	14.1	10.8	6xØ0,75 (M16)	24.9	49.9	862	B110E
		160M		15	5"	4"	5.6	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	54.6	919.3	B110F
	2	280S/M	100		5"	4"	9.1	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	75.6	2447	B160C
		280S/M	125		5"	4"	9.1	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	75.6	2513	B160C
		315S/M	150		5"	4"	9.1	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3148	B160C
		315S/M	180		5"	4"	9.1	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3258	B160C
		315S/M	220		5"	4"	9.1	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	83.3	3545	B160C
		160M		15	5"	4"	9.1	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	57.2	1003	B110F
		160L		20	5"	4"	9.1	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	57.2	1100	B110F
		180L		30	5"	4"	9.1	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	62.0	1254	B110G
	3	315S/M	220		5"	4"	12.7	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	85.9	3629	B160C
		315L	270		5"	4"	12.7	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	42.4	90.2	3902	B180D
		315L	340		5"	4"	12.7	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	42.4	90.2	4233	B180D
		180M		25	5"	4"	12.7	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	63.1	1301	B110G
		180L		30	5"	4"	12.7	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	64.6	1338	B110G
		200L		40	5"	4"	12.7	18.6	28.0	26.4	63.0	23.6	7.9	19.2	14.3	10.8	6xØ0,75 (M16)	26.9	68.1	1448	B125C
	4	315L	270		5"	4"	16.2	18.6	33.9	31.9	82.7	33.5	7.9	22.7	19.8	10.8	6xØ1 (M20)	42.4	94.7	4087	B180D
		315L	340		5"	4"	16.2	18.6	33.9	31.9	82.7	33.5	7.9	22.7	19.8	10.8	6xØ1 (M20)	42.4	94.7	4418	B180D
		355M/L	430		5"	4"	16.2	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	97.0	6003	RWN198B
		200L		40	5"	4"	16.2	18.6	28.0	26.4	63.0	23.6	7.9	19.2	14.3	10.8	6xØ0,75 (M16)	26.9	70.7	1532	B125C
		225S/M		50	5"	4"	16.2	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	75.4	1876	B140C
		225S/M		60	5"	4"	16.2	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	75.4	1953	B140C
	5	355M/L	430		5"	4"	19.8	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	99.6	6087	RWN198B
		355M/L	480		5"	4"	19.8	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	99.6	6087	RWN198B
		355A/B	540		5"	4"	19.8	18.6	39.4	36.6	92.5	36.4	9.8	22.7	23.0	10.8	6xØ1,14 (M24)	51.5	107.3	6768	RWN198B
		225S/M		50	5"	4"	19.8	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	78.9	1960	B140C
		225S/M		60	5"	4"	19.8	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30.0	78.9	2037	B140C
		250S/M		75	5"	4"	19.8	18.6	28.3	26.4	68.9	26.6	7.9	19.2	15.7	10.8	6xØ0,75 (M16)	31.3	82.0	2277	B160C
	6	225S/M		60	5"	4"	23.3	18.6	28.3	26.4	76.8	30.5	7.9	29.8	14.9	10.8	6xØ0,75 (M16)	30.0	83.4	2154	B140C
		250S/M		75	5"	4"	23.3	18.6	28.3	26.4	78.7	31.5	7.9	29.8	15.7	10.8	6xØ0,75 (M16)	31.3	86.5	2394	B160C
		280S/M		100	5"	4"	23.3	18.6	32.3	30.3	80.7	32.5	7.9	29.8	17.4	10.8	6xØ1 (M20)	35.7	90.7	2765	B180E
	7	250S/M		75	5"	4"	26.9	18.6	28.3	26.4	78.7	31.5	7.9	29.8	15.7	10.8	6xØ0,75 (M16)	31.3	89.1	2478	B160C
		280S/M		100	5"	4"	26.9	18.6	32.3	30.3	80.7	32.5	7.9	29.8	17.4	10.8	6xØ1 (M20)	35.7	93.3	2848	B180E

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPR-AS-60-100-us_a_td

MPD SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPD-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																				
	MPD Size	Pump dimensions						Feet dimensions									Shaft end				
		DNS	DND	e	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
100	5"	4"	14.5	18.6	9.3	10.8	10.8	18.6	2.8	1.4	1.4	19.8	17.7	4.9	0.9	0.9	1.8	1.9	0.6	4.3	

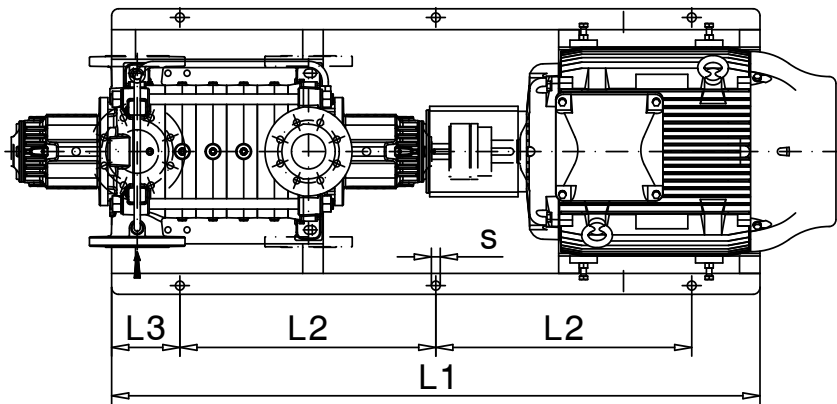
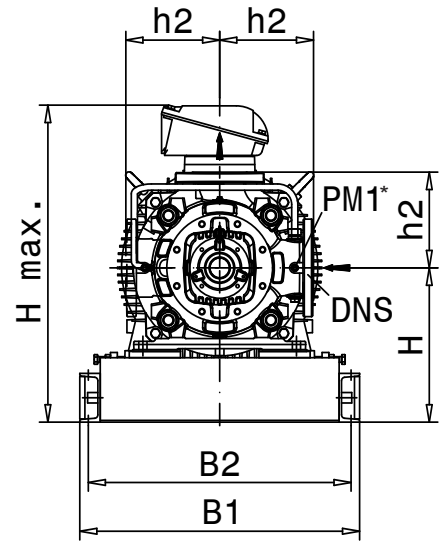
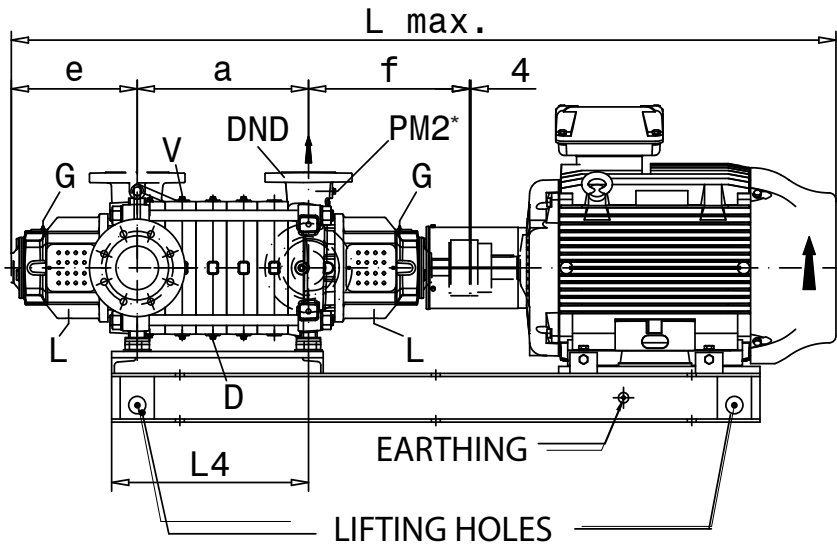
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPD-60-100-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
100	a (inch)	5.59	9.13	12.68	16.22	19.76	23.31	26.85									
	m (inch)	5.59	9.13	12.68	16.22	19.76	23.31	26.85									
	G (lb)	593	677	761	844	928	1012	1096									

e-MPD-60-50_stage_a_td

MPD SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPD-AS-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

MPD SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz

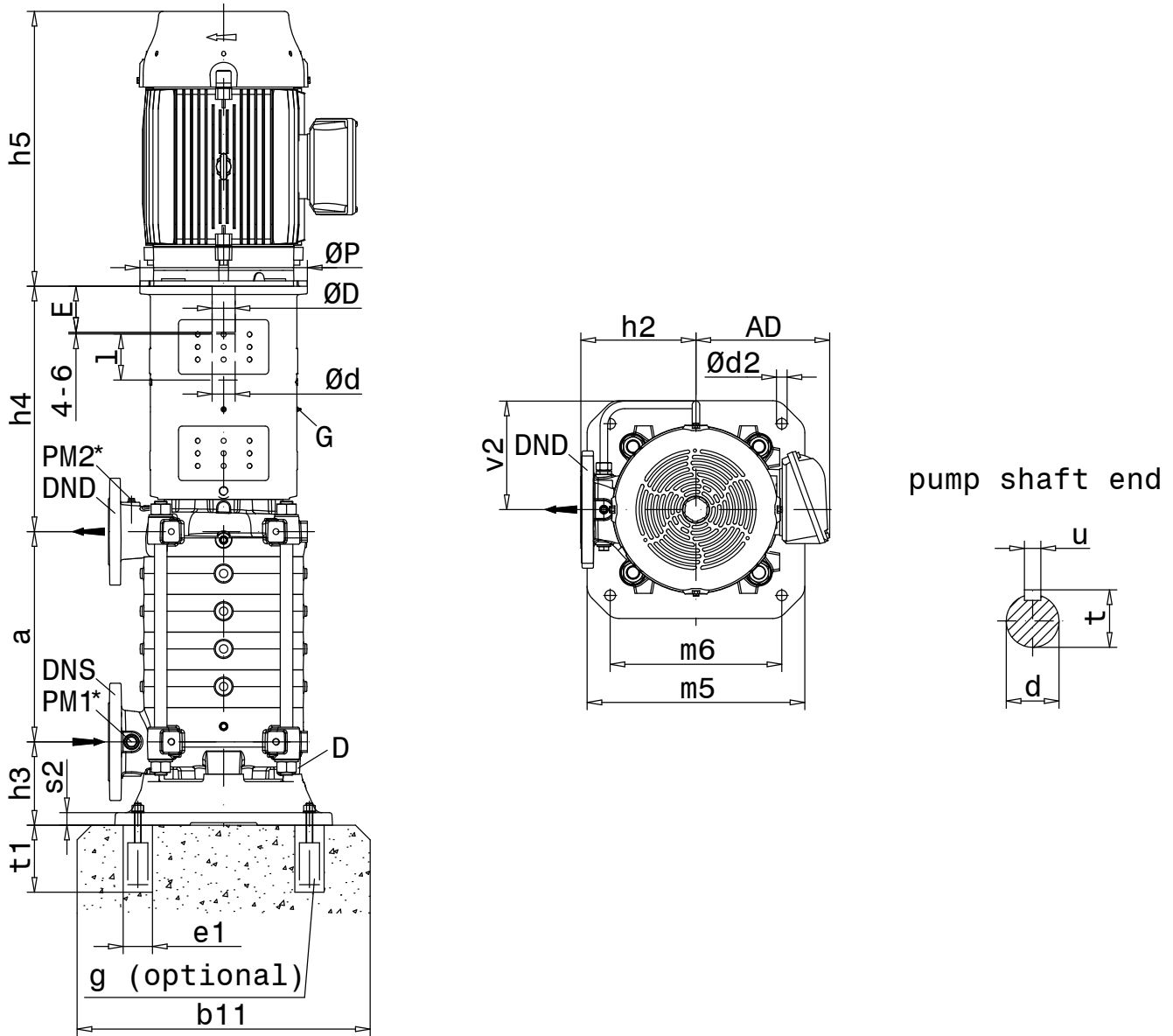
Dimensions and weights in the next table are for reference only and correspond to IEC motor frames. NEMA corresponding dimensions and weights to be published soon. Please contact factory for more information.

PUMP-TYPE MPD Size	NUMBER OF STAGES	IEC MOTOR FRAME	3550 [rpm]	1750 [rpm]	DIMENSIONS [inch]																WEIGHT G [lb]	COUPLING TYPE
					DNS	DND	a	e	f	B1	B2	L1	L2	L3	L4	H	h2	s	Hmax	Lmax		
100	1	280S/M	100	-	5"	4"	5.6	14.5	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	81	2458	B160C
		280S/M	125	-	5"	4"	5.6	14.5	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	81	2524	B160C
		132S/M	-	10	5"	4"	5.6	14.5	18.6	28.0	26.4	47.2	15.7	7.9	12.1	14.1	10.8	6xØ0,75 (M16)	24.9	58	956.8	B110E
		160M	-	15	5"	4"	5.6	14.5	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	62.6	1014	B110F
	2	280S/M	100	-	5"	4"	9.1	14.5	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	84.6	2542	B160C
		280S/M	125	-	5"	4"	9.1	14.5	18.6	32.3	30.3	63.0	23.6	7.9	12.1	17.4	10.8	6xØ1 (M20)	35.7	84.6	2608	B160C
		315S/M	150	-	5"	4"	9.1	14.5	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	91.4	3243	B160C
		315S/M	180	-	5"	4"	9.1	14.5	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	91.4	3353	B160C
		315S/M	220	-	5"	4"	9.1	14.5	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	91.4	3640	B160C
		160M	-	15	5"	4"	9.1	14.5	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	66.2	1098	B110F
		160L	-	20	5"	4"	9.1	14.5	18.6	28.0	26.4	53.1	18.7	7.9	12.1	14.3	10.8	6xØ0,75 (M16)	25.1	66.2	1195	B110F
		180L	-	30	5"	4"	9.1	14.5	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	70	1349	B110G
	3	315S/M	220	-	5"	4"	12.7	14.5	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	40.7	94.9	3724	B160C
		315L	270	-	5"	4"	12.7	14.5	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	42.4	99.2	3997	B180D
		315L	340	-	5"	4"	12.7	14.5	18.6	33.9	31.9	74.8	29.5	7.9	15.6	19.8	10.8	6xØ1 (M20)	42.4	99.2	4328	B180D
		180M	-	25	5"	4"	12.7	14.5	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	72.1	1396	B110G
		180L	-	30	5"	4"	12.7	14.5	18.6	28.0	26.4	57.1	20.7	7.9	15.6	14.3	10.8	6xØ0,75 (M16)	25.4	73.6	1433	B110G
		200L	-	40	5"	4"	12.7	14.5	18.6	28.0	26.4	63.0	23.6	7.9	19.2	14.3	10.8	6xØ0,75 (M16)	26.9	76.1	1543	B125C
	4	315L	270	-	5"	4"	16.2	14.5	18.6	33.9	31.9	82.7	33.5	7.9	22.7	19.8	10.8	6xØ1 (M20)	42.4	103	4182	B180D
		315L	340	-	5"	4"	16.2	14.5	18.6	33.9	31.9	82.7	33.5	7.9	22.7	19.8	10.8	6xØ1 (M20)	42.4	103	4513	B180D
		355M/L	430	-	5"	4"	16.2	14.5	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	105	6098	RWN198B
		200L	-	40	5"	4"	16.2	14.5	18.6	28.0	26.4	63.0	23.6	7.9	19.2	14.3	10.8	6xØ0,75 (M16)	26.9	79.7	1627	B125C
		225S/M	-	50	5"	4"	16.2	14.5	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30	84.4	1971	B140C
		225S/M	-	60	5"	4"	16.2	14.5	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30	84.4	2048	B140C
	5	355M/L	430	-	5"	4"	19.8	14.5	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	109	6182	RWN198B
		355M/L	480	-	5"	4"	19.8	14.5	18.6	39.4	36.6	88.6	36.4	7.9	22.7	23.0	10.8	6xØ1,14 (M24)	47.4	109	6182	RWN198B
		355A/B	540	-	5"	4"	19.8	14.5	18.6	39.4	36.6	92.5	36.4	9.8	22.7	23.0	10.8	6xØ1,14 (M24)	51.5	116	6863	RWN198B
		225S/M	-	50	5"	4"	19.8	14.5	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30	87.9	2055	B140C
		225S/M	-	60	5"	4"	19.8	14.5	18.6	28.3	26.4	66.9	25.6	7.9	19.2	14.9	10.8	6xØ0,75 (M16)	30	87.9	2132	B140C
		250S/M	-	75	5"	4"	19.8	14.5	18.6	28.3	26.4	68.9	26.6	7.9	19.2	15.7	10.8	6xØ0,75 (M16)	31.3	91	2372	B160C
	6	225S/M	-	60	5"	4"	23.3	14.5	18.6	28.3	26.4	76.8	30.5	7.9	29.8	14.9	10.8	6xØ0,75 (M16)	30	91.5	2249	B140C
		250S/M	-	75	5"	4"	23.3	14.5	18.6	28.3	26.4	78.7	31.5	7.9	29.8	15.7	10.8	6xØ19 (M16)	31.3	94.6	2489	B160C
		280S/M	-	100	5"	4"	23.3	14.5	18.6	32.3	30.3	80.7	32.5	7.9	29.8	17.4	10.8	6xØ1 (M20)	35.7	98.7	2859	B180E
	7	250S/M	-	75	5"	4"	26.9	14.5	18.6	28.3	26.4	78.7	31.5	7.9	29.8	15.7	10.8	6xØ0,75 (M16)	31.3	98.1	2573	B160C
		280S/M	-	100	5"	4"	26.9	14.5	18.6	32.3	30.3	80.7	32.5	7.9	29.8	17.4	10.8	6xØ1 (M20)	35.7	102	2943	B180E

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPD-AS-60-100-us_a_td

MPV SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz



* Adaptors for US dimensions outlets are available upon request.

e-MPV-US_a_DD

PUMP TYPE MPV Size	DIMENSIONS [inch]																
	Pump dimensions											Base dimensions					
	DNS	DND	h2	h3	d2	m5	m6	s2	v2	d	t	u	l	b11	e1	t1	g
100	5"	4"	10.8	7.8	1.0	20.5	16.1	1.2	10.8	1.8	1.9	0.6	4.3	28.3	3.5	11.8	1.0

