

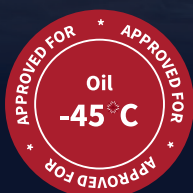


# Transformer Oil Cooling Solutions

Series

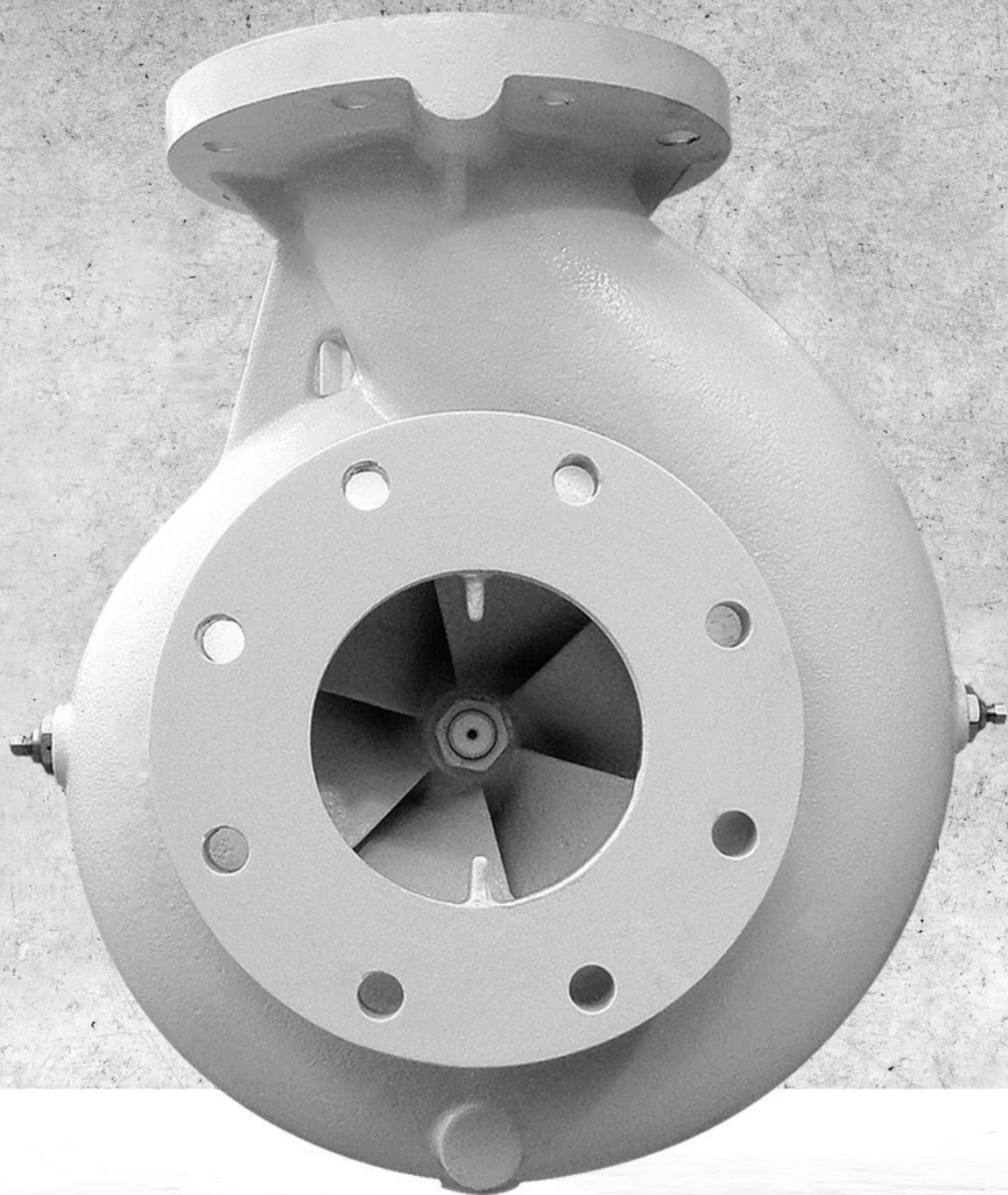
NTG/ TGCL

NTF/ TFBR/ VTTF



**INNOVATION AND EXPERIENCE**  
AT YOUR SERVICE

MANUFACTURING IN PORTUGAL SINCE **1946**





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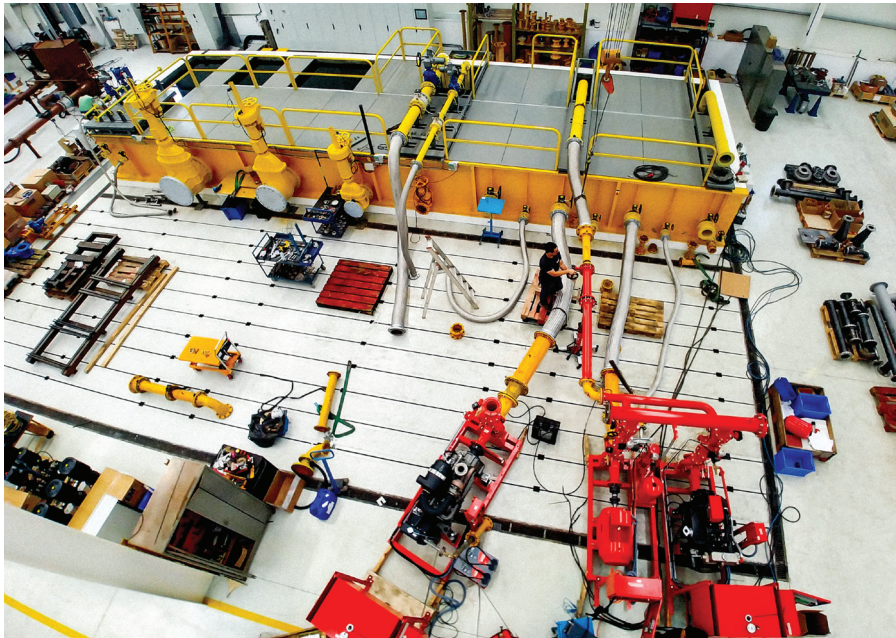
All informations and specifications in this catalogue may be changed by EFAFLU without prior notice. Product images are for illustrative purposes only and may differ from the actual product.

For other products please contact our sales and technical departments:  
**export@efafllu.pt** (export markets).

Assembly line



Hydraulic test lab



Oil test lab





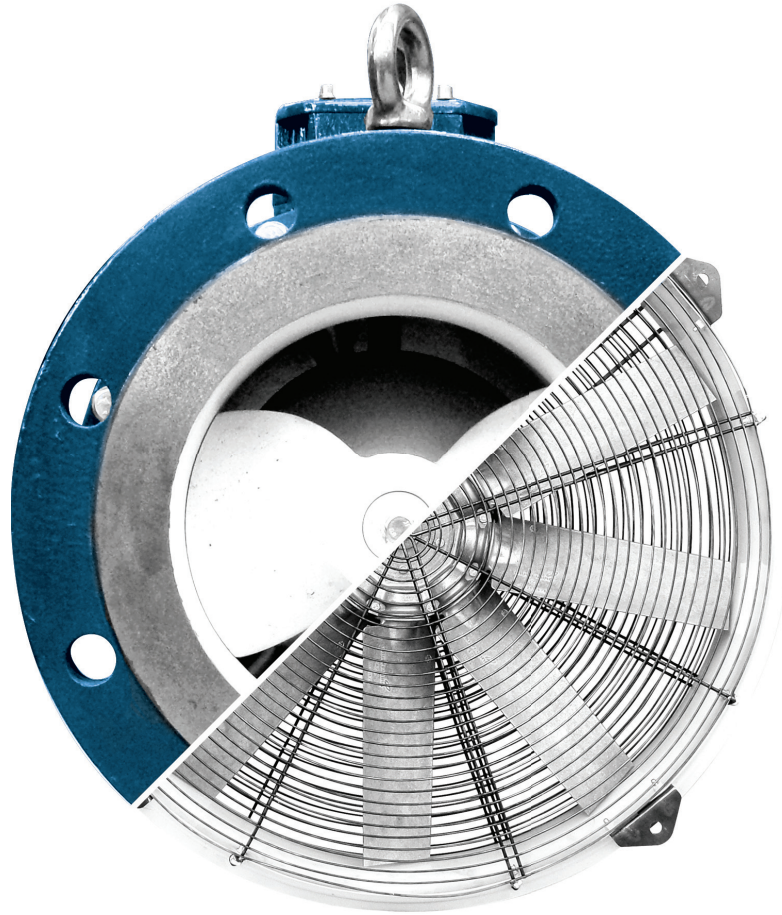
EFAFLU's facilities

EFAFLU, based in Portugal, has been a leading manufacturer of pumps and fans since 1946.

Since our foundation, we're focused on designing, developing, manufacturing and servicing pumps and fans. Our products and equipments can be found working on all continents in the most demanding and challenging conditions and environments.

EFAFLU belongs to a private group of companies in Portugal, United Kingdom and Spain, with more than 100 employees. Our R&D service, testing facilities and dedicated laboratories are located in Portugal.

We proudly develop our products, moulds and manufacture in Portugal. We offer and stock spare parts for more than 20 years.



EFAFLU is able to develop tailor made solutions for their customer's projects or adapt existing products to meet their requirements, ensuring an optimal performance and quality of their transformers.

For the pumps range, we have inline and elbow solutions from DN65 up to DN250, several construction materials and options, all according to EN IEC 60076-22-5.

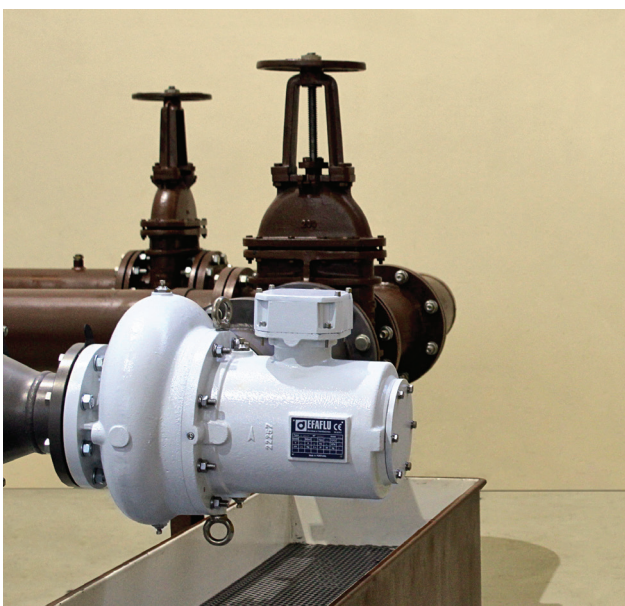
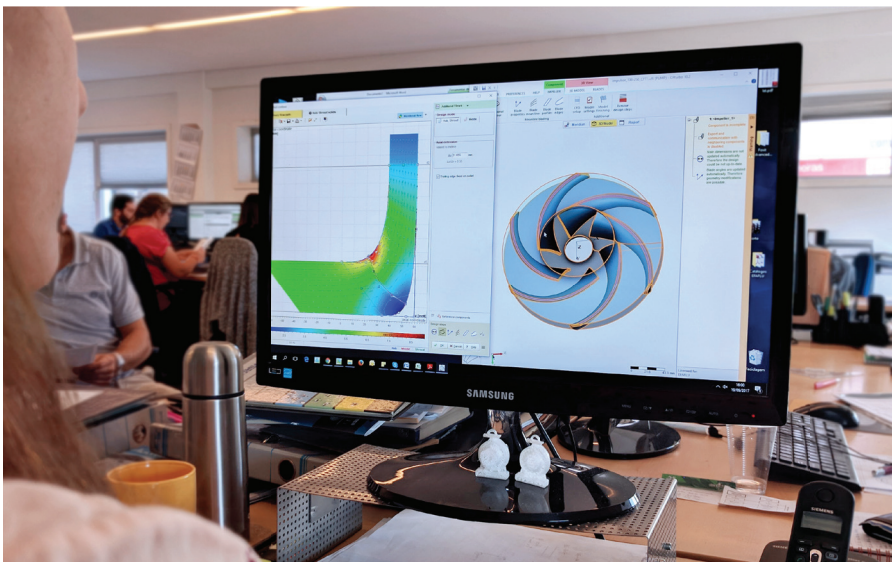
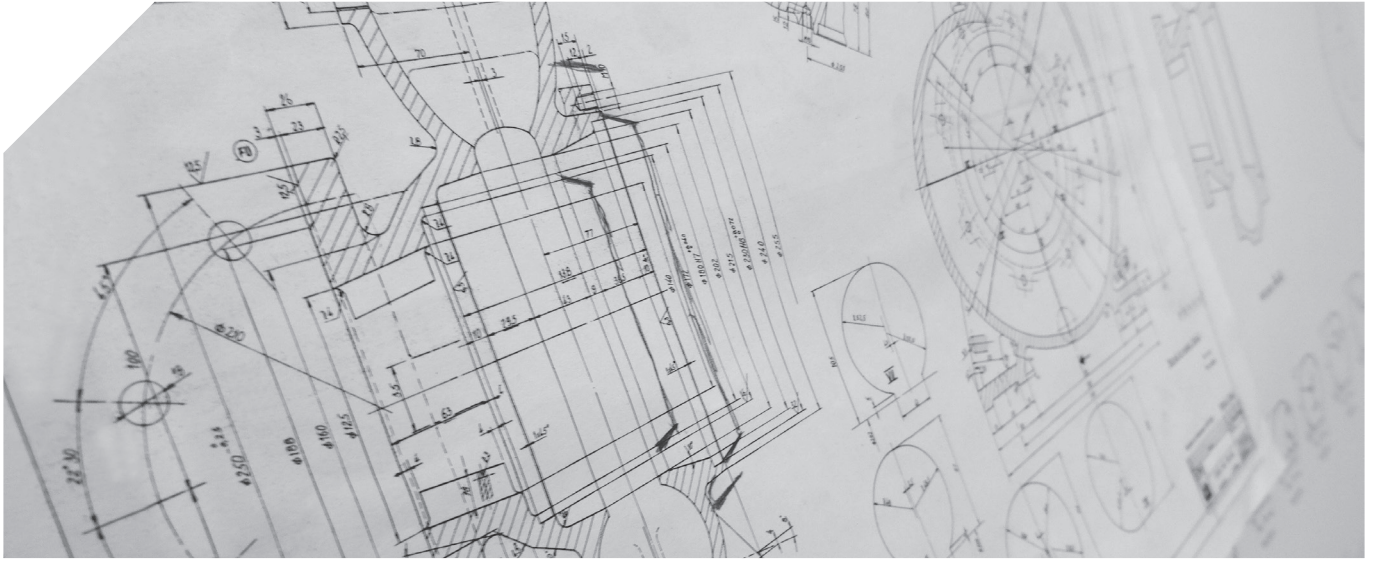
For the fans range, we have short casing and long casing solutions, from 450 up to 1000 mm, several surface treatments and options, all according to EN IEC 60076-22-6.

