

IAC-FT SERIES

IN-LINE EN733 centrifugal pump - Heat transfer fluid

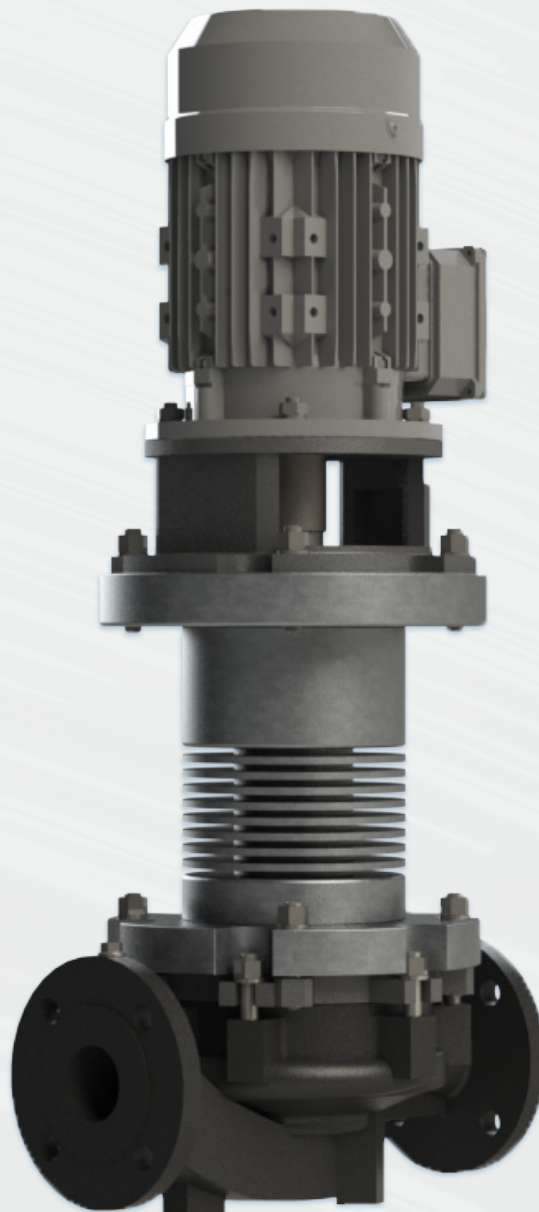
SPECIFICATIONS

DESIGN

SPARE PARTS

DIMENSIONS

PERFORMANCE CURVES



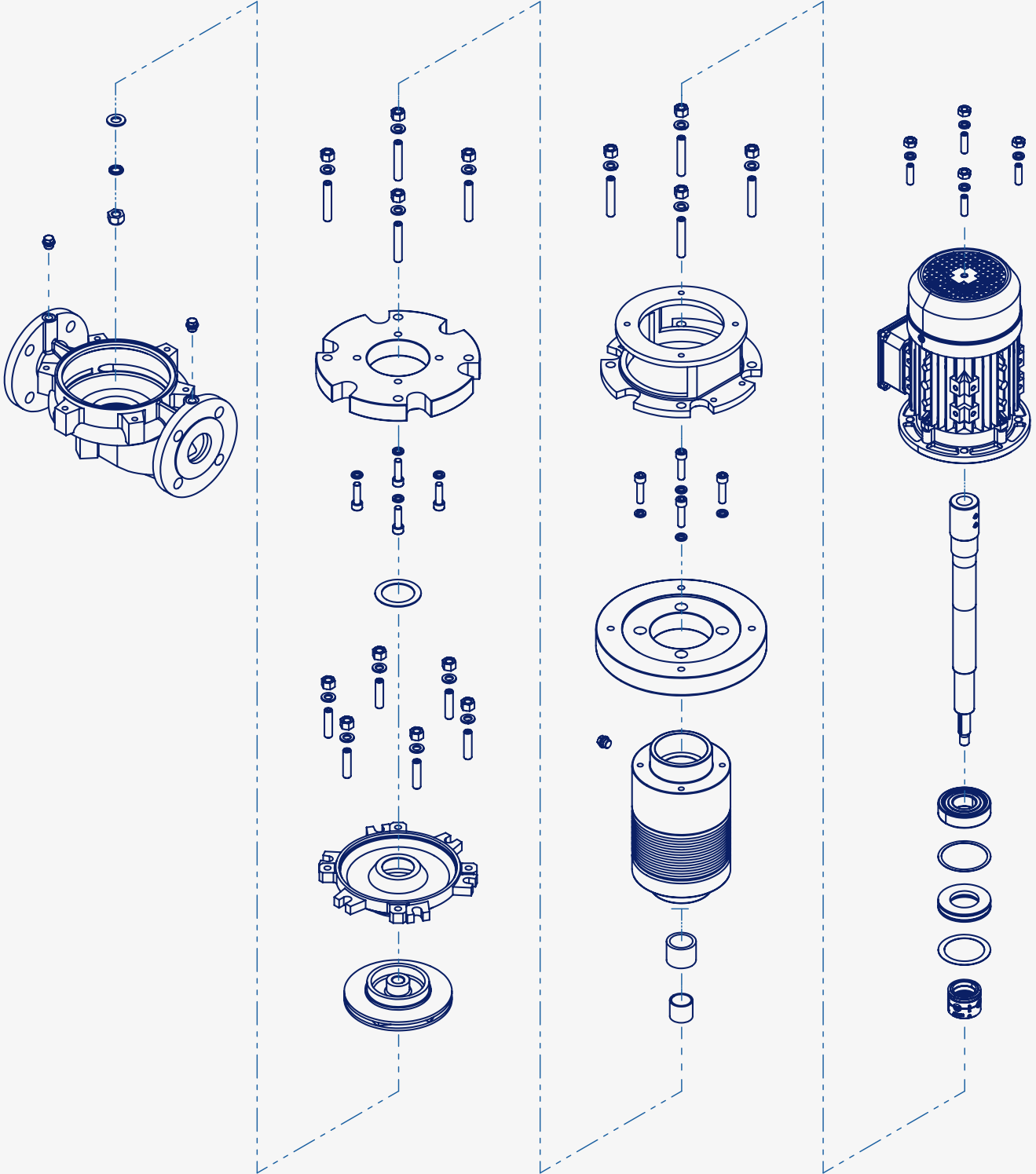
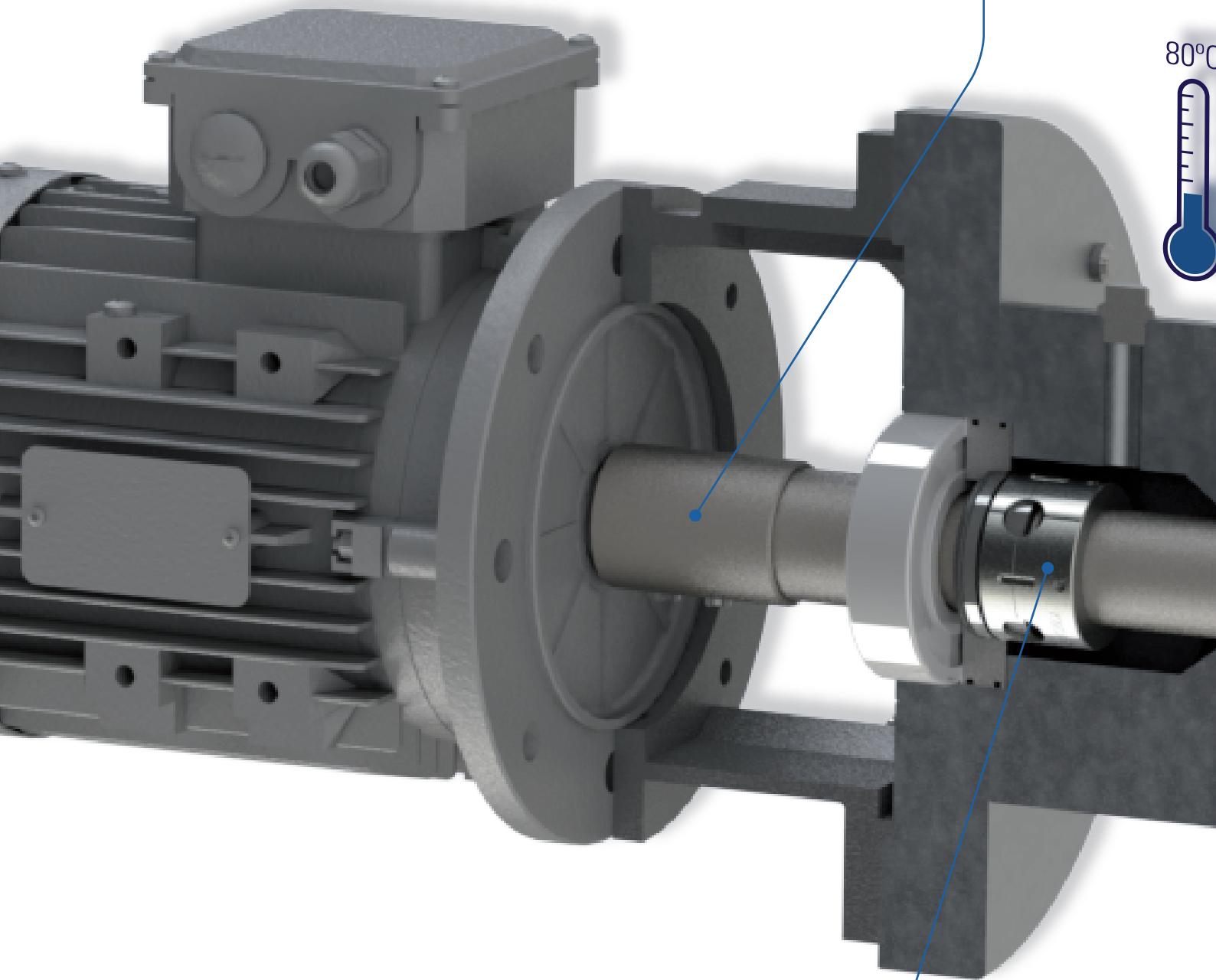


