



# POWER-HYDRAULIK



## FLOW DIVIDER

# Overview

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# The geared flow divider

## Description

- Geared flow dividers by POWER-HYDRAULIK are characterized by high manufacturing accuracy. Depending on the version, volumetric flow rates of 2 to 600 liters per minute can exactly be divided into 2 to max. 12 equal or proportional flows. Due to its special design, there is no need for additional pressure relief valves for limit position equalization in many applications. The design of hydraulic systems can be clearer and more compact when using flow dividers.

### Quality at its best

- High-strength cast housing
- Precision needle bearings
- O-ring seals between the chambers
- Accurately dowelled chambers
- Hardened shafts with hardened round keys and keyways (prevents stress concentration and wear)

Thanks to precisely machined undercuts, which guarantee constant filling and displacement, the flow dividers work smoothly and have a long service life.

### Dimensioning

Best efficiency and highest precision are achieved if the flow divider is operated in the ideal speed range. Therefore both inlets should be used also in case of devices with several chambers. The outlet volumetric flow rate can be adapted to the requirements by combining any chambers of a series. The maximum speed of 3,500 rpm and the minimum speed of 700 - 800 rpm, the maximum inlet pressure and the maximum pressure difference should be observed. The ideal speed range is at 1,500 - 2,500 rpm. Below a speed of 700 - 800 rpm, the division results will be inaccurate. The required inlet pressure for flow dividers is calculated in the following way:

"The product of inlet pressure and volumetric flow rate is equivalent to the sum of the products of sub-flows and pressures at the respective outlets, plus the pressure loss of 10 - 15 bar in the flow divider".

$$p \times Q = p_1 \times Q_1 + p_2 \times Q_2 + p_n \times Q_n + (10-15\text{bar})$$

|         |                     |
|---------|---------------------|
| p       | = inlet pressure    |
| Q       | = inlet flow rate   |
| p1 - pn | = outlet pressures  |
| Q1 - Qn | = outlet flow rates |

Hydraulic oils of up to 500 cSt and filters with a pore size of up to 25 µm are used.

### Product variants and accessories

- Flow dividers are also available as S-Versions for the increased pressure range (continuous pressure 210 bar, intermittent pressure 320 bar, max. pressure difference between chambers 110 bar). Details can be found under the respective flow divider series.
- The flow dividers are furthermore available as T-Versions. They are characterized by increased division accuracy and automatically comprise all features of the S-Version with mounting brackets. Compared to other versions (+/- 2.5% accuracy at 1500 - 2500 rpm and max. pressure difference between sections of 20 -25 bar], the T-Version achieves up to +/- 1.3%.
- By default the flow dividers are equipped with NBR (Buna-N) seals. On request, the flow dividers are also available with Viton O-ring seals.
- Complete pressure relief units, if required also with anti-cavitation valves, can be retrofitted on the secondary side. Pressure relief units must be used wherever the maximum permissible pressure is exceeded by pressure intensification.

### Applications

Flow dividers serve to split an inlet flow into two or more equal or proportional sub-flows. Areas of application are, for instance, the synchronism or two or more cylinders. The flow divider is used as divider in one direction and combiner in another direction. Lubricant/coolant distribution and motor-pump applications are further areas of application. Flow dividers can also be used as pressure intensifiers by relieving one or several outlets to the tank.



### Synchronization error

The division accuracy of geared flow dividers depends on the following parameters:

- oil viscosity and temperature
- difference in load pressures
- system pressure level
- oil flow to be divided

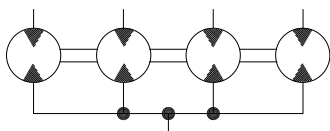
The more information is available, the better POWER-HYDRAULIK can dimension the devices and provide reference about suitable flow dividers.

### Pressure loss( $\Delta p$ )

The pressure loss in the flow divider is usually approx. 10-15 bar. This must be observed in any applications and, if required, the system pressure must be adapted.

