GEA Tuchenhagen Hygienic Centrifugal Pumps

Business Line Hygienic Pump Technology

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Our Business Unit GEA Flow Components

Our main focus is on the growth and further strengthening of our market position as an internationally recognized technology leader in components for the food, pharmaceutical and biotechnology industries – mainly in the business areas of valves, pumps and cleaning technology.

The GEA Group

Every second litre of beer brewed in the world may well have flown through a component supplied by GEA Group. About every fourth litre of milk is extracted or further processed with equipment produced by GEA Group. One third of the worldwide instant coffee is produced in GEA Group systems – with sales of more than four billion euros, the group is one of the largest suppliers of process machinery and technology in the world.

GEA Group comprises four segments. The GEA Flow Components business unit is part of the GEA Mechanical Equipment segment, together with the business units Mechanical Separation, Food Solutions and Homogenizer.

The Business Unit GEA Flow Components consists of:

GEA Tuchenhagen in Büchen (Germany), GEA Aseptomag in Kirchberg (Switzerland) and GEA Breconcherry in the UK as well as various locations in the USA, Canada, China, India, Poland and France

Our four Business Lines – for erverything that flows

Hygienic Valve Technology
GEA Tuchenhagen

Cleaning Technology
GEA Breconcherry

Hygienic Pump Technology
GEA Tuchenhagen

Aseptic Valve Technology
GEA Aseptomag

Our Mission

GEA Tuchenhagen products meet the growing demand for environmentally compatible components. Our basis for this is a future-oriented corporate and product concept committed to economic efficiency, sustainability and service-orientation.

Economically efficient

The current generation of GEA Tuchenhagen®-VARIFLOW pumps provide users with considerable cost savings.

Sensibly rated high-efficiency motors in every dimension needed are available to cover the typical requirements of the markets. They enable that energy consumption is kept as low as possible, which means a positive impact on your profitability.

Hygienic design

Carefully designed flow paths free from dead corners enable optimum utilization of the conveying energy. The product is conveyed evenly and gently, resulting in a higher product quality, which provides the user with improved processing options and distribution potentials. The cleaning requirement is considerably reduced as far as time, water and resources are concerned, with a positive impact on production planning and cost accounting.

Economically

- High product quality
- Reduced consumption of energy, water and cleaning media
- Saves time in maintenance and cleaning

Sustainable

Lower consumption of energy, water and chemicals means less load on environment and climate. For GEA Tuchenhagen users, the future success of their business, and the continuing acceptance of their production site this aspect will become more and more important.

On many markets, ecological criteria and the quality seals introduced for them increasingly determine retail assortment planning and what consumers will buy.
Users of GEA Tuchenhagen products will not only be at an advantage due to production processes which have proven to be environmentally friendly but also as a result of their maximum hygiene and care when processing their products.

This helps users to fulfil their own commitment to sustainable working methods – the best way towards a secure future!

Service-oriented

Plant designers and engineering companies appreciate the benefits offered by GEA Tuchenhagen: they cannot only profit from a range of highly efficient products but also use the individually tailored engineering support available from GEA Tuchenhagen.

Maintenance service offers which protect your investment enable that the necessary service work on GEA Tuchenhagen components can be carried out with just minor interruptions in production processes individually tailored to the customer's requirements.

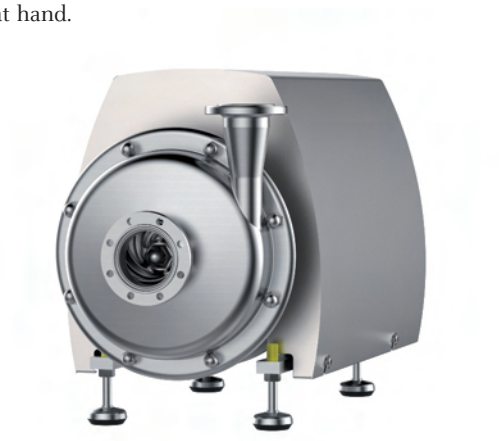
Sustainable

- Less load on climate and environment
- Environmental orientation production methods
- Maximum hygiene and care in product processing

Service-orientated

- Individual engineering support
- Life cycle cost calculations
- Minor production interruptions
- Tailor made service concepts

The **GEA Tuchenhagen®-VARIFLOW Centifugal Pump TP** is designed for pumping demanding media up to a viscosity of 1,000 mPas. Low flow velocities and gentle discharge of media through the spiral housing ensure extremely gentle product handling and high efficiency.
10 pump sizes with a capacity range of up to 210 m^3/h and pump heads of up to 90 m w.c. are available, finely tuned to the task at hand.



The spiral housing for the TP series is made of cold-rolled steel. This material has an excellent surface quality, which is essential for optimum cleaning in CIP/SIP processes. Wall thicknesses of 6 mm provide high strength for critical piping configurations and high inlet pressures.

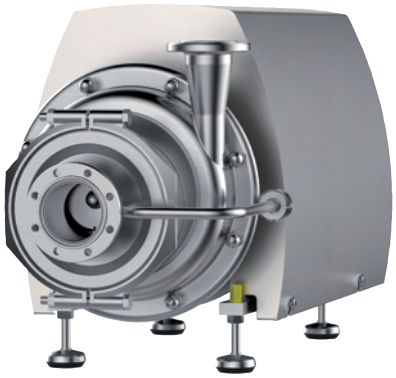
Applications

- **Breweries**
  Beer, wort, yeast, water, CIP solutions
- **Dairies**
  Milk, cream, yoghurt, whey, brine, CIP solutions
- **Food**
  Oils, sauces, stock, brine, flavours, ice-cream mix, CIP solutions
- **Pharmaceuticals/Cosmetics**
  Ultra-pure water, extracts, emulsions, WFI water, distillates
- **Fields of applications TP**
  Conveying, circulation, pressure boosting, filling lines, filling, emptying, filtration, evaporation, cleaning
- **Fields of applications TPS**
  CIP solutions, tank emptying, gas conveying

Technical benefits

- Operating pressure max. 16 bar
- Low NPSH value avoids early cavitation to the pump
- The pumping characteristic can be adapted to the requirements of your system by speed control or impeller trimming

By combining the existing TP series with an upstream screw rotor stage a new generation of hygienic self-priming centrifugal pumps has been created.



The **GEA Tuchenhagen®-VARIFLOW Centrifugal Pump TPS** is a self-priming pump for viscosities of up to 500 mPas. The pump is used for CIP return applications, for emptying tanks as well as for conveying products containing gas.
The TPS is characterized by a low sound power level, highest efficiency and excellent cleaning properties. The TPS series also permits evacuation of pipes on the suction side – so that just one pump is required for CIP return and product conveying!

Constructive characteristics

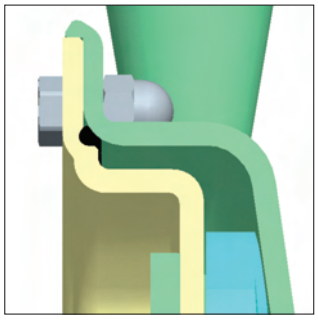
- Open impeller design
- All parts stainless steel, wetted components made of 1.4404 or 1.4409 (AISI 316L)
- Surface roughnesses of Ra ≤ 0.8 µm can be achieved by mechanical treatment of the surface (higher surface qualities on request)
- Driven by premium efficiency IE3 motors, design type IM B35, according to IEC

Special Features

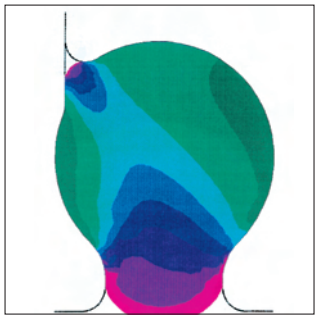
- Gentle product handling
- Standard connection: DIN 11853-2 Hygienic flange
- Low wear part stock requirement
- Acceptance test certification 3.1 (optional)
- EHEDG approved and certified
- Sealings comply to FDA and USP Class IV

Sealing according to the VARIVENT® principle

The special groove enables the seal is kept reliably in place at all times. The shape of the groove is based on FEM analyses. The metallic stop allows a defined compression of the seal, ensuring gap-free sealing against the product chamber without dead corners.



O-ring sealing between pump housing and cover



FEM showing the seal ring in operating mode

Centrifugal Pump TP

1 Pump cover

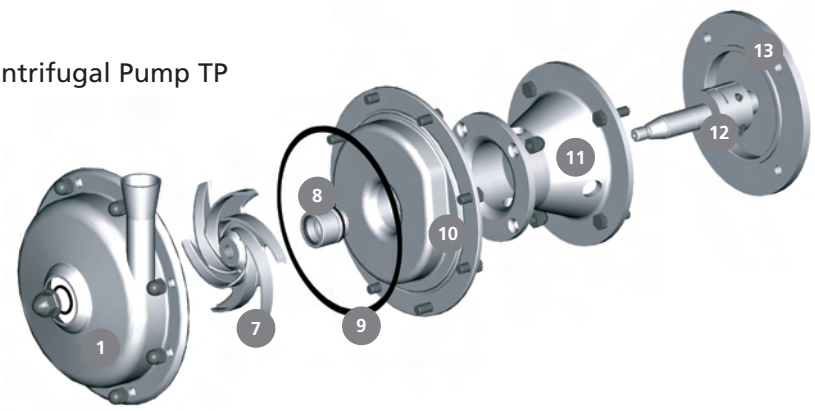
Centrifugal Pump TPS

2 Clamp connection
3 Rotor housing cover
4 Circulation pipe
5 Front rotor
6 Rotor housing

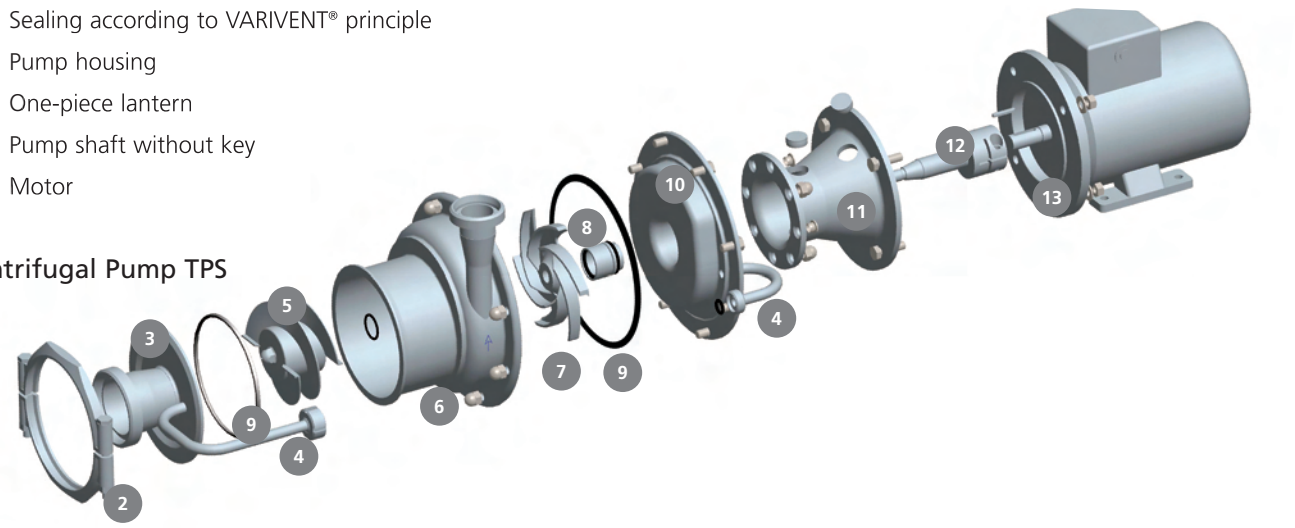
Centrifugal Pump TP/TPS

7 Impeller
8 Mechanical seal
9 Sealing according to VARIVENT® principle
10 Pump housing
11 One-piece lantern
12 Pump shaft without key
13 Motor

Centrifugal Pump TP



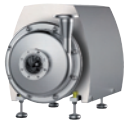
Centrifugal Pump TPS



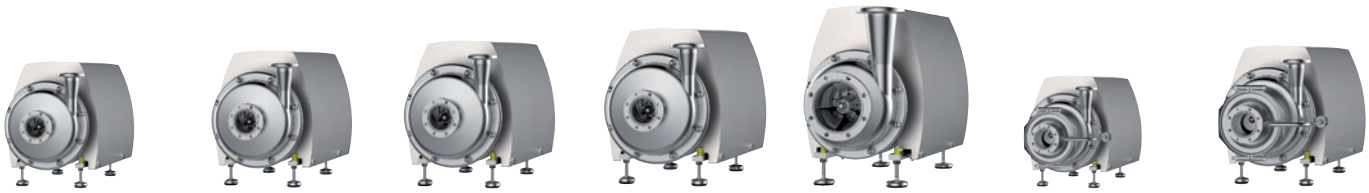
Program overview





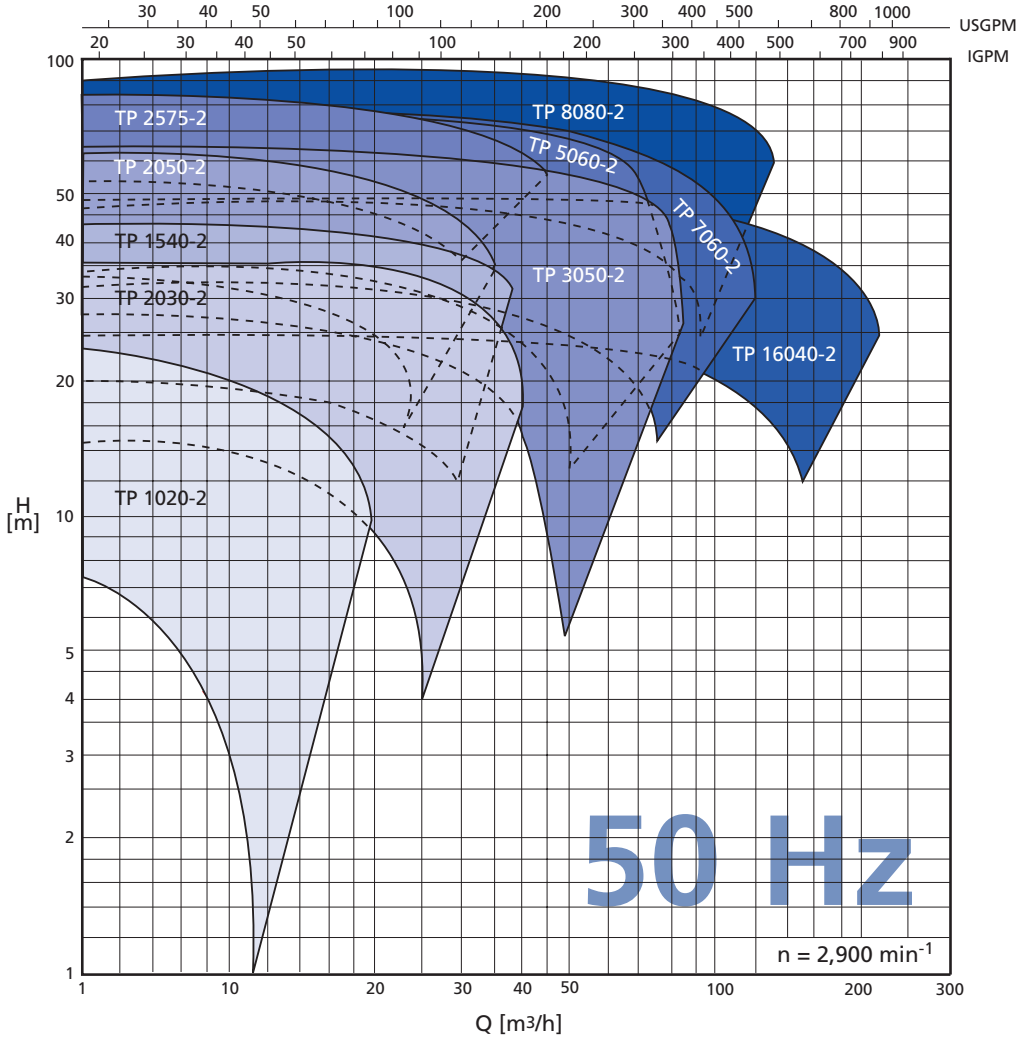


		non self-priming				
		TP 1020	TP 1540	TP 2030	TP 2050	TP 2575
2-pole, 50 Hz	max. flow rate [m³/h]	20	35	36	36	40
	max. pump head [m]	24	42	36	60	85
	Motor rating [kW], 2-pole	1.1 - 5.5	3.0 -15.0	1.5 - 11.0	3.0 - 15.0	5.5 - 30.0
4-pole, 50 Hz	max. flow rate [m³/h]	10	19	19	19	20
	max. pump head [m]	6	11	9	15	21
	Motor rating [kW], 4-pole	0.75 - 3.0	0.75 - 3.0	0.75 - 5.5	0.75 - 4.0	3.0 - 7.5
2-pole, 60 Hz	max. flow rate [m³/h]	24	44	44	42	48
	max. pump head [m]	34	62	52	85	130
	Motor rating [kW], 2-pole	1.25 - 5.5	3.0 - 15.0	1.5 - 11.0	3.0 - 15.0	5.5 - 30.0
4-pole, 60 Hz	max. flow rate [m³/h]	11	22	23	21	22
	max. pump head [m]	8	15.5	13	22	31
	Motor rating [kW], 4-pole	0.75 - 2.2	0.75 - 4.0	0.75 - 5.5	0.75 - 4.0	4.0 - 7.5
	Impeller diameter [mm]	80 - 130	130 - 180	110 - 160	160 - 210	200 - 250
	min. NPSH [m] (2,900 min^{-1})	1.0	1.0	1.0	1.0	1.0
	max. viscosity [mPas]	1,000	1,000	1,000	1,000	1,000

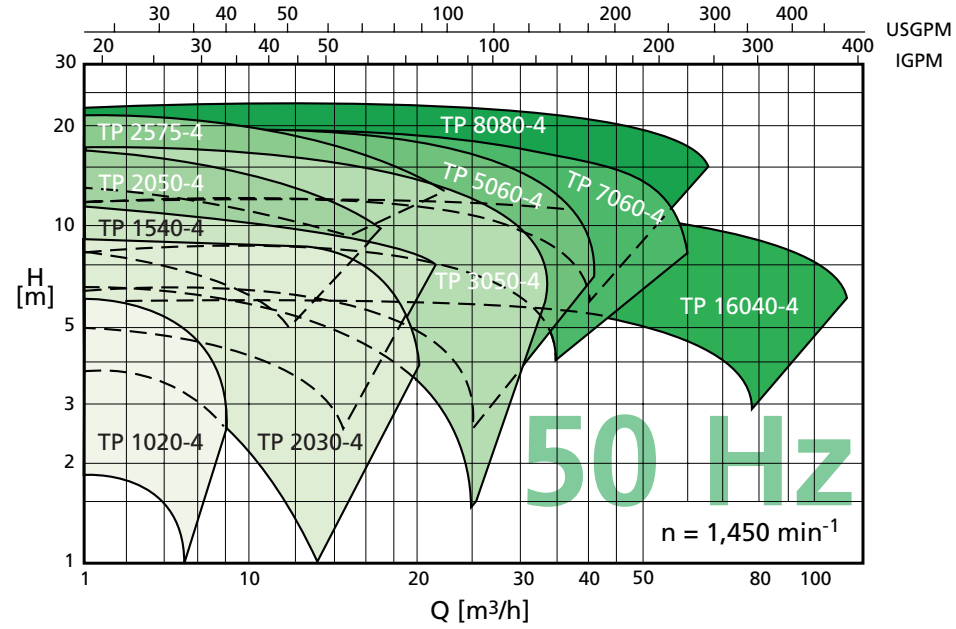


non self-priming					self-priming	
TP 3050	TP 5060	TP 7060	TP 8080	TP 16040	TPS 2030	TPS 3050
75	75	110	120	210	32	52
65	75	74	90	49	37	64
3.0 - 22.0	5.5 - 30.0	7.5 - 30.0	11.0 - 37.0	11.0 - 45.0	2.2 - 11.0	3.0 - 22.0
36	40	55	65	100	n.a.	n.a.
16	17	19	23	12	n.a.	n.a.
0.75 - 7.5	2.2 - 7.5	2.2 - 7.5	4.0 - 7.5	3.0 - 7.5	n.a.	n.a.
85	80	120	125	240	36	69
95	110	105	130	70	52	95
3.0 - 22.0	5.5 - 30.0	7.5 - 30.0	11.0 - 45.0	11.0 - 45.0	2.2 - 11.0	3.0 - 22.0
42	45	65	75	120	n.a.	n.a.
24	24	27	34	17	n.a.	n.a.
0.75 - 7.5	2.2 - 7.5	2.2 - 7.5	4.0 - 7.5	4.0 - 7.5	n.a.	n.a.
140 - 210	155 - 225	155 - 225	180 - 250	160 - 200	110 - 160	140 - 210
0.8	0.9	1.0	1.2	3.8	0.8	0.8
1,000	1,000	1,000	1,000	1,000	500	500

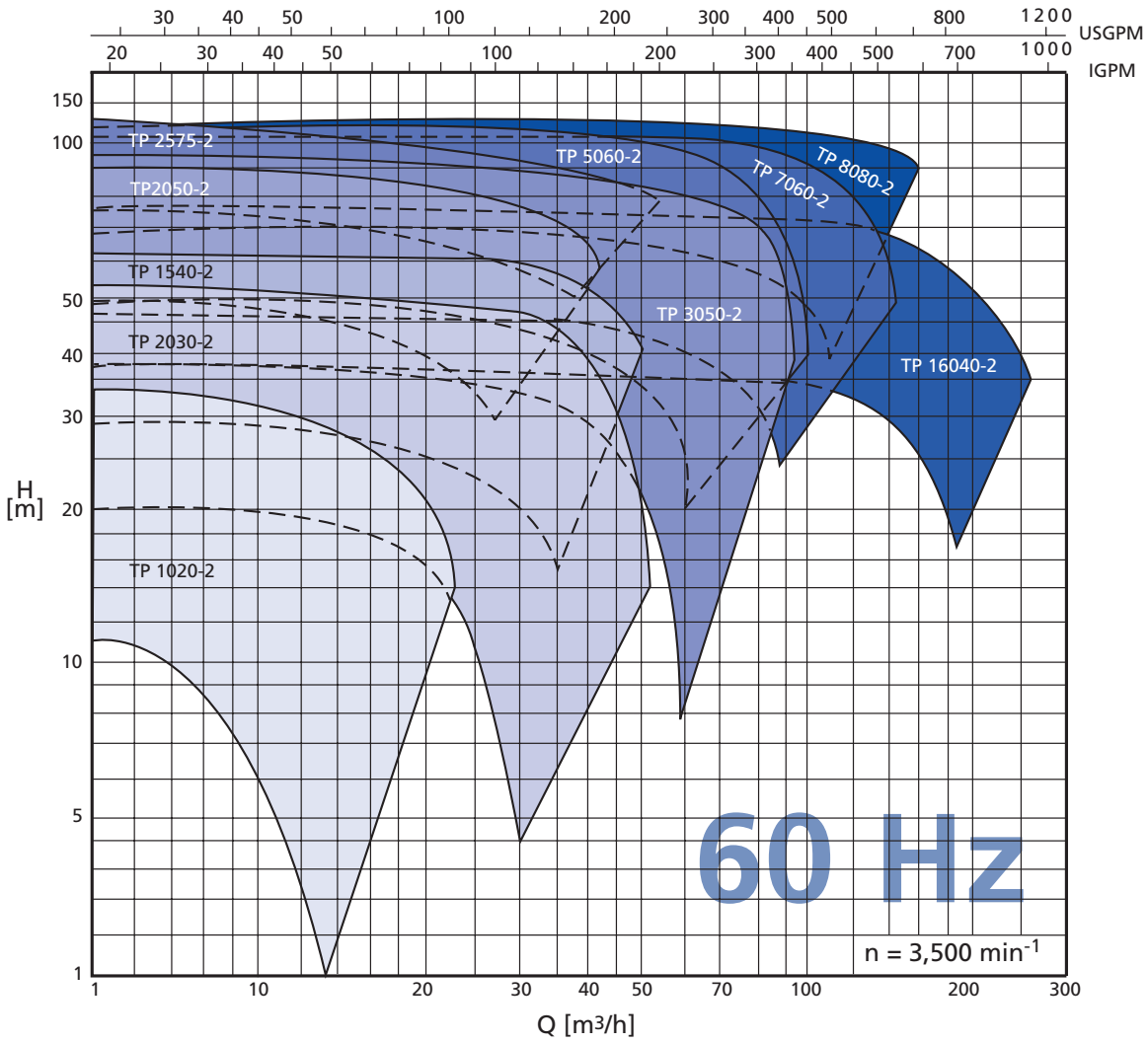
2-pole (n = 2,900 min-1)



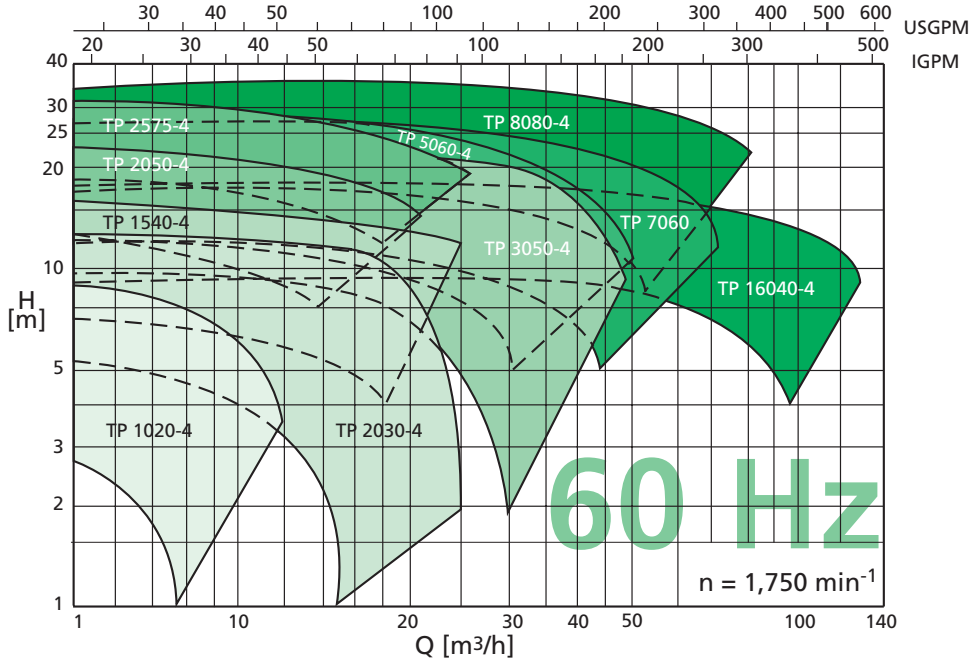
4-pole (n = 1,450 min-1)



2-pole (n = 3,500 min-1)

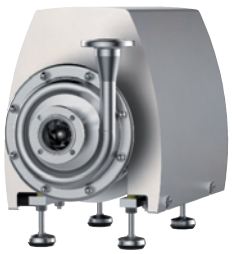


4-pole (n = 1,750 min-1)

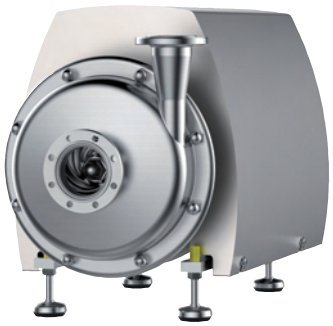


Standard version, centrifugal pump type TP, 2-poles (n=2,900 min^{-1}), 50 Hz

Standard version	**2 pole/50Hz**
Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Depending on pump size
Mechanical seal	Single-acting, material: C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Standard equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 210 m³/h
Pump head	max. 90 m w.c.

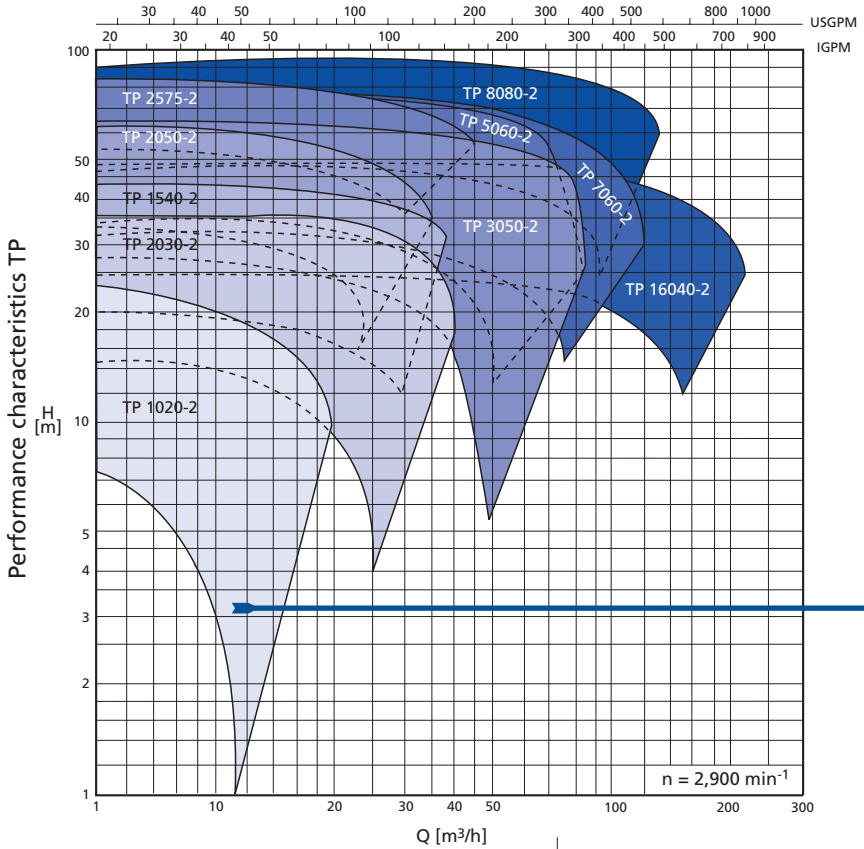


TP 1020



TP 1540 bis TP8080

TP 16040



Example of a standard selection

Code	T	P	0	1	0	2	0	2	5	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3			4			5	6			7			8			9			10			11	12	13	14	15	16	17

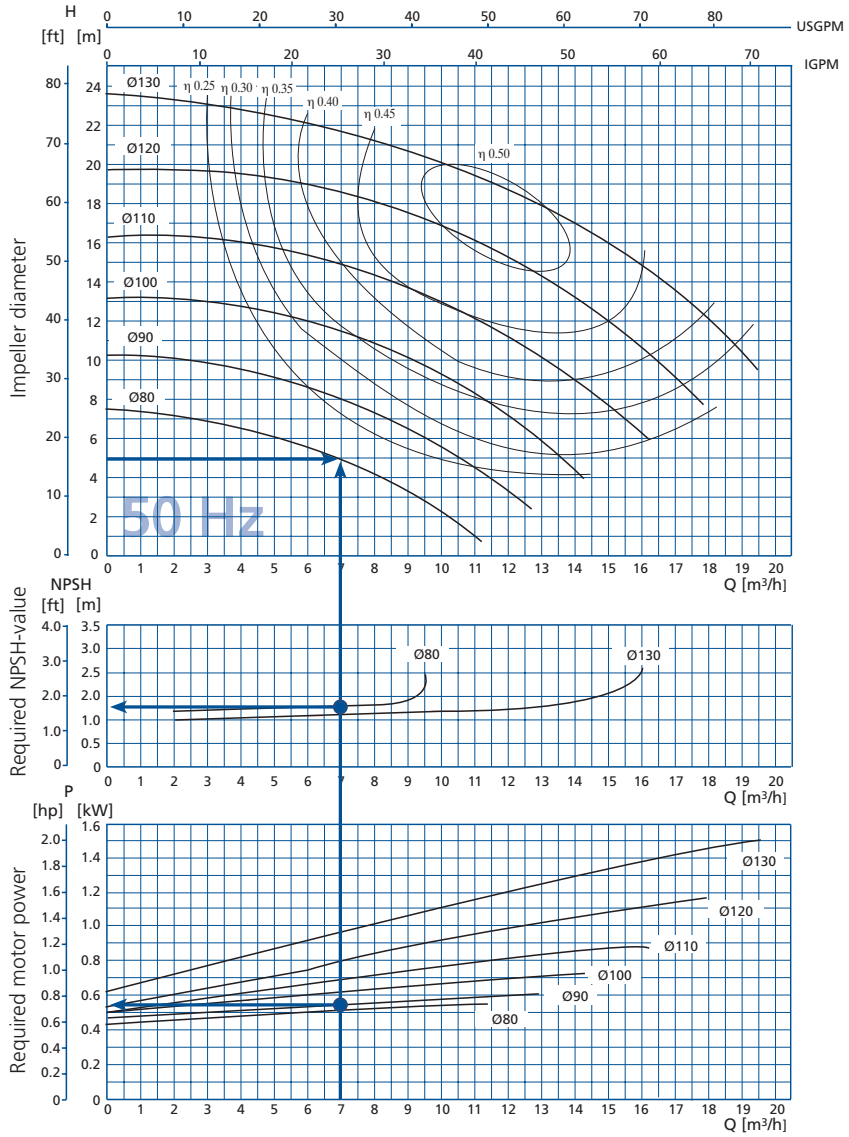
Standard version, for other versions see options

Example	Pos	Designation	Code of selection characteristics	
TP01020	1.	Type	TP01020	Selected values determined by the pump selected
2	2.	Speed	2 = 2 pole	
50	3.	Frequency	50 = 50 Hz	
080	4.	Impeller	080 = 80 mm; 090 = 90 mm; 100 = 100 mm; 110 = 110 mm; 120 = 120 mm; 130 = 130 mm	Selection using the characteristic curves
011	5.	Motor power	011 = 1.1 kW (IEC 80); 015 = 1.5 kW (IEC 90S); 022 = 2.2 kW (IEC 90L); 030 = 3.0 kW (IEC 100L); 040 = 4.0 kW (IEC 112M); 055 = 5.5 kW (IEC 112M)	

Impeller selection in accordance with capacity and pump head

Motor output selection in accordance with capacity and pump head

Performence curves, centrifugal pump, TP 1020 (2-pole / 50 Hz)

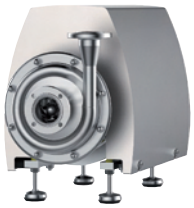


50 Hz 2-pole

Standard TP

Standard TPS

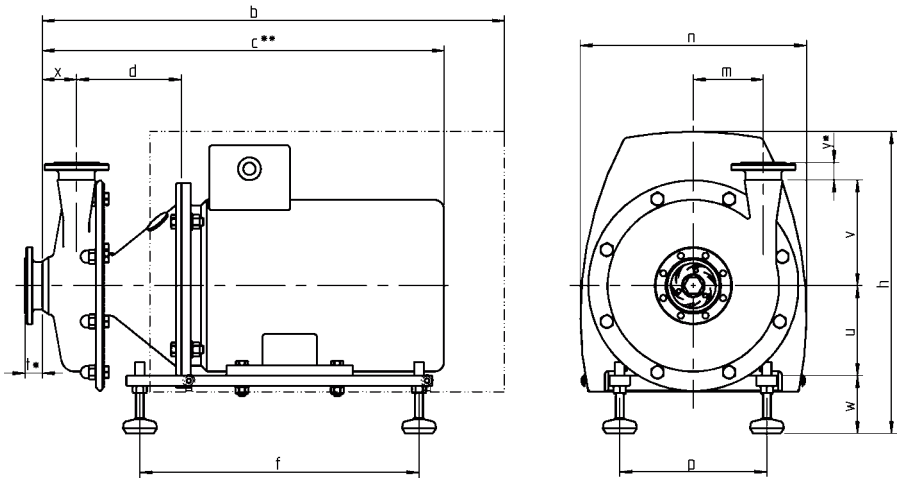
Standard version, centrifugal pump, type TP 1020, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 20 m³/h
Pump head	max. 24 m w.c.
Housing pressure	max. 10 bar

Code	T	P	0	1	0	2	0	2	5	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9		10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics		
TP01020	1.	Type	TP 1020		
2	2.	Speed	2 = 2 pole		
50	3.	Frequency	50 = 50 Hz		
080	4.	Impeller	080 = 80 mm	100 = 100 mm	120 = 120 mm
			090 = 90 mm	110 = 110 mm	130 = 130 mm
011	5.	Motor power	011 = 1.1 kW (IEC 80) 015 = 1.5 kW (IEC 90S) 022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M)		

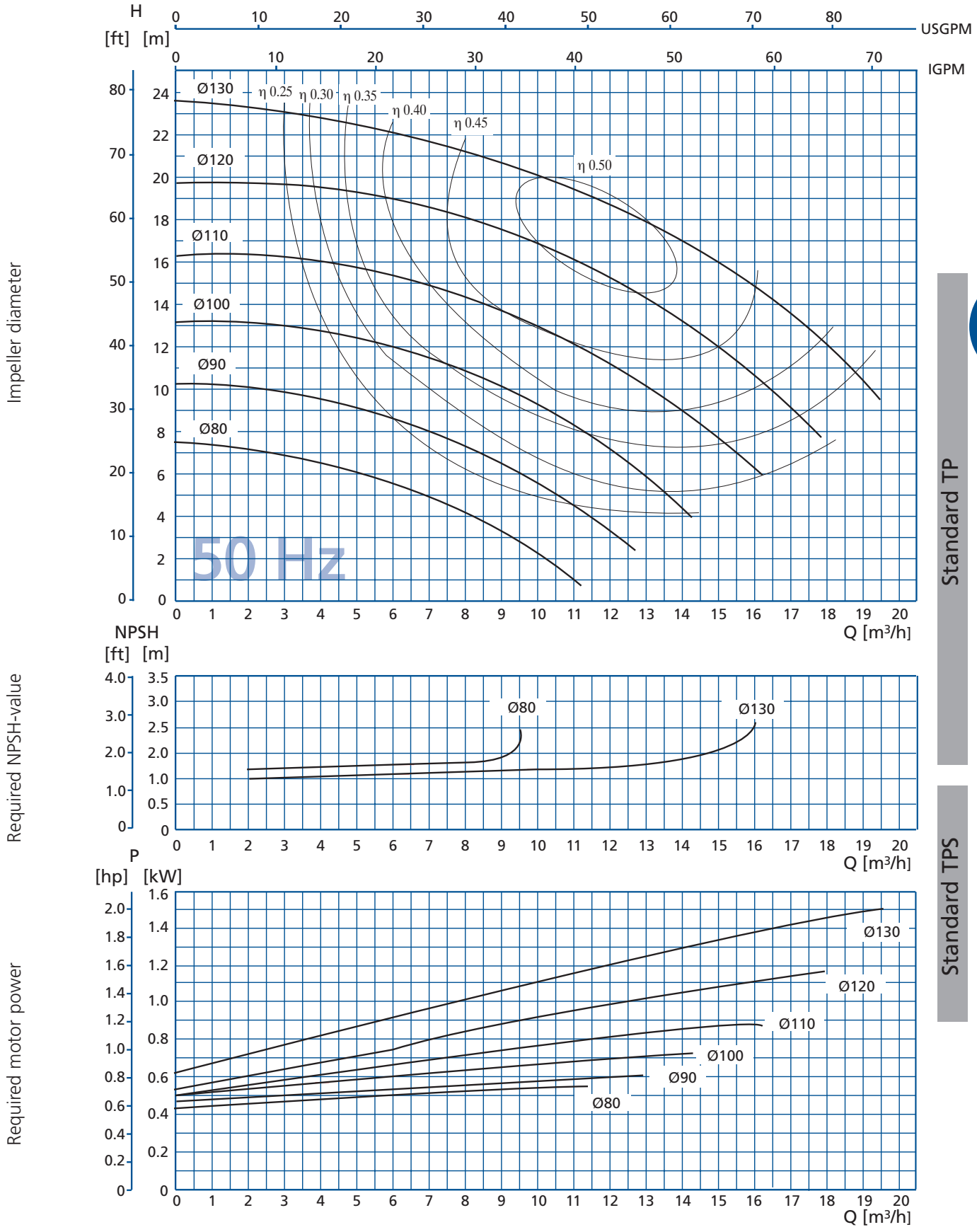


TP 1020 **Motor size**	**b**	**c****	**d**	**f**	**h**	**m**	**n**	**p**	**t***	**u**	**v**	**w**	**x**	**y***
80	484	390	144	285	352	76	228	125	25.5	92	125	82	14	25.5
90S / 90L	490	425	144	285	352	76	228	140	25.5	90	125	82	14	25.5
100L / 112M	602	474/496	154	335	403	76	278	160	25.5	112	125	85	14	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 1020, 2-pole (n=2,900 min^{-1}), 50 Hz



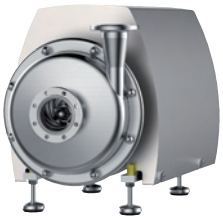
50 Hz 2-pole

Standard TP

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

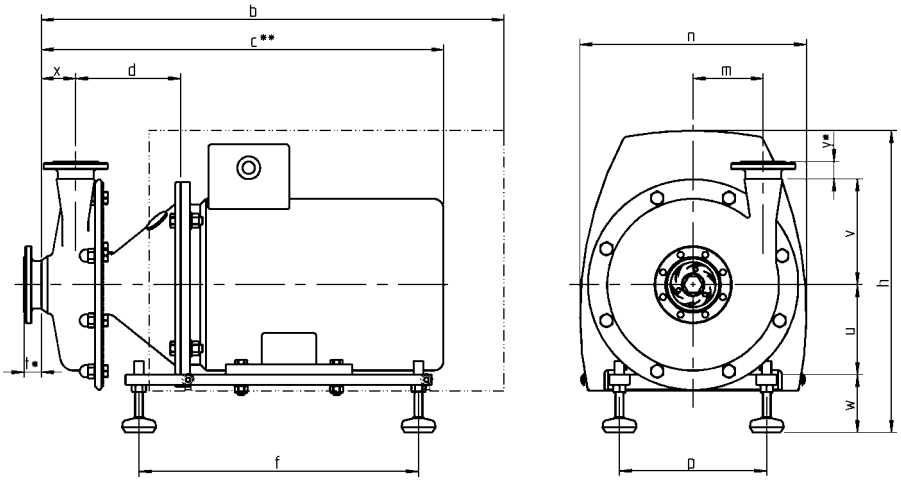
Standard version, centrifugal pump, type TP 1540, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 35 m³/h
Pump head	max. 42 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	1	5	4	0	2	5	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP01540	1.	Type	TP 1540			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
130	4.	Impeller	130 = 130 mm 155 = 155 mm 175 = 175 mm	140 = 140 mm 160 = 160 mm 180 = 180 mm	145 = 145 mm 165 = 165 mm	150 = 150 mm 170 = 170 mm
30	5.	Motor power	030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 092 = 9.0 kW (IEC 132M) 110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M)			

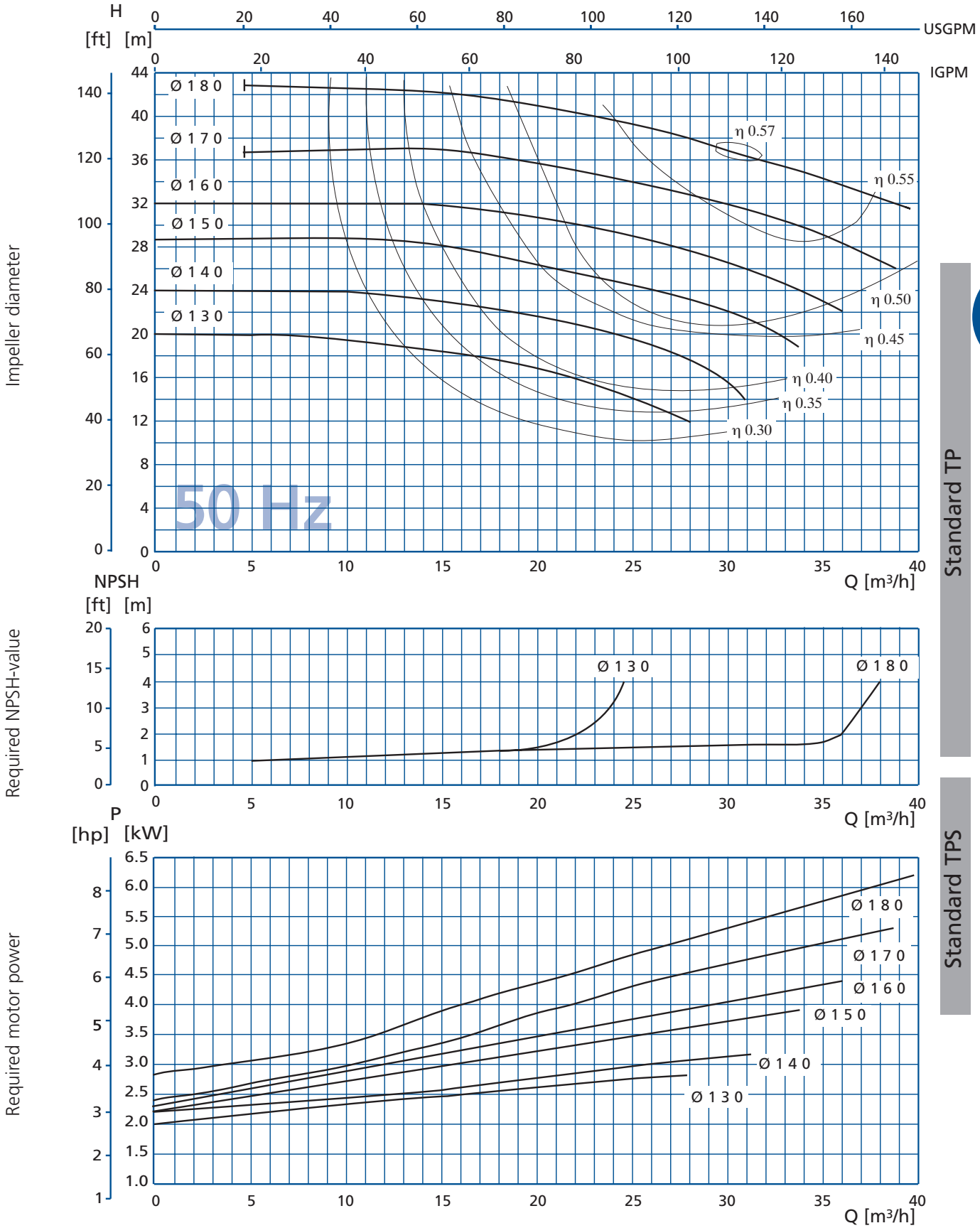


TP 1540 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	608	480	152	335	403	90	278	160	25.5	112	140	85	42	25.5
112M (4 kW + 5.5 kW)	608	502	131.5	335	403	90	278	190	25.5	112	140	85	42	25.5
112M (7.5 kW)	608	524	131.5	335	403	90	278	190	25.5	112	140	85	42	25.5
132M (9.0 kW + 11 kW)	709	619	152	410	444	90	332	216	25.5	132	140	85	42	25.5
132M (15 kW)	709	670	152	410	444	90	332	216	25.5	132	140	85	42	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 1540, 2-pole (n=2,900 min^{-1}), 50 Hz



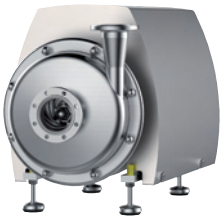
50 Hz 2-pole

Standard TP

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

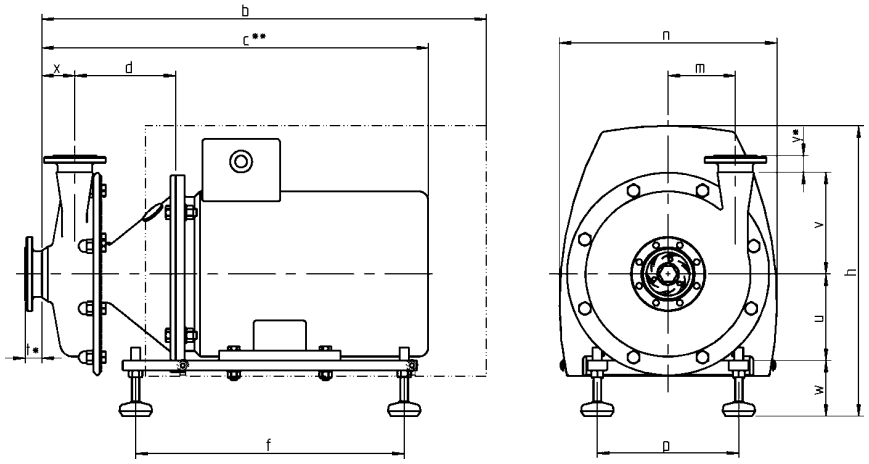
Standard version, centrifugal pump, type TP 2030, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 36 m³/h
Pump head	max. 36 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	3	0	2	5	0						D	N	N	F	K	0	5	0	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7		8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02030	1.	Type	TP 2030			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
110	4.	Impeller	110 = 110 mm	120 = 120 mm	130 = 130 mm	140 = 140 mm
			145 = 145 mm	150 = 150 mm	155 = 155 mm	160 = 160 mm
015	5.	Motor power	015 = 1.5 kW (IEC 90S) 022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 092 = 9.0 kW (IEC 132M) 110 = 11.0 kW (IEC 132M)			