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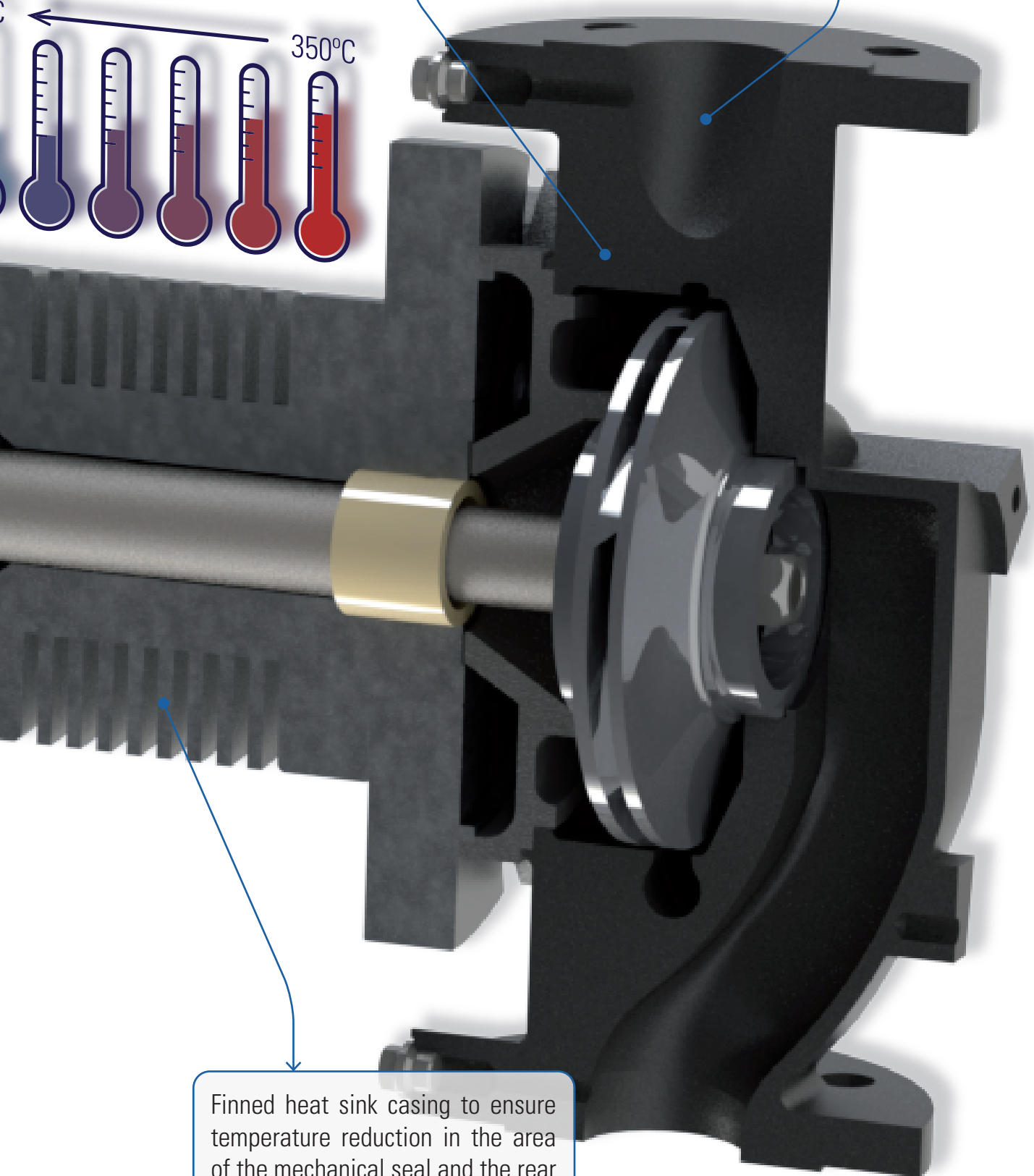
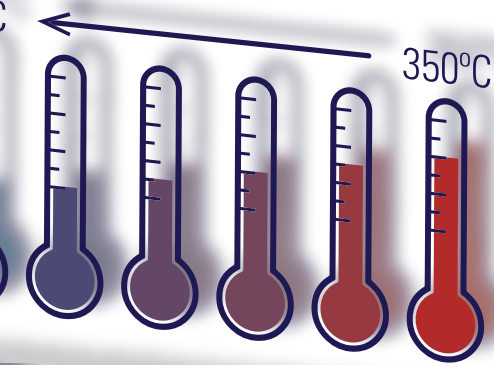
Equipment built in monobloc version, with the motor shaft coupled to the pump by means of a rigid coupling.