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPV-60-100-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
100	a (inch)	5.59	9.13	12.68	16.22	19.76	23.31	26.85									
	G1 (lb)	520	604	688	772	855	939	1023									

e-MPV-60-100 stage a td

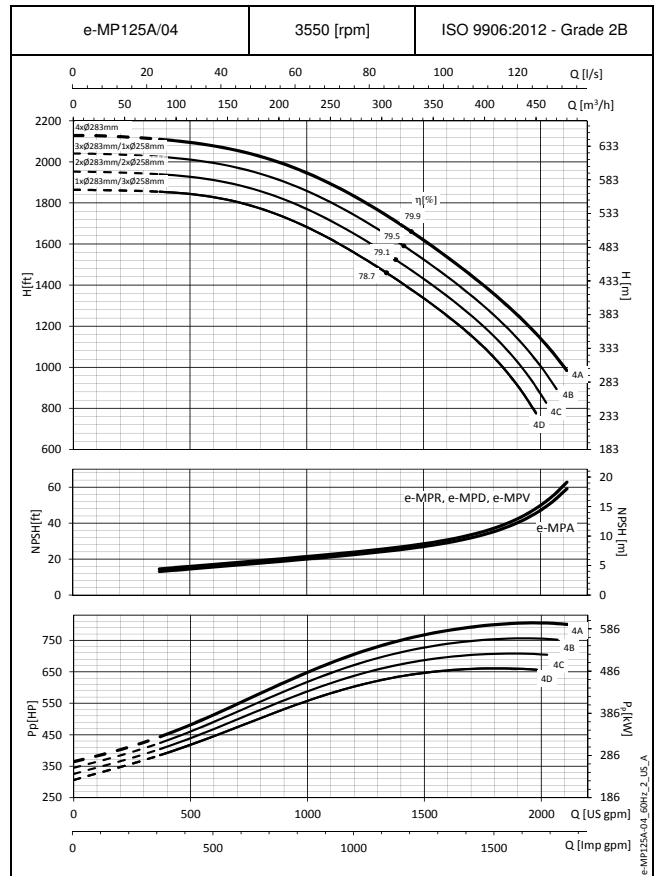
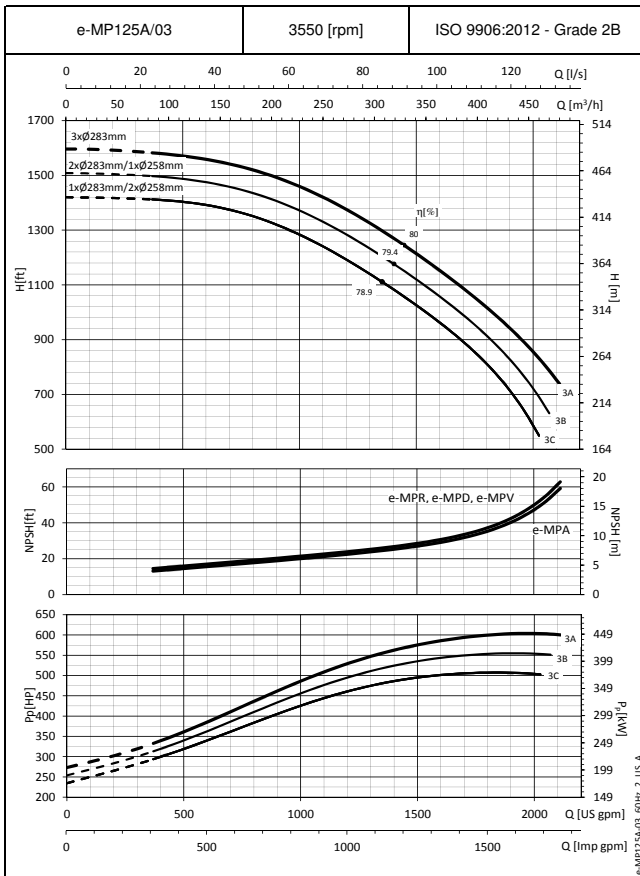
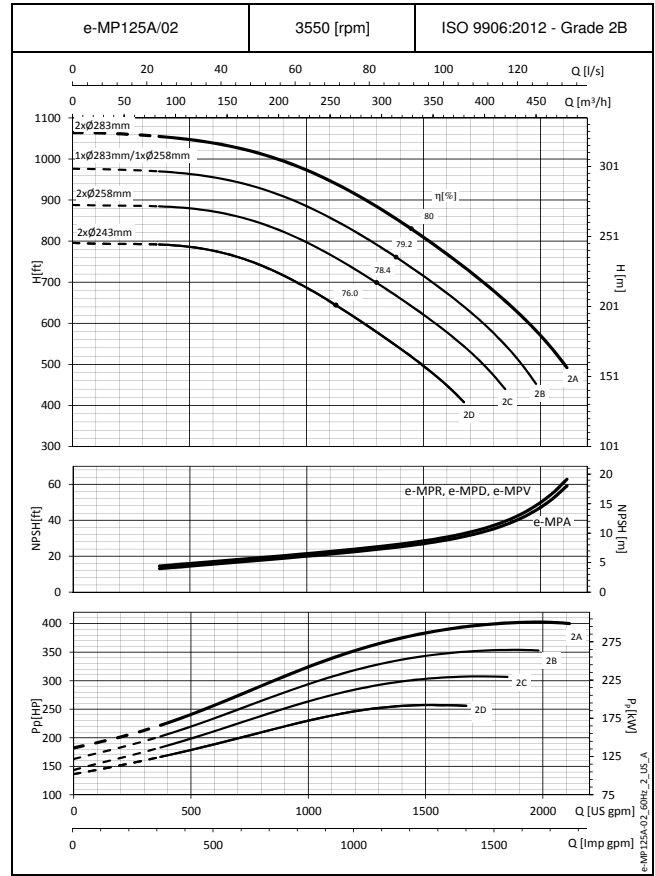
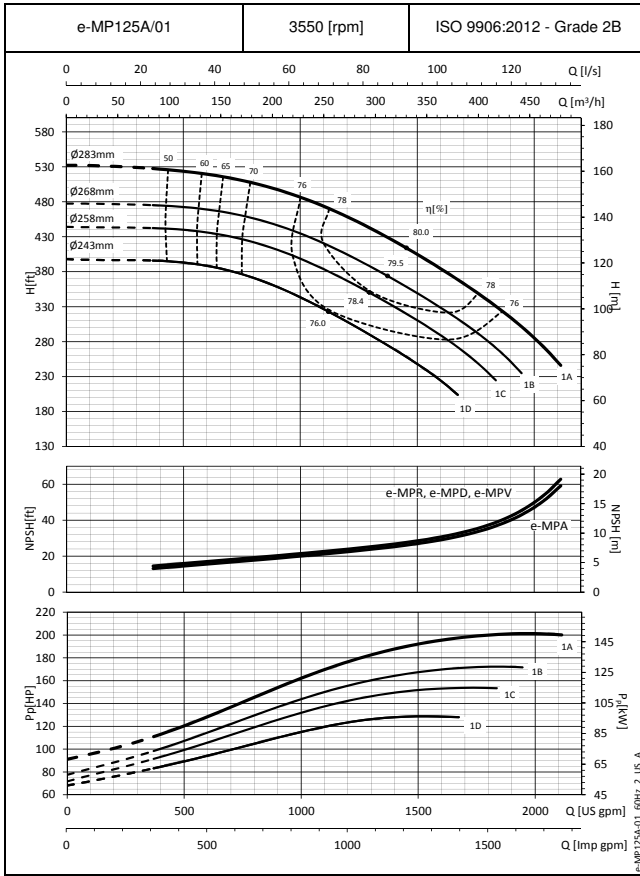
MPV SERIES - DN100 - DIMENSIONS AND WEIGHTS AT 60 Hz

NEMA Size	Speed		Pump dimensions		Motor dimensions				
	3600 [rpm]	1800 [rpm]	h4	G2	h5	P	D	E	AD
	[HP]	[HP]	[in]	[lb]	[in]	[in]	[in]	[in]	[in]
284 TD	-	25	23.03	145	25.93	14	1.875	4.38	13.11
284 TSD	25	-	-	-	21.99	14	1.625	3.25	11.52
286 TD	-	30	23.03	145	25.93	14	1.875	4.38	13.11
286 TSD	30	-	-	-	21.99	14	1.625	3.25	11.52
324 TD	-	40	24.25	169	28.35	18	2.125	5.25	14.13
324 TSD	40	-	-	-	27.78	18	1.875	3.75	14.11
326 TD	-	50	24.25	169	28.35	18	2.125	5.25	14.13
326 TSD	50	-	-	-	27.78	18	1.875	3.75	14.11
364 TD	-	60	24.25	169	30.34	18	2.375	5.88	18.06
364 TSD	60	-	23.03	162	27.35	18	1.875	3.75	18.06
365 TD	-	75	24.25	169	30.34	18	2.375	5.88	18.06
365 TSD	75	-	23.03	162	27.35	18	1.875	3.75	18.06
405 TD	-	100	25.63	260	33.83	22	2.875	7.25	19.31
405 TSD	100	-	24.25	205	33.83	22	2.125	4.25	19.31
444 TD	-	125	27.48	275	38.89	22	3.375	8.50	23.38
444 TSD	125	-	24.25	205	38.89	22	2.375	4.75	23.38
445 TD	-	150	27.48	275	38.89	22	3.375	8.50	23.38
445 TSD	150	-	24.25	205	38.89	22	2.375	4.75	23.38
447 TD	-	200	-	-	41.77	22	3.375	8.50	23.37
447 TSD	200	-	24.25	205	41.77	22	2.375	4.75	23.37
449 TD	-	250	-	-	46.77	22	3.375	8.50	23.37
449 TSD	250	-	24.25	205	46.77	22	2.375	4.75	23.37
449 TSD	300	-	24.25	205	46.77	22	2.375	4.75	23.37
449 TSD	350	-	24.25	205	46.77	22	2.375	4.75	23.37

Total pump unit weight G = weight G1 + weight G2 + weight G3 (±5%)

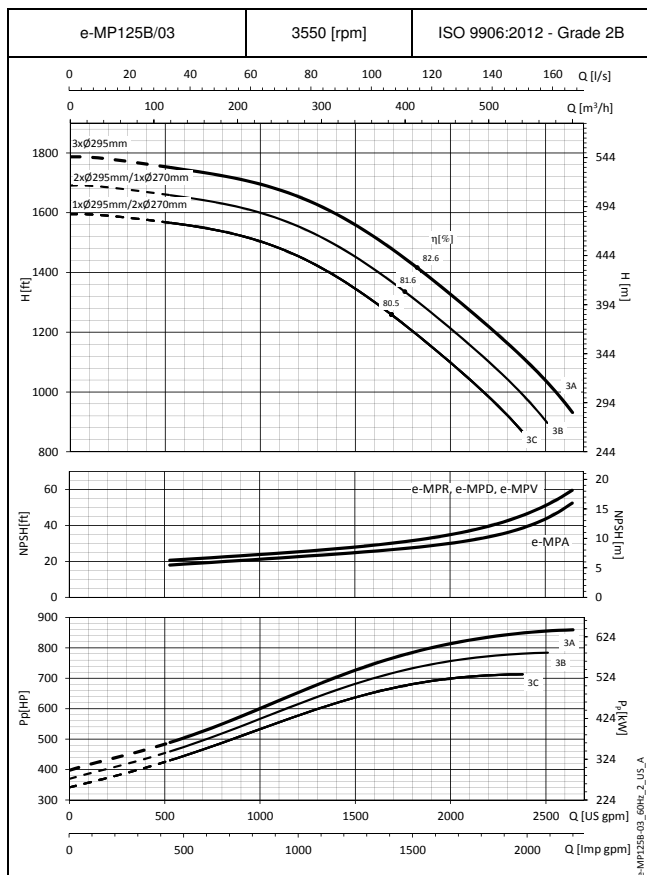
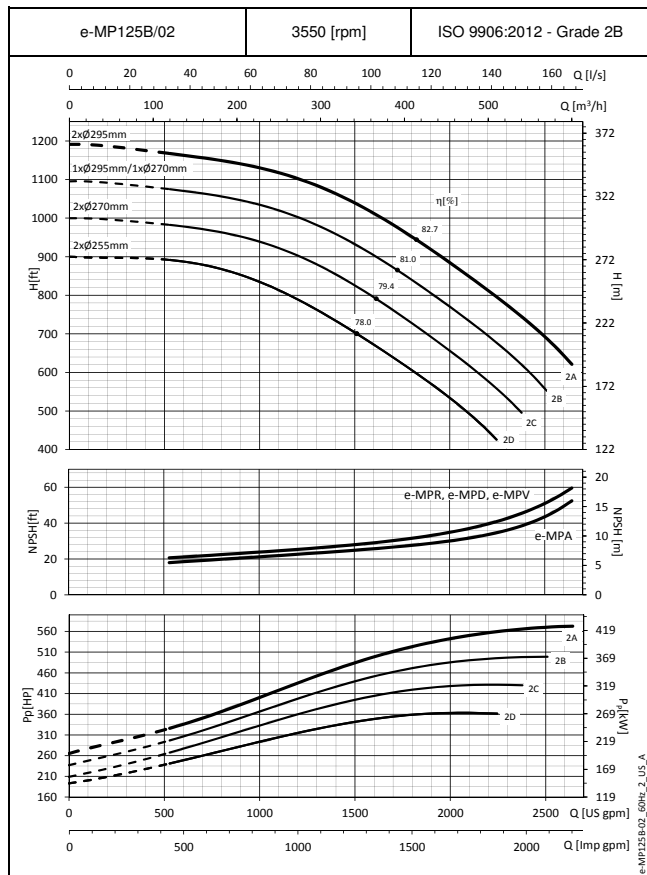
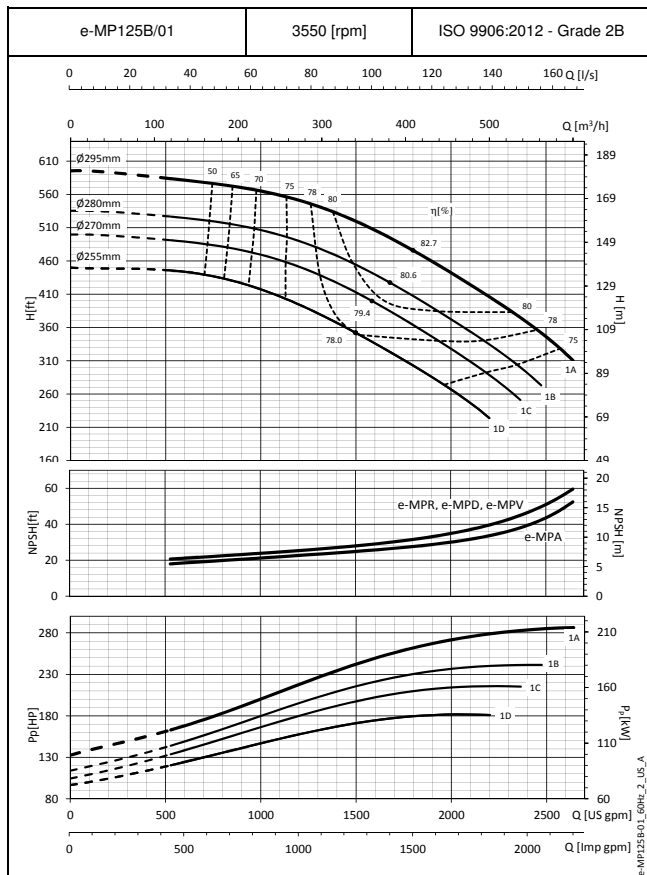
e-MPV-100-AS-us_a_td

e-MP125A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



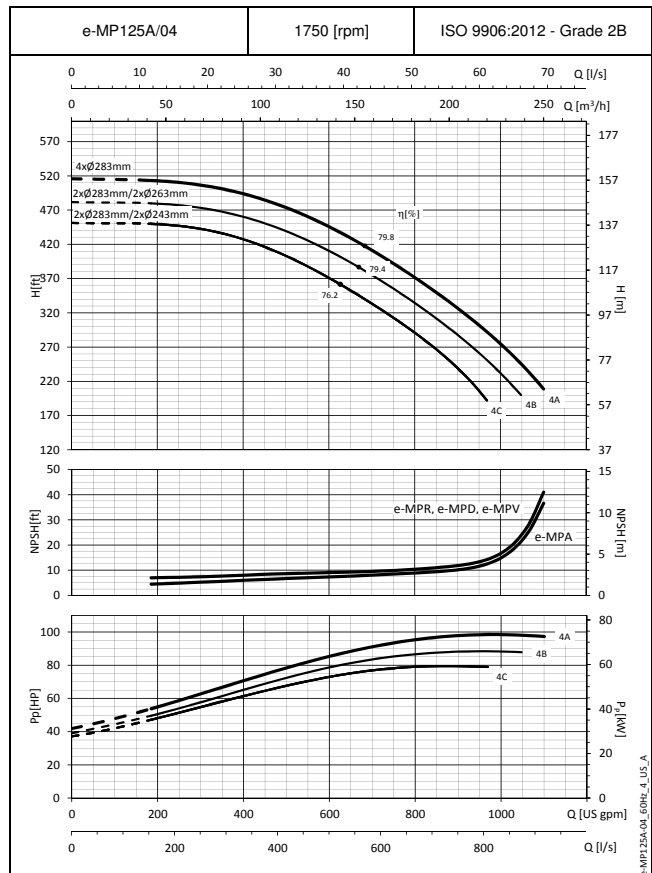
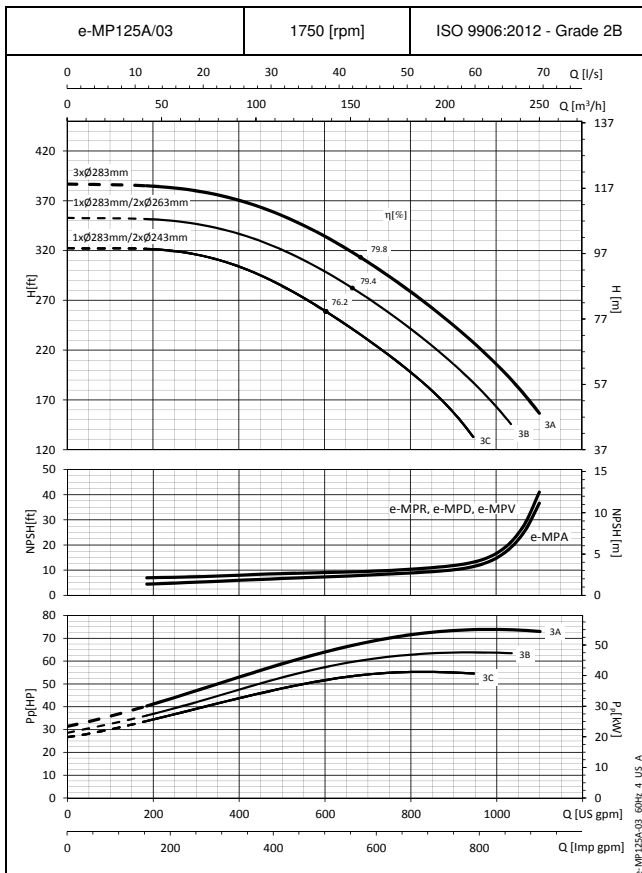
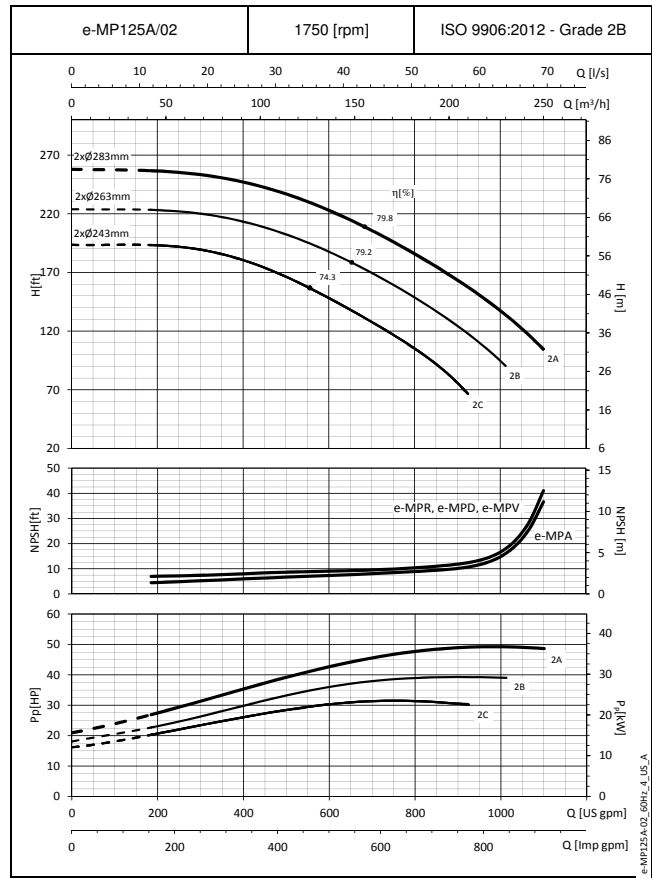
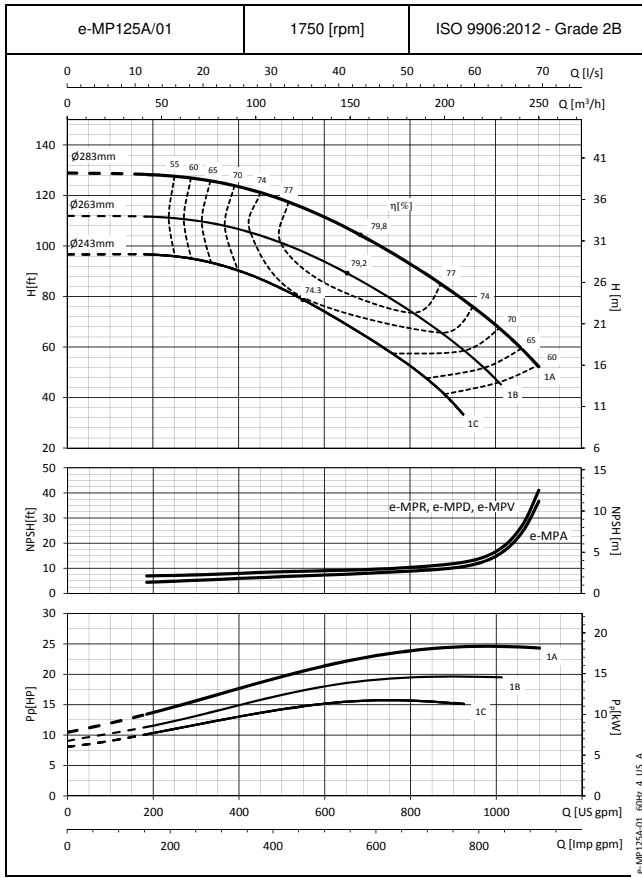
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP125B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 2 POLES