### Symbol of a flow divider (here a 4-fold flow divider)

in all control diagrams of POWER-HYDRAULIK, a symbol like the example on the left is used for the flow divider. An overflow oil connection is not required.



### Division ratio

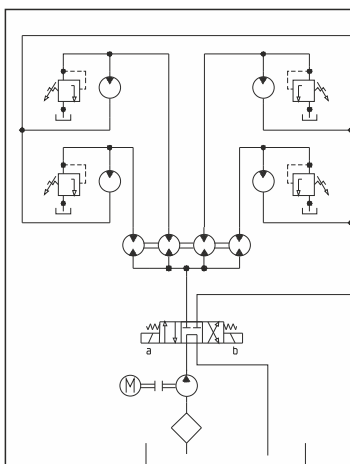
A uniform division ratio is required in most of the cases. On request, diverse division ratios can be achieved as well. This is possible without problems if different volumes are required within one size. Do not hesitate to contact us in case of questions.

### Application of flow dividers under special conditions

If using a flow divider is considered, but there are uncertainties regarding which flow divider is promising and suitable for the application, POWER-HYDRAULIK will gladly assist you. Preferably with the planned control diagram and information on:

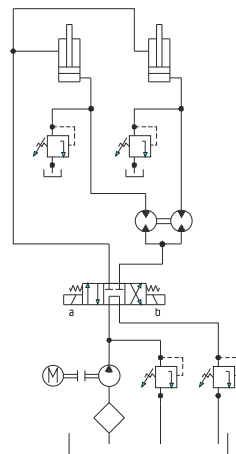
- inlet volumetric flow rate
- equal or proportional division
- operating or system pressure
- type or medium
- type of cylinders

## Typical applications



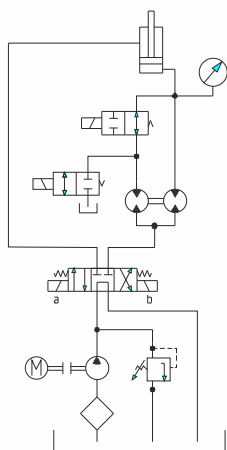
### Supply of several stations

One pump supplies several stations in order to ensure sufficient lubrication: e.g. machines with hydraulic motor drive, tunneling machines, lubrication in coal/bowl mills, coolant distribution in multi-spindle deep-hole drilling machines.



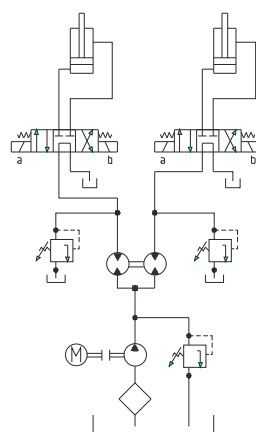
### Synchronism

Synchronism of two or more cylinders, e.g. lifting platforms, pallet changers, ejectors in form tools, tilting stages



### Pressure intensifier

Flow dividers can also be used as pressure intensifiers by relieving one or several outlets to the tank, e.g. in waste presses and other high-/low-pressure designs



### Separate control of flow rates

Two or more flow rates are controlled separately at different pressure: presses, machine tools, etc.

# Type description



## Series 200

- From 2 to 8 sections
- 7 chamber sizes
- max. continuous pressure 110 oder 210 bar
- equal and proportional flow rate
- max. intermittent pressure 320 bar
- inlet volumetric flow rate of 2-section devices: 2-40 l/min.
- 8-section devices: max. 160 l/min



## Series 300

- from 2 to 8 sections
- 5 chamber sizes
- equal and proportional flow rate
- max. continuous pressure 105 oder 210 bar
- max. intermittent pressure 320 bar
- inlet volumetric flow rate of 2-section devices: 13-170 l/min
- 8-section devices: max. 500 l/min



## Series 400

- 2 sections
- 2 chamber sizes
- equal flow rate
- max. continuous pressure 105 oder 210 bar
- max. intermittent pressure 320 bar
- inlet volumetric flow rate 77-380 l/min



