WALRUS PUMP

# TPR Series

## Vertical Multistage Centrifugal Pump

50Hz




*Better Life*
*Through Innovation*

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# TPR Series Vertical Multistage Centrifugal Pump

## 50 Hz

Power: 0.37 - 45 kW

Head: Up to 320 M

Flow: Up to 2,000 L/min

Outlet: 1¼" - 4"



Construction Industry

Agriculture & Fishing Industry

Manufacturing Industry

Electricity & New Energy Industry

Entertainment & Leisure Industry

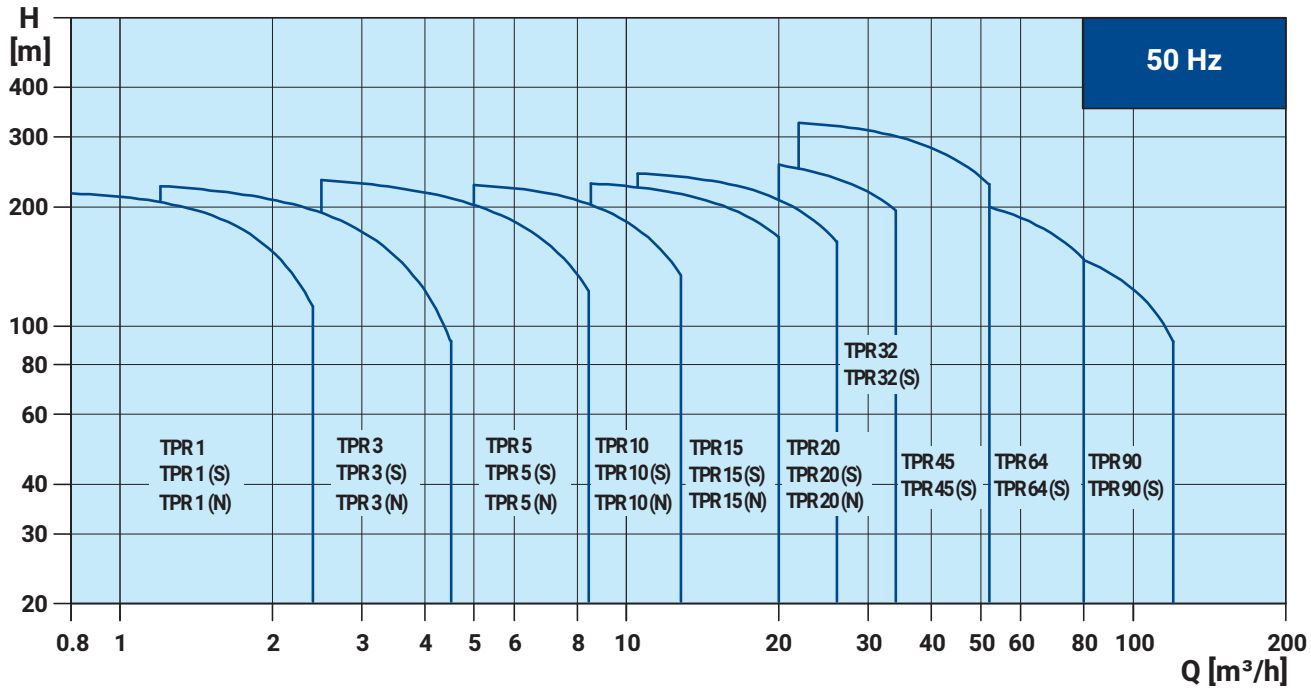
Accommodation & Food Service Industry

Wholesale & Retail Industry

Water Supply & Pollution Control

Service Industry

## Performance Range



## Product Range

| Description | TPR 1 (S)(N) | TPR 3 (S)(N) | TPR 5 (S)(N) | TPR 10 (S)(N) | TPR 15 (S)(N) | TPR 20 (S)(N) |
|---|---|---|---|---|---|---|
| Range | | | | | | |
| Nominal flow rate [m³/h] | 1 | 3 | 5 | 10 | 15 | 20 |
| Flow range [m³/h] | 0.7-2.4 | 1.2-4.5 | 2.5-8.5 | 5-13 | 9-24 | 11-29 |
| Max. pressure [ bar ] | 22 | 24 | 24 | 22 | 23 | 25 |
| Motor power [ kW ] | 0.37-2.2 | 0.37-3 | 0.37-5.5 | 0.37-7.5 | 1.1-15 | 1.1-18.5 |
| Temperature range [ °C ] | -20 ~ +120 | | | | | |
| Version | | | | | | |
| TPR | ● | ● | ● | ● | ● | ● |
| TPR(S) / TPR(N) | ● | ● | ● | ● | ● | ● |
| TPR Pipe Connect | | | | | | |
| DIN flange | DN 25/DN 32 | DN 25/DN 32 | DN 25/DN 32 | DN 40 | DN 50 | DN 50 |
| TPR(S) Pipe Connection | | | | | | |
| DIN flange | DN 25/DN 32 | DN 25/DN 32 | DN 25/DN 32 | DN 40 | DN 50 | DN 50 |
| PJE coupling (Victaulic) | R 1¼ | R 1¼ | R 1¼ | R 2 | R 2 | R 2 |
| TPR(N) Pipe Connection | | | | | | |
| DIN flange | DN 25/DN 32 | DN 25/DN 32 | DN 25/DN 32 | DN 40 | DN 50 | DN 50 |
| PJE coupling (Victaulic) | R 1¼ | R 1¼ | R 1¼ | R 2 | R 2 | R 2 |

● **Available or recommended application**

**- Not available or not recommended**

| Description | | TPR 32 (S) | TPR 45 (S) | TPR 64 (S) | TPR 90 (S) |
|---|---|---|---|---|---|
| Range | | | | | |
| Nominal flow rate | [ $m^3/h$ ] | 32 | 45 | 64 | 90 |
| Flow range | [ $m^3/h$ ] | 15-40 | 22-58 | 30-85 | 45-120 |
| Max. pressure | [ bar ] | 28 | 33 | 22 | 20 |
| Motor power | [ kW ] | 1.5-30 | 3-45 | 4-45 | 5.5-45 |
| Temperature range | [ °C ] | -20 ~ +120 | | | |
| Version | | | | | |
| TPR | | ● | ● | ● | ● |
| TPR(S) | | ● | ● | ● | ● |
| TPR Pipe Connect | | | | | |
| DIN flange | | DN 65 | DN 80 | DN 100 | DN 100 |
| TPR(S) Pipe Connection | | | | | |
| DIN flange | | DN 65 | DN 80 | DN 100 | DN 100 |
| PJE coupling (Victaulic) | | - | - | - | - |

● **Available or recommended application**

**- Not available or not recommended**

## Applications

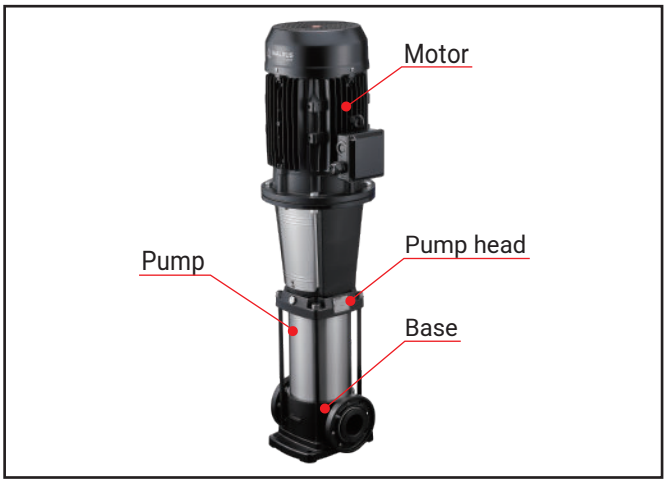
| Application | TPR, TPR(S) | TPR(N) |
|---|---|---|
| **Water supply** | | |
| Filtration and transfer at waterworks | ● | ❍ |
| Distribution from waterworks | ● | ❍ |
| Pressure boosting in mains | ● | ❍ |
| Pressure boosting in high-rise buildings, hotels, etc. | ● | ❍ |
| Pressure boosting for industrial water supply | ● | ❍ |
| **Industry** | | |
| **Pressure boosting** | | |
| Process-water systems | ● | ● |
| Washing and cleaning systems | ● | ● |
| Vehicle-washing tunnels | ● | ❍ |
| Firefighting systems | ● | |
| **Liquid transfer** | | |
| Cooling and air-conditioning systems (refrigerants) | ● | ❍ |
| Boiler feed and condensate systems | ● | ❍ |
| Machine tools (cooling lubricants) | ● | ● |
| **Special transfer duties** | | |
| Oils and alcohols | ● | ● |
| Glycol and coolants | ● | |
| **Water treatment** | | |
| Ultra-filtration systems | | ● |
| Reverse osmosis systems * | | ● |
| Softening, ionising, demineralising systems | | ● |
| Distillation systems | | ● |
| Separators | ● | ● |
| **Irrigation** | | |
| Field irrigation (flooding) | ● | ❍ |
| Sprinkler irrigation | ● | ❍ |
| Drip-feed irrigation | ● | ❍ |

● Recommended version.

❍ Alternative version.

## Pump

TPR(S) is a non self-priming, vertical multistage centrifugal pump, consisting of a base, pump head, pump body and an outer sleeve. The base has in-line suction and discharge ports, and all seals are maintenance-free.




## Motor

The motor is a totally enclosed, fan cooled, 2-pole standard motor.
Installation specifications: 0.37-4.0kW, V18;
over 5.5kW, V1
Insulation class: F
Enclosure class: IP55, IP54
Standard voltages: 3x 220/380 V
Stops and Restarts: 0.37-less than 4kw, 30times/hour
Over 4.0kw, 20times/hour

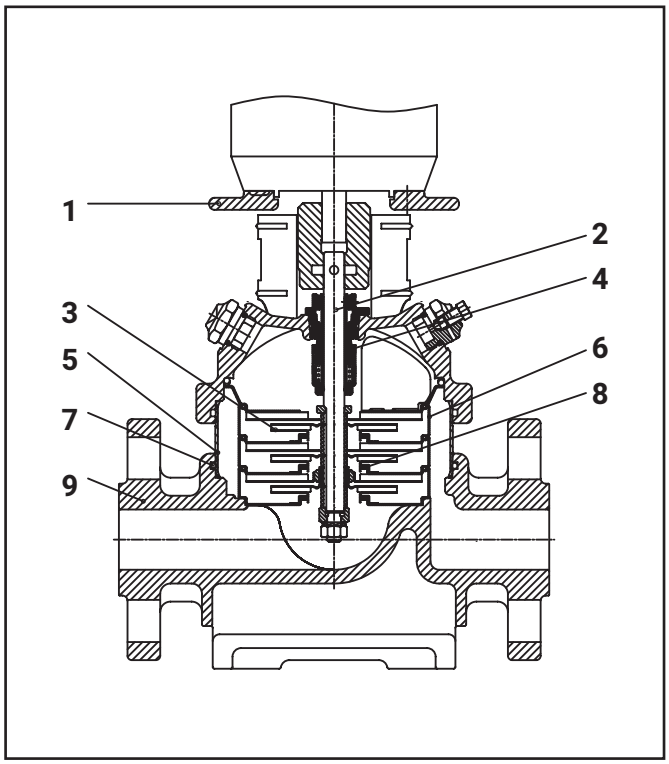
## Operating conditions

Delivery liquids: non-viscous, non-flammable/explosive, without neither solid nor fiber particles, and should not cause physical nor chemical damage to the pump. For viscosity larger than water, use pumps with a higher output if necessary.
Whether a pump is suitable for a certain liquid depends factors such as the liquid's chlorine content, PH value, temperature and composition, among other factors.
Liquids temperature: -20°C to 120°C
Environmental Temperature: Maximum 40°
At environmental temperatures over 40°C or altitudes over 1000m above sea level, motor heat dissipation will be reduced due to reduced air density thus reducing heat dissipation, and cause a decrease in power output. In those situations, higher rated pump is necessary.
Minimum suction pipe pressure: the suction pressure should be calculated and checked if any of these conditions exist:

- High liquid temperature
- Flow significantly larger than rated maximum
- Liquid requires long suction distance
- The suction pipe is long
- Liquid entry conditions are bad

For calculations, please see page 10.

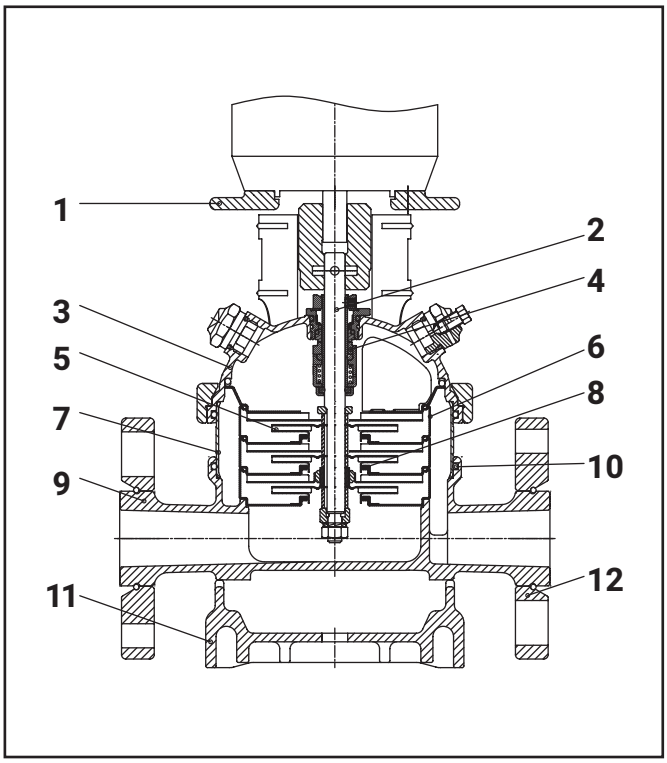
## TPR 1 / 3 / 5 / 10 / 15 / 20




## Materials

| No. | Description | Materials |
|---|---|---|
| 1 | Pump head | FC200 |
| 2 | Shaft | SUS304 |
| 3 | Impeller | SUS304 |
| 4 | Shaft seal | Cartridge type |
| 5 | Sleeve | SUS304 |
| 6 | Chamber | SUS304 |
| 7 | O-ring for sleeve | EPDM or HNBR |
| 8 | Neck ring | PTFE |
| 9 | Base | FC200 |
| | Rubber parts | EPDM or HNBR |

## TPR 1 / 3 / 5 / 10 / 15 / 20 (S)(N)

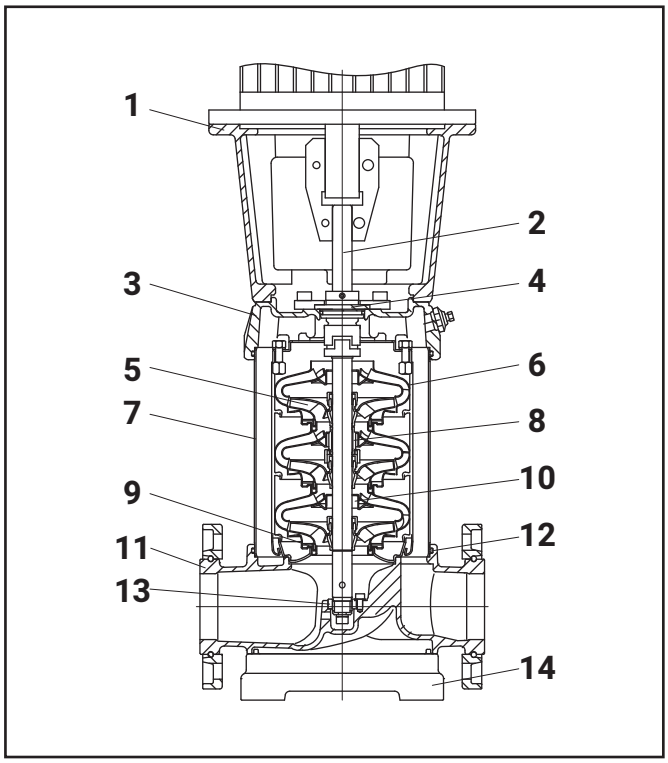



## Materials

| No. | Description | Materials | |
|---|---|---|---|
| | | TPR(S) | TPR(N) |
| 1 | Pump head | FC200 | |
| 2 | Shaft | SUS304 | SUS316 |
| 3 | Pump head cover | SUS304 | SUS316 |
| 4 | Shaft seal | Cartridge type | |
| 5 | Impeller | SUS304 | SUS316 |
| 6 | Chamber | SUS304 | SUS316 |
| 7 | Sleeve | SUS304 | SUS316 |
| 8 | Neck ring | PTFE | |
| 9 | Base | SUS304 | SUS316 |
| 10 | O-ring for sleeve | EPDM or HNBR | |
| 11 | Base plate | FC200 | |
| 12 | Flange | FC200 | |
| | Rubber parts | EPDM or HNBR | |

SUS304 may be replaced by SUS316 depended on stock availability.