We have dedicated laboratories able to perform Routine and Type Tests according to EN IEC 60076-22-5 and EN IEC 60076-22-6.

We use the most efficient motors according to European regulations, to ensure the optimal performance and low energy consumption of our products. To ensure the quality of our products, we offer high quality castings and high degree of surface protection. We offer, as standard, C5 surface painting protection with free possibility of choice of RAL colour to our customers.

Our R&D team works continuously to design and develop state-of-the-art solutions using advanced software and laboratory technologies, such as thermal and mechanical software analysis, computational fluid dynamics as well as 3D printing solutions.

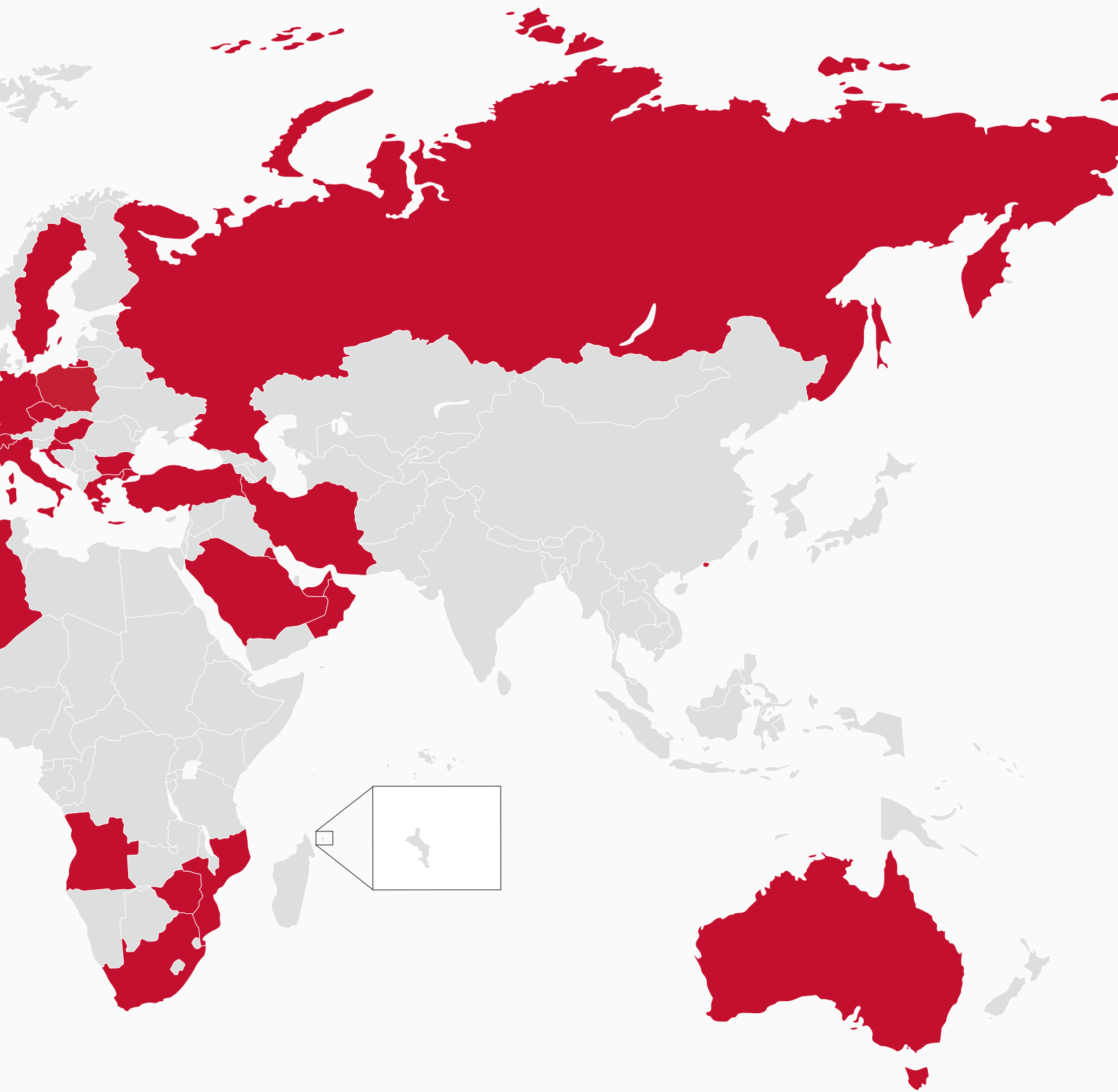
For offshore applications, we have available (only for the pumps) the CX according to ISO 12944:2018.



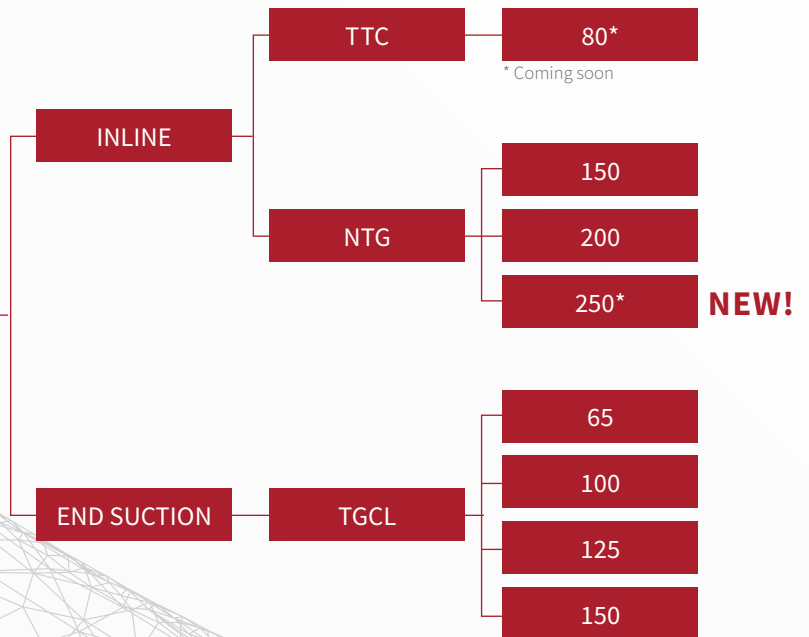


## REFERENCE LIST





# Pumps



In our range we offer inline and elbow solutions, NTG and TGCL respectively, from DN65 up to DN250, in different construction materials with a wide range of options. Our pumps are designed and approved according to EN IEC 60076-22-5, delivered together with the certificate and report test. They're designed to work with mineral oil and synthetic or natural ester, at temperatures from -45°C up to +115°C, manufactured in EN-GJL-250 or EN-GJS-400 Cast Iron, using Viton® or Silicone gaskets to ensure the most reliable operation mode.

To guarantee a vibration free performance and to extend the bearings life, we perform dynamic balancing of the rotor, according to ISO 1940.

## Range chart 50 Hz

All the curves shown in this catalog were obtained with mineral transformer oil. The correspondent density and kinematic viscosity at 60 °C are 847 kg/m<sup>3</sup> and 5,8 mm<sup>2</sup>/s.

The curves and motor running / trip data are valid for transformer oils with a density equal or less than 890 kg/m<sup>3</sup>, and a kinematic viscosity equal or less than 16 mm<sup>2</sup>/s at the desired working temperature. For transformer oils with a density and/or kinematic viscosity that fall outside the stipulated interval above please contact EFAFLU Sales Team for customized selection.

The hydraulic curves are shown as Head (m) in y axis versus Flow (m<sup>3</sup>/h) in x axis. Showing Head (m) instead of Pressure (kPa) eliminates the effect of density used to obtain the curves from the selection and, thus, avoid possible errors.

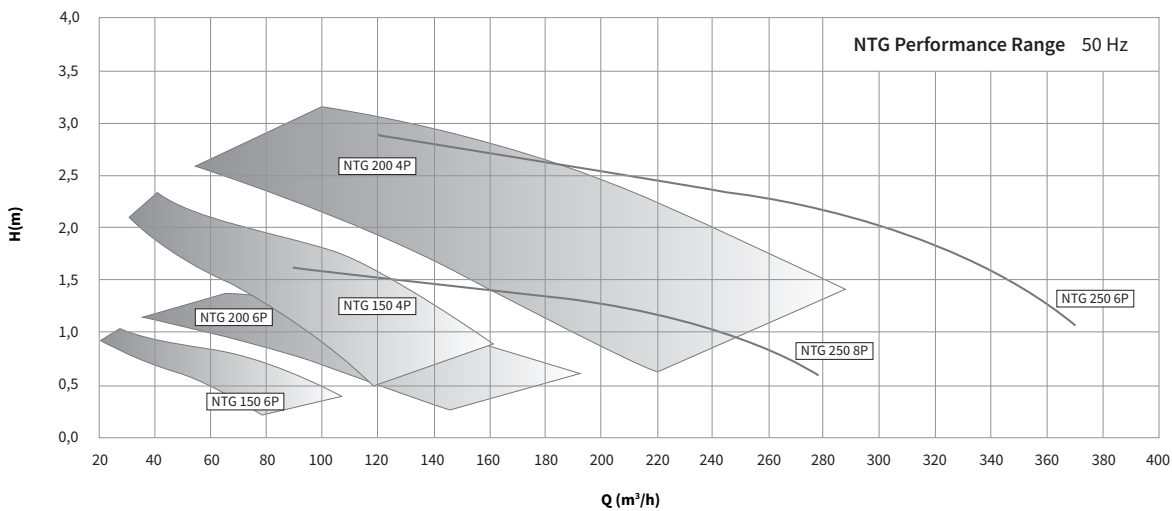
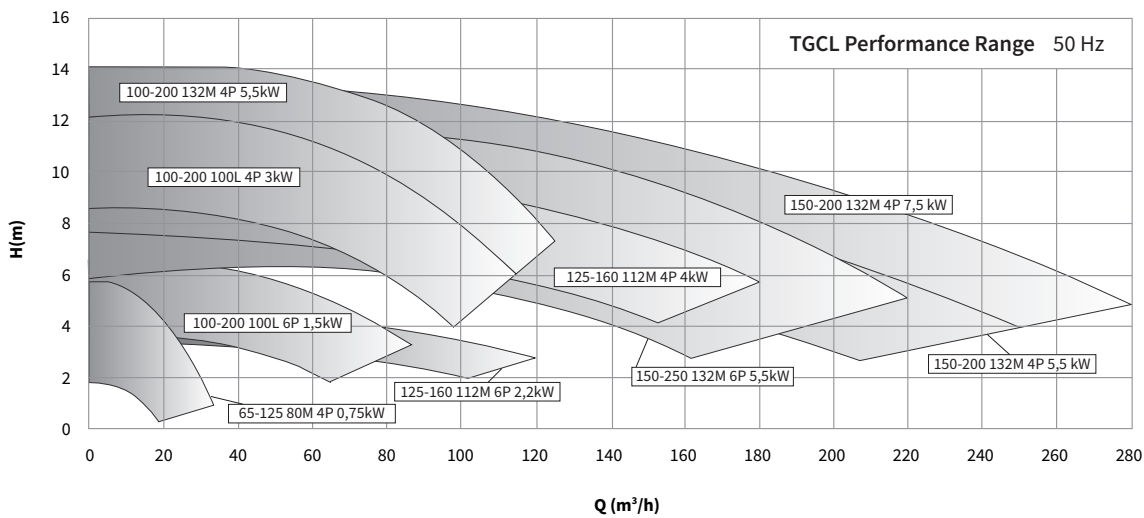
If your input for selection is Pressure (kPa) instead of Head, please use the equation below.

$$H (m) = \frac{P (kPa) \times 1000}{\rho \left(\frac{kg}{m^3}\right) \times g \left(\frac{m}{s^2}\right)}$$

Where:

$\rho$  = density of the working fluid at the desired working temperature

$g = 9,81$



## Pumps range approved for -45°C cold start test

EFAFLU pumps range can be installed in the most extreme environments, such as cold environments. At low temperatures there are potential risks for a pump such as oil viscosity, motor overheating, and behavioural changes of the materials that can lead to failure during start-up.

TGCL and NTG pumps have been successfully tested for cold start at -45°C in an independent laboratory. Tests performed included speed rotation, temperature and electrical data monitoring. Despite EN IEC 60076-22-5 only requiring -25°C, EFAFLU decided to extend to a more severe scenario of -45°C enabling our pumps to be fitted in the most extreme conditions.



## Low temperature versions (LT)

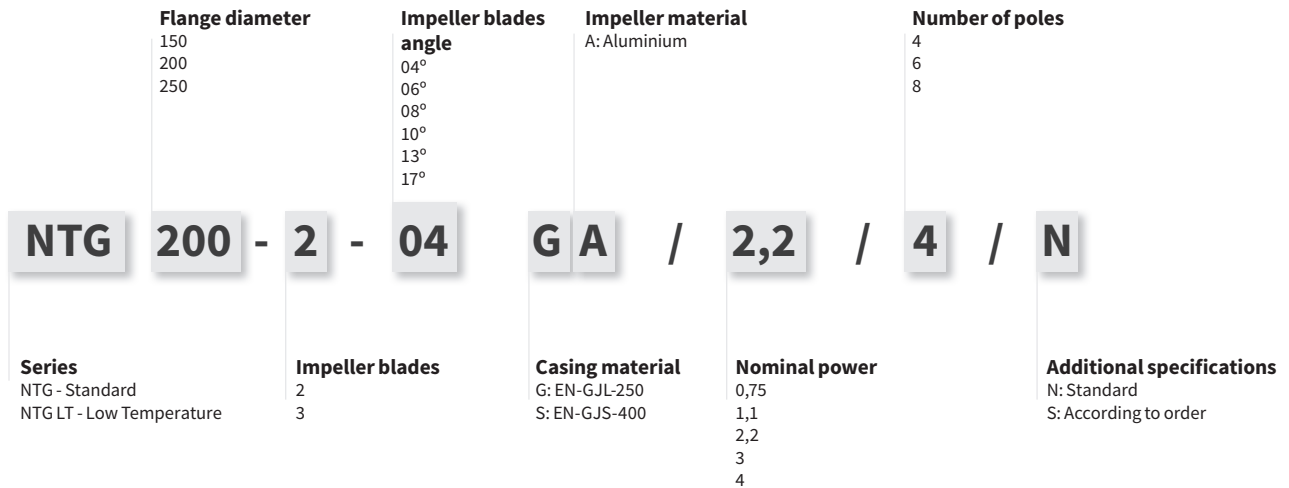
TGCL LT and NTG LT are transformer oil pumps for low temperatures up to -60°C (ambient temperature)\* enabling our pumps to be fitted in the most extreme conditions.