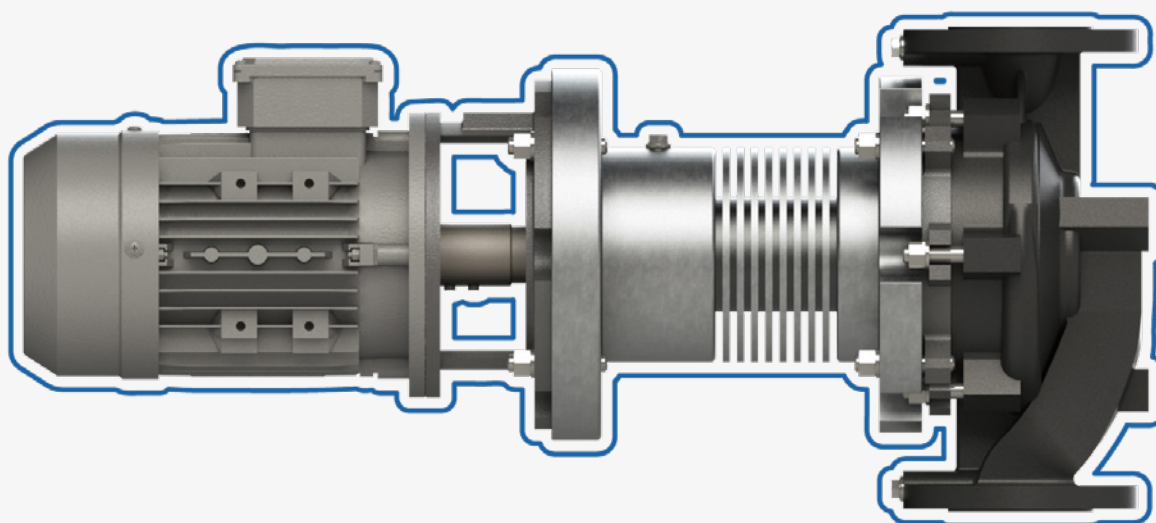
Single NV-2 type mechanical seal (EN12756) with independent direction of rotation. Cylindrical spring and driving by means of set screws. Robust and adaptable design.

Pump casing in GGG-40.
Hydraulics according to EN733
(DIN24255).
Maximum temperature of 350°C.

In-line suction and discharge ports,
allowing horizontal or vertical cir-
culation, depending on the installa-
tion.



Finned heat sink casing to ensure
temperature reduction in the area
of the mechanical seal and the rear
ball bearing.



IAC-FT Series

The IAC-FT series is a set of monoblock, single-stage centrifugal electropumps with an In-Line connection, meaning that the pump's discharge and suction nozzles are aligned in a straight line with the piping, following EN733 (DIN 24255) standards. These pumps are specially designed to operate in applications with high heat transfer fluid temperatures (up to 350°C) and can be installed in either a vertical or horizontal position to fulfill their main function: circulating thermal fluid.

Specifications

Materials

Pump volute	GGG-40 ductile cast iron
Impeller	GG-20 cast iron
Pump shaft	F-114 or 316 Stainless steel
Heat sink casing	Ductile cast iron iron
Mechanical seal	NV-2 Type (EN 12756)
Lantern	GG-20 cast iron

Technical data

Motor	Three-pase according to IEC standards
Efficiency	- IE2 o IE3 for powers > 1 HP - IE1 if the power < 1 HP - It can be supplied up to IE5.
Tension	- Three-pase 230/400 V $\pm$ 10% up to 5,5 HP - Three-pase 400/690 V $\pm$ 10% from 7,5 HP
Poles	2 or 4 depending on the model
Level of protection	IP55
Insulation	F Class

Usage limits

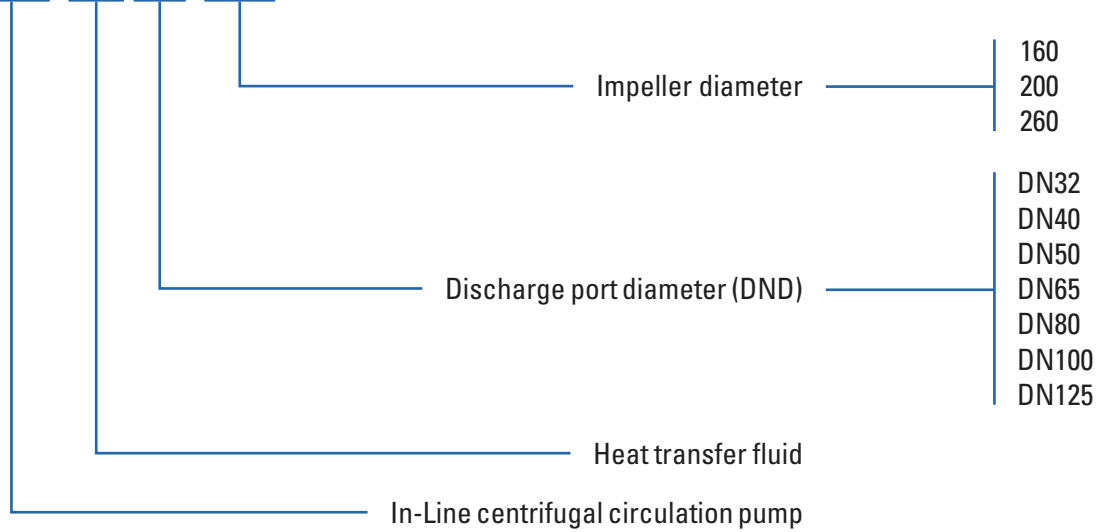
Range of flow rates	Up to 50 m ³ /h
Range of pressures	Up to 10 bar
Max. working pressure	16 bar
Max. working temperature	350°C

Connections

DNS	50-160 65-200/260 80-200	DN50 Flange DN65 Flange DN80 Flange
DND	50-160 65-200/260 80-200	DN50 Flange DN65 Flange DN80 Flange

Nomenclature

IAC-FT 32-160

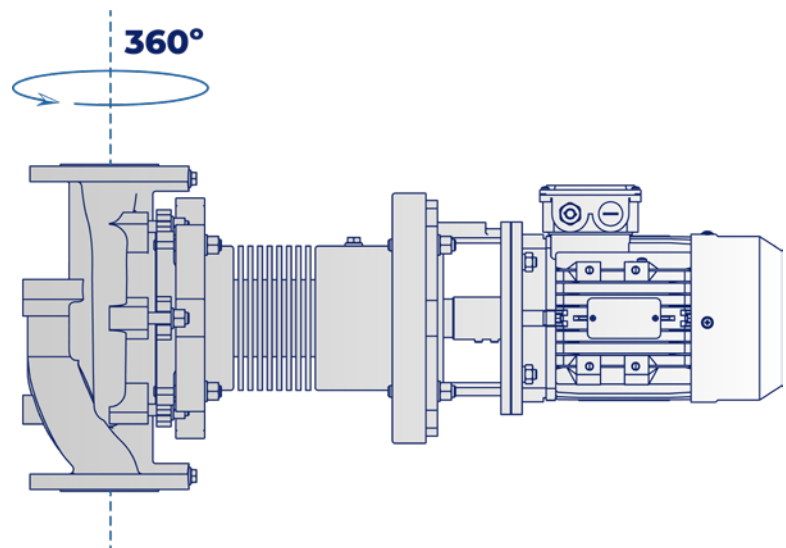


Design

Installation

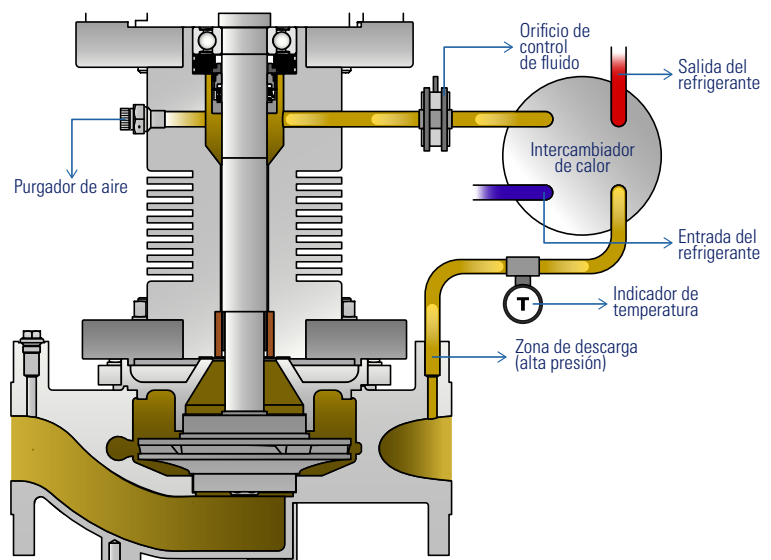
Horizontal installation

When installed with the pump shaft in a horizontal position, the equipment can rotate 360° around the axis connecting the suction and discharge ports, whether horizontally or vertically.