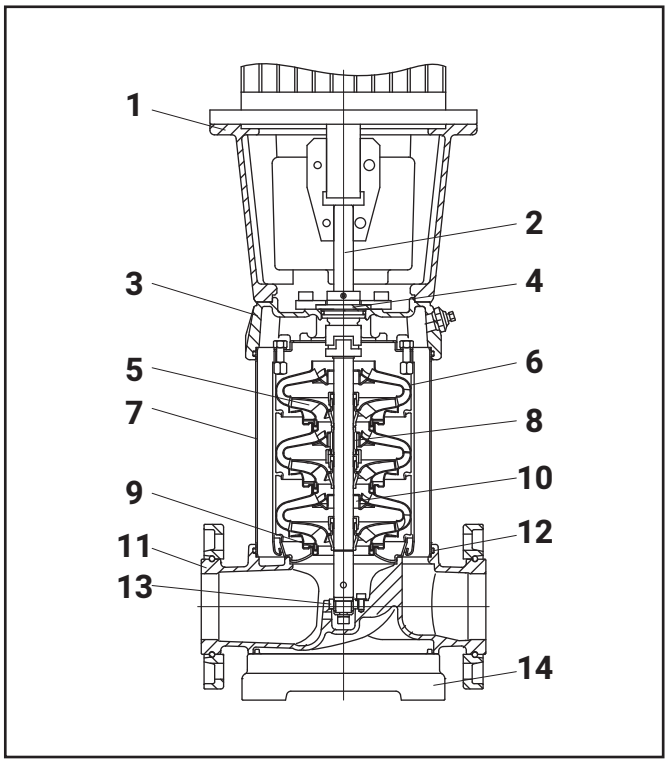
## TPR 32 / 45 / 64 / 90




## Materials

| No. | Description | Materials |
|---|---|---|
| 1 | Motor stool | FC200 |
| 2 | Shaft | SUS304 |
| 3 | Pump head | FC200 |
| 4 | Shaft sea | Cartridge type |
| 5 | Impeller | SUS304 |
| 6 | Chamber | SUS304 |
| 7 | Sleeve | SUS304 |
| 8 | Bearing | Tungsten carbide |
| 9 | Neck ring | Carbon-graphite-filled PTFE |
| 10 | Bearing ring | Bronze |
| 11 | Base | FC200 |
| 12 | O-ring for sleeve | EPDM or FKM |
| 13 | Bearing | Tungsten carbide |
| 14 | Base plate | FCD500 |
| | Rubber parts | EPDM or FKM |

## TPR 32 / 45 / 64 / 90 (S)




## Materials

| No. | Description | Materials |
|---|---|---|
| 1 | Motor stool | FC200 |
| 2 | Shaft | SUS304 |
| 3 | Pump head | SUS304 |
| 4 | Shaft seal | Cartridge type |
| 5 | Impeller | SUS304 |
| 6 | Chamber | SUS304 |
| 7 | Sleeve | SUS304 |
| 8 | Bearing | Tungsten carbide |
| 9 | Neck ring | Carbon-graphite-filled PTFE |
| 10 | Bearing ring | Bronze |
| 11 | Base | SUS304 |
| 12 | O-ring for sleeve | EPDM or FKM |
| 13 | Bearing | Tungsten carbide |
| 14 | Base plate | FCD500 |
| | Rubber parts | EPDM or FKM |

## Type Keys

### Pump

**Example** TPR 32 -3 -1 N F RSSH

- Type range: TPR
- Flow rate [$m^3/h$]
- Number of stages
- Number of impellers
- Code for pump material
- Code for pipe connection
- Code for shaft seal

### Key to codes

| Code | Description |
|---|---|
| **Code for materials** | Notes: 1) |
| **S** | **SUS 304** |
| **N** | **SUS 316** |
| **Code for pipe connection** | Notes: 1) |
| **P** | **PJE** Coupling (Victarlic) |
| **F** | **DIN** flange |

### Shaft seal Notes: 2.3)

**Example** R S S H

- Shaft seal type designation
- Material of stationary seal face
- Material of rotating seal face
- Material of secondary seal (rubber parts)

| Code | Description |
|---|---|
| **Shaft seal type designation** | |
| R | TPR balaced cartridge seal with O-ring |
| **Seal face material (stationary and rotating)** | |
| G | Carbon, resin-impregnated |
| S | Silicon Carbide (SIC) |
| T | Tungsten |
| **Secondary seal material (rubber parts)** | |
| E | EPDM |
| H | HNBR |
| V | VITON (FKM) |

1) TPR 32 ~ 90 not offered SUS316 and PJE type.
2) TPR 1 ~ 20 only has RSSE / RSSH / RSSV.
3) TPR 32 ~ 90 not offered HNBR.

## Operating range of the shaft seal

The operating range of the shaft seal depends on operating pressure, pump type, type of shaft seal and liquid temperature. The range shown in fig. 7 applies to clean water and water with anti-freeze liquids.
If the operating range is exceeded, the life of the shaft seal may be reduced.

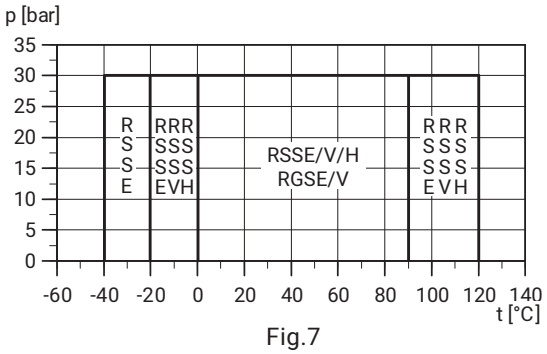
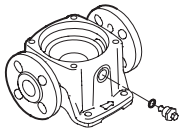
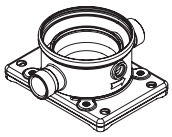



Fig.7

| Standard shaft seal | Pump type | Description | Liquid temperature [°C] |
|---|---|---|---|
| RSSE | TPR 1 ~ 90 | SIC/SIC, EPDM | -40 ~ +120 |
| RSSH | TPR 1 ~ 20 | SIC/SIC, HNBR | -20 ~ +120 |
| RSSV | TPR 1 ~ 90 | SIC/SIC, VITON | -20 ~ +120 |
| RGSE | TPR 32 ~ 90 | Carbon/SIC, EPDM | 0 ~ +90 |
| RGSV | TPR 32 ~ 90 | Carbon/SIC, VITON | 0 ~ +90 |

## Maximum operating pressure and liquid temperature

| Pump type | DIN | | PJE | |
|---|---|---|---|---|
| |  | |  | |
| | **Maximum permissible operating pressure** [bar] | **Liquid temperature** [°C ] | **Maximum permissible operating pressure** [bar] | **Liquid temperature** [°C ] |
| TPR 1 (S)(N) | 25 | -20 ~ +120 | 25 | -20 ~ +120 |
| TPR 3 (S)(N) | 25 | | 25 | |
| TPR 5 (S)(N) | 25 | | 25 | |
| TPR 10-1 → 10-10 (S)(N) | 16 | | 16 | |
| TPR 10-12 → 10-17 (S)(N) | 25 | | 25 | |
| TPR 15-1 → 15-8(S)(N) | 16 | | 16 | |
| TPR 15-9 → 15-12 (S)(N) | 25 | | 25 | |
| TPR 20-1 → 20-7 (S)(N) | 16 | | 16 | |
| TPR 20-8 → 20-10 (S)(N) | 25 | | 25 | |
| TPR 32-1-1 → 32-5 (S) | 16 | | - | |
| TPR 32-6-2 → 32-10-2 (S) | 30 | | - | |
| TPR 45-1-1 → 45-4 (S) | 16 | | - | |
| TPR 45-5-2 → 45-7 (S) | 30 | | - | |
| TPR 64-1-1 → 64-3 (S) | 16 | | - | |
| TPR 64-4-2 → 64-5-2 (S) | 30 | | - | |
| TPR 90-1-1 → 90-3 (S) | 16 | | - | |
| TPR 90-4-2 (S) | 30 | | - | |

## Maximum Inlet Pressure

The following table shows the maximum permissible inlet pressure. However, the actual inlet pressure plus the pressure against a closed valve must always be lower than the maximum permissible operating pressure.
If the maximum permissible operating pressure is exceeded, the conical bearing in the motor may be damaged and the life of the shaft seal reduced.

| Pump Type | Maximum Inlet Pressure [bar] |
|---|---|
| **TPR1(S)(N)** | |
| 1-2 → 1-36 | 10 |
| **TPR3(S)(N)** | |
| 3-2 → 3-29 | 10 |
| 3-31 → 3-36 | 15 |
| **TPR5(S)(N)** | |
| 5-2 → 5-16 | 10 |
| 5-18 → 5-36 | 15 |
| **TPR10(S)(N)** | |
| 10-1 → 10-6 | 8 |
| 10-7 → 10-22 | 10 |
| **TPR15(S)(N)** | |
| 15-1 → 15-3 | 8 |
| 15-4 → 15-17 | 10 |
| **TPR20(S)(N)** | |
| 20-1 → 20-3 | 8 |
| 20-4 → 20-17 | 10 |
| **TPR32(S)** | |
| 32-1-1 → 32-4 | 4 |
| 32-5-2 → 32-10 | 10 |
| 32-11-2 → 32-14 | 15 |
| **TPR45(S)** | |
| 45-1-1 → 45-2 | 4 |
| 45-3-2 → 45-5 | 10 |
| 45-6-2 → 45-13-2 | 15 |
| **TPR64(S)** | |
| 64-1-1 → 64-2-2 | 4 |
| 64-2-1 → 64-4-2 | 10 |
| 64-4-1 → 64-8-1 | 15 |
| **TPR90(S)** | |
| 90-1-1 → 90-1 | 4 |
| 90-2-2 → 90-3-2 | 10 |
| 90-3 → 90-6 | 15 |

## Operating Pressure and Inlet Pressure

The values for operating and inlet pressures shown in the table should not be considered individually but should always be compared.
See the following examples.

Example 1:
The following pump type has been selected：
TPR3-25F
Maximum operating pressure: 25bar
Maximum inlet pressure: 10bar
Discharge pressure against a closed valve: 16.3bar,
See page 15.
This pump is not a allowed to start at an inlet pressure of 10 bar, but at an inlet pressure of 25-16.3=8.7 bar.

## Pump material

Select the material variant on the basis of the liquid to be pumped.
TPR series divide into three types: TPR, TPR(S), TPR(N):

- TPR is suitable for clean non-aggressive liquid. For example water and light oil.
- TPR(S) is suitable for light aggressive liquid; all of wetted parts are stainless steel.
- TPR(N) pumps are suitable for industrial liquids.

## Pump connections

Selection of pump connection depends on the rated pressure and pipework.
To meet any requirement, the TPR,TPR(S) and TPR(N) pumps offer a wide range of flexible connections.

- DIN flange
- PJE Coupling (Victarlic)

## Shaft seal

How to chose the right Mechanical Seal

- Liquid Type
- Liquid Temperature
- Max Pressure

## Operating pressure and inlet pressure

Do not exceed the limit values for these pressures:

- maximum operating pressure
- maximum inlet pressures

## Minimum inlet pressure, NPSH

Calculatio of the inlet pressure "H" is recommended in these situations:

- The liquid temperature is high.
- The flow is significantly higher than the rated flow.
- Water is drawn from depths.
- Water is drawn through long pipes.
- Inlet conditions are poor.

To avoid catitation, make sure that there is a minimum pressure on the suction side of the pump.

H = Pb x 10.2 - NPSH - Hf - Hv – Hs

Pb =Barometric pressure in bar.
Barometric pressure can be set to 1 bar.In closed systeam, Pb indicates the pressure in bar.

NPSH =Friction loss in suction pipe in metres head.To be read from the NPSH curve at the highest flow the pump will be delivering.

Hf =Friction loss in suction pipe in metres head.
At the highest flow the pump will be delivering.

Hv =Vapour pressure in metres head.
To be read from the Vapour pressure scale.

Hs =Safety margin [m]，minimum 0.5 metres head.

If the calculated "H" is positive, the pump can operate at a suction lift of maximum "H" metres head.
If the calculated "H" is negative, an inlet pressure of minimum "H" metres head is required.

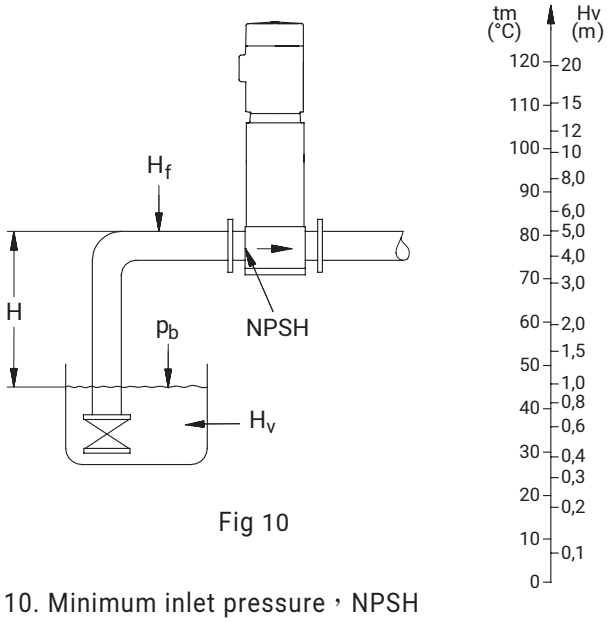
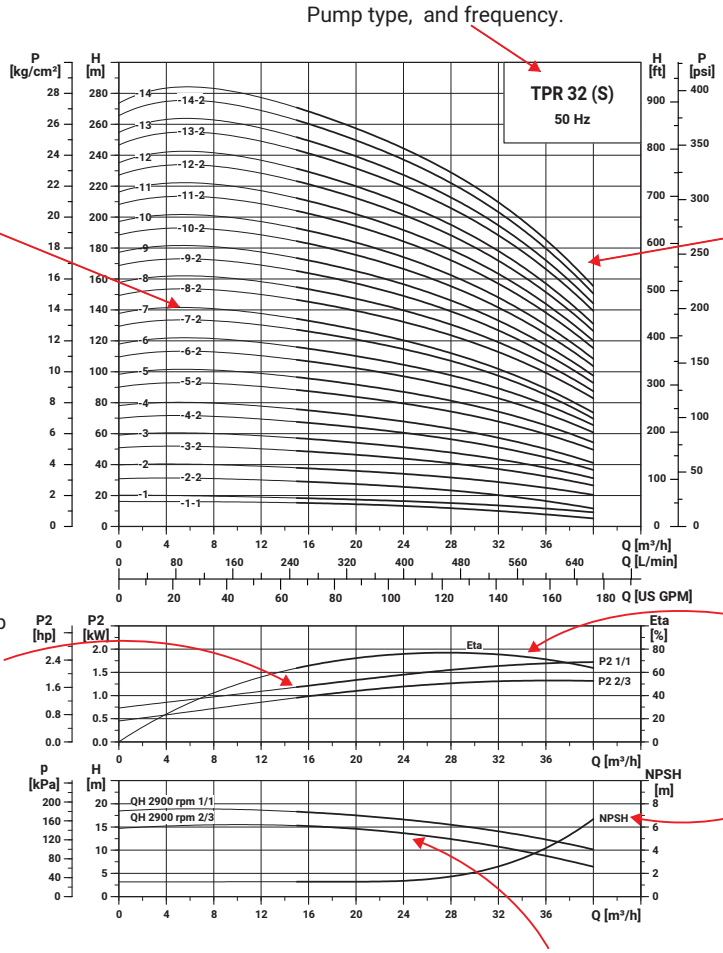



Fig 10

Fig 10. Minimum inlet pressure，NPSH

Note: To avoid cavitation, do not select a pump with a duty point too far to the right on the NPSH curve. Always check the NPSH value of the pump at the highest possible folw.

## How to read the curve charts




Number of stages.
First figure: number of stages.
Second figure: number of reduced-diameter impellers.

QH curve for the individual pump. The bold curves indicate the recommended duty range for best efficiency.

The power curves indicate pump input power per stage.
Curves are shown for complete (1/1) and for reduced-diameter (2/3) impellers.

The eta curve shows the efficiency of the pump.
The eta curve is an average curve of all the pump types shown in the chart.
The efficiency of pump reduced-diameter impellers is approx. 2 % lower than the eta curve shown in the chart.

The NPSH curve is an average curve for all the variants shown.
When sizing the pum safety margin of at least 0.5 m.

Fig 11

QH curve for each individual impeller.
Curves are shown for complete.

## Guidelines to performance curves

- To lerances to ISO9906:1999 , Annex A, if indicated.
- The motors used for the measurements are standard industqrial motors (IE3)
- Measurements have been made with airless water at a temperature of 20°C.
- The curves apply to the following kinematic viscosity:
  ν = 1 mm²/s(1cSt).
- Due to prevent the risk of overheat, the pumps should not be used at floe below the minimum flow rate.
- The QH curves apply to a rated motor speed of a three-phase mains-operated motor.

The curve below shows the minimum flow rate as percentage of the rated flow rate in relation to the liquid temperature. The dotted line shows a TPR pump fitted with an air-cooled top assembly.