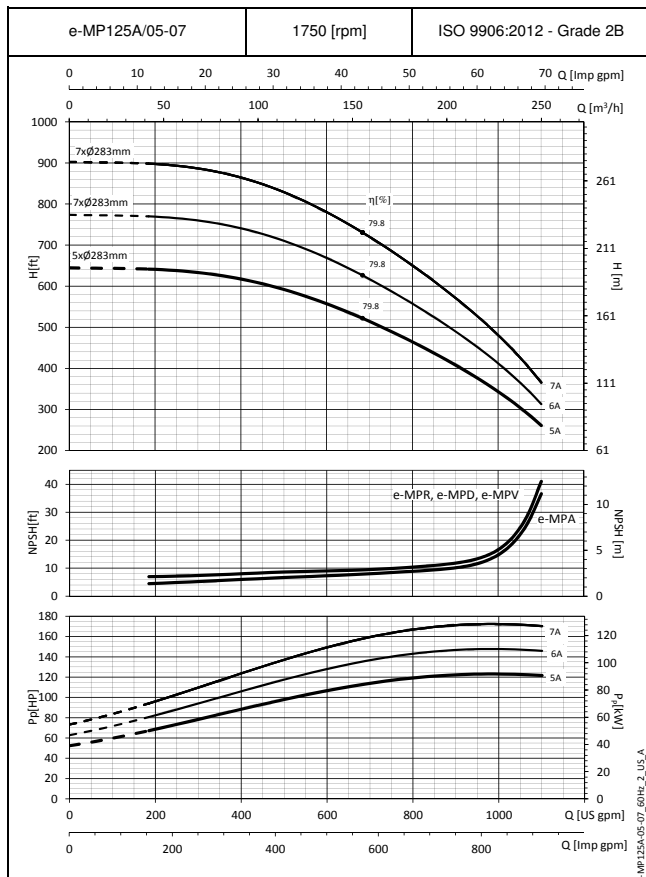
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP125A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



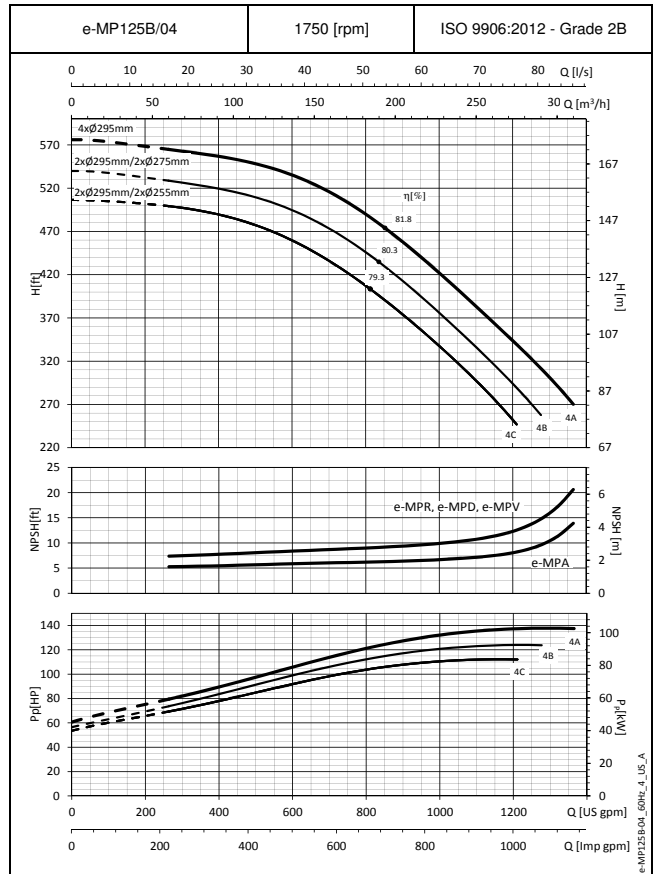
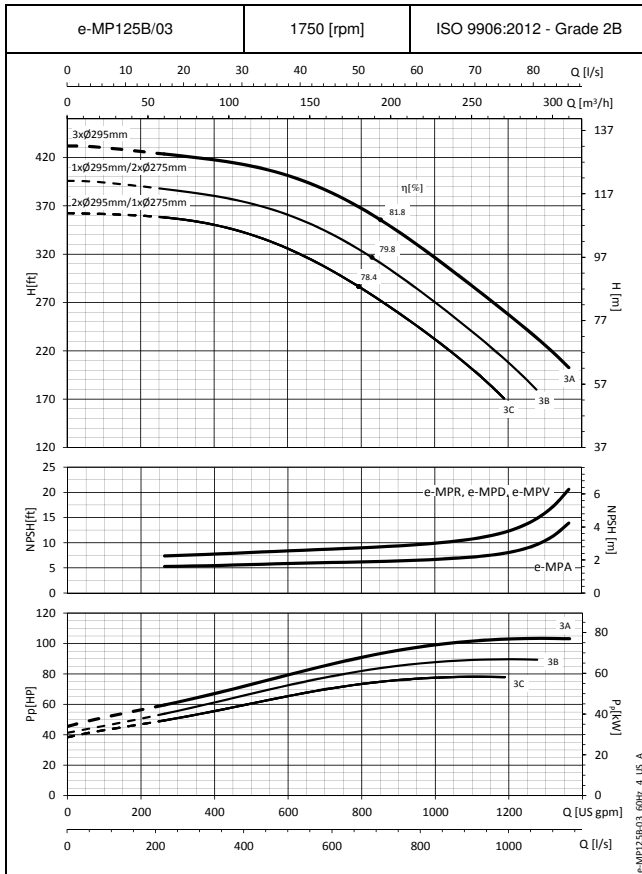
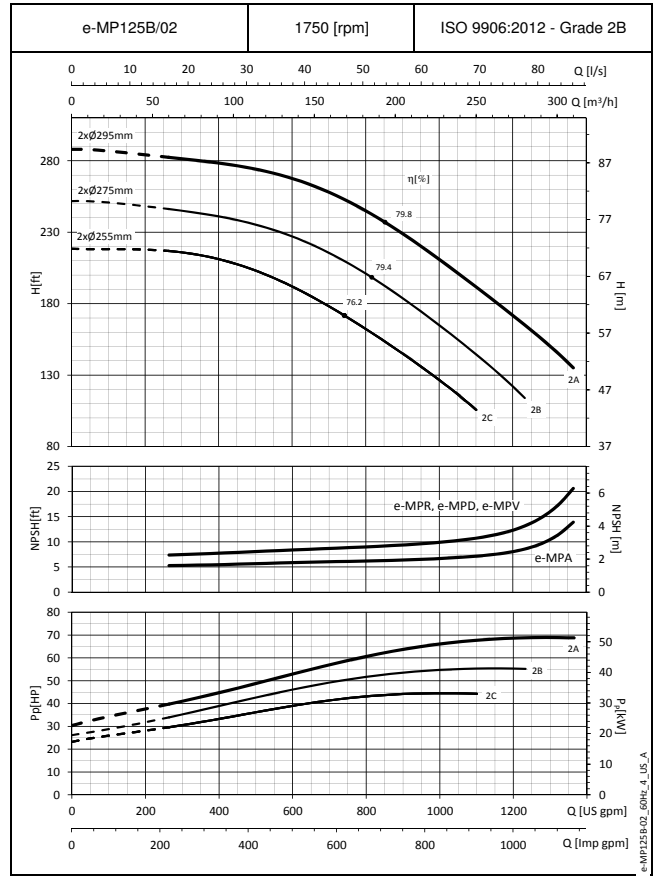
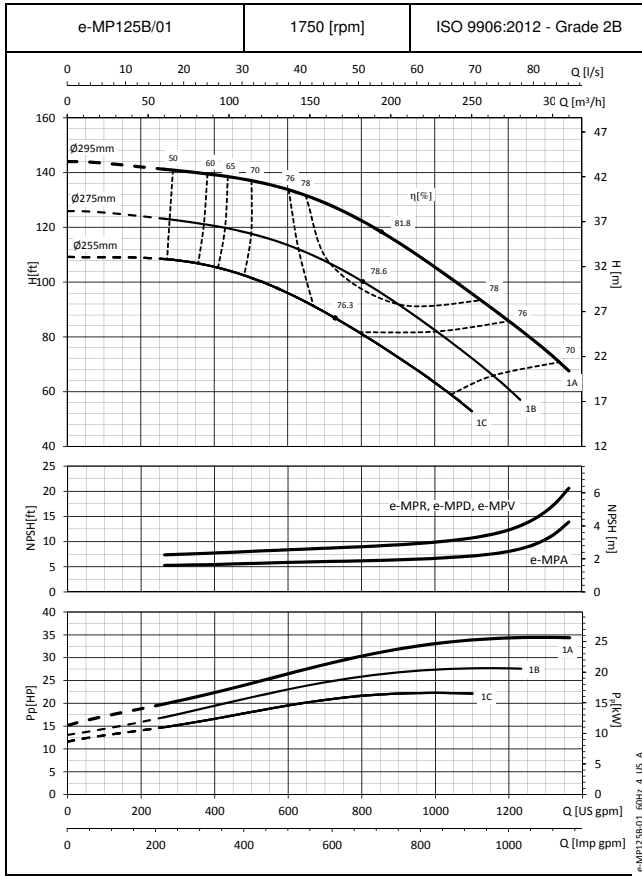
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP125A SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



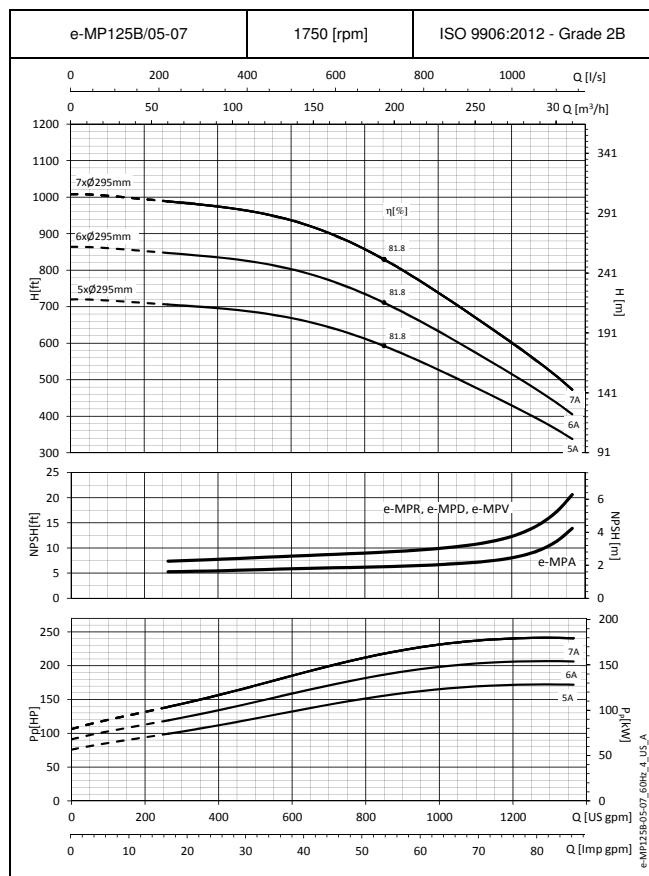
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP125B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



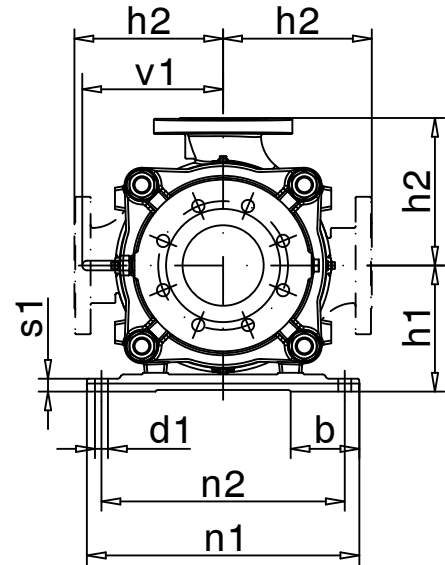
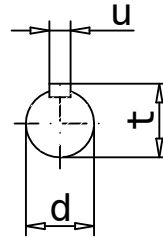
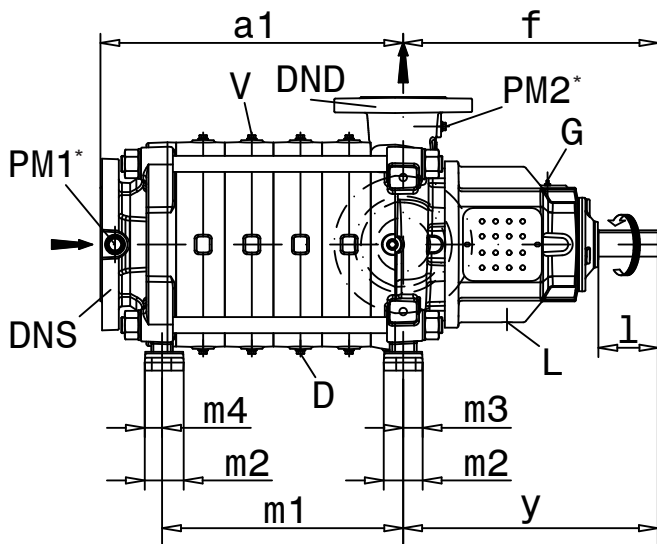
These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

e-MP125B SERIES - OPERATING CHARACTERISTICS AT 60 Hz, 4 POLES



These performances are valid for cold water with density $\rho = 62.42 \text{ lb/ft}^3$ and viscosity $\nu = 1 \text{ cSt}$.

MPA SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G 1/4
PM2	Pressure gauge	G 1/4
D	Drain	G 1/4
G	Grease nipple	M8
L	Leakage	G 1/2
V	Vent	G 1/4

e-MPA-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

PUMP TYPE	DIMENSIONS [inch]																				
	MPA Size	Pump dimensions						Feet dimensions								Shaft end					
		DNS	DND	f	h1	h2	v1	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l	
125	8"	5"	19.2	11.8	12.8	12.8	19.2	3.5	1.8	1.8	24.0	22.0	8.2	1.0	2.0	2.0	2.2	0.6	4.3		

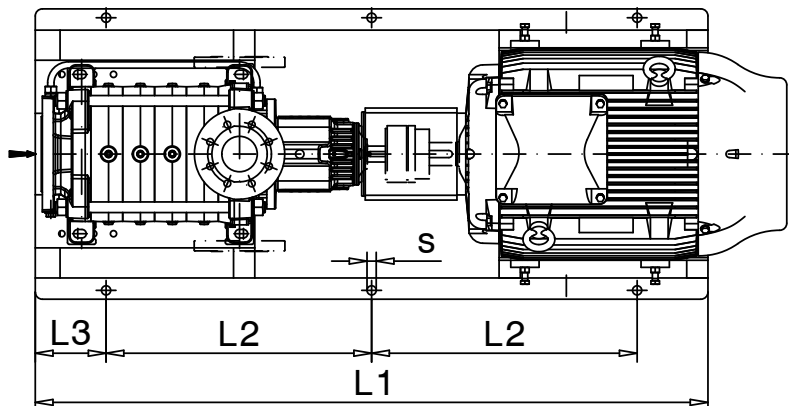
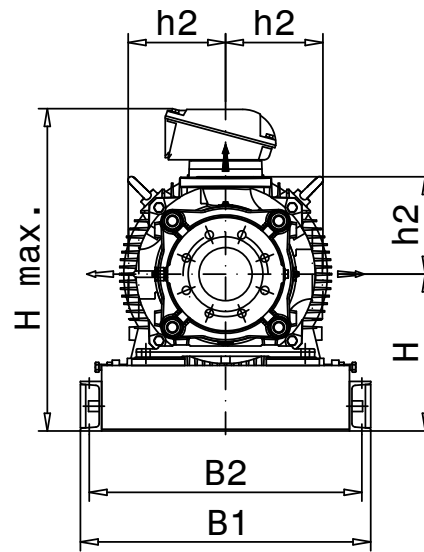
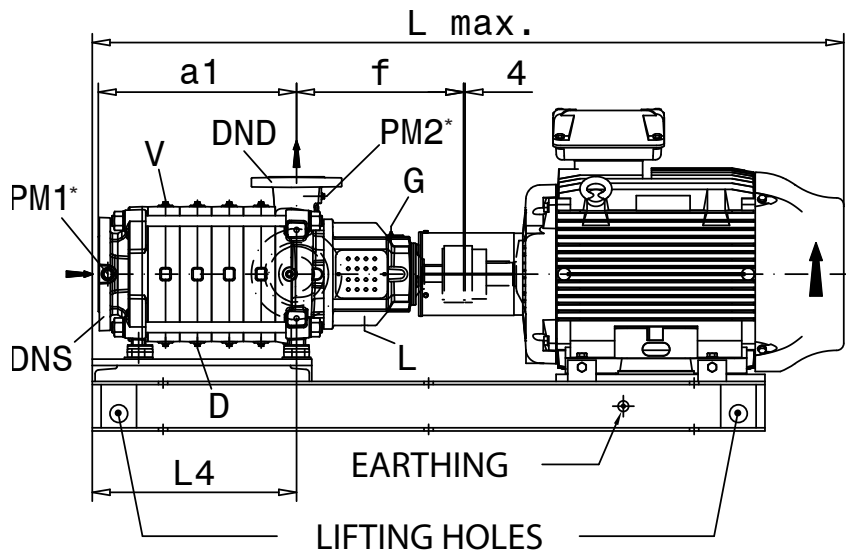
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPA-60-125-us_a_td

Size	Number of stages	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
125	a1 (inch)	15.28	19.69	24.09	28.50	32.91	37.32									
	m1 (inch)	8.62	13.03	17.44	21.85	26.26	30.67									
	G (lb)	195.04	225.44	255.83	286.22	316.61	347.00									

e-MPA-60-125_stage_a_td

MPA SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPA-AS-EN a DD

* Adaptors for US dimensions outlets are available upon request.