## Type description



### Series H/HR

- from 2 to 6 sections
- 5 chamber sizes
- equal and proportional flow rate
- max. continuous pressure 240 bar
- max. intermittent pressure 420 bar
- inlet volumetric flow rate of 2-section devices: 13-170 l/min.
- 6-section devices: max. 400 l/min

### Pressure relief units - for all series

- Used in case of pressure intensification if the maximum permissible pressure is exceeded
- Installation into the pipe by default
- Series 200 PR – 2-section and 4-section also flange-mounted
- Depending on the version, the aluminum control block is equipped with pressure relief valves, check valves and/or anti-cavitation valves
- On request, the pressure relief valves are set



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### flow divider with inductive sensor

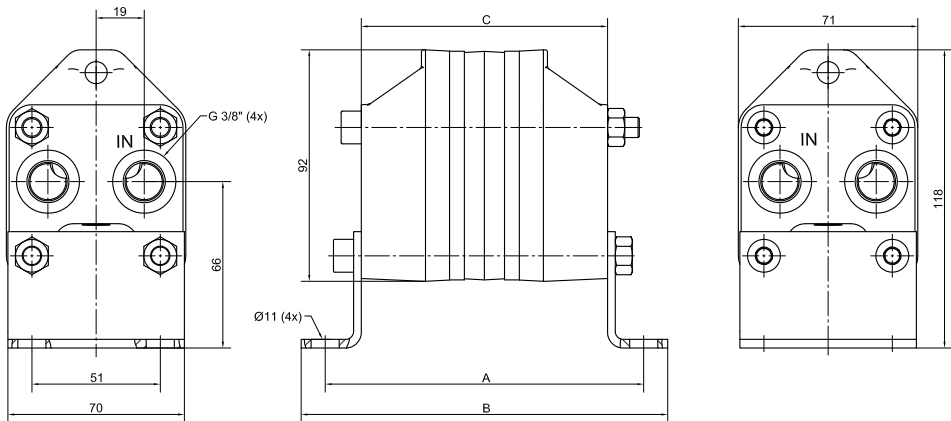
- Possibility to install an inductive sensor to measure the speed at the flow divider
- Further possibilities and solutions on request



# Flow dividers with two equal sub-flows

## Series 200 - PR

**Different variants available:**  
Without variant: standard version without mounting brackets  
A: standard version with mounting brackets  
S: designed for higher pressure without mounting brackets  
B: S-Version with mounting brackets  
T: B-Version with increased division accuracy



max. speed: 3500 rpm

| model    | number of sections | maximum inlet<br>(dm <sup>3</sup> /min) | displacement per section<br>(cm <sup>3</sup> /rev.) | max. pressure continuous [bar] |               | max. pressure intermittent [bar] |               | max. pressure difference between sections [bar] |               | Dim. A*2<br>(mm) | Dim. B*2<br>(mm) | Dim. C<br>(mm) |
|----------|--------------------|---|---|--------------------------------|---------------|----------------------------------|---------------|---|---------------|------------------|------------------|----------------|
|          |                    |   |   | version A                      | version S,B,T | version A                        | version S,B,T | version A                                       | version S,B,T |                  |                  |                |
| PR 202-* | 2                  | 13                                      | 1,9   | 140                            | 210           | 175                              | 320           | 175   | 175           | 126              | 145              | 97,4           |
| PR 204-* | 2                  | 23                                      | 3,3   | 110                            | 210           | 140                              | 320           | 110   | 110           | 134              | 154              | 106,1          |
| PR 207-* | 2                  | 40                                      | 5,6   | 110                            | 210           | 140                              | 320           | 110   | 110           | 148              | 168              | 120,1          |