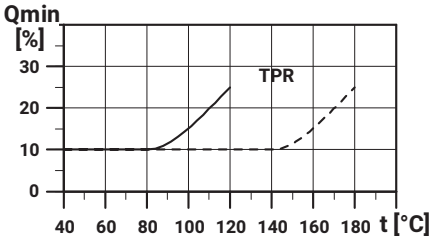
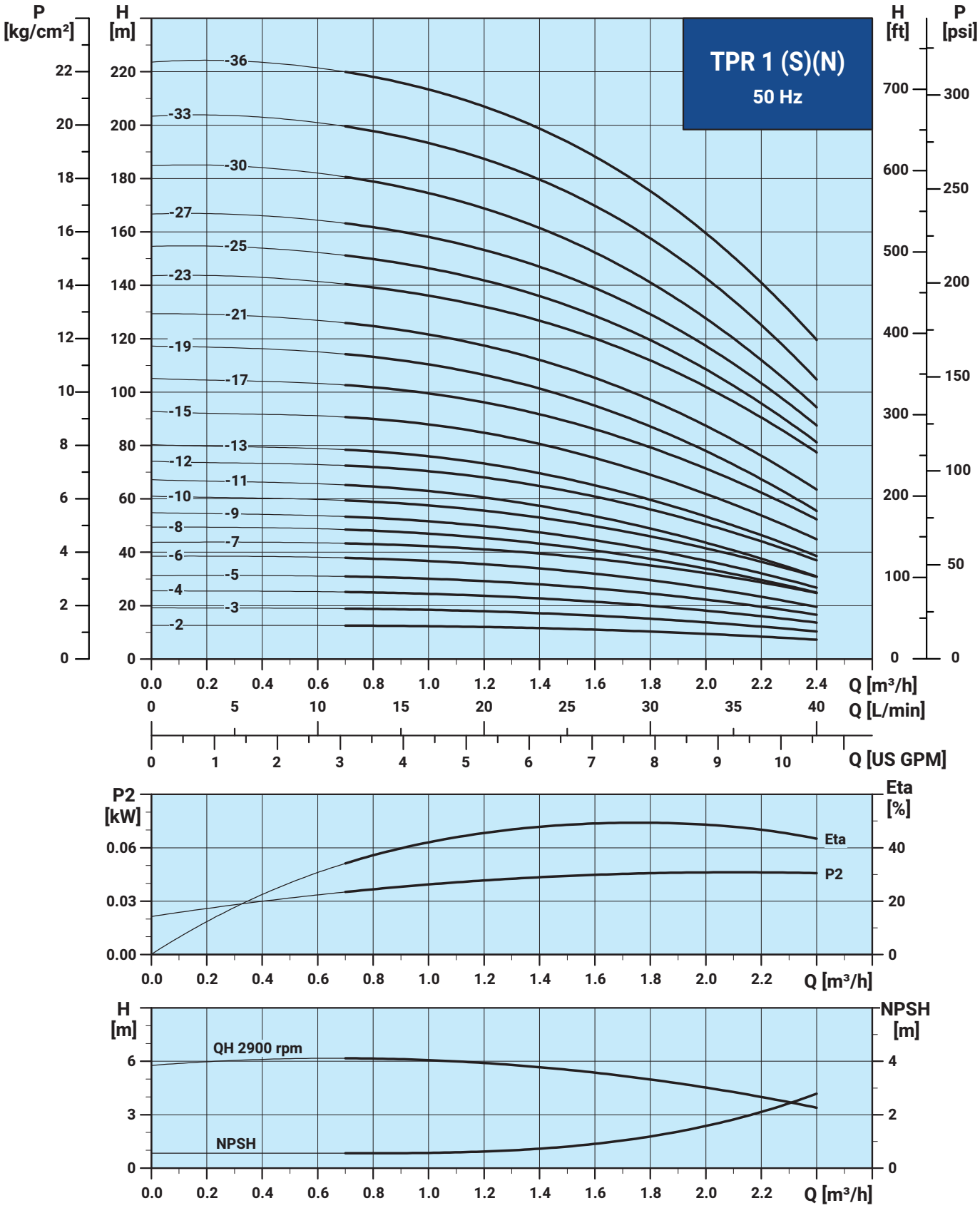


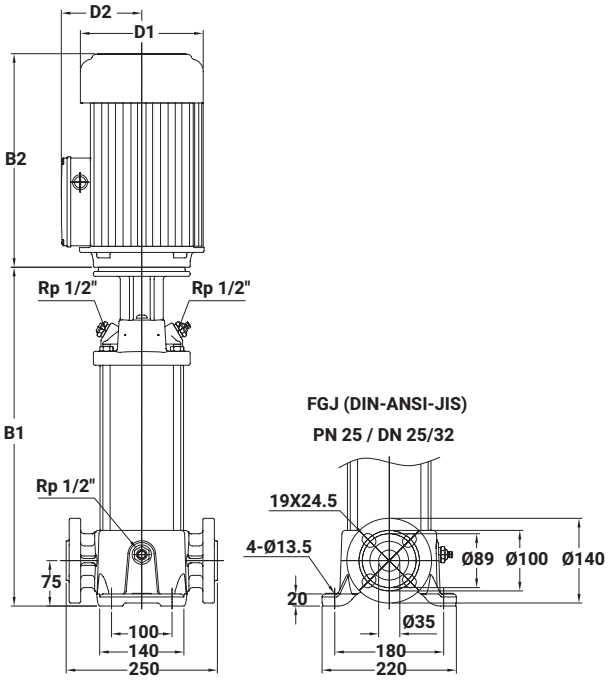

Fig 12

## Performance curves

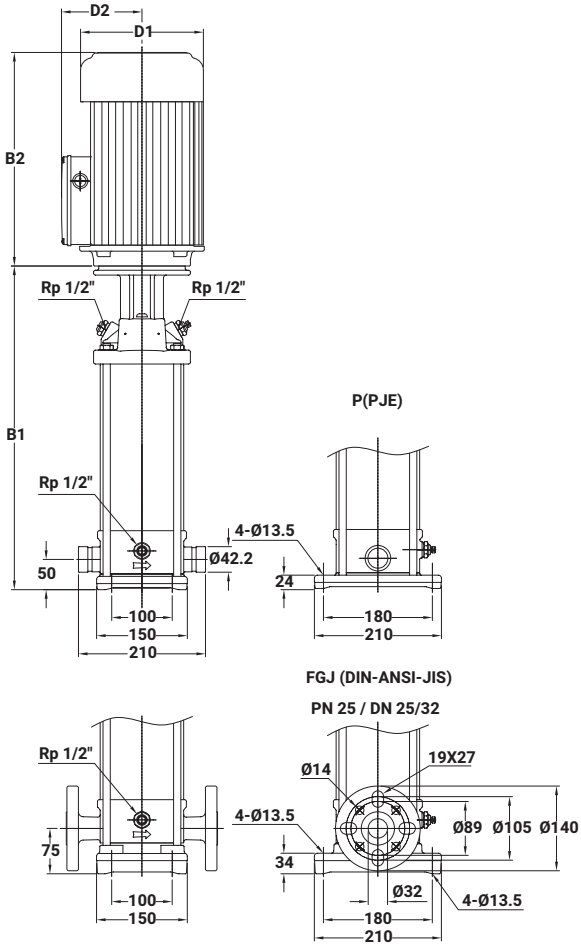


## Dimensional Sketches

### TPR 1




### TPR 1 (S)(N)




## Dimensions and Weights

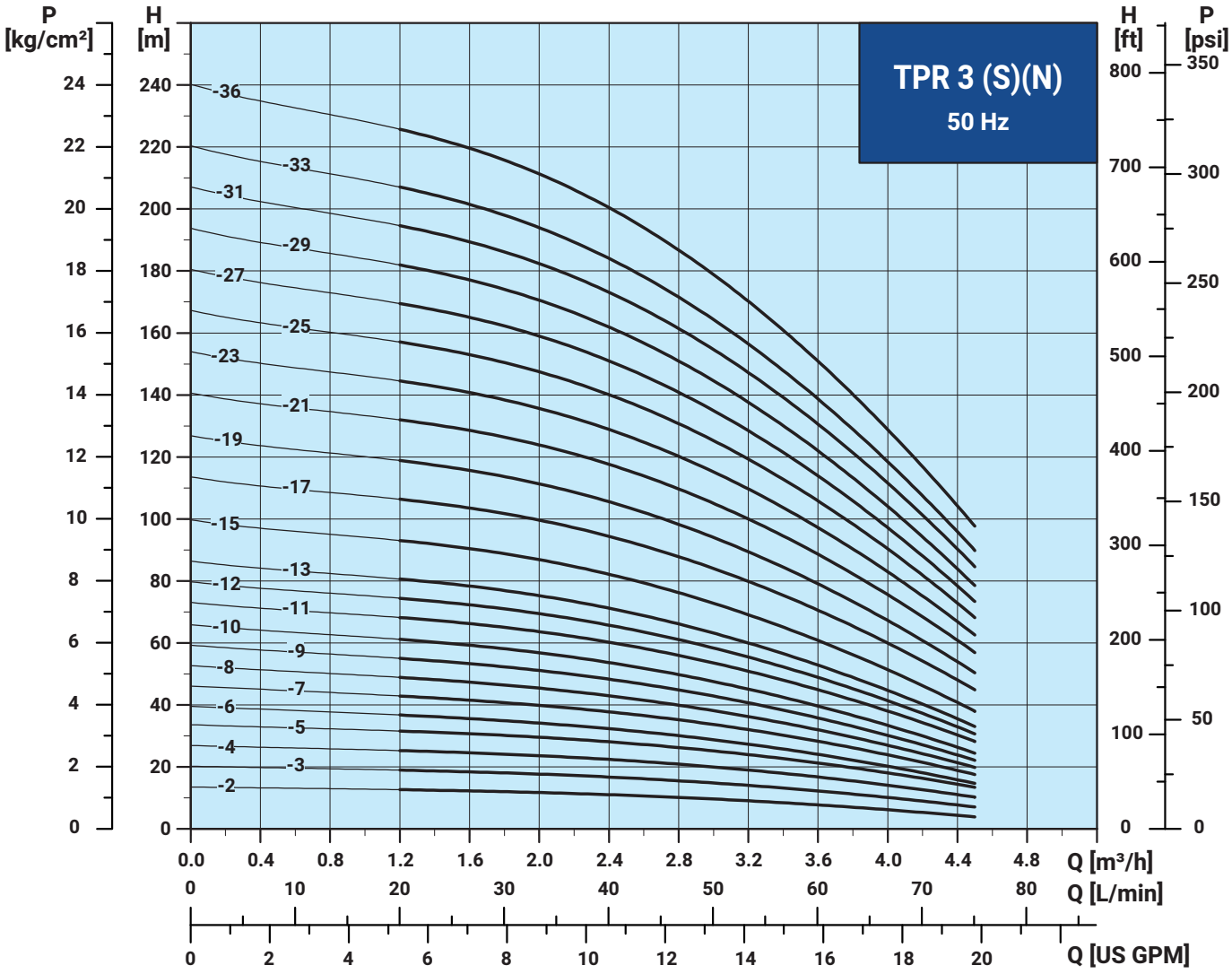
### TPR 1

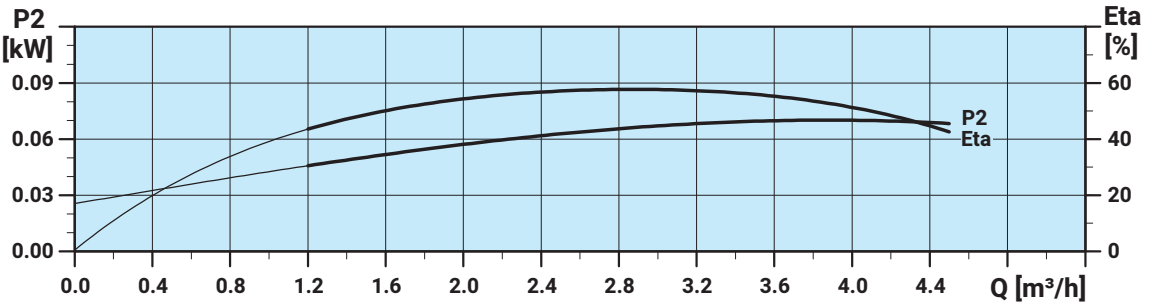
| Pump type | Motor [kW] | Dimension [mm] | | | |
|---|---|---|---|---|---|
| | | DIN flange | | D1 | D2 |
| | | B1 | B1+B2 | | |
| TPR 1-2 | 0.37 | 278 | 471 | 144.5 | 110 |
| TPR 1-3 | 0.37 | 278 | 471 | 144.5 | 110 |
| TPR 1-4 | 0.37 | 296 | 489 | 144.5 | 110 |
| TPR 1-5 | 0.37 | 314 | 507 | 144.5 | 110 |
| TPR 1-6 | 0.37 | 332 | 525 | 144.5 | 110 |
| TPR 1-7 | 0.37 | 350 | 543 | 144.5 | 110 |
| TPR 1-8 | 0.55 | 368 | 601 | 144.5 | 110 |
| TPR 1-9 | 0.55 | 386 | 619 | 144.5 | 110 |
| TPR 1-10 | 0.55 | 404 | 637 | 144.5 | 110 |
| TPR 1-11 | 0.55 | 422 | 655 | 144.5 | 110 |
| TPR 1-12 | 0.75 | 446 | 679 | 144.5 | 110 |
| TPR 1-13 | 0.75 | 464 | 697 | 144.5 | 110 |
| TPR 1-15 | 0.75 | 500 | 733 | 144.5 | 110 |
| TPR 1-17 | 1.10 | 536 | 800 | 144.5 | 110 |
| TPR 1-19 | 1.10 | 572 | 836 | 144.5 | 110 |
| TPR 1-21 | 1.10 | 608 | 872 | 144.5 | 110 |
| TPR 1-23 | 1.10 | 644 | 908 | 181 | 110 |
| TPR 1-25 | 1.50 | 697 | 976 | 181 | 122 |
| TPR 1-30 | 1.50 | 733 | 1012 | 181 | 122 |
| TPR 1-30 | 1.50 | 787 | 1066 | 181 | 122 |
| TPR 1-33 | 2.20 | 841 | 1150 | 181 | 122 |
| TPR 1-36 | 2.20 | 895 | 1204 | 181 | 122 |

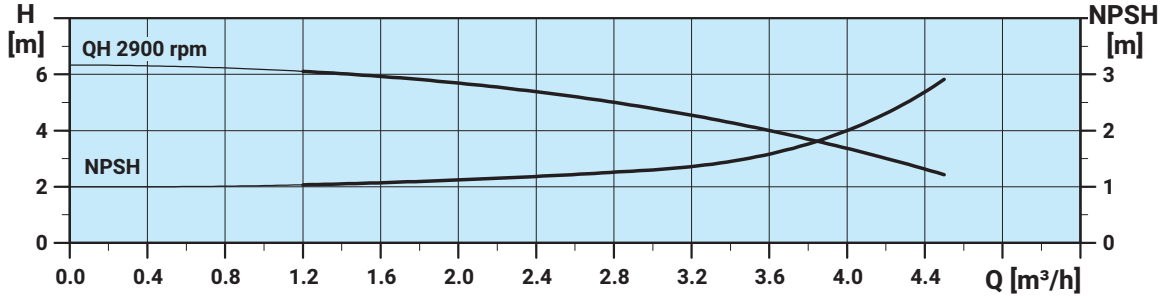
### TPR 1 (S)(N)

| Pump type | Motor [kW] | Dimension [mm] | | | | | |
|---|---|---|---|---|---|---|---|
| | | PJE | | DIN flange | | D1 | D2 |
| | | B1 | B1+B2 | B1 | B1+B2 | | |
| TPR 1-2 (S)(N) | 0.37 | 262 | 456 | 277 | 471 | 144.5 | 110 |
| TPR 1-3 (S)(N) | 0.37 | 262 | 456 | 277 | 471 | 144.5 | 110 |
| TPR 1-4 (S)(N) | 0.37 | 280 | 474 | 295 | 489 | 144.5 | 110 |
| TPR 1-5 (S)(N) | 0.37 | 298 | 492 | 313 | 507 | 144.5 | 110 |
| TPR 1-6 (S)(N) | 0.37 | 316 | 510 | 331 | 525 | 144.5 | 110 |
| TPR 1-7 (S)(N) | 0.37 | 334 | 528 | 349 | 543 | 144.5 | 110 |
| TPR 1-8 (S)(N) | 0.55 | 352 | 586 | 367 | 601 | 144.5 | 110 |
| TPR 1-9 (S)(N) | 0.55 | 370 | 604 | 385 | 619 | 144.5 | 110 |
| TPR 1-10 (S)(N) | 0.55 | 388 | 622 | 403 | 637 | 144.5 | 110 |
| TPR 1-11 (S)(N) | 0.55 | 406 | 640 | 421 | 655 | 144.5 | 110 |
| TPR 1-12 (S)(N) | 0.75 | 430 | 664 | 445 | 679 | 144.5 | 110 |
| TPR 1-13 (S)(N) | 0.75 | 448 | 682 | 463 | 697 | 144.5 | 110 |
| TPR 1-15 (S)(N) | 0.75 | 484 | 718 | 499 | 733 | 144.5 | 110 |
| TPR 1-17 (S)(N) | 1.10 | 520 | 784 | 535 | 799 | 144.5 | 110 |
| TPR 1-19 (S)(N) | 1.10 | 556 | 820 | 571 | 835 | 144.5 | 110 |
| TPR 1-21 (S)(N) | 1.10 | 592 | 856 | 607 | 871 | 144.5 | 110 |
| TPR 1-23 (S)(N) | 1.10 | 628 | 892 | 643 | 907 | 144.5 | 110 |
| TPR 1-25 (S)(N) | 1.50 | 681 | 960 | 696 | 975 | 181 | 122 |
| TPR 1-27 (S)(N) | 1.50 | 717 | 996 | 732 | 1011 | 181 | 122 |
| TPR 1-30 (S)(N) | 1.50 | 771 | 1050 | 786 | 1065 | 181 | 122 |
| TPR 1-33 (S)(N) | 2.20 | 825 | 1134 | 840 | 1149 | 181 | 122 |
| TPR 1-36 (S)(N) | 2.20 | 879 | 1188 | 894 | 1203 | 181 | 122 |