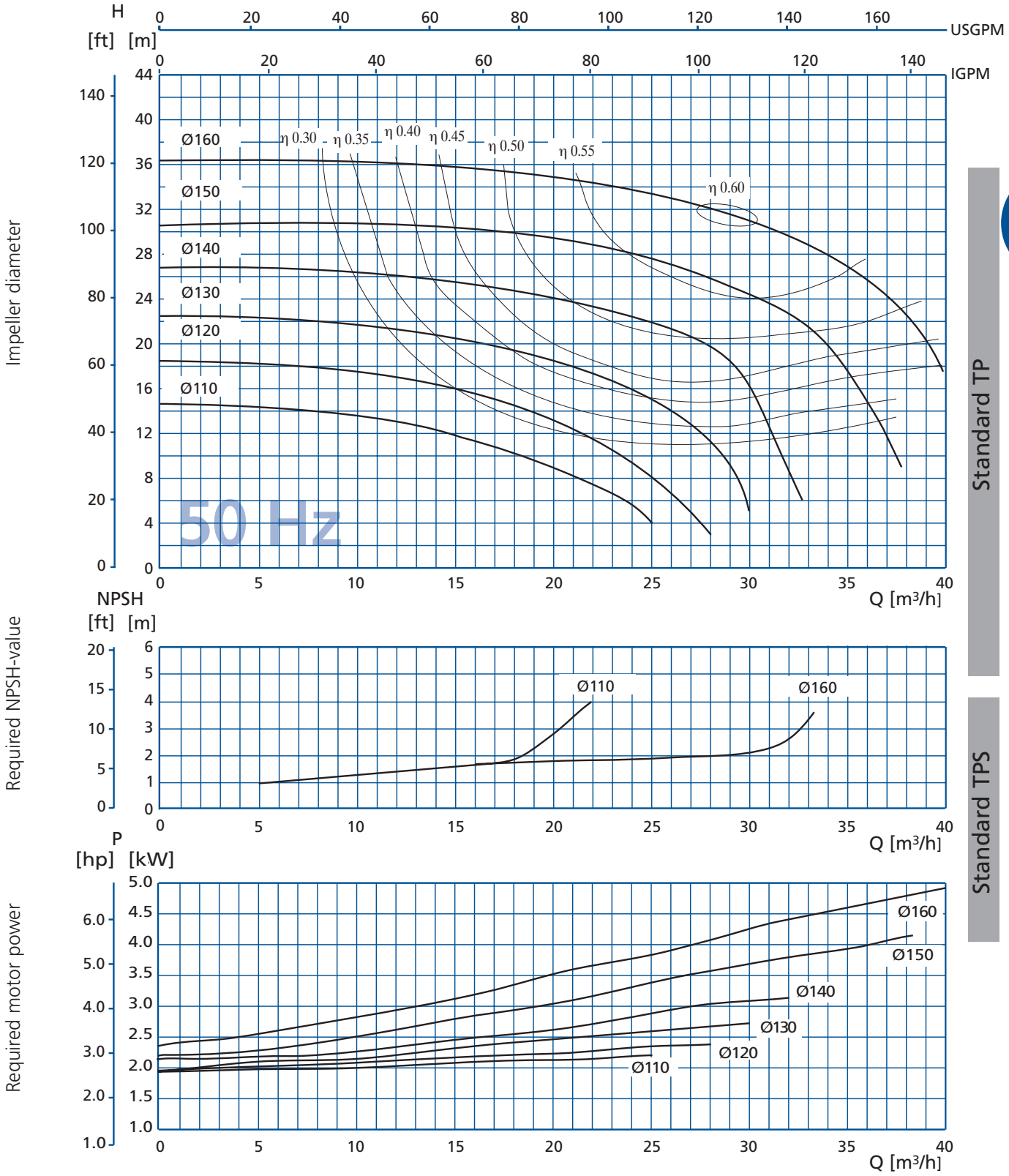


TP 2030 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
90S / 90L	494	429	121.5	285	352	85	228	140	25.5	90	135	82	40	25.5
100L	606	478	131.5	335	403	85	278	160	25.5	112	135	85	40	25.5
112M (4 kW + 5.5 kW)	606	500	131.5	335	403	85	278	190	25.5	112	135	85	40	25.5
112M (7.5 kW)	606	522	131.5	335	403	85	278	190	25.5	112	135	85	40	25.5
132M	707	617	152	410	444	85	332	216	25.5	132	135	85	40	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

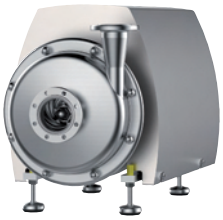
All dimensions in mm

Performance curves, centrifugal pump, type TP 2030, 2-pole (n=2,900 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

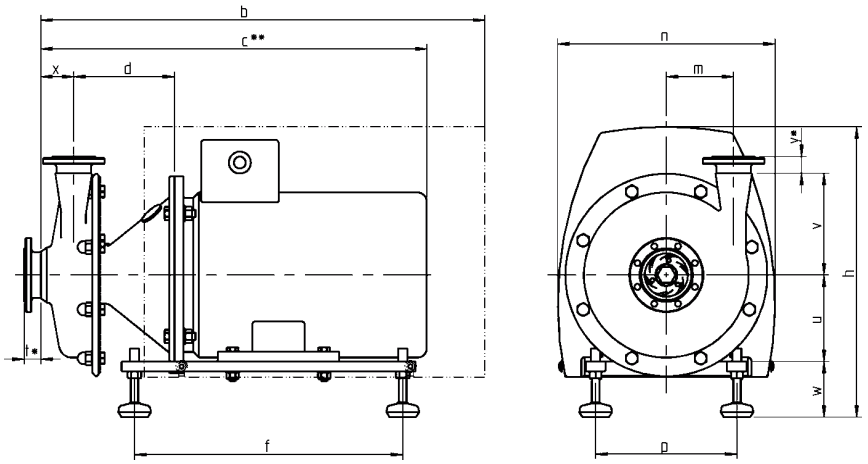
Standard version, centrifugal pump, type TP 2050, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 36 m³/h
Pump head	max. 60 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	5	0	2	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02050	1.	Type	TP 2050			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
160	4.	Impeller	160 = 160 mm 190 = 190 mm 210 = 210 mm	170 = 170 mm 195 = 195 mm	180 = 180 mm 200 = 200 mm	185 = 185 mm 205 = 205 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 092 = 9.0 kW (IEC 132M) 110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M)			

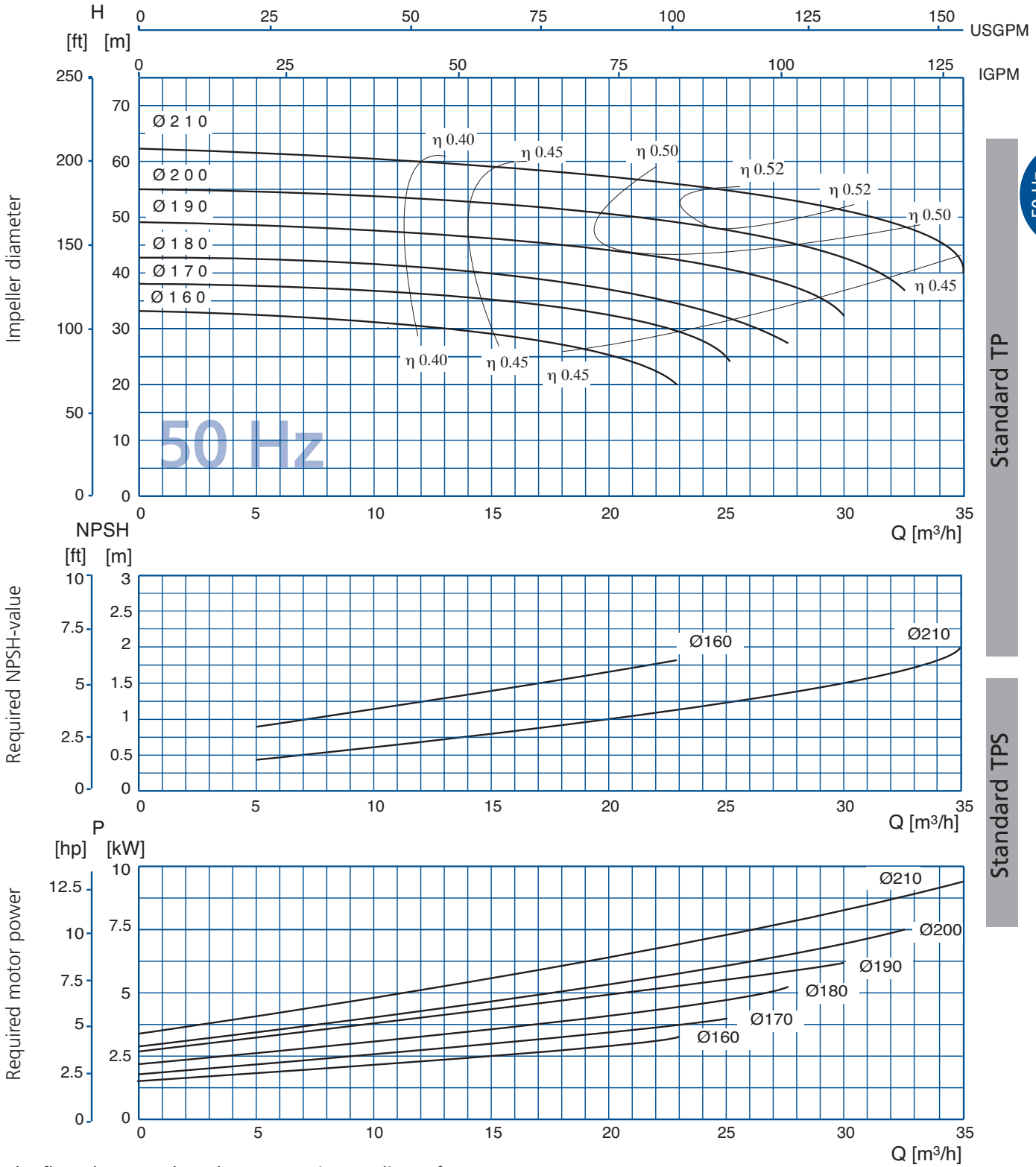


TP 2050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	622	494	136	335	403	107	278	160	25.5	112	161	85	52	25.5
112M (4 kW + 5.5 kW)	622	516	136	335	403	107	278	190	25.5	112	161	85	52	25.5
112M (7.5 kW)	622	538	136	335	403	107	278	190	25.5	112	161	85	52	25.5
132M (9.0 kW + 11 kW)	723	633	156	410	444	107	332	216	25.5	132	161	85	52	25.5
132M (15 kW)	723	684	156	410	444	107	332	216	25.5	132	161	85	52	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

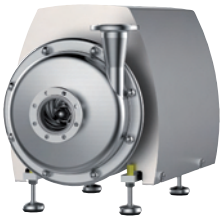
All dimensions in mm

Performance curves, centrifugal pump, type TP 2050, 2-pole (n=2,900 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

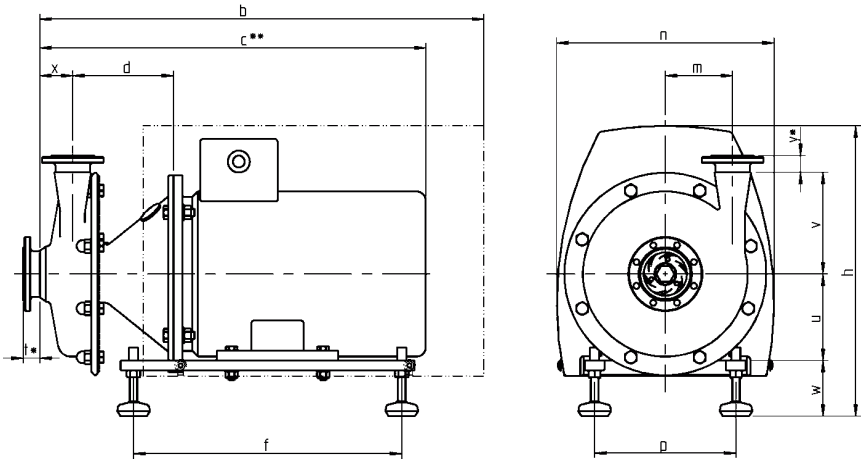
Standard version, centrifugal pump, type TP 2575, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 40 m³/h
Pump head	max. 85 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	5	7	5	2	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02575	1.	Type	TP 2575			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
200	4.	Impeller	200 = 200 mm 225 = 225 mm 245 = 245 mm	210 = 210 mm 230 = 230 mm 250 = 250 mm	215 = 215 mm 235 = 235 mm	220 = 220 mm 240 = 240 mm
055	5.	Motor power	055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 092 = 9.0 kW (IEC 132M) 110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M) 185 = 18.5 kW (IEC 160L) 220 = 22.0 kW (IEC 160L) 300 = 30.0 kW (IEC 200L)			

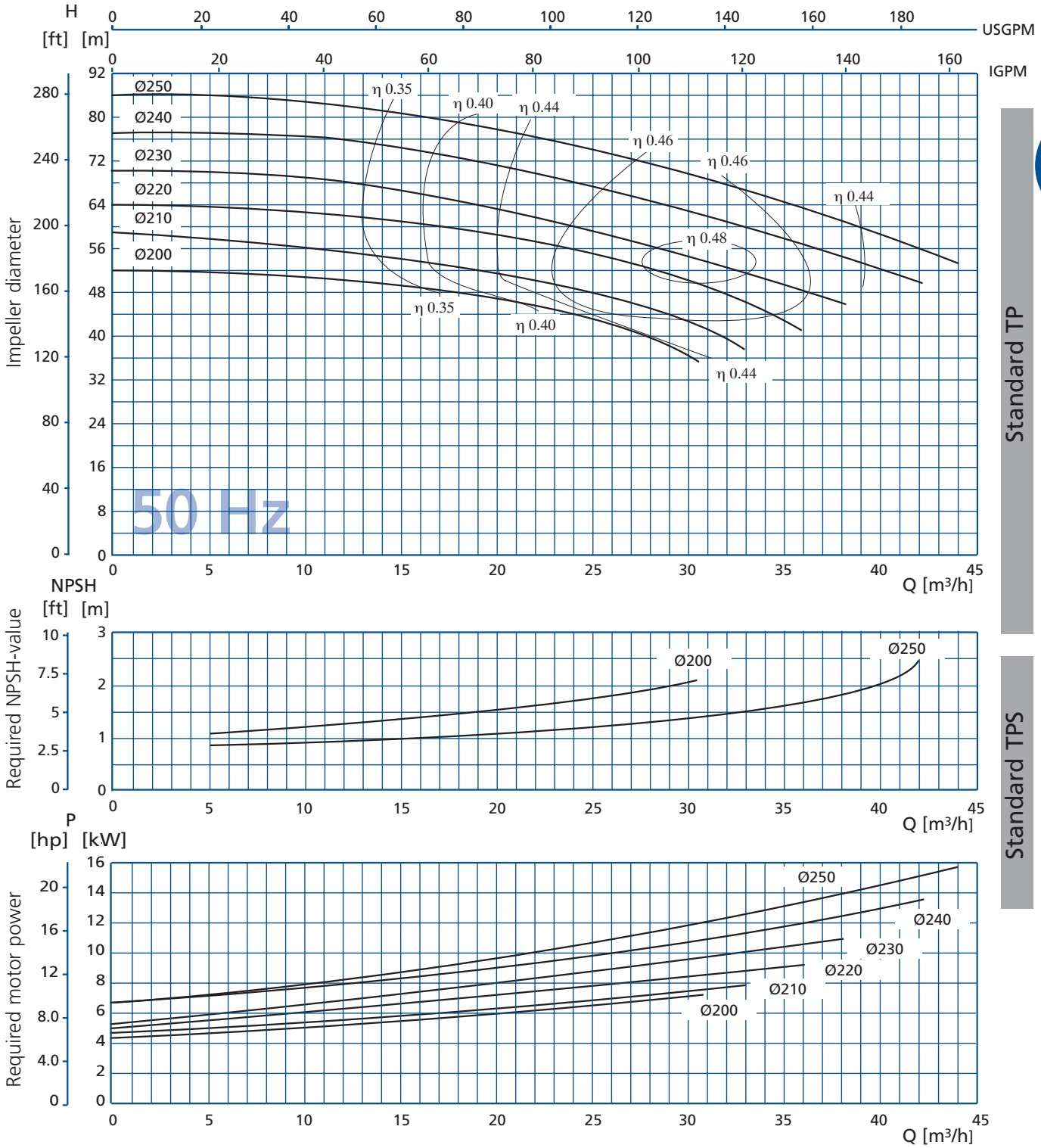


TP 2575 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M (5.5 kW / 7.5 kW)	621	515/537	138	335	403	124.5	278	190	25.5	112	190	85	48.5	25.5
132M (9.0 kW + 11 kW)	720	630	156	410	444	107	332	216	25.5	132	190	85	48.5	25.5
132M (15 kW)	720	681	156	410	444	107	332	216	25.5	132	190	85	48.5	25.5
160L	894	782	191	640	598	124.5	412	254	25.5	160	190	110	48.5	25.5
200L	1,033	908	200.5	810	668	124.5	472	318	25.5	200	190	115	48.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

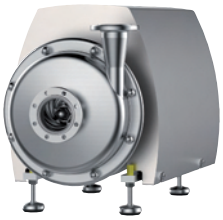
All dimensions in mm

Performance curves, centrifugal pump, type TP 2575, 2-pole (n=2,900 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

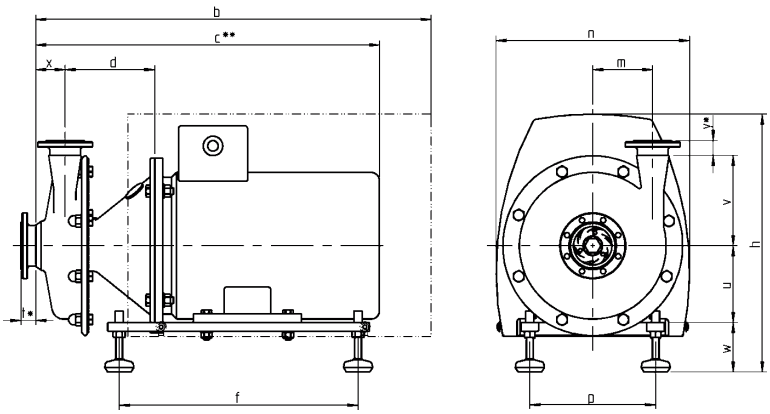
Standard version, centrifugal pump, type TP 3050, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 75 m³/h
Pump head	max. 65 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	3	0	5	0	2	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP03050	1.	Type	TP 3050			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
140	4.	Impeller	140 = 140 mm	150 = 150 mm	160 = 160 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			092 = 9.0 kW (IEC 132M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			185 = 18.5 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			

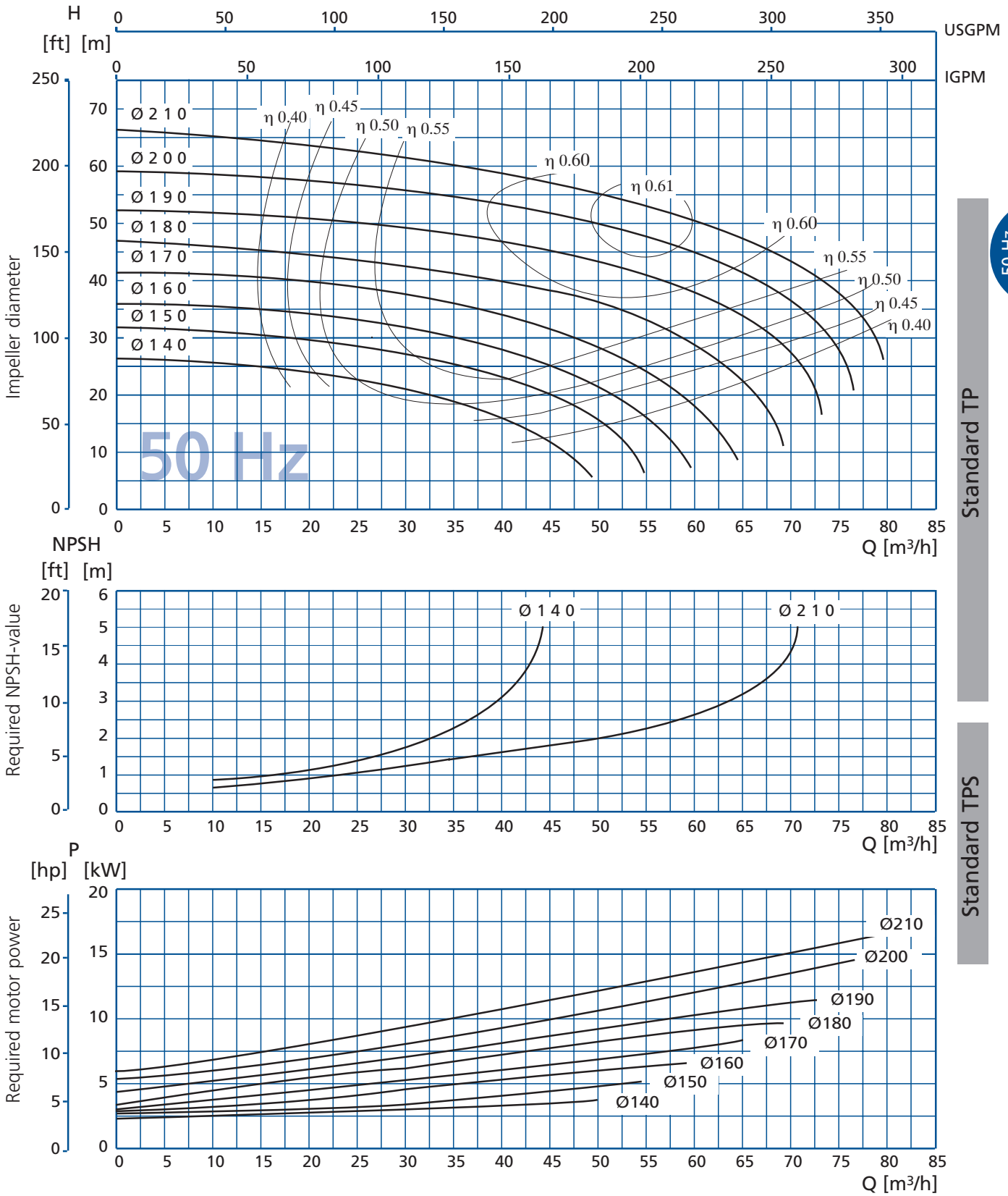


TP 3050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	618	504	134	335	403	103	278	160	25.5	112	155	85	50	25.5
112M (4 kW + 5.5 kW)	618	515	134	335	403	103	278	190	25.5	112	155	85	50	25.5
112M (7.5 kW)	618	534	134	335	403	103	278	190	25.5	112	155	85	50	25.5
132M (9.0 kW + 11 kW)	719	629	154	410	444	103	332	216	25.5	132	155	85	50	25.5
132M (15 kW)	719	680	154	410	444	103	332	216	25.5	132	155	85	50	25.5
160L	893	781	189	640	598	103	412	254	25.5	160	155	110	50	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

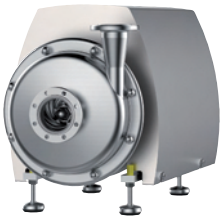
All dimensions in mm

Performance curves, centrifugal pump, type TP 3050, 2-pole (n=2,900 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

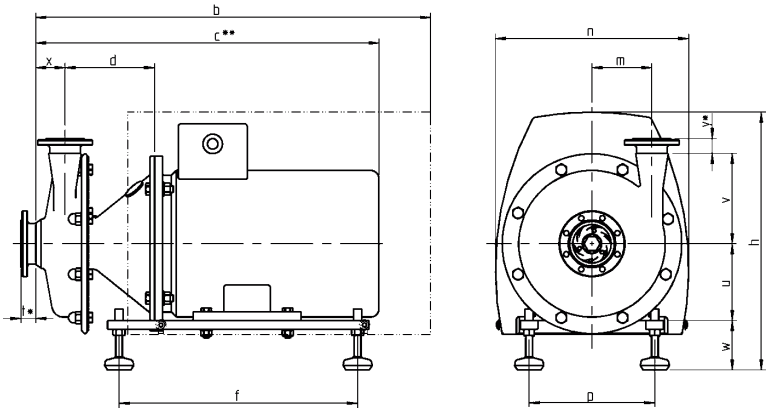
Standard version, centrifugal pump, type TP 5060, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 75 m³/h
Pump head	max. 75 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	5	0	6	0	2	5	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6		7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP05060	1.	Type	TP 5060			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
175	4.	Impeller	155 = 155 mm	160 = 160 mm	165 = 165 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
			215 = 215 mm	220 = 220 mm	225 = 225 mm	
055	5.	Motor power	055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			092 = 9.0 kW (IEC 132M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			185 = 18.5 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			
			300 = 30.0 kW (IEC 200L)			

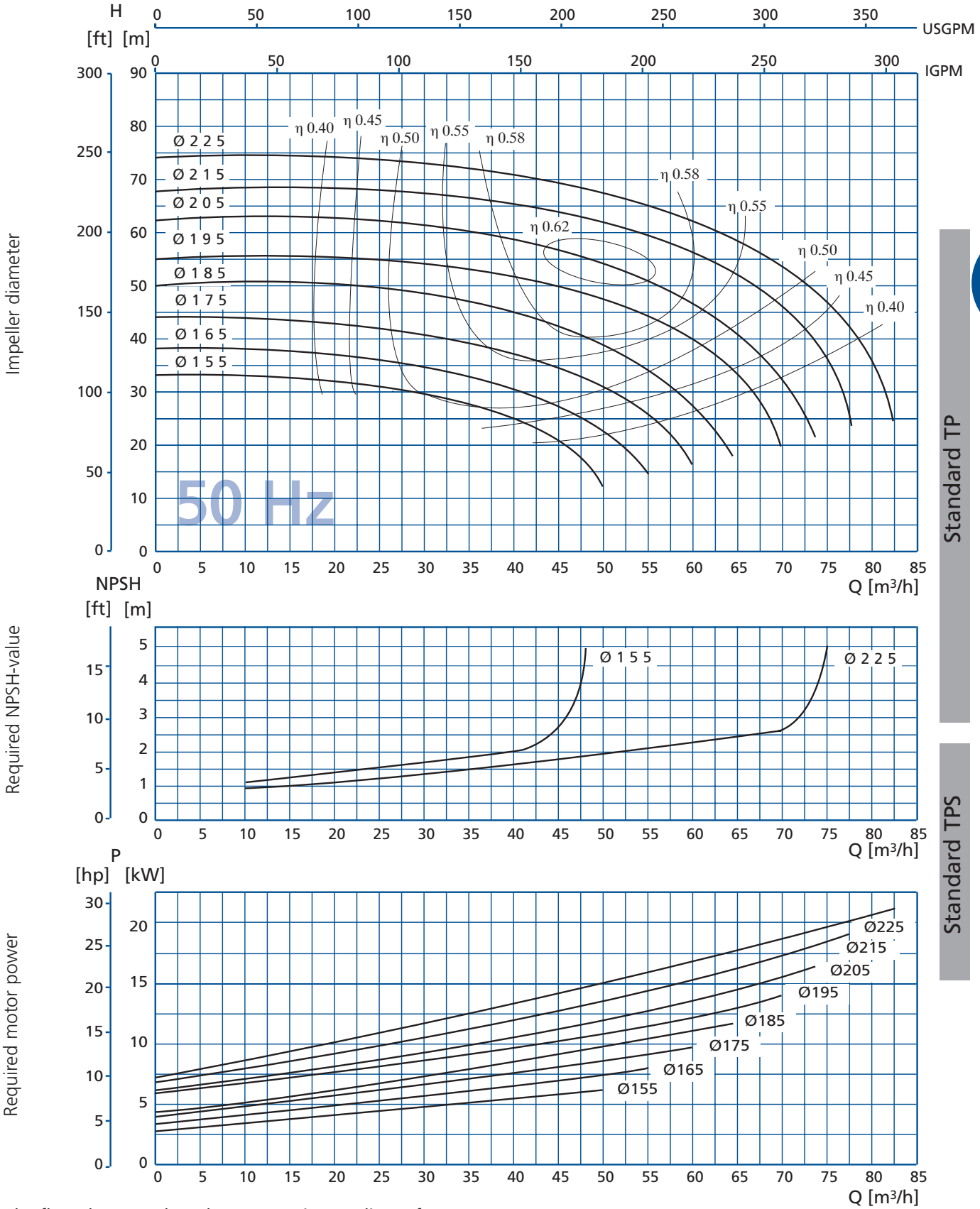


TP 5060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M (5.5 kW / 7.5 kW)	622	517/538	137	335	403	114.5	278	190	27.5	112	230	85	51	25.5
132M (9.0 kW + 11 kW)	723	633	157	410	444	114.5	332	216	27.5	132	230	85	51	25.5
132M (15 kW)	723	684	157	410	444	114.5	332	216	27.5	132	230	85	51	25.5
160L	897	785	192	640	598	114.5	412	254	27.5	160	230	110	52	25.5
200L	1,030	905	195	810	673	114.5	472	318	27.5	200	230	115	52	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 5060, 2-pole (n=2,900 min^{-1}), 50 Hz



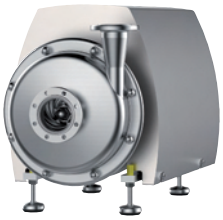
50 Hz 2-pole

Standard TP

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

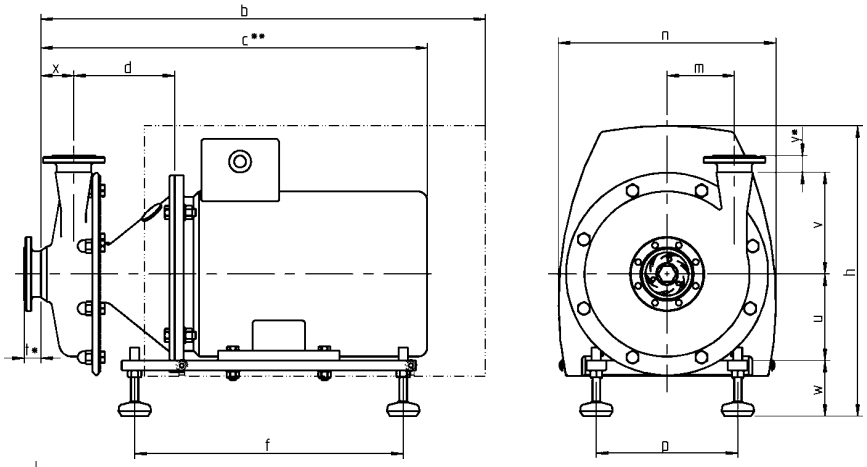
Standard version, centrifugal pump, type TP 7060, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 110 m³/h
Pump head	max. 74 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	7	0	6	0	2	5	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP07060	1.	Type	TP 7060			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
175	4.	Impeller	155 = 155 mm 175 = 175 mm 195 = 195 mm 220 = 220 mm	160 = 160 mm 180 = 180 mm 200 = 200 mm 225 = 225 mm	165 = 165 mm 185 = 185 mm 205 = 205 mm	170 = 170 mm 190 = 190 mm 215 = 215 mm
075	5.	Motor power	075 = 7.5 kW (IEC 112M) 092 = 9.0 kW (IEC 132M) 110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M) 185 = 18.5 kW (IEC 160L) 220 = 22.0 kW (IEC 160L) 300 = 30.0 kW (IEC 200L)			

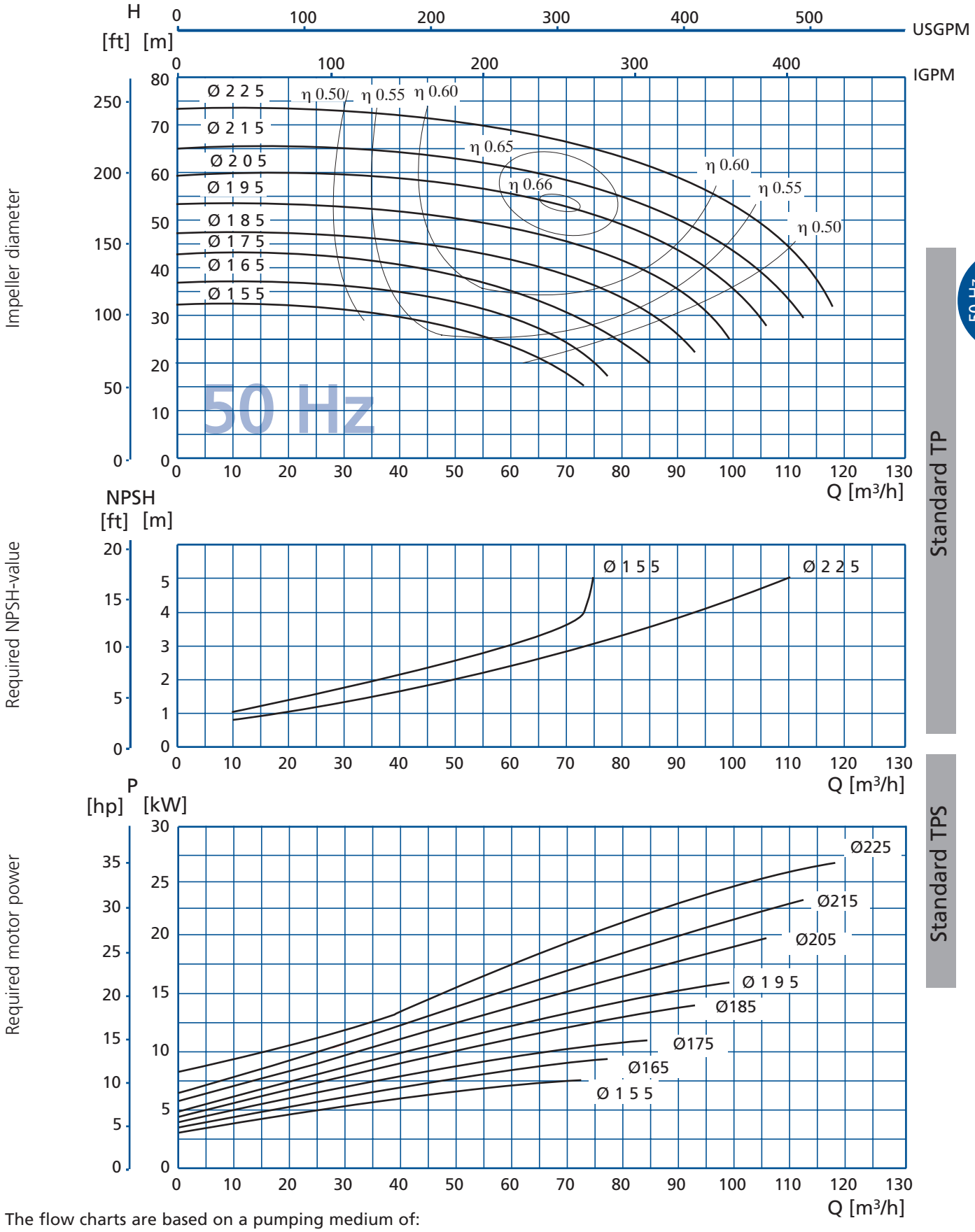


TP 7060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M	622	538	132	335	427	110	278	190	27.5	112	230	85	56	25.5
132M (9.0 kW + 11 kW)	723	633	152	410	444	110	332	216	27.5	132	230	85	56	25.5
132M (15 kW)	723	684	152	410	444	110	332	216	27.5	132	230	85	56	25.5
160L	897	785	187	640	596	110	412	254	27.5	160	230	110	56	25.5
200L	1,030	905	190.5	810	668	110	472	318	27.5	200	230	115	56	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 7060, 2-pole (n=2,900 min^{-1}), 50 Hz



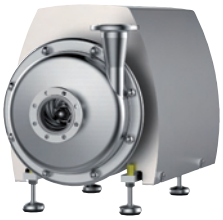
50 Hz 2-pole

Standard TP

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

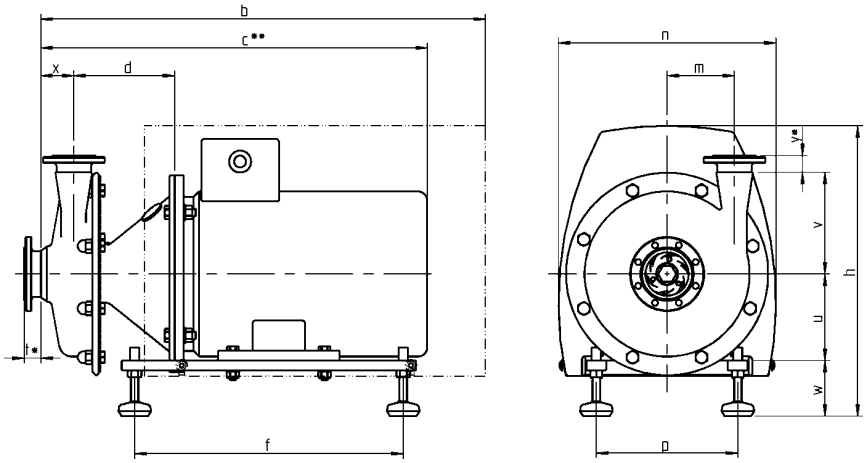
Standard version, centrifugal pump, type TP 8080, 2-pole (n=2,900 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 100; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 120 m³/h
Pump head	max. 90 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	8	0	8	0	2	5	0						D	N	N	F	K	1	0	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP08080	1.	Type	TP 8080			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
180	4.	Impeller	180 = 180 mm 210 = 210 mm 230 = 230 mm 250 = 250 mm	190 = 190 mm 215 = 215 mm 235 = 235 mm	200 = 200 mm 220 = 220 mm 240 = 240 mm	205 = 205 mm 225 = 225 mm 245 = 245 mm
110	5.	Motor power	110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M) 185 = 18.5 kW (IEC 160L) 220 = 22.0 kW (IEC 160L) 300 = 30.0 kW (IEC 200L) 370 = 37.0 kW (IEC 200L) 450 = 45.0 kW (IEC 225M)			

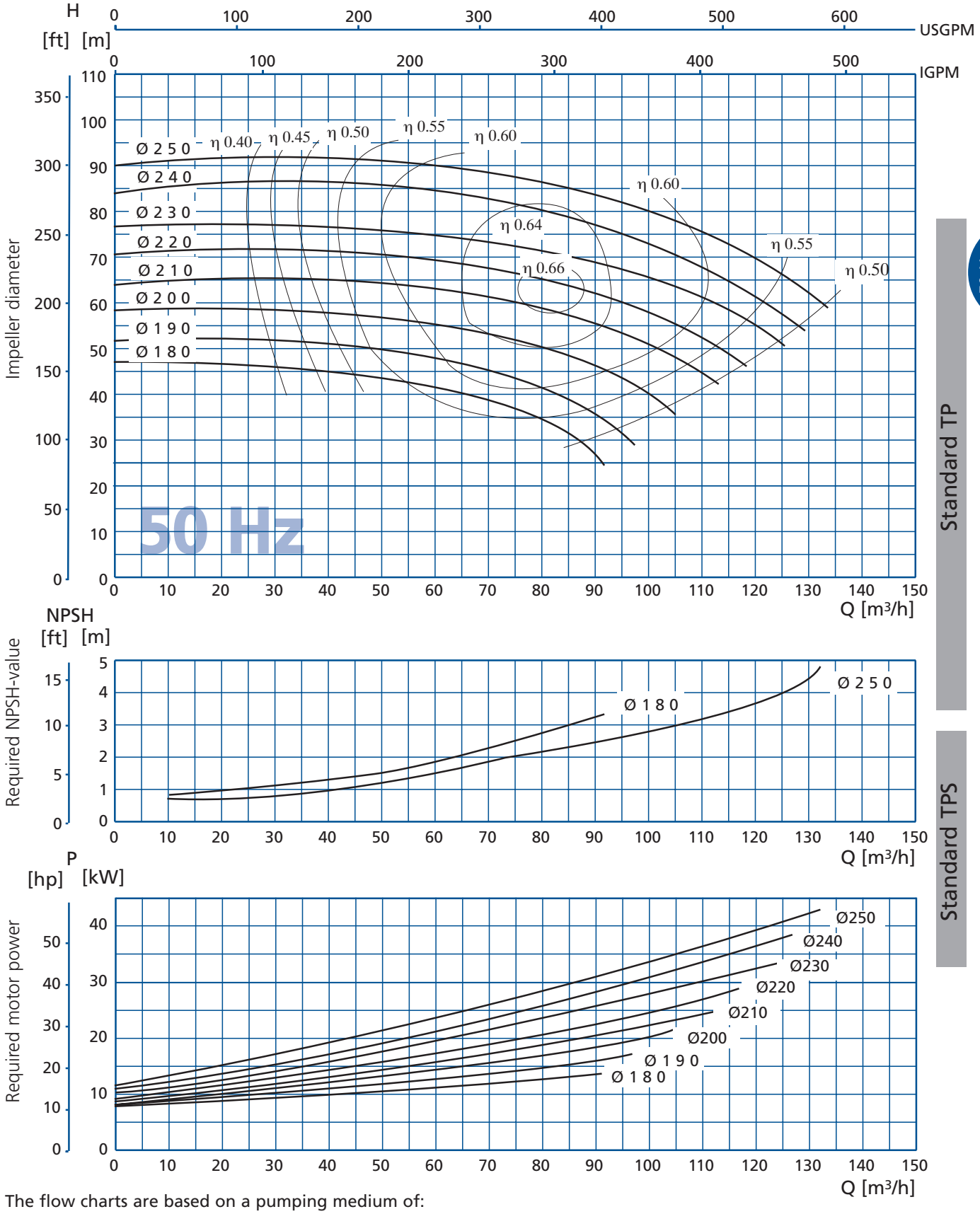


TP 8080 **Motor size**	**b**	**c****	**d**	**f**	**h**	**m**	**n**	**p**	**t***	**u**	**v**	**w**	**x**	**y***
132M (11 kW / 15 kW)	742	652/703	156	410	444	124	332	216	27.5	132	250	85	71	25.5
160L	916	804	191	640	598	124	412	254	27.5	160	250	110	71	25.5
200L	1,050	925	195	810	668	124	472	318	27.5	200	250	115	71	25.5
225M	1,076	961	195	810	720	124	472	356	27.5	200	250	115	71	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 8080, 2-pole (n=2,900 min^{-1}), 50 Hz



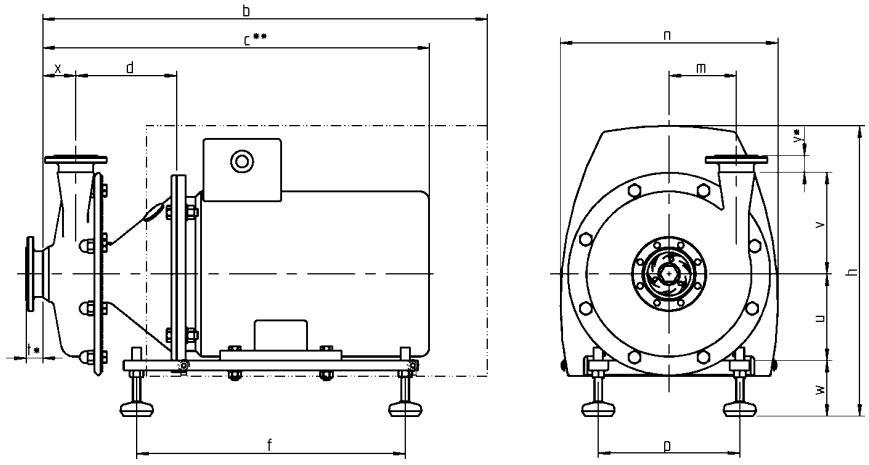
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard version, centrifugal pump, type TP 16040, 2-pole (n=2,900 min^{-1}), 50 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 150; Pressure port (DS), DN 100
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 210 m³/h
Pump head	max. 49 m w.c.
Housing pressure	max. 16 bar

Code	T	P	1	6	0	4	0	2	5	0						D	N	N	F	K	1	5	0	1	0	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP16040	1.	Type	TP 16040			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
160	4.	Impeller	160 = 160 mm 180 = 180 mm 200 = 200 mm	165 = 165 mm 185 = 185 mm	170 = 170 mm 190 = 190 mm	175 = 175 mm 195 = 195 mm
110	5.	Motor power	110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M) 185 = 18.5 kW (IEC 160L) 220 = 22.0 kW (IEC 160L) 300 = 30.0 kW (IEC 200L) 370 = 37.0 kW (IEC 200L) 450 = 45.0 kW (IEC 225M)			

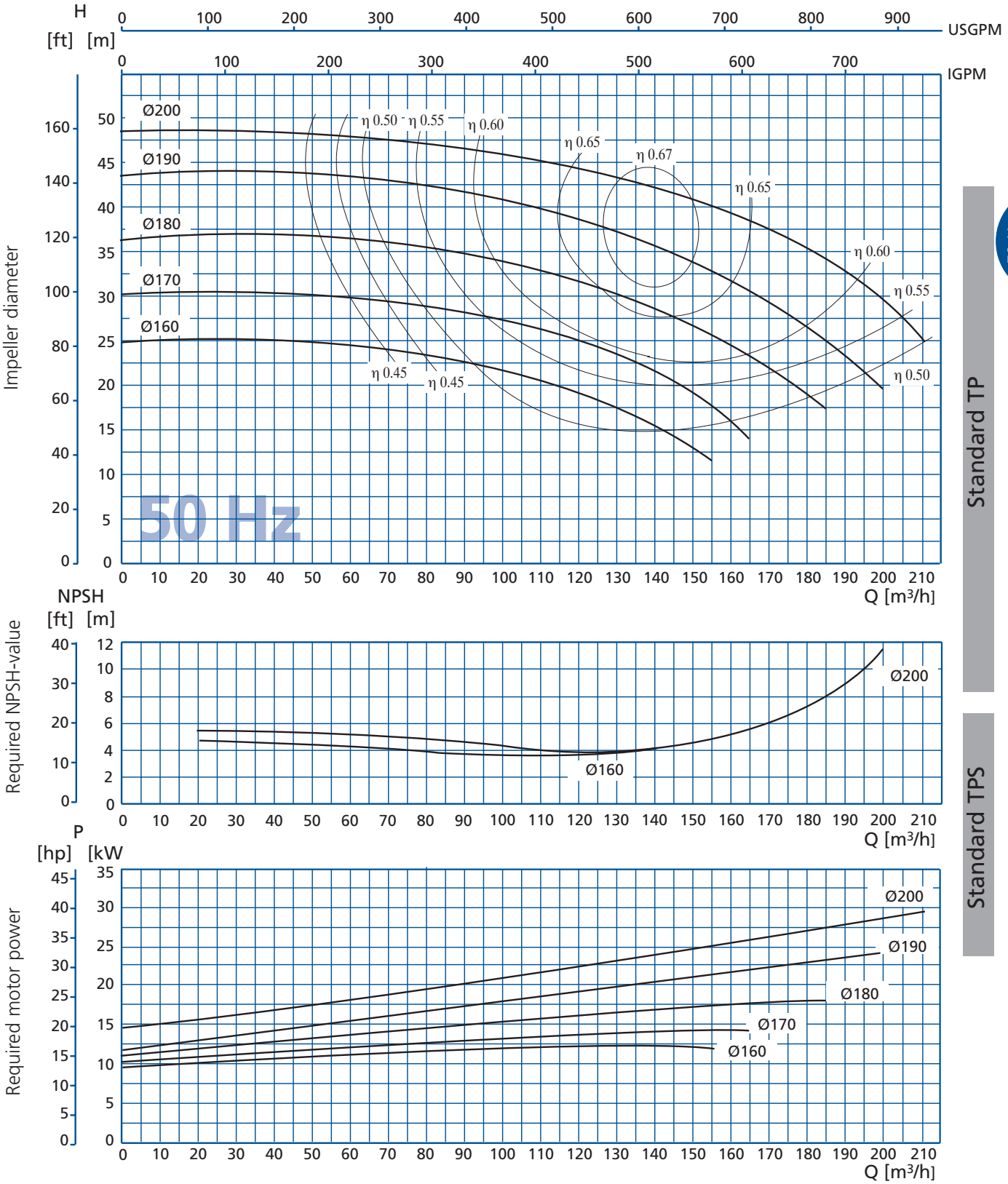


TP 16040 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
132M (11 kW / 15 kW)	752	662/713	151	410	444	108	332	216	29.5	132	280	85	86	27.5
160L	926	814	186	640	596	108	412	254	29.5	160	280	110	86	27.5
200L	1,059	934	189	810	668	108	472	318	29.5	200	280	115	86	27.5
225M	1,085	970	189	810	720	108	521	356	29.5	225	280	115	86	27.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 16040, 2-pole (n=2,900 min^{-1}), 50 Hz



50 Hz 2-pole

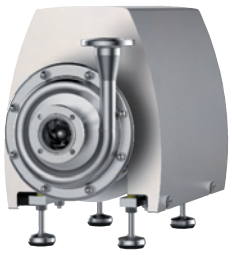
Standard TP

Standard TPS

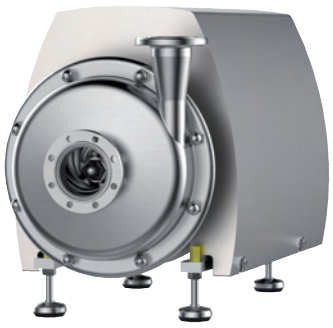
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard version, centrifugal pump, type TP, 4-pole (n=1,450 min^{-1}), 50 Hz

Standard version	**4 pole/50Hz**
Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Depending on pump size
Mechanical seal	Single-acting, material: C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Standard equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 100 m³/h
Pump head	max. 23 m w.c.