Vertical installation

When the pump is installed in a vertical position (with the motor always on top), a bleeder must be installed to release air from inside the pump, along with the addition of an API Plan 21 to ensure optimal lubrication of the mechanical seal.

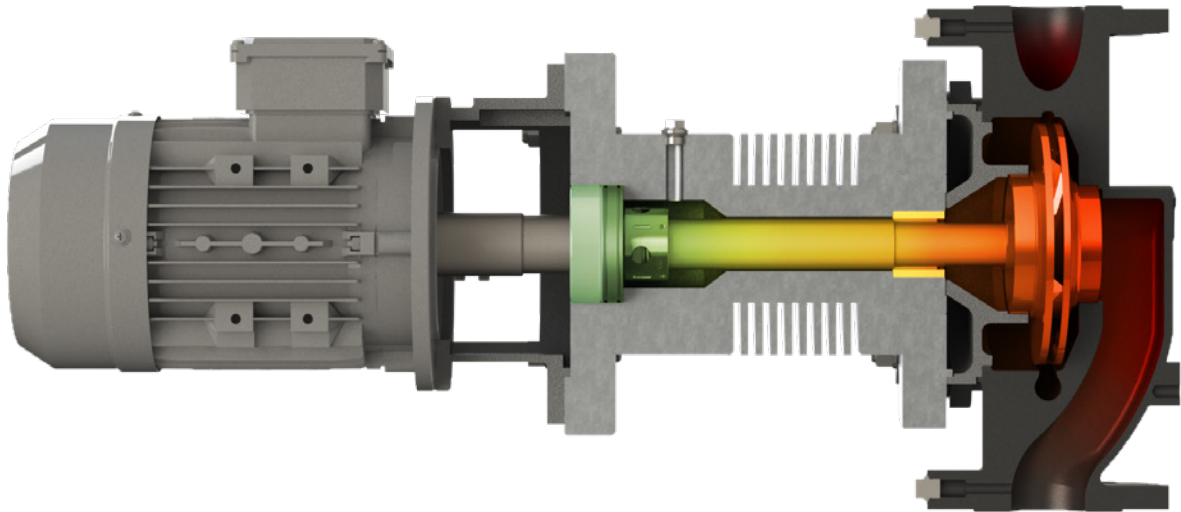




Heat dissipation

The main feature of the IAC-FT series is its ability to operate at high temperatures, up to 350°C. The pump's operation has been rigorously tested at Bomba Elias and verified through thermography. It can therefore be stated that, thanks to the pump's design, the temperature in the working area is significantly reduced along the vertical/axial axis, ensuring the optimal condition of seals, bearings, and the mechanical seal.

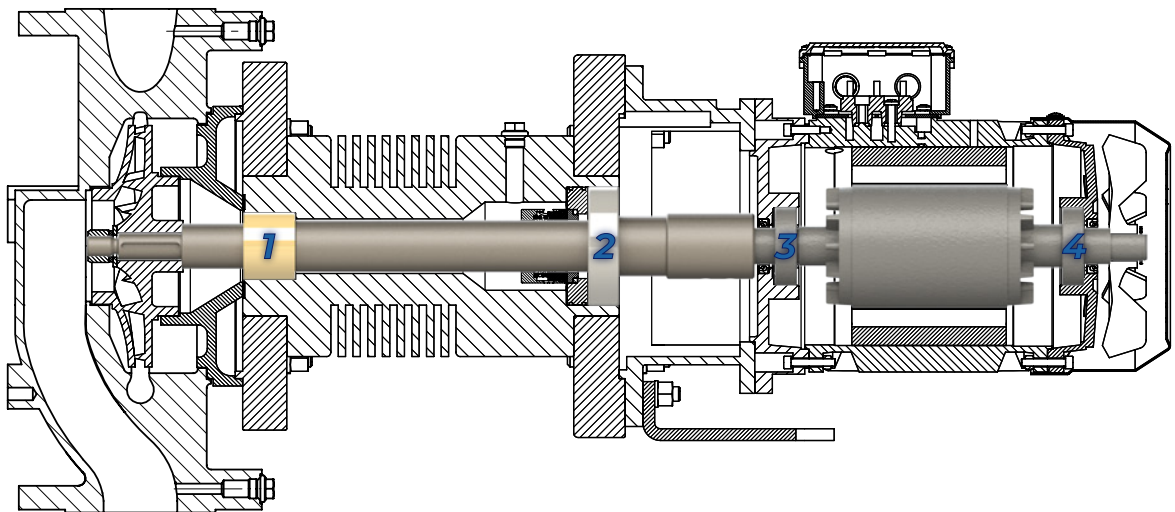
The heat sink body helps reduce the temperature of the transfer fluid through finning. It conducts heat from the inner part, which is in contact with the fluid, to the outer part, releasing the heat to another medium via radiation.



Shaft design

The pump shaft is directly coupled to the motor shaft end by means of a rigid coupling, ensuring optimal alignment and allowing smooth, friction-free operation.

The shaft is supported at up to four points, consisting of three deep groove ball bearings and a front bearing, which, in addition to providing stability to the shaft, acts as a restrictive ring. These supports, properly distributed along the assembly, provide excellent stability, ensuring the correct operation of the pump and increasing the equipment's lifespan.



Sealing solution

NV-2 mechanical seal

Characteristics

- Modular design. Components are easily interchangeable and fabricated in a variety of materials for each application.
- Reversible. It can rotate in both directions indistinctly.
- Friction faces in monolithic and semi-balanced construction.
- Robustness. Fixed to the shaft by means of set screws and torque transmission through a solid machined steel ring.
- Spring. The cylindrical spring design allows to work with loaded liquids without locking problems.
- Simple assembly. The closure incorporates an indicator to adapt to the working benchmark.
- Self-cleaning. The design of the closure avoids the accumulation of product on its surface.
- Dimensions according to *EN 12756* standards.

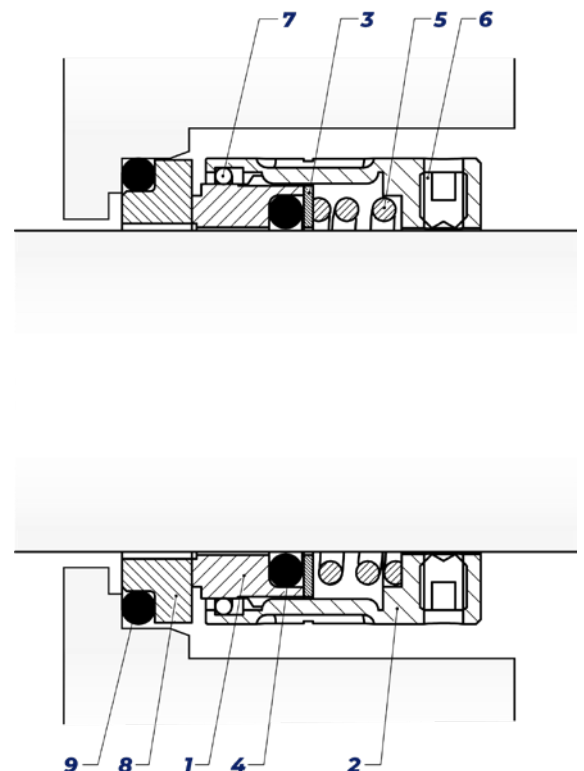


Usage limits

- P (Pressure): Up to 16 bar depending on the PV factor.
- T (Temperature): -40°C up to 200°C (depending on the secondary seal material).
- vg (Velocity): 20 m/s (10 m/s for U1U1)