MPA SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz

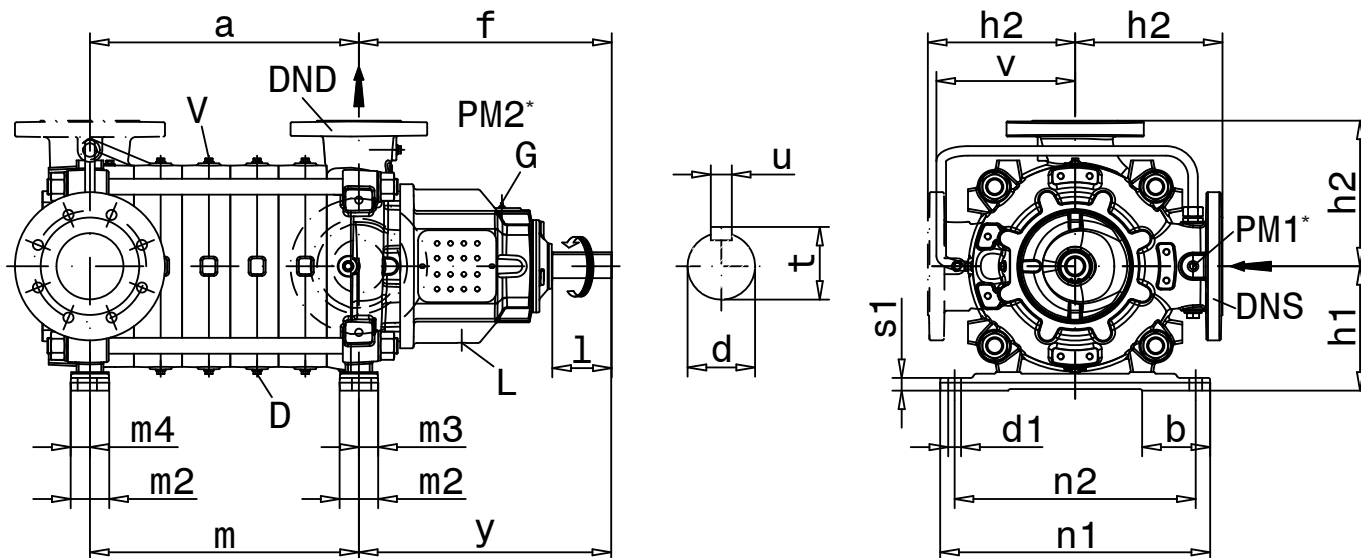
Dimensions and weights in the next table are for reference only and correspond to IEC motor frames. NEMA corresponding dimensions and weights to be published soon. Please contact factory for more information.

PUMP-TYPE MPA Size	NUMBER OF STAGES	IEC MOTOR FRAME	3550 [rpm] [hp]	1750 [rpm] [hp]	DIMENSIONS [inch]														WEIGHT G [lb]	COUPLING TYPE		
					DNS	DND	a1	f	B1	B2	L1	L2	L3	L4	H	h2	s	Hmax			Lmax	
125	2	315L	340		8"	5"	15.3	19.2	33.9	31.9	76.8	30.5	7.9	15.4	20.0	12.8	6xØ1,14 (M20)	42.6	88.0	4486	B180F	
		355M/L	430		8"	5"	15.3	19.2	39.4	36.6	80.7	32.5	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	47.6	90.3	6061	RWN198C	
		355M/L	480		8"	5"	15.3	19.2	39.4	36.6	80.7	32.5	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	47.6	90.3	6061	RWN198C	
		355A/B	540		8"	5"	15.3	19.2	39.4	36.6	86.6	35.4	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	51.7	98.0	6757	RWN198C	
		355A/B	610		8"	5"	15.3	19.2	39.4	36.6	86.6	35.4	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	51.7	98.0	7108	RWS228C	
		200L		40	8"	5"	15.3	19.2	29.5	28.0	59.1	21.7	7.9	15.4	16.9	12.8	6xØ0,75 (M16)	29.6	64.9	1768	B125F	
		225S/M		50	8"	5"	15.3	19.2	29.9	28.0	61.0	22.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	32.8	69.6	2103	B140D	
		225S/M		60	8"	5"	15.3	19.2	29.9	28.0	61.0	22.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	32.8	69.6	2180	B140D	
	250S/M		75	8"	5"	15.3	19.2	29.9	28.0	65.0	24.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	33.3	72.7	2416	B160D		
	3	355A/B	540		8"	5"	19.7	19.2	39.4	36.6	90.6	35.4	9.8	19.8	23.1	12.8	6xØ1,14 (M24)	51.7	102.4	6927	RWN198C	
		355A/B	610		8"	5"	19.7	19.2	39.4	36.6	90.6	35.4	9.8	19.8	23.1	12.8	6xØ1,14 (M24)	51.7	102.4	7277	RWS228C	
		400J/H	680		8"	5"	19.7	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	42.0	117.9	9365	RWS228D	
		400J/H	760		8"	5"	19.7	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	42.0	117.9	9365	RWS228D	
		400J/H	860		8"	5"	19.7	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	42.0	117.9	9553	RWS228D	
		450J/H	980		8"	5"	19.7	19.2	49.6	46.1	106.3	41.3	11.8	19.8	30.8	12.8	6xØ1,14 (M24)	52.8	124.7	12939	RWS228E	
		225S/M		60	8"	5"	19.7	19.2	29.9	28.0	65.0	24.6	7.9	19.8	17.6	12.8	6xØ0,75 (M16)	32.8	74.0	2346	B140D	
		250S/M		75	8"	5"	19.7	19.2	29.9	28.0	68.9	26.6	7.9	19.8	17.6	12.8	6xØ0,75 (M16)	33.3	77.1	2584	B160D	
	4	280S/M	100		8"	5"	19.7	19.2	32.3	30.3	70.9	27.6	7.9	19.8	18.4	12.8	6xØ1 (M20)	36.7	81.3	2912	B180G	
		280S/M	125		8"	5"	19.7	19.2	32.3	30.3	70.9	27.6	7.9	19.8	18.4	12.8	6xØ1 (M20)	36.7	81.3	3067	B180G	
		400J/H	760		8"	5"	24.1	19.2	44.9	42.1	106.3	41.3	11.8	24.2	27.2	12.8	6xØ1,14 (M24)	42.0	122.3	9663	RWS228D	
		280S/M	100		8"	5"	24.1	19.2	32.3	30.3	76.8	30.5	7.9	24.2	18.4	12.8	6xØ1 (M20)	36.7	85.7	3095	B180G	
		280S/M	125		8"	5"	24.1	19.2	32.3	30.3	76.8	30.5	7.9	24.2	18.4	12.8	6xØ1 (M20)	36.7	85.7	3250	B180G	
		315S/M	150		8"	5"	24.1	19.2	33.9	31.9	86.6	35.4	7.9	24.2	20.0	12.8	6xØ1 (M20)	40.9	93.7	3977	B200E	
		5	315S/M	150		8"	5"	28.5	19.2	33.9	31.9	90.6	35.4	9.8	28.6	20.0	12.8	6xØ1 (M20)	40.9	98.1	4131	B200E
			315S/M	220		8"	5"	28.5	19.2	33.9	31.9	90.6	35.4	9.8	28.6	20.0	12.8	6xØ1 (M20)	40.9	98.1	4418	B200E
	6	315S/M	180		8"	5"	32.9	19.2	33.9	31.9	94.5	37.4	9.8	33.0	20.0	12.8	6xØ1 (M20)	40.9	102.5	4418	B200E	
		315L	270		8"	5"	32.9	19.2	33.9	31.9	94.5	37.4	9.8	33.0	20.0	12.8	6xØ1 (M20)	42.6	107.0	4837	B200E	
	7	315S/M	220		8"	5"	37.3	19.2	33.9	31.9	98.4	39.4	9.8	37.4	20.0	12.8	6xØ1 (M20)	40.9	106.9	4727	B200E	
		315L	270		8"	5"	37.3	19.2	33.9	31.9	98.4	39.4	9.8	37.4	20.0	12.8	6xØ1 (M20)	42.6	111.5	4991	B200E	

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPA-AS-60-125-us_a_td

MPR SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPR-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

PUMP TYPE	DIMENSIONS [inch]																			
	MPR Size	Pump dimensions					Feet dimensions										Shaft end			
		DNS	DND	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
125	6"	5"	19.2	11.8	12.8	12.8	19.2	3.5	1.8	1.8	24.0	22.0	8.2	1.0	2.0	2.0	2.2	0.6	4.3	

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.

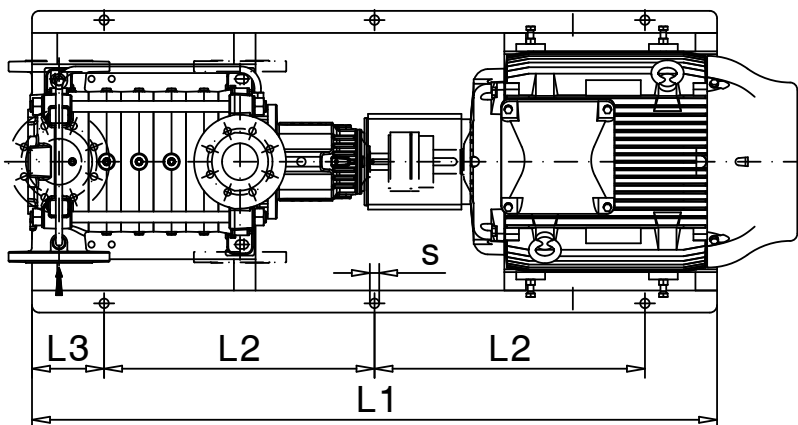
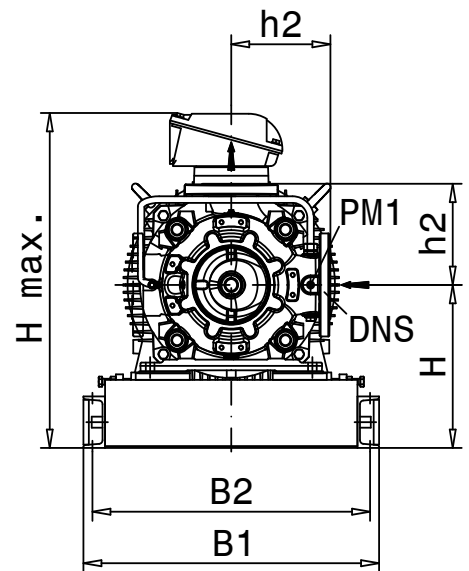
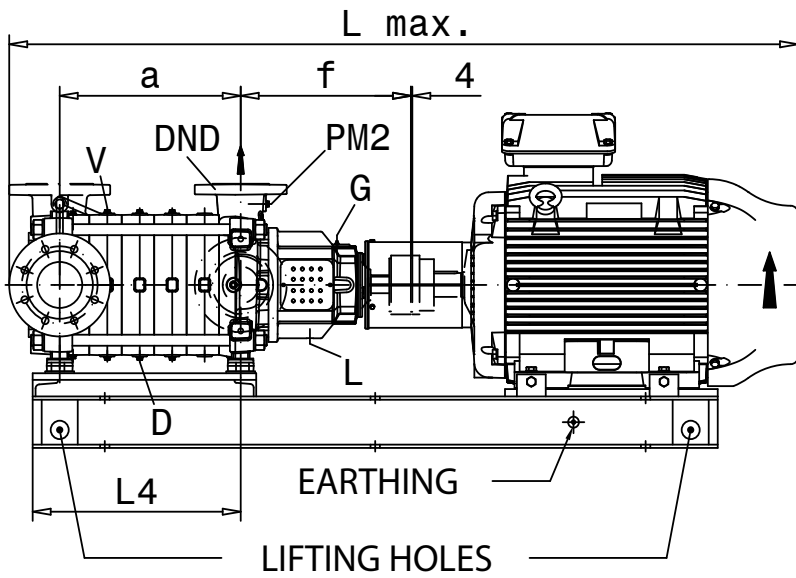
For flanges dimensions see drawing on pages 102-103.

e-MPR-60-125-us a td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
125	a (inch)	6.81	11.22	15.63	20.04	24.45	28.86	33.27									
	m (inch)	6.81	11.22	15.63	20.04	24.45	28.86	33.27									
	G (lb)	844	992	1140	1287	1435	1583	1731									

e-MPR-60-125_stage_a_td

MPR SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G $\frac{1}{4}$
PM2	Pressure gauge	G $\frac{1}{4}$
D	Drain	G $\frac{1}{4}$
G	Grease nipple	M8
L	Leakage	G $\frac{1}{2}$
V	Vent	G $\frac{1}{4}$

e-MPR-AS-EN_a_DD

MPR SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz

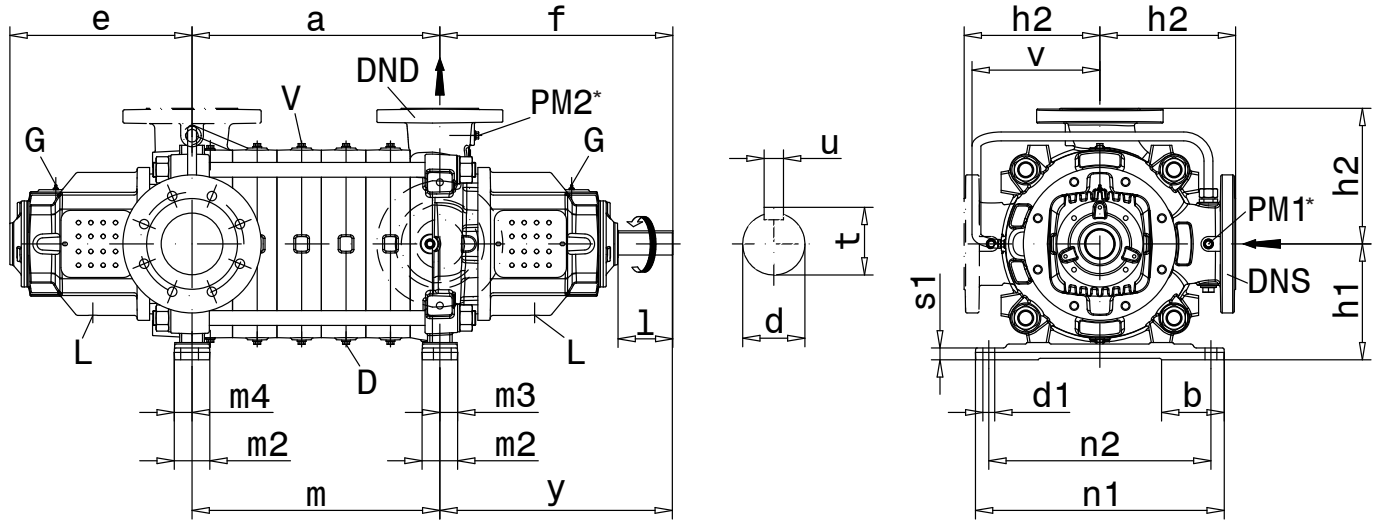
Dimensions and weights in the next table are for reference only and correspond to IEC motor frames. NEMA corresponding dimensions and weights to be published soon. Please contact factory for more information.

PUMP-TYPE MPR Size	NUMBER OF STAGES	IEC MOTOR FRAME	3550 [rpm]		1750 [rpm]		DIMENSIONS [inch]															WEIGHT G [lb]	COUPLING TYPE
			[hp]	[hp]	DNS	DND	a	f	B1	B2	L1	L2	L3	L4	H	h2	s	Hmax	Lmax				
125	1	315S/M	220	-	6"	5"	6.8	19.2	33.9	31.9	70.9	27.6	7.9	10.9	20.0	12.8	6xØ1 (M20)	1038	2069	3748	B160D		
		315L	340	-	6"	5"	6.8	19.2	33.9	31.9	70.9	27.6	7.9	10.9	20.0	12.8	6xØ1 (M20)	1083	2178	4350	B180F		
		180L	-	30	6"	5"	6.8	19.2	29.5	28.0	53.1	18.7	7.9	10.9	16.9	12.8	6xØ0,75 (M16)	753	1527	1541	B125E		
		200L	-	40	6"	5"	6.8	19.2	29.5	28.0	55.1	19.7	7.9	10.9	16.9	12.8	6xØ0,75 (M16)	753	1592	1645	B125F		
	2	315L	340	-	6"	5"	11.2	19.2	33.9	31.9	76.8	30.5	7.9	15.4	20.0	12.8	6xØ1 (M20)	1083	2290	4530	B180F		
		355M/L	430	-	6"	5"	11.2	19.2	39.4	36.6	80.7	32.5	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	1208	2349	6105	RWN198C		
		355M/L	480	-	6"	5"	11.2	19.2	39.4	36.6	80.7	32.5	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	1208	2349	6105	RWN198C		
		355A/B	540	-	6"	5"	11.2	19.2	39.4	36.6	86.6	35.4	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	1313	2544	6801	RWN198C		
		355A/B	610	-	6"	5"	11.2	19.2	39.4	36.6	86.6	35.4	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	1313	2544	7152	RWS228C		
		200L	-	40	6"	5"	11.2	19.2	29.5	28.0	59.1	21.7	7.9	15.4	16.9	12.8	6xØ0,75 (M16)	753	1704	1812	B125F		
		225S/M	-	50	6"	5"	11.2	19.2	29.9	28.0	61.0	22.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	832	1823	2147	B140D		
		225S/M	-	60	6"	5"	11.2	19.2	29.9	28.0	61.0	22.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	832	1823	2224	B140D		
	250S/M	-	75	6"	5"	11.2	19.2	29.9	28.0	65.0	24.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	846	1902	2460	B160D			
	3	355A/B	540	-	6"	5"	15.6	19.2	39.4	36.6	90.6	35.4	9.8	19.8	23.1	12.8	6xØ1,14 (M24)	1313	2656	6971	RWN198C		
		355A/B	610	-	6"	5"	15.6	19.2	39.4	36.6	90.6	35.4	9.8	19.8	23.1	12.8	6xØ1,14 (M24)	1313	2656	7322	RWS228C		
		400J/H	680	-	6"	5"	15.6	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	1067	3049	9409	RWS228D		
		400J/H	760	-	6"	5"	15.6	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	1067	3049	9409	RWS228D		
		400J/H	860	-	6"	5"	15.6	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	1067	3049	9597	RWS228D		
		450J/H	980	-	6"	5"	15.6	19.2	49.6	46.1	106.3	41.3	11.8	19.8	30.8	12.8	6xØ1,14 (M24)	1342	3223	12983	RWS228E		
		225S/M	-	60	6"	5"	15.6	19.2	29.9	28.0	65.0	24.6	7.9	19.8	17.6	12.8	6xØ0,75 (M16)	832	1935	2390	B140D		
		250S/M	-	75	6"	5"	15.6	19.2	29.9	28.0	68.9	26.6	7.9	19.8	17.6	12.8	6xØ0,75 (M16)	846	2014	2628	B160D		
		280S/M	-	100	6"	5"	15.6	19.2	32.3	30.3	70.9	27.6	7.9	19.8	18.4	12.8	6xØ1 (M20)	933	2120	2956	B180G		
		280S/M	-	125	6"	5"	15.6	19.2	32.3	30.3	70.9	27.6	7.9	19.8	18.4	12.8	6xØ1 (M20)	933	2120	3111	B180G		
	4	400J/H	760	-	6"	5"	20.0	19.2	44.9	42.1	106.3	41.3	11.8	24.2	27.2	12.8	6xØ1,14 (M24)	1067	3161	9707	RWS228D		
		280S/M	-	100	6"	5"	20.0	19.2	32.3	30.3	76.8	30.5	7.9	24.2	18.4	12.8	6xØ1 (M20)	933	2232	3139	B180G		
		280S/M	-	125	6"	5"	20.0	19.2	32.3	30.3	76.8	30.5	7.9	24.2	18.4	12.8	6xØ1 (M20)	933	2232	3294	B180G		
		315S/M	-	150	6"	5"	20.0	19.2	33.9	31.9	86.6	35.4	7.9	24.2	20.0	12.8	6xØ1 (M20)	1038	2435	4021	B200E		
	5	315S/M	-	150	6"	5"	24.4	19.2	33.9	31.9	90.6	35.4	9.8	28.6	20.0	12.8	6xØ1 (M20)	1038	2547	4176	B200E		
		315S/M	-	220	6"	5"	24.4	19.2	33.9	31.9	90.6	35.4	9.8	28.6	20.0	12.8	6xØ1 (M20)	1038	2547	4462	B200E		
	6	315S/M	-	180	6"	5"	28.9	19.2	33.9	31.9	94.5	37.4	9.8	33.0	20.0	12.8	6xØ1 (M20)	1038	2659	4462	B200E		
		315L	-	270	6"	5"	28.9	19.2	33.9	31.9	94.5	37.4	9.8	33.0	20.0	12.8	6xØ1 (M20)	1083	2774	4881	B200E		
	7	315S/M	-	220	6"	5"	33.3	19.2	33.9	31.9	98.4	39.4	9.8	37.4	20.0	12.8	6xØ1 (M20)	1038	2771	4771	B200E		
		315L	-	270	6"	5"	33.3	19.2	33.9	31.9	98.4	39.4	9.8	37.4	20.0	12.8	6xØ1 (M20)	1083	2886	5035	B200E		