## Performance curves

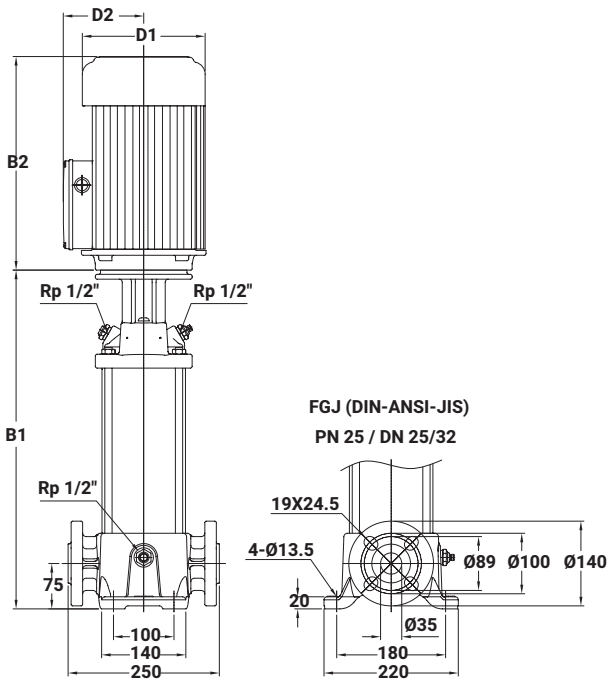


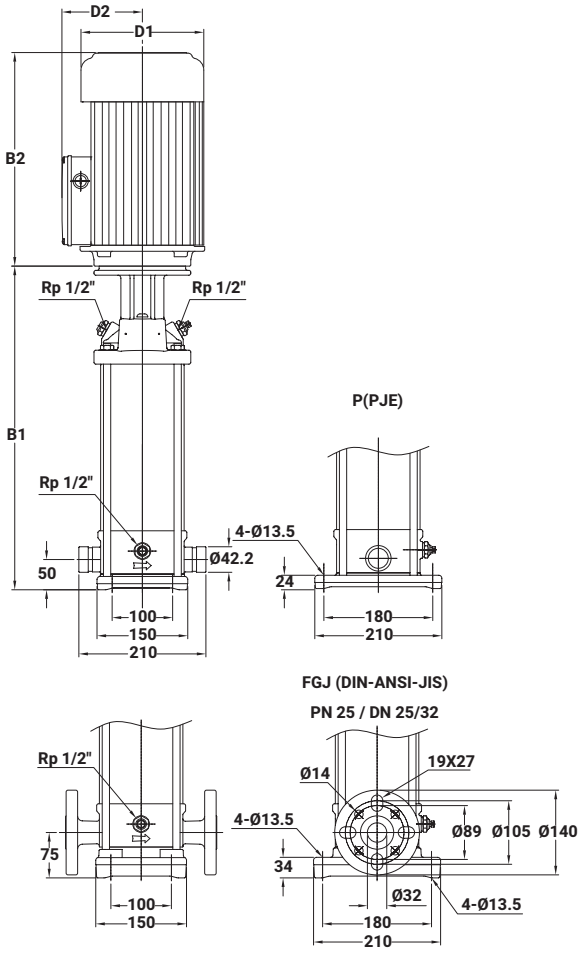



## Dimensional Sketches

### TPR 3




### TPR 3 (S)(N)




## Dimensions and Weights

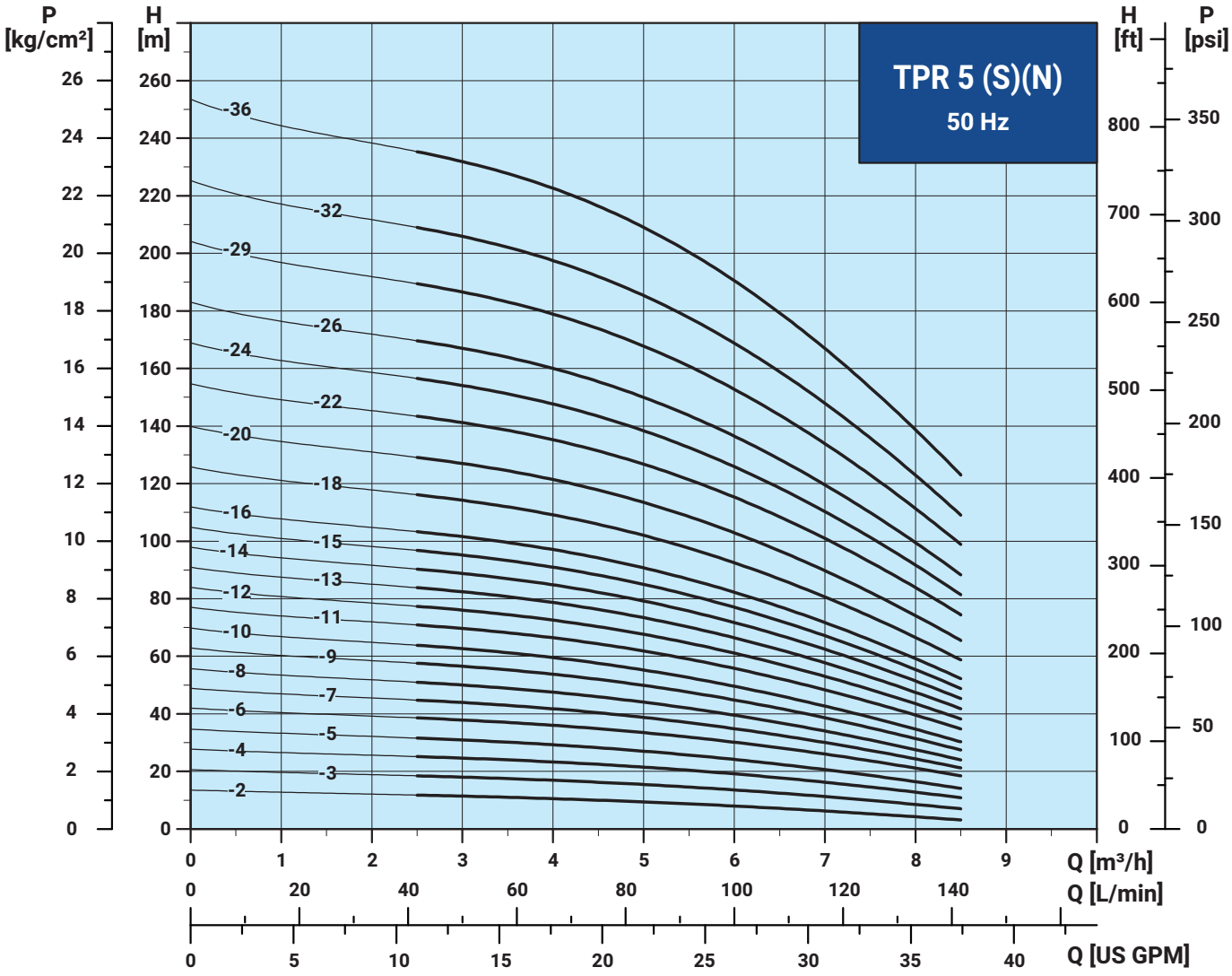
### TPR 3

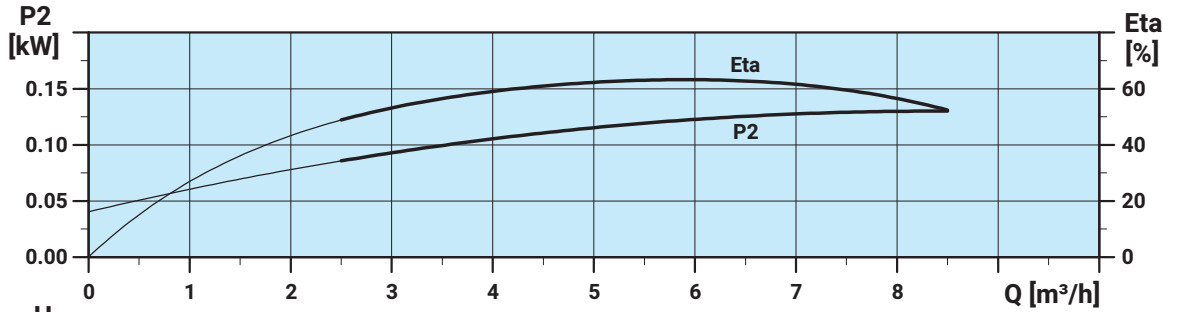
| Pump type | Motor [kW] | Dimension [mm] | | | |
|---|---|---|---|---|---|
| | | DIN flange | | D1 | D2 |
| | | B1 | B1+B2 | | |
| TPR 3-2 | 0.37 | 278 | 471 | 144.5 | 110 |
| TPR 3-3 | 0.37 | 278 | 471 | 144.5 | 110 |
| TPR 3-4 | 0.37 | 296 | 489 | 144.5 | 110 |
| TPR 3-5 | 0.37 | 314 | 507 | 144.5 | 110 |
| TPR 3-6 | 0.55 | 332 | 565 | 144.5 | 110 |
| TPR 3-7 | 0.55 | 350 | 583 | 144.5 | 110 |
| TPR 3-8 | 0.75 | 374 | 607 | 144.5 | 110 |
| TPR 3-9 | 0.75 | 392 | 625 | 144.5 | 110 |
| TPR 3-10 | 0.75 | 410 | 643 | 144.5 | 110 |
| TPR 3-11 | 1.10 | 428 | 692 | 144.5 | 110 |
| TPR 3-12 | 1.10 | 446 | 710 | 144.5 | 110 |
| TPR 3-13 | 1.10 | 464 | 728 | 144.5 | 110 |
| TPR 3-15 | 1.10 | 500 | 764 | 144.5 | 110 |
| TPR 3-17 | 1.50 | 553 | 832 | 181 | 122 |
| TPR 3-19 | 1.50 | 589 | 868 | 181 | 122 |
| TPR 3-21 | 2.20 | 625 | 934 | 181 | 122 |
| TPR 3-23 | 2.20 | 661 | 970 | 181 | 122 |
| TPR 3-25 | 2.20 | 697 | 1006 | 181 | 122 |
| TPR 3-27 | 2.20 | 733 | 1042 | 181 | 122 |
| TPR 3-29 | 2.20 | 769 | 1078 | 181 | 122 |
| TPR 3-31 | 3.00 | 809 | 1133 | 208 | 133 |
| TPR 3-33 | 3.00 | 845 | 1169 | 208 | 133 |
| TPR 3-36 | 3.00 | 899 | 1223 | 208 | 133 |

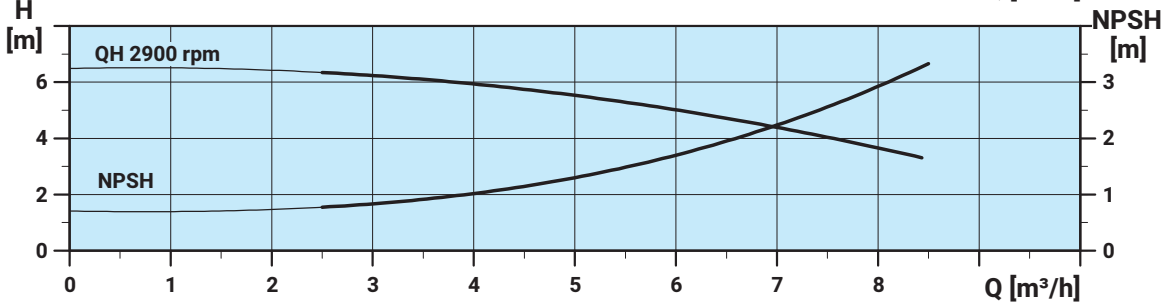
### TPR 3 (S)(N)

| Pump type | Motor [kW] | Dimension [mm] | | | | | |
|---|---|---|---|---|---|---|---|
| | | PJE | | DIN flange | | D1 | D2 |
| | | B1 | B1+B2 | B1 | B1+B2 | | |
| TPR 3-2 (S)(N) | 0.37 | 262 | 456 | 277 | 471 | 144.5 | 110 |
| TPR 3-3 (S)(N) | 0.37 | 262 | 456 | 277 | 471 | 144.5 | 110 |
| TPR 3-4 (S)(N) | 0.37 | 280 | 474 | 295 | 489 | 144.5 | 110 |
| TPR 3-5 (S)(N) | 0.37 | 298 | 492 | 313 | 507 | 144.5 | 110 |
| TPR 3-6 (S)(N) | 0.55 | 316 | 550 | 331 | 565 | 144.5 | 110 |
| TPR 3-7 (S)(N) | 0.55 | 334 | 568 | 349 | 583 | 144.5 | 110 |
| TPR 3-8 (S)(N) | 0.75 | 358 | 592 | 373 | 607 | 144.5 | 110 |
| TPR 3-9 (S)(N) | 0.75 | 376 | 610 | 391 | 625 | 144.5 | 110 |
| TPR 3-10 (S)(N) | 0.75 | 394 | 628 | 409 | 643 | 144.5 | 110 |
| TPR 3-11 (S)(N) | 1.10 | 412 | 676 | 427 | 691 | 144.5 | 110 |
| TPR 3-12 (S)(N) | 1.10 | 430 | 694 | 445 | 709 | 144.5 | 110 |
| TPR 3-13 (S)(N) | 1.10 | 448 | 712 | 463 | 727 | 144.5 | 110 |
| TPR 3-15 (S)(N) | 1.10 | 484 | 748 | 499 | 763 | 144.5 | 110 |
| TPR 3-17 (S)(N) | 1.50 | 537 | 816 | 552 | 831 | 181 | 122 |
| TPR 3-19 (S)(N) | 1.50 | 573 | 852 | 588 | 867 | 181 | 122 |
| TPR 3-21 (S)(N) | 2.20 | 609 | 918 | 624 | 933 | 181 | 122 |
| TPR 3-23 (S)(N) | 2.20 | 645 | 954 | 660 | 969 | 181 | 122 |
| TPR 3-25 (S)(N) | 2.20 | 681 | 990 | 696 | 1005 | 181 | 122 |
| TPR 3-27 (S)(N) | 2.20 | 717 | 1026 | 732 | 1041 | 181 | 122 |
| TPR 3-29 (S)(N) | 2.20 | 753 | 1062 | 768 | 1077 | 181 | 122 |
| TPR 3-31 (S)(N) | 3.00 | 793 | 1117 | 808 | 1132 | 208 | 133 |
| TPR 3-33 (S)(N) | 3.00 | 829 | 1153 | 844 | 1168 | 208 | 133 |
| TPR 3-36 (S)(N) | 3.00 | 883 | 1207 | 898 | 1222 | 208 | 133 |