\* Starting temperature of the oil must be -45°C or higher and kinematic viscosity less than 7200 mm<sup>2</sup>/s.

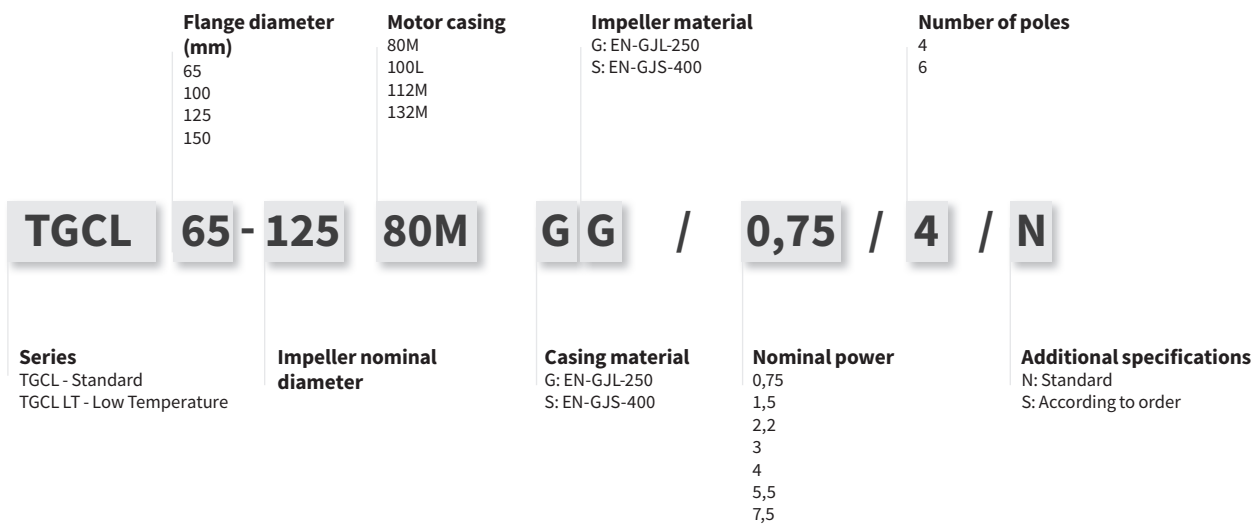
### PUMPS

COMPONENTS	NTG GA LT	NTG SA LT	TGCL GG LT	TGCL SS LT
Impeller	Axial	Axial	Radial	Radial
Impeller material	Aluminium	Aluminium	EN-GJL-250	EN-GJS-400
Casing material	EN-GJL-250	EN-GJS-400	EN-GJL-250	EN-GJS-400
Shaft	AISI 420	AISI 420	AISI 420	AISI 420
Gaskets	Silicone	Silicone	Silicone	Silicone
Bearings	Ball bearings	Ball bearings	Ball bearings	Ball bearings
Lubrication	Dielectric oil	Dielectric oil	Dielectric oil	Dielectric oil
<b>OPERATIONS CONDITIONS</b>				
Max. Tamb	-50°C < T < 40°C	-60°C < T < 40°C	-50°C < T < 40°C	-60°C < T < 40°C

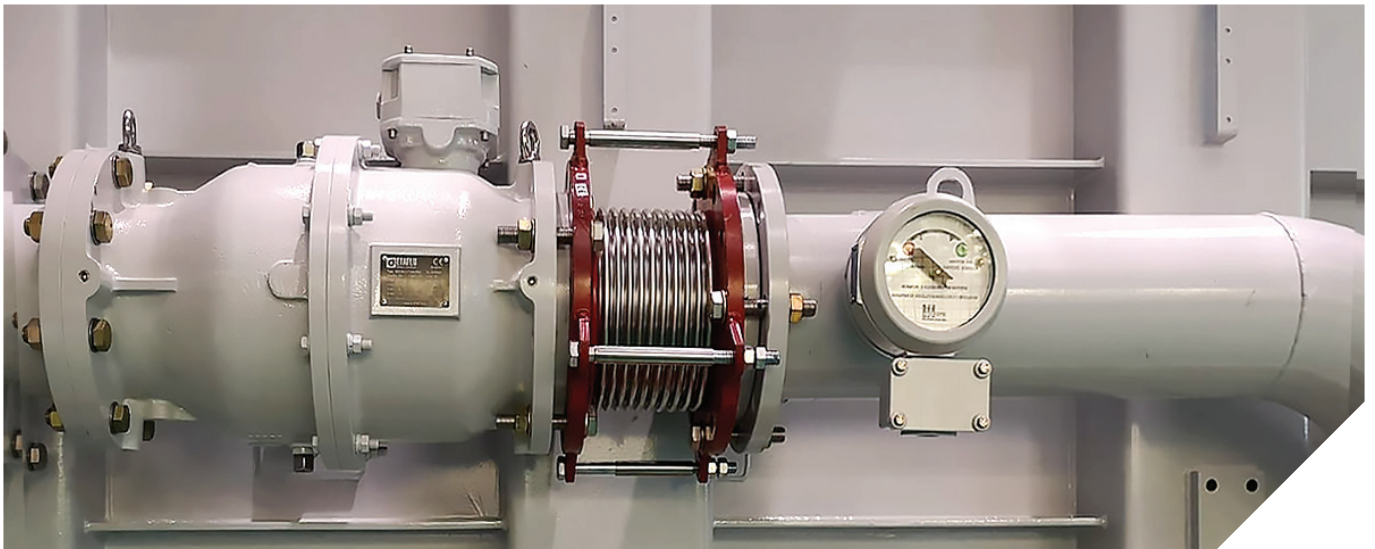
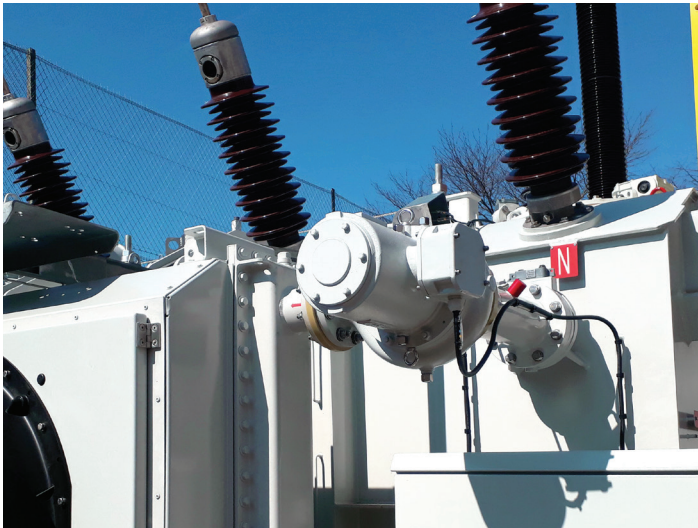
Pump model nomenclature **NTG**



Pump model nomenclature **TGCL**



Applications





## Characteristics

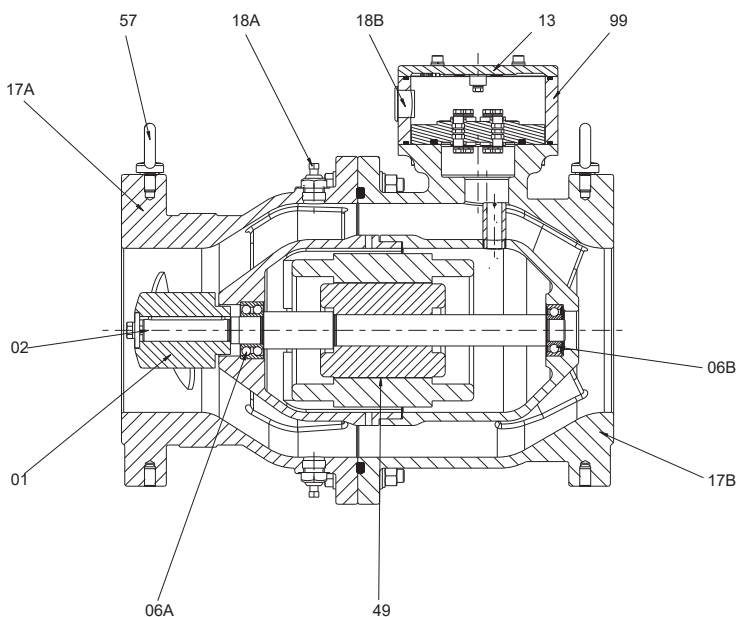
**NTG is an inline axial type pump, from DN150 up to DN250, manufactured in EN-GJL-250 or EN-GJS-400 Cast iron with IP56 protection.**

**Maintenance free SKF bearings.**

NTG pumps perform with low noise levels, measured on free-field hemispherical surface and validated at our laboratory.

The pumps are supplied, as standard, with C5 H surface treatment (high durability) according to ISO 12944:2018 and CX is available as well. They can be installed horizontally or vertically, with terminal box and drain/vent plugs position defined according to order. Flanges can be DIN or ISO PN10, raised or flat faced. They offer the possibility of having multiple motors of choice, either 4P, 6P or 8P, with hydraulic performance curves that will match the requirements of any project.

## Part list



Parts	Materials
<b>Casing</b>	EN-GJL-250 or EN-GJS-400
<b>Impeller</b>	Aluminium Al Si10 Mg
<b>Shaft</b>	AISI420
<b>Terminal Box</b>	Aluminium Al Si10 Mg
<b>Screws</b>	A4 – AISI316
<b>Optionals</b>	ATEX (NTG 150) RAL/ CX/ Munsel Flat face; Raised face; Groove

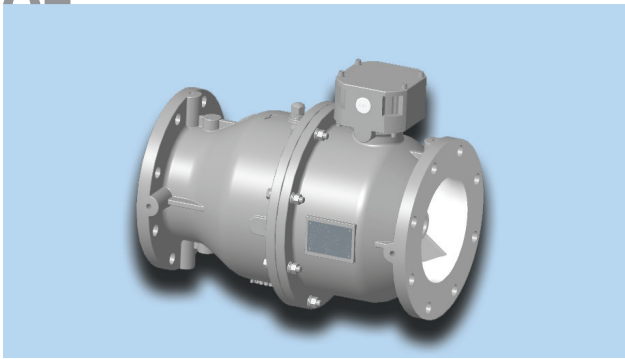
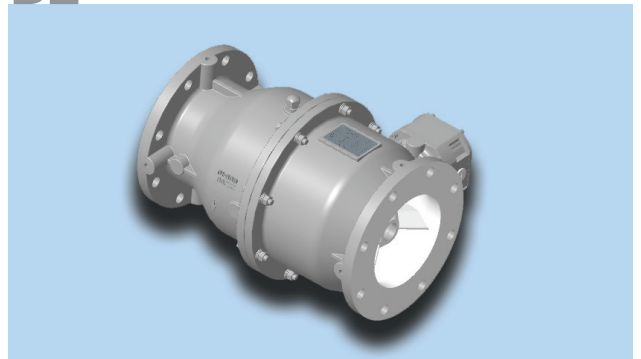
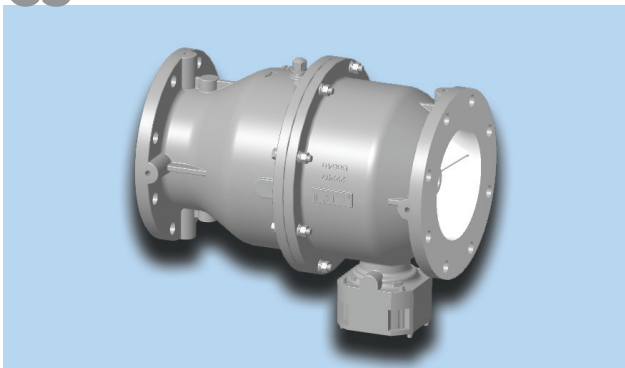
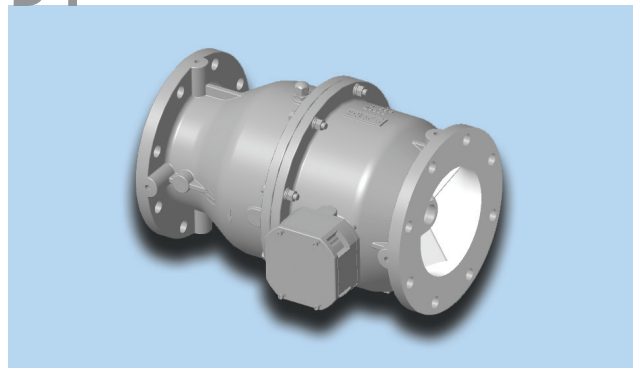
Electrical data	Specifications
<b>Power</b>	0,75 up to 4 kW
<b>Poles</b>	4; 6 and 8
<b>Voltages</b>	3x400 VAC @ 50 Hz or 3x460 VAC @ 60 Hz

\* Other voltages under request.

Part	Designation
<b>01</b>	Impeller
<b>02</b>	Shaft
<b>06A</b>	Bearing
<b>06B</b>	Bearing
<b>13</b>	Terminal box cover
<b>17A</b>	Suction casing
<b>17B</b>	Discharge casing
<b>18A</b>	Drain/ vent
<b>18B</b>	Cable gland
<b>49</b>	Motor
<b>57</b>	Eye bolt
<b>99</b>	Terminal box

## Mounting positions - horizontal and vertical

NTG pumps can be mounted in different positions. The various mounting positions available can be simulated in PSO software. Some examples below (other positions available).