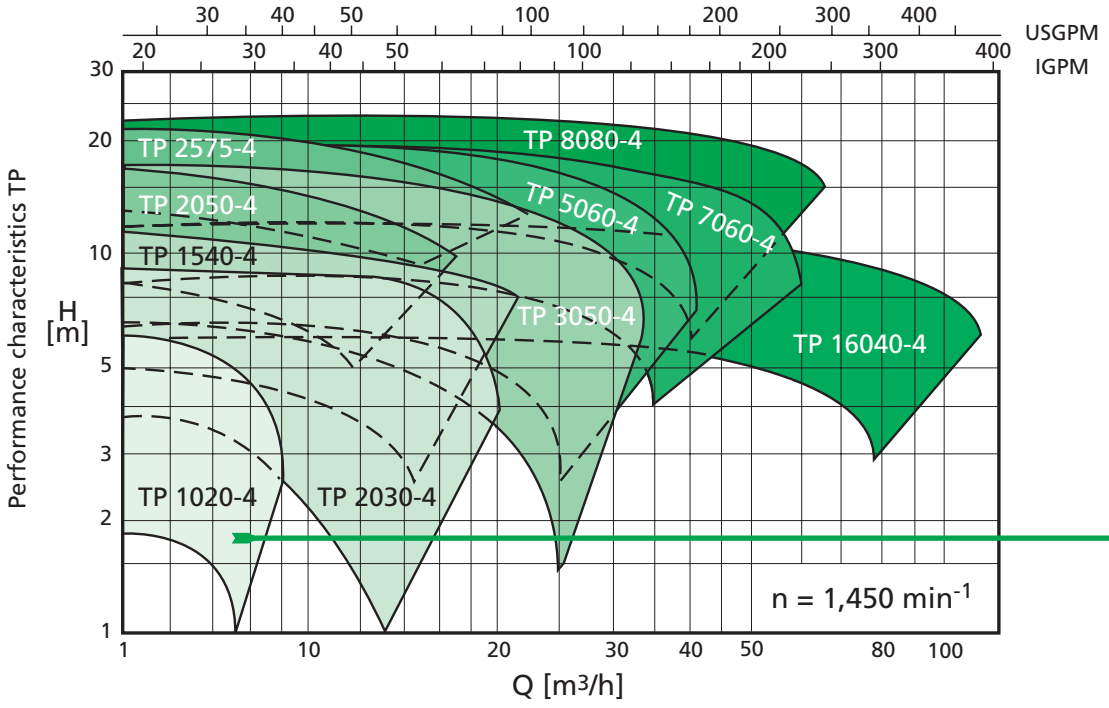


TP 1020



TP 1540 bis TP8080

TP 16040



Example of a standard selection

Code	T	P	0	1	0	2	0	4	5	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Standard version, for other versions see options

Example	Pos	Designation	Code of selection characteristics		
TP01020	1.	Type	TP01020		
4	2.	Speed	4 = 4 pole		
50	3.	Frequency	50 = 50 Hz		
080	4.	Impeller	080 = 80 mm	100 = 100 mm	120 = 120 mm
			090 = 90 mm	110 = 110 mm	130 = 130 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80)		
			011 = 1.1 kW (IEC 90S)		
			015 = 1.5 kW (IEC 90L)		
			022 = 2.2 kW (IEC 100L)		
			030 = 3.0 kW (IEC 100L)		

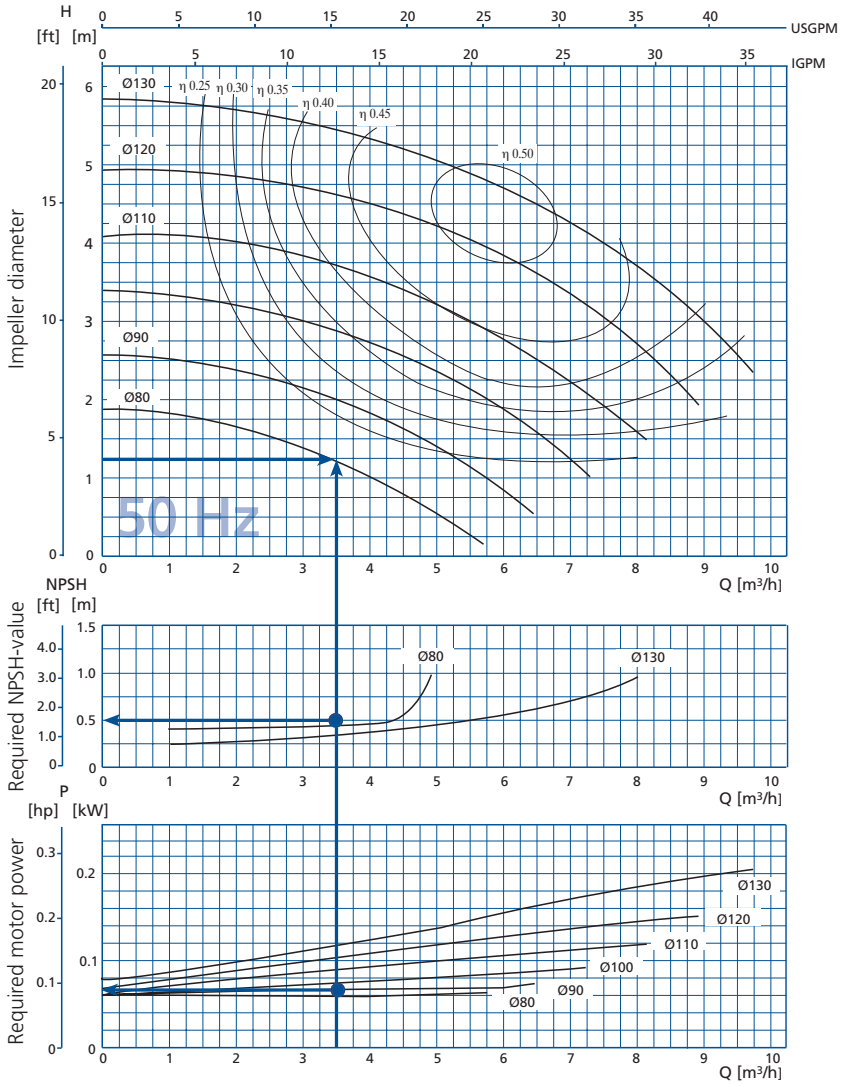
Selected values determined by the pump selected

Selection using the characteristic curves

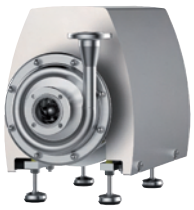
Impeller selection in accordance with capacity and pump head

Motor output selection in accordance with capacity and pump head

Performance curves, centrifugal pump, TP 1020 (4-polig / 50 Hz)



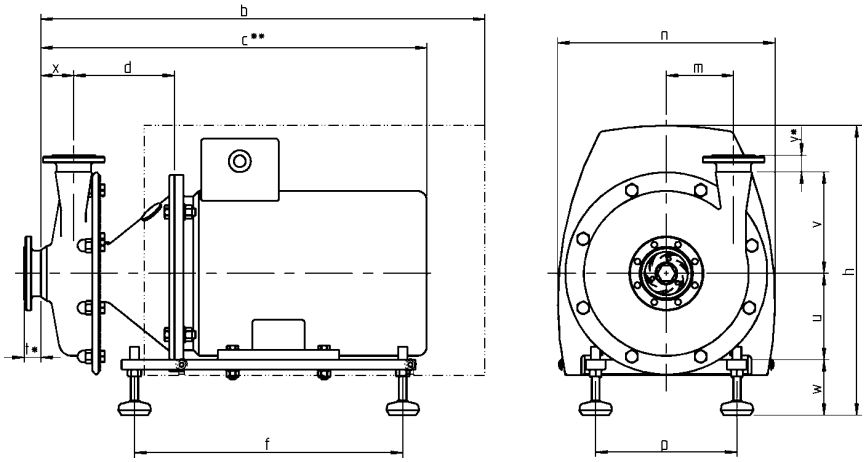
Standard version, centrifugal pump, type TP 1020, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 10 m³/h
Pump head	max. 6 m w.c.
Housing pressure	max. 10 bar

Code	T	P	0	1	0	2	0	4	5	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics		
TP01020	1.	Type	TP 1020		
4	2.	Speed	4 = 4 pole		
50	3.	Frequency	50 = 50 Hz		
080	4.	Impeller	080 = 80 mm	100 = 100 mm	120 = 120 mm
			090 = 90 mm	110 = 110 mm	130 = 130 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 011 = 1.1 kW (IEC 90S) 015 = 1.5 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 030 = 3.0 kW (IEC 100L)		

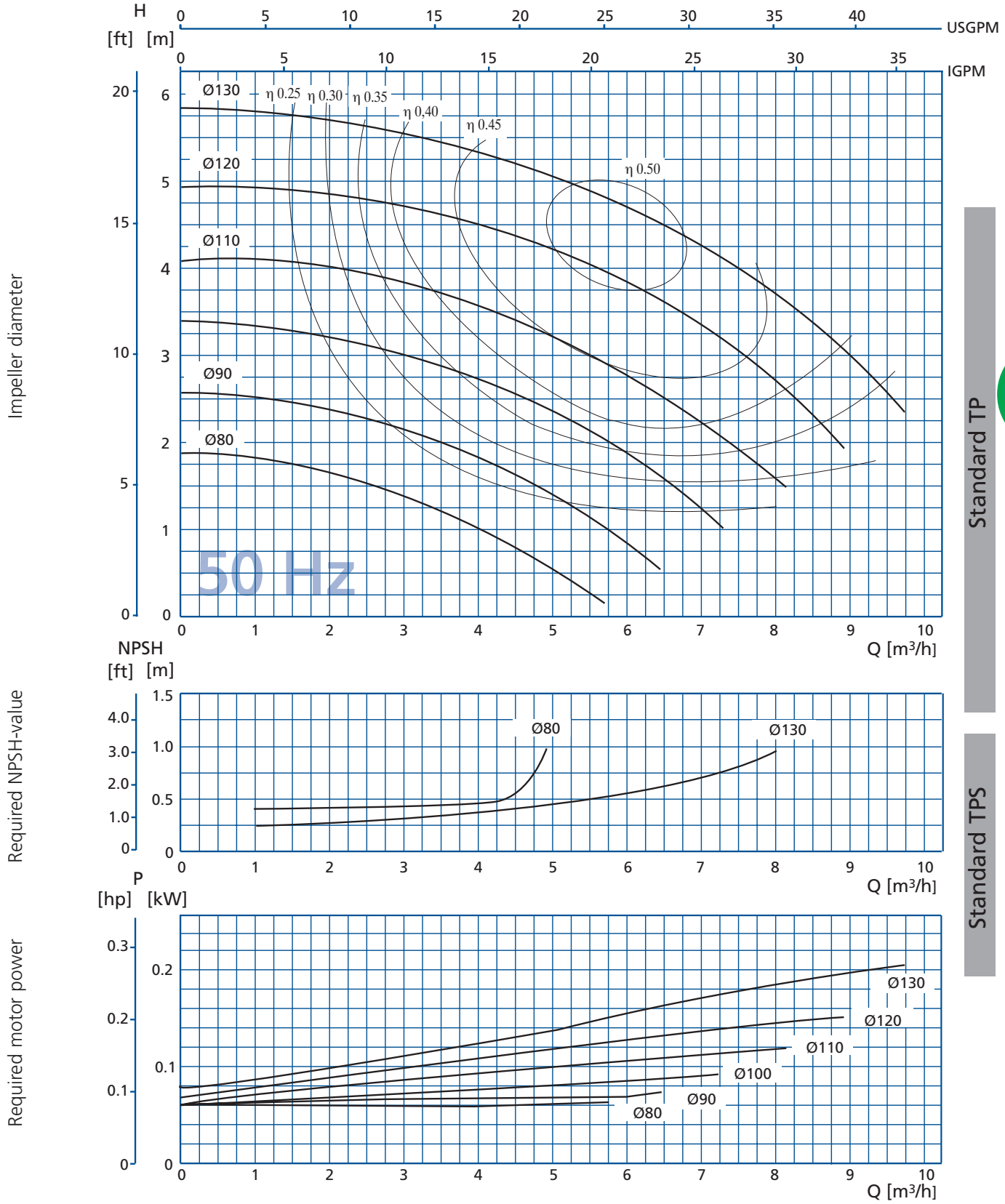


TP 1020 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	484	390	144	285	352	76	228	125	25.5	92	125	82	14	25.5
90S / 90L	490	425	144	285	352	76	228	140	25.5	90	125	82	14	25.5
100L (2.2 kW / 3 kW)	602	474/489	154	335	403	76	278	160	25.5	112	125	85	14	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

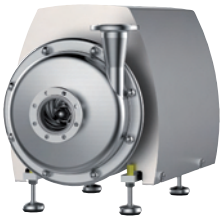
All dimensions in mm

Performance curves, centrifugal pump, type TP 1020, 4-pole (n=1,450 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

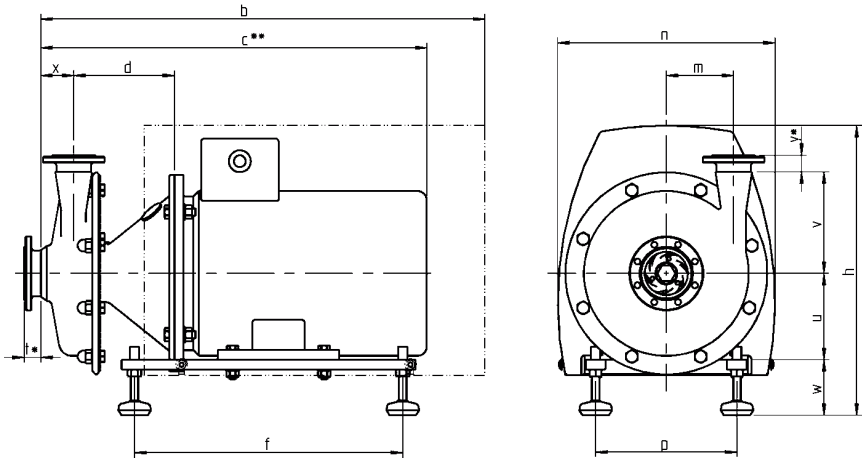
Standard version, centrifugal pump, type TP 1540, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 19 m³/h
Pump head	max. 11 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	1	5	4	0	4	5	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4				5		6			7			8			9		10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP01540	1.	Type	TP 1540			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
130	4.	Impeller	130 = 130 mm 155 = 155 mm 175 = 175 mm	140 = 140 mm 160 = 160 mm 180 = 180 mm	145 = 145 mm 165 = 165 mm	150 = 150 mm 170 = 170 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 011 = 1.1 kW (IEC 90S) 015 = 1.5 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 030 = 3.0 kW (IEC 100L)			

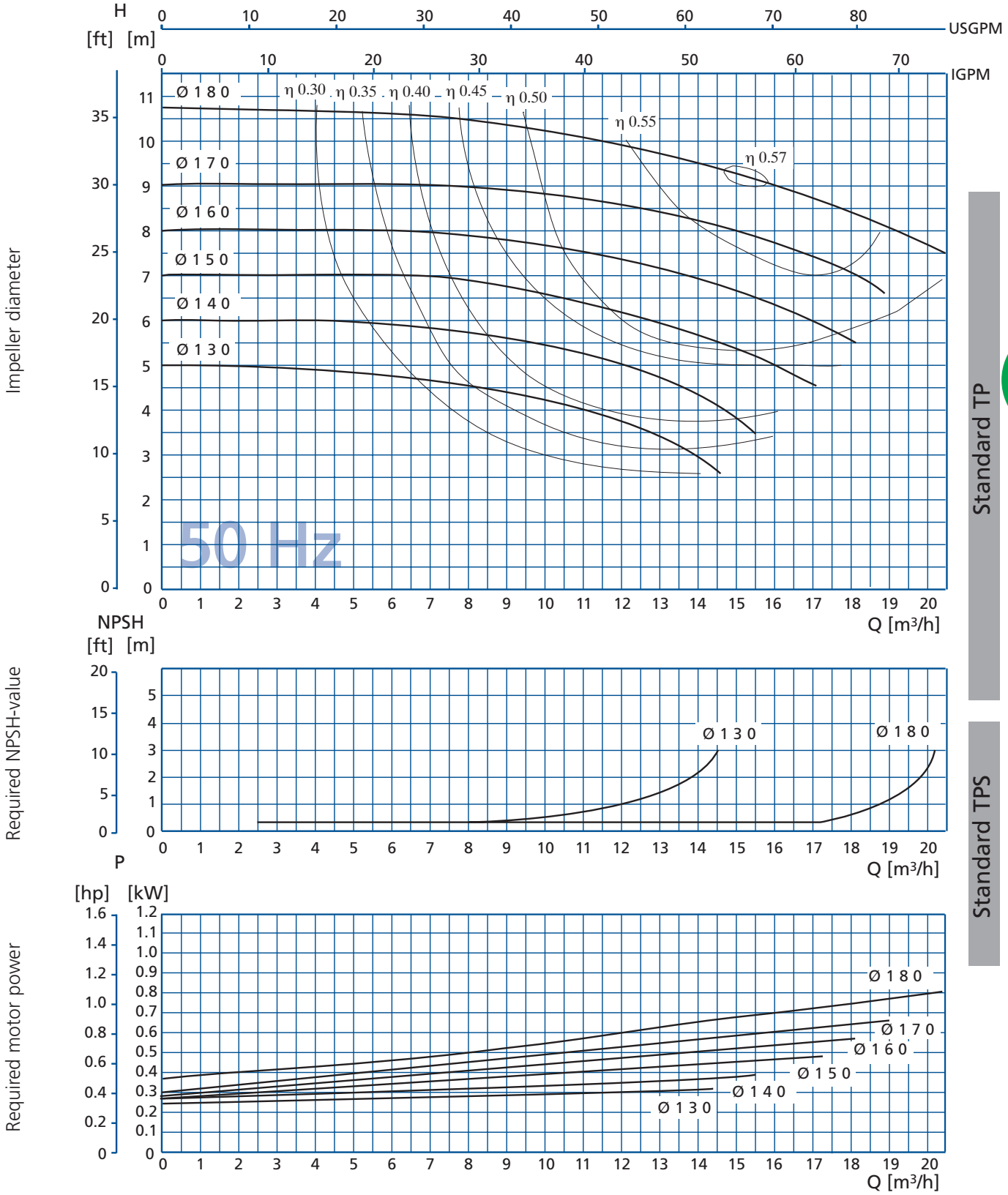


TP 1540 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	490	396	121.5	285	352	90	228	125	25.5	92	140	82	42	25.5
90S / 90L	496	431	121.5	285	352	90	228	140	25.5	90	140	82	42	25.5
100L (2.2 kW / 3 kW)	608	480/495	131.5	335	403	90	278	160	25.5	112	140	85	42	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

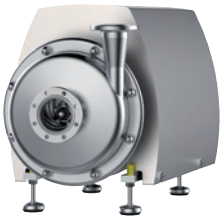
All dimensions in mm

Performance curves, centrifugal pump, type TP 1540, 4-pole (n=1,450 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

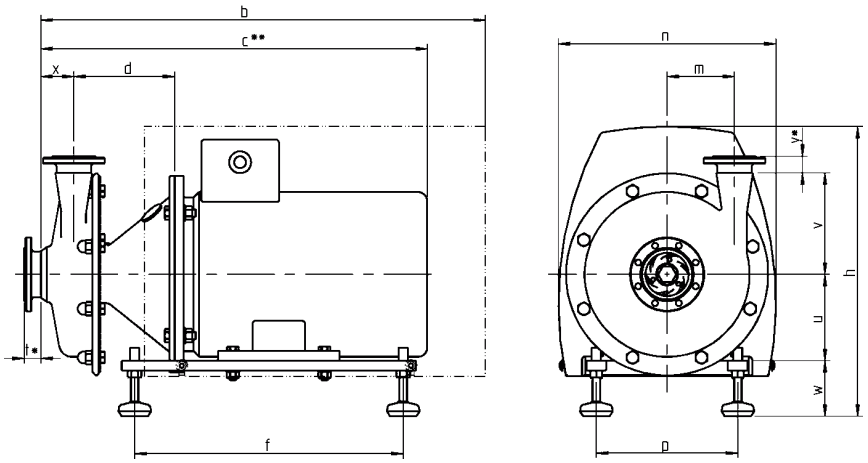
Standard version, centrifugal pump, type TP 2030, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 19 m³/h
Pump head	max. 9 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	3	0	4	5	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02030	1.	Type	TP 2030			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
110	4.	Impeller	110 = 110 mm	120 = 120 mm	130 = 130 mm	140 = 140 mm
			145 = 145 mm	150 = 150 mm	155 = 155 mm	160 = 160 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 011 = 1.1 kW (IEC 90S) 015 = 1.5 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S)			

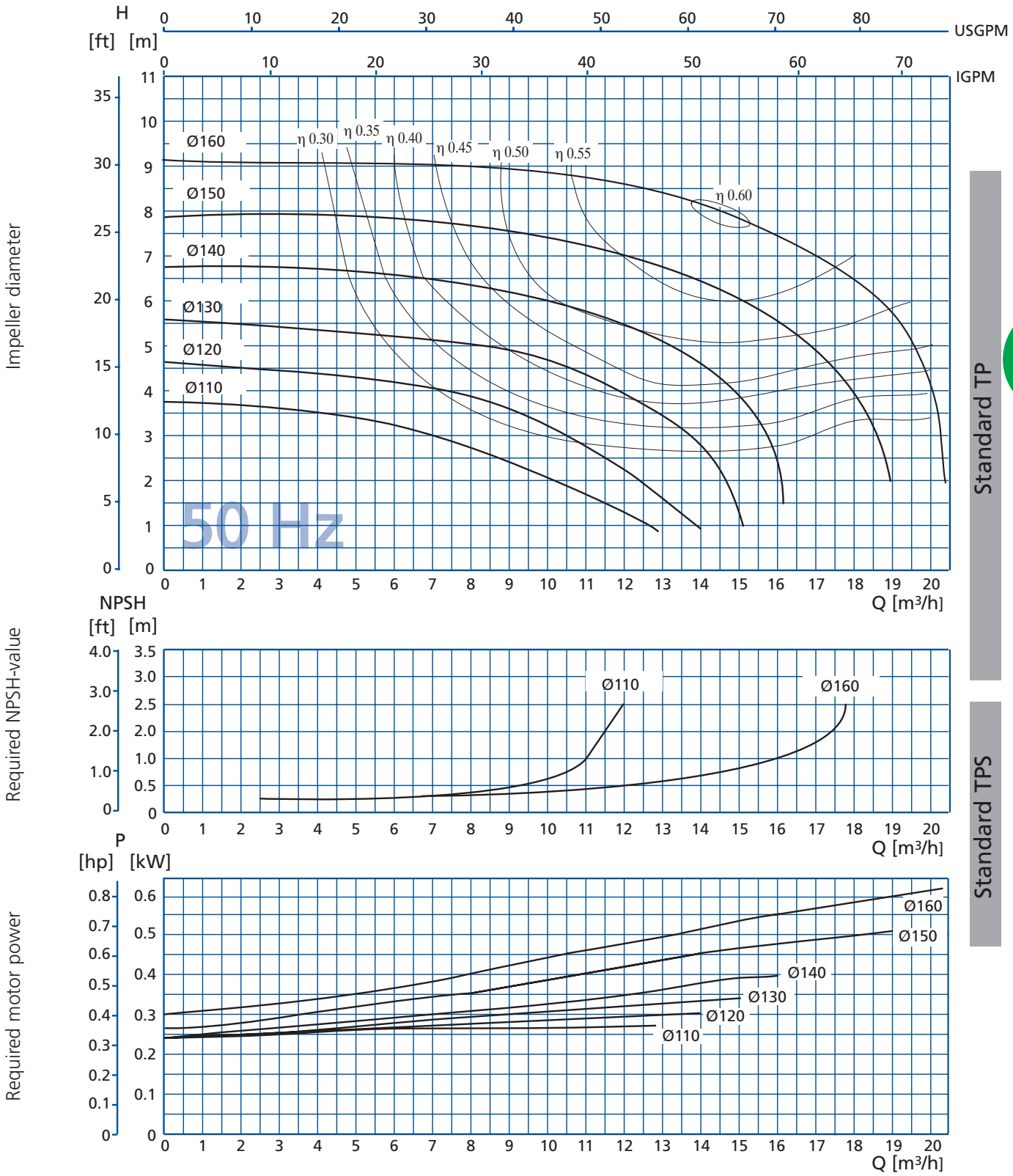


TP 2030 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	488	394	121.5	285	352	85	228	125	25.5	92	135	82	40	25.5
90S / 90L	494	429	121.5	285	352	85	228	140	25.5	90	135	82	40	25.5
100L (2.2 kW / 3 kW)	606	478/493	131.5	335	403	85	278	160	25.5	112	135	85	40	25.5
112M	606	500	131.5	335	403	85	278	190	25.5	112	135	85	40	25.5
132S	707	557	152	410	444	85	332	216	25.5	132	135	85	40	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

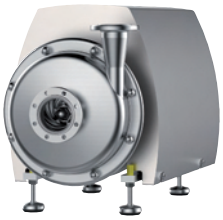
All dimensions in mm

Performance curves, centrifugal pump, type TP 2030, 4-pole (n=1,450 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

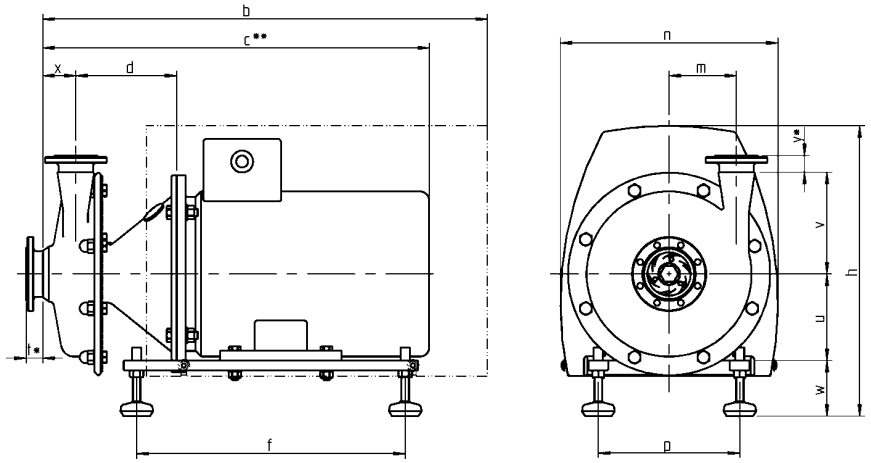
Standard version, centrifugal pump, type TP 2050, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 19 m³/h
Pump head	max. 15 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	5	0	4	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02050	1.	Type	TP 2050			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
160	4.	Impeller	160 = 160 mm 190 = 190 mm 210 = 210 mm	170 = 170 mm 195 = 195 mm	180 = 180 mm 200 = 200 mm	185 = 185 mm 205 = 205 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 011 = 1.1 kW (IEC 90S) 015 = 1.5 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M)			

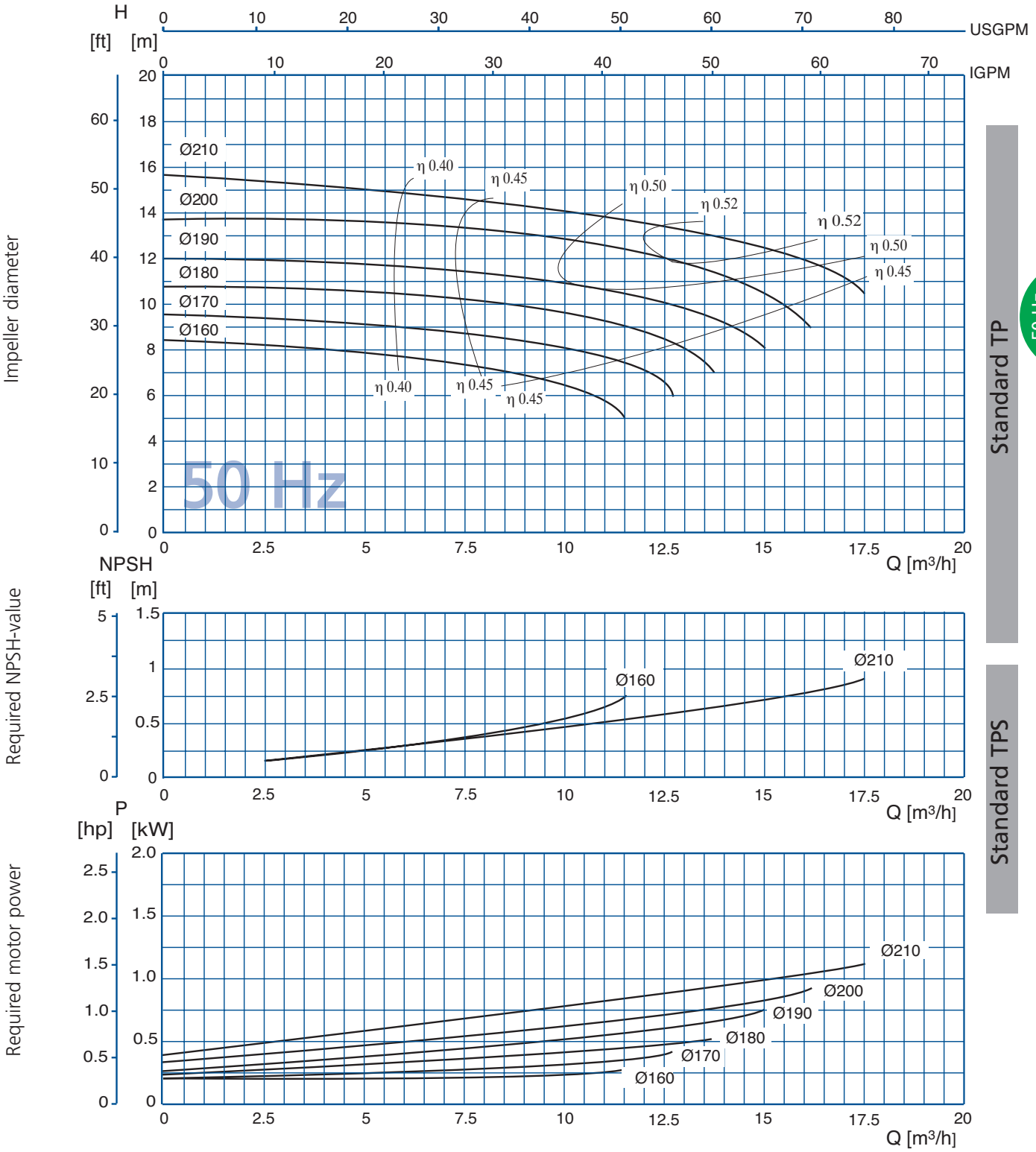


TP 2050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	504	410	126	285	352	107	228	125	25.5	90	161	82	52	25.5
90S / 90L	510	445	126	285	352	107	228	140	25.5	90	161	82	52	25.5
100L (2.2 kW / 3 kW)	622	494/509	136	335	403	107	278	160	25.5	112	161	85	52	25.5
112M	622	516	136	335	403	107	278	190	25.5	112	161	85	52	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

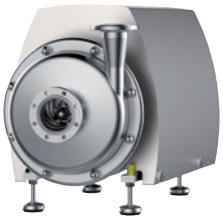
All dimensions in mm

Performance curves, centrifugal pump, type TP 2050, 4-pole (n=1,450 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

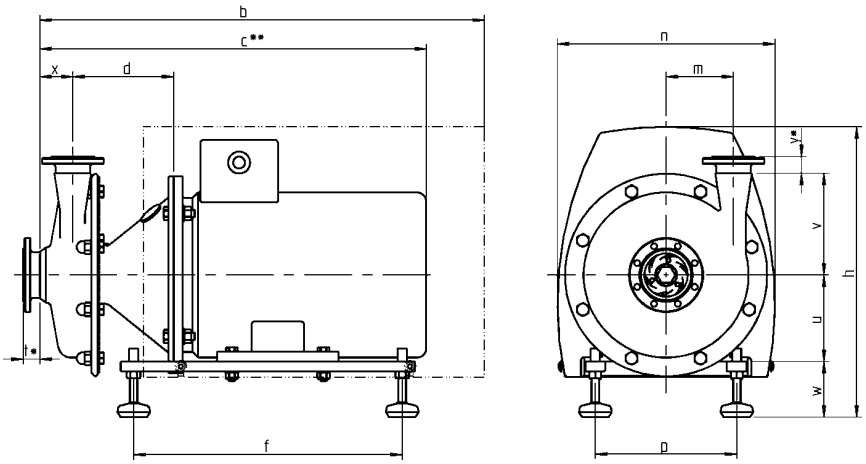
Standard version, centrifugal pump, type TP 2575, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 20 m³/h
Pump head	max. 21 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	5	7	5	4	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4				5		6		7			8				9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02575	1.	Type	TP 2575			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
200	4.	Impeller	200 = 200 mm 225 = 225 mm 245 = 245 mm	210 = 210 mm 230 = 230 mm 250 = 250 mm	215 = 215 mm 235 = 235 mm	220 = 220 mm 240 = 240 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

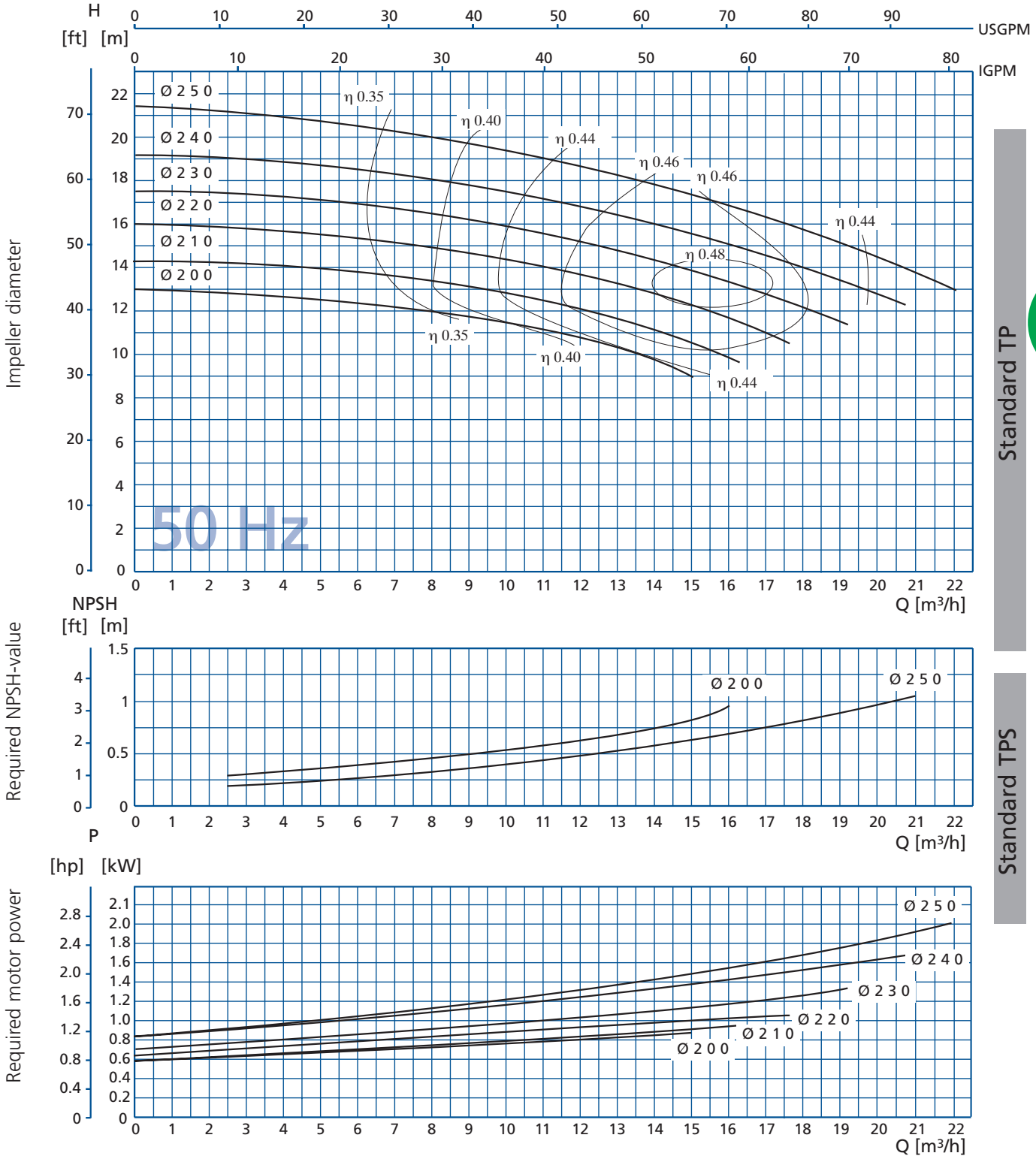


TP 2575 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L / 112M	621	508/515	138	335	403	124.5	278	160/190	25.5	112	190	85	48.5	25.5
132S / 132M	720	570/630	156	410	444	124.5	332	216	25.5	132	190	85	48.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 2575, 4-pole (n=1,450 min^{-1}), 50 Hz



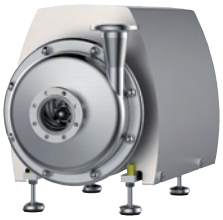
Standard TP

50 Hz 4-pole

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

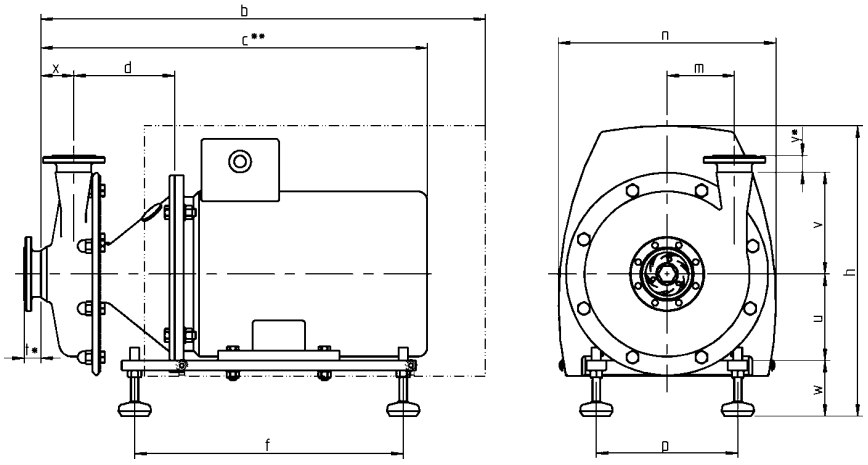
Standard version, centrifugal pump, type TP 3050, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 36 m³/h
Pump head	max. 16 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	3	0	5	0	4	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP03050	1.	Type	TP 3050			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
140	4.	Impeller	140 = 140 mm	150 = 150 mm	160 = 160 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80)			
			011 = 1.1 kW (IEC 90S)			
			015 = 1.5 kW (IEC 90L)			
			022 = 2.2 kW (IEC 100L)			
			030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 132S)			
			075 = 7.5 kW (IEC 132M)			

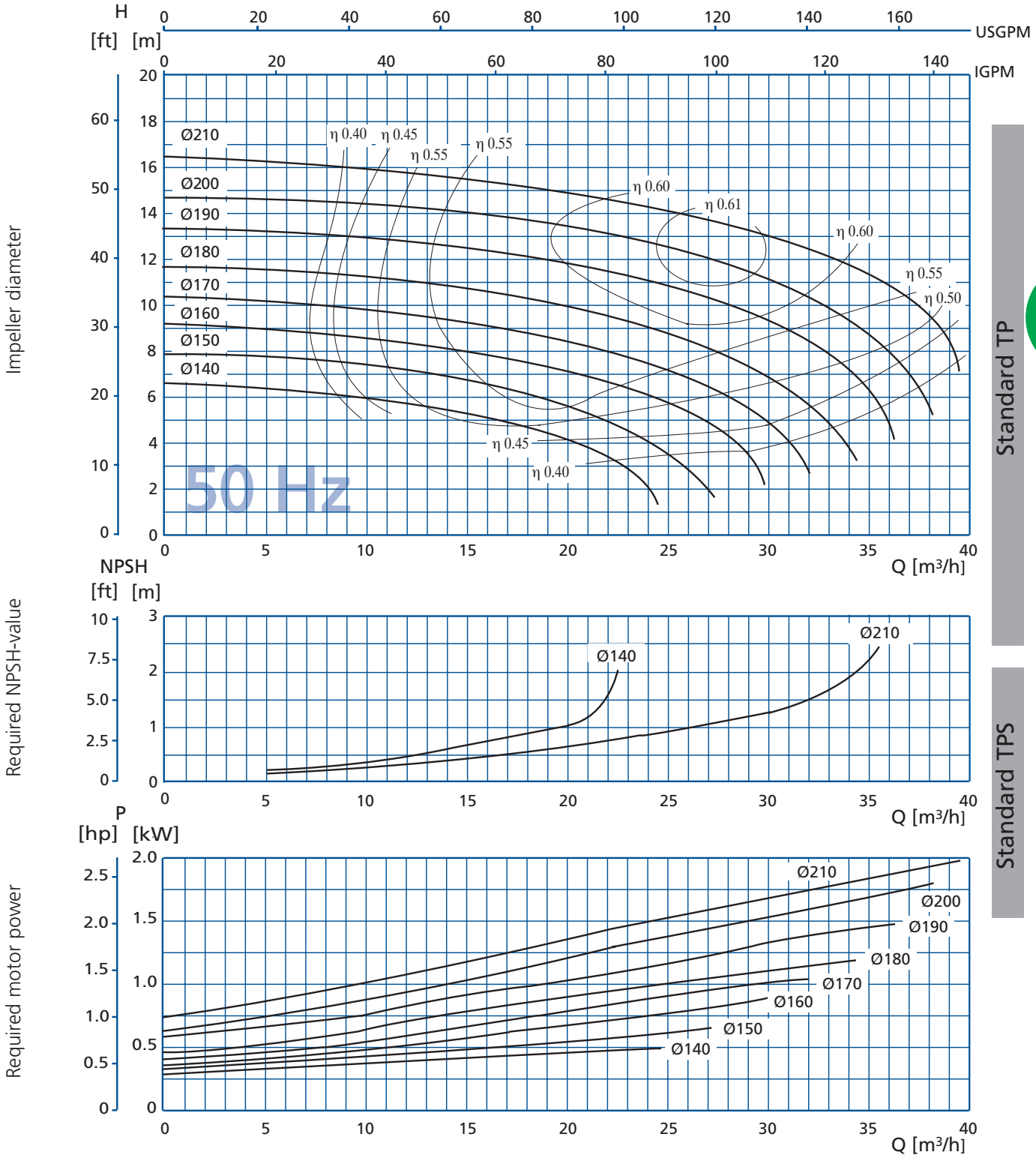


TP 3050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	500	406	124	285	352	103	228	125	25.5	92	155	82	50	25.5
90S / 90L	506	441	124	285	352	103	228	140	25.5	90	155	82	50	25.5
100L (2.2 kW / 3 kW)	618	490/505	134	335	403	103	278	160	25.5	112	155	85	50	25.5
112M	618	512	134	335	403	103	278	190	25.5	112	155	85	50	25.5
132S / 132M	719	569/609	154	410	444	103	332	216	25.5	132	155	85	50	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

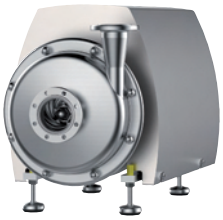
All dimensions in mm

Performance curves, centrifugal pump, type TP 3050, 4-pole (n=1,450 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

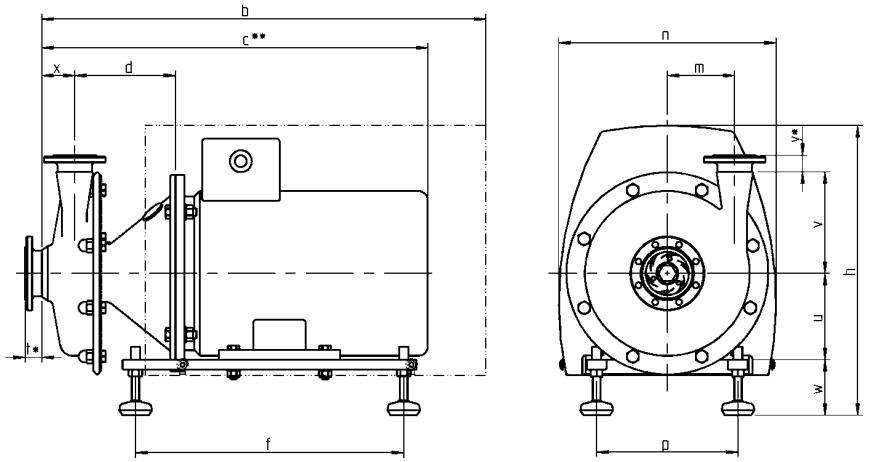
Standard version, centrifugal pump, type TP 5060, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 40 m³/h
Pump head	max. 17 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	5	0	6	0	4	5	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6		7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP05060	1.	Type	TP 5060			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
155	4.	Impeller	155 = 155 mm	160 = 160 mm	165 = 165 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
			215 = 215 mm	220 = 220 mm	225 = 225 mm	
022	5.	Motor power	022 = 2.2 kW (IEC 100L)			
			030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 132S)			
			075 = 7.5 kW (IEC 132M)			

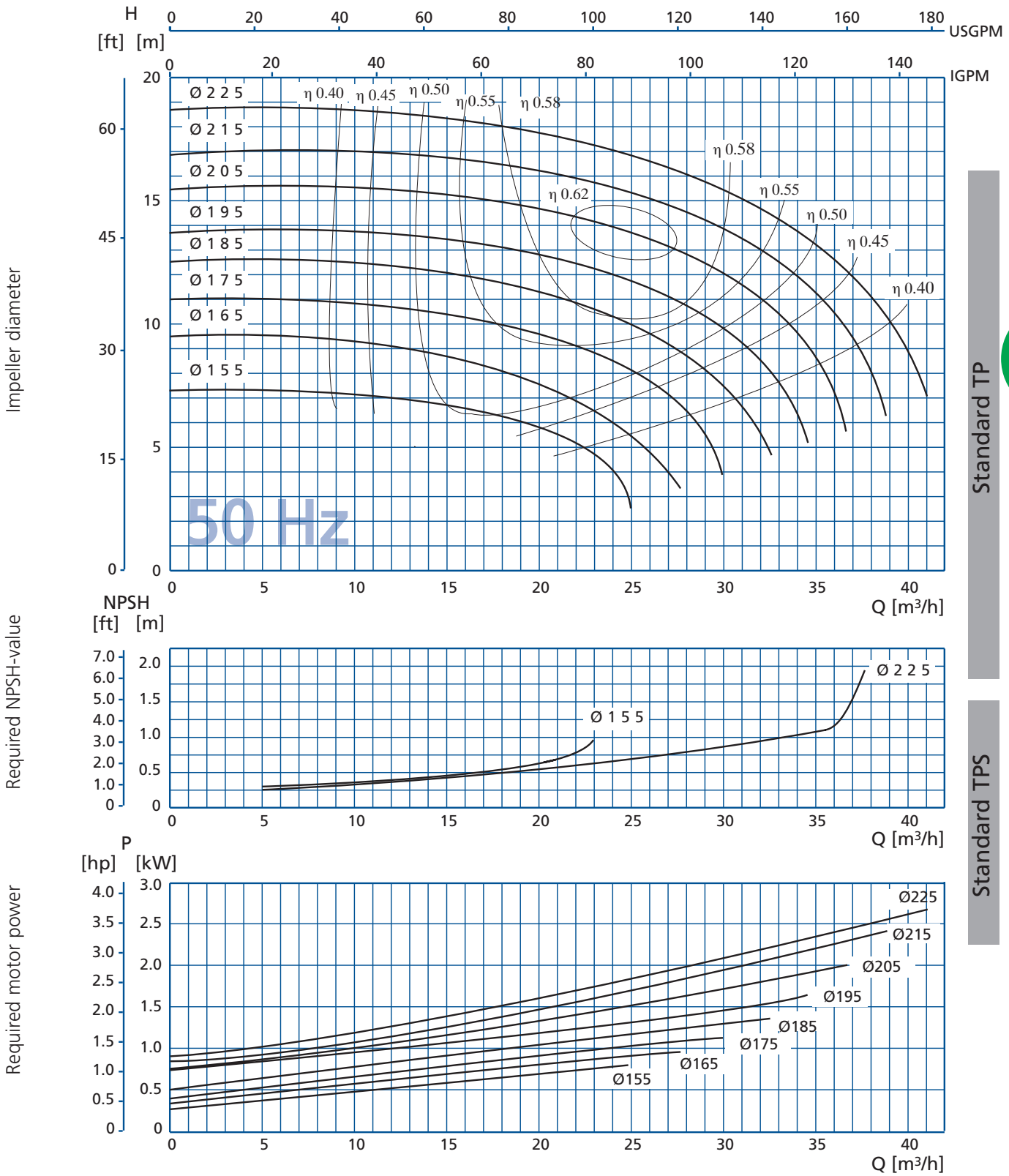


TP 5060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L (2.2 kW / 3 kW)	622	494/509	137	335	403	114.5	278	160	27.5	112	230	85	51	25.5
112M	622	516	137	335	403	114.5	278	190	27.5	112	230	85	51	25.5
132S / 132M	723	573/613	157	410	444	114.5	332	216	27.5	132	230	85	51	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

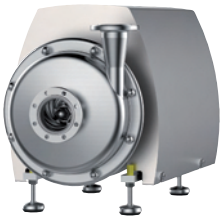
All dimensions in mm

Performance curves, centrifugal pump, type TP 5060, 4-pole (n=1,450 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

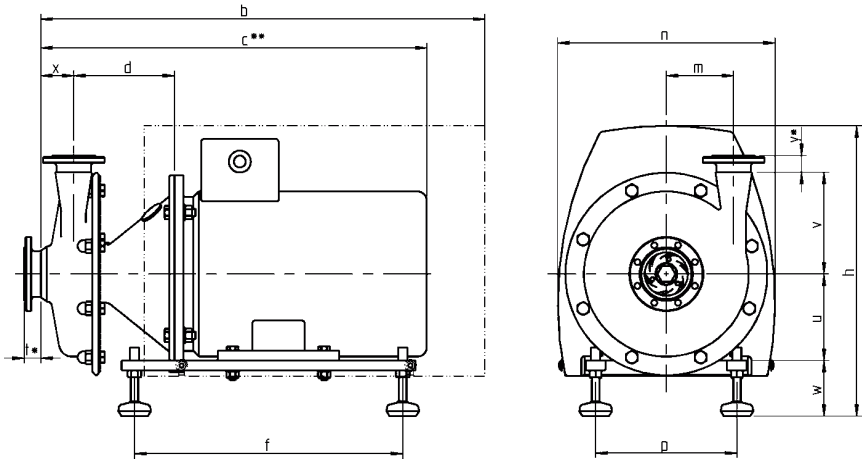
Standard version, centrifugal pump, type TP 7060, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 55 m³/h
Pump head	max. 19 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	7	0	6	0	4	5	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3	4			5			6		7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP07060	1.	Type	TP 7060			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
155	4.	Impeller	155 = 155 mm	160 = 160 mm	165 = 165 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	215 = 215 mm
			220 = 220 mm	225 = 225 mm		
022	5.	Motor power	022 = 2.2 kW (IEC 100L)			
			030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 132S)			
			075 = 7.5 kW (IEC 132M)			