## Performance curves

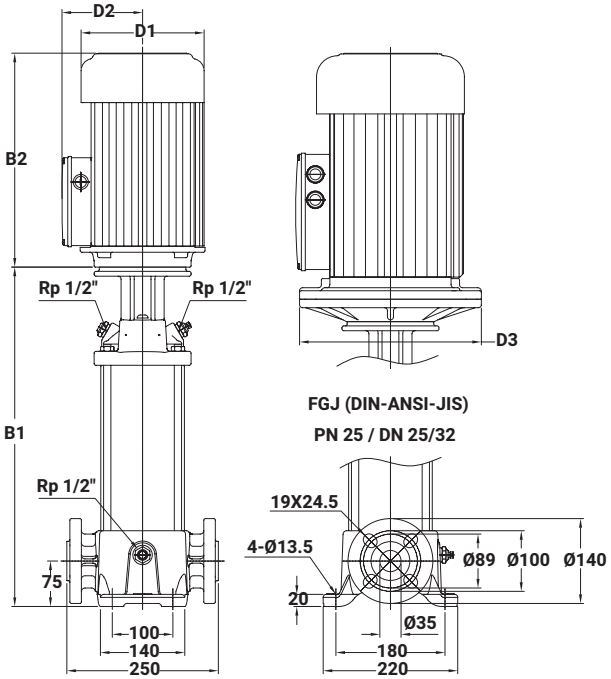


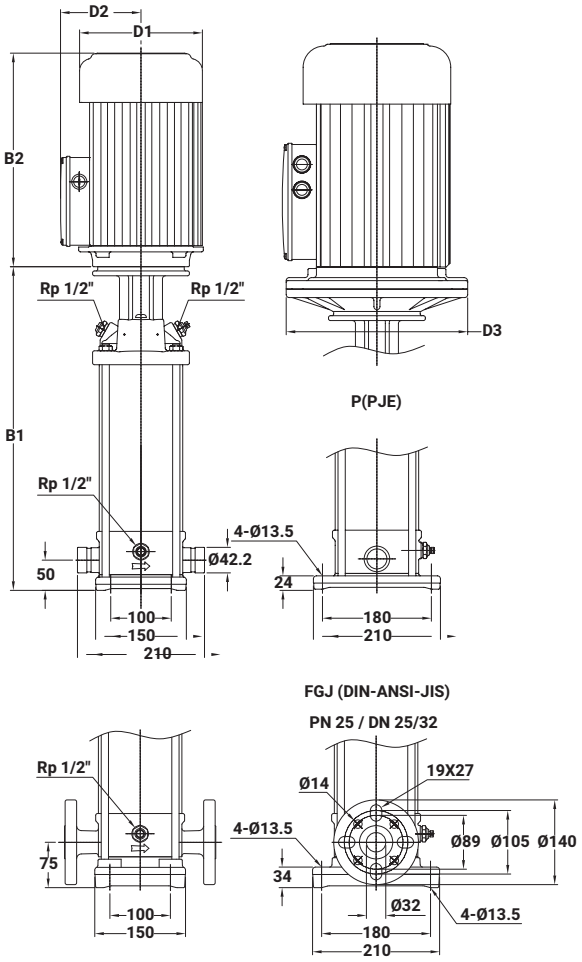



## Dimensional Sketches

### TPR 5




### TPR 5 (S)(N)




## Dimensions and Weights

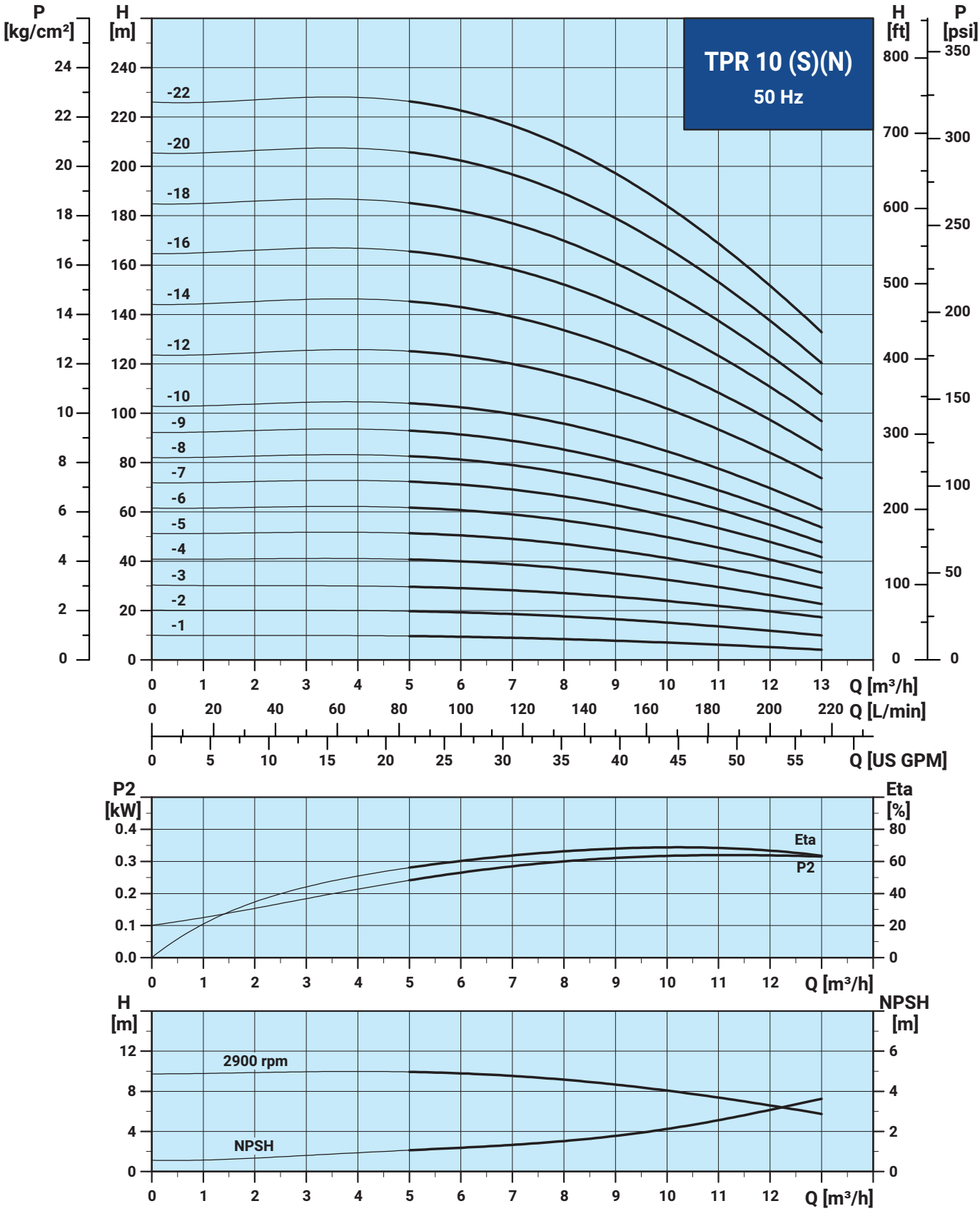
### TPR 5

| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | | | |
| TPR 5-2 | 0.37 | 278 | 471 | 144.5 | 110 | - |
| TPR 5-3 | 0.55 | 305 | 538 | 144.5 | 110 | - |
| TPR 5-4 | 0.55 | 332 | 565 | 144.5 | 110 | - |
| TPR 5-5 | 0.75 | 365 | 598 | 144.5 | 110 | - |
| TPR 5-6 | 1.10 | 392 | 656 | 144.5 | 110 | - |
| TPR 5-7 | 1.10 | 419 | 683 | 144.5 | 110 | - |
| TPR 5-8 | 1.10 | 446 | 710 | 144.5 | 110 | - |
| TPR 5-9 | 1.50 | 490 | 769 | 181 | 122 | - |
| TPR 5-10 | 1.50 | 517 | 796 | 181 | 122 | - |
| TPR 5-11 | 2.20 | 544 | 853 | 181 | 122 | - |
| TPR 5-12 | 2.20 | 571 | 880 | 181 | 122 | - |
| TPR 5-13 | 2.20 | 598 | 907 | 181 | 122 | - |
| TPR 5-14 | 2.20 | 625 | 934 | 181 | 122 | - |
| TPR 5-15 | 2.20 | 652 | 961 | 181 | 122 | - |
| TPR 5-16 | 2.20 | 679 | 988 | 181 | 122 | - |
| TPR 5-18 | 3.00 | 737 | 1061 | 208 | 133 | - |
| TPR 5-20 | 3.00 | 791 | 1115 | 208 | 133 | - |
| TPR 5-22 | 4.00 | 845 | 1204 | 208 | 133 | - |
| TPR 5-24 | 4.00 | 899 | 1258 | 208 | 133 | - |
| TPR 5-26 | 4.00 | 953 | 1312 | 208 | 133 | - |
| TPR 5-29 | 4.00 | 1034 | 1393 | 208 | 133 | - |
| TPR 5-32 | 5.50 | 1152 | 1517 | 244 | 156.5 | 300 |
| TPR 5-36 | 5.50 | 1260 | 1625 | 244 | 156.5 | 300 |

### TPR 5 (S)(N)

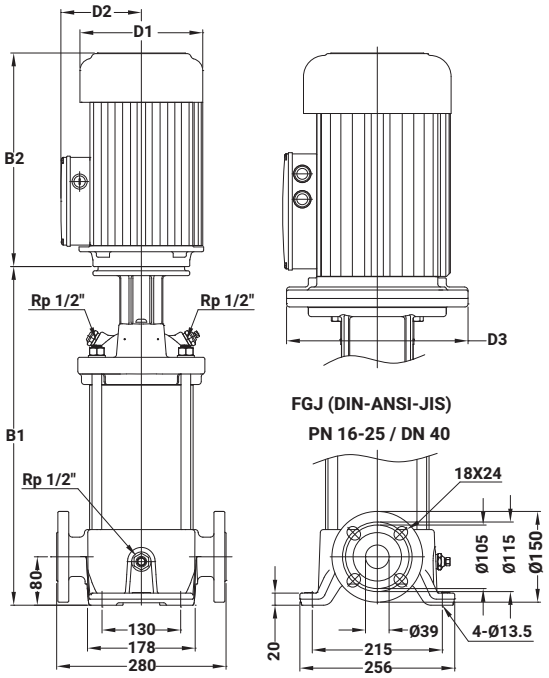
| Pump type | Motor [kW] | Dimension [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | PJE | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | B1 | B1+B2 | | | |
| TPR 5-2 (S)(N) | 0.37 | 262 | 456 | 277 | 471 | 144.5 | 110 | - |
| TPR 5-3 (S)(N) | 0.55 | 289 | 483 | 304 | 498 | 144.5 | 110 | - |
| TPR 5-4 (S)(N) | 0.55 | 316 | 510 | 331 | 525 | 144.5 | 110 | - |
| TPR 5-5 (S)(N) | 0.75 | 349 | 583 | 364 | 598 | 144.5 | 110 | - |
| TPR 5-6 (S)(N) | 1.10 | 376 | 640 | 391 | 655 | 144.5 | 110 | - |
| TPR 5-7 (S)(N) | 1.10 | 403 | 667 | 418 | 682 | 144.5 | 110 | - |
| TPR 5-8 (S)(N) | 1.10 | 430 | 694 | 445 | 709 | 144.5 | 110 | - |
| TPR 5-9 (S)(N) | 1.50 | 474 | 753 | 489 | 768 | 181 | 122 | - |
| TPR 5-10 (S)(N) | 2.20 | 501 | 780 | 516 | 795 | 181 | 122 | - |
| TPR 5-11 (S)(N) | 2.20 | 528 | 837 | 543 | 852 | 181 | 122 | - |
| TPR 5-12 (S)(N) | 2.20 | 555 | 864 | 570 | 879 | 181 | 122 | - |
| TPR 5-13 (S)(N) | 2.20 | 582 | 891 | 597 | 906 | 181 | 122 | - |
| TPR 5-14 (S)(N) | 2.20 | 609 | 918 | 624 | 933 | 181 | 122 | - |
| TPR 5-15 (S)(N) | 2.20 | 636 | 945 | 651 | 960 | 181 | 122 | - |
| TPR 5-16 (S)(N) | 2.20 | 663 | 972 | 678 | 987 | 181 | 122 | - |
| TPR 5-18 (S)(N) | 3.00 | 721 | 1045 | 736 | 1060 | 208 | 133 | - |
| TPR 5-20 (S)(N) | 3.00 | 775 | 1099 | 790 | 1114 | 208 | 133 | - |
| TPR 5-22 (S)(N) | 4.00 | 829 | 1188 | 844 | 1203 | 208 | 133 | - |
| TPR 5-24 (S)(N) | 4.00 | 883 | 1242 | 952 | 1257 | 208 | 133 | - |
| TPR 5-26 (S)(N) | 4.00 | 937 | 1296 | 1033 | 1311 | 208 | 133 | - |
| TPR 5-29 (S)(N) | 4.00 | 1018 | 1377 | 1377 | 1392 | 208 | 133 | - |
| TPR 5-32 (S)(N) | 5.50 | 1136 | 1502 | 1517 | 1517 | 244 | 156.5 | 300 |
| TPR 5-36 (S)(N) | 5.50 | 1244 | 1610 | 1625 | 1625 | 244 | 156.5 | 300 |

## Performance curves

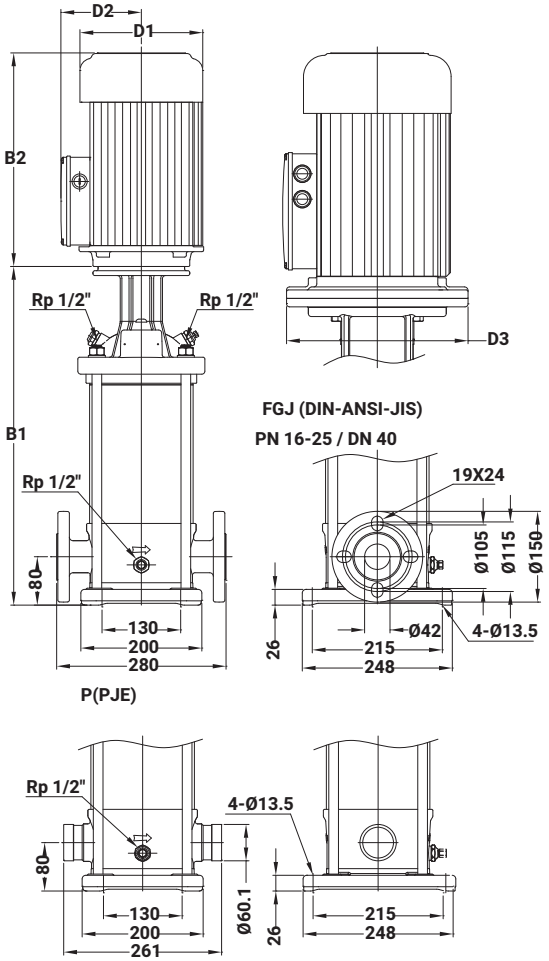


## Dimensional Sketches

### TPR 10




### TPR 10 (S)(N)




## Dimensions and Weights

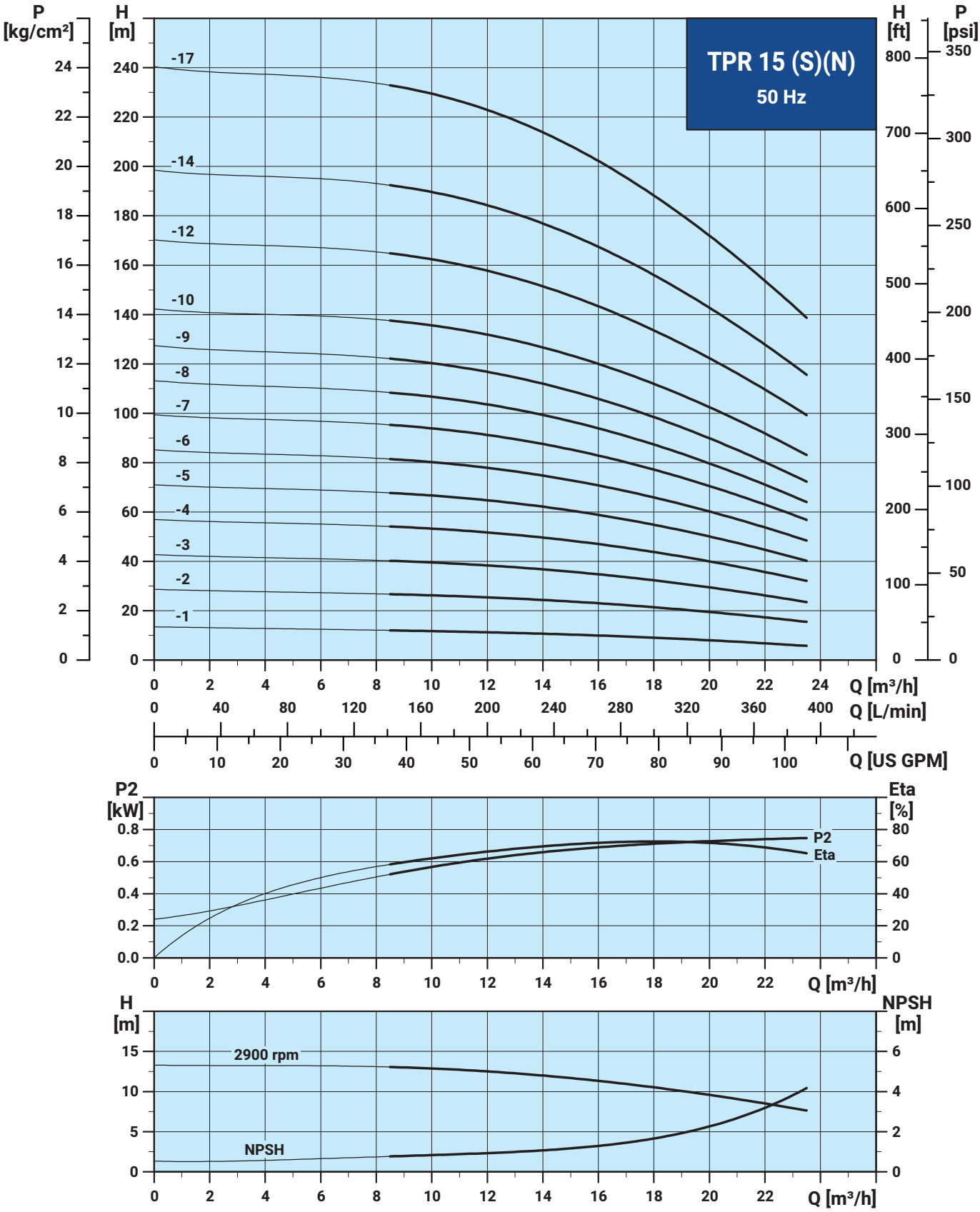
### TPR 10

| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | | | |
| TPR 10-1 | 0.37 | 343 | 537 | 144.5 | 110 | - |
| TPR 10-2 | 0.75 | 348 | 582 | 144.5 | 110 | - |
| TPR 10-3 | 1.10 | 378 | 642 | 144.5 | 110 | - |
| TPR 10-4 | 1.50 | 423 | 702 | 181 | 122 | - |
| TPR 10-5 | 2.20 | 453 | 762 | 181 | 122 | - |
| TPR 10-6 | 2.20 | 483 | 792 | 181 | 122 | - |
| TPR 10-7 | 3.00 | 516 | 840 | 208 | 133 | - |
| TPR 10-8 | 3.00 | 546 | 870 | 208 | 133 | - |
| TPR 10-9 | 3.00 | 576 | 900 | 208 | 133 | - |
| TPR 10-10 | 4.00 | 606 | 965 | 208 | 133 | - |
| TPR 10-12 | 4.00 | 666 | 1025 | 208 | 133 | - |
| TPR 10-14 | 5.50 | 760 | 1126 | 244 | 156.5 | 300 |
| TPR 10-16 | 5.50 | 820 | 1186 | 244 | 156.5 | 300 |
| TPR 10-18 | 7.50 | 880 | 1286 | 244 | 156.5 | 300 |
| TPR 10-20 | 7.50 | 940 | 1346 | 244 | 156.5 | 300 |
| TPR 10-22 | 7.50 | 1000 | 1346 | 244 | 156.5 | 300 |

### TPR 10 (S)(N)

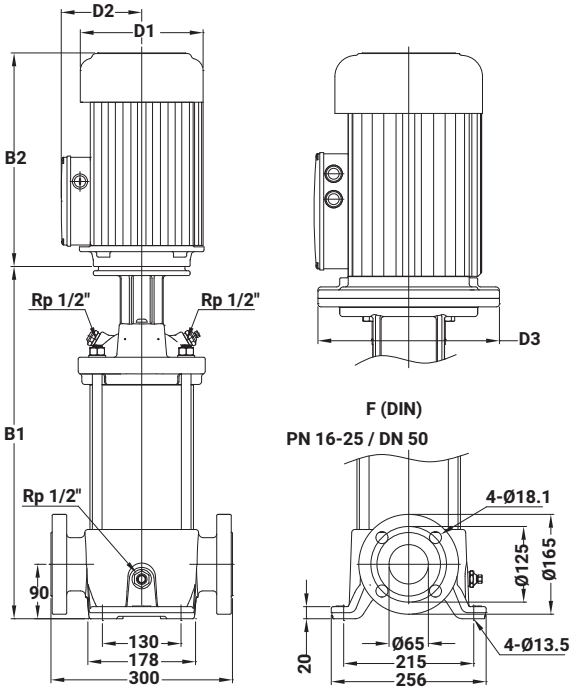
| Pump type | Motor [kW] | Dimension [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | PJE | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | B1 | B1+B2 | | | |
| TPR 10-1 (S)(N) | 0.37 | 355 | 549 | 355 | 549 | 144.5 | 110 | - |
| TPR 10-2 (S)(N) | 0.75 | 355 | 589 | 355 | 589 | 144.5 | 110 | - |
| TPR 10-3 (S)(N) | 1.10 | 390 | 654 | 390 | 654 | 144.5 | 110 | - |
| TPR 10-4 (S)(N) | 1.50 | 435 | 714 | 435 | 714 | 181 | 122 | - |
| TPR 10-5 (S)(N) | 2.20 | 465 | 774 | 465 | 774 | 181 | 122 | - |
| TPR 10-6 (S)(N) | 2.20 | 495 | 804 | 495 | 804 | 181 | 122 | - |
| TPR 10-7 (S)(N) | 3.00 | 528 | 852 | 528 | 852 | 208 | 133 | - |
| TPR 10-8 (S)(N) | 3.00 | 558 | 882 | 558 | 882 | 208 | 133 | - |
| TPR 10-9 (S)(N) | 3.00 | 588 | 912 | 588 | 912 | 208 | 133 | - |
| TPR 10-10 (S)(N) | 4.00 | 618 | 997 | 618 | 977 | 208 | 133 | - |
| TPR 10-12 (S)(N) | 4.00 | 678 | 1037 | 678 | 1037 | 208 | 133 | - |
| TPR 10-14 (S)(N) | 5.50 | 772 | 1138 | 772 | 1138 | 244 | 156.5 | 300 |
| TPR 10-16 (S)(N) | 5.50 | 832 | 1198 | 832 | 1198 | 244 | 156.5 | 300 |
| TPR 10-18 (S)(N) | 7.50 | 892 | 1298 | 892 | 1298 | 244 | 156.5 | 300 |
| TPR 10-20 (S)(N) | 7.50 | 952 | 1358 | 952 | 1358 | 244 | 156.5 | 300 |
| TPR 10-22 (S)(N) | 7.50 | 1012 | 1418 | 1012 | 1418 | 244 | 156.5 | 300 |