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPR-AS-60-125-us_a_td

MPD SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

* Adaptors for US dimensions outlets are available upon request.

e-MPD-EN_a_DD

PUMP TYPE	DIMENSIONS [inch]																				
	MPD Size	Pump dimensions							Feet dimensions							Shaft end					
		DNS	DND	e	f	h1	h2	v	y	m2	m3	m4	n1	n2	b	d1	s1	d	t	u	l
125	6"	5"	15.4	19.2	11.8	12.8	12.8	19.2	3.5	1.8	1.8	24.0	22.0	8.2	1.0	2.0	2.0	2.2	0.6	4.3	

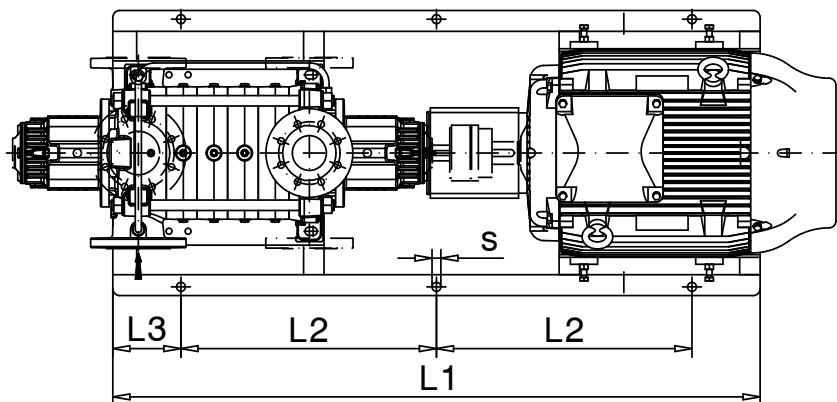
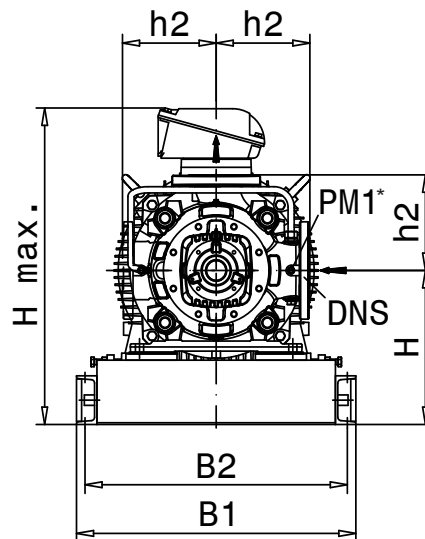
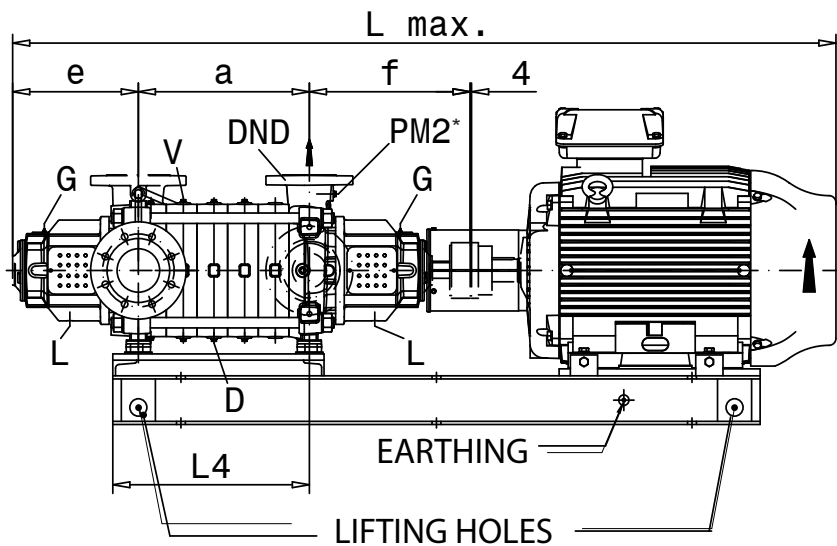
NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPD-60-125-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		125	a (inch)	6.81	11.22	15.63	20.04	24.45	28.86	33.27							
m (inch)	6.81		11.22	15.63	20.04	24.45	28.86	33.27									
G (lb)	983		1131	1279	1426	1574	1722	1870									

e-MPD-60-50_stage_a_td

MPD SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



Position	Connection	Size
PM1	Vacuum gauge	G ¼
PM2	Pressure gauge	G ¼
D	Drain	G ¼
G	Grease nipple	M8
L	Leakage	G ½
V	Vent	G ¼

e-MPD-AS-EN_a_DD

* Adaptors for US dimensions outlets are available upon request.

MPD SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz

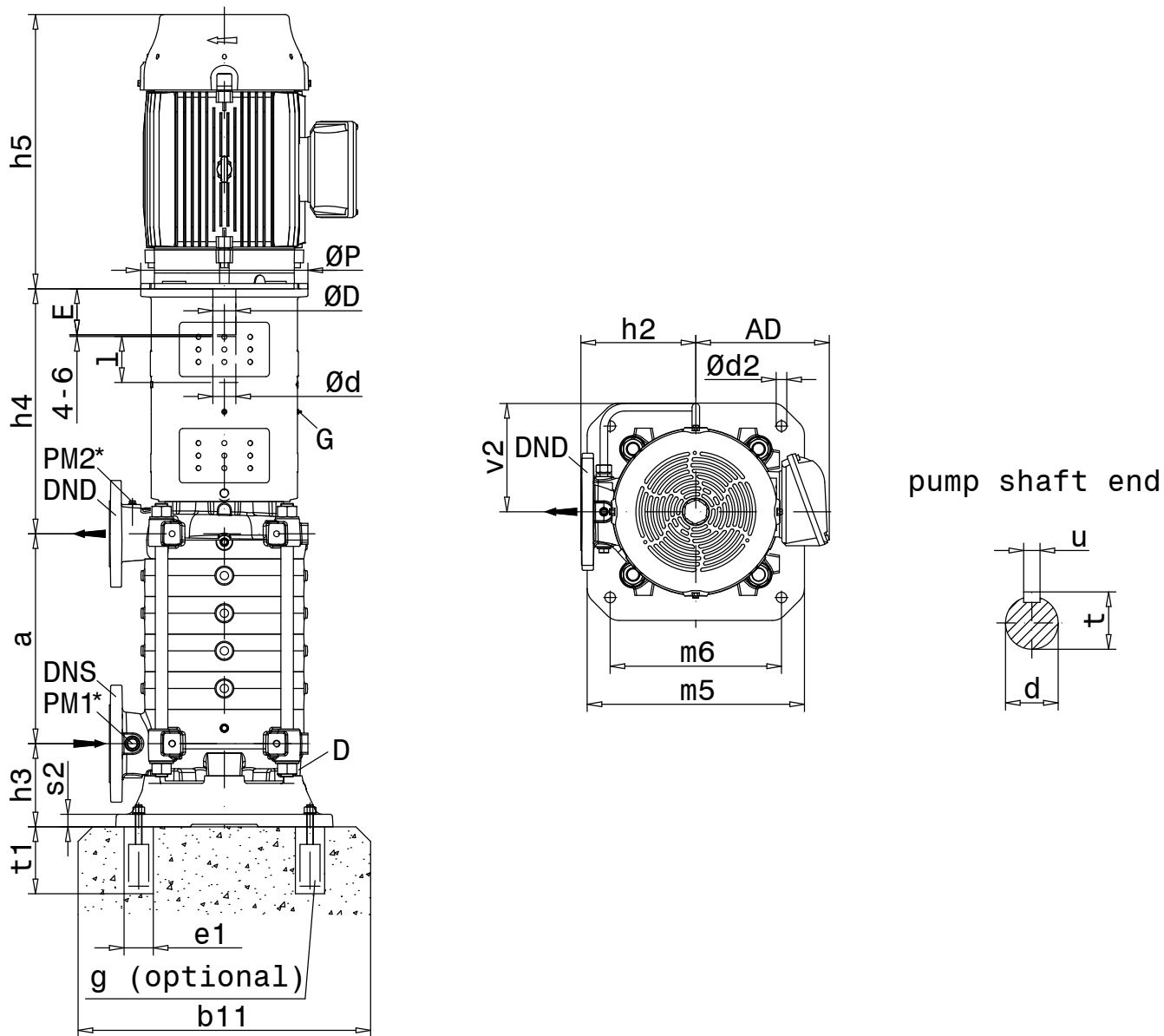
Dimensions and weights in the next table are for reference only and correspond to IEC motor frames. NEMA corresponding dimensions and weights to be published soon. Please contact factory for more information.

PUMP-TYPE MPD Size	NUMBER OF STAGES	IEC MOTOR FRAME	3550 [rpm]	1750 [rpm]	DIMENSIONS [inch]														Hmax	Lmax	WEIGHT G [lb]	COUPLING TYPE
					DNS	DND	a	e	f	B1	B2	L1	L2	L3	L4	H	h2	s				
125	1	315S/M	220	-	6"	5"	6.8	15.4	19.2	33.9	31.9	70.9	27.6	7.9	10.9	20.0	12.8	6xØ1 (M20)	40.9	90.6	3887	B160D
		315L	340	-	6"	5"	6.8	15.4	19.2	33.9	31.9	70.9	27.6	7.9	10.9	20.0	12.8	6xØ1 (M20)	42.6	94.9	4489	B180F
		180L	-	30	6"	5"	6.8	15.4	19.2	29.5	28.0	53.1	18.7	7.9	10.9	16.9	12.8	6xØ0,75 (M16)	29.6	69.3	1680	B125E
		200L	-	40	6"	5"	6.8	15.4	19.2	29.5	28.0	55.1	19.7	7.9	10.9	16.9	12.8	6xØ0,75 (M16)	29.6	71.8	1784	B125F
	2	315L	340	-	6"	5"	11.2	15.4	19.2	33.9	31.9	76.8	30.5	7.9	15.4	20.0	12.8	6xØ1 (M20)	42.6	99.3	4669	B180F
		355M/L	430	-	6"	5"	11.2	15.4	19.2	39.4	36.6	80.7	32.5	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	47.6	101.6	6243	RWN198C
		355M/L	480	-	6"	5"	11.2	15.4	19.2	39.4	36.6	80.7	32.5	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	47.6	101.6	6243	RWN198C
		355A/B	540	-	6"	5"	11.2	15.4	19.2	39.4	36.6	86.6	35.4	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	51.7	109.3	6940	RWN198C
		355A/B	610	-	6"	5"	11.2	15.4	19.2	39.4	36.6	86.6	35.4	7.9	15.4	23.1	12.8	6xØ1,14 (M24)	51.7	109.3	7291	RWS228C
		200L	-	40	6"	5"	11.2	15.4	19.2	29.5	28.0	59.1	21.7	7.9	15.4	16.9	12.8	6xØ0,75 (M16)	29.6	76.2	1951	B125F
		225S/M	-	50	6"	5"	11.2	15.4	19.2	29.9	28.0	61.0	22.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	32.8	80.9	2286	B140D
		225S/M	-	60	6"	5"	11.2	15.4	19.2	29.9	28.0	61.0	22.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	32.8	80.9	2363	B140D
	250S/M	-	75	6"	5"	11.2	15.4	19.2	29.9	28.0	65.0	24.6	7.9	15.4	17.6	12.8	6xØ0,75 (M16)	33.3	84.0	2599	B160D	
	3	355A/B	540	-	6"	5"	15.6	15.4	19.2	39.4	36.6	90.6	35.4	9.8	19.8	23.1	12.8	6xØ1,14 (M24)	51.7	113.7	7110	RWN198C
		355A/B	610	-	6"	5"	15.6	15.4	19.2	39.4	36.6	90.6	35.4	9.8	19.8	23.1	12.8	6xØ1,14 (M24)	51.7	113.7	7460	RWS228C
		400J/H	680	-	6"	5"	15.6	15.4	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	42.0	129.2	9548	RWS228D
		400J/H	760	-	6"	5"	15.6	15.4	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	42.0	129.2	9548	RWS228D
		400J/H	860	-	6"	5"	15.6	15.4	19.2	44.9	42.1	102.4	39.4	11.8	19.8	27.2	12.8	6xØ1,14 (M24)	42.0	129.2	9736	RWS228D
		450J/H	980	-	6"	5"	15.6	15.4	19.2	49.6	46.1	106.3	41.3	11.8	19.8	30.8	12.8	6xØ1,14 (M24)	52.8	136.0	13122	RWS228E
		225S/M	-	60	6"	5"	15.6	15.4	19.2	29.9	28.0	65.0	24.6	7.9	19.8	17.6	12.8	6xØ0,75 (M16)	32.8	85.3	2529	B140D
		250S/M	-	75	6"	5"	15.6	15.4	19.2	29.9	28.0	68.9	26.6	7.9	19.8	17.6	12.8	6xØ0,75 (M16)	33.3	88.4	2767	B160D
		280S/M	-	100	6"	5"	15.6	15.4	19.2	32.3	30.3	70.9	27.6	7.9	19.8	18.4	12.8	6xØ1 (M20)	36.7	92.6	3095	B180G
		280S/M	-	125	6"	5"	15.6	15.4	19.2	32.3	30.3	70.9	27.6	7.9	19.8	18.4	12.8	6xØ1 (M20)	36.7	92.6	3250	B180G
	4	400J/H	760	-	6"	5"	20.0	15.4	19.2	44.9	42.1	106.3	41.3	11.8	24.2	27.2	12.8	6xØ1,14 (M24)	42.0	133.6	9846	RWS228D
		280S/M	-	100	6"	5"	20.0	15.4	19.2	32.3	30.3	76.8	30.5	7.9	24.2	18.4	12.8	6xØ1 (M20)	36.7	97.0	3278	B180G
		280S/M	-	125	6"	5"	20.0	15.4	19.2	32.3	30.3	76.8	30.5	7.9	24.2	18.4	12.8	6xØ1 (M20)	36.7	97.0	3433	B180G
		315S/M	-	150	6"	5"	20.0	15.4	19.2	33.9	31.9	86.6	35.4	7.9	24.2	20.0	12.8	6xØ1 (M20)	40.9	105.0	4160	B200E
	5	315S/M	-	150	6"	5"	24.4	15.4	19.2	33.9	31.9	90.6	35.4	9.8	28.6	20.0	12.8	6xØ1 (M20)	40.9	109.4	4314	B200E
		315S/M	-	220	6"	5"	24.4	15.4	19.2	33.9	31.9	90.6	35.4	9.8	28.6	20.0	12.8	6xØ1 (M20)	40.9	109.4	4601	B200E
	6	315S/M	-	180	6"	5"	28.9	15.4	19.2	33.9	31.9	94.5	37.4	9.8	33.0	20.0	12.8	6xØ1 (M20)	40.9	113.8	4601	B200E
		315L	-	270	6"	5"	28.9	15.4	19.2	33.9	31.9	94.5	37.4	9.8	33.0	20.0	12.8	6xØ1 (M20)	42.6	118.3	5020	B200E
	7	315S/M	-	220	6"	5"	33.3	15.4	19.2	33.9	31.9	98.4	39.4	9.8	37.4	20.0	12.8	6xØ1 (M20)	40.9	118.2	4910	B200E
		315L	-	270	6"	5"	33.3	15.4	19.2	33.9	31.9	98.4	39.4	9.8	37.4	20.0	12.8	6xØ1 (M20)	42.6	122.8	5174	B200E

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPD-AS-60-125-us_a_td

MPV SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz



* Adaptors for US dimensions outlets are available upon request.

e-MPV-US_a_DD

PUMP TYPE MPV Size	DIMENSIONS [inch]																
	Pump dimensions											Base dimensions					
	DNS	DND	h2	h3	d2	m5	m6	s2	v2	d	t	u	l	b11	e1	t1	g
125	6"	5"	12.8	8.9	1.2	24.4	18.9	1.3	12.8	2.0	2.2	0.6	4.3	32.3	3.9	15.7	1.2

NOTE: Pumps supplied with ANSI B16.5 flanges. Flanges according to EN 1092-2 are available on request.
For flanges dimensions see drawing on pages 102-103.

e-MPV-60-125-us_a_td

Size	Number of stages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		125	a (inch)	6.81	11.22	15.63	20.04	24.45	28.86	33.27							
	G1 (lb)	928	1076	1224	1371	1519	1667	1814									

e-MPV-60-125_stage_a_td

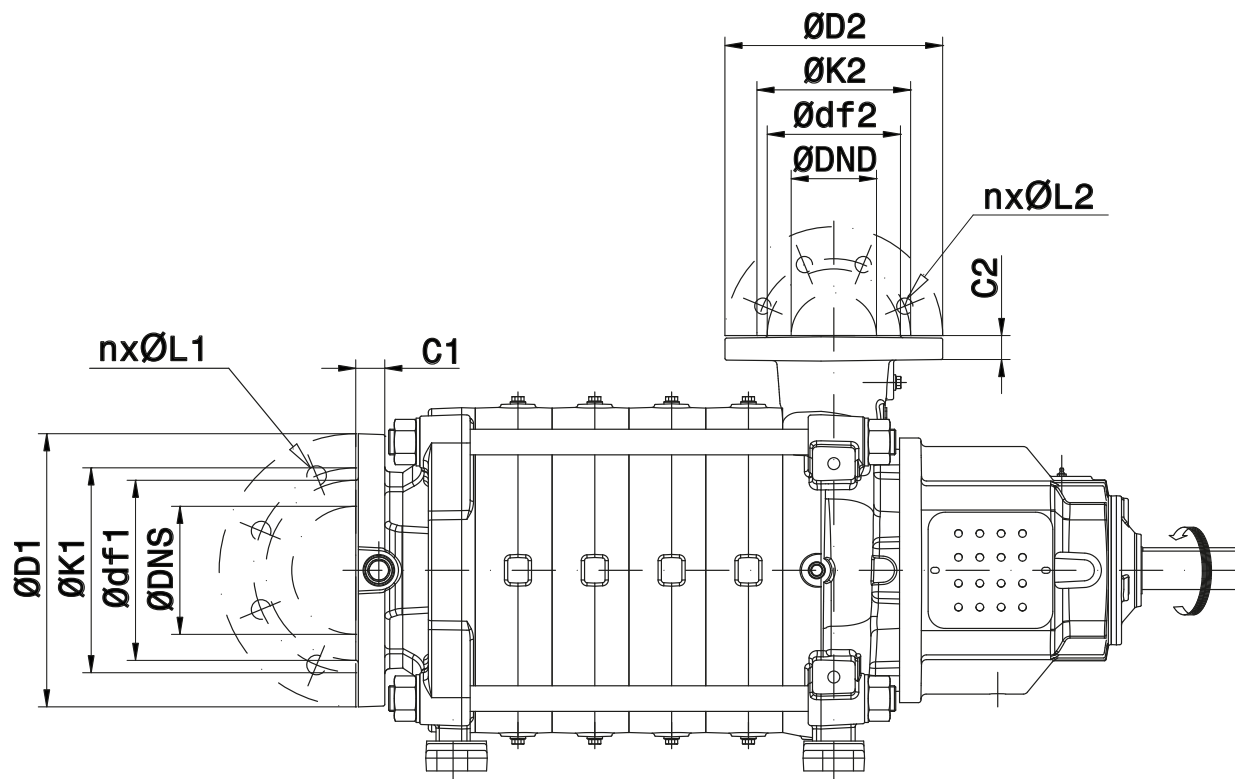
MPV SERIES - DN125 - DIMENSIONS AND WEIGHTS AT 60 Hz