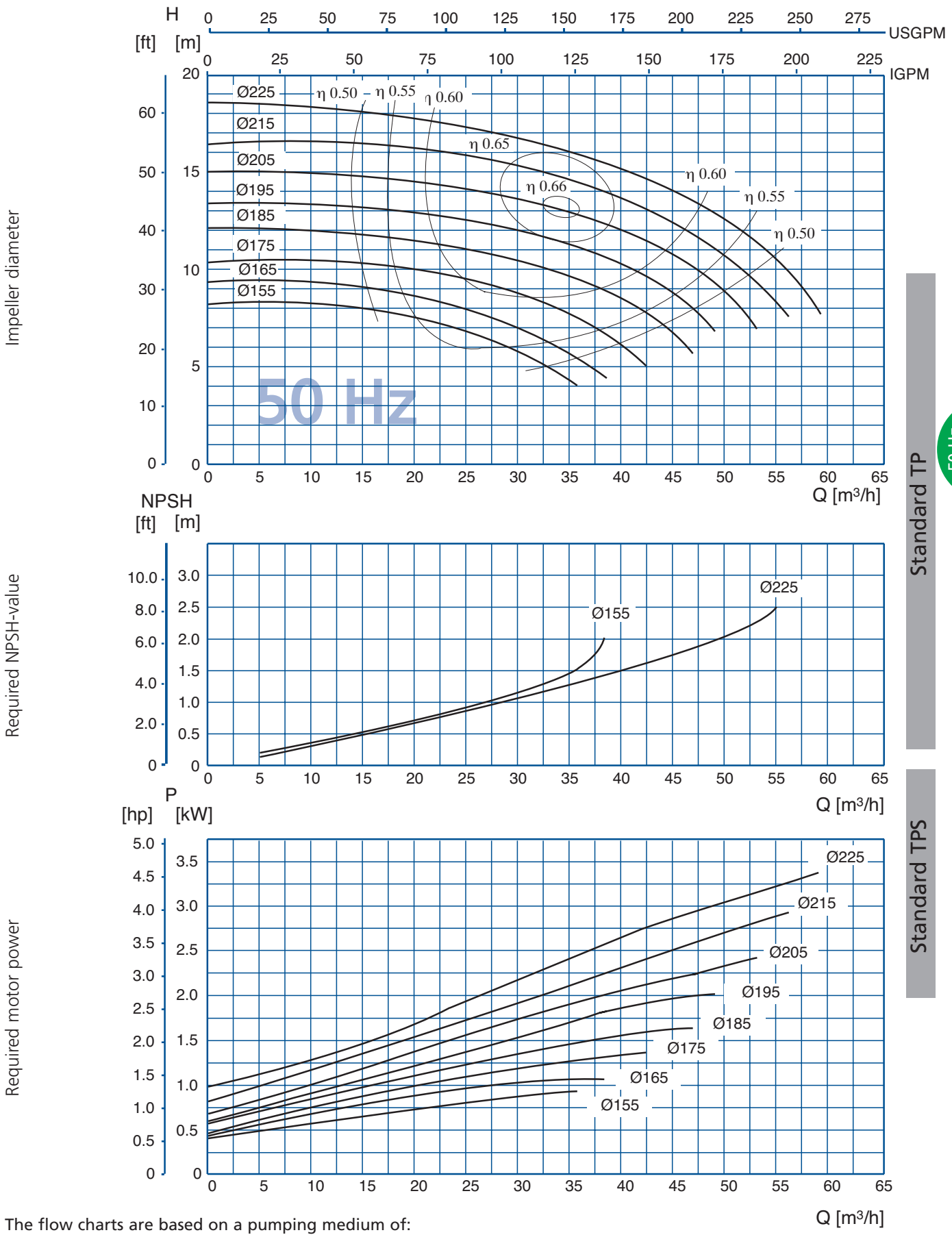


TP 7060 **Motor size**	**b**	**c****	**d**	**f**	**h**	**m**	**n**	**p**	**t***	**u**	**v**	**w**	**x**	**y***
100L (2.2 kW / 3 kW)	622	494/509	132	335	427	110	278	160	27.5	112	230	85	56	25.5
112M	622	516	132	335	427	110	278	190	27.5	112	230	85	56	25.5
132S / 132M	723	573/613	152	410	444	110	332	216	27.5	132	230	85	56	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 7060, 4-pole (n=1,450 min^{-1}), 50 Hz



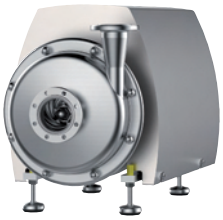
Standard TP

50 Hz 4-pole

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

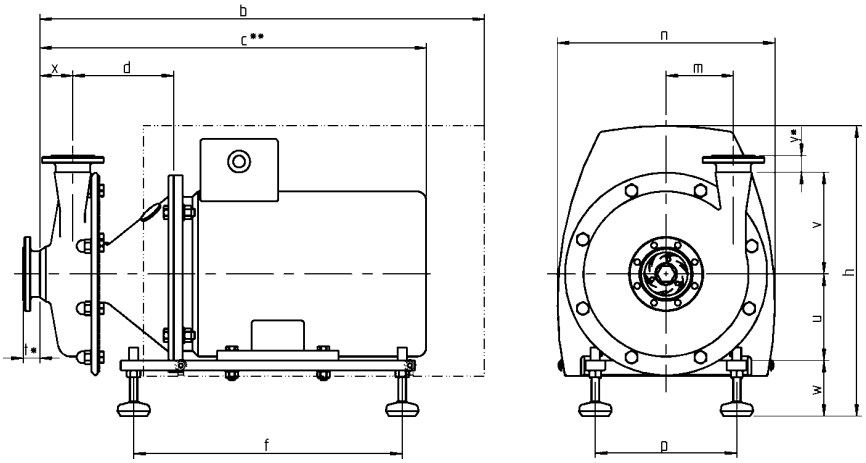
Standard version, centrifugal pump, type TP 8080, 4-pole (n=1,450 min^{-1}), 50 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 100; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 65 m³/h
Pump head	max. 23 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	8	0	8	0	4	5	0						D	N	N	F	K	1	0	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3	4				5		6			7		8				9		10								

Example	Pos	Designation	Code of selection characteristics			
TP08080	1.	Type	TP 8080			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
180	4.	Impeller	180 = 180 mm 210 = 210 mm 230 = 230 mm 250 = 250 mm	190 = 190 mm 215 = 215 mm 235 = 235 mm	200 = 200 mm 220 = 220 mm 240 = 240 mm	205 = 205 mm 225 = 225 mm 245 = 245 mm
040	5.	Motor power	040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

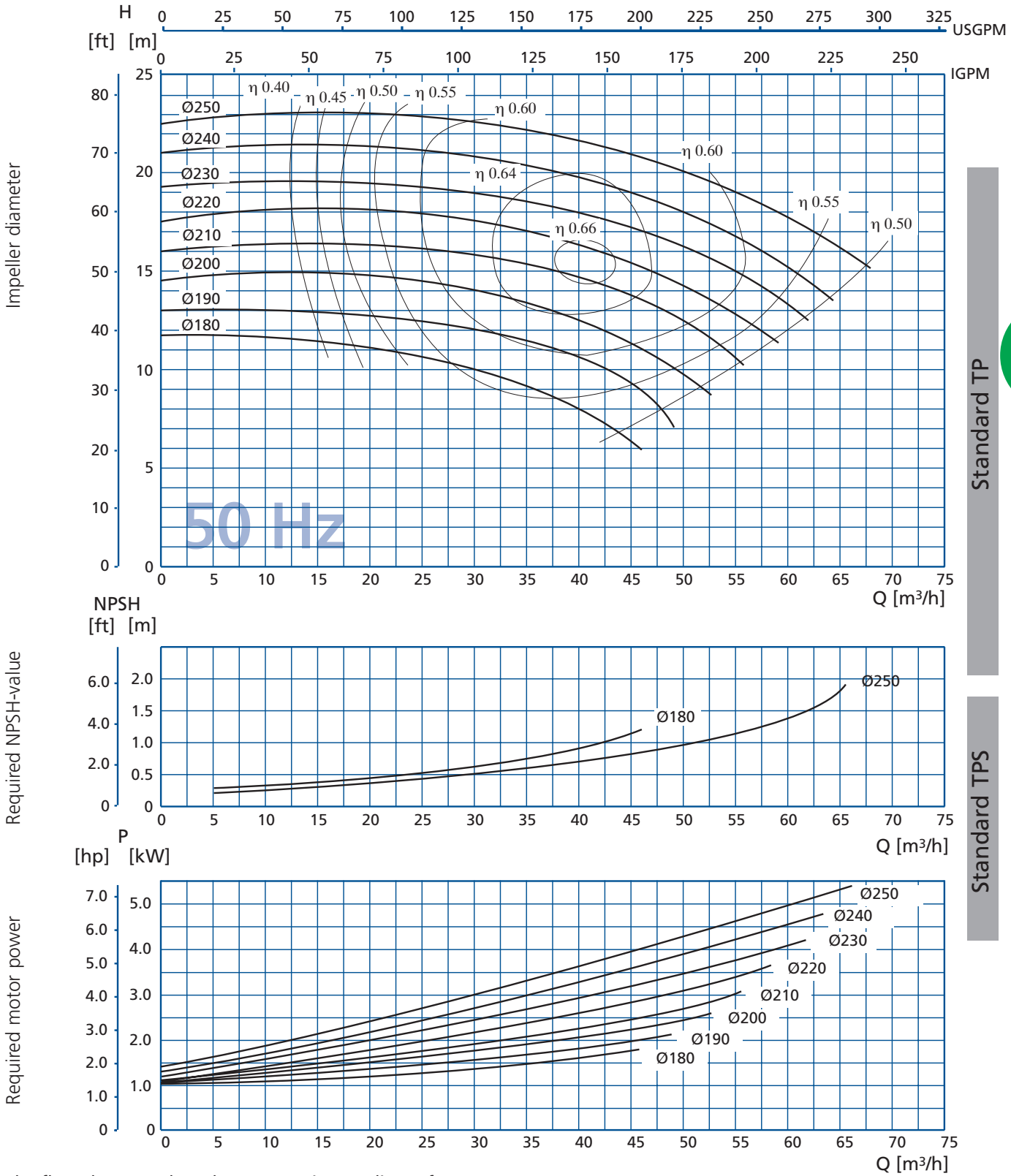


TP 8080 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M	641	535	136	335	403	124	278	190	27.5	112	250	85	71	25.5
132S / 132M	742	592/632	156	410	444	124	332	216	27.5	132	250	85	71	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 8080, 4-pole (n=1,450 min^{-1}), 50 Hz



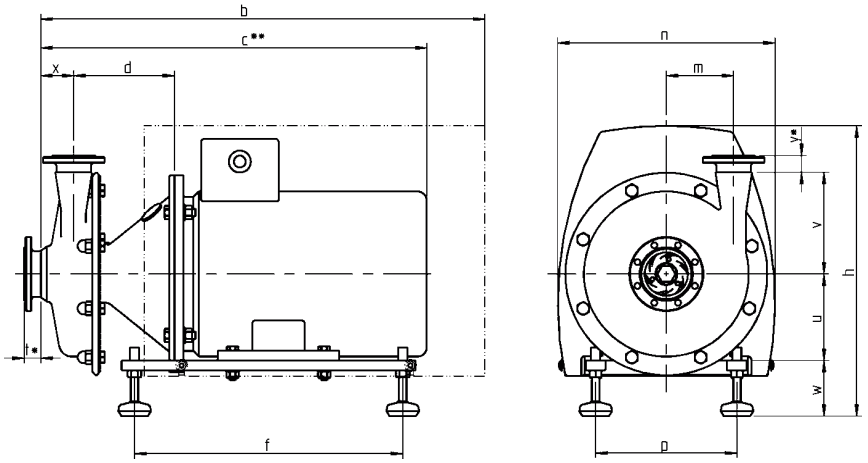
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard version, centrifugal pump, type TP 16040, 4-pole (n=1,450 min^{-1}), 50 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 150; Pressure port (DS), DN 100
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 100 m³/h
Pump head	max. 12 m w.c.
Housing pressure	max. 16 bar

Code	T	P	1	6	0	4	0	2	5	0						D	N	N	F	K	1	5	0	1	0	0	E	K	E	-	1	-	J	J	-
Position	1							4	3	4		5				6		7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP16040	1.	Type	TP 16040			
4	2.	Speed	4 = 4 pole			
50	3.	Frequency	50 = 50 Hz			
160	4.	Impeller	160 = 160 mm 180 = 180 mm 200 = 200 mm	165 = 165 mm 185 = 185 mm	170 = 170 mm 190 = 190 mm	175 = 175 mm 195 = 195 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

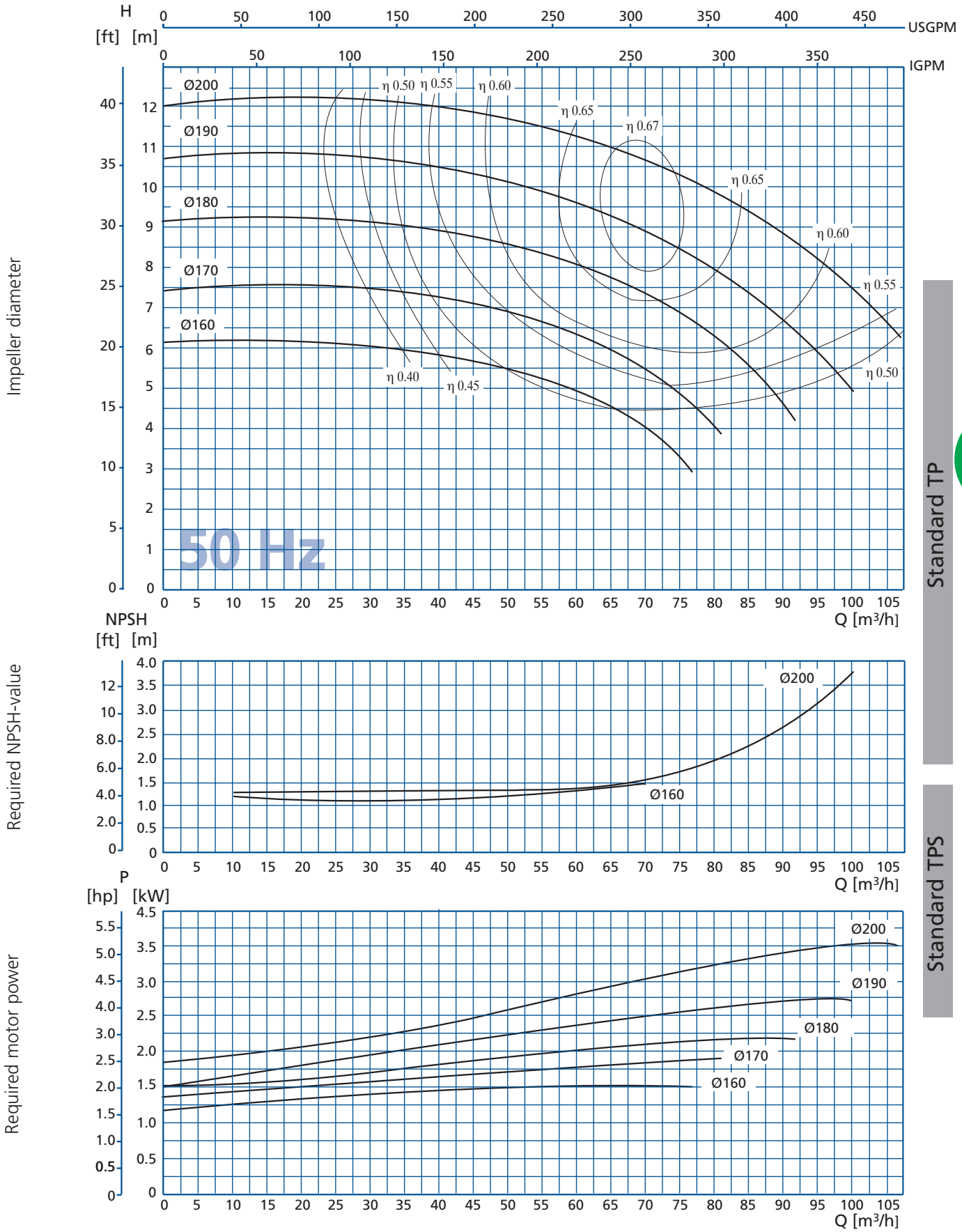


TP 16040 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L / 112M	651	538/545	131	335	403	108	278	160/190	29.5	112	280	85	86	27.5
132S / 132M	752	602/642	151	410	444	108	332	216	29.5	132	280	85	86	27.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

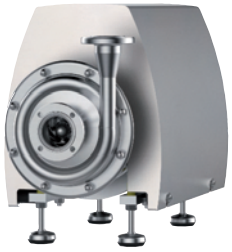
Performance curves, centrifugal pump, type TP 16040, 4-pole (n=1,450 min^{-1}), 50 Hz



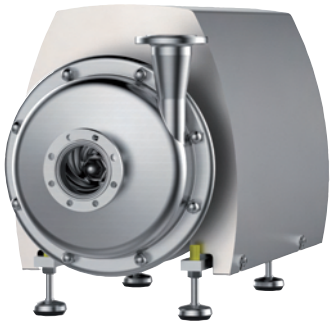
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard version, centrifugal pump, type TP, 2-pole (n=3,500 min^{-1}), 60 Hz

Standard version	**2 pole/60Hz**
Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Depending on pump size
Mechanical seal	Single-acting, material: C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Standard equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 240 m³/h
Pump head	max. 130 m w.c.

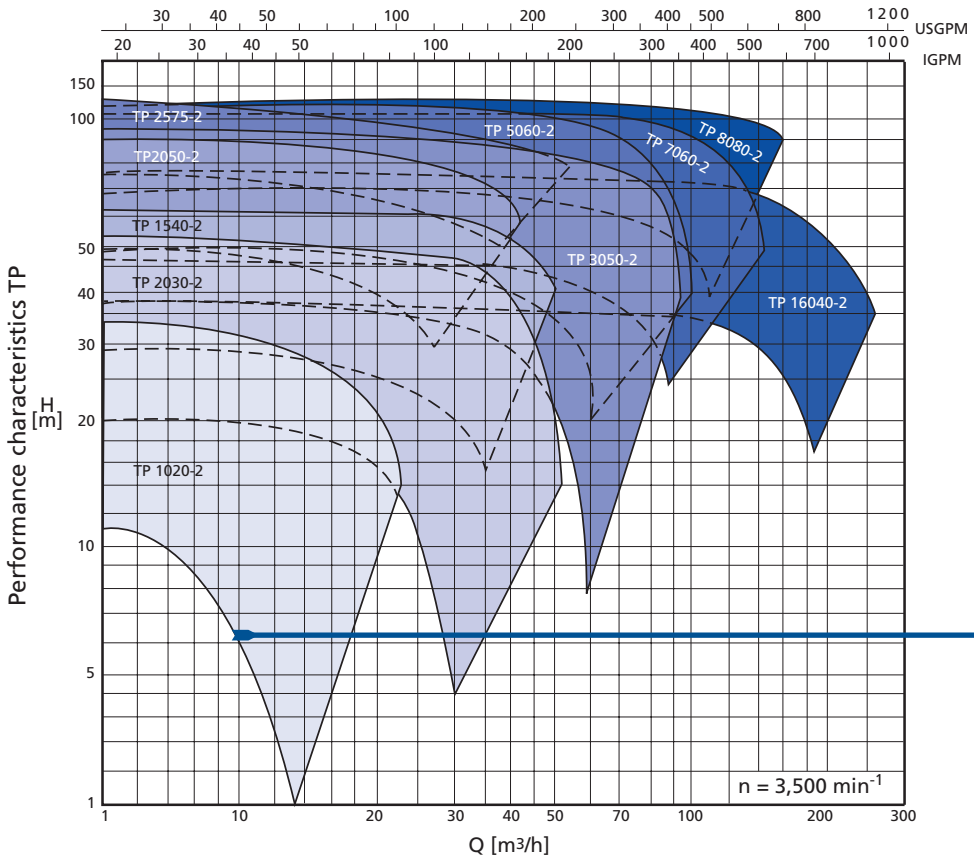


TP 1020



TP 1540 bis TP8080

TP 16040



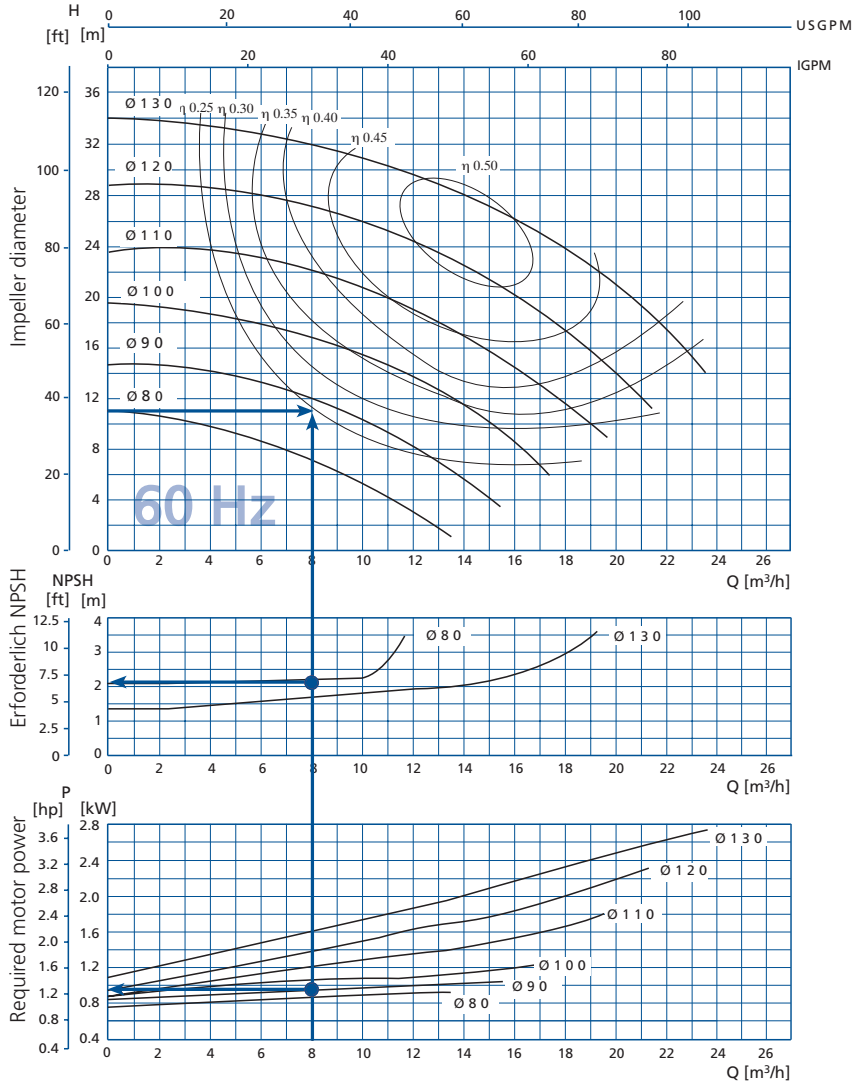
Example of a standard selection

Code	T	P	0	1	0	2	0	2	6	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4		5			6			7			8			9			10		11	12	13	14	15	16	17

Standard version, for other versions see options

Example	Pos	Designation	Code of selection characteristics	
TP01020	1.	Type	TP01020	Selected values determined by the pump selected
2	2.	Speed	2 = 2 pole	
60	3.	Frequency	60 = 60 Hz	
080	4.	Impeller	080 = 80 mm; 090 = 90 mm; 100 = 100 mm; 110 = 110 mm; 120 = 120 mm; 130 = 130 mm	Selection using the characteristic curves
012	5.	Motor power	012 = 1.25 kW (IEC 80) 015 = 1.5 kW (IEC 90S) 022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M)	

Performance curves, centrifugal pump,TP 1020 (2-polig / 60 Hz)



Impeller selection in accordance with capacity and pump head

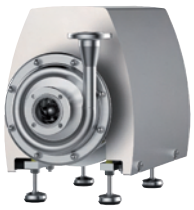
Motor output selection in accordance with capacity and pump head

Standard TP

60 Hz 2-pole

Standard TPS

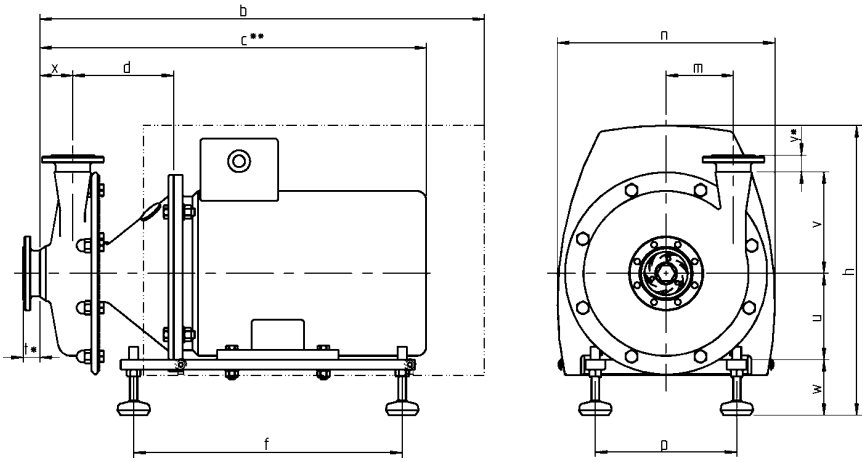
Standard version, centrifugal pump, type TP 1020, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 24 m³/h
Pump head	max. 34 m w.c.
Housing pressure	max. 10 bar

Code	T	P	0	1	0	2	0	2	6	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4		5				6			7			8			9		10								

Example	Pos	Designation	Code of selection characteristics		
TP01020	1.	Type	TP 1020		
2	2.	Speed	2 = 2 pole		
60	3.	Frequency	60 = 60 Hz		
080	4.	Impeller	080 = 80 mm	100 = 100 mm	120 = 120 mm
			090 = 90 mm	110 = 110 mm	130 = 130 mm
012	5.	Motor power	012 = 1.25 kW (IEC 80) 015 = 1.5 kW (IEC 90S) 022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M)		

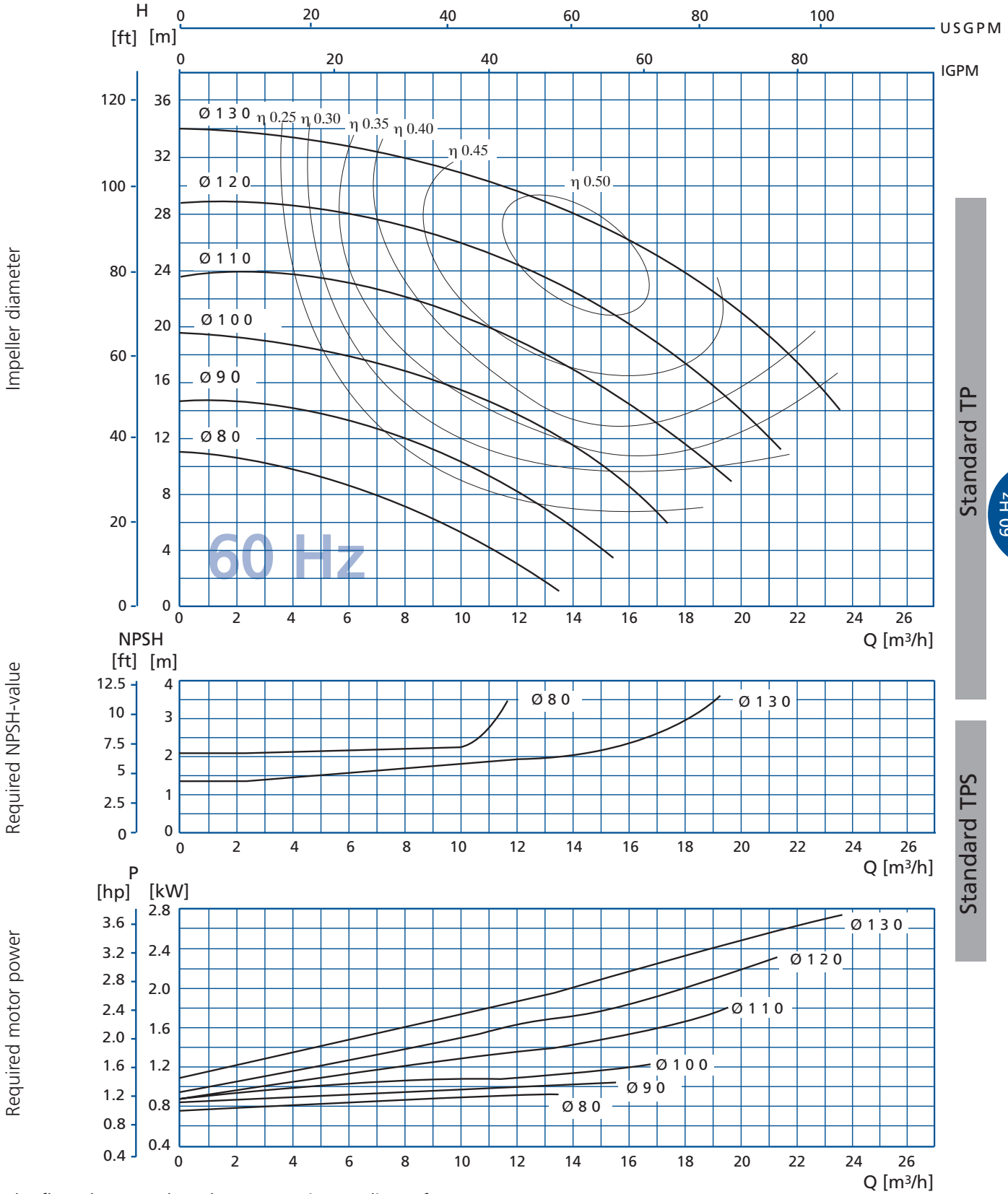


TP 1020 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	484	390	144	285	352	76	228	125	25.5	92	125	82	14	25.5
90S / 90L	490	425	144	285	352	76	228	140	25.5	90	125	82	14	25.5
100L / 112M	602	474/496	154	335	403	76	278	160	25.5	112	125	85	14	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

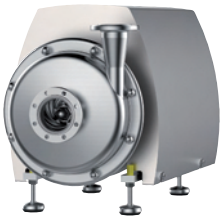
All dimensions in mm

Performance curves, centrifugal pump, type TP 1020, 2-pole (n=3,500 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

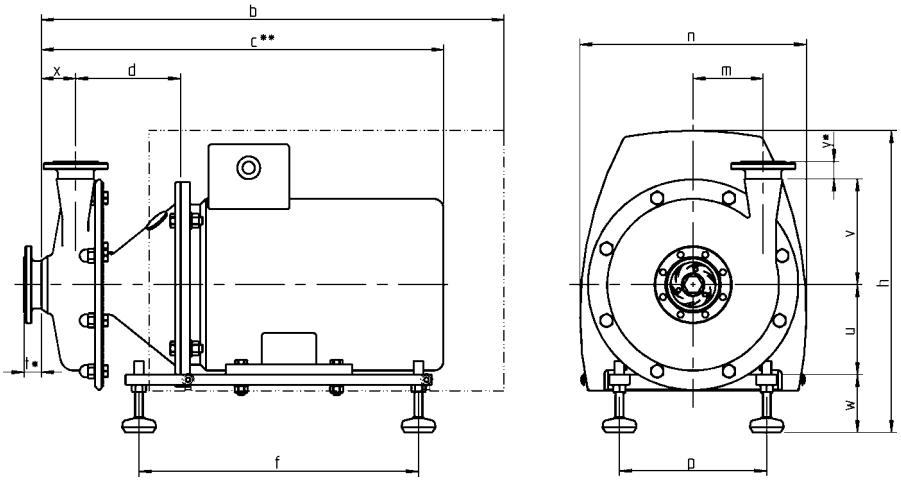
Standard version, centrifugal pump, type TP 1540, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 44 m³/h
Pump head	max. 62 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	1	5	4	0	2	6	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP01540	1.	Type	TP 1540			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
130	4.	Impeller	130 = 130 mm 155 = 155 mm 175 = 175 mm	140 = 140 mm 160 = 160 mm 180 = 180 mm	145 = 145 mm 165 = 165 mm	150 = 150 mm 170 = 170 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M)			

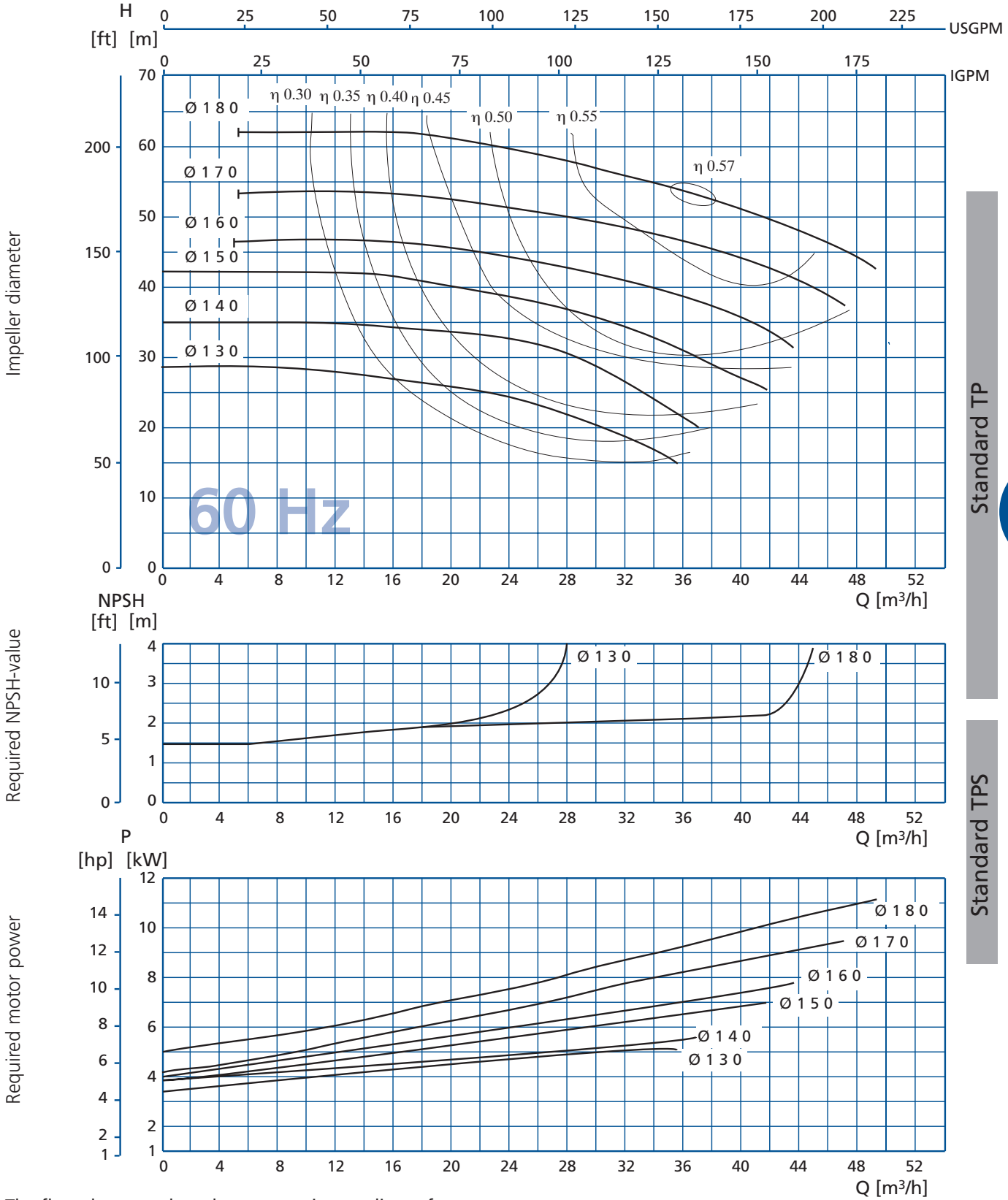


TP 1540 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	608	480	131.5	335	403	90	278	160	25.5	112	140	85	42	25.5
112M (4 kW + 5.5 kW)	608	502	131.5	335	403	90	278	190	25.5	112	140	85	42	25.5
112M (7.5 kW)	608	524	131.5	335	403	90	278	190	25.5	112	140	85	42	25.5
132M (11 kW)	709	619	152	410	444	90	332	216	25.5	132	140	85	42	25.5
132M (15 kW)	709	670	152	410	444	90	332	216	25.5	132	140	85	42	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 1540, 2-pole (n=3,500 min^{-1}), 60 Hz



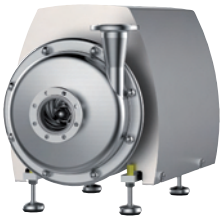
Standard TP

60 Hz 2-pole

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

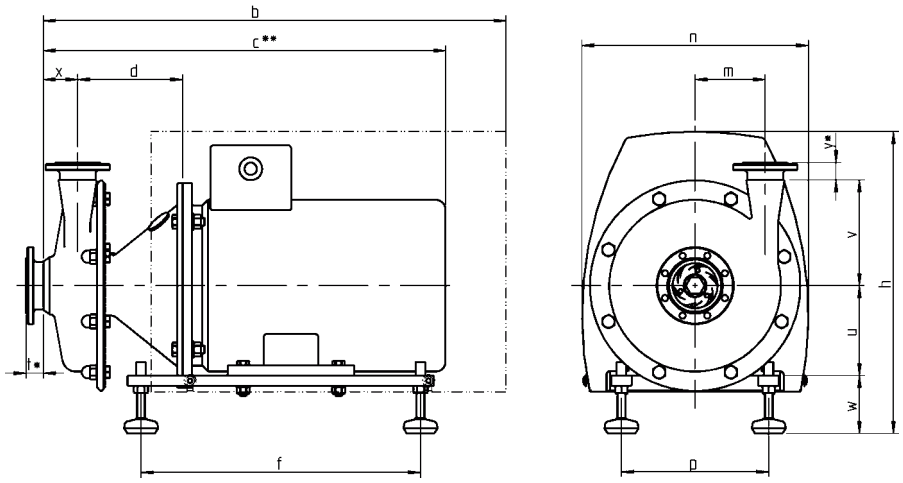
Standard version, centrifugal pump, type TP 2030, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 44 m³/h
Pump head	max. 52 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	3	0	2	6	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7		8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02030	1.	Type	TP 2030			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
110	4.	Impeller	110 = 110 mm	120 = 120 mm	130 = 130 mm	140 = 140 mm
			145 = 145 mm	150 = 150 mm	155 = 155 mm	160 = 160 mm
015	5.	Motor power	015 = 1.5 kW (IEC 90S) 022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 110 = 11.0 kW (IEC 132M)			

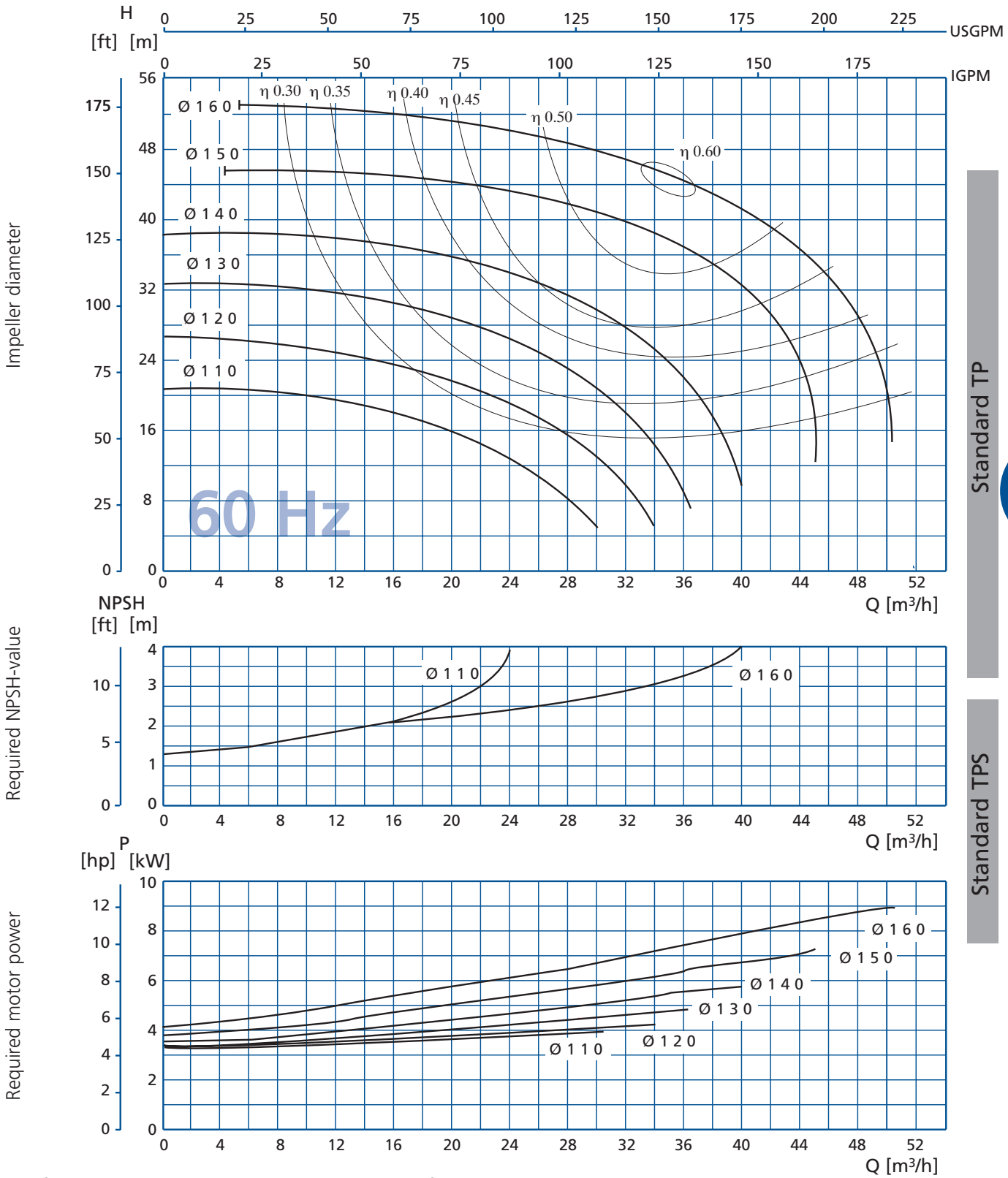


TP 2030 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
90S / 90L	494	429	121.5	285	352	85	228	140	25.5	90	135	82	40	25.5
100L	606	478	131.5	335	403	85	278	160	25.5	112	135	85	40	25.5
112M (4 kW + 5.5 kW)	606	500	131.5	335	403	85	278	190	25.5	112	135	85	40	25.5
112M (7.5 kW)	606	522	131.5	335	403	85	278	190	25.5	112	135	85	40	25.5
132M	707	617	152	410	444	85	332	216	25.5	132	135	85	40	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 2030, 2-pole (n=3,500 min^{-1}), 60 Hz



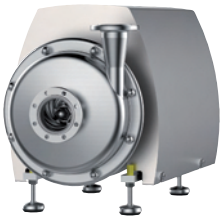
Standard TP

60 Hz 2-pole

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

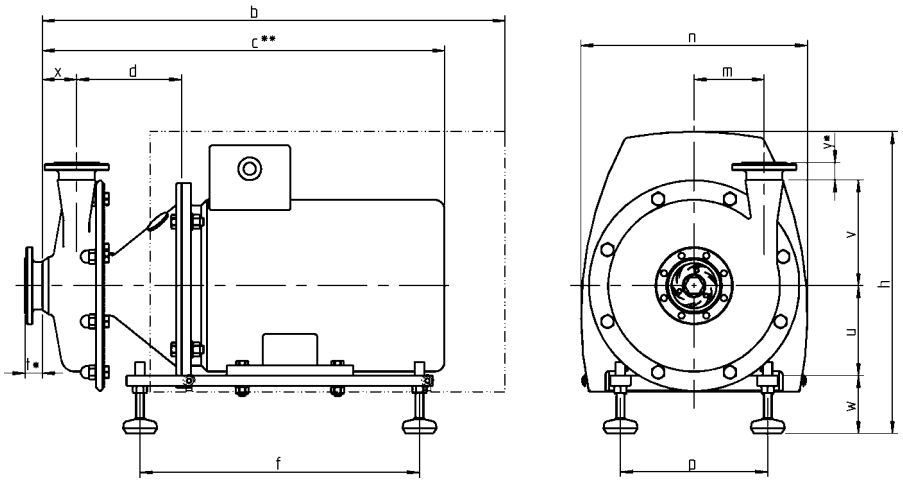
Standard version, centrifugal pump, type TP 2050, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 42 m³/h
Pump head	max. 85 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	5	0	2	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4		5			6		7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02050	1.	Type	TP 2050			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
160	4.	Impeller	160 = 160 mm 190 = 190 mm 210 = 210 mm	170 = 170 mm 195 = 195 mm	180 = 180 mm 200 = 200 mm	185 = 185 mm 205 = 205 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M)			

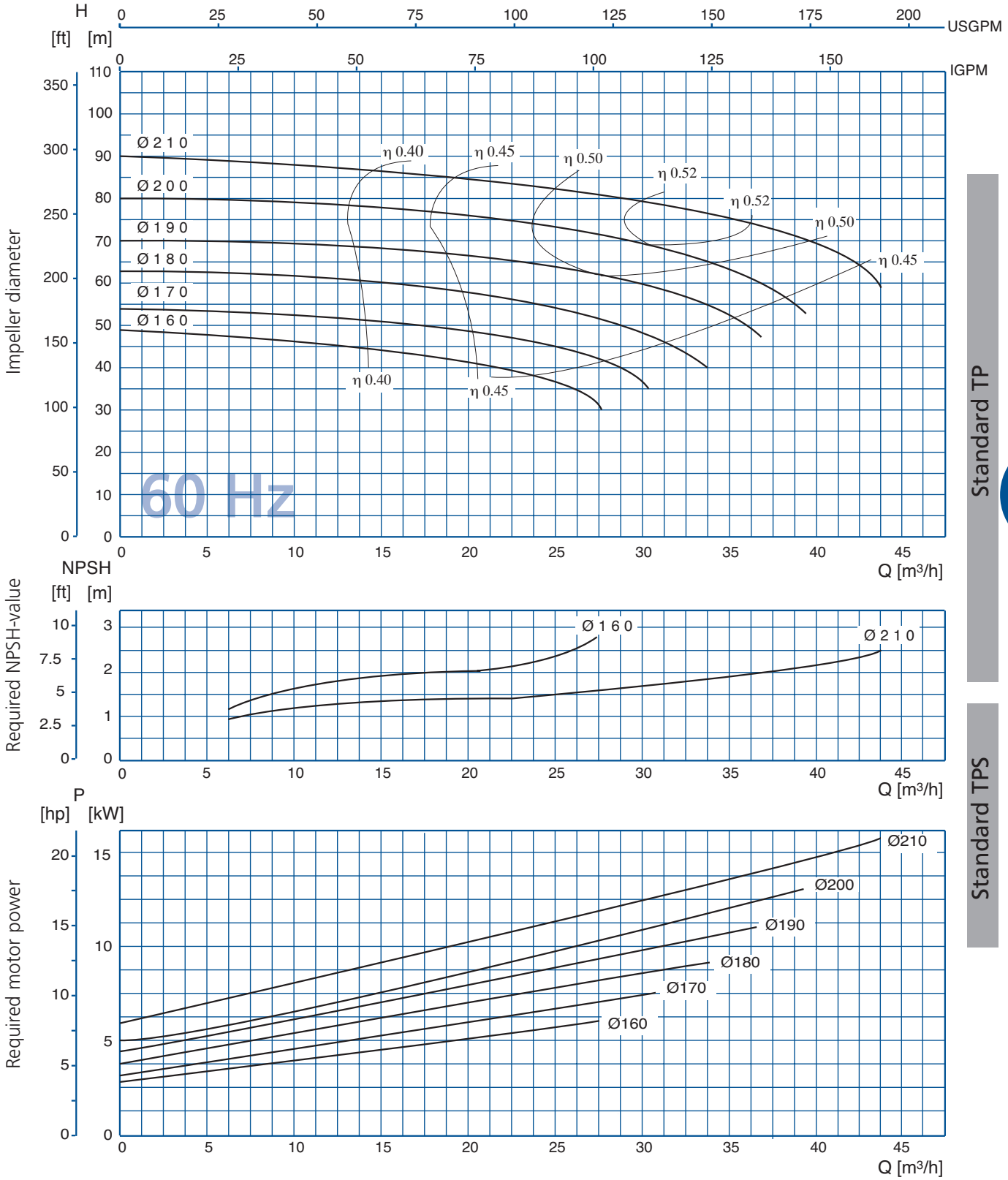


TP 2050 **Motor size**	**b**	**c****	**d**	**f**	**h**	**m**	**n**	**p**	**t***	**u**	**v**	**w**	**x**	**y***
100L	622	494	136	335	403	107	278	160	25.5	112	161	85	52	25.5
112M (4 kW + 5.5 kW)	622	516	136	335	403	107	278	190	25.5	112	161	85	52	25.5
112M (7.5 kW)	622	538	136	335	403	107	278	190	25.5	112	161	85	52	25.5
132M (11 kW)	723	633	156	410	444	107	332	216	25.5	132	161	85	52	25.5
132M (15 kW)	723	684	156	410	444	107	332	216	25.5	132	161	85	52	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

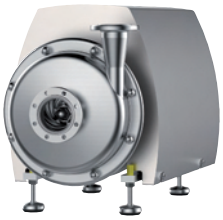
All dimensions in mm

Performance curves, centrifugal pump, type TP 2050, 2-pole (n=3,500 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