## Performance curves

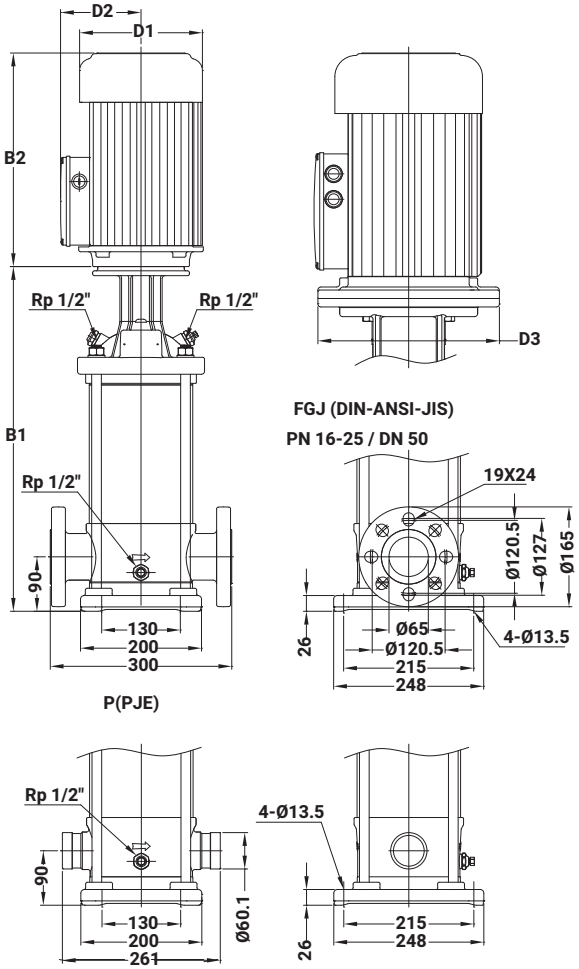


## Dimensional Sketches

### TPR 15




### TPR 15 (S)(N)




## Dimensions and Weights

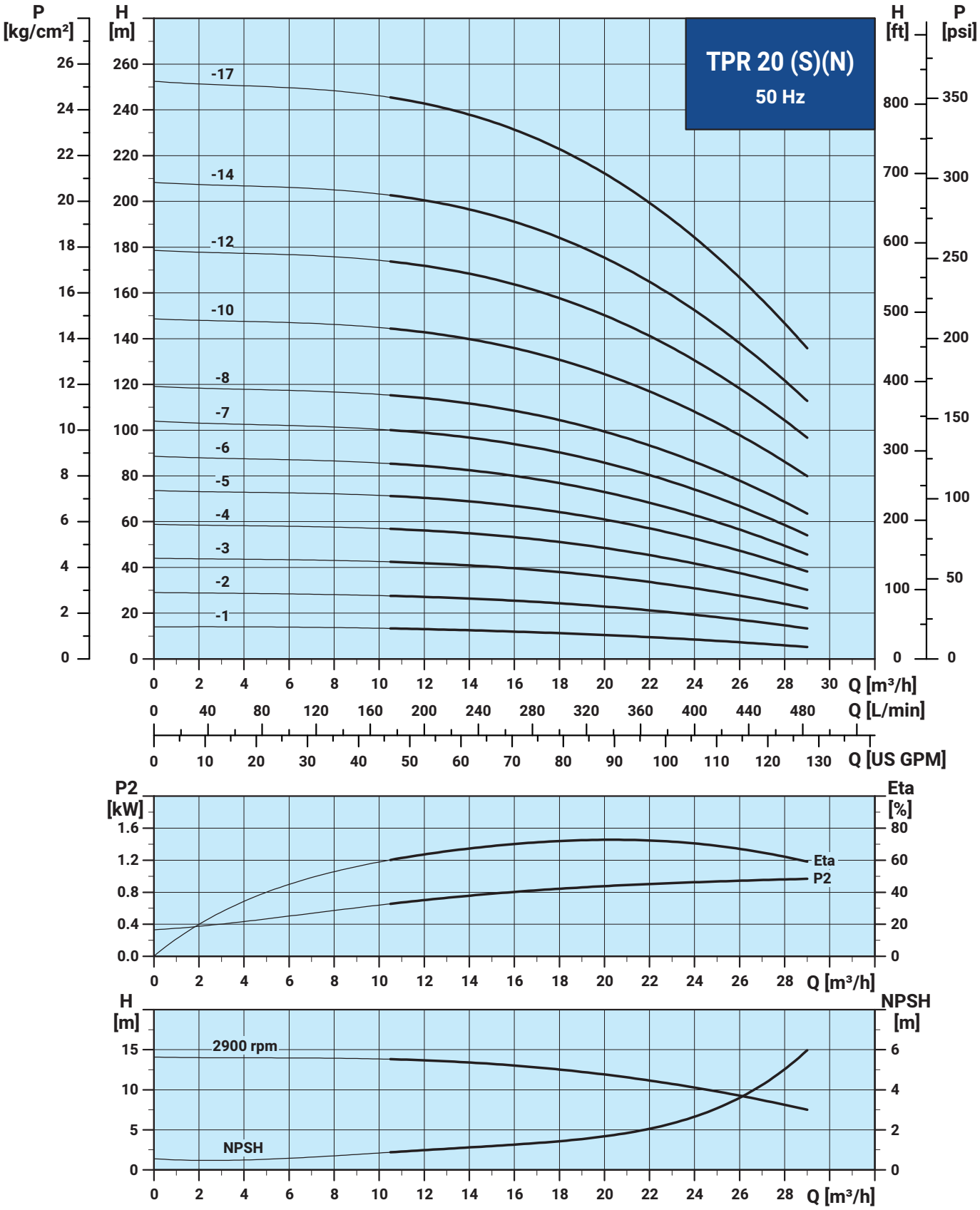
### TPR 15

| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | | | |
| TPR 15-1 | 1.10 | 401 | 665 | 144.5 | 110 | - |
| TPR 15-2 | 2.20 | 416 | 725 | 181 | 122 | - |
| TPR 15-3 | 3.00 | 464 | 788 | 208 | 133 | - |
| TPR 15-4 | 4.00 | 509 | 868 | 208 | 133 | - |
| TPR 15-5 | 4.00 | 554 | 913 | 208 | 133 | - |
| TPR 15-6 | 5.50 | 633 | 999 | 244 | 156.5 | 300 |
| TPR 15-7 | 5.50 | 678 | 1044 | 244 | 156.5 | 300 |
| TPR 15-8 | 7.50 | 723 | 1129 | 244 | 156.5 | 300 |
| TPR 15-9 | 7.50 | 768 | 1174 | 244 | 156.5 | 300 |
| TPR 15-10 | 11.00 | 894 | 1394 | 330 | 250 | 350 |
| TPR 15-12 | 11.00 | 984 | 1484 | 330 | 250 | 350 |
| TPR 15-14 | 11.00 | 1074 | 1574 | 330 | 250 | 350 |
| TPR 15-17 | 15.00 | 1209 | 1709 | 330 | 250 | 350 |

### TPR 15 (S)(N)

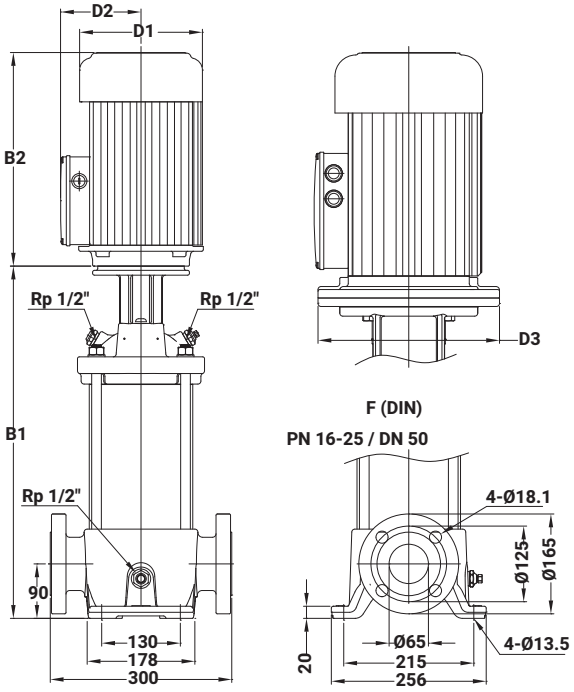
| Pump type | Motor [kW] | Dimension [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | PJE | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | B1 | B1+B2 | | | |
| TPR 15-1 (S)(N) | 1.10 | 402 | 666 | 402 | 666 | 144.5 | 110 | - |
| TPR 15-2 (S)(N) | 2.20 | 417 | 726 | 417 | 726 | 181 | 122 | - |
| TPR 15-3 (S)(N) | 3.00 | 465 | 789 | 465 | 789 | 208 | 133 | - |
| TPR 15-4 (S)(N) | 4.00 | 510 | 869 | 510 | 869 | 208 | 133 | - |
| TPR 15-5 (S)(N) | 4.00 | 555 | 914 | 555 | 914 | 208 | 133 | - |
| TPR 15-6 (S)(N) | 5.50 | 634 | 1000 | 634 | 1000 | 244 | 156.5 | 300 |
| TPR 15-7 (S)(N) | 5.50 | 679 | 1045 | 679 | 1045 | 244 | 156.5 | 300 |
| TPR 15-8 (S)(N) | 7.50 | 724 | 1130 | 724 | 1130 | 244 | 156.5 | 300 |
| TPR 15-9 (S)(N) | 7.50 | 769 | 1175 | 769 | 1175 | 244 | 156.5 | 300 |
| TPR 15-10 (S)(N) | 11.00 | 895 | 1395 | 895 | 1395 | 330 | 250 | 350 |
| TPR 15-12 (S)(N) | 11.00 | 985 | 1485 | 985 | 1485 | 330 | 250 | 350 |
| TPR 15-14 (S)(N) | 11.00 | 1075 | 1575 | 1075 | 1575 | 330 | 250 | 350 |
| TPR 15-17 (S)(N) | 15.00 | 1210 | 1710 | 1210 | 1710 | 330 | 250 | 350 |

## Performance curves

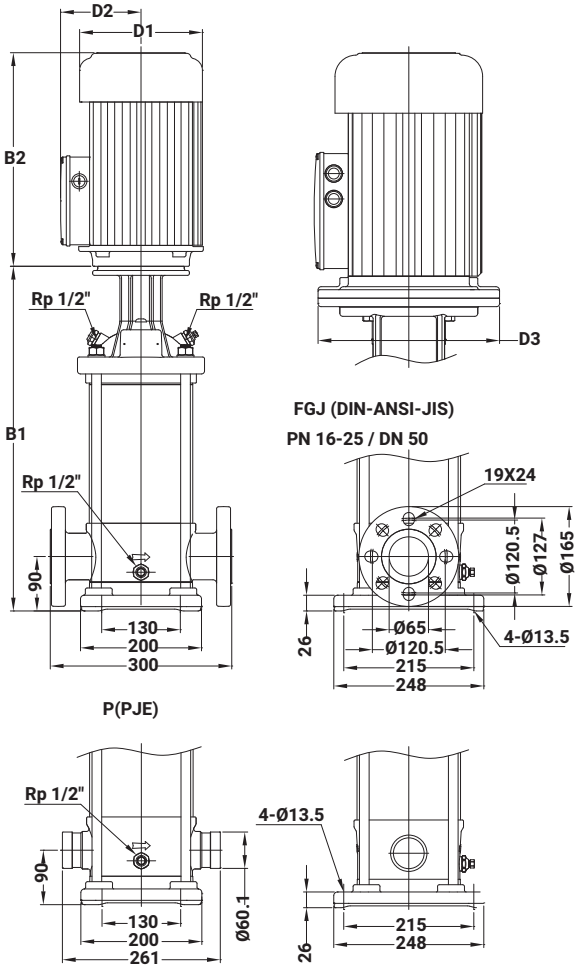


## Dimensional Sketches

### TPR 20




### TPR 20 (S)(N)




## Dimensions and Weights

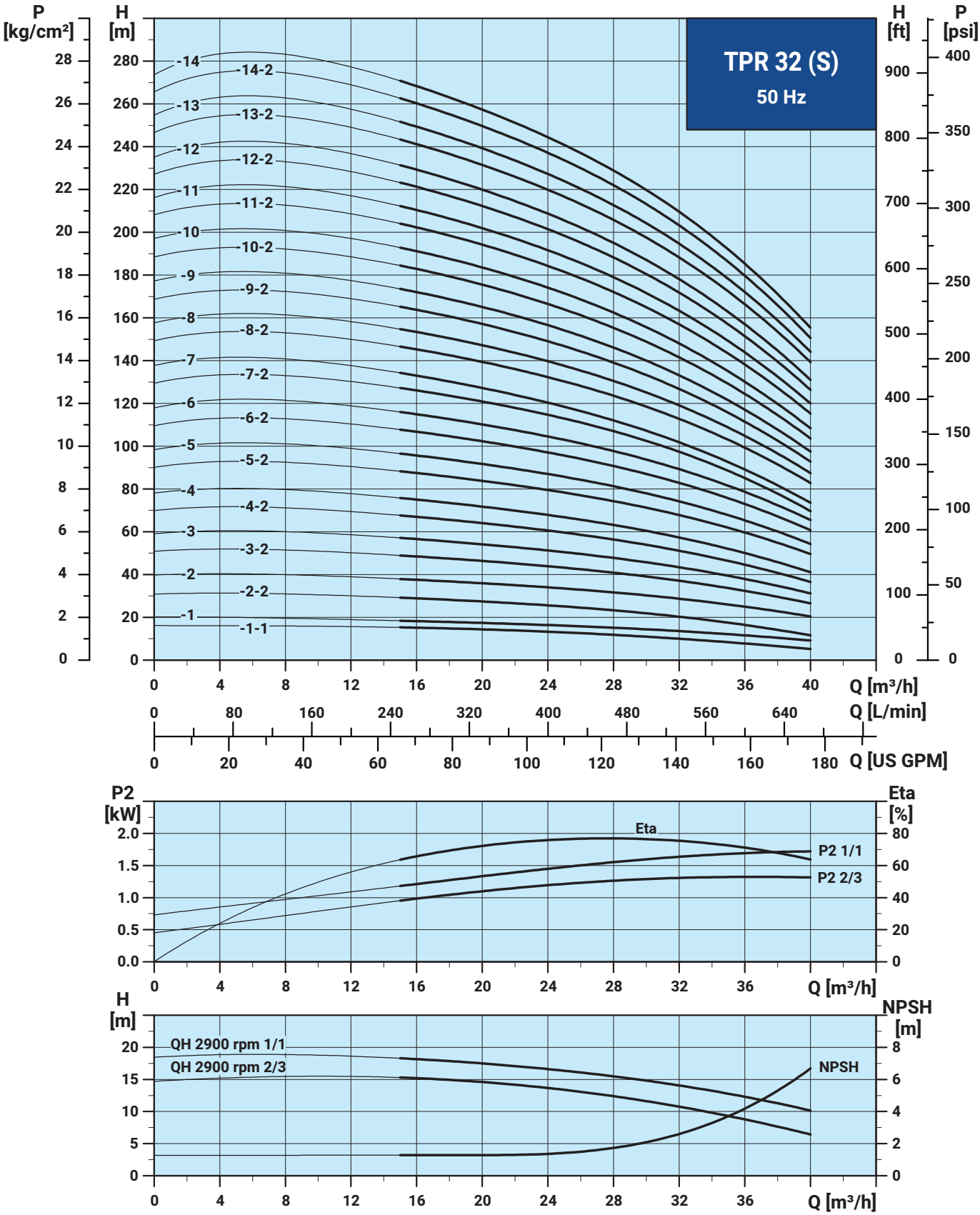
### TPR 20

| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | | | |
| TPR 20-1 | 1.10 | 401 | 665 | 144.5 | 110 | - |
| TPR 20-2 | 2.20 | 416 | 725 | 181 | 122 | - |
| TPR 20-3 | 4.00 | 464 | 823 | 208 | 133 | - |
| TPR 20-4 | 5.50 | 543 | 909 | 244 | 156.5 | - |
| TPR 20-5 | 5.50 | 588 | 954 | 244 | 156.5 | - |
| TPR 20-6 | 7.50 | 633 | 1039 | 244 | 156.5 | 300 |
| TPR 20-7 | 7.50 | 678 | 1084 | 244 | 156.5 | 300 |
| TPR 20-8 | 11.00 | 804 | 1210 | 330 | 250 | 300 |
| TPR 20-10 | 11.00 | 894 | 1300 | 330 | 250 | 300 |
| TPR 20-12 | 15.00 | 984 | 1390 | 330 | 250 | 350 |
| TPR 20-14 | 15.00 | 1074 | 1480 | 330 | 250 | 350 |
| TPR 20-17 | 18.50 | 1209 | 1615 | 330 | 250 | 350 |

### TPR 20 (S)(N)

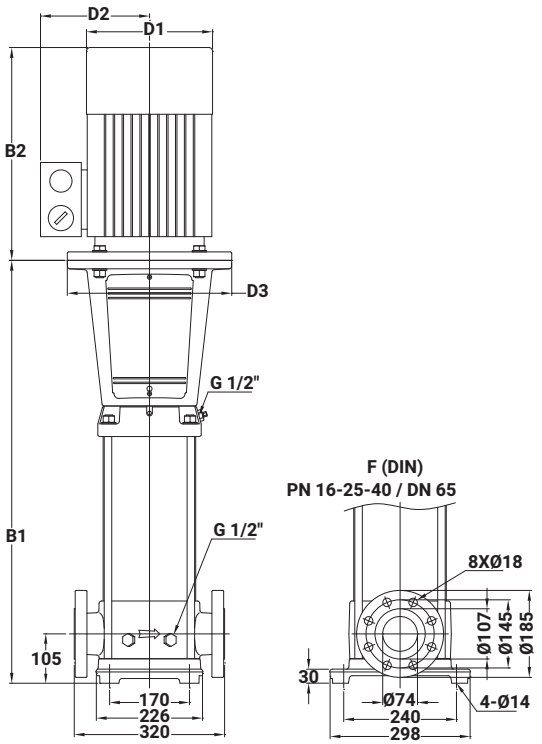
| Pump type | Motor [kW] | Dimension [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | PJE | | DIN flange | | D1 | D2 | D3 |
| | | B1 | B1+B2 | B1 | B1+B2 | | | |
| TPR 20-1 (S)(N) | 1.10 | 402 | 666 | 402 | 666 | 144.5 | 110 | - |
| TPR 20-2 (S)(N) | 2.20 | 417 | 726 | 417 | 726 | 181 | 122 | - |
| TPR 20-3 (S)(N) | 4.00 | 465 | 824 | 465 | 824 | 208 | 133 | - |
| TPR 20-4 (S)(N) | 5.50 | 544 | 910 | 544 | 910 | 244 | 156.5 | - |
| TPR 20-5 (S)(N) | 5.50 | 589 | 955 | 589 | 955 | 244 | 156.5 | - |
| TPR 20-6 (S)(N) | 7.50 | 634 | 1040 | 634 | 1040 | 244 | 156.5 | 300 |
| TPR 20-7 (S)(N) | 7.50 | 679 | 1085 | 679 | 1085 | 244 | 156.5 | 300 |
| TPR 20-8 (S)(N) | 11.00 | 805 | 1305 | 805 | 1305 | 330 | 250 | 300 |
| TPR 20-10 (S)(N) | 11.00 | 895 | 1395 | 895 | 1395 | 330 | 250 | 300 |
| TPR 20-12 (S)(N) | 15.00 | 985 | 1485 | 985 | 1485 | 330 | 250 | 350 |
| TPR 20-14 (S)(N) | 15.00 | 1075 | 1575 | 1075 | 1575 | 330 | 250 | 350 |
| TPR 20-17 (S)(N) | 18.50 | 1210 | 1755 | 1210 | 1755 | 330 | 250 | 350 |