NEMA Size	Speed		Pump dimensions		Motor dimensions				
	3600 [rpm]	1800 [rpm]	h4	G2	h5	P	D	E	AD
	[HP]	[HP]	[in]	[lb]	[in]	[in]	[in]	[in]	[in]
324 TD	-	40	24.88	198	28.35	18	2.125	5.25	14.13
324 TSD	40	-	-	-	27.78	18	1.875	3.75	14.11
326 TD	-	50	24.88	198	28.35	18	2.125	5.25	14.13
326 TSD	50	-	-	-	27.78	18	1.875	3.75	14.11
364 TD	-	60	24.88	198	30.34	18	2.375	5.88	18.06
364 TSD	60	-	-	-	27.35	18	1.875	3.75	18.06
365 TD	-	75	24.88	198	30.34	18	2.375	5.88	18.06
365 TSD	75	-	-	-	27.35	18	1.875	3.75	18.06
405 TD	-	100	26.26	270	33.83	22	2.875	7.25	19.31
405 TSD	100	-	-	-	33.83	22	2.125	4.25	19.31
444 TD	-	125	28.11	285	38.89	22	3.375	8.50	23.38
444 TSD	125	-	24.88	215	38.89	22	2.375	4.75	23.38
445 TD	-	150	28.11	285	38.89	22	3.375	8.50	23.38
445 TSD	150	-	24.88	215	38.89	22	2.375	4.75	23.38
447 TD	-	200	28.11	285	41.77	22	3.375	8.50	23.37
447 TSD	200	-	24.88	215	41.77	22	2.375	4.75	23.37
449 TD	-	250	28.11	285	46.77	22	3.375	8.50	23.37
449 TSD	250	-	24.88	215	46.77	22	2.375	4.75	23.37
449 TSD	300	-	24.88	215	46.77	22	2.375	4.75	23.37
449 TSD	350	-	24.88	215	46.77	22	2.375	4.75	23.37
449 TSD	400	-	24.88	215	46.77	22	2.375	4.75	23.37
500 TSD	500	-	25.87	287	79.74	25	2.375	4.75	25

Total pump unit weight G = weight G1 + weight G2 + weight G3 (±5%)

e-MPV-125-AS-us_a_td

MPA SERIES - FLANGE DIMENSIONS (ANSI B16.5)



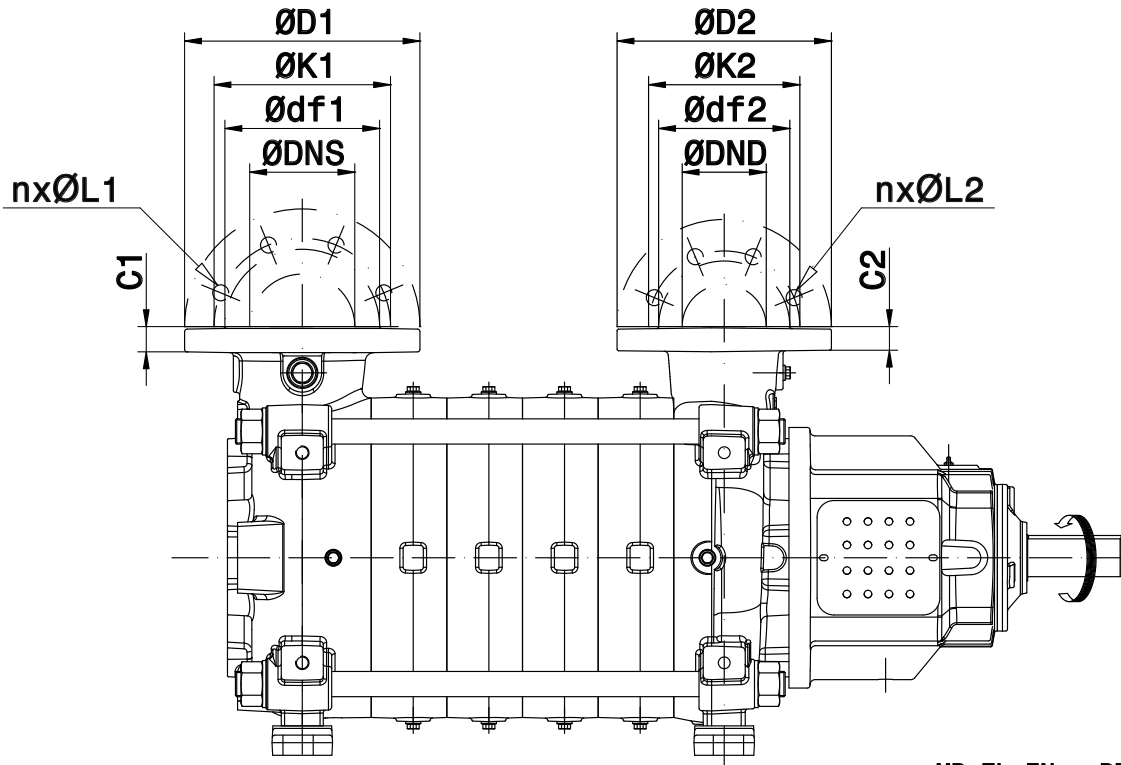
e-MPA-FL-EN_a_DD

PUMP TYPE	DIMENSIONS (inch)														
	MPA Size	Suction side							Discharge side						
		DNS	CLASS	D1	K1	C1	df1	n x ØL1	DND	CLASS	D2	K2	C2	df2	n x ØL2
Cast Iron EN-GJL-250 (ANSI B16.5)	50	4"	150	9.25	7.50	1.10	6.14	8x0.71	2"	150	7.09	4.74	1.10	3.90	4x0.71
	50								2"	300	7.09	5.00	1.10	3.90	8x0.71
	65	5"	150	10.63	8.50	1.18	7.24	8x0.87	2 1/2"	150	7.48	5.49	0.94	4.65	4x0.71
	65								2 1/2"	300	7.48	5.89	0.94	4.65	8x0.87
	100	6"	150	12.60	9.51	1.34	8.31	8x0.87	4"	150	10.04	7.50	1.10	6.14	8x0.71
	100	6"	300	12.60	10.63	1.34	8.31	12xM20	4"	300	10.04	7.87	1.10	6.14	8x0.87
	125	8"	150	14.96	11.75	1.57	10.47	8x0.87	5"	150	11.02	8.50	1.18	7.24	8x0.87
	125	8"	300	14.96	12.99	1.57	10.47	12x1.02	5"	300	11.02	9.25	1.18	7.24	8x0.87
	150	10"	150	17.72	14.25	1.81	12.76	12x1.02	6"	150	13.98	9.51	1.54	8.50	8x0.87
150	10"	300	17.72	15.26	1.81	12.76	16x1.16	6"	300	13.98	10.63	1.54	8.50	12x0.87	
Ductile Iron EN-GJL-400-15 (ANSI B16.5)	50	4"	150	9.25	7.50	1.10	6.14	8x0.71	2"	150	7.09	4.74	1.10	3.90	4x0.71
	50								2"	300/600	7.09	5.00	1.10	3.90	8x0.71
	65	5"	150	10.63	8.50	1.18	7.24	8x0.87	2 1/2"	150	8.07	5.49	1.10	4.65	4x0.71
	65			0.00	0.00	0.00	0.00		2 1/2"	300/600	8.07	5.89	1.10	4.65	8x0.87
	100	6"	150	12.60	9.51	1.34	8.31	8x0.87	4"	150	10.83	7.50	1.30	6.14	8x0.71
	100	6"	300	12.60	10.63	1.34	8.31	12xM20	4"	300	10.83	7.87	1.30	6.14	8x0.87
	100								4"	600	10.83	8.50	1.30	6.14	8x1.02
	125	8"	150	14.96	11.75	1.57	10.47	8x0.87	5"	150	12.99	8.50	1.46	7.24	8x0.87
	125	8"	300	14.96	12.99	1.57	10.47	12x1.02	5"	300	12.99	9.25	1.46	7.24	8x0.87
	125			0.00	0.00	0.00	0.00		5"	600	12.99	10.51	1.46	7.24	8x1.16
	150	10"	150	17.72	14.25	1.81	12.76	12x1.02	6"	150	13.98	9.51	1.54	8.50	8x0.87
150	10"	300	17.72	15.26	1.81	12.76	16x1.16	6"	300	13.98	10.63	1.54	8.50	12x0.87	
150								6"	600	13.98	11.50	1.54	8.50	12x1.16	
Cast Steel 1.4408, 1.4517 (ANSI B16.5)	50	4"	150	9.25	7.50	0.94	6.30	8x0.71	2"	150	7.09	4.74	1.02	4.02	4x0.71
	50								2"	300	7.09	5.00	1.02	4.02	8x0.71
	65	5"	150	10.63	8.50	1.02	7.40	8x0.87	2 1/2"	150	8.07	5.49	1.02	4.80	4x0.71
	65								2 1/2"	300/600	8.07	5.89	1.02	4.80	8x0.87
	100	6"	150	12.60	9.51	1.10	8.50	8x0.87	4"	150	10.83	7.50	1.18	6.38	8x0.71
	100	6"	300	12.60	10.63	1.10	8.50	12xM20	4"	300	10.83	7.87	1.18	6.38	8x0.87
	100								4"	600	10.83	8.50	1.18	6.38	8x1.02
	125	8"	150	14.96	11.75	1.34	10.63	8x0.87	5"	150	12.99	8.50	1.34	7.40	8x0.87
	125	8"	300	14.96	12.99	1.34	10.63	12x1.02	5"	300	12.99	9.25	1.34	7.40	8x0.87
	125								5"	600	12.99	10.51	1.34	7.40	8x1.16
	150	10"	150	17.72	14.25	1.50	12.76	12x1.02	6"	150	13.98	9.51	1.42	8.50	8x0.87
	150	10"	300	17.72	15.26	1.50	12.76	16x1.16	6"	300	13.98	10.63	1.42	8.50	12x0.87
	150								6"	600	13.98	11.50	1.42	8.50	12x1.16

NOTE: Value D, C and df may vary from standard

e-MPA-FL-ASME-en_a_id

MPD, MPR, MPV SERIES - FLANGE DIMENSIONS (ANSI B16.5)



e-MP-FL-EN_a_DD

PUMP TYPE	DIMENSIONS (mm)														
	MPD, MPR, MPV		Suction side						Discharge side						
	Size	DNS	CLASS	D1	K1	C1	df1	n x ØL1	DND	CLASS	D2	K2	C2	df2	n x ØL2
Cast Iron EN-GJL-250 (ANSI B16.5)	50	3"	150	8.268	6.004	1.024	5.197	4x0.71	2"	150	7.087	4.744	1.102	3.898	4x0.71
	50	3"	300	8.268	6.614	1.024	5.197	8x0.87	2"	300	7.087	5	1.102	3.898	8x0.71
	65	4"	150	10.04	7.5	1.102	6.142	8x0.71	2 1/2"	150	7.48	5.492	0.945	4.646	4x0.71
	65	4"	300	10.04	7.874	1.102	6.142	8x0.87	2 1/2"	300	7.48	5.886	0.945	4.646	8x0.87
	100	5"	150	11.02	8.504	1.181	7.244	8x0.87	4"	150	10.04	7.5	1.102	6.142	8x0.71
	100	5"	300	11.02	9.252	1.181	7.244	8x0.87	4"	300	10.04	7.874	1.102	6.142	8x0.87
	125	6"	150	12.6	9.508	1.339	8.504	8x0.87	5"	150	11.02	8.504	1.181	7.244	8x0.87
	125	6"	300	12.6	10.63	1.339	8.504	12x0.87	5"	300	11.02	9.252	1.181	7.244	8x0.87
	150	8"	150	14.96	11.75	1.575	10.63	8x0.87	6"	150	13.98	9.508	1.535	8.504	8x0.87
	150	8"	300	14.96	12.99	1.575	10.63	12x1.02	6"	300	13.98	10.63	1.535	8.504	12x0.87
Ductile Iron EN-GJS-400-15 (ANSI B16.5)	50	3"	150	8.268	6.004	1.024	5.197	4x0.71	2"	150	7.087	4.744	1.102	3.898	4x0.71
	50	3"	300	8.268	6.614	1.024	5.197	8x0.87	2"	300/600	7.087	5	1.102	3.898	8x0.71
	65	4"	150	10.04	7.5	1.102	6.142	8x0.71	2 1/2"	150	8.071	5.492	1.102	4.646	4x0.71
	65	4"	300	10.04	7.874	1.102	6.142	8x0.87	2 1/2"	300/600	8.071	5.886	1.102	4.646	8x0.87
	100	5"	150	11.02	8.504	1.181	7.244	8x0.87	4"	150	10.83	7.5	1.299	6.142	8x0.71
	100	5"	300	11.02	9.252	1.181	7.244	8x0.87	4"	300	10.83	7.874	1.299	6.142	8x0.87
	100								4"	600	10.83	8.504	1.299	6.142	8x1.02
	125	6"	150	12.6	9.508	1.339	8.504	8x0.87	5"	150	12.99	8.504	1.457	7.244	8x0.87
	125	6"	300	12.6	10.63	1.339	8.504	12x0.87	5"	300	12.99	9.252	1.457	7.244	8x0.87
	125								5"	600	12.99	10.51	1.457	7.244	8x1.16
	150	8"	150	14.96	11.75	1.575	10.63	8x0.87	6"	150	13.98	9.508	1.535	8.504	8x0.87
	150	8"	300	14.96	12.99	1.575	10.63	12x1.02	6"	300	13.98	10.63	1.535	8.504	12x0.87
	150							6"	600	13.98	11.5	1.535	8.504	12x1.16	
Cast Steel 1.4408, 1.4517 (ANSI B16.5)	50	3"	150	8.268	6.004	0.945	5.433	4x0.71	2"	150	7.087	4.744	1.024	4.016	4x0.71
	50	3"	300	8.268	6.614	0.945	5.433	8x0.87	2"	300	7.087	5	1.024	4.016	8x0.71
	65	4"	150	10.04	7.5	0.945	6.22	8x0.71	2 1/2"	150	8.071	5.492	1.024	4.803	4x0.71
	65	4"	300	10.04	7.874	0.945	6.22	8x0.87	2 1/2"	300/600	8.071	5.886	1.024	4.803	8x0.87
	100	5"	150	11.02	8.504	1.024	7.402	8x0.87	4"	150	10.83	7.5	1.181	6.378	8x0.71
	100	5"	300	11.02	9.252	1.024	7.402	8x0.87	4"	300	10.83	7.874	1.181	6.378	8x0.87
	100								4"	600	10.83	8.504	1.181	6.378	8x1.02
	125	6"	150	12.6	9.508	1.102	8.346	8x0.87	5"	150	12.99	8.504	1.339	7.402	8x0.87
	125	6"	300	12.6	10.63	1.102	8.346	12x0.87	5"	300	12.99	9.252	1.339	7.402	8x0.87
	125								5"	600	12.99	10.51	1.339	7.402	8x1.16
	150	8"	150	14.96	11.75	1.339	10.63	8x0.87	6"	150	13.98	9.508	1.417	8.504	8x0.87
	150	8"	300	14.96	12.99	1.339	10.63	12x1.02	6"	300	13.98	10.63	1.417	8.504	12x0.87
	150								6"	600	13.98	11.5	1.417	8.504	12x1.16

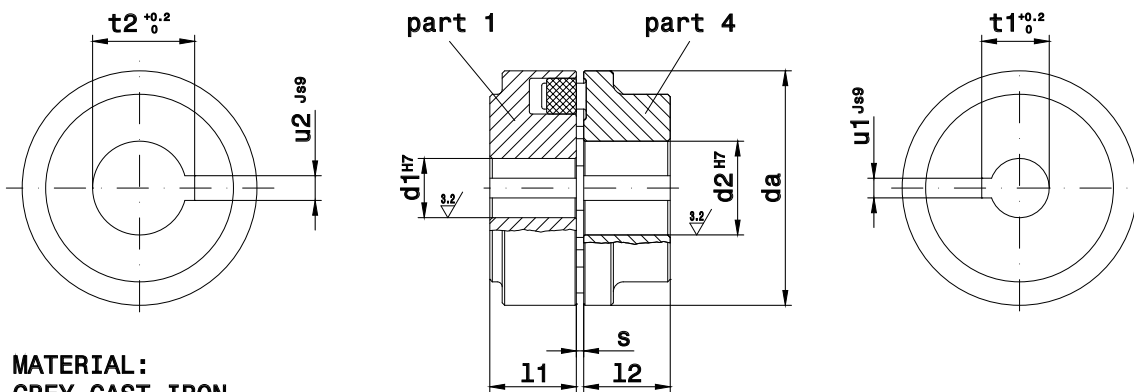
NOTE: Value D, C and df may vary from standard

e-MP-FL-ASME-us_a_td

ACCESSORIES

SPACER COUPLING DIMENSIONS

Dimensions in the next table are not final. Coupling dimensions to be used with NEMA motors for all horizontal configurations to be published soon. Please contact factory for more information.