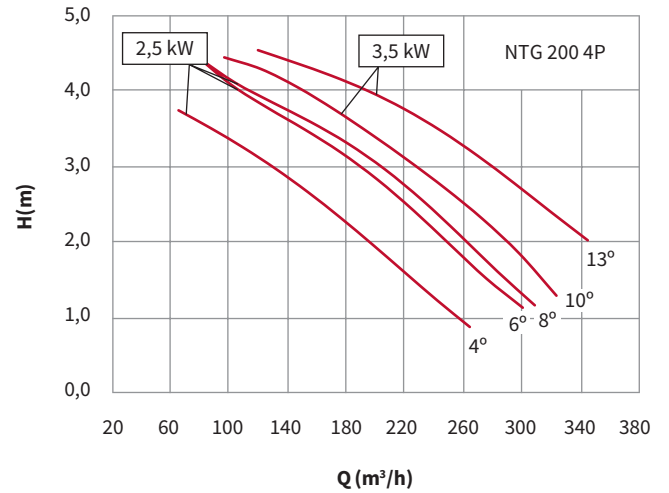
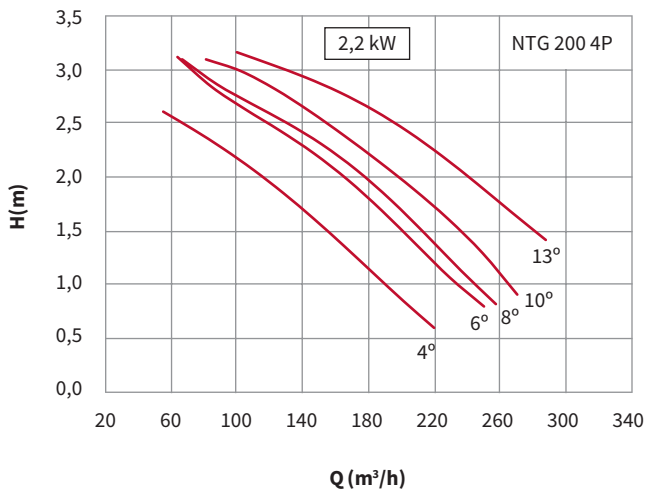
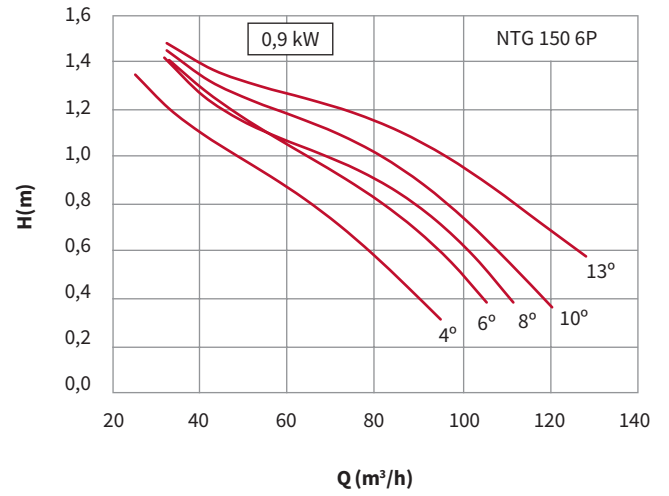
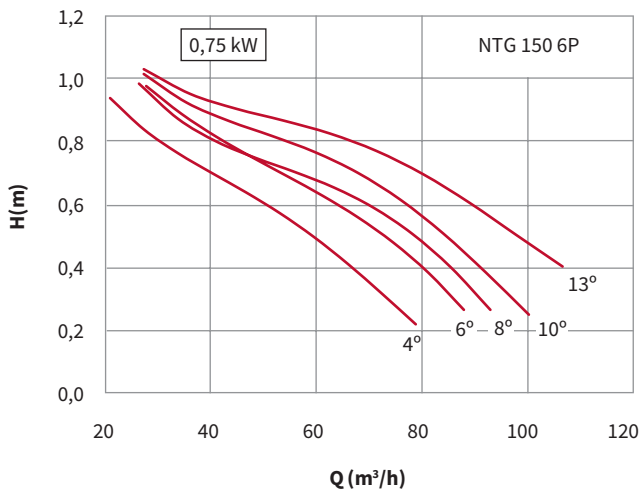
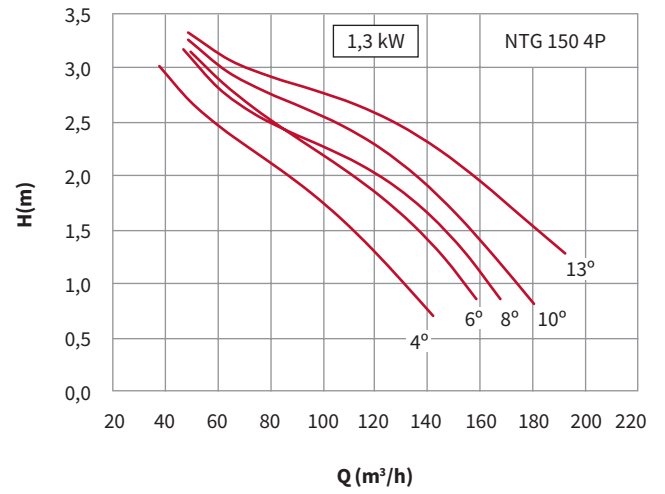
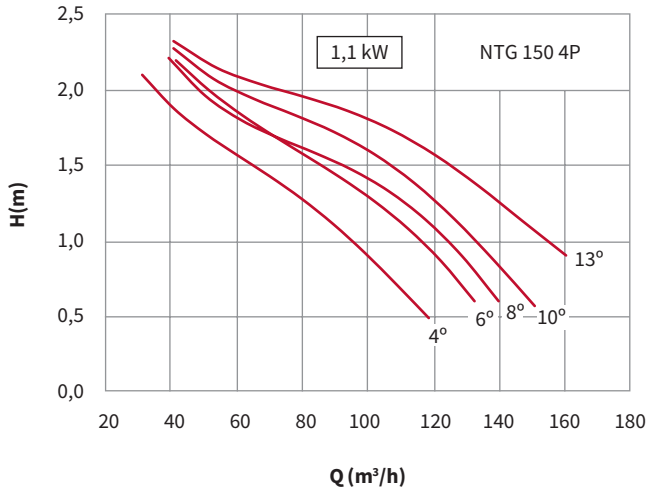
**A1****B2****C3****D4**



Curves According to ISO 9906 Grade 2B/ EN IEC 60076-22-5

# 50 Hz 400v

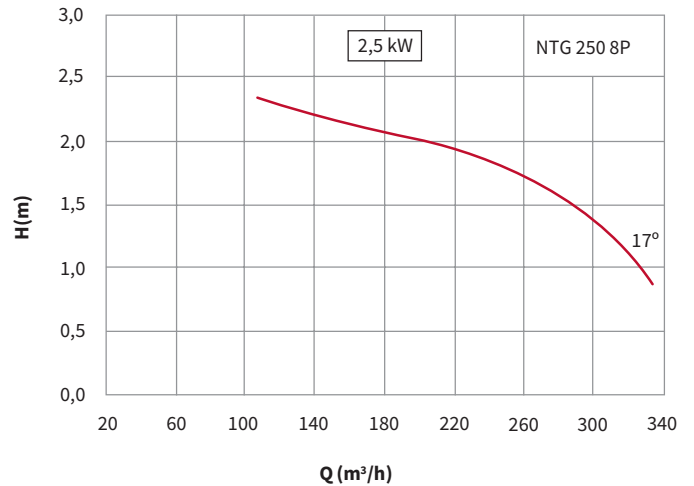
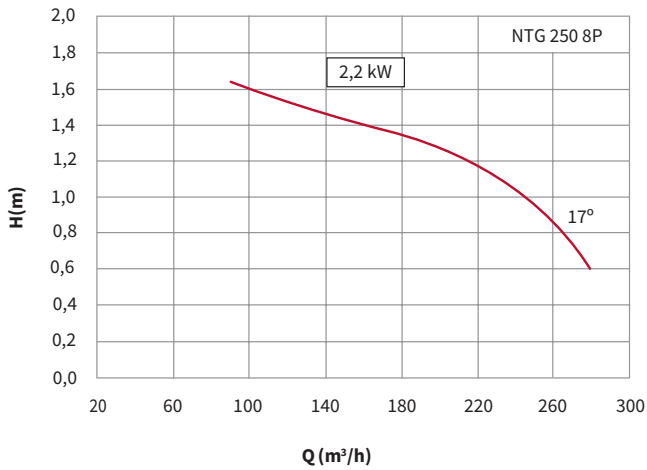
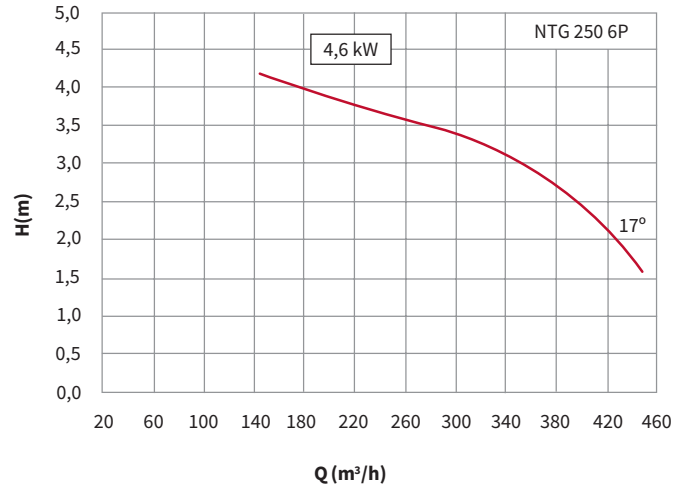
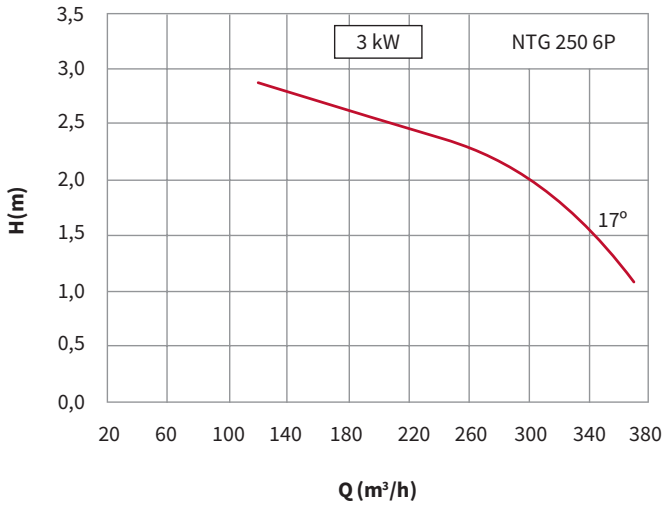
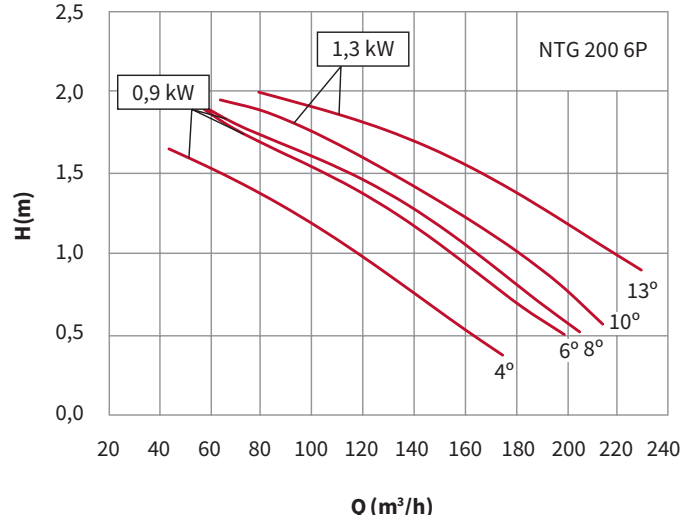
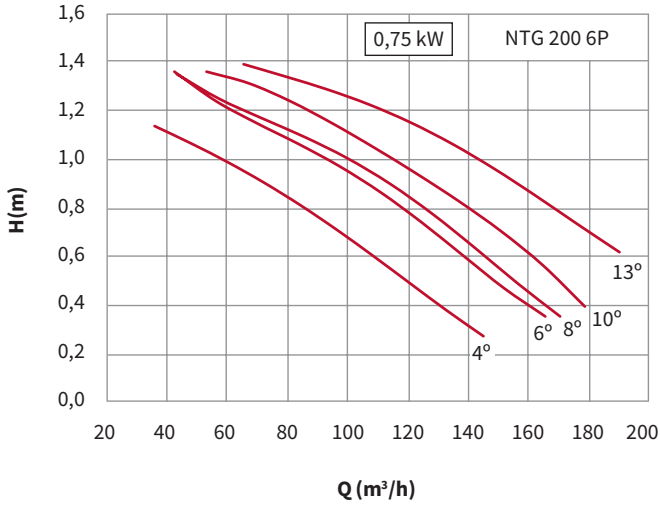
# 60 Hz 460v



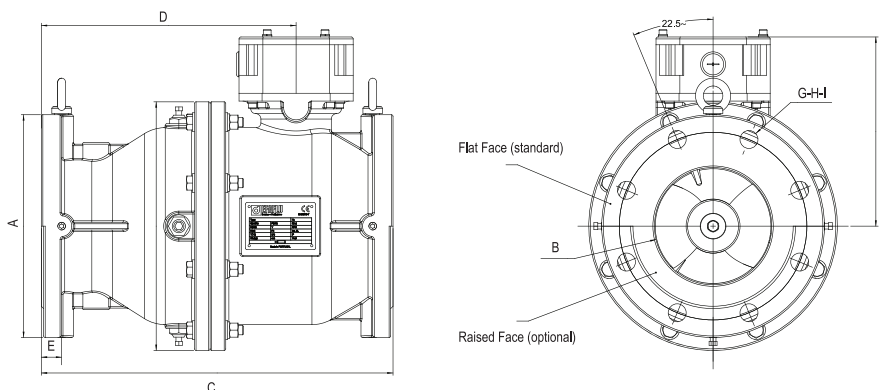
Curves According to ISO 9906 Grade 2B/ EN IEC 60076-22-5

# 50 Hz 400v

# 60 Hz 460v



### Dimensions (mm)



Pump	A	B	C	D	E	F	G	H	I	Weight (Kg)
<b>NTG 150*</b>	285	150	450	326	26	240	8	23	240	80
<b>NTG 200</b>	340	200	548	408	26	272	8	23	295	115
<b>NTG 250</b>	395	250	550	410	28	305	12	23	350	162