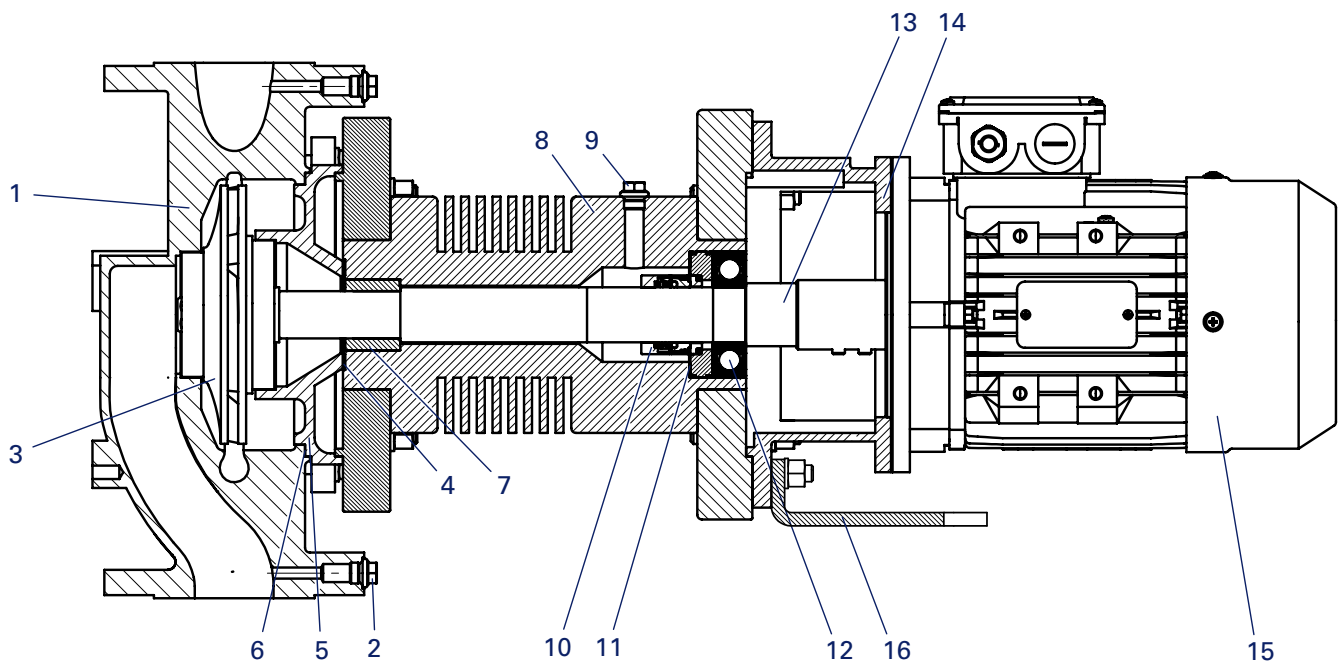
Component breakdown

REF	Designation	Material
1	Rotating ring	Carbon resin
2	Draging sleeve	CrNiMo-steel
3	Gasket	CrNiMo-steel
4	Shaft gasket	FPM (Viton)
5	Spring	CrNiMo-steel
6	Set screw kit	CrNiMo-steel
7	Safety ring	CrNiMo-steel
8	Stationary ring	Silicone carbide Q2
9	Stationary gasket	FPM (Viton)



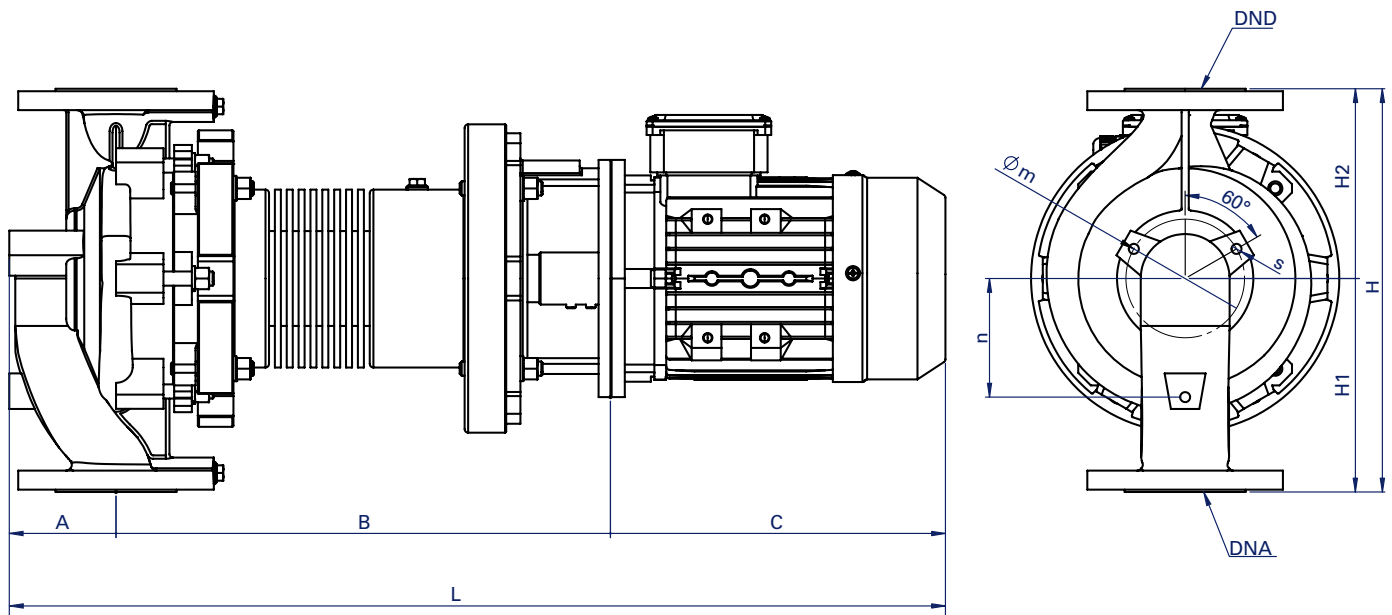


Component breakdown



REF	Designation	REF	Designation
1	Volute	9	Mechanical seal filling plug
2	Pump draining plug	10	Mechanical seal
3	Impeller	11	Mechanical seal gasket
4	Pump volute/cover gasket	12	Ball bearing
5	Pump cover	13	Pump shaft
6	Pump cover/Heat sink casing gasket	14	Lantern
7	Front restrictive ring	15	Motor
8	Heat sink casing	16	Rear supporting foot

Dimensions table



$n = 2900 \text{ r.p.m.} / 50 \text{ Hz}$

Model	Motor		Pump dimensions									Anch. dimensions		
	CV	Size	DNS	DND	L	A	B	C	H	H1	H2	Øm	n	ØS
50-160	3	90 L1	50	50	789	90	417	282	340	180	160	100	100	M10
	4	100 L1			825		429	306						
	5,5	112 M			847		454	328						
	7,5	132 S1			888		462	369						
65-200	7,5	132 S1	65	65	941	110	462	369	415	215	200	130	120	M10
	10	132 S2			1079		494	475						
	15	160 M1			1102		497	475						
	20	160 M2			1146		519							
80-200	15	160 M1	80	80	1102	130	497	475	475	250	225	170	145	M12
	20	160 M2			1146		519							
	25	160 L			1146		519							