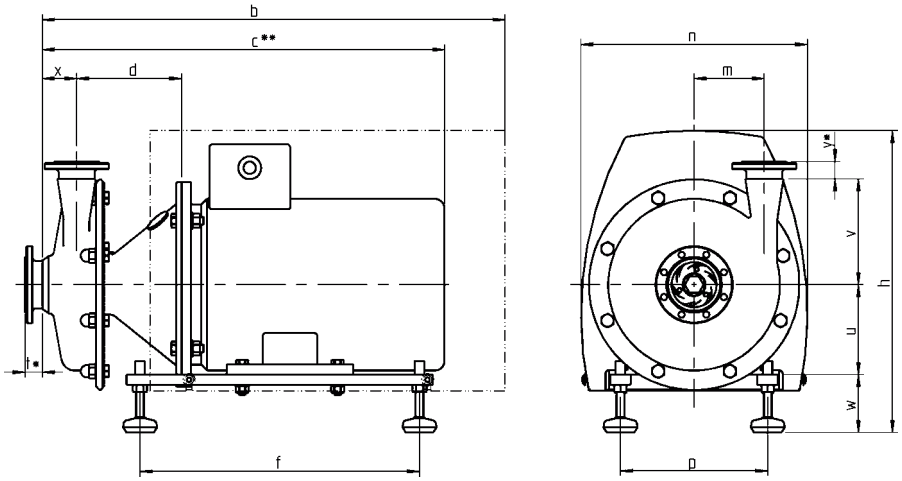
Standard version, centrifugal pump, type TP 2575, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 48 m³/h
Pump head	max. 130 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	5	7	5	2	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4		5			6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02575	1.	Type	TP 2575			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
20	4.	Impeller	200 = 200 mm	210 = 210 mm	215 = 215 mm	220 = 220 mm
			225 = 225 mm	230 = 230 mm	235 = 235 mm	240 = 240 mm
			245 = 245 mm	250 = 250 mm		
055	5.	Motor power	055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			212 = 21.2 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			
			300 = 30.0 kW (IEC 200L)			

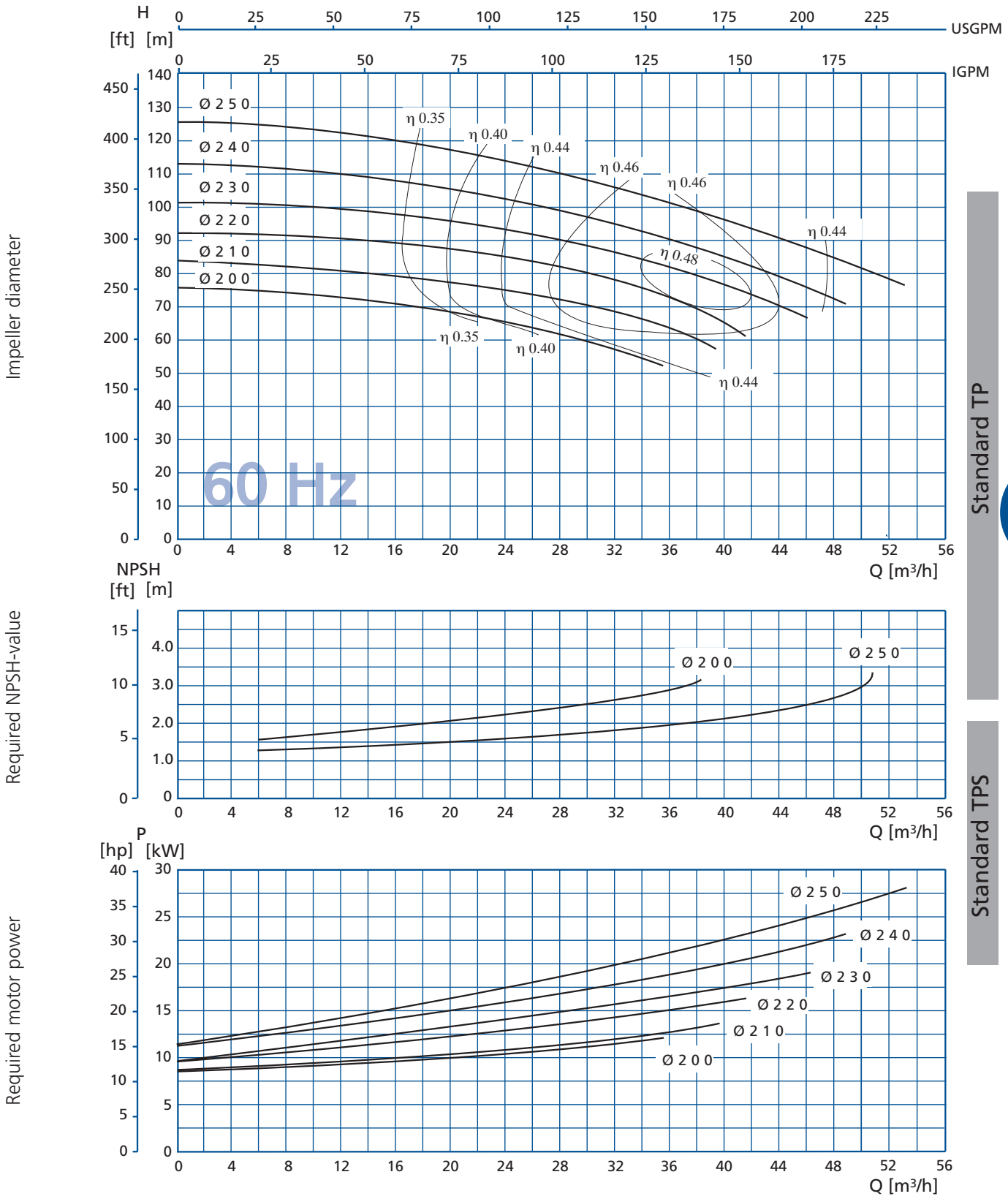


TP 2575 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M (5.5 kW / 7.5 kW)	621	515/537	138	335	403	124.5	278	190	25.5	112	190	85	48.5	25.5
132M (11 kW)	720	630	156	410	444	107	332	216	25.5	132	190	85	48.5	25.5
132M (15 kW)	720	681	156	410	444	107	332	216	25.5	132	190	85	48.5	25.5
160L	894	782	191	640	598	124.5	412	254	25.5	160	190	110	48.5	25.5
200L	1,033	908	200.5	810	668	124.5	472	318	25.5	200	190	115	48.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 2575, 2-pole (n=3,500 min^{-1}), 60 Hz



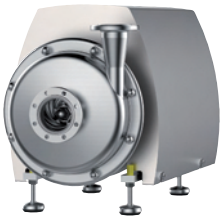
Standard TP

Standard TPS

60 Hz 2-pole

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

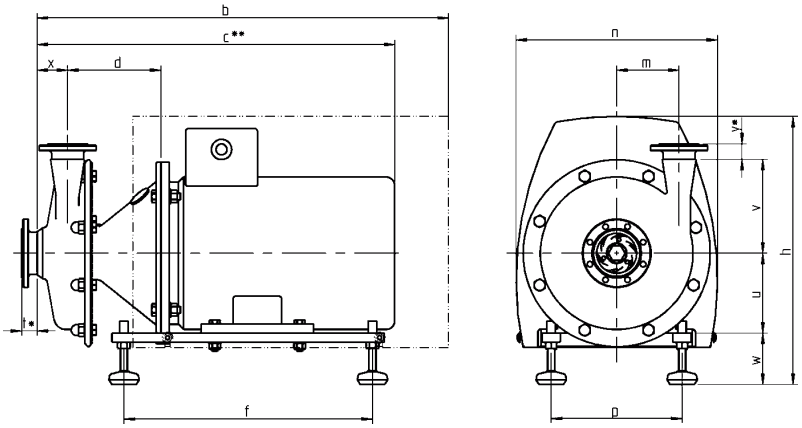
Standard version, centrifugal pump, type TP 3050, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 85 m³/h
Pump head	max. 95 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	3	0	5	0	2	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP03050	1.	Type	TP 3050			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
140	4.	Impeller	140 = 140 mm	150 = 150 mm	160 = 160 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			212 = 21.2 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			

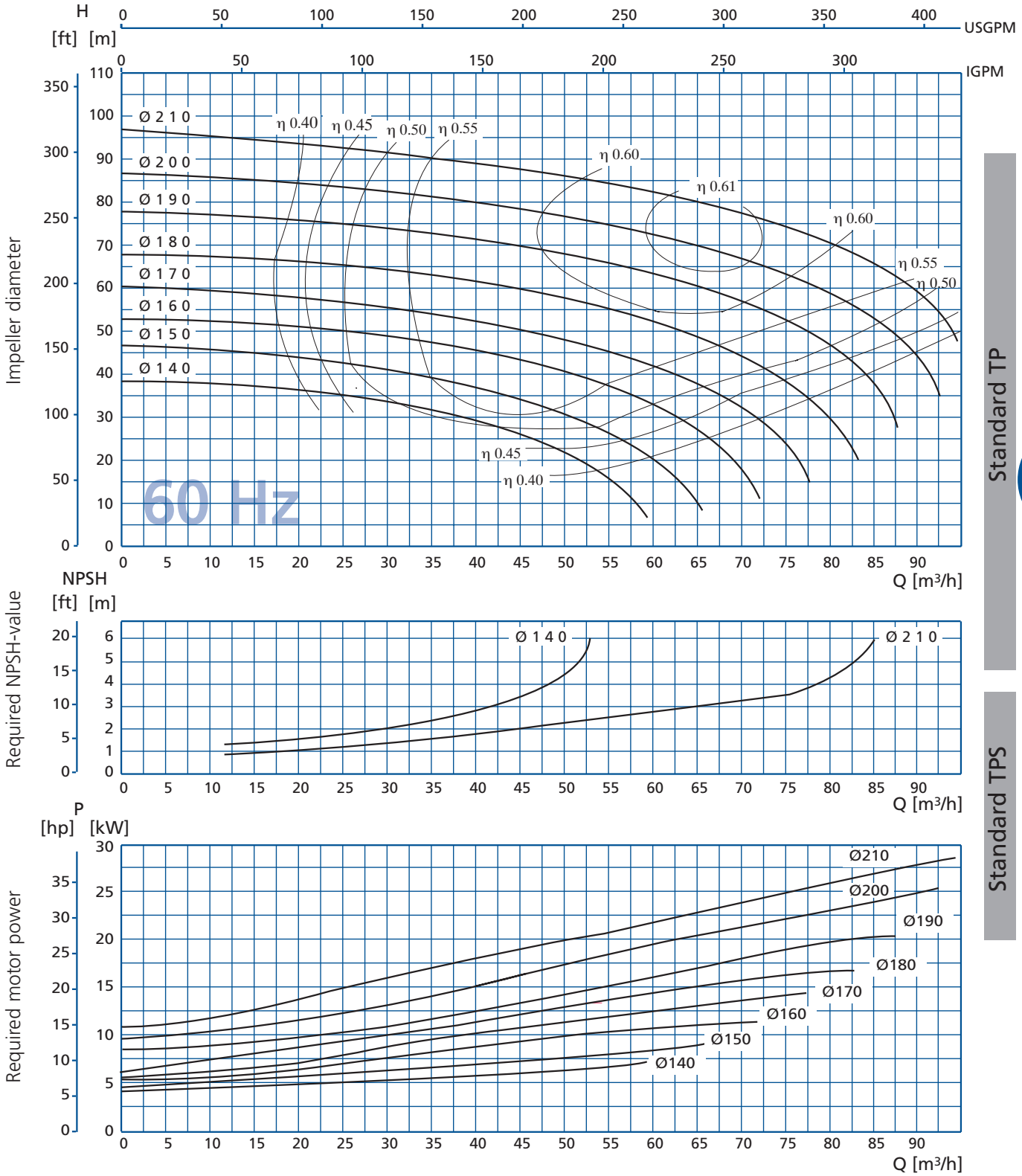


TP 3050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	618	504	134	335	403	103	278	160	25.5	112	155	85	50	25.5
112M (4 kW + 5.5 kW)	618	515	134	335	403	103	278	190	25.5	112	155	85	50	25.5
112M (7.5 kW)	618	534	134	335	403	103	278	190	25.5	112	155	85	50	25.5
132M (11 kW)	719	629	154	410	444	103	332	216	25.5	132	155	85	50	25.5
132M (15 kW)	719	680	154	410	444	103	332	216	25.5	132	155	85	50	25.5
160L	893	781	189	640	598	103	412	254	25.5	160	155	110	50	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 3050, 2-pole (n=3,500 min^{-1}), 60 Hz



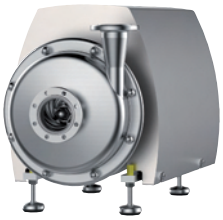
Standard TP

60 Hz 2-pole

Standard TPS

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

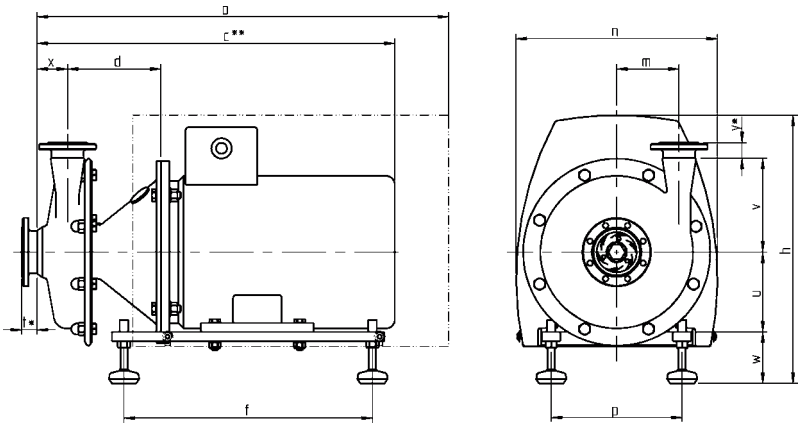
Standard version, centrifugal pump, type TP 5060, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 80 m³/h
Pump head	max. 110 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	5	0	6	0	2	6	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP05060	1.	Type	TP 5060			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
155	4.	Impeller	155 = 155 mm	160 = 160 mm	165 = 165 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
			215 = 215 mm	220 = 220 mm	225 = 225 mm	
055	5.	Motor power	055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			212 = 21.2 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			
			300 = 30.0 kW (IEC 200L)			

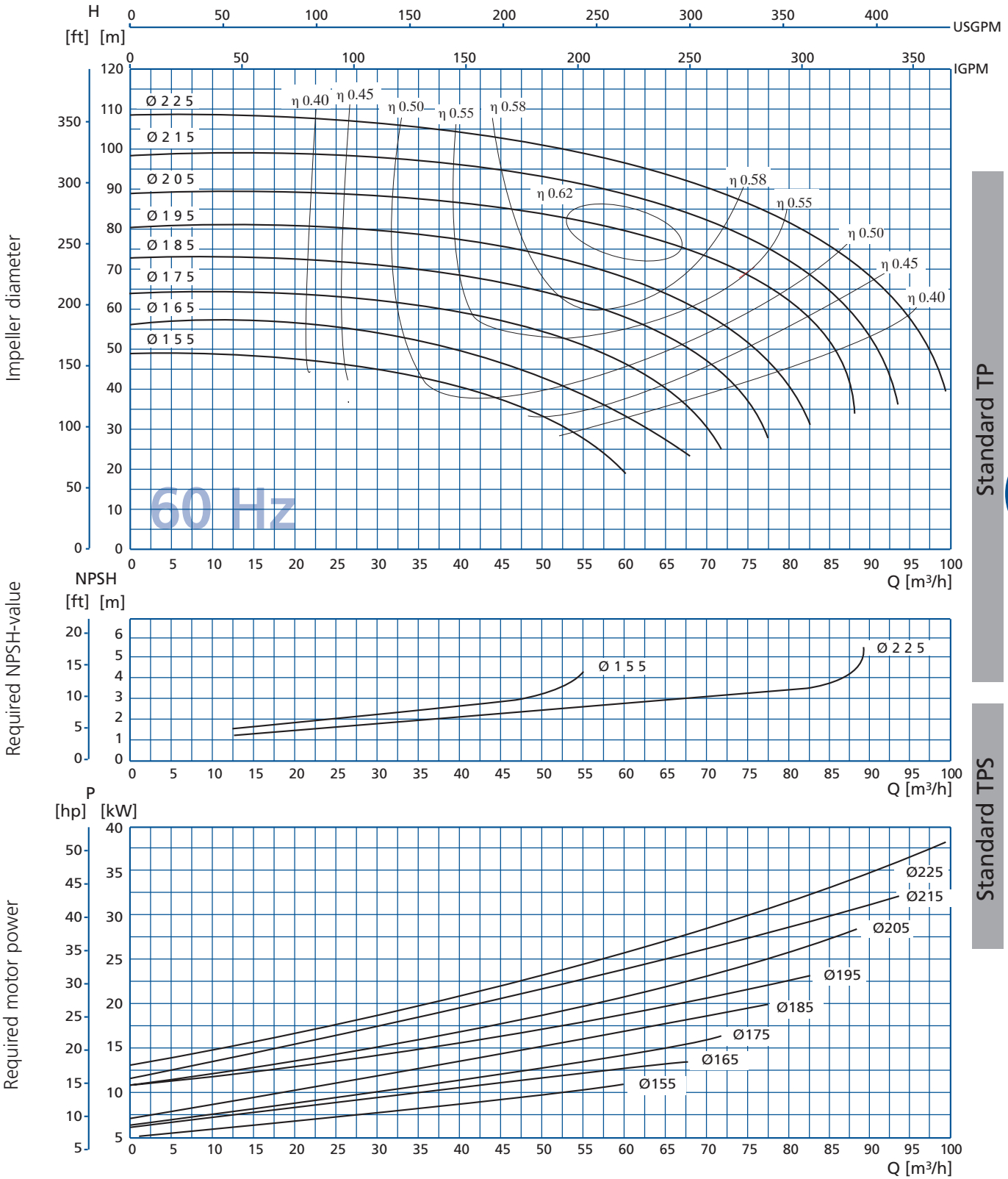


TP 5060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M (5.5 kW / 7.5 kW)	622	517/538	137	335	403	114.5	278	190	27.5	112	230	85	51	25.5
132M (11 kW)	723	633	157	410	444	114.5	332	216	27.5	132	230	85	51	25.5
132M (15 kW)	723	684	157	410	444	114.5	332	216	27.5	132	230	85	51	25.5
160L	897	785	192	640	598	114.5	412	254	27.5	160	230	110	52	25.5
200L	1,030	905	195	810	673	114.5	472	318	27.5	200	230	115	52	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

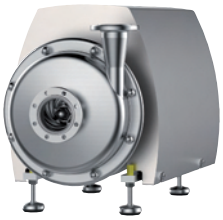
All dimensions in mm

Performance curves, centrifugal pump, type TP 5060, 2-pole (n=3,500 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

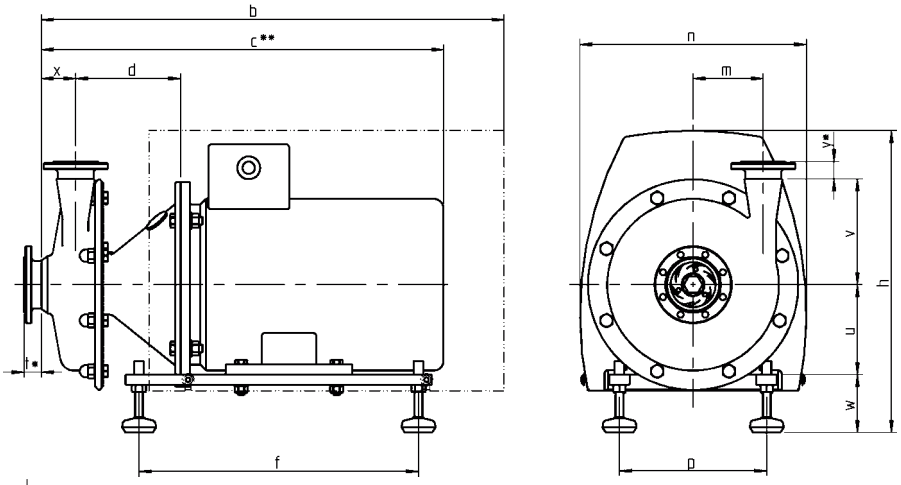
Standard version, centrifugal pump, type TP 7060, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 120 m³/h
Pump head	max. 105 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	7	0	6	0	2	6	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP07060	1.	Type	TP 7060			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
155	4.	Impeller	155 = 155 mm	160 = 160 mm	165 = 165 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	215 = 215 mm
			220 = 220 mm	225 = 225 mm		
110	5.	Motor power	075 = 7.5 kW (IEC 112M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			212 = 21.2 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			
			300 = 30.0 kW (IEC 200L)			

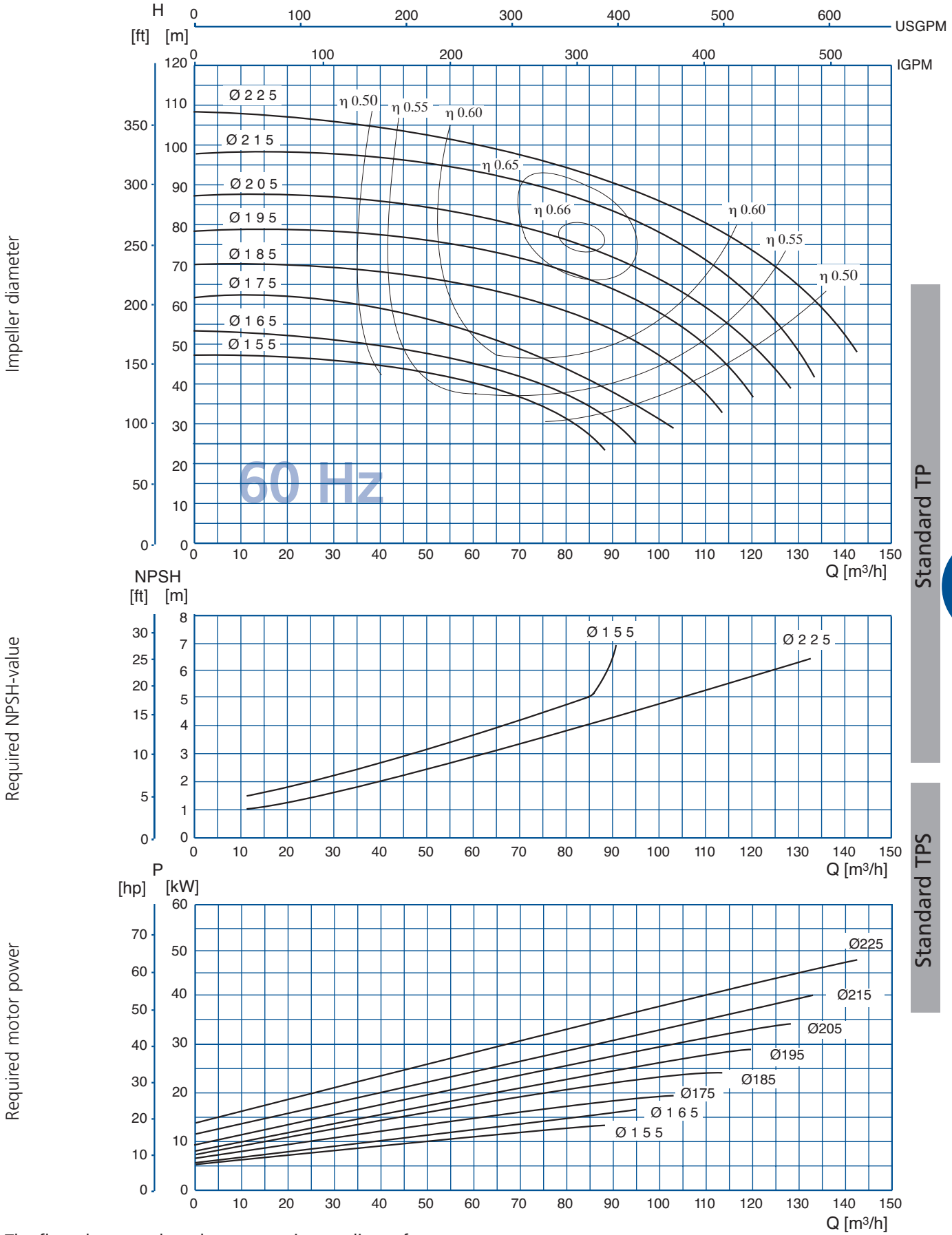


TP 7060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M	622	538	132	335	427	110	278	190	27.5	112	230	85	56	25.5
132M (11 kW)	723	633	152	410	444	110	332	216	27.5	132	230	85	56	25.5
132M (15 kW)	723	684	152	410	444	110	332	216	27.5	132	230	85	56	25.5
160L	897	785	187	640	596	110	412	254	27.5	160	230	110	56	25.5
200L	1,030	905	190.5	810	668	110	472	318	27.5	200	230	115	56	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

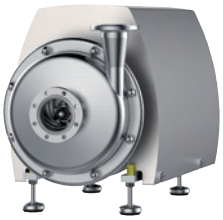
All dimensions in mm

Performance curves, centrifugal pump, type TP 7060, 2-pole (n=3,500 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

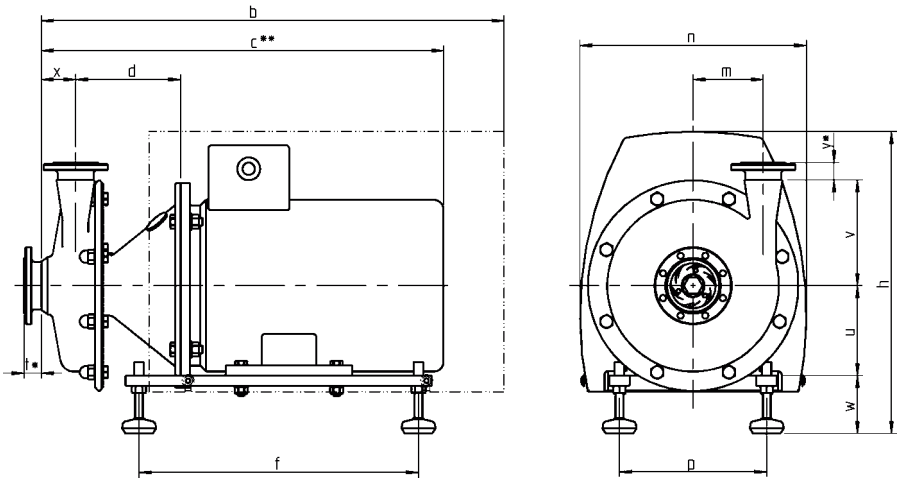
Standard version, centrifugal pump, type TP 8080, 2-pole (n=3,500 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 100; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 125 m³/h
Pump head	max. 130 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	8	0	8	0	2	6	0						D	N	N	F	K	1	0	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP08080	1.	Type	TP 8080			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
180	4.	Impeller	180 = 180 mm 210 = 210 mm 230 = 230 mm 250 = 250 mm	190 = 190 mm 215 = 215 mm 235 = 235 mm	200 = 200 mm 220 = 220 mm 240 = 240 mm	205 = 205 mm 225 = 225 mm 245 = 245 mm
150	5.	Motor power	110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M) 212 = 21.2 kW (IEC 160L) 220 = 22.0 kW (IEC 160L) 300 = 30.0 kW (IEC 200L) 370 = 37.0 kW (IEC 200L) 450 = 45.0 kW (IEC 225M)			

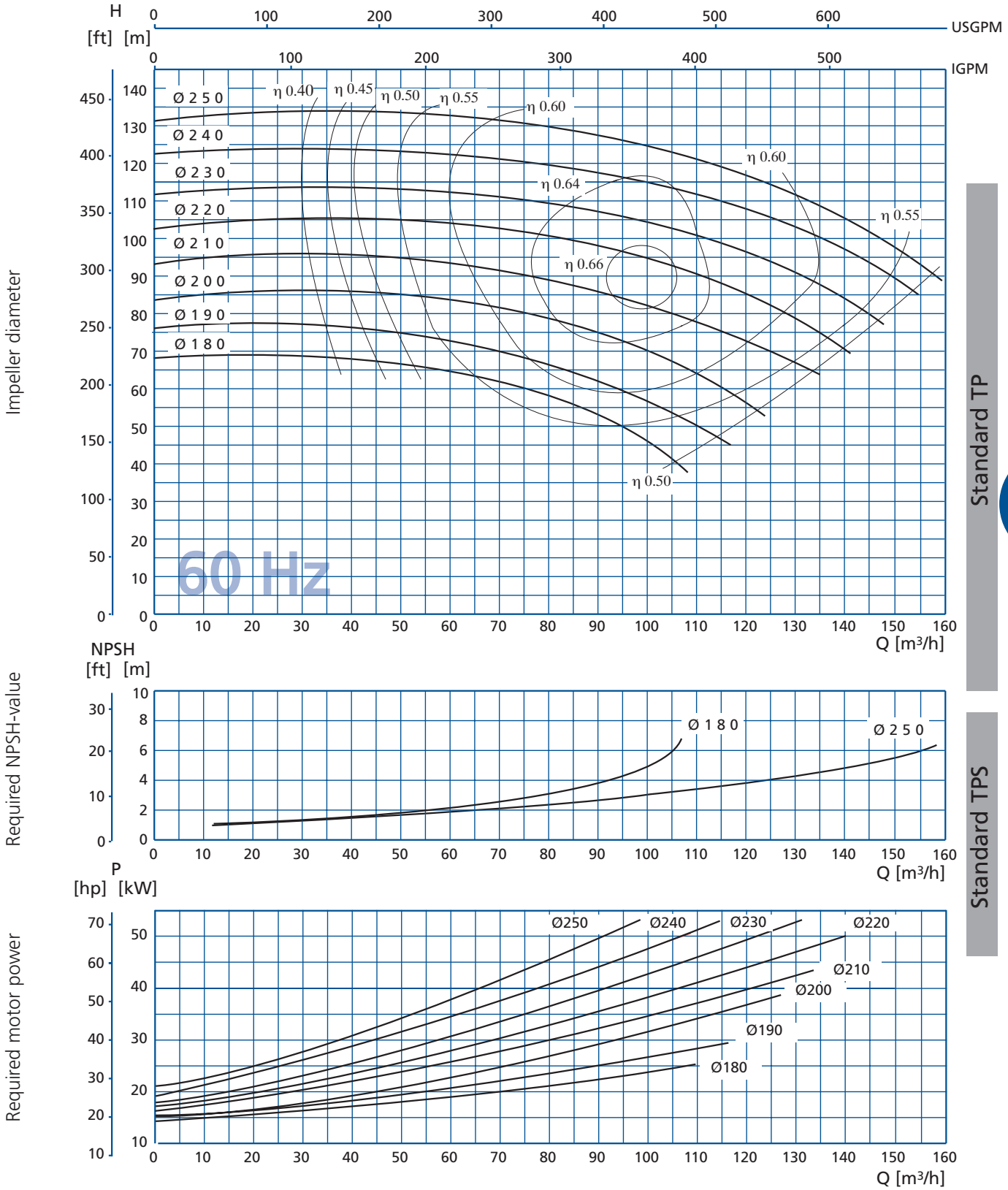


TP 8080 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
132M	742	652/703	156	410	444	124	332	216	27.5	132	250	85	71	25.5
160L	916	804	191	640	598	124	412	254	27.5	160	250	110	71	25.5
200L	1,050	925	195	810	668	124	472	318	27.5	200	250	115	71	25.5
225M	1,076	961	195	810	720	124	472	356	27.5	200	250	115	71	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 8080, 2-pole (n=3,500 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard TP

Standard TPS

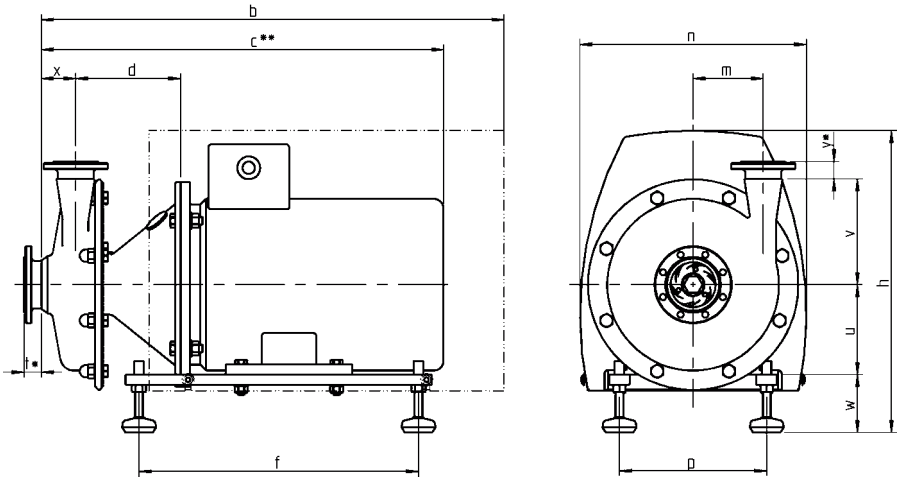
60 Hz 2-pole

Standard version, centrifugal pump, type TP 16040, 2-pole (n=3,500 min^{-1}), 60 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 150; Pressure port (DS), DN 100
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 240 m³/h
Pump head	max. 70 m w.c.
Housing pressure	max. 16 bar

Code	T	P	1	6	0	4	0	2	6	0						D	N	N	F	K	1	5	0	1	0	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7		8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP16040	1.	Type	TP 16040			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
180	4.	Impeller	160 = 160 mm 180 = 180 mm 200 = 200 mm	165 = 165 mm 185 = 185 mm	170 = 170 mm 190 = 190 mm	175 = 175 mm 195 = 195 mm
150	5.	Motor power	110 = 11.0 kW (IEC 132M) 150 = 15.0 kW (IEC 132M) 212 = 21.2 kW (IEC 160L) 220 = 22.0 kW (IEC 160L) 300 = 30.0 kW (IEC 200L) 370 = 37.0 kW (IEC 200L) 450 = 45.0 kW (IEC 225M)			

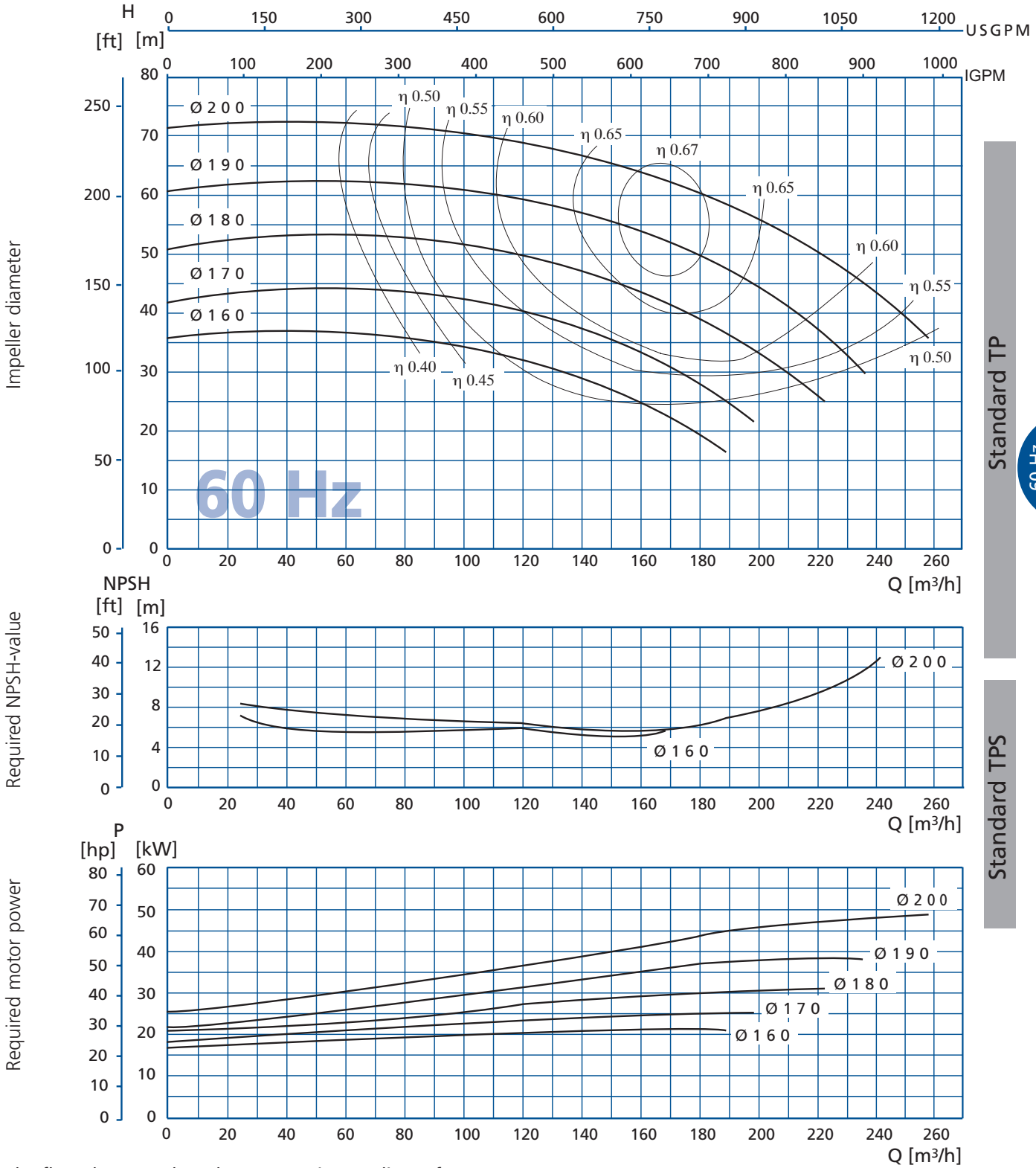


TP 16040 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
132M	752	713	151	410	444	108	332	216	29.5	132	280	85	86	27.5
160L	926	814	186	640	596	108	412	254	29.5	160	280	110	86	27.5
200L	1,059	934	189	810	668	108	472	318	29.5	200	280	115	86	27.5
225M	1,085	970	189	810	720	108	521	356	29.5	225	280	115	86	27.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TP 16040, 2-pole (n=3,500 min^{-1}), 60 Hz



Standard TP

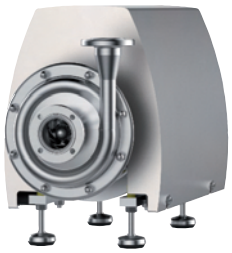
60 Hz 2-pole

Standard TPS

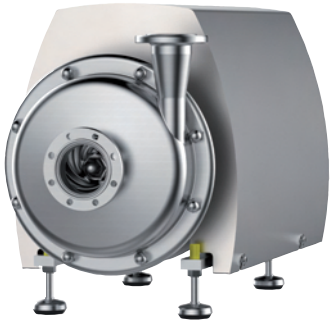
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard version, centrifugal pump, type TP, 4-pole (n=1,750 min^{-1}), 60 Hz

Standard version	**4 pole/60Hz**
Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Depending on pump size
Mechanical seal	Single-acting, material: C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Standard equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 120 m³/h
Pump head	max. 34 m w.c.

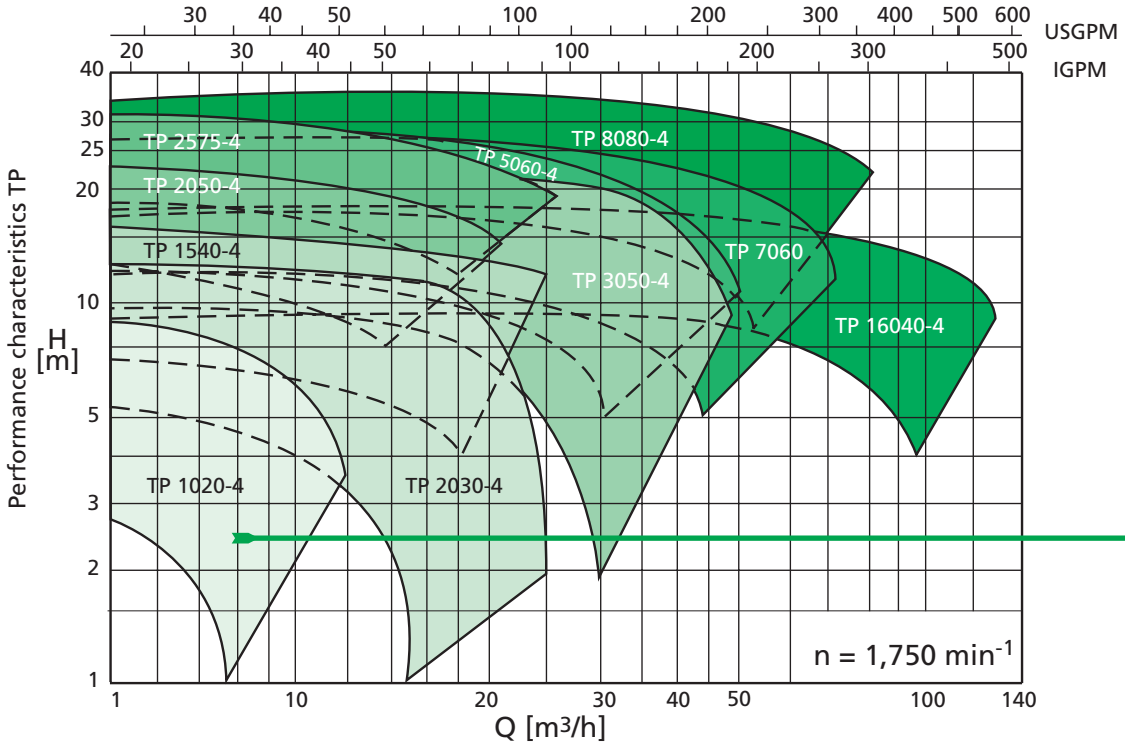


TP 1020



TP 1540 bis TP8080

TP 16040



Example of a standard selection

Code	T	P	0	1	0	2	0	4	6	0					D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4		5		6		7		8		9		10		11	12	13	14	15	16	17				

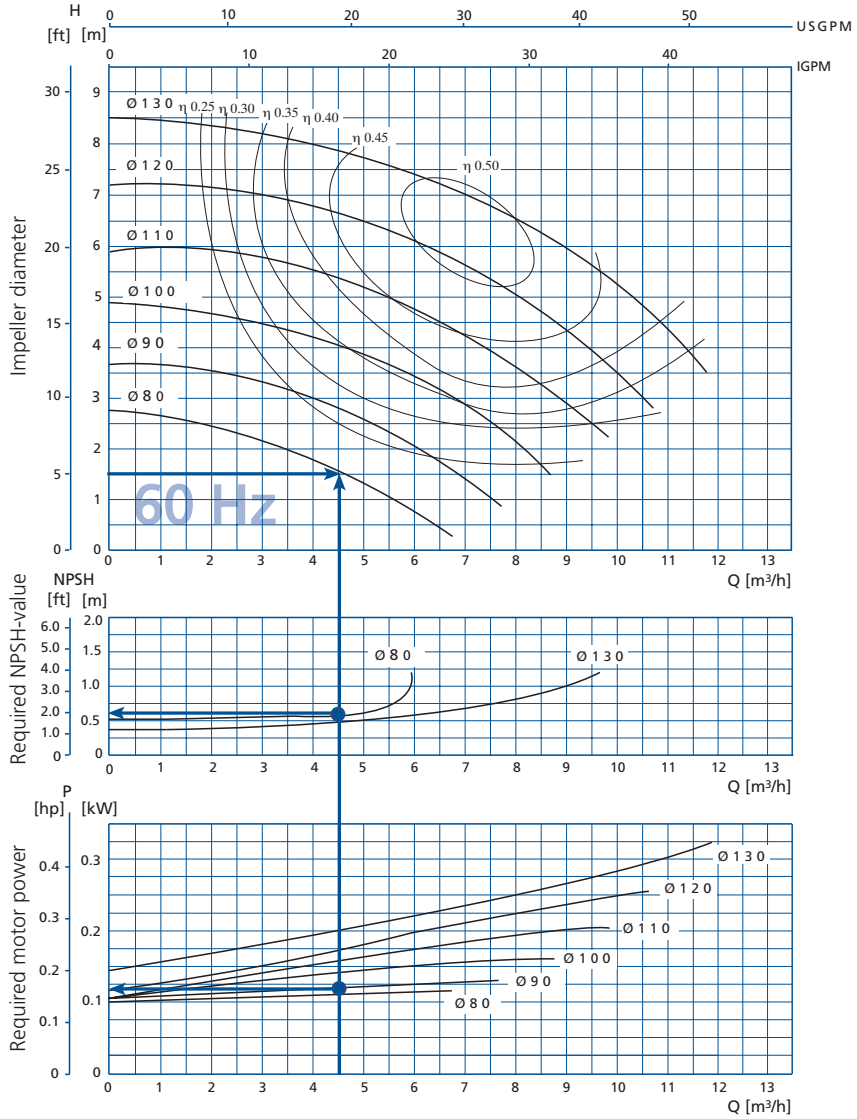
Standard version, for other versions see options

Example	Pos	Designation	Code of selection characteristics	
TP01020	1.	Type	TP01020	Selected values determined by the pump selected
4	2.	Speed	4 = 4 pole	
60	3.	Frequency	60 = 60 Hz	
080	4.	Impeller	080 = 80 mm, 090 = 90 mm, 100 = 100 mm, 110 = 110 mm, 120 = 120 mm, 130 = 130 mm	Selection using the characteristic curves
009	5.	Motor power	007 = 0.75 kW (IEC 80) 012 = 1.25 kW (IEC 90S) 018 = 1.8 kW (IEC 90L) 022 = 2.2 kW (IEC 100L)	

Impeller selection in accordance with capacity and pump head

Motor output selection in accordance with capacity and pump head

Performance curves, centrifugal pump, TP 1020 (4-polig / 60 Hz)

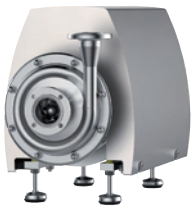


Standard TP

60 Hz 4-pole

Standard TPS

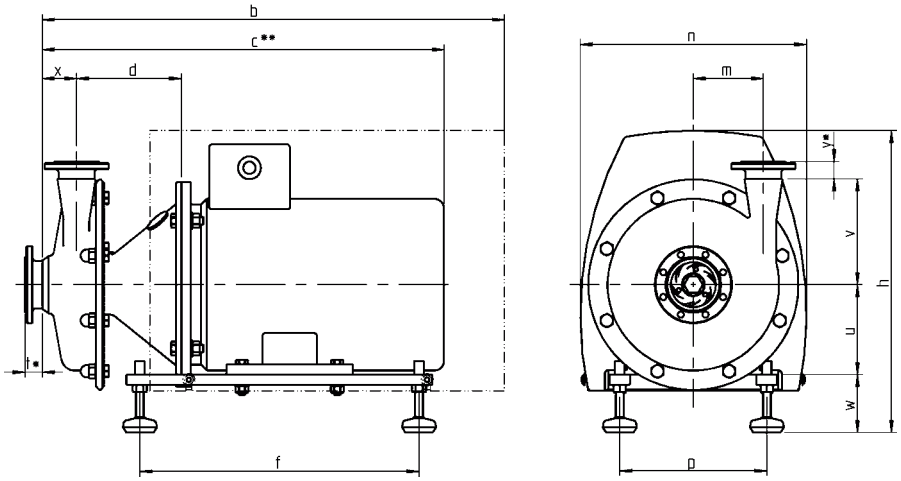
Standard version, centrifugal pump, type TP 1020, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max 11 m³/h
Pump head	max. 8 m w.c.
Housing pressure	max. 10 bar

Code	T	P	0	1	0	2	0	4	6	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4				5		6			7		8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics		
TP01020	1.	Type	TP 1020		
4	2.	Speed	4 = 4 pole		
60	3.	Frequency	60 = 60 Hz		
080	4.	Impeller	080 = 80 mm	100 = 100 mm	120 = 120 mm
			090 = 90 mm	110 = 110 mm	130 = 130 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80)		
			012 = 1.25 kW (IEC 90S)		
			018 = 1.8 kW (IEC 90L)		
			022 = 2.2 kW (IEC 100L)		

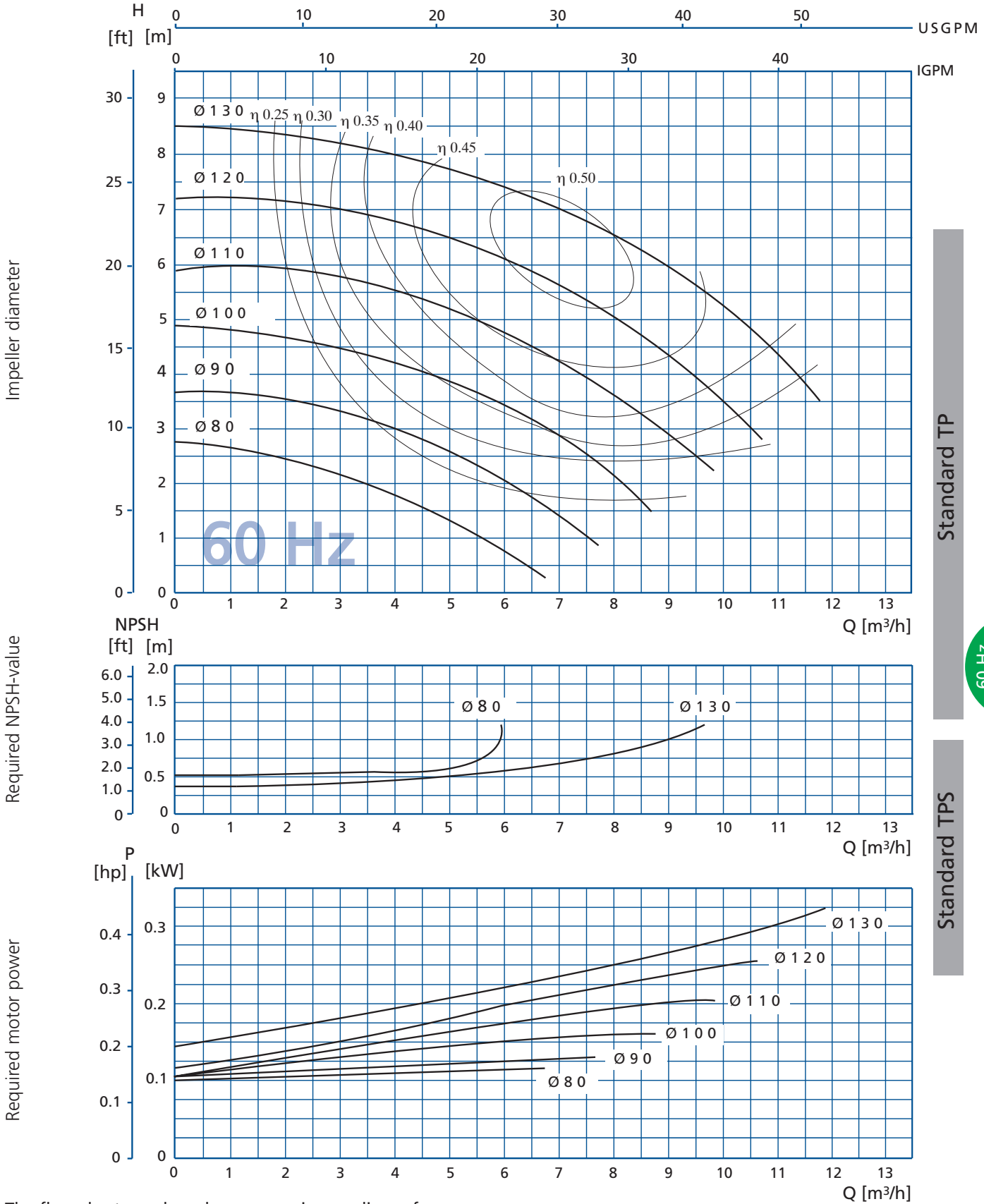


TP 1020 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	484	390	144	285	352	76	228	125	25.5	92	125	82	14	25.5
90S / 90L	490	425	144	285	352	76	228	140	25.5	90	125	82	14	25.5
100L	602	474	154	335	403	76	278	160	25.5	112	125	85	14	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