\* ATEX version available

### Motor

Motor	Poles	Frequency (Hz)	Rated Power (kW)	Voltage (V)	Connection	Rated Speed (rpm)	Power Factor	Rated Current (A)	Starting Current (A)	Trip Current (A)	NTG Pump Model	SPL @1m (dBA)	SWL (dBA)
<b>0,75kW IE3</b>	6	50	0,75	230/400	D / Y	950	0,67	3,7/2,1	17,2/9,9	4,0/2,3	200	41,5	49,5
	6	50	0,75	230/400	D / Y	950	0,67	3,7/2,1	17,2/9,9	4,0/2,3	150	On Request	On Request
	6	60	0,90	265/460	D / Y	1140	0,67	3,7/2,1	16,5/9,5	4,0/2,3	200	On Request	On Request
	6	60	0,90	265/460	D / Y	1140	0,67	3,7/2,1	16,5/9,5	4,0/2,3	150	On Request	On Request
<b>1,1kW IE3</b>	4	50	1,1	230/400	D / Y	1440	0,72	4,5/2,6	34,8/20,0	5,0/2,9	150	44,1	52,0
	4	60	1,3	265/460	D / Y	1728	0,72	4,5/2,6	33,4/19,2	5,0/2,9	150	On Request	On Request
	6	60	1,3	265/460	D / Y	1140	0,67	5,0/2,9	25,2/14,5	5,0/3,2	200	On Request	On Request
<b>2,2kW IE3</b>	4	50	2,2	230/400	D / Y	1450	0,82	7,8/4,5	62,6/36,0	8,6/5,0	200	63,1	71,1
	4	60	2,5	265/460	D / Y	1740	0,82	7,8/4,5	60,1/34,6	8,6/5,0	200	On Request	On Request
<b>3kW IE3</b>	4	60	3,5	460	D	1740	0,78	6,4	49,8	7,0	200	On Request	On Request
<b>2,2kW IE3</b>	8	50	2,2	230/400	D / Y	725	0,66	10,2/5,9	55,1/31,9	11,2/6,5	250	On request	On request
	8	60	2,5	265/460	D / Y	870	0,66	10,2/5,9	52,9/30,6	11,2/6,5	250	On request	On request
<b>3 kW IE3</b>	6	50	3,0	400/690	D / Y	965	0,74	6,8/3,9	40,8/23,4	7,5/4,3	250	52,8	60,8
<b>4 kW IE3</b>	6	60	4,6	460	D	1160	0,74	9	58,8	9,9	250	On request	On request

Running and trip currents are valid for operation at rated voltage and temperature of 60°C. Sound pressure level measured in a free field hemispherical surface with a radius of 1 meter at the best efficiency point using an impeller with 13° at best efficiency point. **Lower pitch angle impeller will have lower noise.**

For different working conditions and other voltages please contact EFAFLU.

Rated voltage tolerances:

50Hz - ±10%

60Hz - ±5%



**TGCL is an end suction radial type pump, from DN65 up to DN150, manufactured in EN-GJL-250 or EN-GJS-400 Cast iron with IP56 protection.**

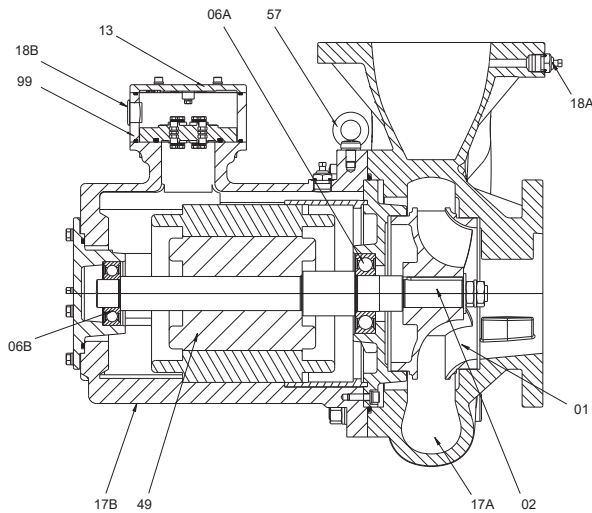
**Maintenance free SKF bearings.**

TGCL pumps perform with low noise levels, measured on free-field hemispherical surface and validated at our laboratory.

The pumps are supplied, as standard, with C5 H surface treatment (high durability - 260 µm) according to ISO 12944:2018 and CX is available as well.

They can be installed horizontally or vertically with the possibility of motor housing being rotated in 90° angles, with terminal box and drain/vent plugs position defined according to order. Flanges can be DIN or ISO PN10, raised or flat faced. They offer the possibility of having multiple motors of choice, either 4 or 6 poles, with hydraulic performance curves that will match the requirements of any project.

### Part list



### Characteristics

Parts	Materials
<b>Casing</b>	EN-GJL-250 or EN-GJS-400
<b>Impeller</b>	EN-GJL-250 or EN-GJS-400
<b>Shaft</b>	AISI420
<b>Terminal Box</b>	Aluminium Al Si10 Mg
<b>Screws</b>	A4 – AISI316
<b>Optionals</b>	RAL/ CX/ Munsel Flat face; Raised face; Groove

### Electrical data

<b>Power</b>	0,75 up to 7,5 kW
<b>Poles</b>	4/6
<b>Voltages</b>	3x400 VAC @ 50 Hz or 3x460 VAC @ 60 Hz

\* Other voltages under request.

Part	Designation
<b>01</b>	Impeller
<b>02</b>	Shaft
<b>06A</b>	Bearing
<b>06B</b>	Bearing
<b>13</b>	Terminal box cover
<b>17A</b>	Pump casing
<b>17B</b>	Motor casing
<b>18A</b>	Drain/ vent
<b>18B</b>	Cable gland
<b>49</b>	Motor
<b>57</b>	Eye bolt
<b>99</b>	Terminal box

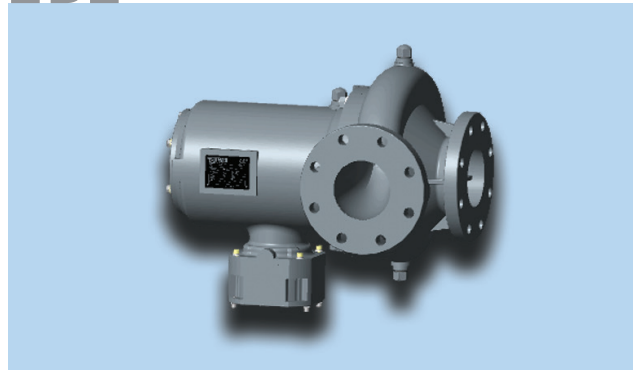
## Mounting positions - horizontal and vertical

TGCL pumps can be mounted in different positions. The various mounting positions available can be simulated in PSO software. Some examples below (Other positions available).

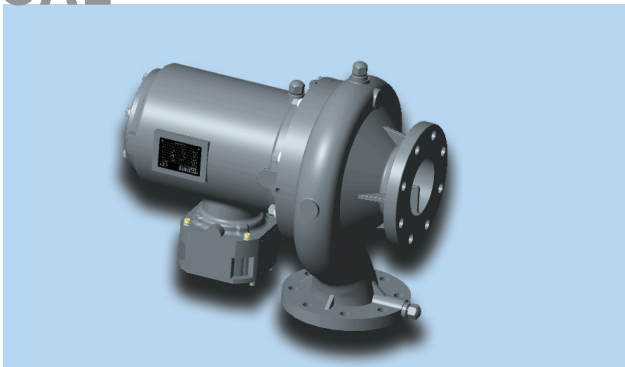
1A1



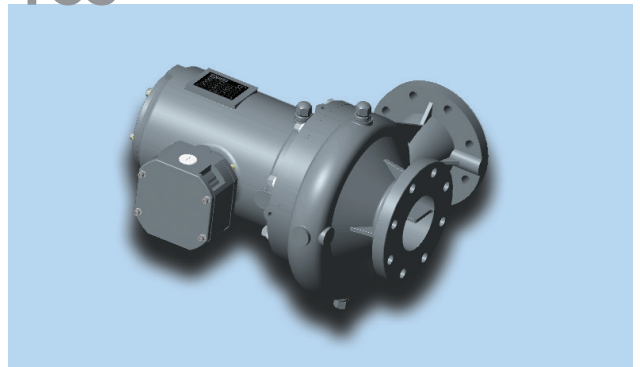
2B2



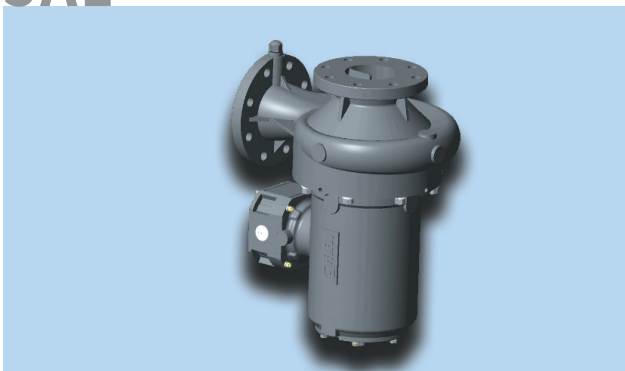
3A1



4C3



5A1

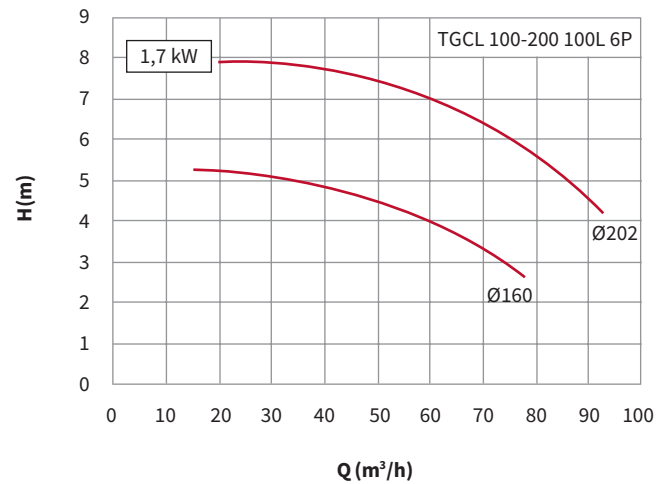
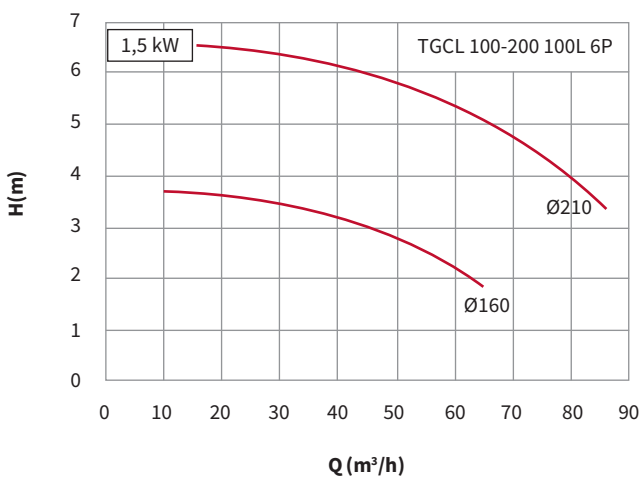
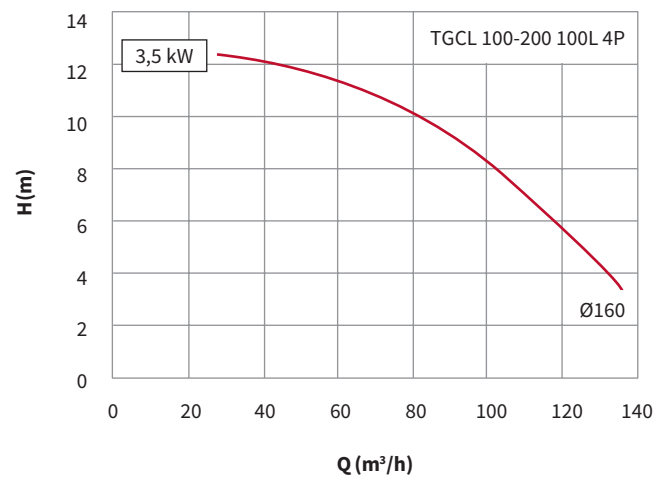
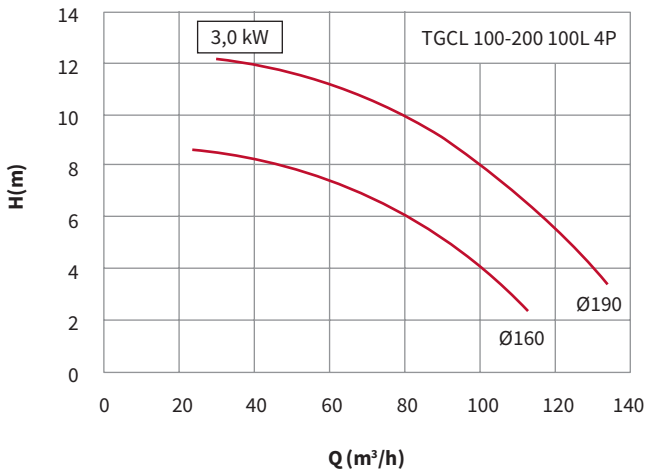
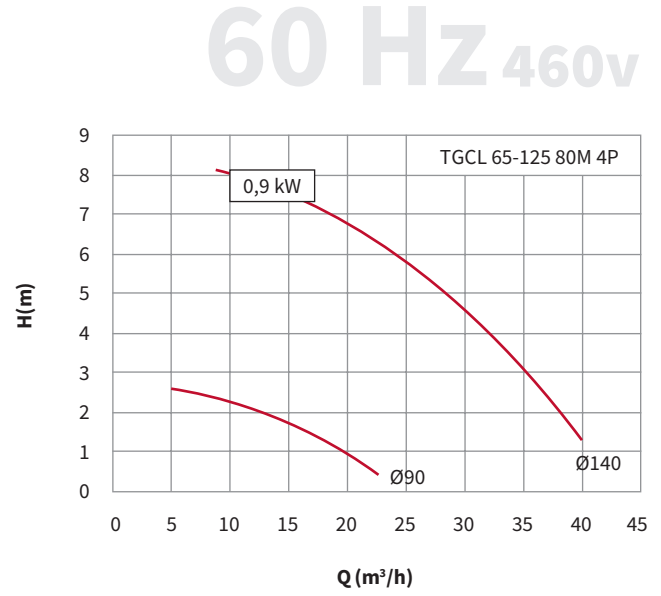
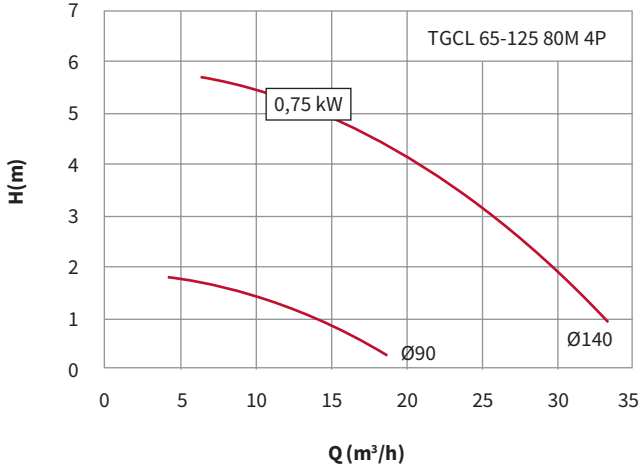