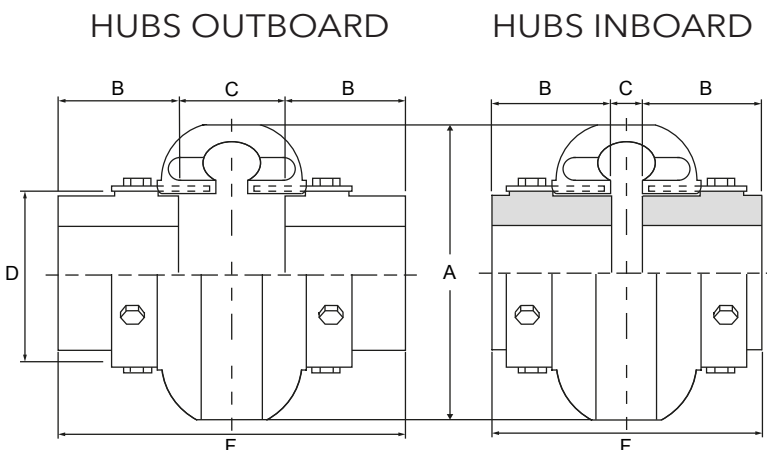
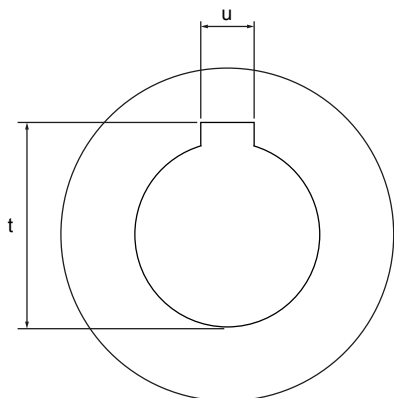


MATERIAL :
GREY CAST IRON
WITH FLEXIBLE ELEMENTS MADE
OF SYNTHETIC RUBBER 80 ShA

COUP-B_EN_A_DD

REF.	DENOMINATION	DIMENSIONS (inch)										
		SIZE x d ₁ (mm) x d ₂ (mm)	d _a	PART 1 PUMP-SIDE HALF COUPLING				s	PART 4 MOTOR-SIDE HALF COUPLING			
				d ₁ ^{H7}	l ₁	u ₁ ^{Js9}	t ₁ ^{+0.2/0}		d ₂ ^{H7}	l ₂	u ₂ ^{Js9}	t ₂ ^{+0.2/0}
B80A	B 80 x 28 x 28	3.150	1.102	1.181	0.315	1.232	0.08÷0.16	1.102	1.181	0.315	1.232	
B80B	B 80 x 28 x 38	3.150	1.102	1.181	0.315	1.232	0.08÷0.16	1.496	1.181	0.394	1.626	
B95A	B 95 x 28 x 42	3.740	1.102	1.378	0.315	1.232	0.08÷0.16	1.654	1.378	0.472	1.783	
B95B	B 95 x 35 x 28	3.740	1.378	1.378	0.394	1.508	0.08÷0.16	1.102	1.378	0.315	1.232	
B95C	B 95 x 35 x 38	3.740	1.378	1.378	0.394	1.508	0.08÷0.16	1.496	1.378	0.394	1.626	
B95D	B 95 x 35 x 42	3.740	1.378	1.378	0.394	1.508	0.08÷0.16	1.654	1.378	0.472	1.783	
B110A	B 110 x 28 x 42	4.331	1.102	1.575	0.315	1.232	0.08÷0.16	1.654	1.575	0.472	1.783	
B110B	B 110 x 28 x 48	4.331	1.102	1.575	0.315	1.232	0.08÷0.16	1.890	1.575	0.551	2.039	
B110C	B 110 x 35 x 42	4.331	1.378	1.575	0.394	1.508	0.08÷0.16	1.654	1.575	0.472	1.783	
B110D	B 110 x 35 x 48	4.331	1.378	1.575	0.394	1.508	0.08÷0.16	1.890	1.575	0.551	2.039	
B110E	B 110 x 45 x 38	4.331	1.772	1.575	0.551	1.921	0.08÷0.16	1.496	1.575	0.394	1.626	
B110F	B 110 x 45 x 42	4.331	1.772	1.575	0.551	1.921	0.08÷0.16	1.654	1.575	0.472	1.783	
B110G	B 110 x 45 x 48	4.331	1.772	1.575	0.551	1.921	0.08÷0.16	1.890	1.575	0.551	2.039	
B125A	B 125 x 28 x 55	4.921	1.102	1.969	0.315	1.232	0.08÷0.16	2.165	1.969	0.630	2.335	
B125B	B 125 x 35 x 55	4.921	1.378	1.969	0.394	1.508	0.08÷0.16	2.165	1.969	0.630	2.335	
B125C	B 125 x 45 x 55	4.921	1.772	1.969	0.551	1.921	0.08÷0.16	2.165	1.969	0.630	2.335	
B125D	B 125 x 52 x 42	4.921	2.047	1.969	0.630	2.217	0.08÷0.16	1.654	1.969	0.472	1.783	
B125E	B 125 x 52 x 48	4.921	2.047	1.969	0.630	2.217	0.08÷0.16	1.890	1.969	0.551	2.039	
B125F	B 125 x 52 x 55	4.921	2.047	1.969	0.630	2.217	0.08÷0.16	2.165	1.969	0.630	2.335	
B140A	B 140 x 28 x 60	5.512	1.102	2.165	0.315	1.232	0.08÷0.16	2.362	2.165	0.709	2.535	
B140B	B 140 x 35 x 60	5.512	1.378	2.165	0.394	1.508	0.08÷0.16	2.362	2.165	0.709	2.535	
B140C	B 140 x 45 x 60	5.512	1.772	2.165	0.551	1.921	0.08÷0.16	2.362	2.165	0.709	2.535	
B140D	B 140 x 52 x 60	5.512	2.047	2.165	0.630	2.217	0.08÷0.16	2.362	2.165	0.709	2.535	
B160A	B 160 x 28 x 65	6.299	1.102	2.362	0.315	1.232	0.08÷0.16	2.559	2.362	0.709	2.732	
B160B	B 160 x 35 x 65	6.299	1.378	2.362	0.394	1.508	0.08÷0.16	2.559	2.362	0.709	2.732	
B160C	B 160 x 45 x 65	6.299	1.772	2.362	0.551	1.921	0.08÷0.16	2.559	2.362	0.709	2.732	
B160D	B 160 x 52 x 65	6.299	2.047	2.362	0.630	2.217	0.08÷0.16	2.559	2.362	0.709	2.732	
B180A	B 180 x 28 x 65	7.087	1.102	2.756	0.315	1.232	0.08÷0.16	2.559	2.756	0.709	2.732	
B180B	B 180 x 35 x 65	7.087	1.378	2.756	0.394	1.508	0.08÷0.16	2.559	2.756	0.709	2.732	
B180C	B 180 x 35 x 75	7.087	1.378	2.756	0.394	1.508	0.08÷0.16	2.953	2.756	0.787	3.146	
B180D	B 180 x 45 x 65	7.087	1.772	2.756	0.551	1.921	0.08÷0.16	2.559	2.756	0.709	2.732	
B180E	B 180 x 45 x 75	7.087	1.772	2.756	0.551	1.921	0.08÷0.16	2.953	2.756	0.787	3.146	
B180F	B 180 x 52 x 65	7.087	2.047	2.756	0.630	2.217	0.08÷0.16	2.559	2.756	0.709	2.732	
B180G	B 180 x 52 x 75	7.087	2.047	2.756	0.630	2.217	0.08÷0.16	2.953	2.756	0.787	3.146	
B200A	B 200 x 35 x 75	7.874	1.378	3.150	0.394	1.508	0.08÷0.16	2.953	3.150	0.787	3.146	
B200B	B 200 x 45 x 75	7.874	1.772	3.150	0.551	1.921	0.08÷0.16	2.953	3.150	0.787	3.146	
B200C	B 200 x 45 x 80	7.874	1.772	3.150	0.551	1.921	0.08÷0.16	3.150	3.150	0.866	3.362	
B200D	B 200 x 52 x 75	7.874	2.047	3.150	0.630	2.217	0.08÷0.16	2.953	3.150	0.787	3.146	
B200E	B 200 x 52 x 80	7.874	2.047	3.150	0.630	2.217	0.08÷0.16	3.150	3.150	0.866	3.362	
B225A	B 225 x 45 x 75	8.858	1.772	3.543	0.551	1.921	0.08÷0.16	2.953	3.543	0.787	3.146	
B225B	B 225 x 45 x 80	8.858	1.772	3.543	0.551	1.921	0.08÷0.16	3.150	3.543	0.866	3.362	
B225C	B 225 x 52 x 75	8.858	2.047	3.543	0.630	2.217	0.08÷0.16	2.953	3.543	0.787	3.146	
B225D	B 225 x 52 x 80	8.858	2.047	3.543	0.630	2.217	0.08÷0.16	3.150	3.543	0.866	3.362	

MPV SERIES - FLEXIBLE COUPLING DIMENSIONS



COUP_EN_A_DD

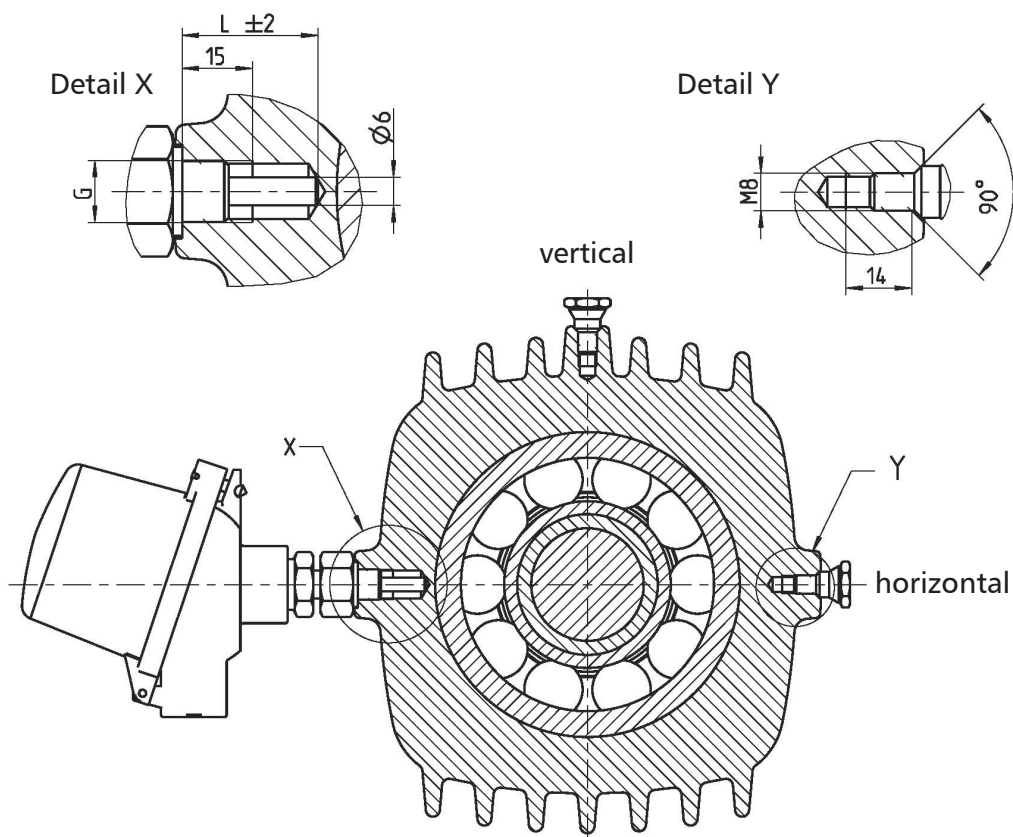
REF.	Dimensions (in)							Approx. Weight (lb)
	A	B	C		D	F		
			Hubs inboard	Hubs outboard		Hubs inboard	Hubs outboard	
E4	4.56	1.69	0.44	1.31	2.60	3.81	4.69	3.0
E5	5.38	1.75	0.81	1.81	3.13	4.31	5.31	5.4
E10	6.38	1.88	0.56	1.81	3.65	4.31	5.56	8.2
E20	7.25	2.06	0.50	2.38	4.48	4.62	6.50	13.0
E30	8.25	2.31	0.56	2.44	5.42	5.19	7.06	21.0
E40	9.50	2.50	0.56	2.68	6.63	5.56	7.68	35.0
E50	11.00	2.75	0.63	3.38	8.13	6.13	8.88	54.0
E60	12.50	3.25	0.69	3.44	8.75	7.19	9.94	72.0

Flex_coup_a_td

MPV Size	PUMP HUB CLEARANCE FIT			MOTOR HUB INTERFERENCE FIT	
	HUB BORE DIA. (in)	DIM. t (in)	DIM. u (in)	HUB BORE DIA. (in)	KEY
50	1.1032/1.1039	1.232/1.240	0.3143/0.3157	1.6230/1.6240	3/8 SQ
				1.8730/1.8740	1/2 SQ
				2.1230/2.1240	1/2 SQ
				2.3730/2.3740	5/8 SQ
65	1.3789/1.3799	1.55679/1.5157	0.3930/0.3944	1.6230/1.6240	3/8 SQ
				1.8730/1.8740	1/2 SQ
				2.1230/2.1240	1/2 SQ
				2.3730/2.3740	5/8 SQ
100	1.7726/1.7736	1.9213/1.9291	0.5503/0.5520	1.8730/1.8740	1/2 SQ
				1.8730/1.8740	1/2 SQ
				2.1230/2.1240	1/2 SQ
				1.8730/1.8740	1/2 SQ
				2.1230/2.1240	1/2 SQ
				2.3730/2.3740	5/8 SQ
				2.8730/2.8740	3/4 SQ
				2.3730/2.3740	5/8 SQ
				3.3720/3.3735	7/8 SQ
125	2.0484/2.0496	2.2165/2.2244	0.6291/0.6308	2.1230/2.1240	1/2 SQ
				2.3730/2.3740	5/8 SQ
				2.8730/2.8740	3/4 SQ
				2.3730/2.3740	5/8 SQ
				3.3720/3.3735	7/8 SQ
				2.3730/2.3740	5/8 SQ
				3.3720/3.3735	7/8 SQ
				2.3730/2.3740	5/8 SQ

Flex_coup2_a_td

SENSOR CONNECTOR AND SENSORS FOR PUMP MONITORING AND DIAGNOSTIC SYSTEMS



Bearing temperature (X)¹			
PUMP SIZE	G [inch]	MPA, MPR, MPD	MPV
		L [inch]	L [inch]
50	1/4	0.79	3.15
65	1/4	0.98	3.70
100	1/4	0.79	3.98
125	1/4	0.98	4.49
150	1/4	1.18	5.12

Bearing vibrations sensors (Y)²

¹ = Bearing temperature sensor: eg. PT100 - (4 to 20 mA)

MP-sensor-us_a_td

² = Bearing vibration nipple: eg. SPM 32000

Standard dimensions (see also figure above) are metric. Adapters for USC units are available.

REPORTS AND DECLARATIONS

i) Test reports

a) Factory Test Report

- Test report compiled at the end of the assembly line, including flow-head performance test (ISO 9906:2012 - Grade 3B) and hydrostatic pressure test.

b) Audit Test Report

- Test report for electric pumps compiled in the test room, comprising flow-head-pump input-pump efficiency performance test (according to ISO 9906:2012)

c) NPSH Test Report

- Test report for electric pumps compiled in the test room, comprising flow-NPSH performance test (according to ISO 9906:2012)

d) Noise Test Report

- Report indicating sound pressure and power measurements (EN ISO 20361, EN ISO 11203, EN ISO 4871)

e) Vibration Test Report

- (unavailable for submerged or submergible pumps)
- Report indicating vibration measurements (ISO 10816-1)

ii) Declaration of product conformity with the technical requirements indicated in the order

a) EN 10204:2004 - type 2.1

- does not include test results on supplied or similar products.

b) EN 10204:2004 - type 2.2

- includes test results (materials certificates) on similar products.

iii) Issue of a further EC Declaration of Conformity,

- in addition to the one accompanying the product, it comprises references to European law and the main technical standards (e.g.: MD 2006/42/EC, EMCD 2004/108/EC, ErP 2009/125/EC).

N.B.: if the request is made after receipt of the product, communicate the code (name) and serial number (date + progressive number).

iv) Manufacturer's declaration of conformity

- relative to one of more types of products without indicating specific codes and serial numbers.

v) Other certificates and/or documentation on request

- subject to availability or feasibility.

vi) Duplication of certificates and/or documentation on request

- subject to availability or feasibility.

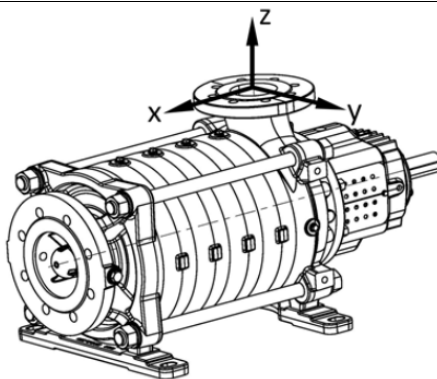
TECHNICAL APPENDIX

FORCES AND MOMENTS AT PUMP FLANGES

PERMISSIBLE FORCES AND MOMENTS AT PUMP FLANGES

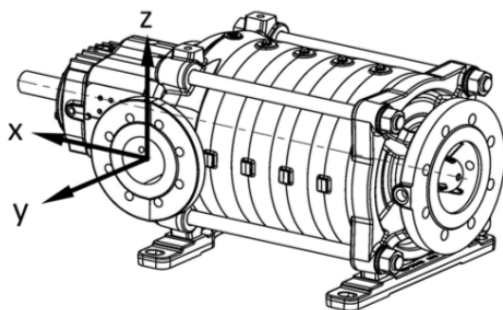
Forces and moments for horizontal pump similar to ISO5199

Top flange (eMPA / e-MPR / e-MPD)



DN	Material code: CCC, CBC, CNC								Material code: DCC, DBC, DNC, NNN, RNN, RRR, TTT							
	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM
50	101	91	111	176	3445	2206	2670	4885	202	182	223	352	6889	4411	5341	9770
65	125	115	142	221	3754	2515	2825	5330	250	229	283	442	7509	5031	5650	10659
80	152	138	169	266	4064	2670	3135	5786	303	277	337	531	8129	5341	6270	11572
100	202	182	226	354	4529	2980	3600	6508	405	364	452	708	9058	5960	7199	13015
125	239	216	266	418	5613	3754	4994	8399	479	432	533	836	11226	7509	9987	16798
150	303	273	337	530	6852	4529	5458	9862	607	546	674	1059	13704	9058	10917	19724
200	405	364	452	708	9176	6233	7317	13288	809	728	904	1415	18351	12465	14634	26576

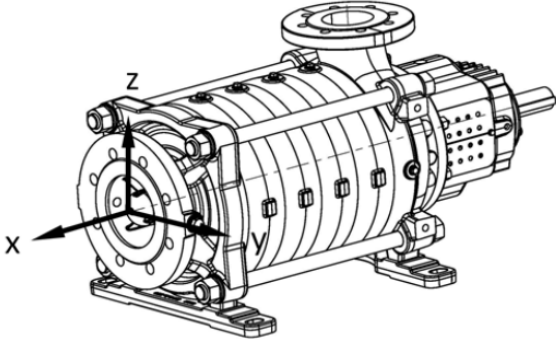
Side flange (eMPA / e-MPR / e-MPD)

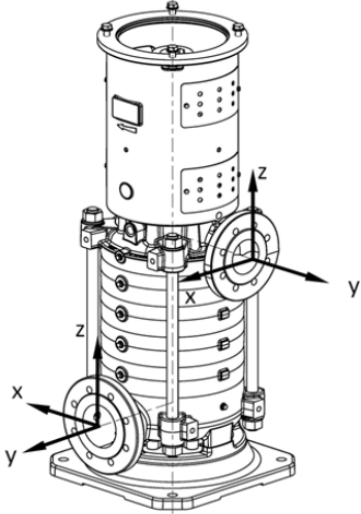


DN	Material code: CCC, CBC, CNC								Material code: DCC, DBC, DNC, NNN, RNN, RRR, TTT							
	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM
50	101	111	91	176	3445	2206	2670	4885	202	223	182	352	6889	4411	5341	9770
65	125	142	115	221	3754	2515	2825	5330	250	283	229	442	7509	5031	5650	10659
80	152	169	138	266	4064	2670	3135	5786	303	337	277	531	8129	5341	6270	11572
100	202	226	182	354	4529	2980	3600	6508	405	452	364	708	9058	5960	7199	13015
125	239	266	216	418	5613	3754	4994	8399	479	533	432	836	11226	7509	9987	16798
150	303	337	273	530	6852	4529	5458	9862	607	674	546	1059	13704	9058	10917	19724
200	405	452	364	708	9176	6233	7317	13288	809	904	728	1415	18351	12465	14634	26576

TECHNICAL APPENDIX

FORCES AND MOMENTS AT PUMP FLANGES

PERMISSIBLE FORCES AND MOMENTS AT PUMP FLANGES																
Forces and moments for horizontal pump similar to ISO5199																
End flange (eMPA)																
																
	Material code: CCC, CBC, CNC								Material code: DCC, DBC, DNC, NNN, RNN, RRR, TTT							
DN	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM
	[lbf]	[lbf]	[lbf]	[lbf]	[lbf-in]	[lbf-in]	[lbf-in]	[lbf-in]	[lbf]	[lbf]	[lbf]	[lbf]	[lbf-in]	[lbf-in]	[lbf-in]	[lbf-in]
100	226	202	182	354	4529	2980	3600	6508	452	405	364	708	9058	5960	7199	13015
125	266	239	216	418	5613	3754	4994	8399	533	479	432	836	11226	7509	9987	16798
150	337	303	273	530	6852	4529	5458	9862	674	607	546	1059	13704	9058	10917	19724
200	452	405	364	708	9176	6233	7317	13288	904	809	728	1415	18351	12465	14634	26576
250	563	502	455	881	12893	8866	10415	18796	1126	1005	910	1763	25786	17732	20829	37592

Forces and moments for vertical pump similar to ISO5199																
Side flange (eMPV)																
																
	Material code: CCC, CBC, CNC								Material code: DCC, DBC, DNC, NNN, RNN, RRR, TTT							
DN	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM	Fx	Fy	Fz	ΣF	Mx	My	Mz	ΣM
	[lbf]	[lbf]	[lbf]	[lbf]	[lbf-in]	[lbf-in]	[lbf-in]	[lbf-in]	[lbf]	[lbf]	[lbf]	[lbf]	[lbf-in]	[lbf-in]	[lbf-in]	[lbf-in]
50	101	111	91	176	3445	2206	2670	4885	202	223	182	352	6889	4411	5341	9770
65	125	142	115	221	3754	2515	2825	5330	250	283	229	442	7509	5031	5650	10659
80	152	169	138	266	4064	2670	3135	5786	303	337	277	531	8129	5341	6270	11572
100	202	226	182	354	4529	2980	3600	6508	405	452	364	708	9058	5960	7199	13015
125	239	266	216	418	5613	3754	4994	8399	479	533	432	836	11226	7509	9987	16798
150	303	337	273	530	6852	4529	5458	9862	607	674	546	1059	13704	9058	10917	19724
200	405	452	364	708	9176	6233	7317	13288	809	904	728	1415	18351	12465	14634	26576

TECHNICAL APPENDIX

NPSH

The minimum operating values that can be reached at the pump suction end are limited by the onset of cavitation.