## Performance curves



## Dimensional Sketches

TPR 32 (S)

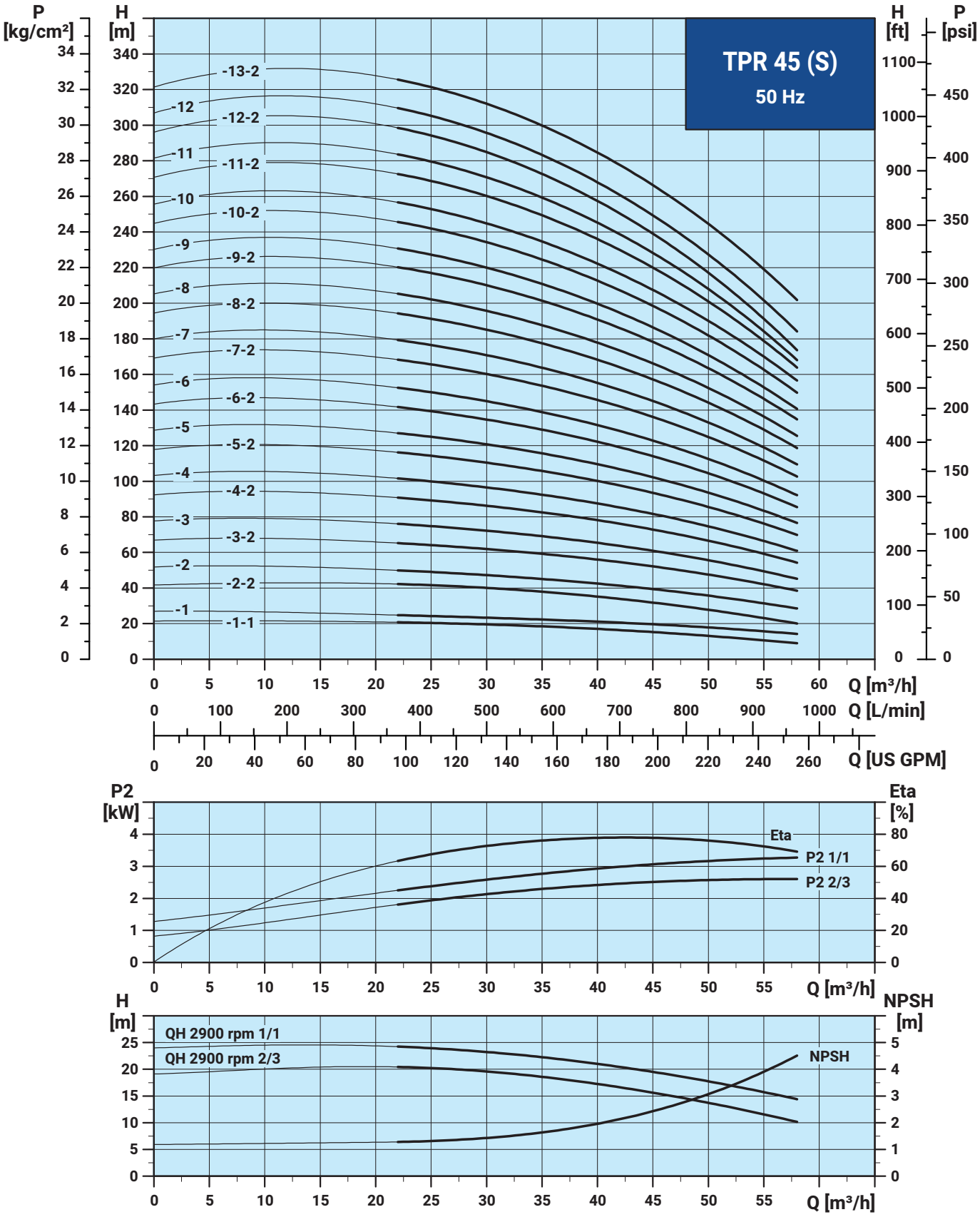



## Dimensions and Weights

TPR 32 (S)

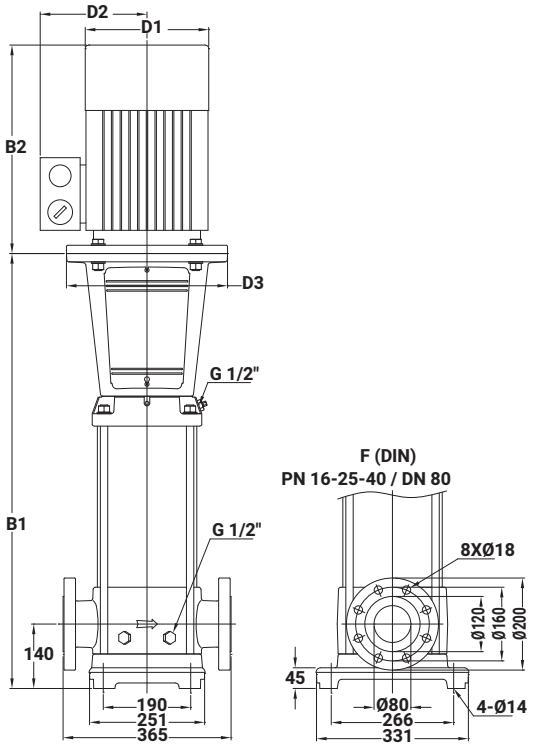
| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | B1 | B1+B2 | D1 | D2 | D3 |
| TPR 32-1-1 (S) | 1.50 | 505 | 786 | 178 | 110 | - |
| TPR 32-1 (S) | 2.20 | 505 | 826 | 178 | 110 | - |
| TPR 32-2-2 (S) | 3.00 | 575 | 910 | 198 | 120 | - |
| TPR 32-2 (S) | 4.00 | 575 | 947 | 220 | 134 | - |
| TPR 32-3-2 (S) | 5.50 | 645 | 1036 | 220 | 134 | 300 |
| TPR 32-3 (S) | 5.50 | 645 | 1036 | 220 | 134 | 300 |
| TPR 32-4-2 (S) | 7.50 | 715 | 1094 | 260 | 159 | 300 |
| TPR 32-4 (S) | 7.50 | 715 | 1094 | 260 | 159 | 300 |
| TPR 32-5-2 (S) | 11.00 | 895 | 1366 | 314 | 204 | 350 |
| TPR 32-5 (S) | 11.00 | 895 | 1366 | 314 | 204 | 350 |
| TPR 32-6-2 (S) | 11.00 | 965 | 1436 | 314 | 204 | 350 |
| TPR 32-6 (S) | 11.00 | 965 | 1436 | 314 | 204 | 350 |
| TPR 32-7-2 (S) | 15.00 | 1035 | 1506 | 314 | 204 | 350 |
| TPR 32-7 (S) | 15.00 | 1035 | 1506 | 314 | 204 | 350 |
| TPR 32-8-2 (S) | 15.00 | 1105 | 1576 | 314 | 204 | 350 |
| TPR 32-8 (S) | 15.00 | 1105 | 1576 | 314 | 204 | 350 |
| TPR 32-9-2 (S) | 18.50 | 1175 | 1690 | 314 | 204 | 350 |
| TPR 32-9 (S) | 18.50 | 1175 | 1690 | 314 | 204 | 350 |
| TPR 32-10-2 (S) | 18.50 | 1245 | 1760 | 314 | 204 | 350 |
| TPR 32-10 (S) | 18.50 | 1245 | 1760 | 314 | 204 | 350 |
| TPR 32-11-2 (S) | 22.00 | 1315 | 1856 | 314 | 204 | 350 |
| TPR 32-11 (S) | 22.00 | 1315 | 1856 | 314 | 204 | 350 |
| TPR 32-12-2 (S) | 22.00 | 1385 | 1926 | 314 | 204 | 350 |
| TPR 32-12 (S) | 22.00 | 1385 | 1926 | 314 | 204 | 350 |
| TPR 32-13-2 (S) | 30.00 | 1455 | 2066 | 396 | 315 | 400 |
| TPR 32-13 (S) | 30.00 | 1455 | 2066 | 396 | 315 | 400 |
| TPR 32-14-2 (S) | 30.00 | 1525 | 2136 | 396 | 315 | 400 |
| TPR 32-14 (S) | 30.00 | 1525 | 2136 | 396 | 315 | 400 |

## Performance curves



## Dimensional Sketches

TPR 45 (S)

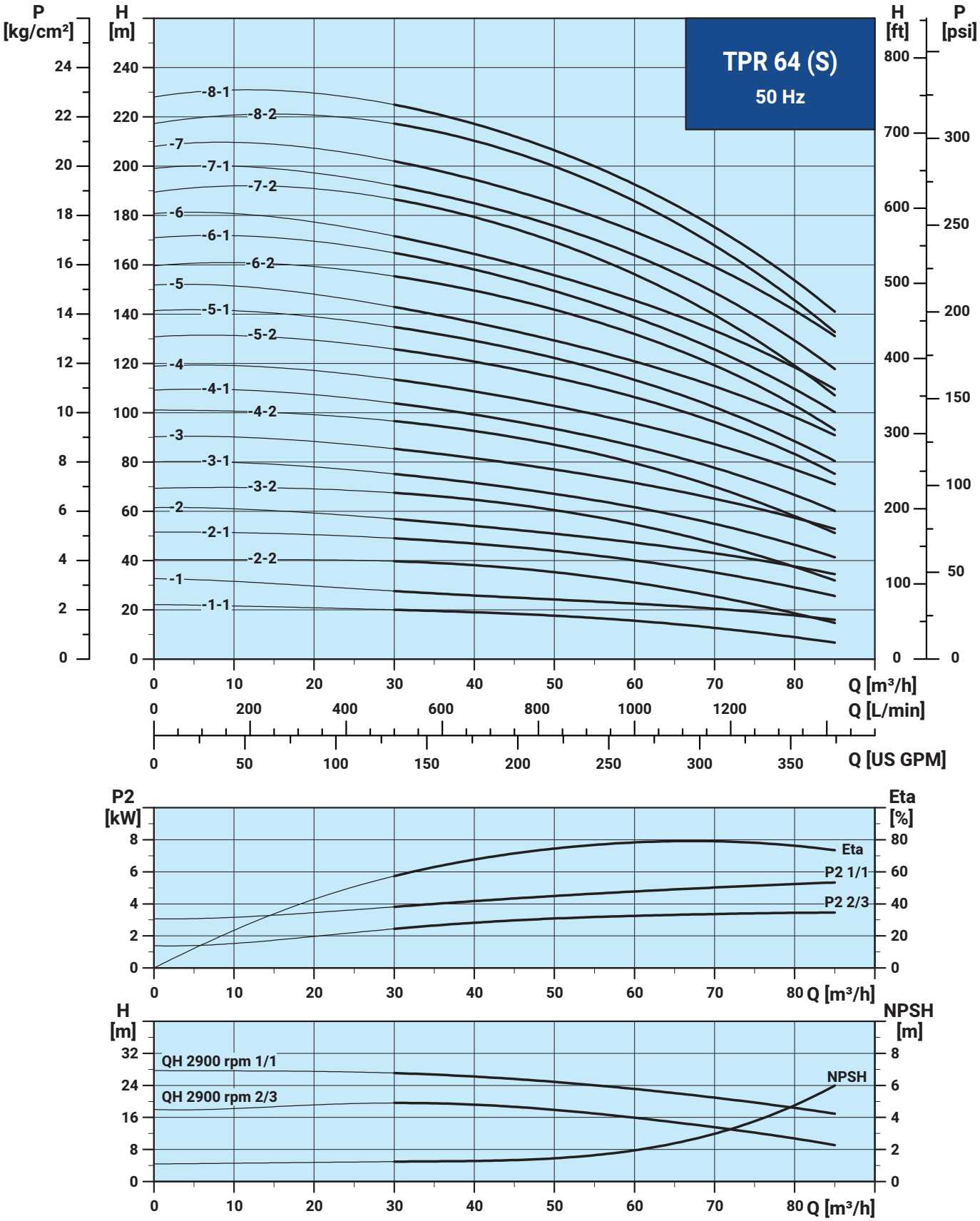



## Dimensions and Weights

TPR 45 (S)

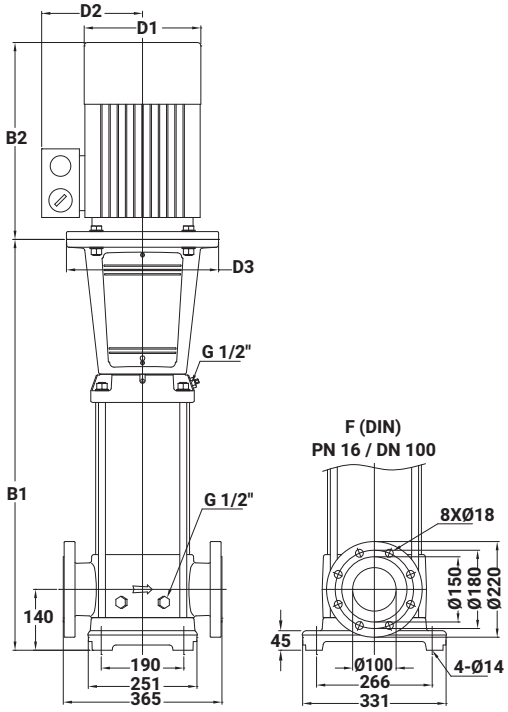
| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | B1 | B1+B2 | D1 | D2 | D3 |
| TPR 45-1-1 (S) | 3.00 | 558 | 888 | 198 | 120 | - |
| TPR 45-1 (S) | 4.00 | 558 | 888 | 220 | 134 | - |
| TPR 45-2-2 (S) | 5.50 | 638 | 1058 | 220 | 134 | 300 |
| TPR 45-2 (S) | 7.50 | 638 | 1058 | 260 | 159 | 300 |
| TPR 45-3-2 (S) | 11.00 | 828 | 1328 | 314 | 204 | 350 |
| TPR 45-3 (S) | 11.00 | 828 | 1328 | 314 | 204 | 350 |
| TPR 45-4-2 (S) | 15.00 | 908 | 1408 | 314 | 204 | 350 |
| TPR 45-4 (S) | 15.00 | 908 | 1408 | 314 | 204 | 350 |
| TPR 45-5-2 (S) | 18.50 | 988 | 1538 | 314 | 204 | 350 |
| TPR 45-5 (S) | 18.50 | 988 | 1538 | 314 | 204 | 350 |
| TPR 45-6-2 (S) | 22.00 | 1068 | 1668 | 314 | 204 | 350 |
| TPR 45-6 (S) | 22.00 | 1068 | 1668 | 314 | 204 | 350 |
| TPR 45-7-2 (S) | 30.00 | 1148 | 1808 | 396 | 315 | 400 |
| TPR 45-7 (S) | 30.00 | 1148 | 1808 | 396 | 315 | 400 |
| TPR 45-8-2 (S) | 30.00 | 1228 | 1888 | 396 | 315 | 400 |
| TPR 45-8 (S) | 30.00 | 1228 | 1888 | 396 | 315 | 400 |
| TPR 45-9-2 (S) | 30.00 | 1308 | 1968 | 396 | 315 | 400 |
| TPR 45-9 (S) | 37.00 | 1308 | 1968 | 396 | 315 | 400 |
| TPR 45-10-2 (S) | 37.00 | 1388 | 2048 | 396 | 315 | 400 |
| TPR 45-10 (S) | 37.00 | 1388 | 2048 | 396 | 315 | 400 |
| TPR 45-11-2 (S) | 45.00 | 1468 | 2178 | 439 | 338 | 450 |
| TPR 45-11 (S) | 45.00 | 1468 | 2178 | 439 | 338 | 450 |
| TPR 45-12-2 (S) | 45.00 | 1556 | 2266 | 439 | 338 | 450 |
| TPR 45-12 (S) | 45.00 | 1556 | 2266 | 439 | 338 | 450 |
| TPR 45-13-2 (S) | 45.00 | 1636 | 2346 | 439 | 338 | 450 |

## Performance curves



## Dimensional Sketches

TPR 64 (S)