6D4



Curves According to ISO 9906 Grade 2B/ EN IEC 60076-22-5

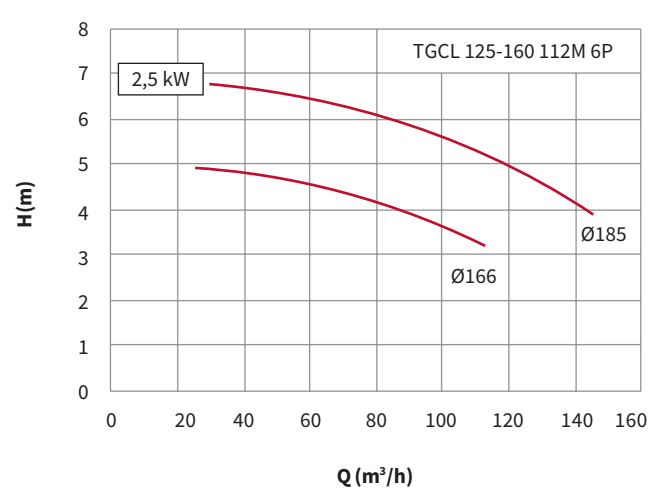
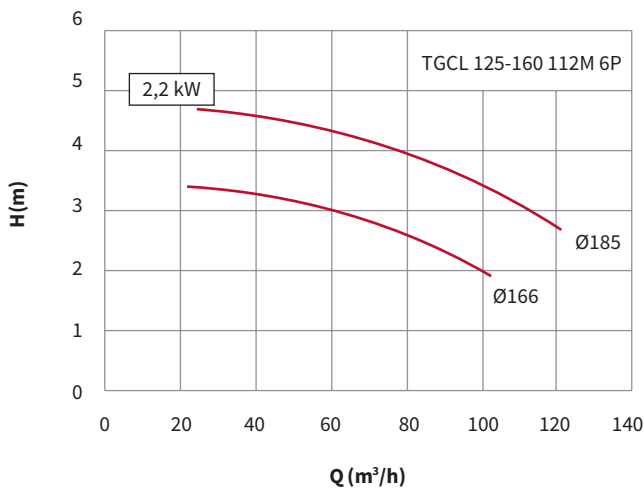
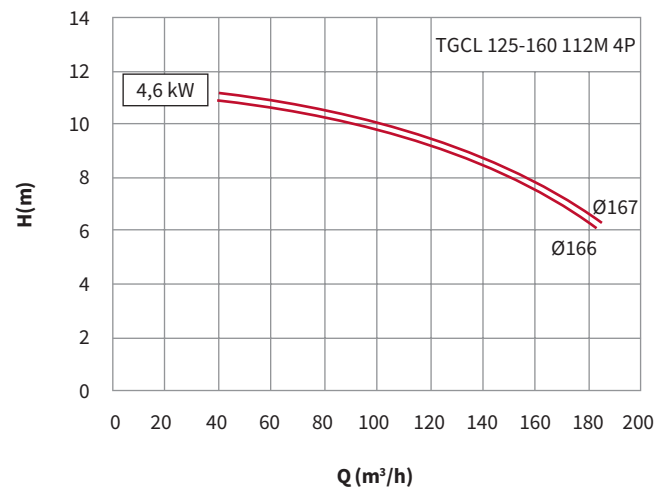
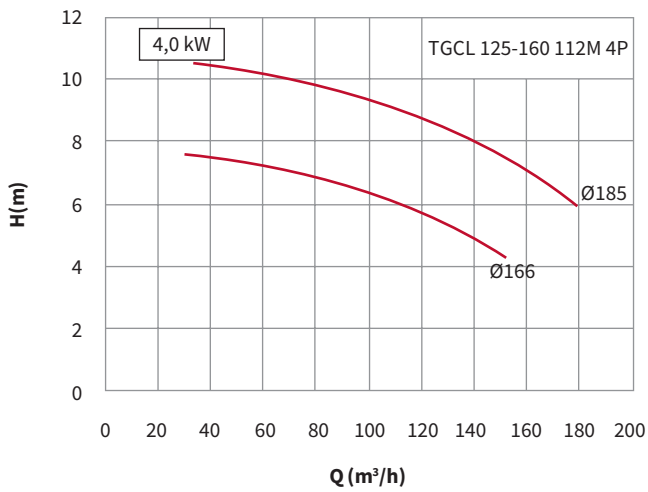
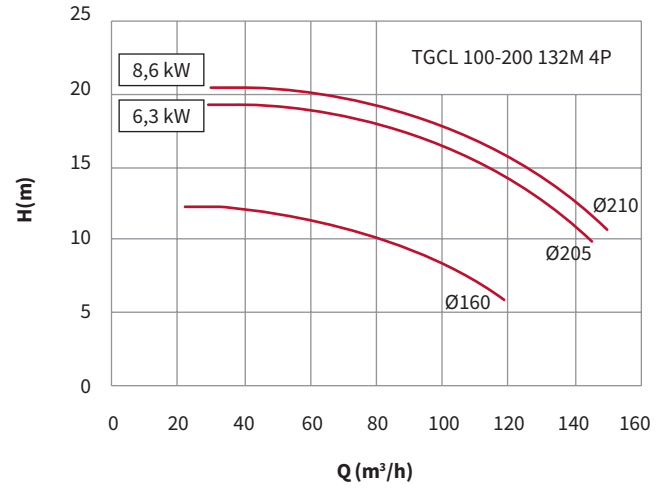
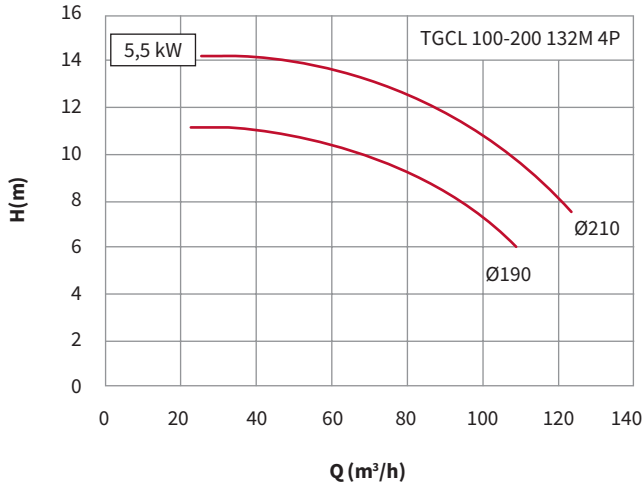
# 50 Hz 400v



Curves According to ISO 9906 Grade 2B/ EN IEC 60076-22-5

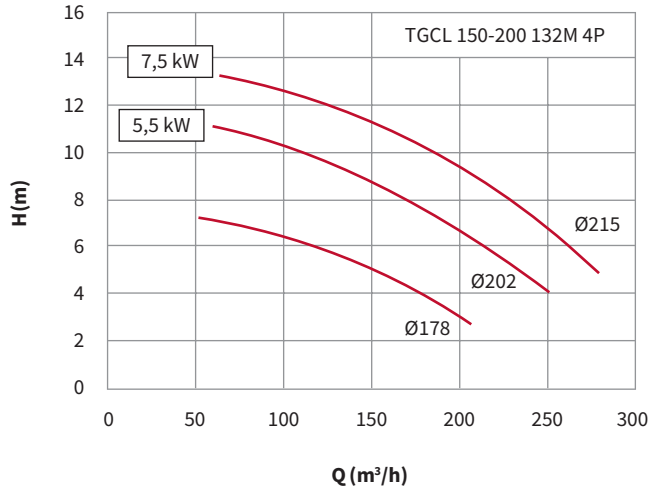
# 50 Hz 400v

# 60 Hz 460v

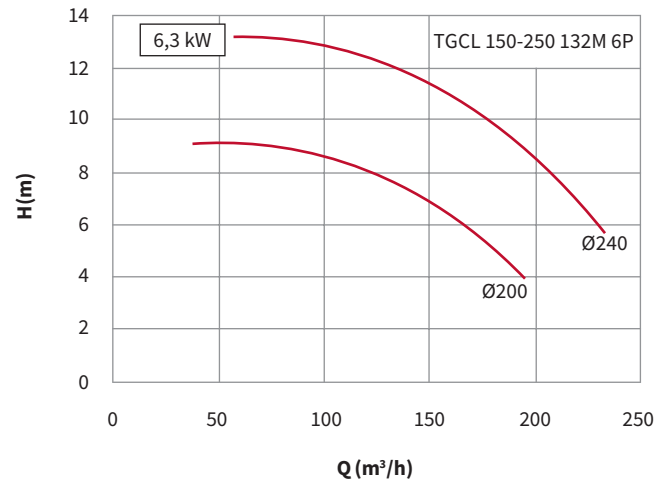
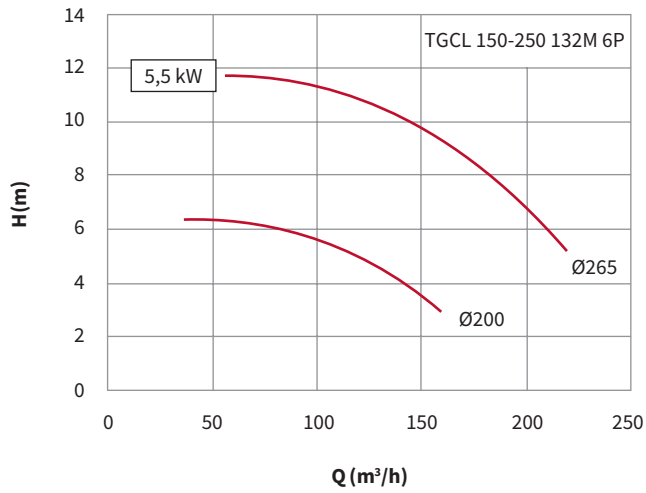
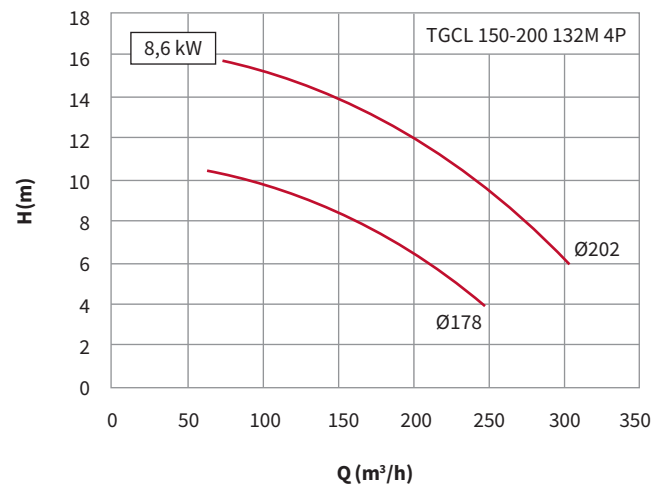


Curves According to ISO 9906 Grade 2B/ EN IEC 60076-22-5

# 50 Hz 400v

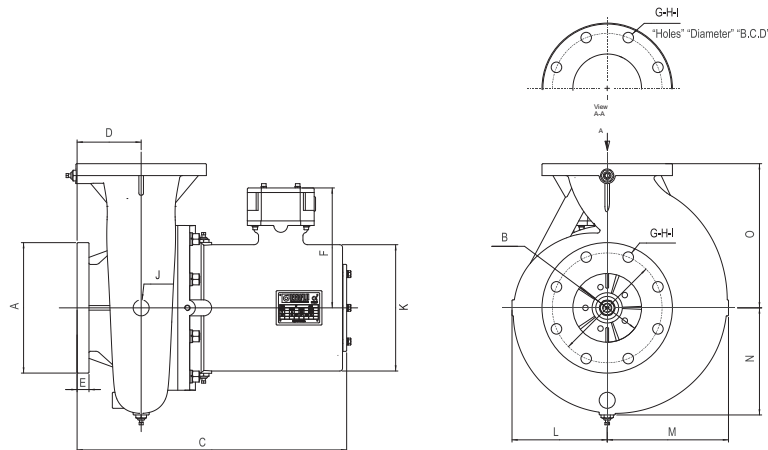


# 60 Hz 460v





Dimensions (mm)



Pump	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Weight (Kg)
TGCL 65-125 80M	185	65	392	86	18	204	4	18	145	35	171	113	121	113	150	55
TGCL 100-200 100L	220	100	524	125	24	234	8	18	180	35	211	155	188	173	250	120
TGCL 100-200 132M	220	100	559	125	24	260	8	18	180	35	276	180	188	180	250	160
TGCL 125-160 112M	250	125	559	125	26	245	8	18	210	35	235	181	221	202	280	145
TGCL 150-200 132M	285	150	589	140	26	260	8	23	240	35	276	208	265	234	315	195
TGCL 150-250 132M	285	150	574	140	26	260	8	23	240	35	276	211	262	237	355	190

Motor

Motor	Poles	Frequency (Hz)	Rated Power (kW)	Voltage (V)	Connection	Rated Speed (rpm)	Power Factor	Rated Current (A)	Starting Current (A)	Trip Current (A)	TGCL Pump Model	SPL@1m (dBA)	SWL (dBA)
0,75kW IE3	4	50	0,75	230/400	D/Y	1430	0,70	3,3/1,9	20,8/12,0	3,6/2,1	65-125 80M	41,5	49,5
	4	60	0,90	265/460	D/Y	1716	0,72	3,3/1,9	20,0/11,5	3,6/2,1	65-125 80M	On Request	On Request
1,5kW IE3	6	50	1,5	230/400	D/Y	955	0,71	6,4/3,7	35,4/20,4	7,1/4,1	100-200 100L	50,4	58,4
	6	60	1,7	265/460	D/Y	1146	0,71	3,7	34,0/19,5	7,1/4,1	100-200 100L	On Request	On Request
2,2kW IE3	6	50	2,2	230/400	D/Y	960	0,72	9,7/5,6	53,6/30,8	10,7/6,2	125-160 112M	42,2	50,1
	6	60	2,5	265/460	D/Y	1152	0,72	5,3	51,4/29,6	10,7/6,2	125-160 112M	On Request	On Request
3kW IE3	4	50	3,0	400/690	D/Y	1450	0,78	6,4/3,7	51,8/30,1	7,0/4,1	100-200 100L	54,6	62,6
	4	60	3,5	460	D	1740	0,78	6,4	49,8	7,0	100-200 100L	On Request	On Request
4kW IE3	4	50	4,0	400/690	D/Y	1450	0,82	8,0/4,6	68,8/39,9	8,8/5,1	125-160 112M	60,4	68,4
	4	60	4,6	460	D	1740	0,82	8,0	66	8,8	125-160 112M	On Request	On Request
5,5kW IE3	4	50	5,5	400/690	D/Y	1460	0,84	10,5/6,1	94,5/54,8	11,6/6,7	150-200 132M	57,7	65,7
	4	60	6,3	460	D	1752	0,84	10,5	90,7	11,6	100-200 132M	On Request	On Request
5,5kW IE3	6	50	5,5	400/690	D/Y	970	0,75	12,7/7,4	94,0/54,5	14,0/8,1	150-250 132M	51,9	59,8
	6	60	6,3	460	D	1165	0,75	12,7	90,2	14,0	150-250 132M	On Request	On Request
7,5kW IE3	4	50	7,5	400/690	D/Y	1460	0,85	14,1/8,2	104,3/60,5	15,5/9,0	150-200 132M	60,5	68,5
	4	60	8,6	460	D	1752	0,85	14,1	100,2	15,5	150-200 132M	On Request	On Request
	4	60	8,6	460	D	1752	0,85	14,1	100,2	15,5	100-200 132M	On Request	On Request

Running and trip currents are valid for operation at rated voltage and temperature of 60°C. Sound pressure level measured in a free field hemispherical surface with a radius of 1 meter at the best efficiency point, with maximum impeller diameter. Lower impeller diameter will have lower noise.