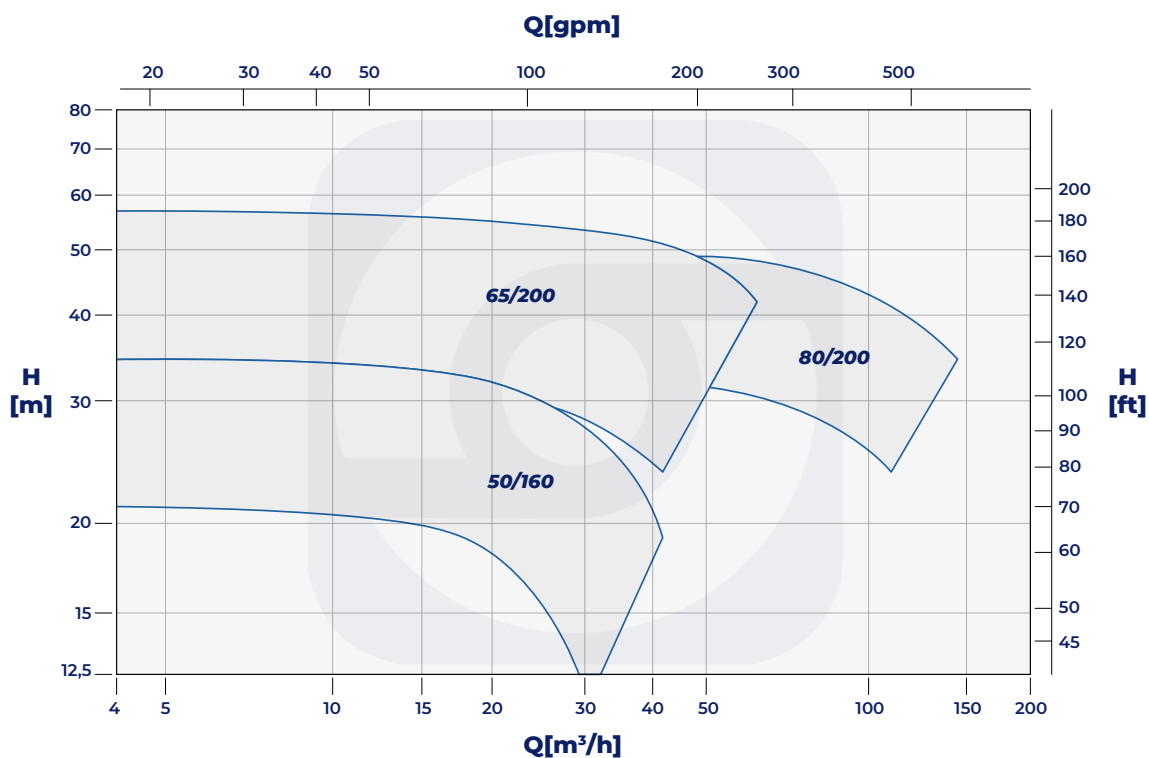
$n = 1450 \text{ r.p.m.} / 50 \text{ Hz}$

Model	Motor		Pump dimensions									Anch. dimensions		
	CV	Size	DNS	DND	A	B	C	L	H	H1	H2	Øm	n	ØS
50-160	0,5	71 2	50	50	90	391	282	763	360	180	160	100	100	M10
	0,75	71 3						809						
65-200	1	80 2	65	65	110	417	369	896	415	215	200	130	120	M10
	1,5	80 3					425	475						
	2	90 L1					428	475						
65-260	2	90 L1	65	65	115	440	519	1074	500	250	250	170	145	M12
	3	100 L2					519	1074						
	4	100 L2					519	1074						
80-200	2	90 L1	80	80	130	425	475	1030	475	250	225	170	145	M12
	3	90 L2					475	1030						
	4	100 L2					437	1086						