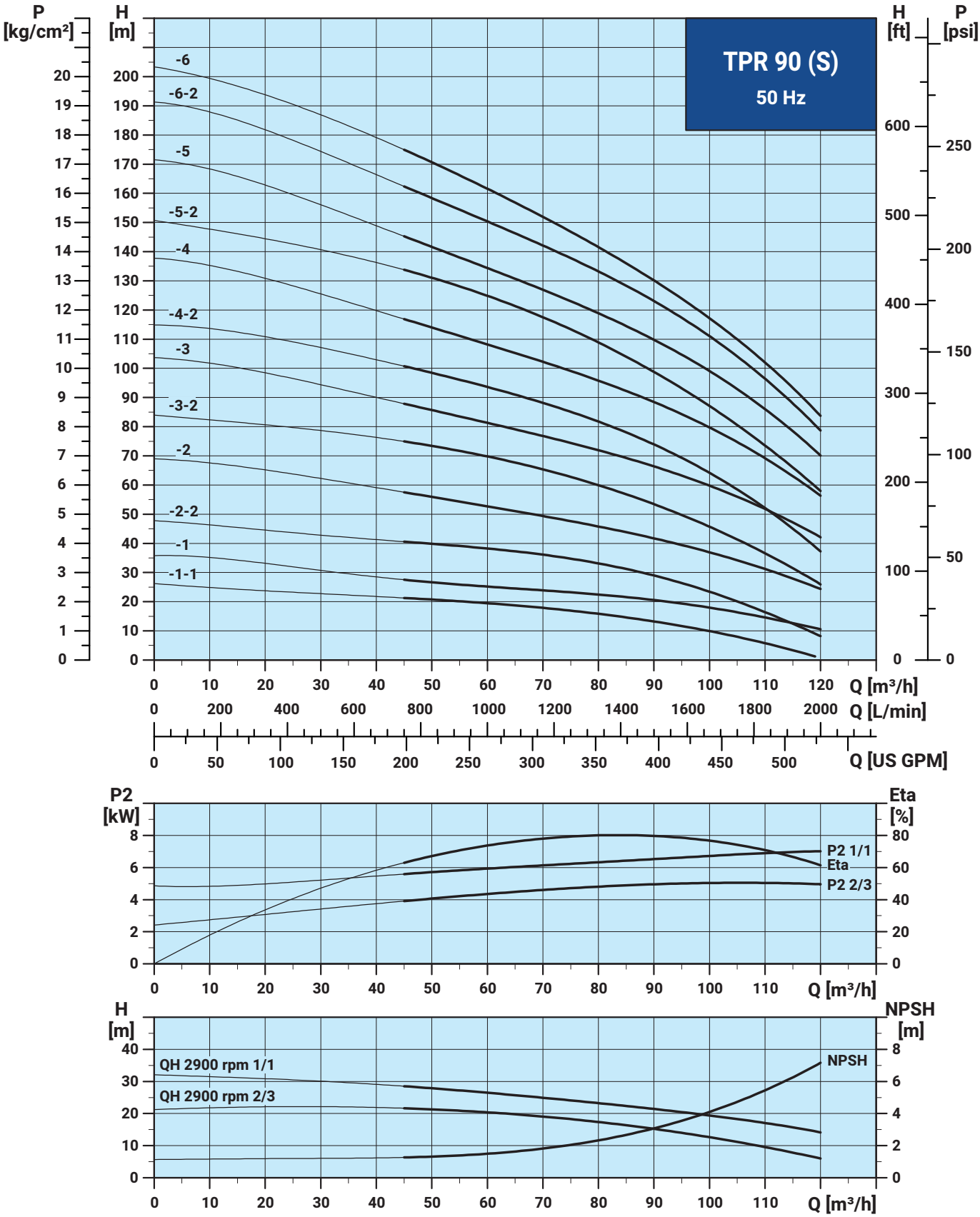



## Dimensions and Weights

TPR 64 (S)

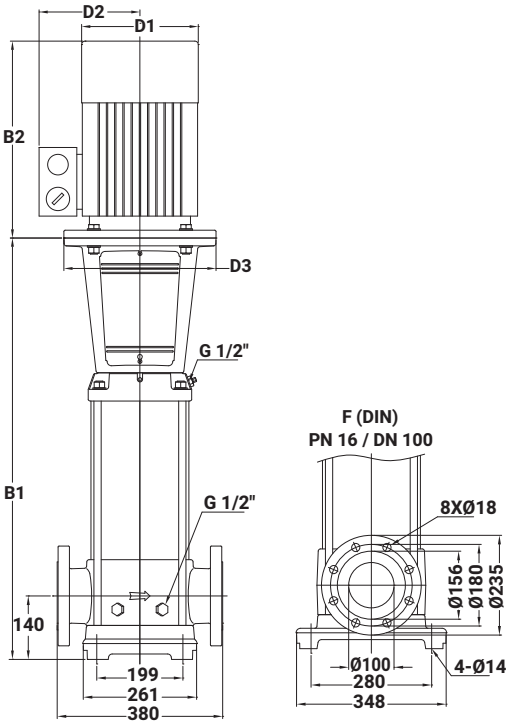
| Pump type | Motor [kW] | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | | B1 | B1+B2 | D1 | D2 | D3 |
| TPR 64-1-1 (S) | 4.00 | 561 | 933 | 220 | 134 | - |
| TPR 64-1 (S) | 5.50 | 561 | 952 | 220 | 134 | 300 |
| TPR 64-2-2 (S) | 7.50 | 644 | 1023 | 260 | 159 | 300 |
| TPR 64-2-1 (S) | 11.00 | 754 | 1225 | 314 | 204 | 350 |
| TPR 64-2 (S) | 11.00 | 754 | 1225 | 314 | 204 | 350 |
| TPR 64-3-2 (S) | 15.00 | 836 | 1307 | 314 | 204 | 350 |
| TPR 64-3-1 (S) | 15.00 | 836 | 1307 | 314 | 204 | 350 |
| TPR 64-3 (S) | 18.50 | 836 | 1351 | 314 | 204 | 350 |
| TPR 64-4-2 (S) | 18.50 | 919 | 1434 | 314 | 204 | 350 |
| TPR 64-4-1 (S) | 22.00 | 919 | 1460 | 314 | 204 | 350 |
| TPR 64-4 (S) | 22.00 | 919 | 1460 | 314 | 204 | 350 |
| TPR 64-5-2 (S) | 30.00 | 1001 | 1612 | 396 | 315 | 400 |
| TPR 64-5-1 (S) | 30.00 | 1001 | 1612 | 396 | 315 | 400 |
| TPR 64-5 (S) | 30.00 | 1001 | 1612 | 396 | 315 | 400 |
| TPR 64-6-2 (S) | 30.00 | 1084 | 1695 | 396 | 315 | 400 |
| TPR 64-6-1 (S) | 37.00 | 1084 | 1720 | 396 | 315 | 400 |
| TPR 64-6 (S) | 37.00 | 1084 | 1720 | 396 | 315 | 400 |
| TPR 64-7-2 (S) | 37.00 | 1166 | 1802 | 396 | 315 | 400 |
| TPR 64-7-1 (S) | 37.00 | 1166 | 1802 | 396 | 315 | 400 |
| TPR 64-7 (S) | 45.00 | 1166 | 1874 | 439 | 338 | 450 |
| TPR 64-8-2 (S) | 45.00 | 1248 | 1956 | 439 | 338 | 450 |
| TPR 64-8-1 (S) | 45.00 | 1248 | 1956 | 439 | 338 | 450 |

## Performance curves



## Dimensional Sketches

TPR 90 (S)




## Dimensions and Weights

TPR 90 (S)

| Pump type | Motor | Dimension [mm] | | | | |
|---|---|---|---|---|---|---|
| | [kW] | B1 | B1+B2 | D1 | D2 | D3 |
| TPR 90-1-1 (S) | 5.50 | 571 | 962 | 220 | 134 | 300 |
| TPR 90-1 (S) | 7.50 | 571 | 950 | 260 | 159 | 300 |
| TPR 90-2-2 (S) | 11.00 | 773 | 1244 | 314 | 204 | 350 |
| TPR 90-2 (S) | 15.00 | 773 | 1244 | 314 | 204 | 350 |
| TPR 90-3-2 (S) | 18.50 | 865 | 1380 | 314 | 204 | 350 |
| TPR 90-3 (S) | 22.00 | 865 | 1406 | 314 | 204 | 350 |
| TPR 90-4-2 (S) | 30.00 | 957 | 1568 | 396 | 315 | 400 |
| TPR 90-4 (S) | 30.00 | 957 | 1568 | 396 | 315 | 400 |
| TPR 90-5-2 (S) | 37.00 | 1049 | 1685 | 396 | 315 | 400 |
| TPR 90-5 (S) | 37.00 | 1049 | 1685 | 396 | 315 | 400 |
| TPR 90-6-2 (S) | 45.00 | 1141 | 1849 | 439 | 338 | 450 |
| TPR 90-6 (S) | 45.00 | 1141 | 1849 | 439 | 338 | 450 |

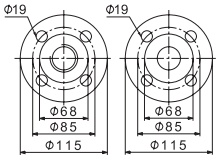
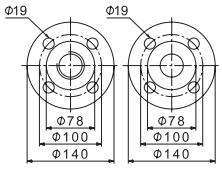
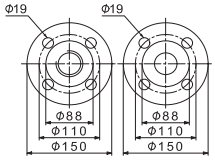
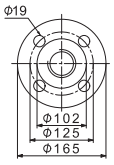
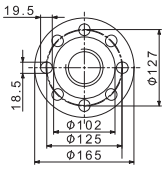
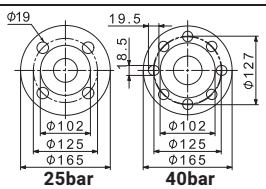
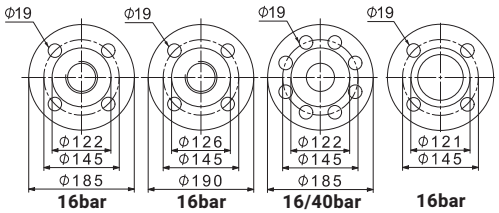
# Accessories

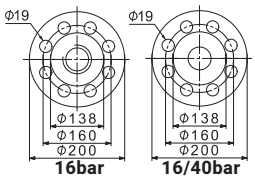
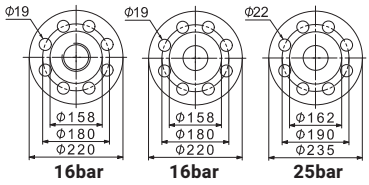
## Pipe connection

Various sets of counter-flanges and couplings are available for pipe connection.

### Counter-flanges for TPR

A set consists of one counter-flange, one gasket, bolts and nuts.

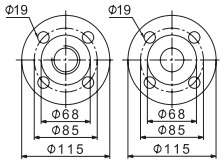
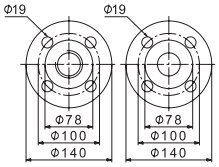
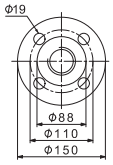
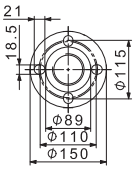
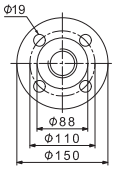
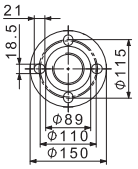
| Counter-flange | Pump type | Description | Rated pressure | Pipe connection |
|---|---|---|---|---|
|  | TPR 1,3,5 | Threaded | 16bar, EN 1092-2 | Rp 1 |
| | | For welding | 25bar, EN 1092-2 | 25mm, nominal |
|  | TPR 1,3,5 | Threaded | 16bar, EN 1092-2 | Rp 1 1/4 |
| | | For welding | 25bar, EN 1092-2 | 32mm, nominal |
|  | TPR 10 | Threaded | 16bar, EN 1092-2 | Rp 1 1/2 |
| | | Threaded | 16bar, EN 1092-2 | Rp 2 |
| | | For welding | 25bar, EN 1092-2 | 40mm, nominal |
| | | For welding | 40bar, special flange | 50mm, nominal |
|  | TPR 15<br>TPR 20 | Threaded | 16bar, EN 1092-2 | Rp 2 |
| | | Threaded | 16bar, special flange | Rp 2 1/2 |
|  | | Threaded | 16bar, special flange | Rp 2 1/2* |
|  | | For welding | 25bar, EN 1092-2 | 50mm, nominal |
| | | For welding | 40bar, special flange | 65mm, nominal |
|  | TPR 32 | Threaded | 16bar, EN 1092-2 | Rp 2 1/2 |
| | | Threaded | 16bar, special flange | Rp 3 |
| | | For welding | 16bar, EN 1092-2 | 65mm, nominal |
| | | For welding | 40bar, DIN 2635 | 65mm, nominal |

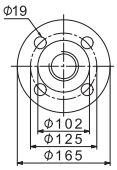
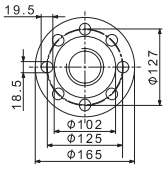
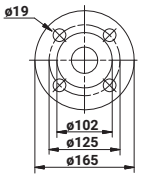
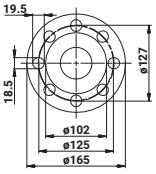
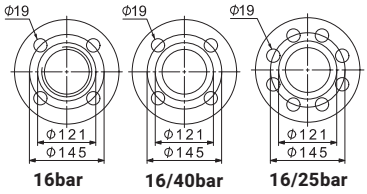
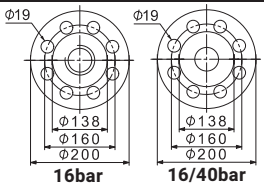
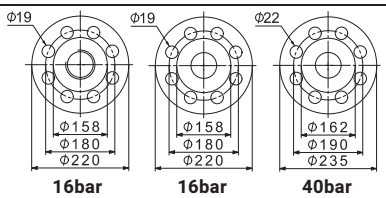
| Counter-flange | Pump type | Description | Rated pressure | Pipe connection |
|---|---|---|---|---|
|  | TPR 45 | Threaded | 16bar | Rp 3 |
| | | For welding | 16bar | 80mm, nominal |
| | | For welding | 40bar | 80mm, nominal |
|  | TPR 64, 90 | Threaded | 16bar, EN 1092-2 | Rp 4 |
| | | For welding | 16bar, EN 1092-2 | 100mm, nominal |

## Counter-flanges for TPR(S)(N)

Counter-flanges for TPR(N) pumps are made of stainless steel .(SUS 316)

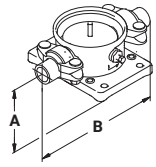
A set consists of one counter-flange, one gasket, bolts and nuts.

| Counter-flange | Pump type | Description | Rated pressure | Pipe connection |
|---|---|---|---|---|
|  | TPR 1,3,5 (S)(N) | Threaded | 16bar, EN 1092-2 | Rp 1 |
| | | For welding | 25bar, EN 1092-2 | 25mm, nominal |
|  | TPR 1,3,5 (S)(N) | Threaded | 16bar, EN 1092-2 | Rp 1 1/4 |
| | | For welding | 25bar, EN 1092-2 | 32mm, nominal |
|  | TPR 10 (S)(N) | For welding | 16bar, EN 1092-2 | Rp 1 1/2 |
|  | | Threaded | 16bar, EN 1092-2 | Rp 2 |
|  | | For welding | 25bar, EN 1092-2 | 40mm, nominal |
|  | | For welding | 25bar, special flange | 50mm, nominal |

| Counter-flange | Pump type | Description | Rated pressure | Pipe connection |
|---|---|---|---|---|
|  | TPR 15, 20 (S)(N) | Threaded | 16bar, EN 1092-2 | Rp 2 |
|  | | Threaded | 16bar, special flange | Rp 2 1/2 |
| | | Threaded | 16bar, special flange | Rp 2 1/2* |
|  | | For welding | 25bar, EN 1092-2 | 50mm, nominal |
|  | | For welding | 25bar, special flange | 65mm, nominal |
|  | TPR 32 (S) | Threaded | 16bar | Rp 2 1/2 |
| | | Threaded | 16bar, special flange | Rp 3 |
| | | For welding | 16bar | 65mm, nominal |
| | | For welding | 40bar | 65mm, nominal |
| | | For welding | 16bar, special flange | 80mm, nominal |
|  | TPR 45 (S) | Threaded | 16bar | Rp 3 |
| | | For welding | 16bar | 80mm, nominal |
| | | For welding | 40bar | 80mm, nominal |
|  | TPR 64, 90 (S) | Threaded | 16bar | Rp 4 |
| | | For welding | 16bar | 100mm, nominal |

## PJE couplings for TPR(S)(N)

Materials in contact with the pumped liquid are made of stainless steel (AISI 316) and rubber.
A set consists of tow coupling halves, one gasket, one pipe stub (for welding or threaded), bolts and nuts.

| Coupling | Pump type | Pipe stub | Max. pressure [bar] | A | B | Pipe connection | Rubber parts | Nuber of coupling sets required |
|---|---|---|---|---|---|---|---|---|
|  | TPR 1,3,5 (S)(N) | Threaded | 69 | 50 | 320 | R 1 1/4 | EPDM | 2 |
|  | TPR 10 (S)(N)<br>TPR 15, 20 (S)(N) | Threaded | 69 | 80 | 377 | R 2 | EPDM | 2 |

## Pressure and Head Conversion Table

| kgf/cm² | m $H_2O$ | lbf/in² (psi) | ft $H_2O$ | N/m² (Pa) | kPa | bar |
|---|---|---|---|---|---|---|
| 1 | 10 | 14.22 | 32.81 | 98,067 | 98.07 | 0.981 |
| 0.1 | 1 | 1.42 | 3.28 | 9,789 | 9.789 | 0.098 |
| 0.0703 | 0.703 | 1 | 2.31 | 6,895 | 6.895 | 0.069 |
| 0.0305 | 0.305 | 0.433 | 1 | 2,984 | 2.984 | 0.03 |
| $1.02X10^{-5}$ | $1.02X10^{-4}$ | $1.45X10^{-4}$ | $3.35X10^{-4}$ | 1 | 0.001 | $10^{-5}$ |
| 0.0102 | 0.102 | 0.145 | 0.335 | 1,000 | 1 | 0.01 |
| 1.02 | 10.2 | 14.5 | 33.52 | $10^5$ | 100 | 1 |

## Water Flow Conversion Table

| L /min | m³/h | ft³/h | ft³/min | Imp. gal/min | US gal/min |
|---|---|---|---|---|---|
| 1 | 0.06 | 2.1189 | 0.0353 | 0.22 | 0.264 |
| 16.667 | 1 | 35.3147 | 0.5886 | 3.666 | 4.403 |
| 0.472 | 0.0283 | 1 | 0.0167 | 0.104 | 0.125 |
| 28.317 | 1.6990 | 60 | 1 | 6.229 | 7.480 |
| 4.546 | 0.2728 | 9.6326 | 0.1605 | 1 | 1.201 |
| 3.785 | 0.2271 | 8.0209 | 0.1337 | 0.833 | 1 |

# Memo

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All specifications are subject to change without notice. TPR-50Hz-EN004b-202506

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