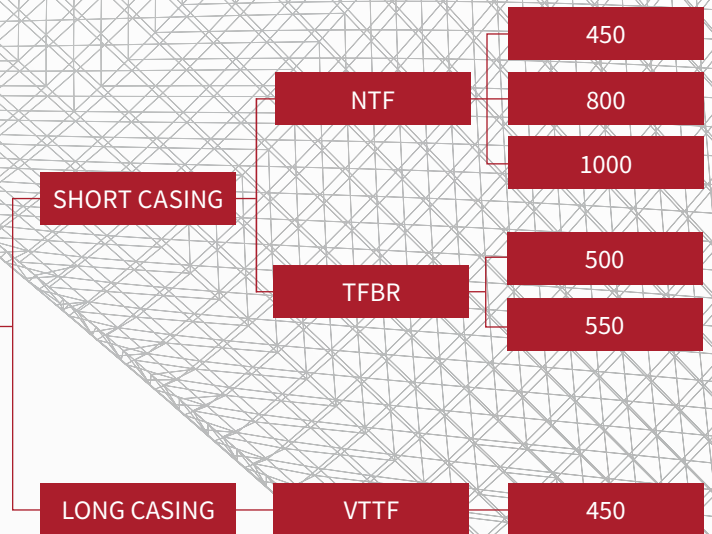
For different working conditions and other voltages please contact EFAFLU.

Rated voltage tolerances:

50Hz - ±10%

60Hz - ±5%

# Fans

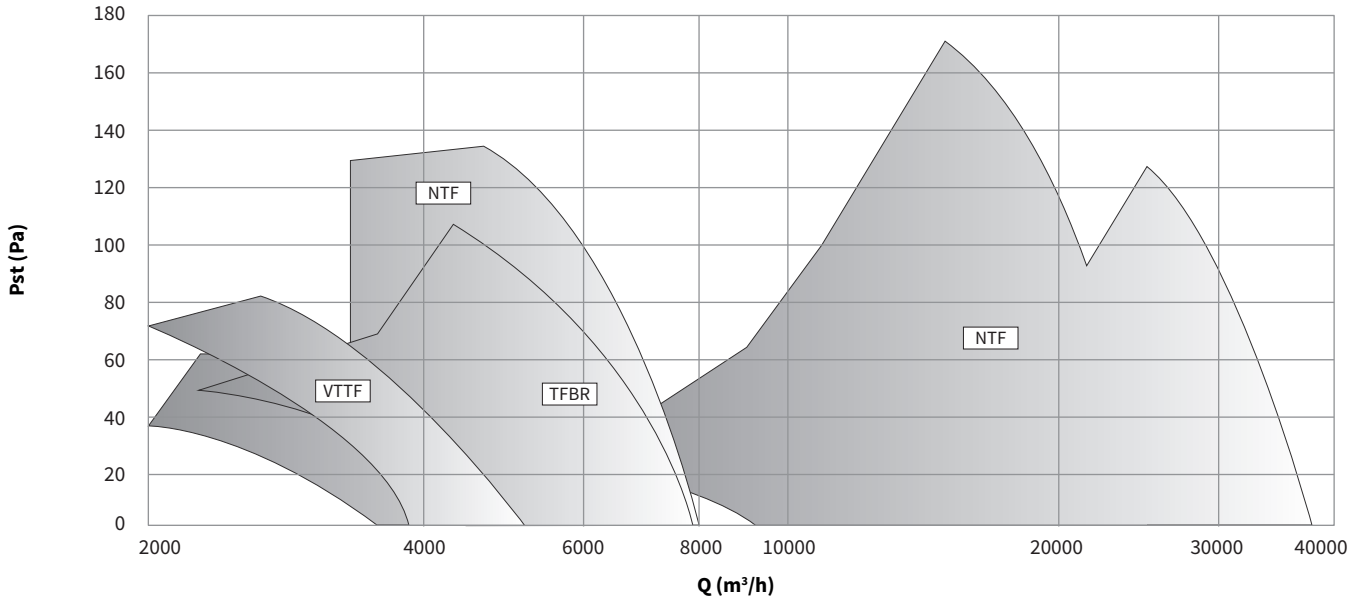


Our range offers an extended range of sizes and different types of design features that offer flexibility to our customers. We have short and long casing solutions, NTF, TFBR and VTTF, from 450 up to 1000 mm with a wide range of options.

Our fans are designed and approved according to EN IEC 60076-22-6, are delivered to our customers 100% EN IEC 60076-22-6 Routine Tested and include the certificate and report test. They're designed to be used in radiators or air coolers according to EN IEC 60076-22-6 and they can be delivered with different surface treatments, such as hot dip galvanization or C5 surface protection.

To guarantee a vibration free performance and to extend the bearings life, we perform dynamic balancing of the impeller.

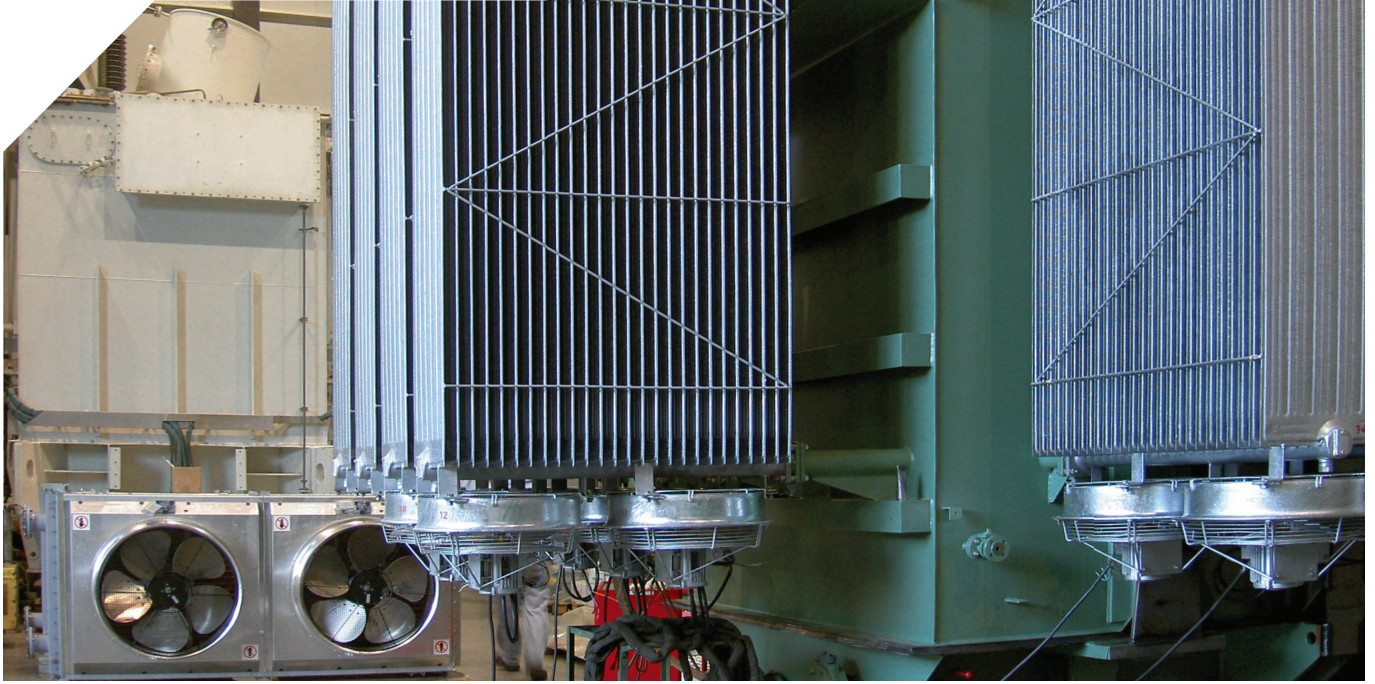
## Range chart 50 Hz



## Fan model nomenclature

	<b>Nominal diameter (mm)</b> 450 500 550 800 1000	<b>Impeller material</b> PA: Polyamide A: Aluminium PAG: Glass fiber reinforced polyamide	<b>Blade's pitch angle</b>	<b>Number of poles</b> 4 6 8 10 12 16	<b>Additional specifications</b> N: Standard S: According to order
<b>NTF</b>	<b>450</b>	<b>R / PA</b>	<b>6 / 45</b>	<b>- 0,25 / 4</b>	<b>/ C5-M / N</b>
<b>Series</b> TFBR NTF VTF		<b>Fan design</b> R: Round S: Square L: Long	<b>Number of blades</b>	<b>Nominal power</b> 0,09 0,12 0,18 0,25 0,37 0,55 0,75 1,1 1,5 2,2	<b>Surface treatment</b> C5-M: Coating system C5-H: Coating system Z: Hot dip galvanization

Applications





**NTF is a 450, 800 and 1000 mm short casing type fan, with a carbon steel casing and an electric motor with IP55 protection.**

The impeller is made from either casted aluminium or glass fiber reinforced polyamide and the fan is supplied with back and front grid protection. It can be supplied with hot dip galvanization (80 µm) or with C5 surface protection, along with AISI 316 (A4) screws.

NTF can be installed horizontally or vertically, according to the transformer layout.

**Standard supply:**

Painted version with motor painted in RAL 7035. For galvanized solutions, the motor is painted in RAL 9006.

Ambiente temperature -30 a 50°C conforme datasheets.

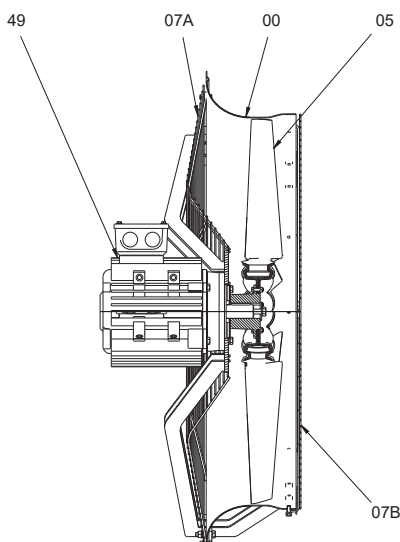
Characteristics

Parts	Materials
Casing	Carbon Steel
Impeller	Casted Aluminium/ Polyamide/ Glass fiber reinforced polyamide
Shaft	AISI420
Terminal Box	IP55
Screws	A4 – AISI316
Protection grill	AISI316 L
Optionals	Ambient temperatures -45 to 50°C Entire fan painted with the same RAL Other RAL solutions Other voltages and frequencies Other IP: IP56 and IP66 Tropicalized winding

Electrical data

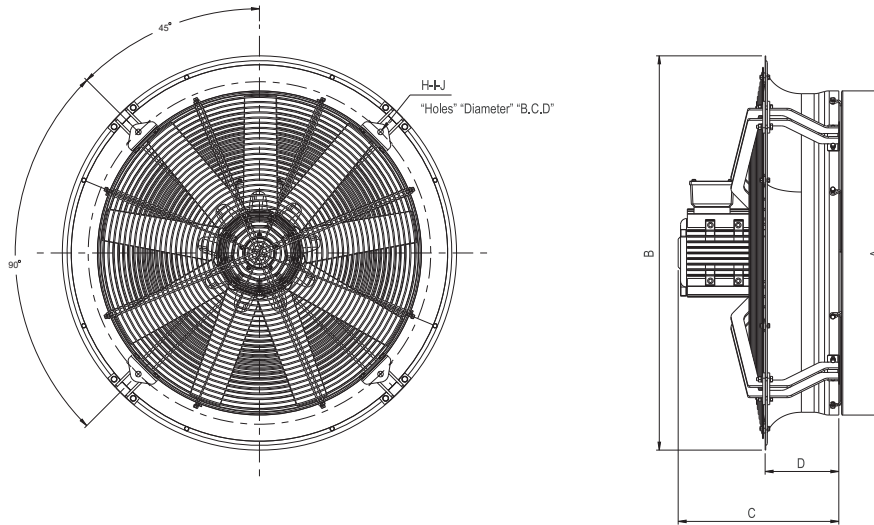
Power	0,09/ 0,12/ 0,18/ 0,25/ 0,37/ 0,55/ 0,75/ 1,1/ 1,5/ 2,2 kW
Poles	4/ 6/ 8/ 10/ 12/ 16
Voltages	3x230/400 VAC @ 50 Hz or 3x265/460 VAC @ 60 Hz

Part list



Part	Designation
00	Fan casing
05	Impeller
07A	Inlet protection grid
07B	Outlet protection grid
49	Motor

Dimensions (mm)