Cavitation is the formation of vapor-filled cavities within liquids where the pressure is locally reduced to a critical value, or where the local pressure is equal to, or just below the vapor pressure of the liquid.

The vapor-filled cavities flow with the current and when they reach a higher pressure areas the vapor contained in the cavities condenses. The cavities collide, generating pressure waves that are transmitted to the walls. These, being subjected to stress cycles, gradually become deformed and yield due to fatigue. This phenomenon, characterized by a metallic noise produced by the hammering on the pipe walls, is called incipient cavitation.

The damage caused by cavitation may be magnified by electrochemical corrosion and a local rise in temperature due to the plastic deformation of the walls. The materials that offer the highest resistance to heat and corrosion are alloy steels, especially austenitic steel .

The conditions that trigger cavitation may be assessed by calculating the total net suction head, referred to in technical literature with the acronym NPSH (Net Positive Suction Head).

The NPSH represents the total energy (expressed in feet) of the liquid measured at suction under conditions of incipient cavitation, excluding the vapor pressure (expressed in feet) that the liquid has at the pump inlet .

A margin above the NPSHr is necessary in order to achieve the pump's published performance and an adequate service life.

To find the static height (hz) at which to install the machine under safe conditions, the following formula must be verified:

$$h_p + h_z \geq (NPSHr + 2 \text{ ft}) + h_f + h_{pv}$$

where:

h_p is the absolute pressure applied to the free liquid surface in the suction tank, expressed in feet of liquid; h_p is the quotient between the barometric pressure and the specific weight of the liquid;

h_z is the suction lift between the pump axis and the free liquid surface in the suction tank, expressed in feet; h_z is negative when the liquid level is lower than the pump axis;

h_f is the flow resistance in the suction line and its accessories, such as: fittings, foot valve, gate valve, elbows, etc ;

h_{pv} is the vapor pressure of the liquid at the operating temperature, expressed in feet of the liquid. h_{pv} is the quotient between the P_v vapor pressure and the liquid's specific weight;

2ft is the safety margin.

The maximum possible suction head for installation depends on the value of the atmospheric pressure (i.e. the elevation above sea level at which the pump is installed) and the temperature of the liquid.

To help the user, with reference to water temperature (40°F) and to the elevation above sea level, the following tables show the drop in hydraulic pressure head in relation to the elevation above sea level, and the suction loss in relation to temperature.

Water temperature (°F)	68	104	140	176	194	230	248
Suction loss (ft)	- .7	2.3	6.6	16.4	24.3	50.5	70.5

Elevation above sea level (ft)	1600	3300	4900	6500	8200	9800
Suction loss (ft)	1.8	3.6	5.4	7.2	9.0	10.8

To reduce it to a minimum, especially in cases of high suction head (over 13 - 16 feet) or within the operating limits with high flow rates, we recommend using a suction line having a larger diameter than that of the pump's suction port. It is always a good idea to position the pump as close as possible to the liquid to be pumped.

TECHNICAL APPENDIX

VAPOUR PRESSURE ps AND ρ DENSITY OF WATER TABLE

Temp (°F)	Temp (°C)	Specific Volume (ft ³ /lb)	Specific Gravity			Weight (lb/ft ³)	Vapor Pressure (psi abs)
			@ 39.2°F	@ 60°F	@ 68°F		
32	0.0	0.01602	1.0000	1.0010	1.0020	62.42	0.0880
35	1.7	0.01602	1.0000	1.0010	1.0020	62.42	0.1000
40	4.4	0.01602	1.0000	1.0010	1.0020	62.42	0.1220
50	10.0	0.01603	0.9990	1.0010	1.0020	62.38	0.1780
60	15.6	0.01604	0.9990	1.0000	1.0010	62.34	0.2560
70	21.1	0.01606	0.9980	0.9990	1.0000	62.27	0.3630
80	26.7	0.01608	0.9960	0.9980	0.9990	62.19	0.5070
90	32.2	0.01610	0.9950	0.9960	0.9970	62.11	0.6980
100	37.8	0.01613	0.9930	0.9940	0.9950	62.00	0.9490
120	48.9	0.01620	0.9890	0.9900	0.9910	61.73	1.6920
140	60.0	0.01629	0.9830	0.9850	0.9860	61.39	2.8890
160	71.1	0.01639	0.9770	0.9790	0.9790	61.01	4.7410
180	82.2	0.01651	0.9700	0.9720	0.9730	60.57	7.5100
200	93.3	0.01663	0.9630	0.9640	0.9660	60.13	11.5260
212	100.0	0.01672	0.9580	0.9590	0.9600	59.81	14.6960
220	104.4	0.01677	0.9550	0.9560	0.9570	59.63	17.1860
240	115.6	0.01692	0.9470	0.9480	0.9490	59.10	24.9700
260	126.7	0.01709	0.9380	0.9390	0.9400	58.51	35.4300
280	137.8	0.01726	0.9280	0.9290	0.9300	58.00	49.2000
300	148.9	0.01745	0.9180	0.9190	0.9200	57.31	67.0100
320	160.0	0.01756	0.9080	0.9090	0.9100	56.66	89.6600
340	171.1	0.01787	0.8960	0.8980	0.8990	55.96	118.010
360	182.2	0.01811	0.8850	0.8860	0.8870	55.22	153.040
380	193.3	0.01836	0.8730	0.8740	0.8750	54.47	195.770
400	204.4	0.01864	0.8590	0.8600	0.8620	53.65	247.310
420	215.6	0.01894	0.8460	0.8470	0.8480	52.80	308.830
440	226.7	0.01926	0.8320	0.8330	0.8340	51.92	381.590
460	237.8	0.01960	0.8170	0.8180	0.8190	51.02	466.900
480	248.9	0.02000	0.8010	0.8020	0.8030	50.00	566.100
500	260.0	0.02040	0.7850	0.7860	0.7870	49.02	680.800
520	271.1	0.02090	0.7650	0.7660	0.7670	47.85	812.400
540	282.2	0.02150	0.7460	0.7470	0.7480	46.51	962.500
560	293.3	0.02210	0.7260	0.7270	0.7280	45.30	1133.10
580	304.4	0.02280	0.7030	0.7040	0.7040	43.90	1325.80
600	315.6	0.02360	0.6780	0.6790	0.6800	42.30	1542.90
620	326.7	0.02470	0.6490	0.6500	0.6500	40.50	1786.60
640	337.8	0.02600	0.6170	0.6180	0.6180	38.50	2059.70
660	348.9	0.02780	0.5770	0.5770	0.5780	36.00	2365.40
680	360.0	0.03050	0.5250	0.5260	0.5270	32.80	2708.10
700	371.1	0.03690	0.4340	0.4350	0.4350	27.10	3093.70

G-at_npsb_b_sc

TECHNICAL APPENDIX

FRICITION LOSS - STEEL PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

FLOW RATE		NOMINAL DIAMETER													
GPM	GPH	¾" ft.	½" ft.	¾" ft.	1" ft.	1¼" ft.	1½" ft.	2" ft.	2½" ft.	3" ft.	4" ft.	5" ft.	6" ft.	8" ft.	10" ft.
1	60	4.30	1.86	0.26											
2	120	15.00	4.78	1.21	0.38										
3	180	31.80	10.00	2.50	0.77										
4	240	54.90	17.10	4.21	1.30	0.34									
5	300	83.50	25.80	6.32	1.93	0.51	0.24								
6	360		36.50	8.87	2.68	0.70	0.33	0.10							
7	420		48.70	11.80	3.56	0.93	0.44	0.13							
8	480		62.70	15.00	4.54	1.18	0.56	0.17							
9	540			18.80	5.65	1.46	0.69	0.21							
10	600			23.00	6.86	1.77	0.83	0.25	0.11	0.04					
12	720			32.60	9.62	2.48	1.16	0.34	0.15	0.05					
15	900			49.70	14.70	3.74	1.75	0.52	0.22	0.08					
20	1200			86.10	25.10	6.34	2.94	0.87	0.36	0.13					
25	1500				38.60	9.65	4.48	1.30	0.54	0.19					
30	1800				54.60	13.60	6.26	1.82	0.75	0.26					
35	2100				73.40	18.20	8.37	2.42	1.00	0.35					
40	2400				95.00	23.50	10.79	3.10	1.28	0.44					
45	2700					30.70	13.45	3.85	1.60	0.55					
70	4200					68.80	31.30	8.86	3.63	1.22	0.35				
100	6000						62.20	17.40	7.11	2.39	0.63				
150	9000							38.00	15.40	5.14	1.32				
200	12000							66.30	26.70	8.90	2.27	0.74	0.30	0.08	
250	15000							90.70	42.80	14.10	3.60	1.20	0.49	0.13	
300	18000								58.50	19.20	4.89	1.58	0.64	0.16	0.05
350	21000								79.20	26.90	6.72	2.18	0.88	0.23	0.07
400	24000								103.00	33.90	8.47	2.72	1.09	0.28	0.09
450	27000								130.00	42.75	10.65	3.47	1.36	0.35	0.11
500	30000								160.00	52.50	13.00	4.16	1.66	0.42	0.14
550	33000								193.00	63.20	15.70	4.98	1.99	0.51	0.16
600	36000								230.00	74.80	18.60	5.88	2.34	0.60	0.19
650	39000									87.50	21.70	6.87	2.73	0.69	0.22
700	42000									101.00	25.00	7.93	3.13	0.80	0.26
750	45000									116.00	28.60	9.05	3.57	0.91	0.29
800	48000									131.00	32.40	10.22	4.03	1.02	0.33
850	51000									148.00	36.50	11.50	4.53	1.15	0.37
900	54000									165.00	40.80	12.90	5.05	1.27	0.41
950	57000									184.00	45.30	14.30	5.60	1.41	0.46
1000	60000									204.00	50.20	15.80	6.17	1.56	0.50

G-at-pct-us_a_th

EQUIVALENT NUMBER OF FEET STRAIGHT PIPE FOR DIFFERENT FITTINGS

TYPE OF FITTINGS	SIZE OF FITTINGS (inch)													
	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	
90° Elbow	1.5	2.0	2.7	3.5	4.3	5.5	6.5	8.0	10.0	14.0	15.0	20.0	25.0	
45° Elbow	0.8	1.0	1.3	1.7	2.0	2.5	3.0	3.8	5.0	6.3	7.1	9.4	12.0	
Long Sweep Elbow	1.0	1.4	1.7	2.3	2.7	3.5	4.2	5.2	7.0	9.0	11.0	14.0		
Close Return Bend	3.6	5.0	6.0	8.3	10.0	13.0	15.0	18.0	24.0	31.0	37.0	39.0		
Tee-Straight Run	1.0	2.0	2.0	3.0	3.0	4.0	5.0							
Tee-Side Inlet or Outlet or Pitless Adapter	3.3	4.5	5.7	7.6	9.0	12.0	14.0	17.0	22.0	27.0	31.0	40.0		
① Ball or Globe Valve Open	17.0	22.0	27.0	36.0	43.0	55.0	67.0	82.0	110.0	140.0	160.0	220.0		
① Angle Valve Open	8.4	12.0	15.0	18.0	22.0	28.0	33.0	42.0	58.0	70.0	83.0	110.0		
Gate Valve-Fully Open	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.7	2.3	2.9	3.5	4.5		
Check Valve (Swing)	4.0	5.0	7.0	9.0	11.0	13.0	16.0	20.0	26.0	33.0	39.0	52.0	65.0	
In Line Check Valve (Spring) or Foot Valve	4.0	6.0	8.0	12.0	14.0	19.0	23.0	32.0	43.0	58.0				

① There are many new, full port valve designs available today which are more efficient and create much less friction loss, consult with valve suppliers for new data.

G-a-pcv-us_b_th

TECHNICAL APPENDIX

VOLUMETRIC CAPACITY

Units	U.S. Gallons Per Minute	Million U.S. Gallons Per Day	Cubic Feet Per Second	Cubic Meters Per Hour	Liters Per Second	Imperial Gallons Per Minute	Cubic Inch Per Minute
1 U.S. Gallon Per Minute	1	0.00144	0.00223	0.227	0.0631	0.8327	231.00
1 Million U.S. GPD	694.5	1	1.547	157.73	43.8	578.25	160416.83
1 Cubic Foot Per Second	448.8	0.646	1	101.9	28.32	373.40	103587.55
1 Cubic Meter Per Hour	4.403	0.00634	0.00981	1	0.2778	3.6682	1017.62
1 Liter Per Second	15.85	0.0228	0.0353	3.6	1	13.20	3660.86
1 Imp. Gallons Per Minute	1.201	0.00173	0.00268	0.27262	0.07578	1	277.42
1 Cubic Inch Per Minute	0.004329	0.000006	0.000010	0.000983	0.000273	0.003605	1

LENGTH

Units	Inch	Foot	Yard	Mile	Meter	Kilometer	Nautical mile
1 Inch	1	2.31	0.704	2.04	0.0681	0.0703	0.0000137
1 Foot	0.433	1	0.305	0.882	0.02947	0.0305	0.00016
1 Yard	1.421	3.28	1	2.89	0.0967	0.1	0.00049
1 Mile	0.491	1.134	0.3456	1	0.0334	0.0345	0.86842
1 Meter	14.7	33.93	10.34	29.92	1	1.033	0.0005396
1 Kilometer	14.22	32.8	10	28.96	0.968	1	0.53967
1 Nautical mile	72960	6080	2026.66	1.152	1853.18	1.853	1

POWER

Unit	Horsepower	Ft. – Lbs. Per Minute	Watts	Kilowatts	Metric Horsepower	B.T.U. Per Minute	kgf - m Per Second
1 Horsepower	1	33000	746	0.746	1.014	42.4	76.040
1 Ft. – Lb. Per Minute	0.0000303	1	0.0226	0.0000226	0.0000307	0.001285	0.138
1 Watt	0.00134	44.2	1	0.001	0.00136	0.0568	0.102
1 Kilowatt	1.341	44.25	1000	1	1.36	56.8	101.971
1 Metric Horsepower	0.986	32550	736	0.736	1	41.8	74.991
1 B.T.U. Per Minute	0.0236	778.4	17.6	0.0176	0.0239	1	1.793
1 kgf - m Per Second	0.01315	7.23301	9.80670	0.00981	0.01334	0.55770	1

HEAD

Units	Lbs. Per Square Inch	Feet of Water	Meters of Water	Inches of Mercury	Atmospheres	Kilograms Per Sq. C.M.	bar
1 Lb. Per Square Inch	1	2.31	0.704	2.04	0.0681	0.0703	0.0690
1 Foot of Water	0.433	1	0.305	0.882	0.02947	0.0305	0.0299
1 Meter of Water	1.421	3.28	1	2.89	0.0967	0.1	0.0981
1 Inch of Mercury	0.491	1.134	0.3456	1	0.0334	0.0345	0.0339
1 Atm (at Sea Level)	14.7	33.93	10.34	29.92	1	1.033	1.0132
1 Kilogram Per Sq. C.M.	14.22	32.8	10	28.96	0.968	1	0.9809
1 bar	14.491	33.45	10.198	29.47	0.987	1.0195	1

Equivalent units are based on density of fresh water from 32° to 62° F. Equivalent units are based on density of mercury from 32° to 62° F, sufficient accuracy.

Each 1,000 feet of ascent decreases pressure about 1/2 lb./square inch.

VOLUME

Units	U.S. Gallons	Imperial Gallons	Cubic Inches	Cubic Feet	Acre Feet	Pounds	Cubic Meters
1 U.S. Gallon	1	0.833	231	0.1337	0.00000307	8.35	0.003785
1 Imperial Gallon	1.201	1	277.4	0.1605	0.00000369	10.02	0.004546
1 Cubic Inch	0.00433	0.0036	1	0.000579	—	0.0361	—
1 Cubic Foot	7.48	6.23	1728	1	0.000023	62.4	0.02832
1 Acre-Foot	325.85	271335	—	43560	1	—	1233.5
1 Pound*	0.12	0.0998	27.7	0.016	—	1	—
1 Cubic Meter	264.2	220	61023	35.314	0.000811	2205	1

* Weights shown based on maximum density of fresh water at 39° F.

AREA

Units	Square Inch	Square Feet	Square Yard	Acres	Square Miles	Square Meters	Hectares
1 Square Inch	1	0.00694	0.00077	—	—	—	—
1 Square Foot	144	1	0.111	—	—	0.0929	—
1 Square Yard	1296	9	1	0.000207	—	0.8336	—
1 Acre	—	43.5	4840	1	0.00156	4049	0.405
1 Square Mile	—	27.9 x 106	3097600	640	1	2.58 x 106	258
1 Square Meter	1549	10.76	1.196	0.000247	—	1	0.0001
1 Hectare	—	107.639	11.96	2.471	0.00386	10	1

Conv_a_to

TECHNICAL APPENDIX

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Intellitronic X



Intellitronic X is pump solution software with multiple search options and helpful project management facilities.

The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Goulds Water Technology products. The search by application guides users not familiar with the product range to the right choice. The detailed output makes it easy to select the optimal pump from the given alternatives.

The search can be made by:

- Application
- Product type
- Duty point

Intellitronic X gives a detailed output:

- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings (can be downloaded in dxf format.)
- Options
- Data sheet printouts
- Document downloads incl dxf files

The best way to work with Intellitronic X is to create a personal account. This makes it possible to:

- Set own standard units
- Create and save projects
- Share projects with other Intellitronic X users

Every registered user has a proper space, where all projects are saved.

For more information about Intellitronic X please contact our sales network or visit www.gouldsintellitronic.com.

NOTES

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com



Xylem Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (800) 453-6777
Fax: (888) 322-5877
www.gouldswatertechnology.com

Goulds is a registered trademark of Goulds Pumps, Inc. and is used under license. Intellitronic X is trademark or registered trademark of Xylem Inc. or one of its subsidiaries. All other trademarks or registered trademarks are property of their respective owners.
© 2017 Xylem Inc. BeMP R1 October 2017