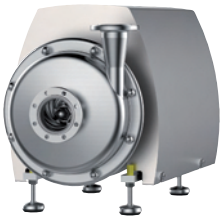
All dimensions in mm

Performance curves, centrifugal pump, type TP 1020, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

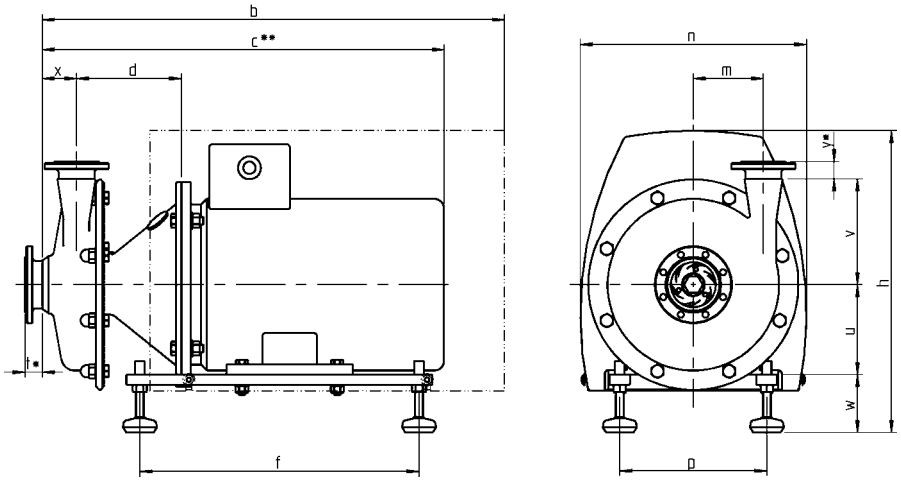
Standard version, centrifugal pump, type TP 1540, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 22 m³/h
Pump head	max. 15,5 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	1	5	4	0	4	6	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP01540	1.	Type	TP 1540			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
130	4.	Impeller	130 = 130 mm 155 = 155 mm 175 = 175 mm	140 = 140 mm 160 = 160 mm 180 = 180 mm	145 = 145 mm 165 = 165 mm	150 = 150 mm 170 = 170 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 012 = 1.25 kW (IEC 90S) 018 = 1.8 kW (IEC 90L) 022 = 2.2 kW (IEC 100L)			

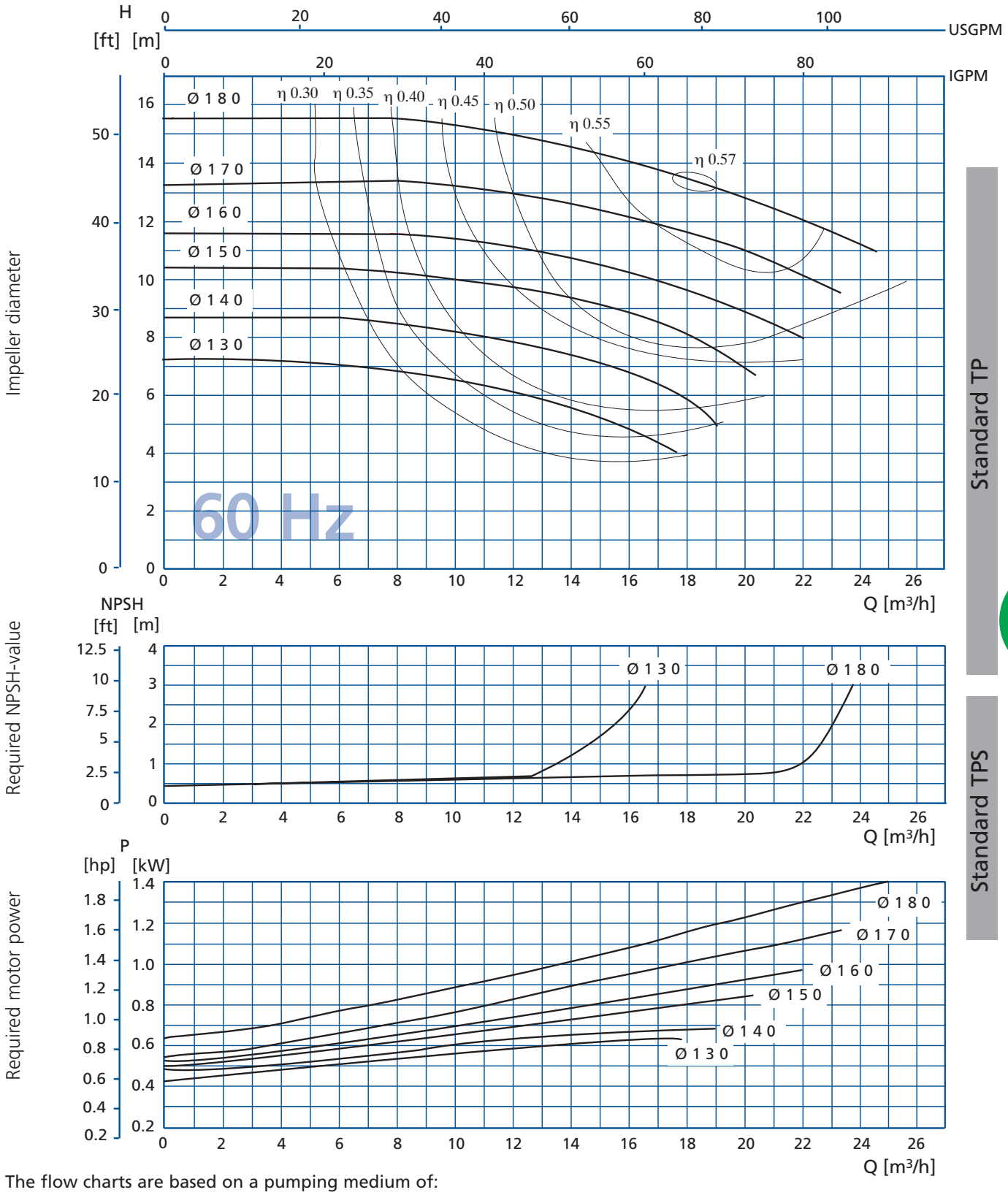


TP 1540 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	490	396	121.5	285	352	90	228	125	25.5	92	140	82	42	25.5
90S / 90L	496	431	121.5	285	352	90	228	140	25.5	90	140	82	42	25.5
100L	608	480	131.5	335	403	90	278	160	25.5	112	140	85	42	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

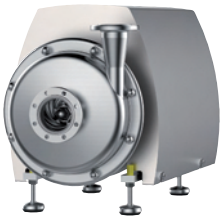
All dimensions in mm

Performance curves, centrifugal pump, type TP 1540, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

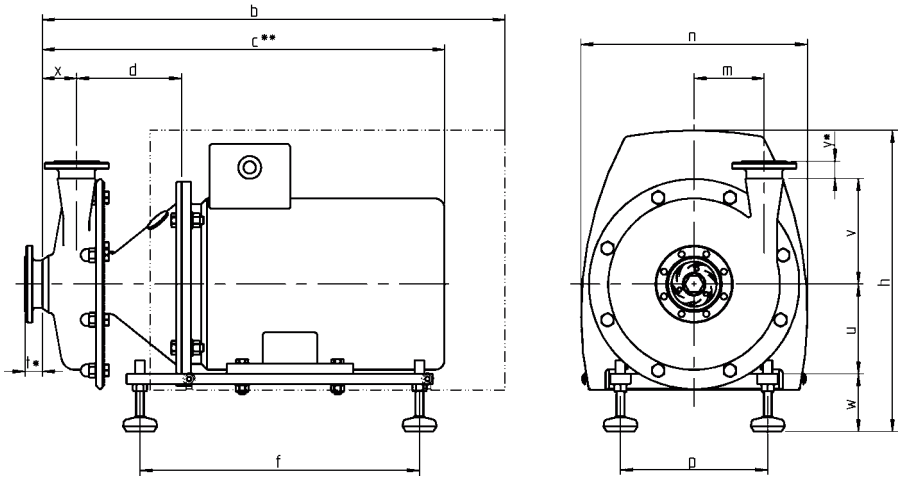
Standard version, centrifugal pump, type TP 2030, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 50; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 23 m³/h
Pump head	max. 13 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	3	0	4	6	0						D	N	N	F	K	0	5	0	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7		8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02030	1.	Type	TP 2030			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
110	4.	Impeller	110 = 110 mm	120 = 120 mm	130 = 130 mm	140 = 140 mm
			145 = 145 mm	150 = 150 mm	155 = 155 mm	160 = 160 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 012 = 1.25 kW (IEC 90S) 018 = 1.8 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S)			

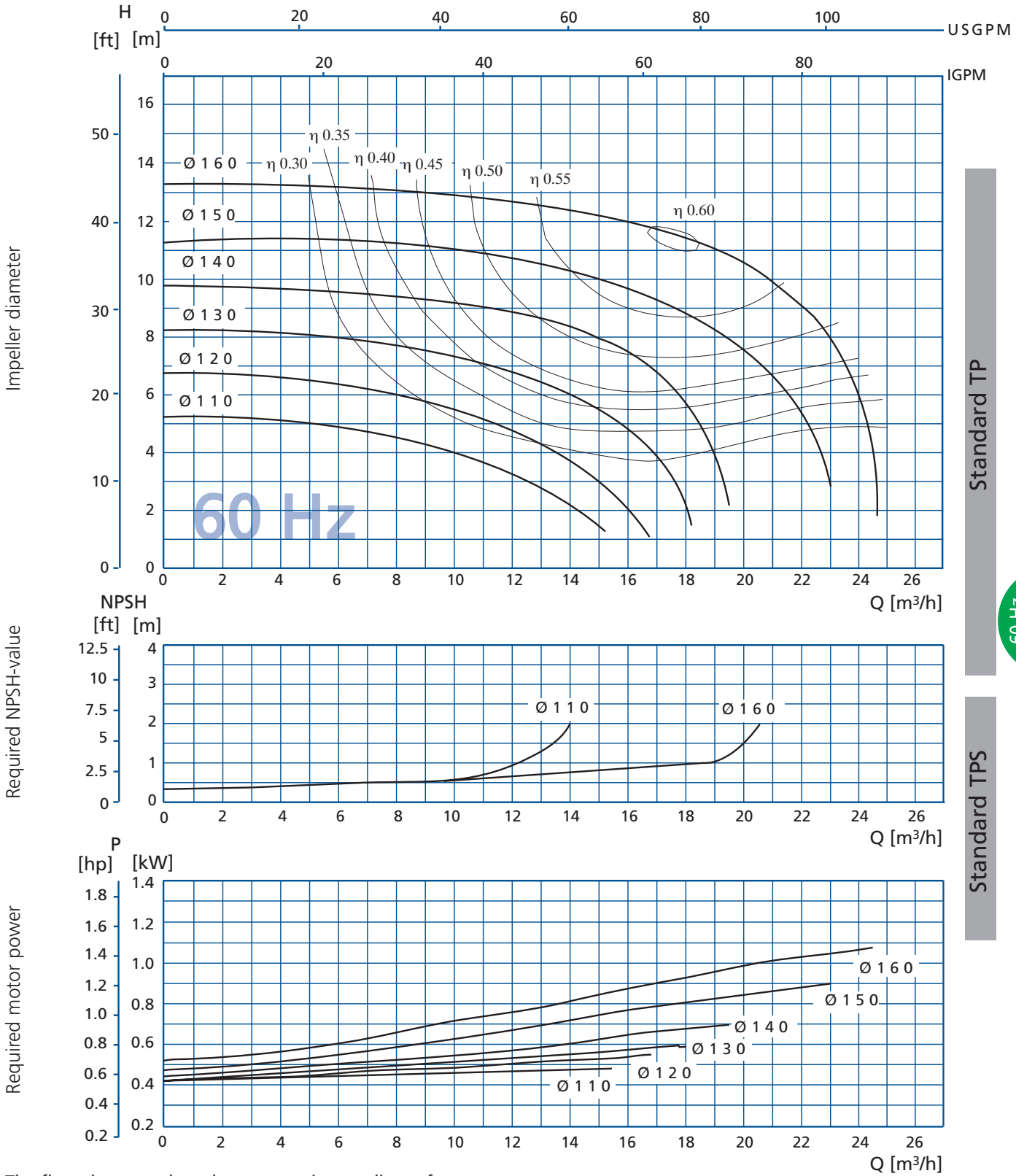


TP 2030 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	488	394	121.5	285	352	85	228	125	25.5	92	135	82	40	25.5
90S / 90L	494	429	121.5	285	352	85	228	140	25.5	90	135	82	40	25.5
100L	606	478	131.5	335	403	85	278	160	25.5	112	135	85	40	25.5
112M	606	500	131.5	335	403	85	278	190	25.5	112	135	85	40	25.5
132S	707	557	152	410	444	85	332	216	25.5	132	135	85	40	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

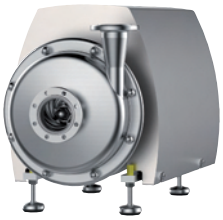
All dimensions in mm

Performance curves, centrifugal pump, type TP 2030, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

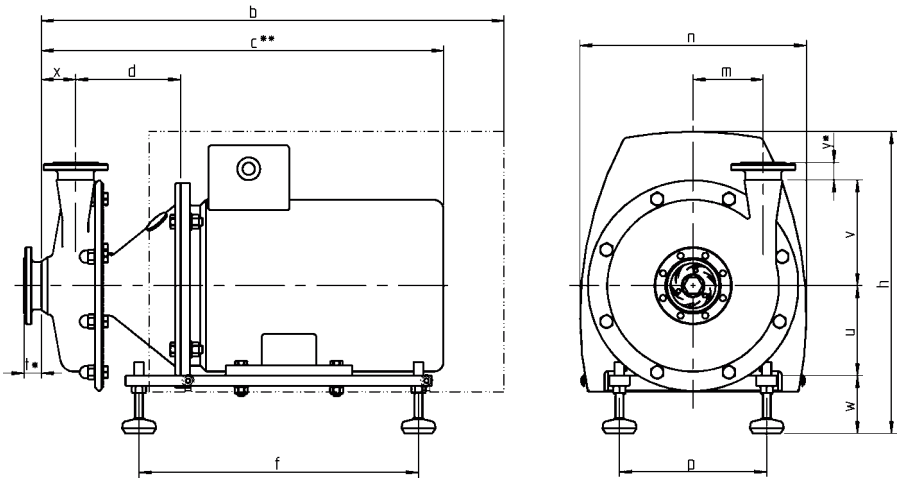
Standard version, centrifugal pump, type TP 2050, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 21 m³/h
Pump head	max. 22 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	0	5	0	4	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02050	1.	Type	TP 2050			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
160	4.	Impeller	160 = 160 mm 190 = 190 mm 210 = 210 mm	170 = 170 mm 195 = 195 mm	180 = 180 mm 200 = 200 mm	185 = 185 mm 205 = 205 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 012 = 1.25 kW (IEC 90S) 018 = 1.8 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 040 = 4.0 kW (IEC 112M)			

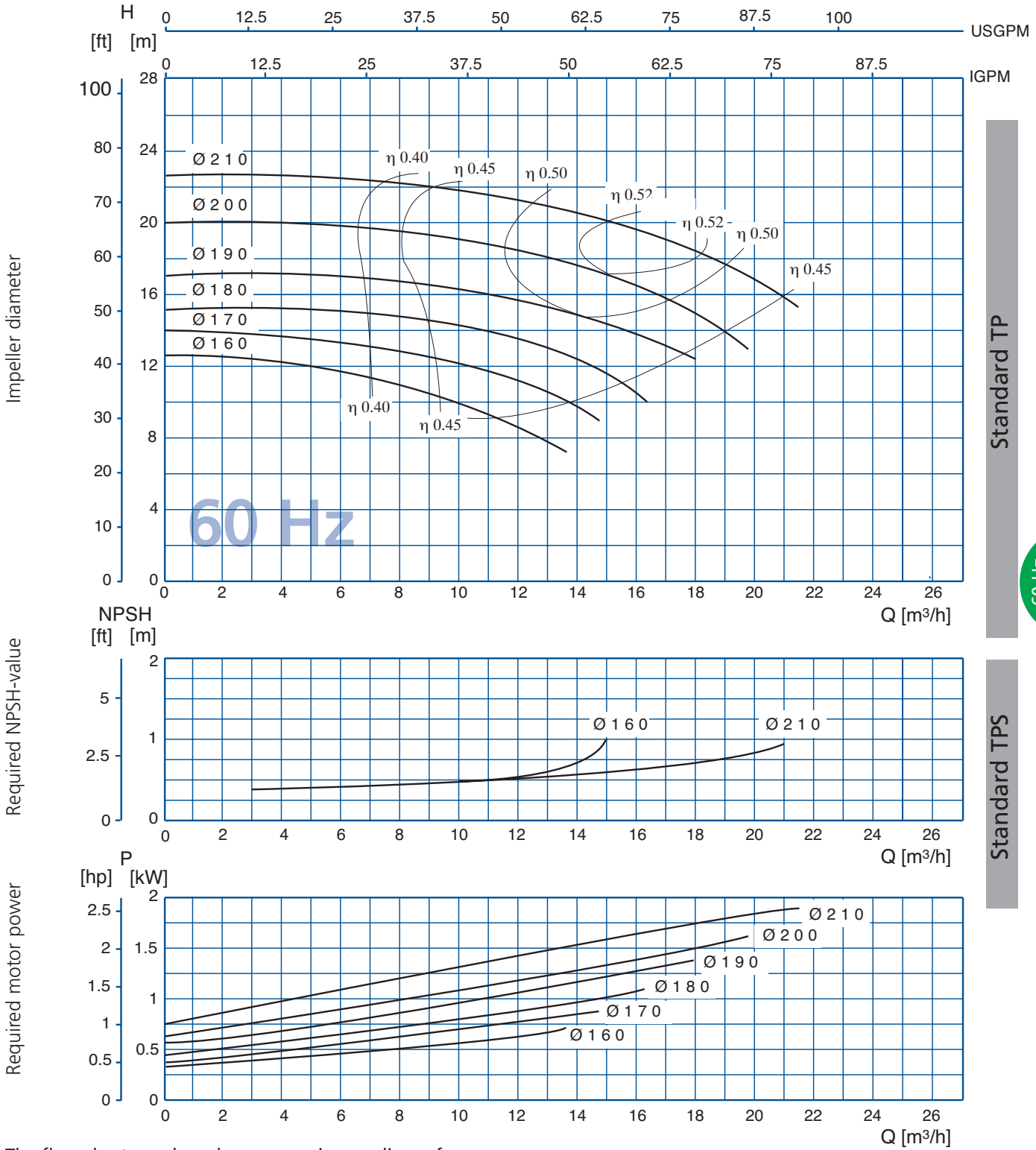


TP 2050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	504	410	126	285	352	107	228	125	25.5	90	161	82	52	25.5
90S / 90L	510	445	126	285	352	107	228	140	25.5	90	161	82	52	25.5
100L	622	494	136	335	403	107	278	160	25.5	112	161	85	52	25.5
112M	622	516	136	335	403	107	278	190	25.5	112	161	85	52	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

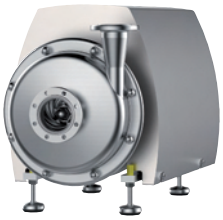
All dimensions in mm

Performance curves, centrifugal pump, type TP 2050, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

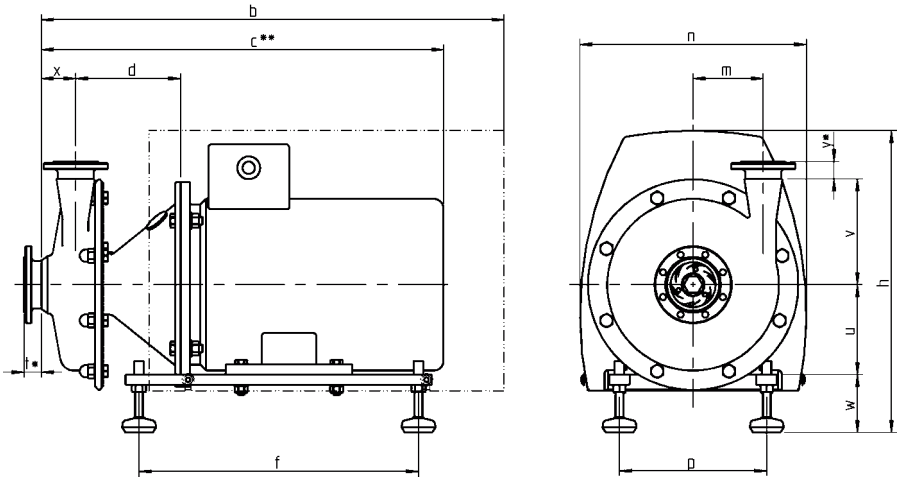
Standard version, centrifugal pump, type TP 2575, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 22 m³/h
Pump head	max. 31 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	2	5	7	5	4	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4				5		6		7			8				9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP02575	1.	Type	TP 2575			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
200	4.	Impeller	200 = 200 mm 225 = 225 mm 245 = 245 mm	210 = 210 mm 230 = 230 mm 250 = 250 mm	215 = 215 mm 235 = 235 mm	220 = 220 mm 240 = 240 mm
040	5.	Motor power	040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

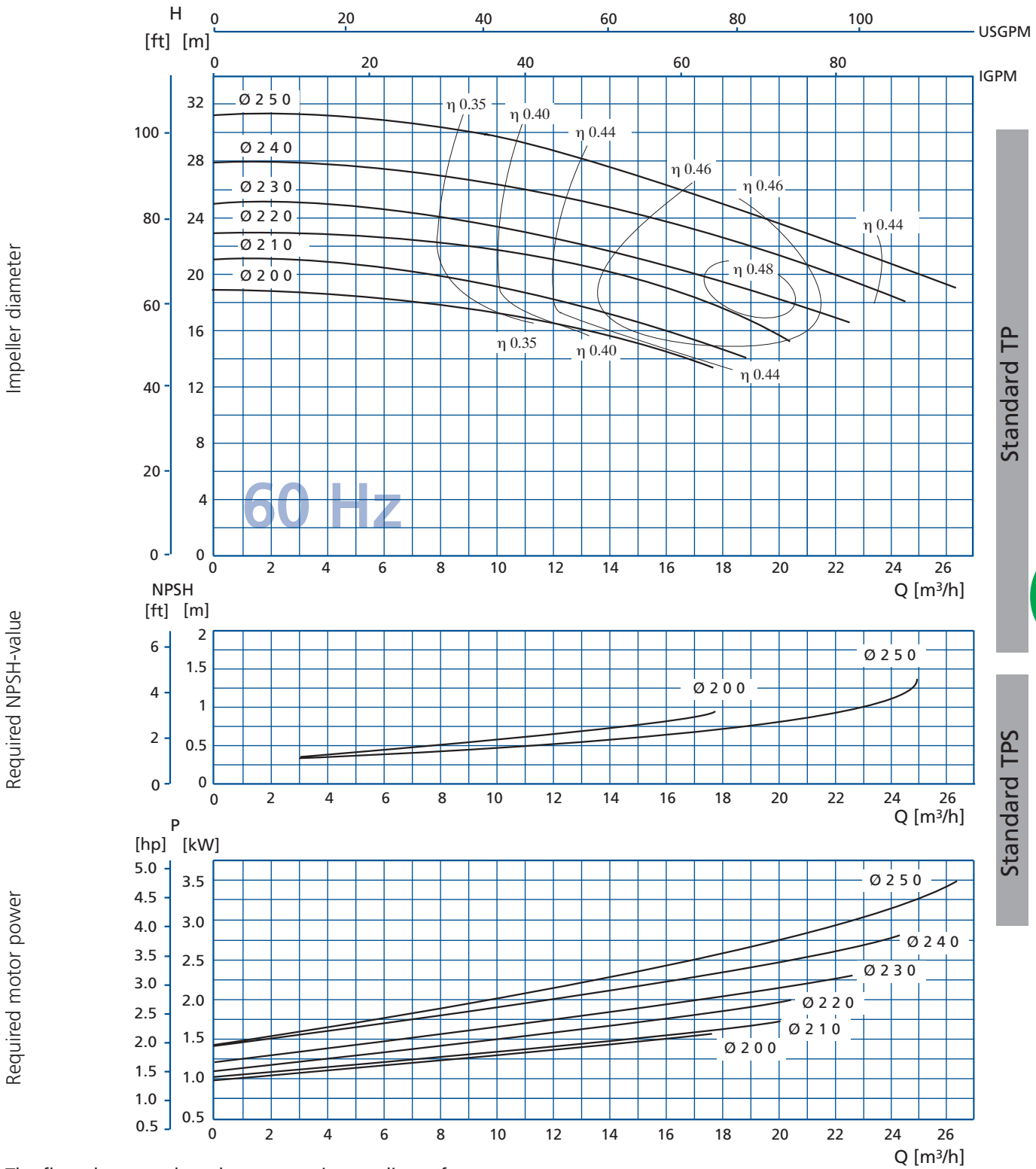


TP 2575 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M	621	515	138	335	403	124.5	278	190	25.5	112	190	85	48.5	25.5
132S / 132M	720	570/630	156	410	444	124.5	332	216	25.5	132	190	85	48.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

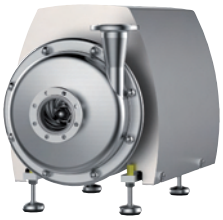
All dimensions in mm

Performance curves, centrifugal pump, type TP 2575, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

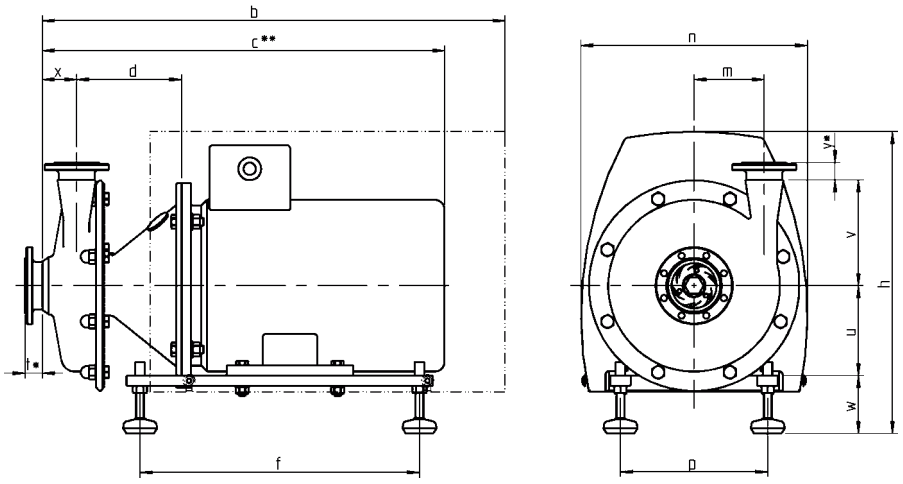
Standard version, centrifugal pump, type TP 3050, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 42 m³/h
Pump head	max. 24 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	3	0	5	0	4	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP03050	1.	Type	TP 3050			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
140	4.	Impeller	140 = 140 mm	150 = 150 mm	160 = 160 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
007	5.	Motor power	007 = 0.75 kW (IEC 80) 012 = 1.25 kW (IEC 90S) 018 = 1.8 kW (IEC 90L) 022 = 2.2 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

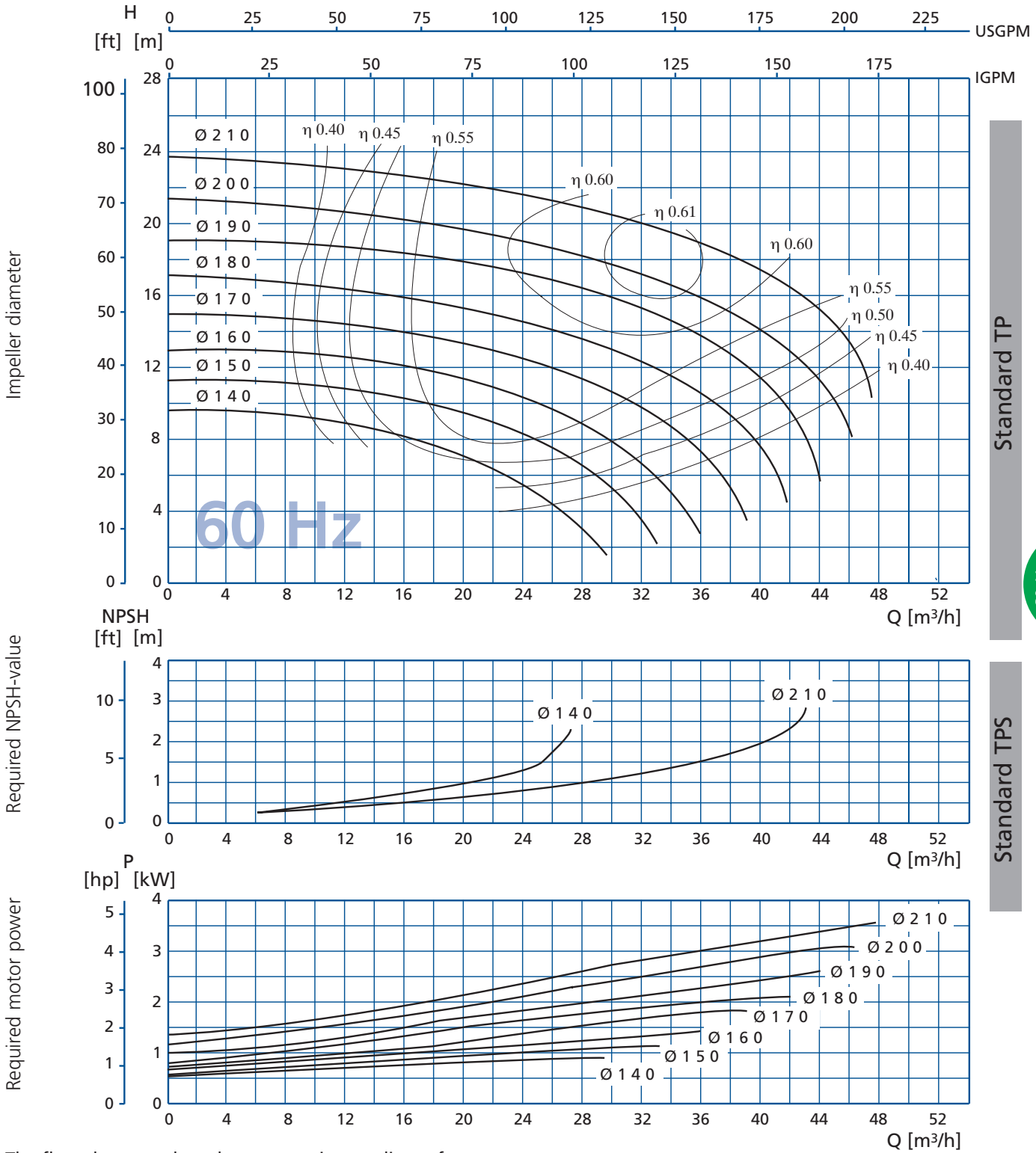


TP 3050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
80	500	406	124	285	352	103	228	125	25.5	92	155	82	50	25.5
90S / 90L	506	441	124	285	352	103	228	140	25.5	90	155	82	50	25.5
100L	618	490	134	335	403	103	278	160	25.5	112	155	85	50	25.5
112M	618	512	134	335	403	103	278	190	25.5	112	155	85	50	25.5
132S / 132M	719	569/609	154	410	444	103	332	216	25.5	132	155	85	50	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

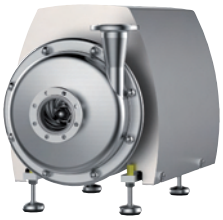
All dimensions in mm

Performance curves, centrifugal pump, type TP 3050, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

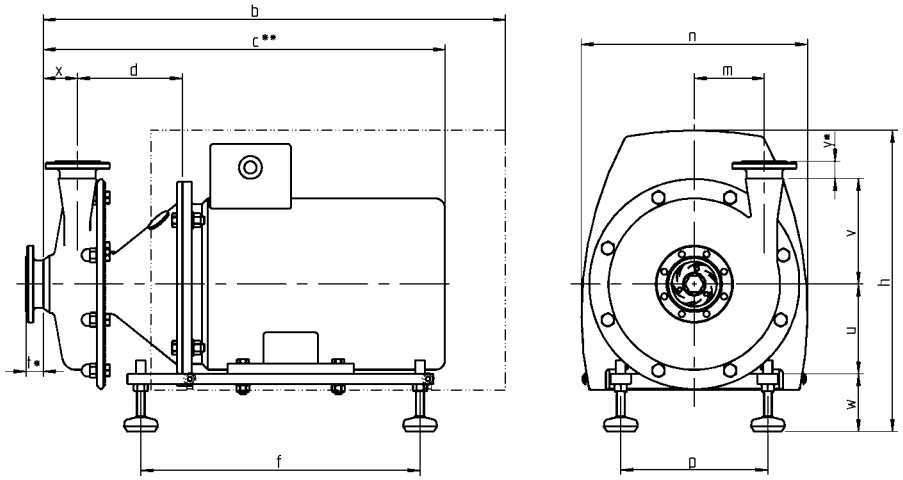
Standard version, centrifugal pump, type TP 5060, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 45 m³/h
Pump head	max. 24 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	5	0	6	0	4	6	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP05060	1.	Type	TP 5060			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
155	4.	Impeller	155 = 155 mm	160 = 160 mm	165 = 165 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
			215 = 215 mm	220 = 220 mm	225 = 225 mm	
022	5.	Motor power	022 = 2.2 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

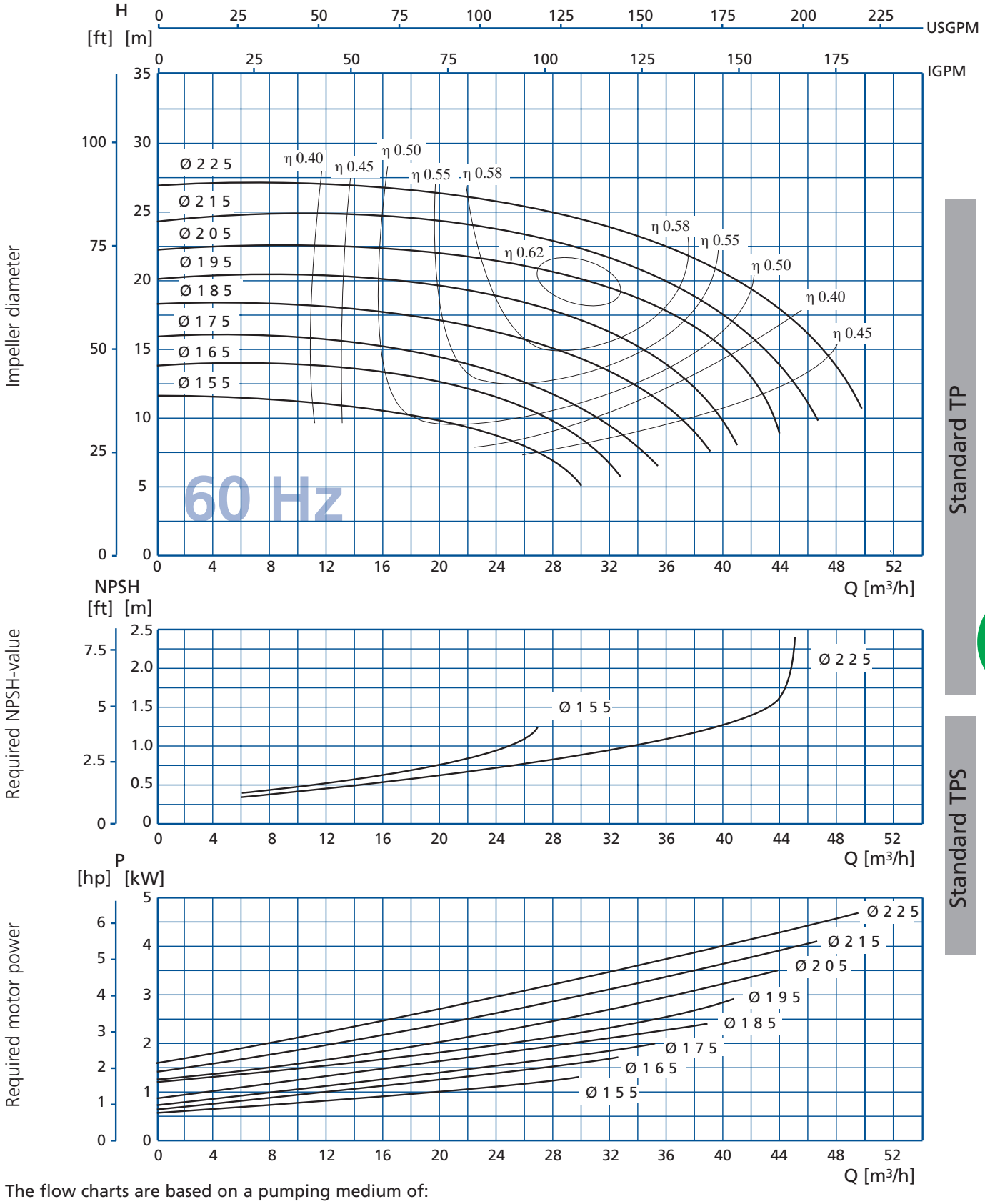


TP 5060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	622	494	137	335	403	114.5	278	160	27.5	112	230	85	51	25.5
112M	622	516	137	335	403	114.5	278	190	27.5	112	230	85	51	25.5
132S / 132M	723	573/613	157	410	444	114.5	332	216	27.5	132	230	85	51	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

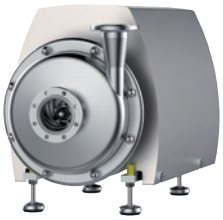
All dimensions in mm

Performance curves, centrifugal pump, type TP 5060, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

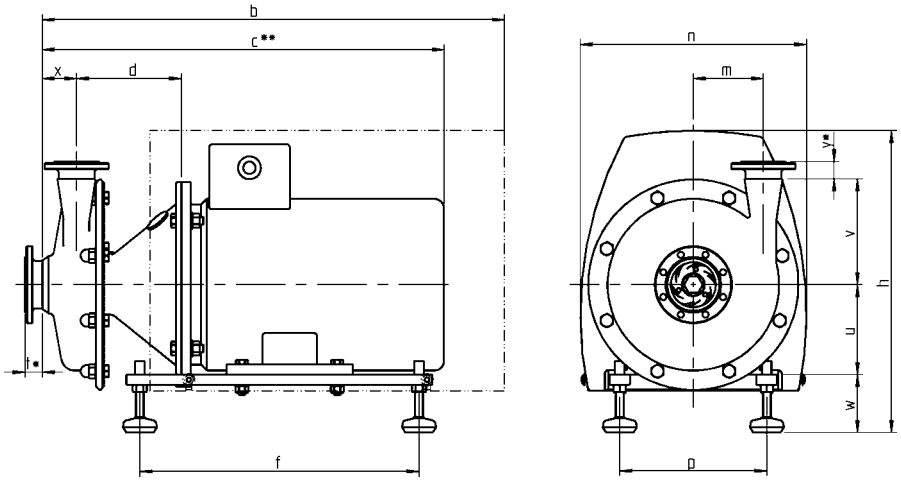
Standard version, centrifugal pump, type TP 7060, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 80; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 65 m³/h
Pump head	max. 27 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	7	0	6	0	4	6	0						D	N	N	F	K	0	8	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP07060	1.	Type	TP 7060			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
155	4.	Impeller	155 = 155 mm 175 = 175 mm 195 = 195 mm 220 = 220 mm	160 = 160 mm 180 = 180 mm 200 = 200 mm 225 = 225 mm	165 = 165 mm 185 = 185 mm 205 = 205 mm	170 = 170 mm 190 = 190 mm 215 = 215 mm
022	5.	Motor power	022 = 2.2 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			



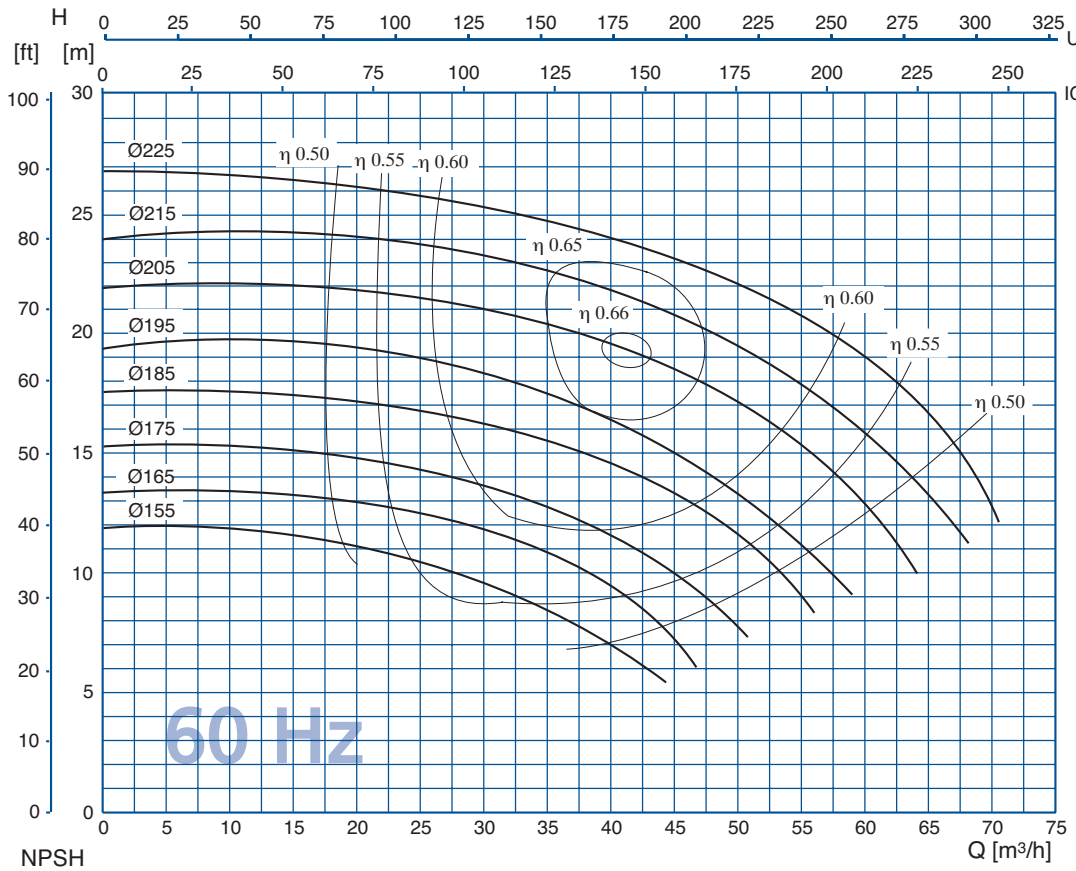
TP 7060 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	622	494	132	335	427	110	278	160	27.5	112	230	85	56	25.5
112M	622	516	132	335	427	110	278	190	27.5	112	230	85	56	25.5
132S / 132M	723	573/613	152	410	444	110	332	216	27.5	132	230	85	56	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

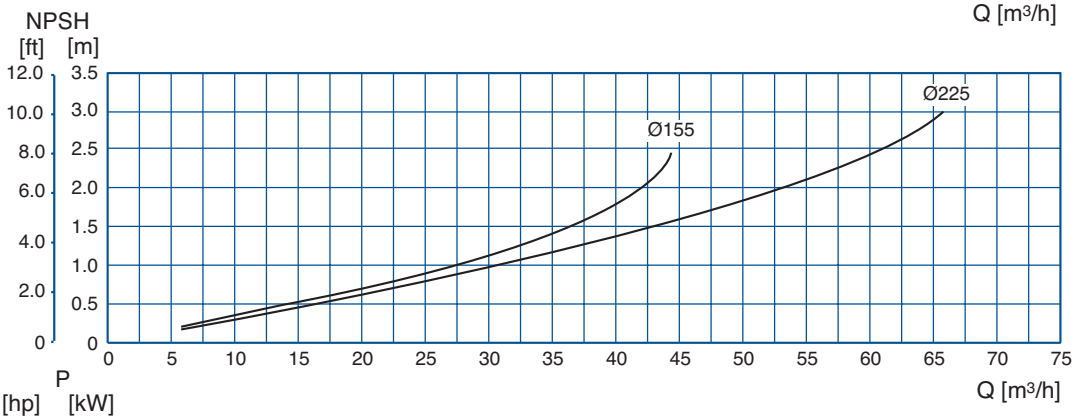
All dimensions in mm

Performance curves, centrifugal pump, type TP 7060, 4-pole (n=1,750 min^{-1}), 60 Hz

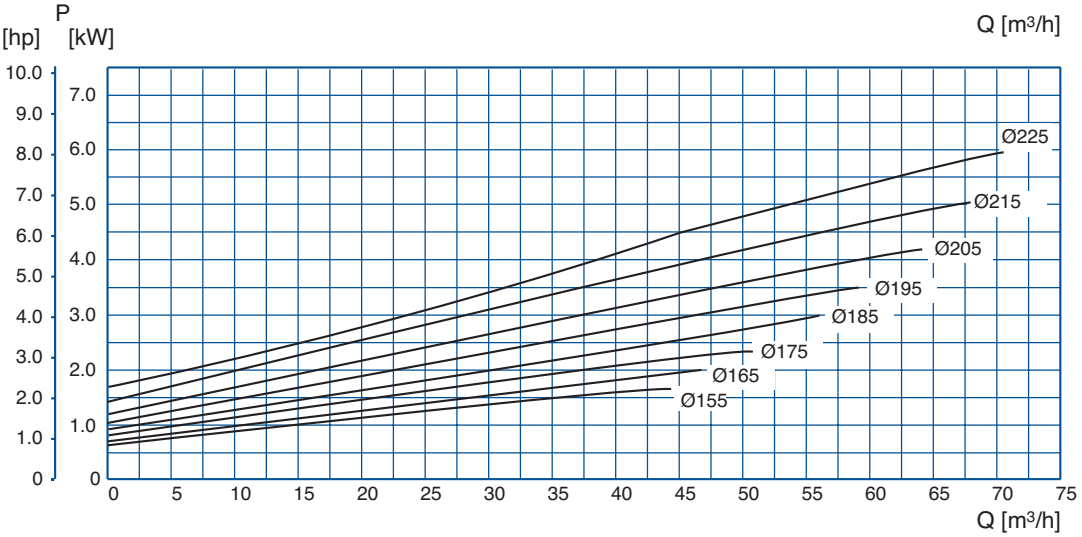
Impeller diameter



Required NPSH-value



Required motor power



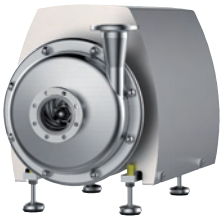
Standard TP

Standard TPS

60 Hz 4-pole

The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

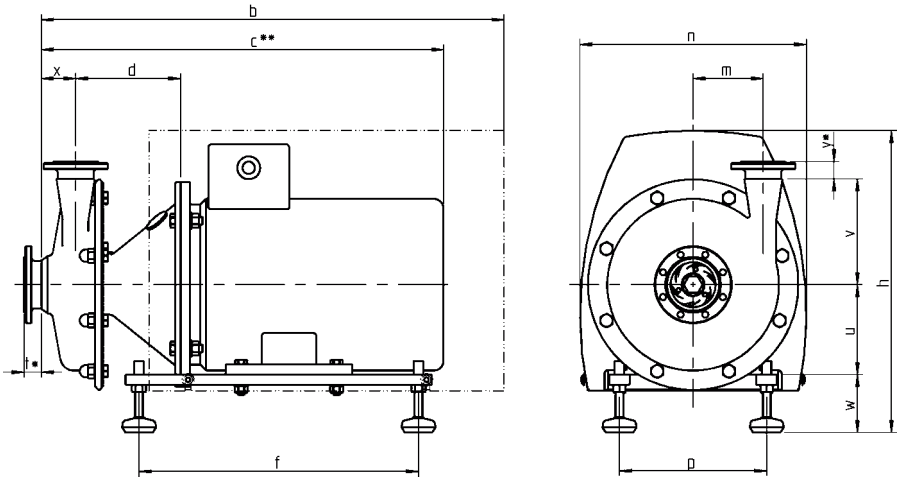
Standard version, centrifugal pump, type TP 8080, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 100; Pressure port (DS), DN 65
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 75 m³/h
Pump head	max. 34 m w.c.
Housing pressure	max. 16 bar

Code	T	P	0	8	0	8	0	4	6	0						D	N	N	F	K	1	0	0	0	6	5	E	K	E	-	1	-	J	J	-
Position	1							2	3		4				5	6			7		8				9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP08080	1.	Type	TP 8080			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
180	4.	Impeller	180 = 180 mm 210 = 210 mm 230 = 230 mm 250 = 250 mm	190 = 190 mm 215 = 215 mm 235 = 235 mm	200 = 200 mm 220 = 220 mm 240 = 240 mm	205 = 205 mm 225 = 225 mm 245 = 245 mm
040	5.	Motor power	040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