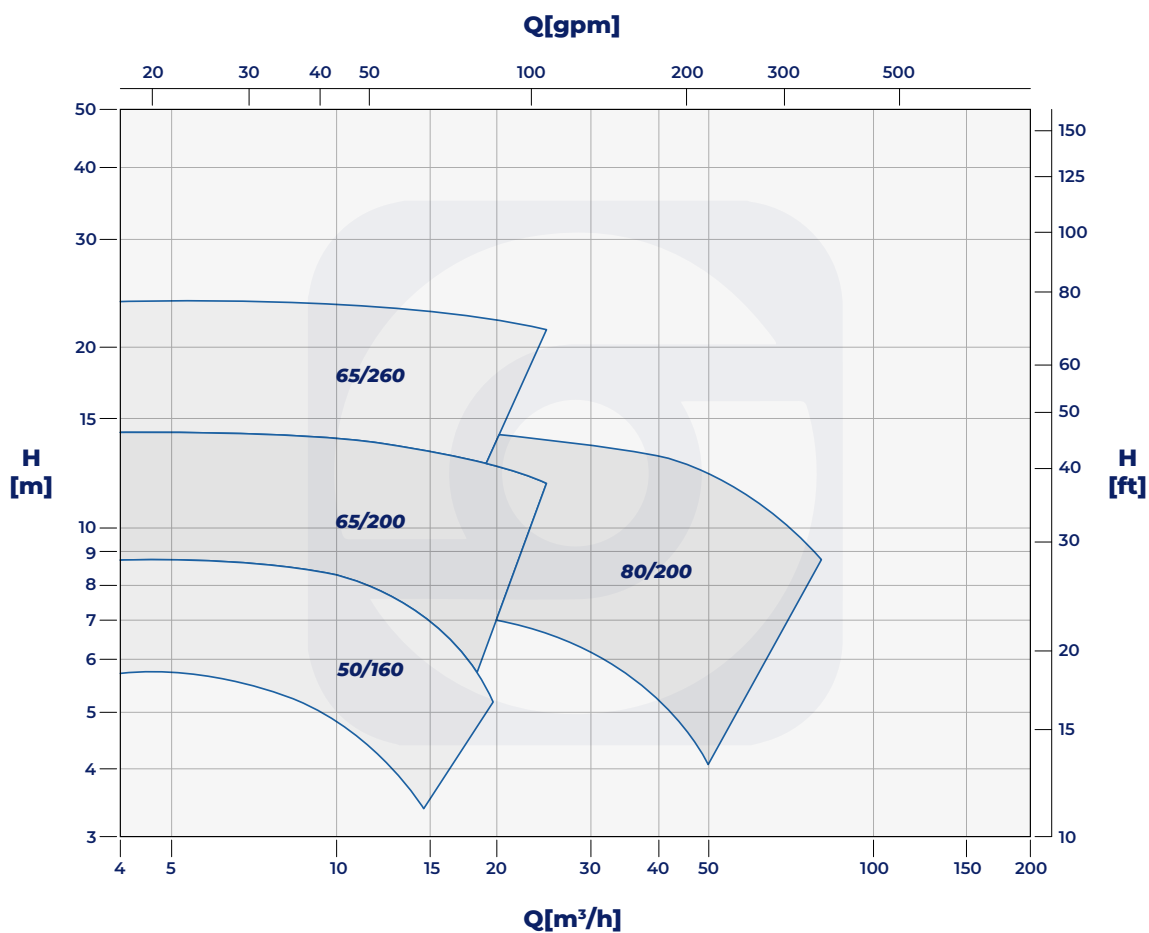


Pump selection charts

$n = 2900 \text{ r.p.m.} / 50 \text{ Hz}$

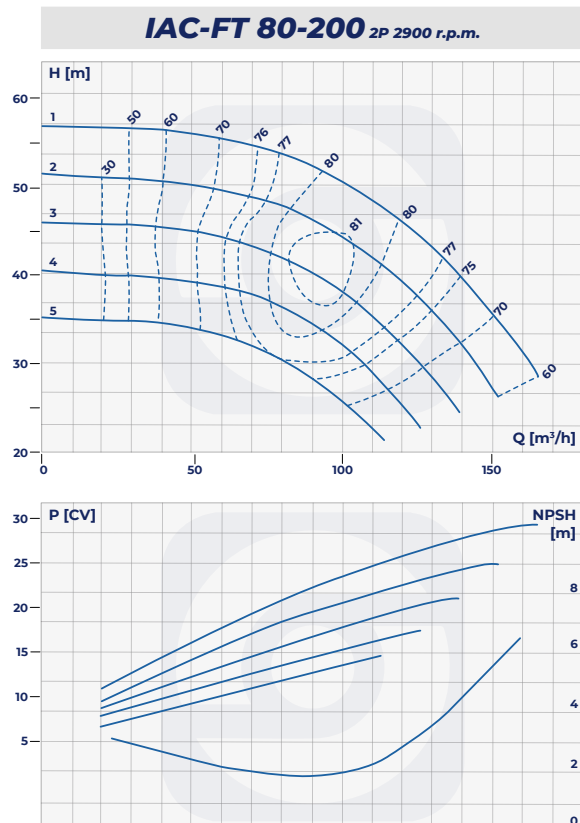
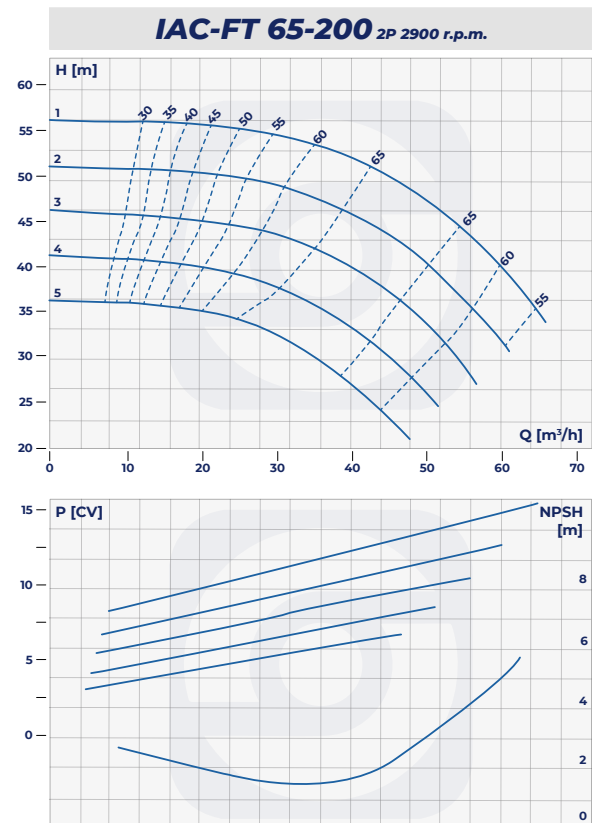
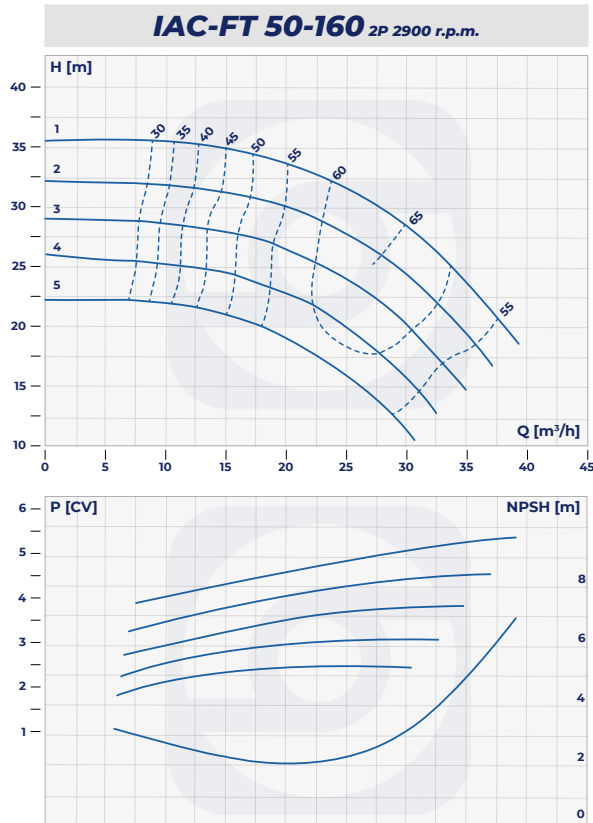