Fan	A	B	C	D	H	I	J
NTF 450	489	598	305	121	8	14	520
NTF 800	814	990	438	197	4	14	889
NTF 1000	1016	1170	585	214	4	14	1092

Technical features

Model	Frequency (Hz)	Flow (m <sup>3</sup> /h)	Static pressure (Pa)	Fan speed (rpm)	Nominal Power (kW)	Nr. Poles	SPL at 2m [dB(A)]	SWL (dBA)	Weight (Kg)
NTF 450R/PA/6/45 - 0,37/4	50	7650	0 (free air)	1390	0,37	4	69	83,0	13
NTF 450R/PA/6/35 - 0,18/4	50	6400	0 (free air)	1390	0,18	4	65	79,0	13
NTF 450R/PA/6/45 - 0,12/6	50	4900	0 (free air)	960	0,12	6	58	72,0	13
NTF 450R/PA/6/35 - 0,12/6	50	4000	0 (free air)	960	0,12	6	55	69,0	13
NTF 450R/PA/6/35 - 0,09/8	50	3050	0 (free air)	725	0,09	8	49	63,0	13
NTF 800R/A/9/41,5 - 2,2/6	50	25.000	0 (free air)	960	2,2	6	74	88,0	55
NTF 800R/A/9/41,5 - 1,1/8	50	17.500	0 (free air)	710	1,1	8	65	79,0	47
NTF 800R/A/9/41,5 - 0,55/10	50	14.300	0 (free air)	540	0,55	10	62	76,0	55
NTF 800R/A/9/41,5 - 0,25/12	50	12.000	0 (free air)	420	0,25	12	59	73,0	47
NTF 800R/A/9/41,5 - 0,25/16	50	10.000	0 (free air)	310	0,25	16	55	69,0	55
NTF 1000R/A/6/43 - 2,2/8	50	38.600	0 (free air)	720	2,2	8	75	89,0	78
NTF 1000R/A/6/43 - 1,5/10	50	30.600	0 (free air)	570	1,5	10	69	83,0	94
NTF 1000R/A/6/43 - 0,75/12	50	23.600	0 (free air)	440	0,75	12	63	77,0	78
NTF 1000R/A/6/43 - 0,55/16	50	18.000	0 (free air)	330	0,55	16	56	70,0	100

**Note:** Other solutions beyond those shown in the table above can be considered depending on project requirements (e.g. other flow, noise or power solutions available under request please contact [export@efaflu.pt](mailto:export@efaflu.pt))



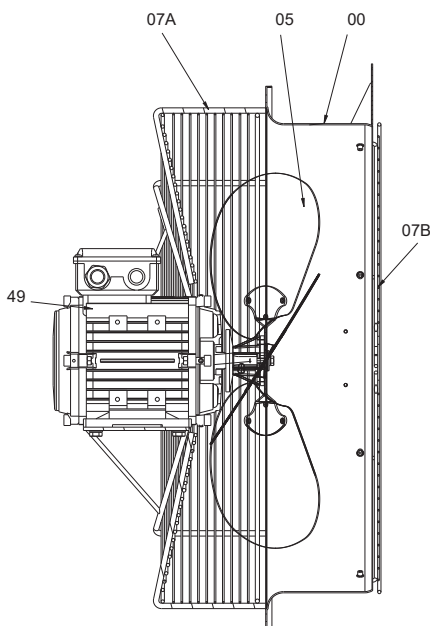
## Characteristics

TFBR is a 500 and 550 mm short casing type fan with low noise design conception, with a carbon steel casing and an electric motor with IP56 protection.

The impeller is made from stamped aluminium and the fan is supplied with back and front grid protection. It can be supplied with hot dip galvanization (80 µm) or with C5 surface protection, along with AISI 316 (A4) screws. TFBR can be installed horizontally or vertically, according to the transformer layout.

Parts	Materials
Casing	Carbon Steel
Impeller	Stamped Aluminium
Shaft	AISI420
Terminal Box	IP56
Screws	A4 – AISI316
Optionals	Ambient temperatures -45 to 50°C Entire fan painted with the same RAL Other RAL solutions Other voltages and frequencies Other IP: IP56 and IP66 Tropicalized winding

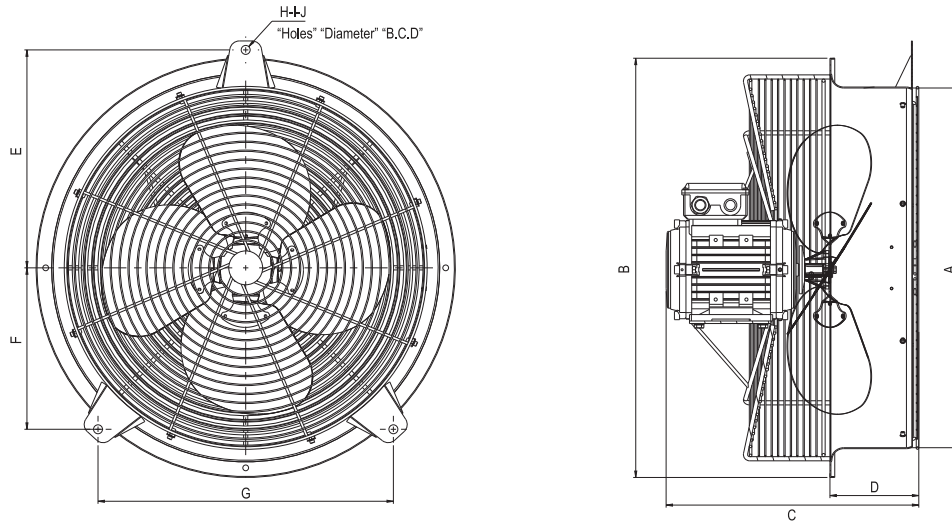
## Part list



Electrical data	
Power	0,18 up to 0,37 kW
Poles	6/8
Voltages	3x400 VAC @ 50 Hz or 3x460 VAC @ 60 Hz

Part	Designation
00	Fan casing
05	Impeller
07A	Inlet protection grid
07B	Outlet protection grid
49	Motor

Dimensions (mm)



Fan	A	B	C	D	E	F	G	H	I	J
TFBR 500	518	595	370	141	301	203	443	3	14	601
TFBR 550	562	655	380	138	341	252	462	3	14	682

Technical features

Model	Frequency (Hz)	Flow (m <sup>3</sup> /h)	Static pressure (Pa)	Fan speed (rpm)	Nominal Power (kW)	Nr. Poles	SPL at 2m [dB(A)]	SWL (dBA)	Weight (Kg)
TFBR 500R/A/4/27 - 0,18/8	50	4300	0 (free air)	675	0,18	8	50	64,0	19
TFBR 550R/A/4/27 - 0,37/6	50	7500	0 (free air)	900	0,37	6	60	74,0	20
TFBR 550R/A/4/27 - 0,18/8	50	6320	0 (free air)	690	0,18	8	51	65,0	20





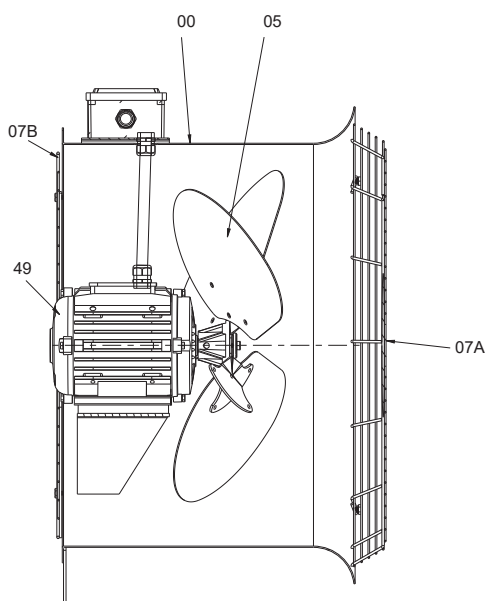
### Characteristics

Parts	Materials
<b>Casing</b>	Carbon Steel
<b>Impeller</b>	Stamped Aluminium/ Glass fiber reinforced polyamid
<b>Shaft</b>	AISI420
<b>Terminal Box</b>	IP56
<b>Screws</b>	A4 – AISI316
<b>Optionals</b>	Ambient temperatures -45 to 50°C Entire fan painted with the same RAL Other RAL solutions Other voltages and frequencies Other IP: IP56 and IP66 Tropicalized winding

**VTTF is a 450 mm long casing type fan, where the motor is inside the fan housing, thus more protected from outside environment conditions. With a carbon steel casing and an electric motor with IP56 protection.**

The impeller is made from stamped aluminium and the fan is supplied with back and front grid protection. It can be supplied with hot dip galvanization (80 µm) or with C5 surface protection, along with AISI 316 (A4) screws. VTTF can be installed horizontally or vertically, according to the transformer layout.

### Part list

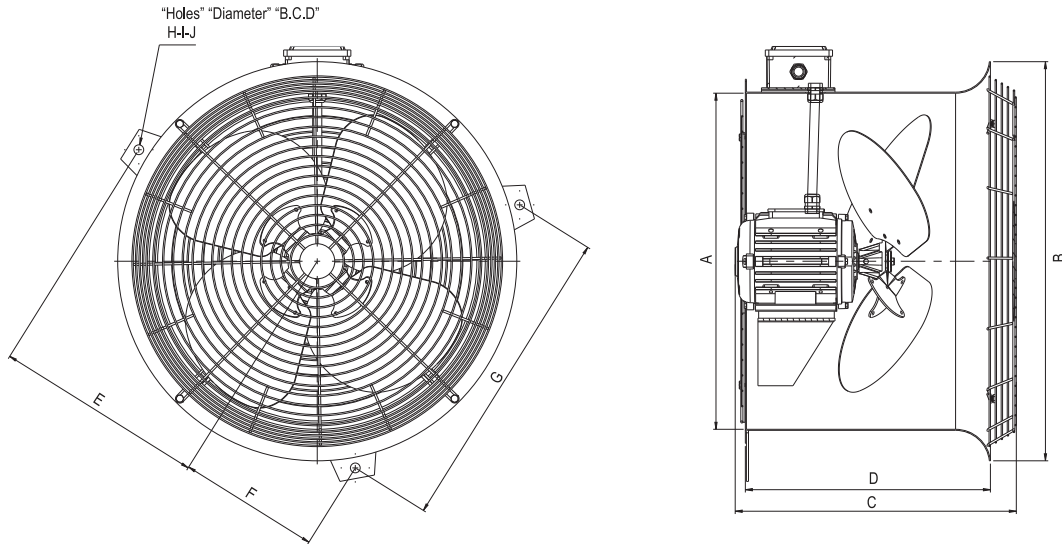


### Electrical data

<b>Power</b>	0,18/ 0,25 kW
<b>Poles</b>	6
<b>Voltages</b>	3x230/400 VAC @ 50 Hz or 3x265/460 VAC @ 60 Hz

Part	Designation
<b>00</b>	Fan casing
<b>05</b>	Impeller
<b>07A</b>	Inlet protection grid
<b>07B</b>	Outlet protection grid
<b>49</b>	Motor

Dimensions (mm)



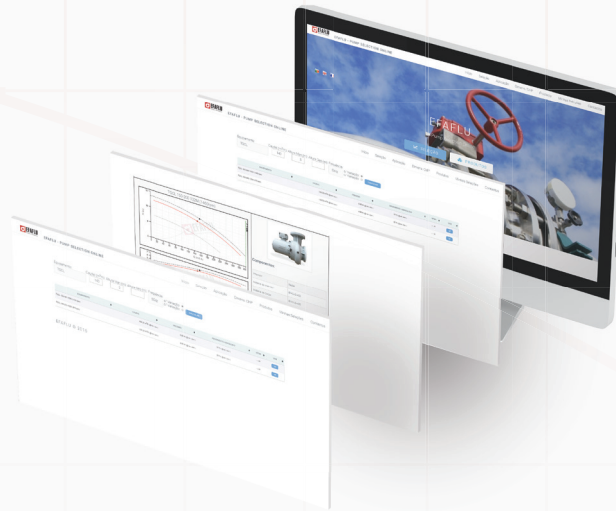
Fan	A	B	C	D	E	F	G	H	I	J
VTTF 450	480	570	400	350	301	203	443	3	14	601

Technical features

Model	Frequency (Hz)	Flow (m <sup>3</sup> /h)	Static pressure (Pa)	Fan speed (rpm)	Nominal Power (kW)	Nr. Poles	SPL at 2m [dB(A)]	SWL (dBA)	Weight (Kg)
VTTF 450L/PAG/40-0,25/6	50	5300	0 (free air)	910	0,25	6	52	65,0	19
VTTF 450L/A/4/27 - 0,18/6	50	3600	0 (free air)	850	0,18	6	50	64,0	18

Other solutions on request

# Pump Selector Online



With EFAFLU's online pump selector, you can:

- » Select the most suitable equipment for your projects.
- » See a 3D model of your pump according to your needs.

Access

[www.pso.efaflu.pt](http://www.pso.efaflu.pt)

or scan this code:



## Other solutions by request

- » Cooling fans totally designed according to our client needs;
- » Other flows (fans);
- » Special casing treatments (painting, powder coating);
- » Cable connectors;
- » Flexible mounting solutions;
- » Single-phase electric motors;
- » Different voltages and frequencies;
- » Different gasket materials according to fluid and temperature conditions;
- » Different IP protection grades;
- » PT 100;
- » Harting connector;



# Technical Assistance EFAFLU

[+351] 252 298 712

[+351] 964 241 072

sav@efafllu.pt



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Our after sales services relies on experienced field engineers that will provide our client the best solutions at the least possible time. We offer full availability to diagnose, evaluate and solve problems at the client's requested location. We keep in store original spare parts for 20 years ensuring a fast and reliable maintenance, and a long lasting product. Our commitment does not end with the delivery of the equipment. We offer a full customer support during the installation and startup, along with precise instructions for safe and correct use. We want our client to benefit the most from our services, adding value to the business chain.

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**ANEPC**  
Nº 458

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ASSOCIAÇÃO PORTUGUESA DE SEGURANÇA  
Nº 271



**EFAFLU**

CT 050/05.01 EN 08/2023

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**HEAD OFFICE** Póvoa de Varzim, Portugal

**LISBON OFFICE** Cacém, Portugal

**AFTER-SALES SERVICES**

T [+351] 252 298 700

T [+351] 214 134 700

T [+351] 252 298 712

geral@efafllu.pt

vendassul@efafllu.pt

sav@efafllu.pt

export@efafllu.pt

**www.efafllu.pt**