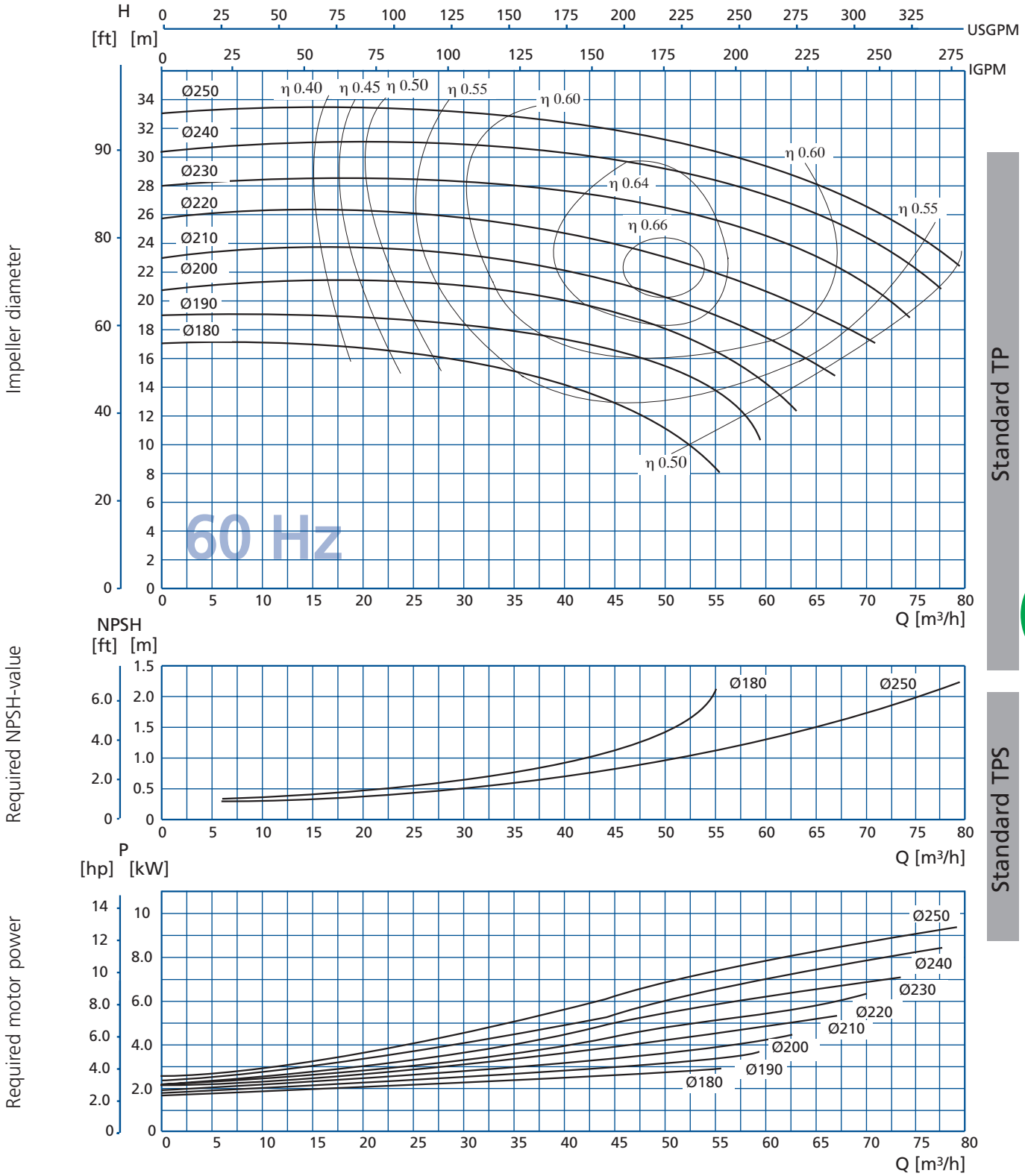


TP 8080 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M	641	535	136	335	403	124	278	190	27.5	112	250	85	71	25.5
132S / 132M	742	592/632	156	410	444	124	332	216	27.5	132	250	85	71	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

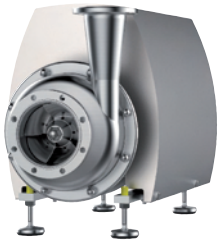
All dimensions in mm

Performance curves, centrifugal pump, type TP 8080, 4-pole (n=1,750 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

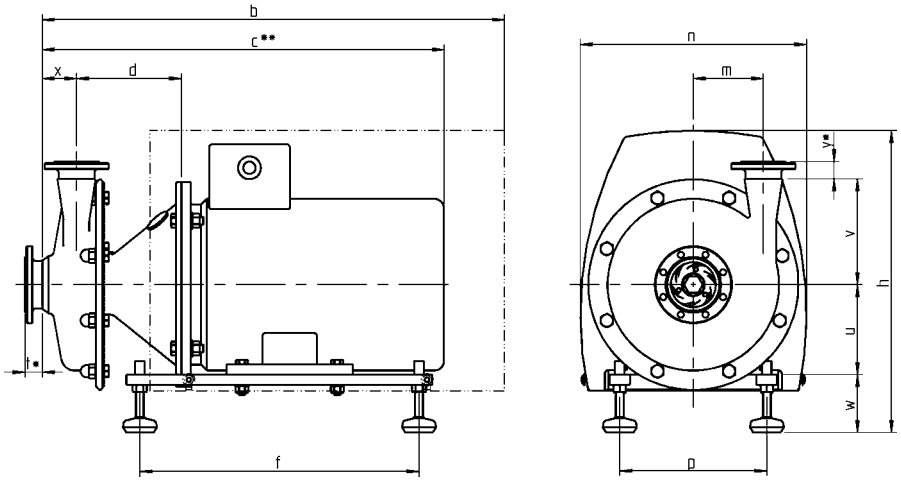
Standard version, centrifugal pump, type TP 16040, 4-pole (n=1,750 min^{-1}), 60 Hz



Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 150; Pressure port (DS), DN 100
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 120 m³/h
Pump head	max. 17 m w.c.
Housing pressure	max. 16 bar

Code	T	P	1	6	0	4	0	4	6	0						D	N	N	F	K	1	5	0	1	0	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4		5				6		7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TP16040	1.	Type	TP 16040			
4	2.	Speed	4 = 4 pole			
60	3.	Frequency	60 = 60 Hz			
160	4.	Impeller	160 = 160 mm 180 = 180 mm 200 = 200 mm	165 = 165 mm 185 = 185 mm	170 = 170 mm 190 = 190 mm	175 = 175 mm 195 = 195 mm
040	5.	Motor power	040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 132S) 075 = 7.5 kW (IEC 132M)			

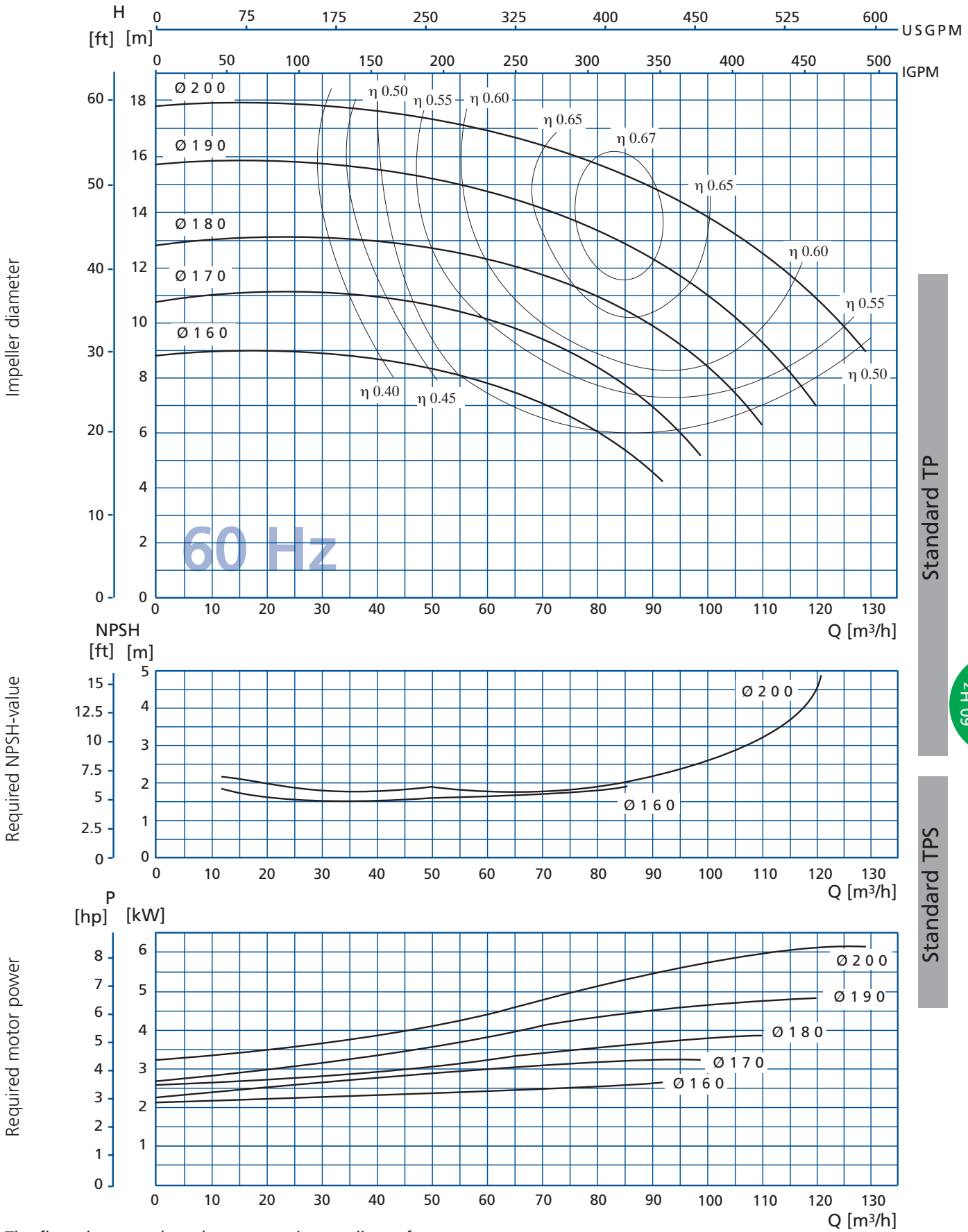


TP 16040 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
112M	651	545	131	335	403	108	278	190	29.5	112	280	85	86	27.5
132S / 132M	752	602/642	151	410	444	108	332	216	29.5	132	280	85	86	27.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

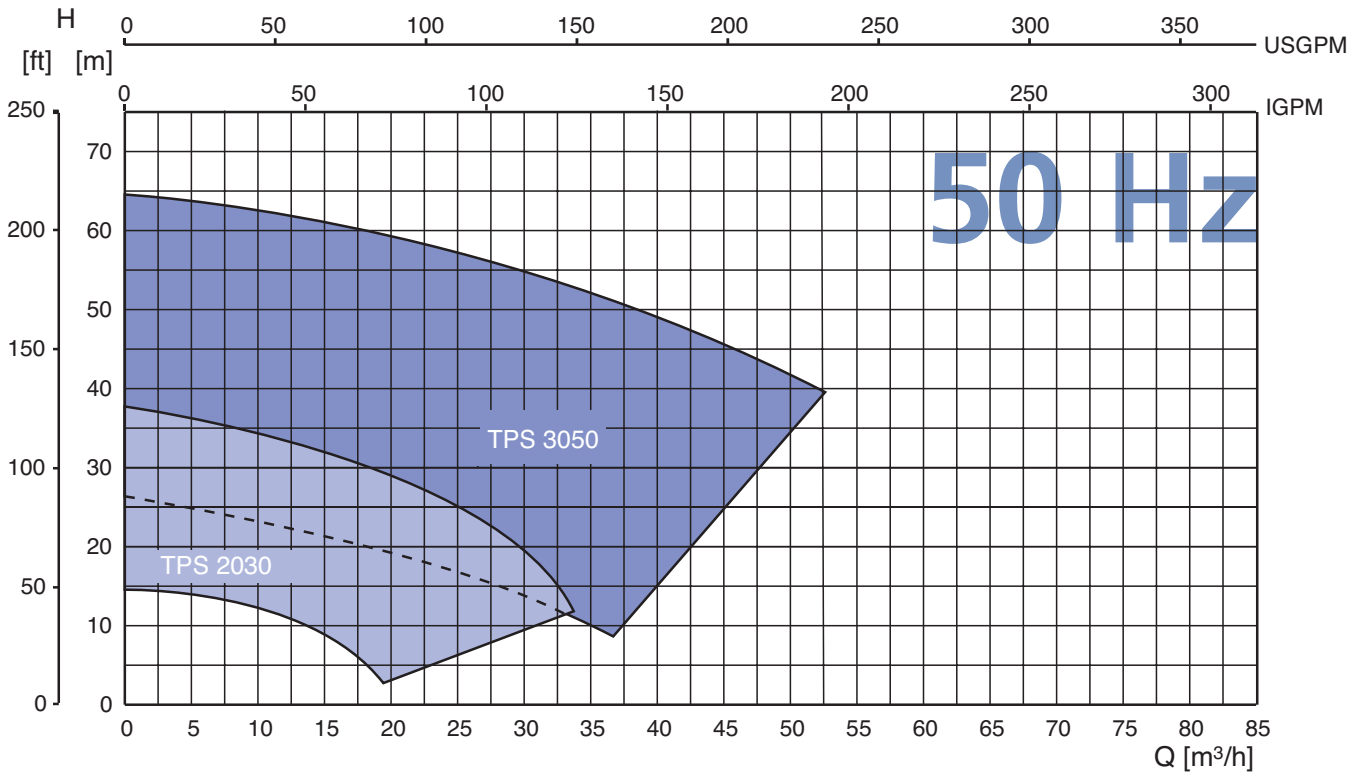
All dimensions in mm

Performance curves, centrifugal pump, type TP 16040, 4-pole (n=1,750 min^{-1}), 60 Hz

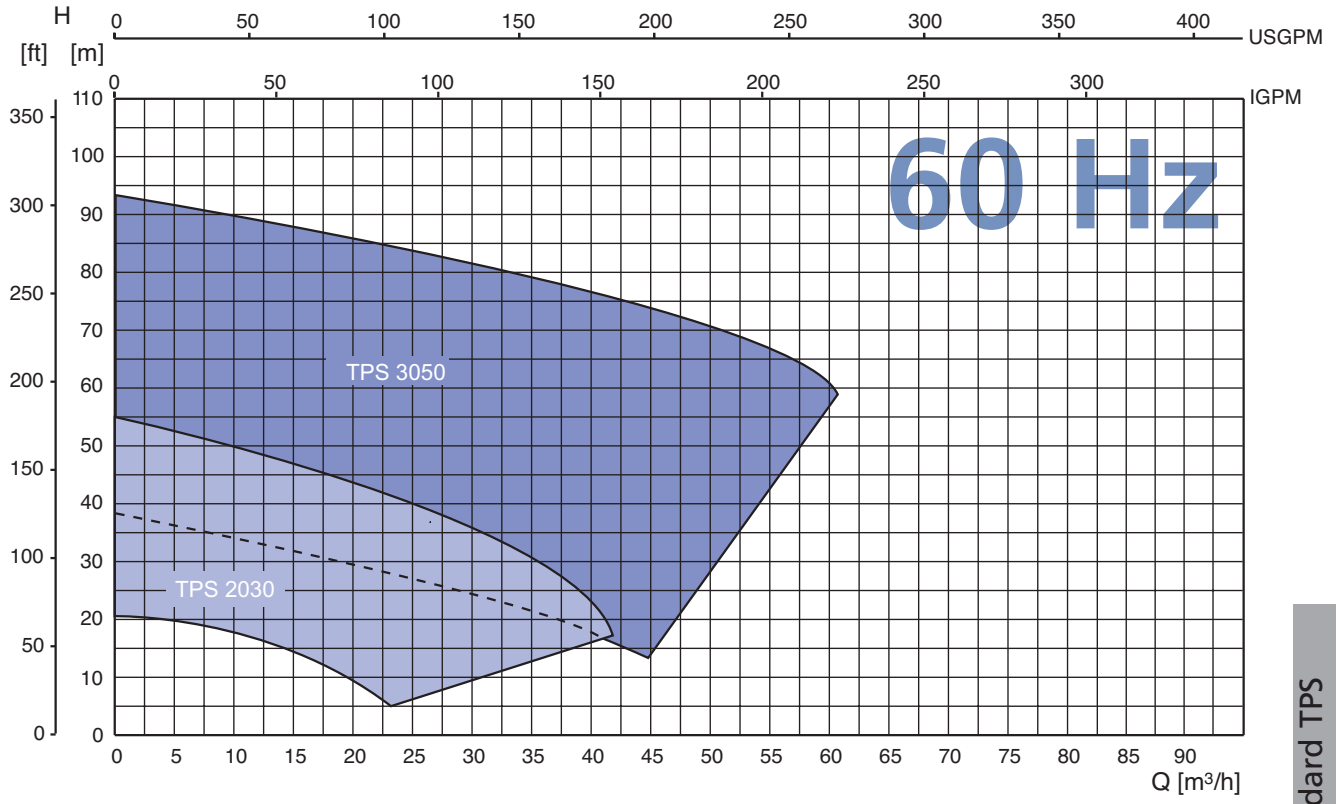


The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

2-pole (n = 2,900 min-1)



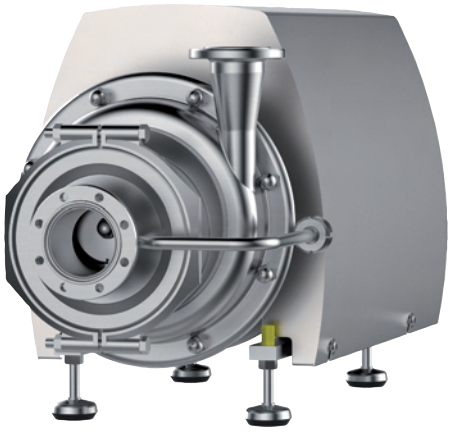
2-pole (n = 3,500 min-1)



Standard TPS

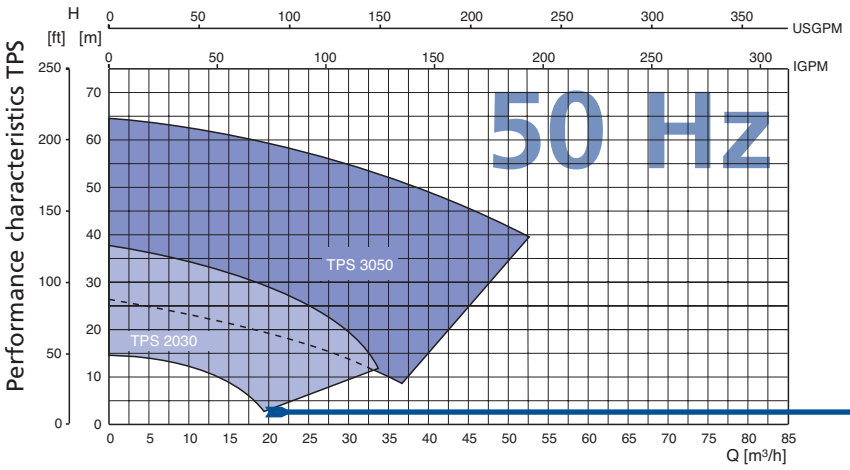
Standard version, centrifugal pump, type TPS, 2-pole (n=2,900 min^{-1}), 50 Hz

Standard version	**2 pole/50Hz**
Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Depending on pump size
Mechanical seal	Single-acting, material: C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Standard equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 55 m³/h
Pump head	max. 64 m w.c.



TPS 2030 und TPS 3050

2-pole (n=2,900 min^{-1}), 50 Hz



Example of a standard selection

Code	T	P	S	2	0	3	0	2	5	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

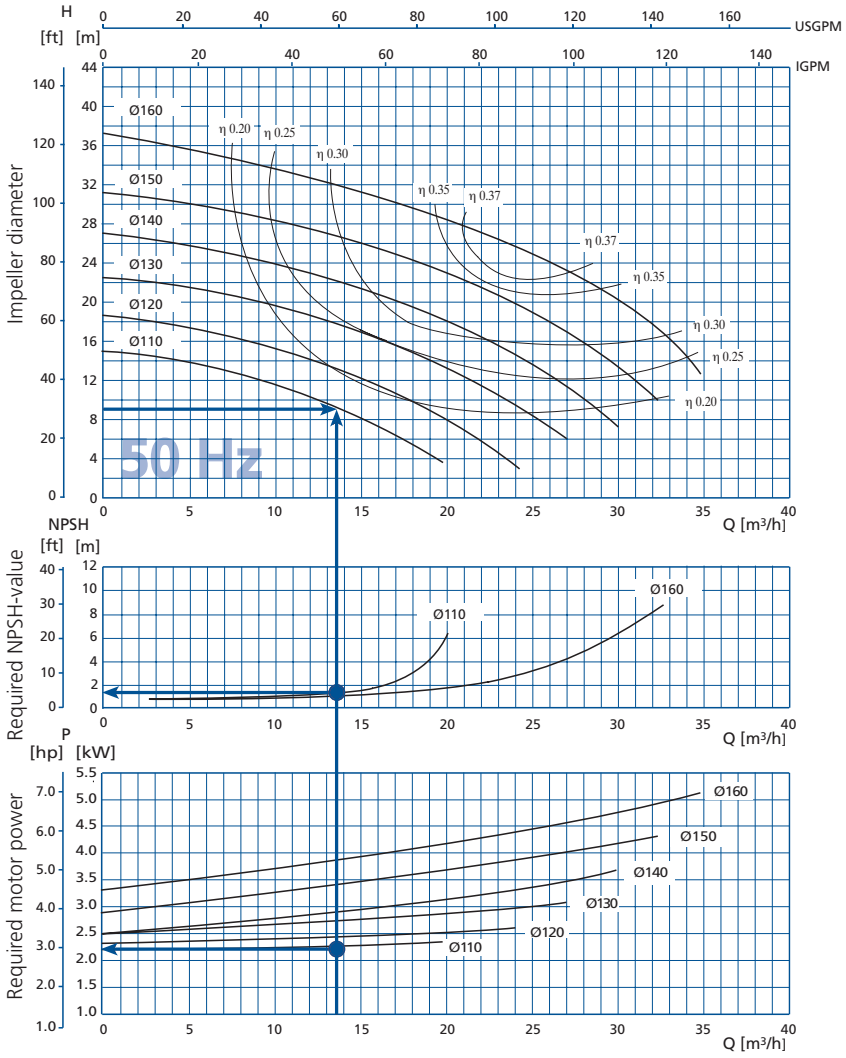
Standard version, for other versions see options

Example	Pos	Designation	Code of selection characteristics	
TPS 2030	1.	Type	TPS 2030	Selected values determined by the pump selected
2	2.	Speed	2 = 2 pole	
50	3.	Frequency	50 = 50 Hz	
110	4.	Impeller	110 = 110 mm, 120 = 120 mm, 130 = 130 mm, 140 = 140 mm, 145 = 145 mm, 150 = 150 mm, 155 = 155 mm, 160 = 160 mm	Selection using the characteristic curves
022	5.	Motor power	022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 110 = 11.0 kW (IEC 132M)	

Impeller selection in accordance with capacity and pump head

Motor output selection in accordance with capacity and pump head

Performance curves, centrifugal pump, TPS 2030 (2-polig / 50 Hz)



Standard TPS

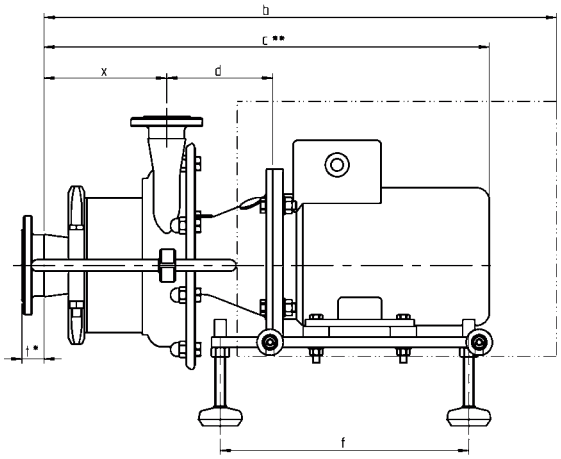
50 Hz 2-pole

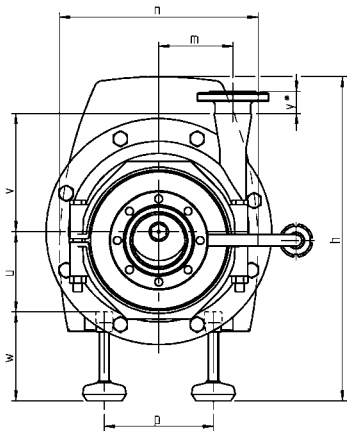
Standard version, centrifugal pump, type TPS 2030, 2-pole (n=2,900 min^{-1}), 50 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 32 m³/h
Pump head	max. 37 m w.c.
Housing pressure	max. 16 bar

Code	T	P	S	2	0	3	0	2	5	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3	4				5		6			7			8			9		10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TPS2030	1.	Type	TPS 2030			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
110	4.	Impeller	110 = 110 mm	120 = 120 mm	130 = 130 mm	140 = 140 mm
			145 = 145 mm	150 = 150 mm	155 = 155 mm	160 = 160 mm
022	5.	Motor power	022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 092 = 9.2 kW (IEC 132M) 110 = 11.0 kW (IEC 132M)			



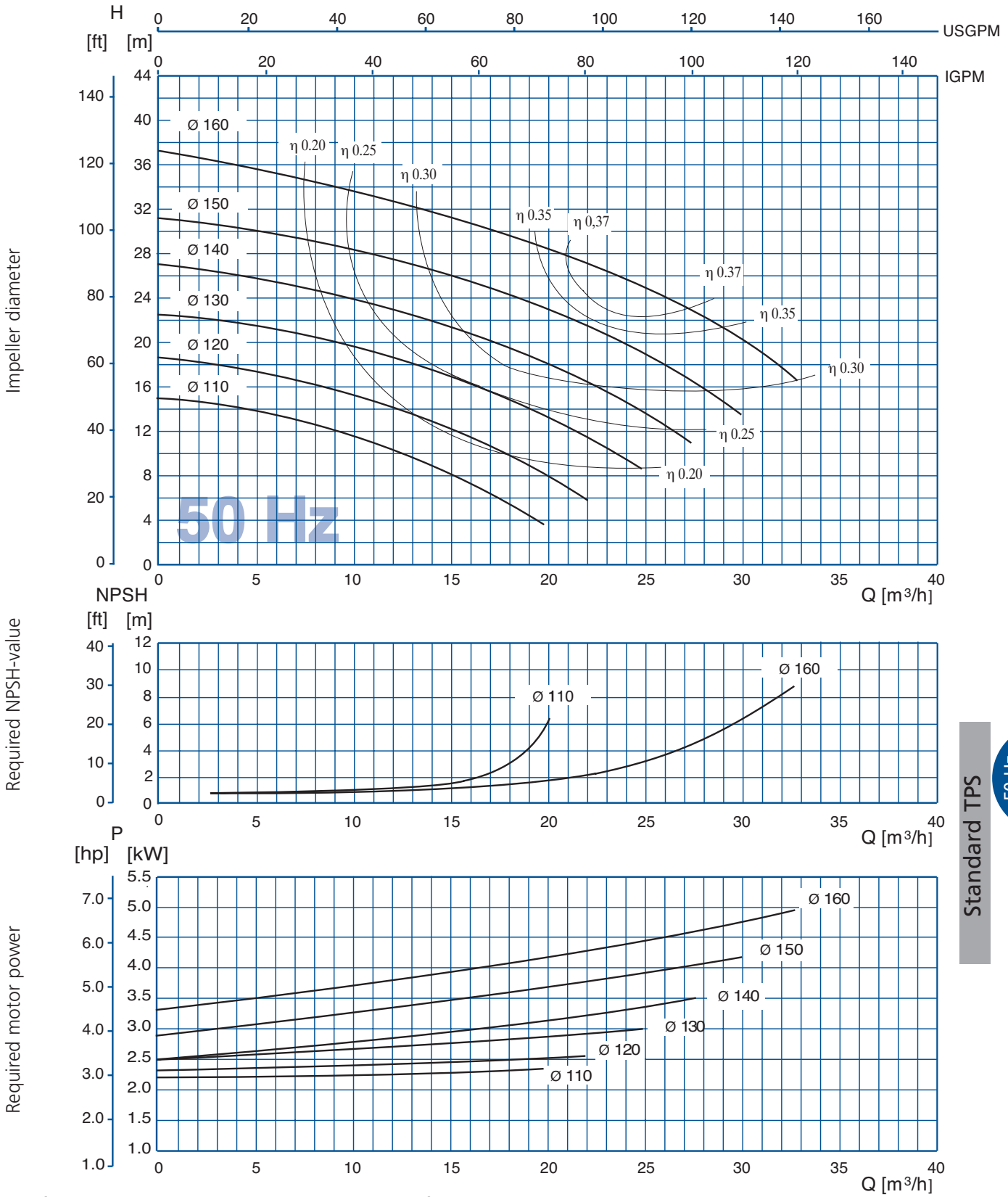


TP 2030 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
90L	594	529	121.5	285	352	85	227	140	25.5	80	135	82	140.5	25.5
100L	706	578	131.5	335	403	85	227	160	25.5	90	135	85	140.5	25.5
112M (4 kW + 5.5 kW)	706	600	131.5	335	403	85	227	190	25.5	102	135	85	140.5	25.5
112M (7.5 kW)	706	622	131.5	335	403	85	227	190	25.5	102	135	85	140.5	25.5
132M	808	717.5	152	410	444	85	332	216	25.5	122	135	85	140.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TPS 2030, 2-pole (n=2,900 min^{-1}), 50 Hz



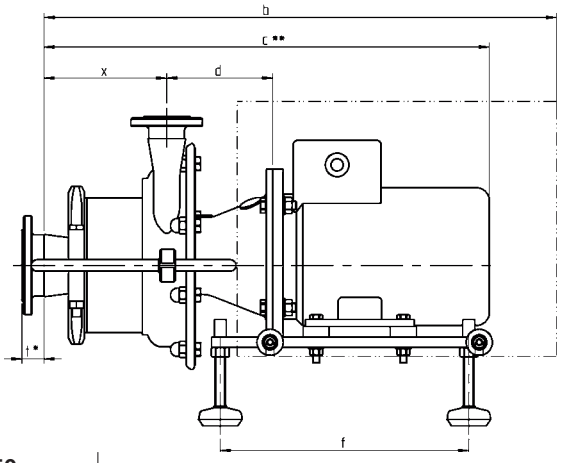
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

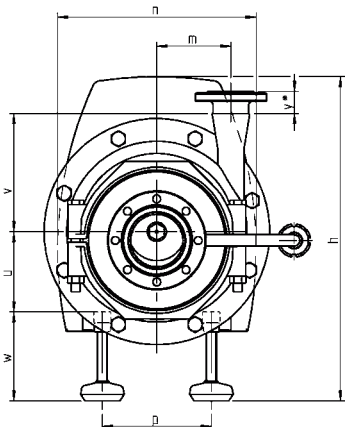
Standard version, centrifugal pump, type TPS 3050, 2-pole (n=2,900 min^{-1}), 50 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 400V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 55 m³/h
Pump head	max. 64 m w.c.
Housing pressure	max. 16 bar

Code	T	P	S	3	0	5	0	2	5	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TPS3050	1.	Type	TPS 3050			
2	2.	Speed	2 = 2 pole			
50	3.	Frequency	50 = 50 Hz			
140	4.	Impeller	140 = 140 mm	150 = 150 mm	160 = 160 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			092 = 9.2 kW (IEC 132M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			185 = 18.5 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			



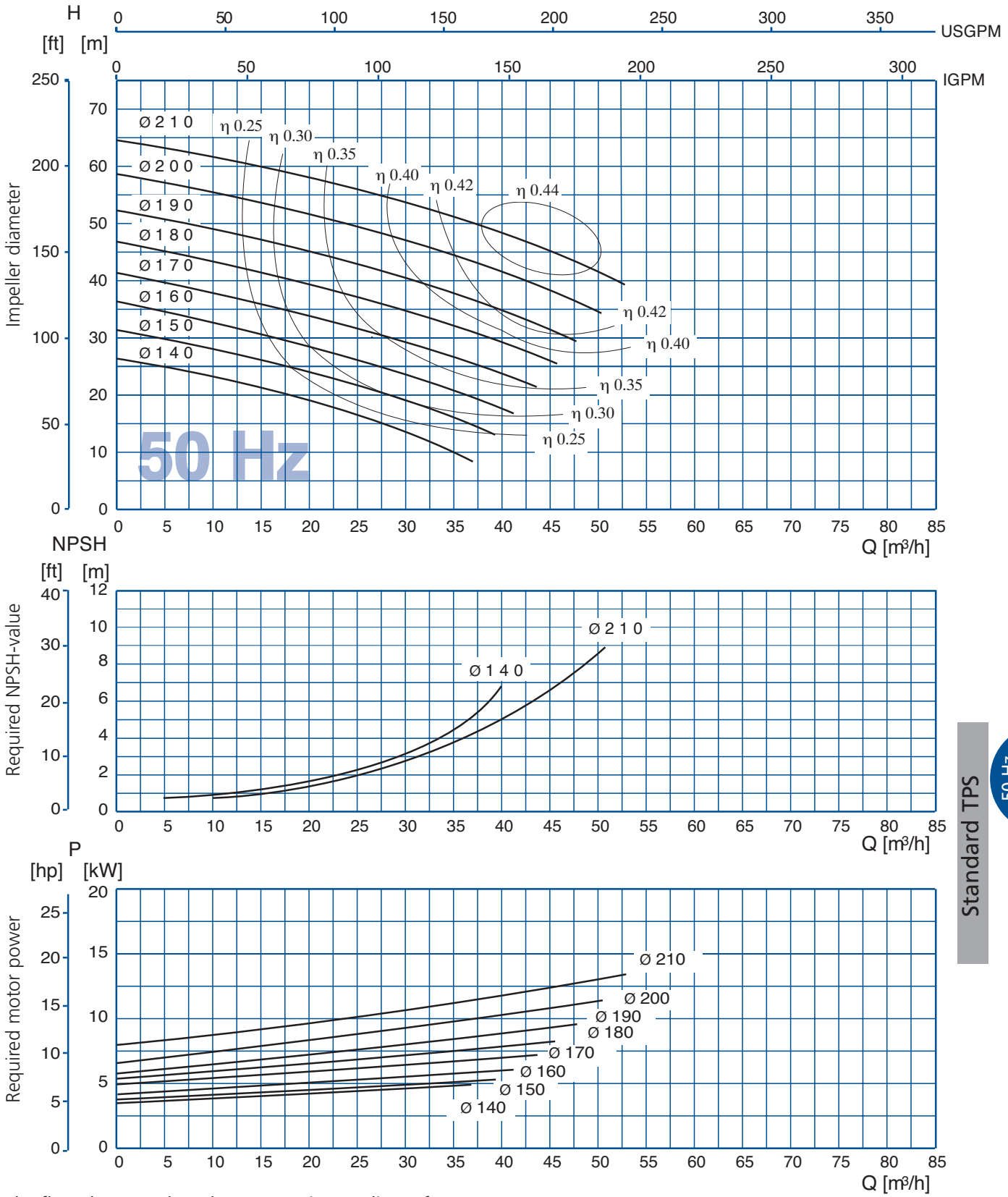


TP 3050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	729	600.5	133	335	403	103	227	160	25.5	90	155	85	161.5	25.5
112M (4 kW + 5.5 kW)	729	622.5	133	335	403	103	227	190	25.5	102	155	85	161.5	25.5
112M (7.5 kW)	729	644.5	133	335	403	103	227	190	25.5	102	155	85	161.5	25.5
132 M	830	740	153	410	444	103	332	216	25.5	122	155	85	161.5	25.5
160 L	999	886.5	183	640	598	103	408	254	25.5	150	155	110	161.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

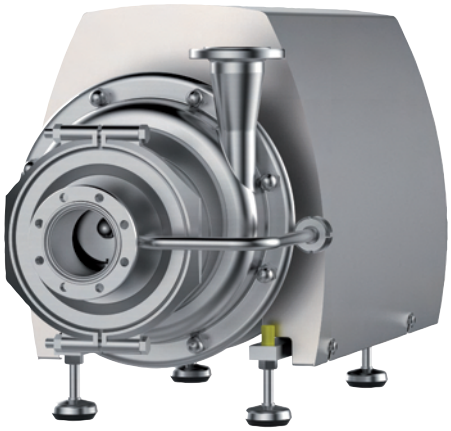
Performance curves, centrifugal pump, type TPS 3050, 2-pole (n=2,900 min^{-1}), 50 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

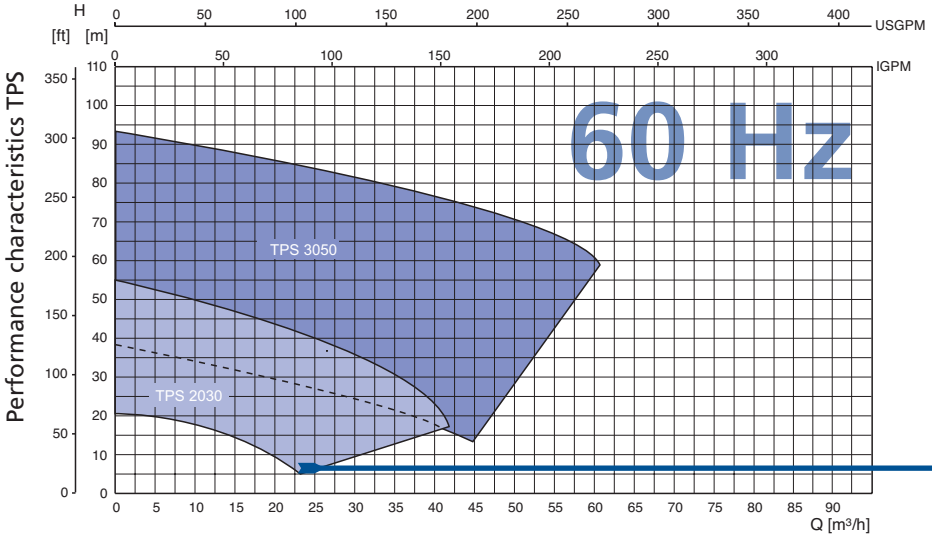
Standard version, centrifugal pump, type TPS, 2-pole (n=3,500 min^{-1}), 60 Hz

Standard version	**2 pole/60Hz**
Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Depending on pump size
Mechanical seal	Single-acting, material: C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Standard equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 69 m³/h
Pump head	max. 95 m w.c.



TPS 2030 und TPS 3050

2-pole (n=3,500 min^{-1}), 60 Hz



Example of a standard selection

Code	T	P	S	2	0	3	0	2	6	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4		5			6			7			8			9			10		11	12	13	14	15	16	17

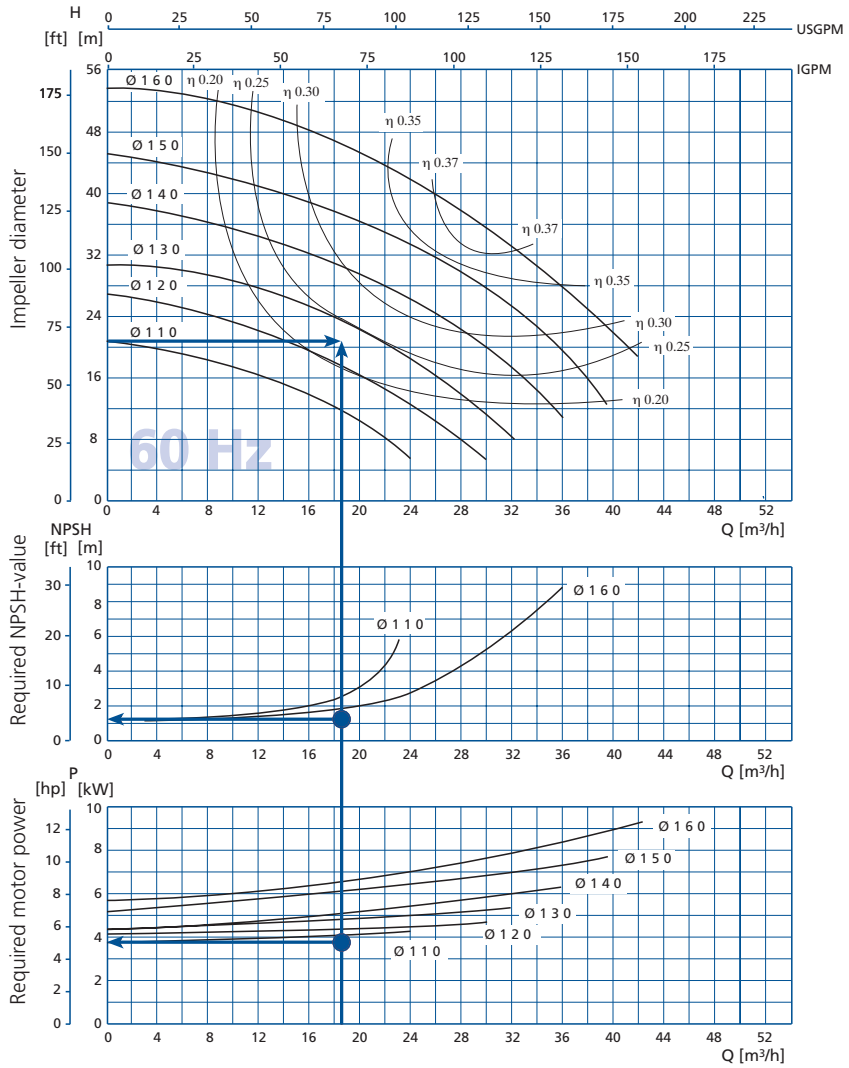
Standard version, for other versions see options

Example	Pos	Designation	Code of selection characteristics	
TPS2030	1.	Type	TPS 2030	Selected values determined by the pump selected
2	2.	Speed	2 = 2 pole	
60	3.	Frequency	60 = 60 Hz	
110	4.	Impeller	110 = 110 mm, 120 = 120 mm, 130 = 130 mm, 140 = 140 mm, 145 = 145 mm, 150 = 150 mm, 155 = 155 mm, 160 = 160 mm	Selection using the characteristic curves
022	5.	Motor power	022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 110 = 11.0 kW (IEC 132M)	

Impeller selection in accordance with capacity and pump head

Motor output selection in accordance with capacity and pump head

Performance curves, centrifugal pump, TPS 2030 (2-polig / 60 Hz)



Standard TPS

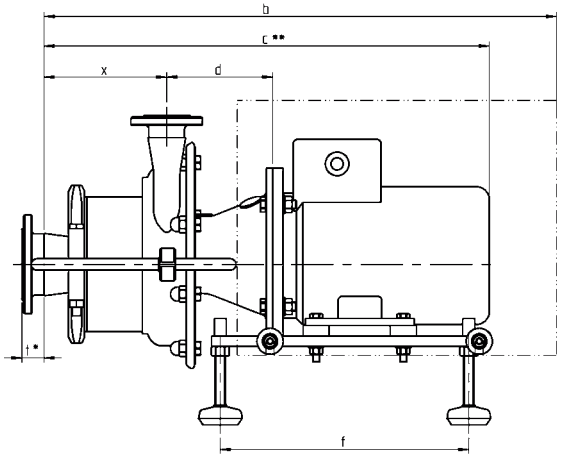
60 Hz 2-pole

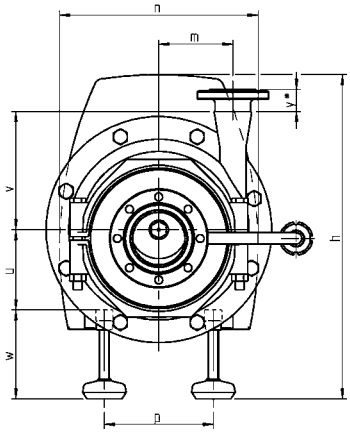
Standard version, centrifugal pump, type TPS 2030, 2-pole (n=3,500 min^{-1}), 60 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 40
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 36 m³/h
Pump head	max. 52 m w.c.
Housing pressure	max. 16 bar

Code	T	P	S	2	0	3	0	2	6	0						D	N	N	F	K	0	6	5	0	4	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4			5		6			7			8			9			10		11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TPS2030	1.	Type	TPS 2030			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
110	4.	Impeller	110 = 110 mm	120 = 120 mm	130 = 130 mm	140 = 140 mm
			145 = 145 mm	150 = 150 mm	155 = 155 mm	160 = 160 mm
022	5.	Motor power	022 = 2.2 kW (IEC 90L) 030 = 3.0 kW (IEC 100L) 040 = 4.0 kW (IEC 112M) 055 = 5.5 kW (IEC 112M) 075 = 7.5 kW (IEC 112M) 110 = 11.0 kW (IEC 132M)			



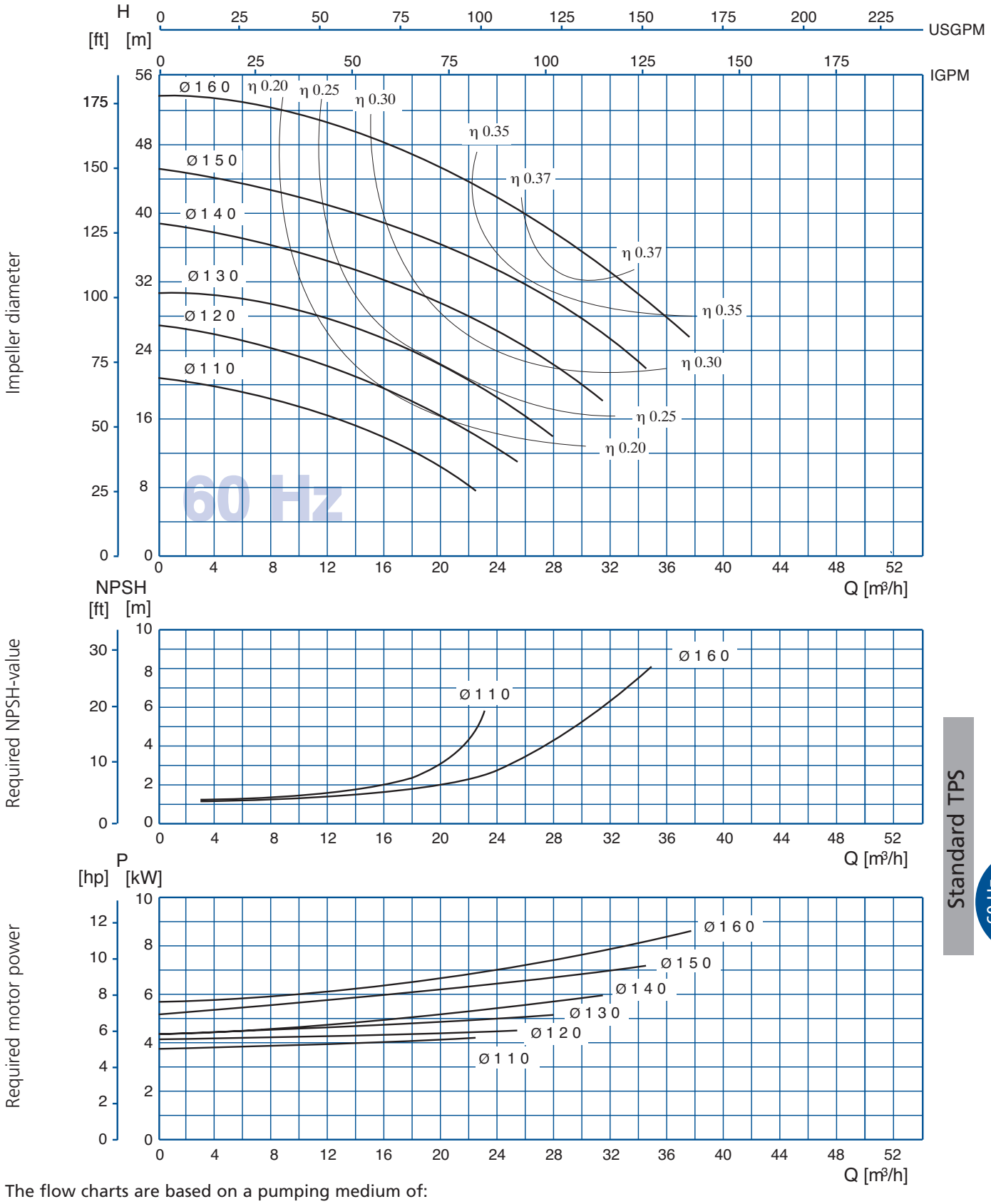


TP 2030 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
90L	594	529	121.5	285	352	85	227	140	25.5	80	135	82	140.5	25.5
100L	706	578	131.5	335	403	85	227	160	25.5	90	135	85	140.5	25.5
112M (4 kW + 5.5 kW)	706	600	131.5	335	403	85	227	190	25.5	102	135	85	140.5	25.5
112M (7.5 kW)	706	622	131.5	335	403	85	227	190	25.5	102	135	85	140.5	25.5
132M	808	717.5	152	410	444	85	332	216	25.5	122	135	85	140.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TPS 2030, 2-pole (n=3,500 min^{-1}), 60 Hz



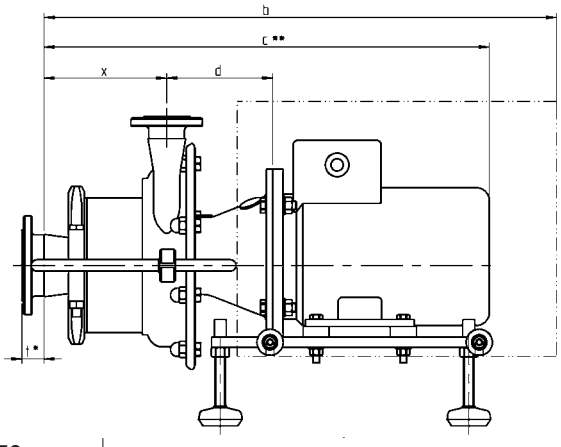
The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