$n = 1450 \text{ r.p.m.} / 50 \text{ Hz}$



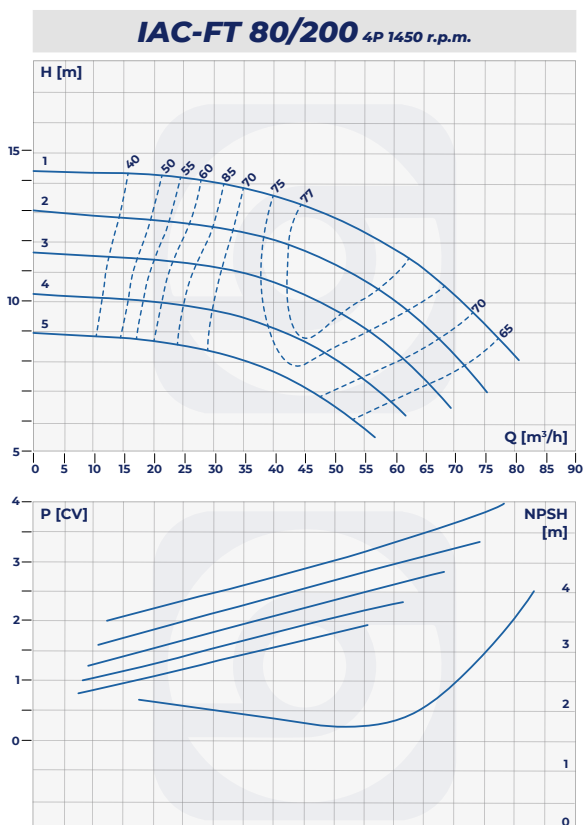
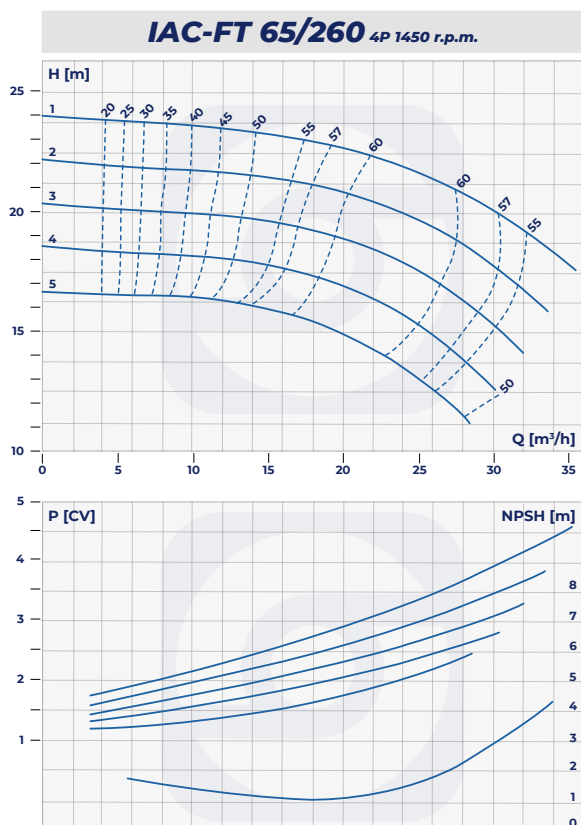
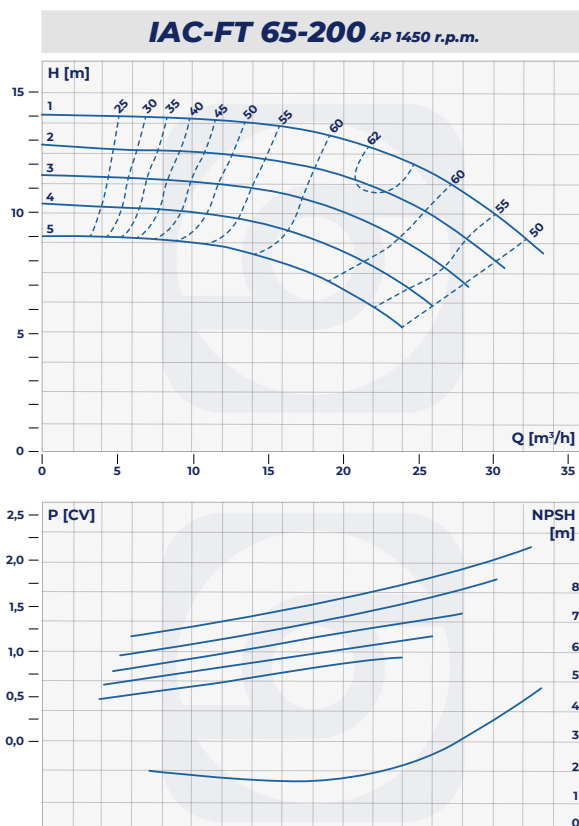
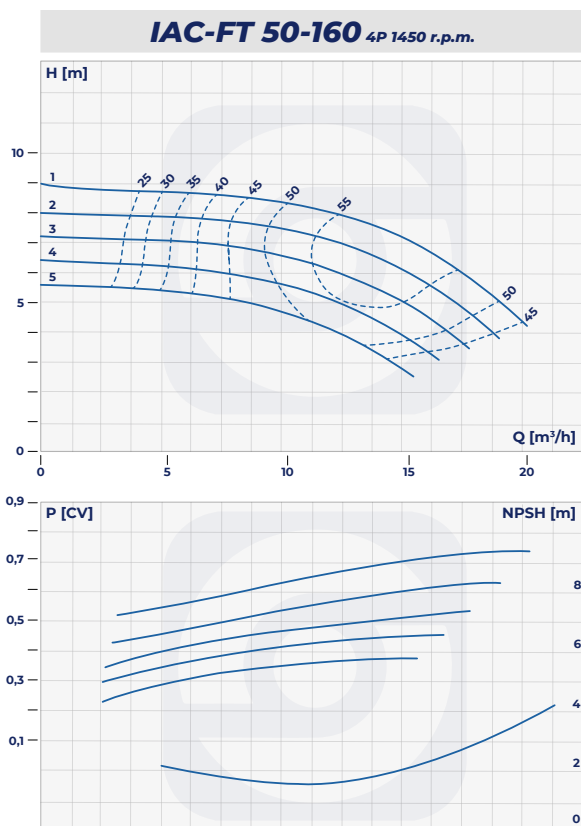
Operating curves

$n = 2900 \text{ r.p.m.} / 50 \text{ Hz}$



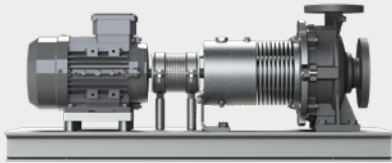


$n = 1450 \text{ r.p.m.} / 50 \text{ Hz}$

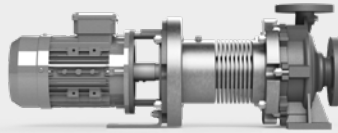


!We have all the solutions you need for your HEAT TRANSFER fluid installation at your disposal!

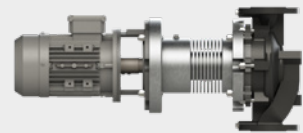
Main installation



AC-FT Series: EN733, on baseplate.
FT Series: EN22858, on baseplate.

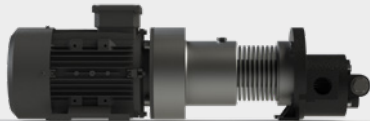


FT M Series: EN733, monoblock,
variable speed.



IAC-FT Series: EN733, monoblock,
In-Line.

Subinstallations



R-FT Series: gear pump. Adjustable
flow. Energy savings.

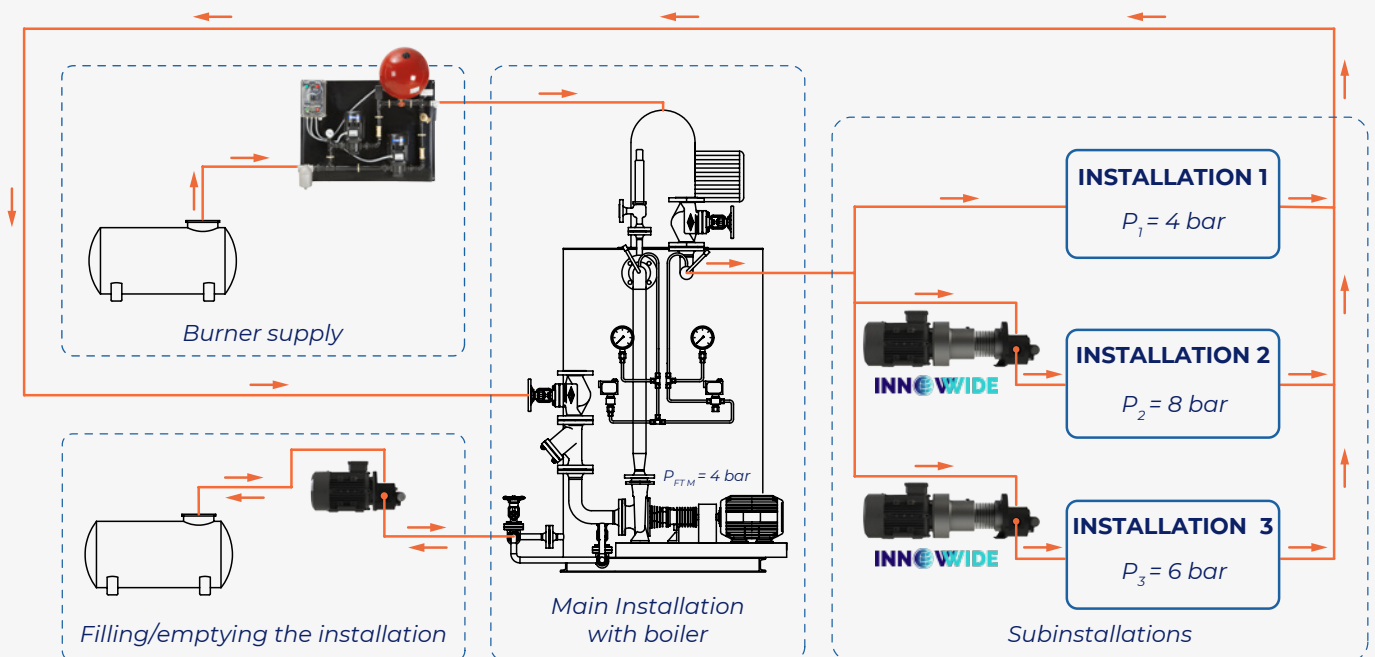


GPG/GPG-D Series: diesel pressure
booster sets.



R Series: reversible self-priming
gear pump.

Filling/draining of the installation





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