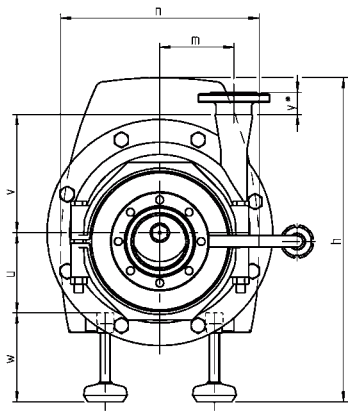
Standard version, centrifugal pump, type TPS 3050, 2-pole (n=3,500 min^{-1}), 60 Hz

Materials	Pump housing, 316L (1.4404), deep-drawn impeller, 316L (1.4409), precision casting
Connections	DIN 11853-2 hygienic grooved flange (flange connection optional)
Nominal width of connections	Suction port (SS), DN 65; Pressure port (DS), DN 50
Mechanical seal	Single-acting, material C / SIC / EPDM
Static seals	EPDM (FDA, USP Class VI)
Equipment	Stainless steel protection hood and base frame with height-adjustable calotte-type feet
Motor	Standard IEC motor, 3-phase 460V/±5%, IM B35, IP55, ISO class F, incl. thermistor, IE3
Documentation	Operating instructions, declaration of conformity
Flow rate	max. 69 m³/h
Pump head	max. 95 m w.c.
Housing pressure	max. 16 bar

Code	T	P	S	3	0	5	0	2	6	0						D	N	N	F	K	0	6	5	0	5	0	E	K	E	-	1	-	J	J	-
Position	1							2	3		4		5			6			7			8			9			10			11	12	13	14	15	16	17

Example	Pos	Designation	Code of selection characteristics			
TPS3050	1.	Type	TPS 3050			
2	2.	Speed	2 = 2 pole			
60	3.	Frequency	60 = 60 Hz			
140	4.	Impeller	140 = 140 mm	150 = 150 mm	160 = 160 mm	170 = 170 mm
			175 = 175 mm	180 = 180 mm	185 = 185 mm	190 = 190 mm
			195 = 195 mm	200 = 200 mm	205 = 205 mm	210 = 210 mm
030	5.	Motor power	030 = 3.0 kW (IEC 100L)			
			040 = 4.0 kW (IEC 112M)			
			055 = 5.5 kW (IEC 112M)			
			075 = 7.5 kW (IEC 112M)			
			110 = 11.0 kW (IEC 132M)			
			150 = 15.0 kW (IEC 132M)			
			212 = 21.2 kW (IEC 160L)			
			220 = 22.0 kW (IEC 160L)			



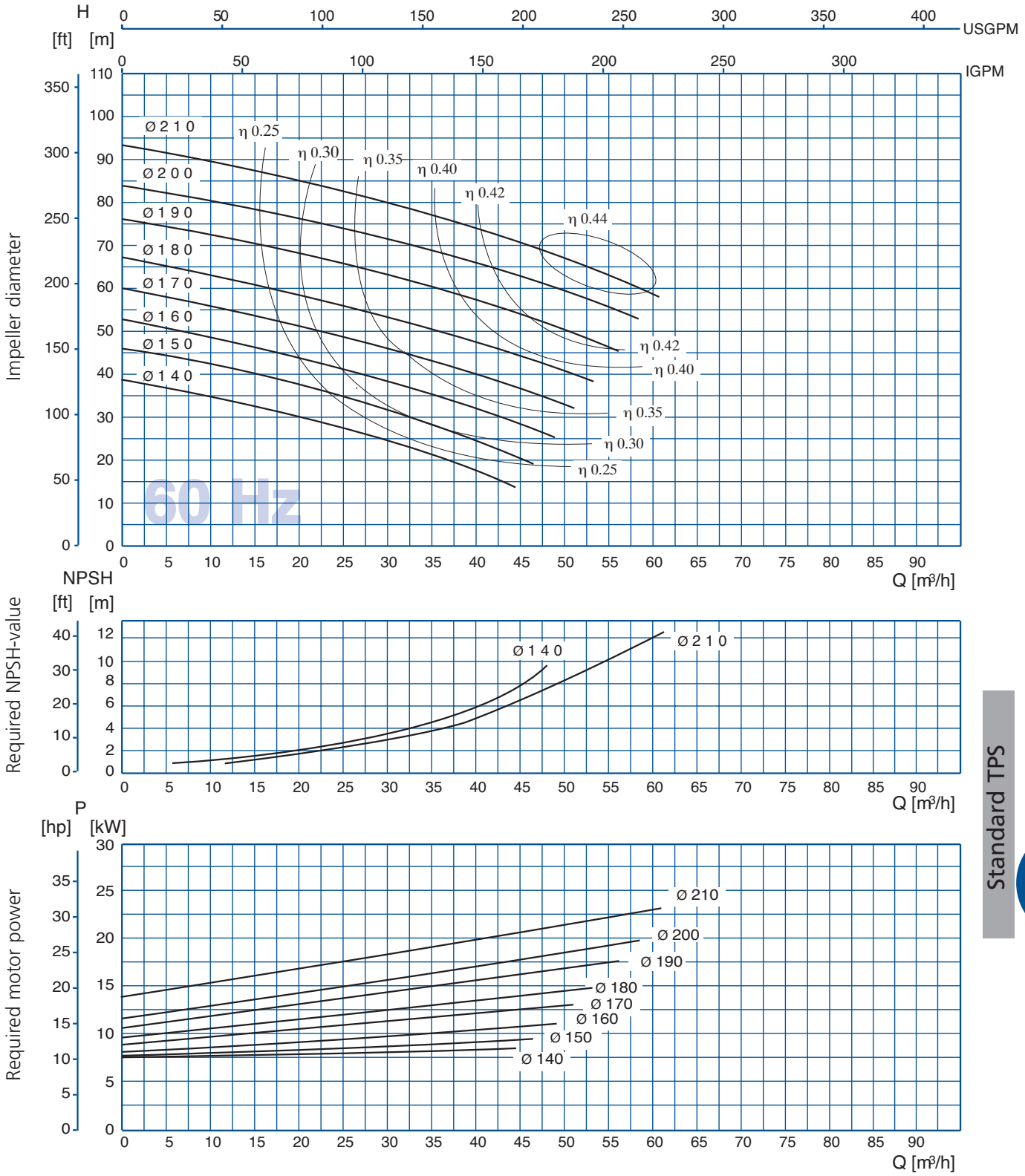


TP 3050 Motor size	b	c**	d	f	h	m	n	p	t*	u	v	w	x	y*
100L	729	600.5	133	335	403	103	227	160	25.5	90	155	85	161.5	25.5
112M (4 kW + 5.5 kW)	729	622.5	133	335	403	103	227	190	25.5	102	155	85	161.5	25.5
112M (7.5 kW)	729	644.5	133	335	403	103	227	190	25.5	102	155	85	161.5	25.5
132 M	830	740	153	410	444	103	332	216	25.5	122	155	85	161.5	25.5
160 L	999	886.5	183	640	598	103	408	254	25.5	150	155	110	161.5	25.5

(*) Dimensions t and y only apply to the hygienic grooved flange acc. to DIN 11853-2 for the relevant standard nominal width
(**) Dimension c refers to our standard motors

All dimensions in mm

Performance curves, centrifugal pump, type TPS 3050, 2-pole (n=3,500 min^{-1}), 60 Hz



The flow charts are based on a pumping medium of:
densitiy 1 kg/dm³, viscosity 1 mm²/s, temperature 15°C, tolerance ±7%

Standard															D	N	N	F	K	-	-	-			-	E	K	E	-	1	-	J	J	-
Options																																	
Position	1							2	3	4		5			6		7				9		10		11	12	13	14	15	16	17		

Example	Pos	Designation	Code of selection characteristics					
	6.	Nominal width standard	DN = DIN 11850 OD = Zoll OD					
				DN 40, 50, 65, 80	DN 100	DN 125, 150	OD 1.5", 2" 2.5", 3"	OD 4"
GSK	7.	Connection type *1)	NFK = Hygienic grooved flange DIN 11853-2 (standard)				*2)	*2)
			ASK = Hygienic flange connection DIN 11853-2, cpl.				*2)	*2)
			GO = Male part DIN 11851				*2)	*2)
			GK = Pipe connection DIN 11851, cpl.				*2)	*2)
			TN = VARIVENT® grooved flange					
			TK = VARIVENT® flange connection					
			GSK = Hygienic male part DIN 11853-1			*2)	*2)	*2)
			AVK = Hygienic union DIN 11853-1, cpl.			*2)	*2)	*2)
			CO = Tri-Clamp analogous to DIN 32676 / ISO 2852		DN not available			
			SMG = SMS male part		DN not available			
			SMK = SMS connection cpl.		DN not available			
	8.	Connection sizes suction side (SS)	040 = DN 40	112 = 1.5" OD	TP 1020			
			050 = DN 50	200 = 2" OD	**TP 1020**	TP 2050		
					TP 2030	TP 3050		
			065 = DN 65	212 = 2.5" OD	**TP 1540**	**TP 2575**	TP 7060	
					TP 2030	**TP 3050**	**TPS 2030**	
					TP 2050	TP 5060	**TPS 3050**	
			080 = DN 80	300 = 3" OD	TP 1540	TP 3050	TP 8080	
					TP 2050	**TP 5060**		
					TP 2575	**TP 7060**		
			100 = DN 100	400 = 4" OD	**TP 8080**	TP 16040		
			125 = DN 125		TP 16040			
			150 = DN 150		**TP 16040**			
	9.	Connection sizes Pressure side (DS)	040 = DN 40	112 = 1.5" OD	**TP 1020**	**TP 2030**		
					TP 1540	**TPS 2030**		
			050 = DN 50	200 = 2" OD	TP 1020	**TP 2050**	TPS 2030	
					TP 1540	**TP 2575**	**TPS 3050**	
					TP 2030	**TP 3050**		
			065 = DN 65	212 = 2.5" OD	**TP 5060**	**TP 7060**	**TP 8080**	
			080 = DN 80	300 = 3" OD	TP 5060	TP 7060	TP 8080	
			100 = DN 100	400 = 4" OD	**TP 16040**			

*1) For TP 16040 on request

*2) Versions available on request

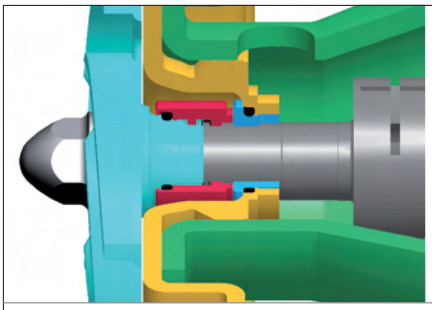
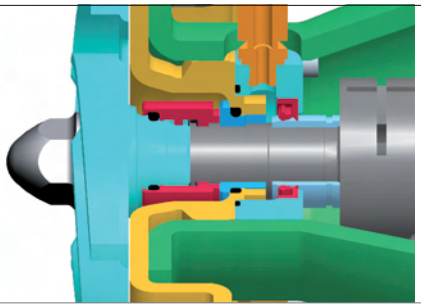
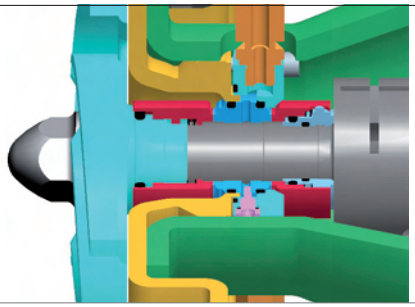
Standard															D	N	N	F	K	-	-	-			-	E	K	E	-	1	-	J	J	-
Options																																	
Position	1							2	3	4		5			6		7		8		9		10		11	12	13	14	15	16	17		

Example	Pos	Designation	Code of selection characteristics
			TP 1020 TP 2575 TPS 2030 TP 1540 TP 5060 TPS 3050 TP 2030 TP 7060 TP 2050 TP 8080 TP 3050 TP 16040
PS	10.	Design / Material of mechanical seal	**Single-acting** EK = carbon / silicon carbide (standard) EH = carbon / chrome molybdenum ES = silicon carbide / silicon carbide **Single acting with flush** QK = with flush - carbon / silicon carbide QH = with flush - carbon / chrome molybdenum QS = with flush - silicon carbide / silicon carbide **Double-acting** PS = with flush - silicon carbide / silicon carbide
F	11.	Static seals	E = EPDM (Standard) F = FKM
D	12.	Drainage	- = no drainage valve (standard) D = drainage valve type VTP *3) C = with drainage connection Tri-Clamp DN 15 *3) (analogous to 32676 / ISO 2852)
3	13.	Product contact Surfaces	1 = Ra ≤ 3.2µm (Standard) 3 = Ra ≤ 0.8µm electro-polished
X	14.	Explosion protection class*4)	**Motor power** **0.75 kW 1.1 kW 1.5 kW 2.2 kW 3.0 kW 4.0 kW 5.5 kW** - = without (standard) X = with ATEX (II2G Eex d IIB T4) **Motor power** **7.5 kW 11.0 kW 15.0 kW 18.5 kW 22.0 kW 30.0 kW 37.0 kW 45.0 kW** - = without (standard) X = mit ATEX (II2G Eex d IIB T4)
J	15.	Stainless steel protection	**Motor size** **80 90S/90L 100L 112M 132S/132M** J = with (standard) N = without **Motor size** **160L 200L 225M** J = with (standard) N = without
J	16.	Calotte-type frame	**Motor size** **80 90S/90L 100L 112M 132S/132M** J = with (standard) N = without **Motor size** **160L 200L 225M** J = with (standard) N = without
Z	17.	Certificates	- = without (standard) O = surface measurement report Z = acceptance test certificate 3.1 DIN/EN 10204

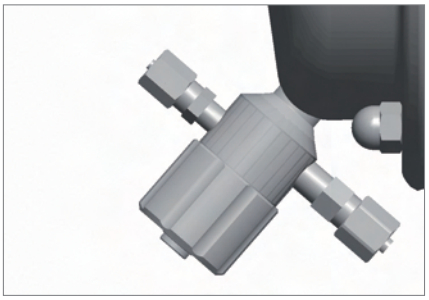
*3) 2 pieces for TPS Pumps

*4) 30 kW ATEX on request

Mechanical seal design options

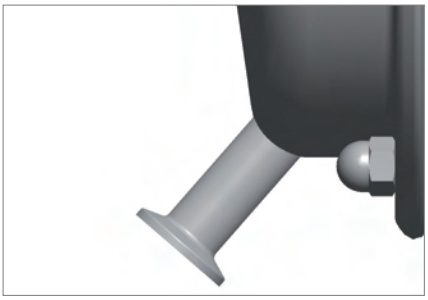
		
Single-acting (standard) mechanical seal	Single-acting, flushed (Quench) mechanical seal	Double-acting mechanical seal
	Slide ring holder, Shaft sealing ring and shaft protection sleeve	Second slide ring and counter ring on both sides
	Crystallizing and highly viscous products (≥100 cP)	Hazardous, abrasive and dilatant fluids
Two sizes for the entire TP(S) program, easy to replace		
Encapsulated spring, seal ring, counter ring, dead-space free		

Drainage



Drainage valve type VTP

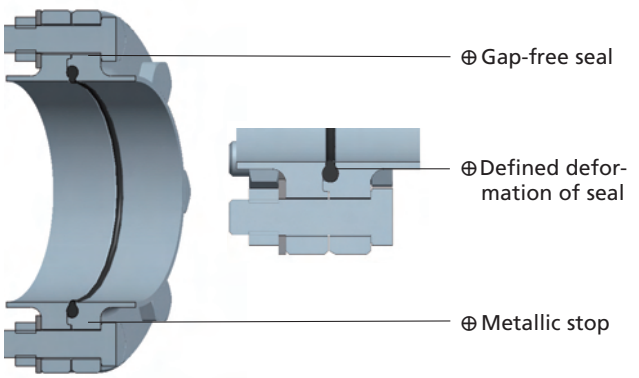
For complete draining of the pump housing without any dead corners. Safe closing function, even in the event of pressure surges in the system.



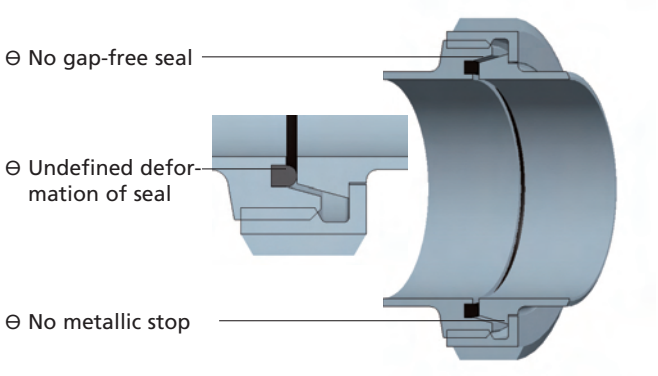
Drainage connector Tri-Clamp 1/2“, DN 15

Variable connection for individual draining

Advantages of hygienic flange connection compared with dairy union

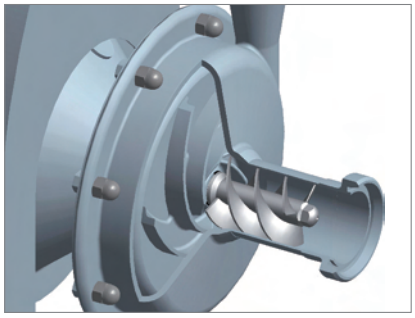


Hygienic flange connection (DIN 11853-2)

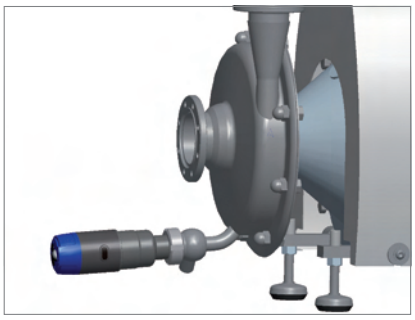


Dairy union (DIN 11851-1)

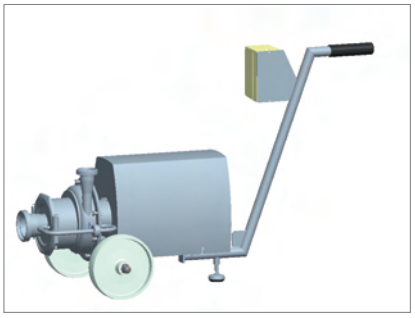
Special versions for TP and TPS series on request



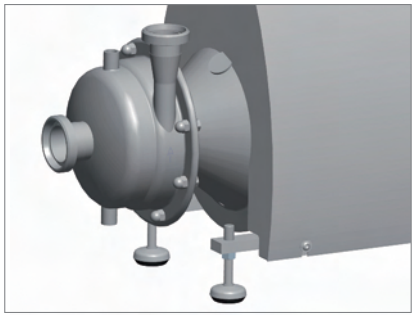
Inducer for TP series



VESTA® valves for draining



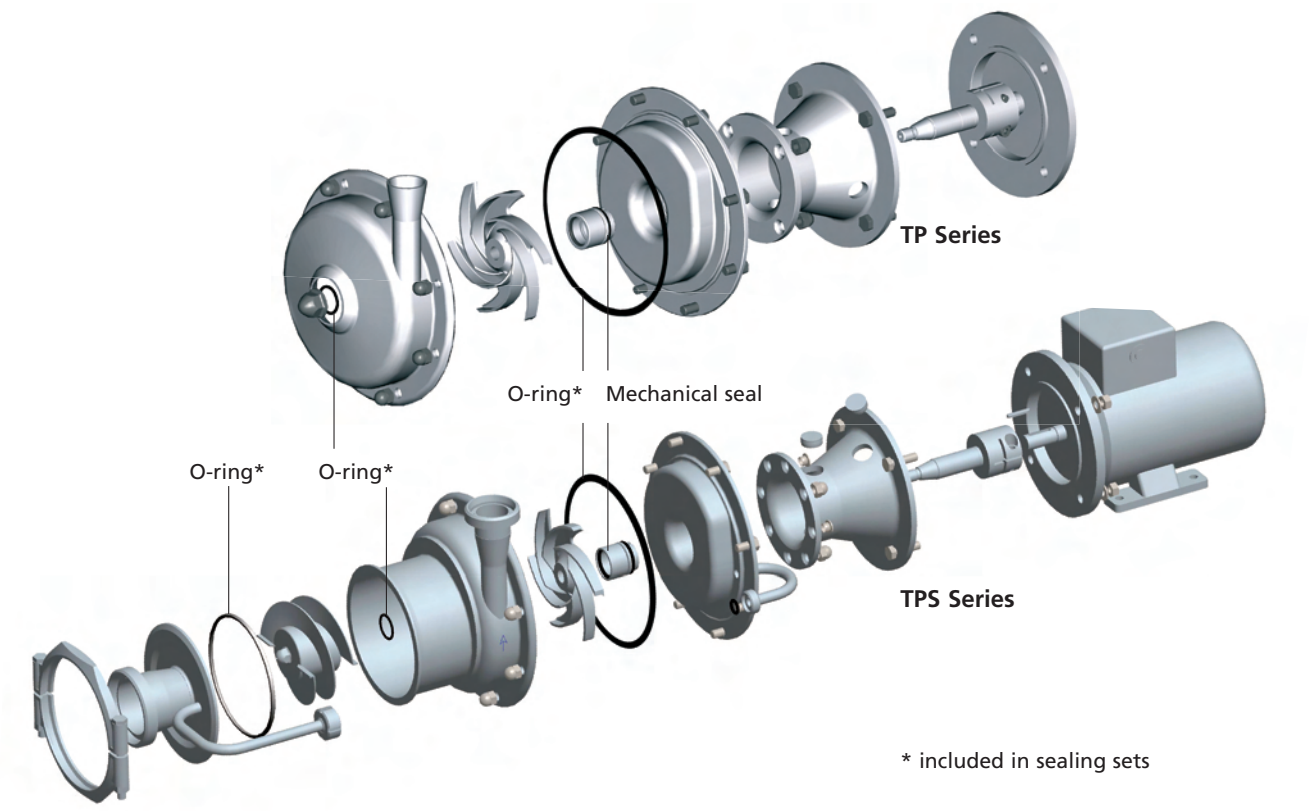
Carriage for pump



Heating jacket for TP series

Also available on request:

- Other connection types
- Noise protection hood
- Other motor designs and manufacturers



Sealing sets

Pump type	EPDM sealing set	FKM sealing set
	Part number	Part number
TP 1020	244-000125	244-000128
TP 1540	244-000126	244-000129
TP 2030	244-000127	244-000130
TP 2050	244-001024	244-001032
TP 3050	244-000221	244-000222
TP 5060	244-000458	244-000466
TP 7060	244-001054	244-001055
TP 2575	244-000467	244-000468
TP 8080	244-000336	244-000384
TP 16040	244-000519	244-000520
TPS 2030	244-000696	244-000697
TPS 3050	244-000785	244-000786

Mechanical seals

Mechanical seal		Pump type	
Configuration		TP 1020; TP(S) 2030; TP 1540; TP 2050; TP(S) 3050	TP 5060; TP 7060; TP 2575; TP 8080; TP 16040
Type	Material	Part number	Part number
EW/QU*	C/SIC/EPDM	244-000045	244-000345
EW/QU*	C/CrMo/EPDM	244-000531	244-000533
EW/QU*	SIC/SIC/EPDM	244-000043	244-000382
EW/QU*	C/SIC/FKM	244-000044	244-000381
EW/QU*	C/CrMo/FKM	244-000532	244-000534
EW/QU*	SIC/SIC/FKM	244-000042	244-000383
DW	SIC/SIC/EPDM	244-000135	244-000378
DW	SIC/SIC/FKM	244-000136	244-000379
Shaft seal		100-000014	924-342

* For mechanical seal QU is recommended to change the shaft seal in addition

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Pumps Checklist

1	Company / Cust. No:			
	Contact:			
	Phone:	Fax:	E-Mail:	
2	Project / Tag No:			

Pump performance	3	Flow parameters*	Flow rate: (m³/h)	Pressure: bar
	4	Operating frequency (if not given "50Hz" assumed)	☐ 50 Hz	☐ 60 Hz
	5	Fluid	Viscosity: (if not given "1 cP" assumed)	Density: (if not given "1 kg/dm³" assumed)
	6	Application*	☐ nonself-priming (TP Series)	☐ self-priming (TPS Series)

Gasket selection	7	Mechanical seals (if unknown no. 9 essential!)	Execution:	☐ single acting (Standard)	☐ single flushed (Quench) ☐ double flushed
			Material:	☐ C / SIC (Standard)	☐ SIC / SIC (double floushes only in SIC / SIC!)
	8	Static seals (if unknown no. 9 essential!)	Material:	☐ EPDM (Standard)	☐ FKM (Viton®)
	9	Fluid	Medium:		Temperature: Viscosity:

10	Connections (suction and pressure nozzles)	☐ Hygienic grooved flange DIN 11853-2 (standard) ☐ DIN 11853-2 (Hygienic flange) ☐ VARIVENT® flange	
		☐ SMS ☐ other:	☐ complete, incl. counterpiece

11	Version	☐ with stainless steel cover		☐ stainless steel cover with acoustic insulation
		☐ with adjustable calotte feet	or	☐ carrier without electrical connection
				☐ carrier with electrical connection (incl. safety switch and 10 m cable and plug)

12	Actuator / Motor	existing supply voltage	☐ 3~ 400V/50Hz (Europe)	☐ 3~ 460V/60Hz
			☐ 3~ 200V/60Hz (e.g. Japan)	☐ 3~ 200V/50Hz (e.g. Japan)
			☐ 3~ 380V/60Hz (e.g. Brazil)	☐ other:
		Manufacturer:	☐ GEA Tuchenhagen Standard or	☐ ABB
		Protection class:	☑ IP 55 (Standard)	
		ATEX:	☐ II G Eex d IIB T4 or	☐ II G Eex de IIB T4
		Adjustment control:	☑ Thermistor (PTC) (Standard)	

13	Options	Surface: (Product contacted)	☐ matt blank (Standard)	☐ Ra ≤ 0.8 µm
		Drain:	☐ Drainvalve VTP or	☐ Drainpipe DN 15 with TriClamp
		Heating:	☐ Heating- or cooling jackets	
		Certificates:	☐ 3.1 Certificate DIN/EN 10204	☐ Performance test certificate
			☐ Surface measurement report	

14	Marks / Other	

* Please fill out all required fields

The checklist can also be found on www.tuchenhagen.com

General Sales Terms and Conditions of GEA Tuchenhagen GmbH

(Edition May 2003)

Any contract placed with us (hereinafter referred to as "the Seller") by any private-law corporation, company or other business or any public-law legal person or other entity (hereinafter referred to as "the Buyer") shall exclusively be subject to these Standard Sales Terms and these Standard Sales Terms shall be applicable to any transaction agreed between the Seller and the Buyer thereafter even if no express reference to these Standard Sales Terms is made in connection with any such further transaction. The Seller hereby expressly refuses to accept any standard terms of the Buyer referred to in any correspondence or other document placing any such order. Notwithstanding any reference of the Buyer to any standard terms of the Buyer, the Buyer shall, upon the acceptance of any delivery by the Seller to the Buyer, be deemed to have accepted these Standard Sales Terms. No standard terms of the Buyer shall be applicable to any contract or order placed by the Buyer with the Seller unless such terms have been accepted expressly by the Seller in writing and the performance of any such contract or order by the Seller shall not be deemed to be an acceptance of any terms of the Buyer by the Seller.

Unless otherwise provided for in these Standard Sales Terms, the relationship between the Seller and the Buyer shall be governed by the provisions of applicable law.

If these Standard Sales Terms are otherwise inapplicable or ineffective for any reason whatsoever, the sale of any goods delivered by the Seller to the Buyer ("the Goods") shall be subject to the reservations of Clause 6 in Article V hereinbelow.

Article I General Terms

1. Any bid or offer submitted by the Seller to the Buyer shall not be binding upon the Seller and unless otherwise expressly agreed upon by the Seller and the Buyer, no contract placed by the Buyer shall be effective unless expressly accepted by the Seller in writing.

2. The title to any sample, drawing or other document or information, whether reduced to writing or in electronic form, including but not limited to any copyrights or other rights associated therewith, which may be provided by the Seller to the Buyer shall remain vested in the Seller and no such sample, drawing or other document or information may be made accessible by the Buyer to any third party.

3. Any performance or other data or description of any Goods by the Seller in any brochure, price list, bid, proposal, offer or any other document which may form part of any such bid, proposal or offer shall be deemed to be approximate in accordance with standard industry practices and shall not be binding upon the Seller unless expressly accepted as binding by the Seller and the Seller does not make any warranties whatsoever with respect to any properties of any of the Goods.

4. Commercial terms agreed between the Seller and the Buyer shall be interpreted in accordance with Incoterms 2000.

Article II Price and Payment

1. Unless expressly otherwise agreed upon, any price agreed between the Seller and the Buyer shall be ex works exclusive of any packaging. Each such price shall be exclusive of any sales tax which shall be billed by the Seller in addition to said price at the rate which may be applicable at any time and from time to time.

2. Unless otherwise agreed upon, the price of any of the Goods shall be paid without any deduction for any reason whatsoever as follows:
   - One third upon the receipt of the Seller's acceptance of the contract placed by the Buyer
   - One third upon the receipt by the Buyer of the Seller's notice that all main components of the Goods are ready for shipment
   - The remaining sum upon the transfer of the risks of the Goods to the Buyer and upon the issuance of the Seller's final invoice for the Goods

3. The Buyer shall not have the right to retain any payment due to the Seller for any reason whatsoever and shall not deduct from any moneys due to the Seller any money owed or allegedly owed by the Seller to the Buyer unless any such counterclaim is undisputed by the Seller or has been awarded to the Buyer by a judgment from which no appeal can be taken.

4. If, during the period between the date on which any contract was awarded by the Buyer to or any order was placed by the Buyer with the Seller and the date on which production for the performance of said contract or order commences, any labor, material and/or production costs associated with said contract or order increase for any reason for which the Seller is not liable and the cost of any of the Goods (as defined in Section 255 of the German Commercial Code) as determined in accordance with generally accepted German accounting principles is shown by the Seller to have risen by more than twenty percent (20%) since the date of contract award or order placement, then the Seller shall have the right to redetermine the price of any such Goods payable by the Buyer under said contract or order provided however that the Seller shall not be entitled to increase said price by more than the increase in said cost.

5. The Buyer shall pay any amount owing to the Seller within seven (7) calendar days from the due date for the payment of said amount.

Article III Delivery Time and Late Delivery

1. The time available to the Seller for the delivery of the Goods ("Delivery Time") shall be as agreed between the Parties in the contract placed. The Seller shall not be obligated to deliver within said Delivery Time unless all technical and commercial details have been agreed upon order placement and the Buyer performs all of its obligations under said contract or order such as, without limitation, any obligation

to obtain necessary certificates, approvals or permits from agencies or authorities and the obligation to make any advance payment provided that any non-satisfaction of any of the preceding conditions shall operate to increase the Delivery Time reasonably and further provided that no delay for which the Seller may be liable shall operate to increase the Delivery Time.

2. The Seller shall not be obligated to deliver any Goods within the Delivery Time unless the Seller receives deliveries from its suppliers as and when ordered by the Seller provided that the Seller shall notify the Buyer as soon as reasonably possible of any delay in delivery it may become aware of.

3. The Seller shall be deemed to have delivered within the Delivery Time if the Goods have left the Seller's works prior to the expiry of the Delivery Time or the Seller has notified the Buyer prior to the expiry of the Delivery Time that the Goods are ready for Delivery.

4. If the Buyer fails to make any payment to the Seller under any contract or order whatsoever when said payment is due, the Seller shall, upon notice to the Buyer, have the right to discontinue performance under the contract awarded or the order placed for the Goods until the payment the Buyer has failed to make when due has been received provided however that the Seller shall not have said right if the payment so due but not made is immaterial.

5. If the Seller is unable to deliver any Goods within the Delivery Time for reasons of force majeure, due to any labor dispute or due to any circumstances beyond the reasonable control of the Seller then the Delivery Time shall be extended reasonably. The Seller shall notify the Buyer of the commencement and the end of any such circumstances as soon as may be reasonably possible.

Article IV Transfer of Risk and Acceptance

1. Unless expressly otherwise agreed upon between the Seller and the Buyer, the Goods shall be delivered ex works.

2. If the Goods to be delivered by Seller to the Buyer are divisible, then the Seller shall have the right to deliver and to invoice to the Buyer said Goods in reasonable parts and the Buyer shall not have the right to retain payment for any such reasonable part on the grounds of the non-delivery of any other parts of the Goods.

3. If any delivery by the Seller to the Buyer requires acceptance by the Buyer under any express provision of the order placed by the Buyer or at law, then any delivery by the Seller to the Buyer shall be deemed to have been accepted by the Buyer if and in as far as
   - any Goods manufactured or processed by the Seller are, after delivery, sold to or allowed to be used by any third party or
   - any Goods manufactured or processed by the Seller are, after delivery, processed or mixed or combined with any other things with the agreement of the Buyer or
   - any Goods manufactured or processed by the Seller are, beyond trials or tests, used by the Buyer or by any third party with the agreement of the Buyer or
   - the Goods are accepted by any purchaser from the Buyer

   whatever may be earlier provided that any prior acceptance under the contract awarded or the order placed by the Buyer or at law shall take precedence over any acceptance under this Clause.

Article V Retention of Title

1. The title to all Goods delivered by the Seller to the Buyer shall remain vested in the Seller until the full payment of all accounts receivable by the Seller from the Buyer for any reason whatsoever provided that under current account arrangements the title so retained shall be deemed to be security for any balance owed to the Seller.

   The Buyer shall not dispose of any of the Goods the title to which is so vested in the Seller ("Title Reservation Goods") other than in the Buyer's ordinary course of business provided that the Buyer shall no longer have the right so to dispose of any Title Reservation Goods if and as soon as the Buyer fails to make payments when payments are due. The Buyer shall not have the right to pledge or to transfer by way of security the title to any Title Reservation Goods. The Buyer shall be obligated to maintain the rights of the Seller if the Title Reservation Goods are sold by the Buyer to any third party under credit arrangements. The Buyer shall promptly notify the Seller of any lien of attachment, execution or garnishment or any seizure or the like relating to any Title Reservation Goods.

   The Buyer hereby assigns to the Seller and the Seller hereby accepts the Buyer's assignment of any title to payment for any of the Goods resold by the Buyer to any purchaser and any security received by the Buyer from any such purchaser for any such payment provided however that the Buyer shall, subject to any notice to the contrary given by the Seller, have the right to collect any such payment and to enforce any such security at its cost. Upon the request of the Seller, the Buyer shall notify the Seller of the debtors against which titles to payment so assigned are held, the securities provided therefor, the type and the amount of the debt of each such debtor and the type and the amount of each such security and deliver to the Seller all documents which may be necessary to collect any amount so owed by any such debtor. Upon notice to the Buyer, the Seller shall have the right to notify any such debtor of the assignment of the title to payment by the Buyer to the Seller hereunder.

2. If the Goods are sold by the Buyer to any purchaser together with any other goods the title to which is not vested in the Seller, then a share of the full title to payment of the Buyer under said sale to said purchaser equal to the price of said Goods agreed between the Buyer and the Seller shall be deemed to have been assigned by the Buyer to the Seller.

3. Upon the request of the Buyer, the Seller shall waive any title to Goods delivered by the Seller to the Buyer in as far as the value of all Goods the title to which has been retained by the Seller hereunder exceeds one hundred ten percent (110%) of the value of all titles to payment the Seller holds against the Buyer.
4. The Buyer shall, as of the transfer of risks associated with Title Reservation Goods, insure all Title Reservation Goods against any damage or loss or destruction as a result of any fire, inundation, flooding or theft or any destruction or loss or damage in transit provided that the Buyer shall notify the Seller promptly of any such destruction or loss or damage and shall, upon the request of the Seller, provide to the Seller any documentation of any such loss or damage such as, without limitation, any expert report on said destruction or loss or damage, the names of the insurers of said Goods and, as requested by the Seller, the insurance policy or policies relating to the Title Reservation Goods or insurance certificates issued by the insurer or the insurers for the Title Reservation Goods. The Buyer hereby assigns to the Seller, conditionally as of the time of any such destruction or loss of or damage to any Goods, any title against any insurer or any party liable for any such destruction or loss or damage to a maximum amount equal to the price agreed for any such Goods affected by any such destruction or loss or damage by way of security for all moneys owed by the Buyer to the Seller.

5. Any processing of any Title Reservation Goods by the Buyer shall be for the Seller and the Seller shall be deemed to be the processor for the purposes of Section 950 of the German Civil Code. If Title Reservation Goods are processed, combined or mixed with other goods the title to which is not vested in the Seller, then a fraction of the title to the new product equal to the ratio between the price invoiced to the Buyer for the Goods so processed, combined or mixed and the sum of the price invoiced to the Buyer for the Goods so processed, combined or mixed and the price or prices invoiced to the Buyer for the other goods so processed, combined or mixed shall be vested in the Seller. The Buyer shall be the custodian of any such new product the title to which is vested in the Seller in total or in part for the Seller. If any such Title Reservation Goods are processed, combined or mixed with goods of the Buyer and the goods of the Buyer are the main constituents of the new product thereby created, then the Buyer shall be deemed to have transferred to the Seller a fraction of the title to any such new product computed in accordance with the principles of the preceding sentence and shall be the custodian of said new product for the Seller.

   The provisions of Clauses 1 through 4 hereinabove applicable to Title Reservation Goods shall apply mutatis mutandis to any new product obtained by processing, combination or mixing in which the Seller acquires in total or in part a title through the operation of this Clause.

6. If these Standard Sales Terms have not been agreed effectively, any transfer of title to any of the Goods shall be subject to the Seller receiving the full price agreed between the Seller and the Buyer therefor.

Article VI Defects

1. General

1.1 If Section 377 or Sections 377 and 381 of the German Commercial Code (sales and contract manufacture agreements between business organizations as defined in Section 1 et seq, of the German Commercial Code) are applicable to the order placed, the Buyer shall notify the Seller promptly of any patent defect in any of the Goods provided that said notice shall be given no later than on the fourth (4th) working day following the delivery of said Goods. Any latent defect in any of said Goods shall be notified promptly by the Buyer to the Seller provided that said notice shall be given no later than on the fourth (4th) working day following the discovery of said defect. Each such notice of any defect in any of the Goods shall be in writing. The conditions applicable to any such notice and the effects of a late notice of any defect in any of the Goods shall furthermore be governed by the conditions of law (Sections 377, respectively 377 and 381 of the German Commercial Code),

1.2 If the Buyer is not a business organization, notice of any patent defect in any of the Goods delivered by the Seller to the Buyer shall be given by the Buyer to the Seller within two (2) weeks following the delivery of said Goods in the case of sales and contract manufacture agreements and within two (2) weeks following acceptance in the case of service agreements. The term provided for hereinbefore shall be deemed to have been complied with if said notice is forwarded by the Buyer within said term and received by the Seller within four (4) weeks from such delivery or acceptance as the case may be. The Buyer shall not be entitled to any remedy for any patent defect in any of the Goods if the Buyer fails to give notice as aforesaid unless and in as far as
- the Seller is liable for said defect due to willful act, neglect or omission, any act of bad faith or any gross negligence,
- said defect is covered by a warranty of the Seller in accordance with Section 443 of the German Civil Code or
- said defect is claimed in connection with loss of human life, injury, impairment of health or loss of freedom

provided that any liability of the Seller for any such defect shall be excluded in accordance with the provisions of law such as but not limited to the provisions of Section 640, paragraph 2, or Section 442 of the German Civil Code if the Buyer had known said defect or did not know said defect due to its own gross negligence.

2. Product Defects

2.1 If any of the Goods delivered by the Seller to the Buyer is defective, the Seller shall remedy said defect by repair or replacement. If said remedial action fails, then, subject to the provisions on damages in Article VII hereinbelow, the Buyer

shall be entitled to any of the remedies provided for by law.

2.2 If any remedial action is taken by the Seller, then the Seller shall bear all costs and expenses occasioned by the removal of said defect such as, without limitation, any transportation or traveling expenses or any labor or material costs provided however that any extra costs occasioned by the Buyer moving the Goods after delivery to a place other than the registered premises of the Buyer shall be carried by the Buyer unless the removal of said Goods is a use for which the Goods are intended.

2.3 The Buyer shall give the Seller the time and the opportunity which may be needed to remove any defect in any of the Goods provided that the Seller shall not be held liable for any consequences of not being given such time and opportunity.

2.4 Any repair or replacement by the Seller with respect to any Goods shall irrespective of the scope of any such repair or replacement not be deemed to be an acceptance of any liability for any defect in any of the Goods claimed by the Buyer provided that no persons other than legal representatives or procurators under Sect. 49 German Commercial Code ("Prokuristen") of the Seller shall have the right to accept any liability for any defect on behalf of the Seller.

2.5 If any defect in any of the Goods claimed by the Buyer shows not to be a defect for which the Seller is liable, then the Buyer shall reimburse to the Seller all costs reasonably incurred by the Seller to remove said alleged defect in good faith provided that material and labor costs so incurred by the Seller shall be reimbursed at the Seller's standard rates applicable at the time when the alleged defect was so removed.

2.6 The Buyer shall not be entitled to the removal by the Seller of any defect due to any of the following:
- Improper use of any Goods or use of any Goods for a purpose for which the Goods are not fit or defective installation or commissioning of the Goods by the Buyer or any third party
- Natural wear and tear, improper or negligent handling, improper maintenance or use of any unfit consumables or utilities
- Defective construction work, unsuitable foundations or chemical, electrochemical or electrical interference unless caused by the Seller

2.7 The Seller shall not be held liable for the consequences of any improper or inappropriate removal of any defect in any of the Goods by the Buyer or any third party or any modification to any of the Goods made without the Seller's prior consent.

3. Legal Defects

3.1 The liability of the Seller for the Goods not to be in breach of any third-party industrial property rights or copyrights shall be limited to the Federal Republic of Germany and the country in which the Buyer is registered. The Seller shall have no such liability for any other country, such as any country to which the Goods may be moved by the Buyer, unless such other country has been notified by the Buyer to the Seller prior to awarding the contract or placing the order for the Goods.

3.2 If the use of the Goods delivered by the Seller to the Buyer is in breach of any third-party industrial property rights or copyrights and the Seller is liable for said breach according to Clause 3.1 hereinabove, the Seller shall, at its cost, obtain for the Buyer the right to continue the use of said Goods or modify said Goods in a manner reasonably acceptable to the Buyer so that said Goods will no longer be in breach of any such industrial property rights or copyrights. If such rights cannot be obtained at reasonable commercial terms or within a reasonable period of time and if the Goods cannot be so modified, then the Buyer shall have the right, at its discretion, to rescind the contract awarded by the Buyer to the Seller or the order placed by the Buyer with the Seller or to obtain from the Seller a reasonable reduction in the price of said Goods.

The Seller shall in any such event further indemnify the Buyer against any undisputed claims or any claims determined by non-appealable court decision of the owners of such industrial property rights or copyrights.

3.3 Subject to Clause 3.4 hereinbelow, the Buyer shall not have the rights under Clause 3.2 hereinabove, unless
- the Buyer notifies the Seller promptly of any breach of industrial property rights or copyrights claimed by any third party,
- the Buyer reasonably supports the defense of any such claims by the Seller and allows the Seller to make modifications as referred to in Clause 3.2 hereinabove,
- the Buyer allows the Seller to defend at its own cost any such claim or to make any out-of-court settlement with respect to any such claim as the Seller may think fit,
- the legal defect is not due to any instructions given by the Buyer to the Seller and
- the legal defect is not due to any modification of the Goods by the Buyer or any use of the Goods not in conformity with the intended use.

3.4 Notwithstanding the limitations in Clauses 3.2 and 3.3 hereinabove, the provisions laid down by law shall apply, if and in as far as
- the title of the Buyer against the Seller is held under Section 478 or under Sections 651 and 478 of the German Civil Code,
- the Seller is liable for the breach of the industrial property rights or the copyrights due to any willful act, neglect or omission or any gross negligence on the part of the Seller,
- the Seller warranted (as provided for in Section 443 of the

German Civil Code) that the Goods will not violate any industrial property rights or copyrights or
- any damages claimed as a result of any breach of any industrial property rights or copyrights are on the grounds of any loss of life, injury, loss of health or loss of freedom.

4. Warranties Under Section 443 of the German Civil Code

No person other than a legal representative or a procurator under Sect. 49 German Commercial Code ("Prokuristen") of the Seller will have the right to agree any warranties according to Section 443 of the German Civil Code.

Article VII Liability and Damages

1. The Seller shall be liable for any willful acts, neglects and omissions and any gross negligence of its legal representatives and/or any other persons authorized by the Seller to perform any of the obligations of the Seller under any contract awarded to the Seller or order placed with the Seller ("Agent or Employee").

2. In the event of any ordinary negligence of any legal representative, Agent or Employee of the Seller, the liability of the Seller shall be limited to liability for any loss or damage the Seller foresaw when the contract was awarded or the order was placed by the Buyer or should have foreseen when the contract was awarded or the order was placed by the Buyer considering the circumstances the Seller knew or should have known when the contract was awarded or the order was placed by the Buyer.

   If and in as far as any loss or damage suffered by the Buyer due to the ordinary negligence of any legal representative, Agent or Employee of the Seller is compensated by any final payment by any insurer under any insurance contract against loss or indemnity concluded by the Buyer or for the Buyer such as, but not limited to any liability, all-risks, transportation, fire or business interruption insurance, the liability of the Seller shall be limited to any losses incurred by the Buyer as a result of any such insurance claim such as, without limitation, any increase in insurance premium. Any liability of the Seller for any loss or damage caused by the ordinary negligence of any of the legal representatives, Agents or Employees of the Seller and covered by a final insurance payment to the Buyer shall be excluded.

   Subject to the limitations provided for hereinbefore, any liability of the Seller for any loss or damage caused by the ordinary negligence of any legal representative, Agent or Employee of the Seller shall for each incident be limited to an amount of two hundred fifty thousand Euros (250,000 €).

3. The exclusions and limitations of liability provided for hereinabove shall not apply,
   - if and in as far as the Seller is held liable for any human loss of life, injury or loss of health,
   - if and in as far as the Seller is held liable under the German Product Liability Act or
   - if and in as far as the Seller is held liable under any warranty in accordance with Section 443 of the German Civil Code agreed by the Seller to provide security to the Buyer with respect to the loss or damage incurred by the Buyer.

4. The provisions of Clauses 1 through 3 hereinabove shall not operate to alter any of the provisions of law regarding the onus probandi.

Article VIII Limitation

1. The period of limitation with respect to any defect shall be a period of one (1) year provided that said period shall be five (5) years for any defect in any Goods serving as civil engineering structure or structures or any defect in any civil engineering structure caused by any Goods ordinarily used in civil engineering structures.

2. The period of limitation with respect to any other cause under the contract awarded or the order placed by the Buyer or any other cause outside said contract or order shall be a period of eighteen (18) months.

3. Notwithstanding the provisions of Clauses 1 and 2 hereinabove, the periods of limitation allowed by law shall apply, if and in as far as
   - the title held by the Buyer against the Seller is under Section 478 or Sections 651 and 478 of the German Civil Code,
   - the title of the Buyer is held on the grounds of any willful act, neglect or omission, any act of bad faith or any gross negligence on the part of any of the legal representatives, Agents or Employees of the Seller,
   - the title held by the Buyer against the Seller is on the grounds of any loss of life, injury, loss of health or loss of freedom of any person,
   - the title held by the Buyer against the Seller is under the German Product Liability Act,
   - the title held is on the grounds of a third party title in rem which grants any such third party a title to the surrender of the Goods (Sect. 438 para.1 subsubpara. a German Civil Code) or
   - the title held is on the grounds of any title recorded in any register of deeds (Sect. 438 para.1 subpara. b German Civil Code).

   The provisions in Clauses 1 and 2 shall further not apply if the title is held by the Buyer under a warranty of the Seller in accordance with Section 443 of the German Civil Code provided that any such title shall exclusively be subject to the provisions of Clause 4 hereinbelow.

4. The period of limitation applicable to any warranty of the Seller in accordance with Section 443 of the German Civil Code shall commence upon the delivery of the Goods to the Buyer or, if acceptance by the Buyer is required by law, upon the acceptance of the Goods by the Buyer provided that, in the event of bad faith, said period shall commence as provided for in Section 438, paragraph 3, of the German

Civil Code. Said period shall terminate as provided for in Section 438 of the German Civil Code unless a shorter period has been agreed according to the terms of the warranty under Section 443 of the German Civil Code.

5. Clauses 1 through 4 hereinabove shall not operate to alter any of the provisions of Sections 196, 197 and 479 of the German Civil Code or any of the provisions of law applicable to the onus probandi.

Article IX Software Use

If the contract awarded by the Buyer to the Seller or the order placed by the Buyer with the Seller provides for the supply of software, the Buyer will be granted a non-exclusive right to use said software and any documentation of said software. Said software will be supplied by the Seller to the Buyer for use with the Goods delivered by the Seller to the Buyer provided that the Buyer shall not have the right to use said software on more than one system.

Any copying, modification or translation of said software or any conversion of the object code of said software into source code shall be limited as provided for in Section 69 et seq. of the German Copyright Act. The Buyer agrees not to remove from said software any reference to the developer of said software such as, without limitation, any copyright reference and not to modify any such reference unless the prior express content of the Seller has been obtained.

Any other rights associated with such software and any documentation of said software and any copies thereof shall remain vested in the Seller or the supplier of said software as the case may be. The Buyer shall not grant any sub-license.

Article X Applicable Law and Jurisdiction

1. The relationship between the Seller and the Buyer shall exclusively be governed by the law of the Federal Republic of Germany as the same may be applicable to the relationship between two German parties provided however that the application of the United Nations Convention on Contracts for the International Sale of Goods of 11 April 1980 shall be excluded.

2. If the Buyer is a business or any public-law legal person or other entity, any dispute between the Seller and the Buyer shall be settled by the courts having jurisdiction at the registered offices of the Seller provided however that the Seller shall have the right to bring action against the Buyer in the courts having jurisdiction at the registered offices of the Buyer.

3. If any of the terms and conditions of the Contract or these Standard Sales Terms is or become ineffective, the remaining provisions of the Contract and these Standard Sales Terms shall remain in full force and effect. Any such ineffective provision shall be deemed to have been replaced by the Seller and the Buyer by an effective provision which shall have commercial, financial and economic implications which shall be as close to those of said ineffective provision as may be reasonably.

Notes

We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

GEA Mechanical Equipment

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