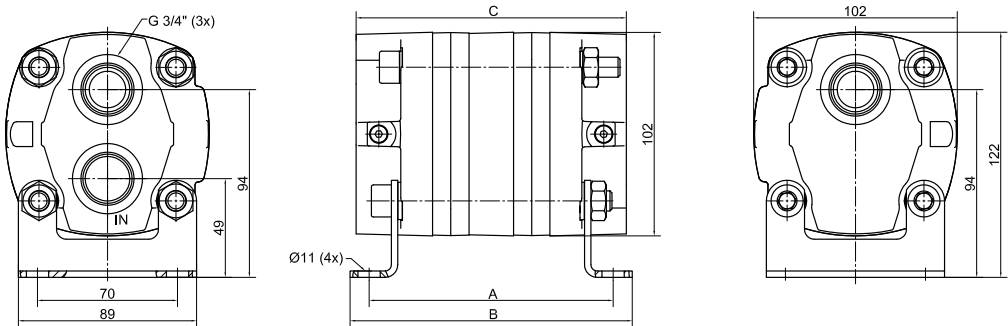
\* Please add required variant!

Ordering code on page 14!

## 300er Serie - PR

**Different variants available:**  
Without variant: standard version  
S: designed for higher pressure  
T: S-Version with increased division accuracy

All versions of Series 300 by default with mounting brackets



max. speed: 3500 rpm

| model    | number of sections | maximum inlet<br>(dm <sup>3</sup> /min) | displacement per section<br>(cm <sup>3</sup> /rev.) | max. pressure continuous [bar] |             | max. pressure intermittent [bar] |             | max. pressure difference between sections [bar] |             | Dim. A*2<br>(mm) | Dim. B*2<br>(mm) | Dim. C<br>(mm) |
|----------|--------------------|---|---|--------------------------------|-------------|----------------------------------|-------------|---|-------------|------------------|------------------|----------------|
|          |                    |   |   | without version                | version S,T | without version                  | version S,T | without version                                 | version S,T |                  |                  |                |
| PR 307-* | 2                  | 80                                      | 11,7  | 105                            | 210         | 140                              | 320         | 70  | 110         | 122              | 141              | 134,8          |
| PR 310-* | 2                  | 115                                     | 16,4  | 105                            | 210         | 140                              | 320         | 70  | 110         | 136              | 155              | 149,3          |
| PR 315-* | 2                  | 170                                     | 24,4  | 105                            | 210         | 140                              | 320         | 70  | 110         | 161              | 180              | 174,2          |

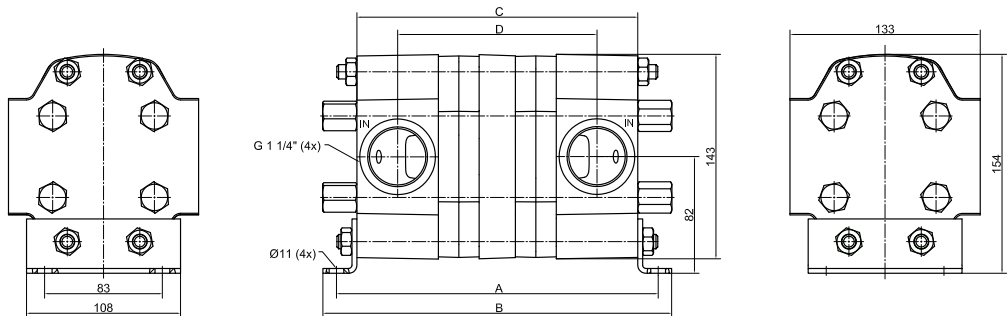
\* Please add required variant!

Ordering code on page 14!

## Series 400 - PR

**Different variants available:**  
Without variant: standard version  
S: designed for higher pressure  
T: S-Version with increased division accuracy

All versions of Series 400 by default with mounting brackets



max. speed: 3000 rpm

| model    | number of sections | maximum inlet<br>(dm <sup>3</sup> /min) | displacement per section<br>(cm <sup>3</sup> /rev.) | max. pressure continuous [bar] |             | max. pressure intermittent [bar] |             | max. pressure difference between sections [bar] |             | Dim. A*2<br>(mm) | Dim. B*2<br>(mm) | Dim. C<br>(mm) | Dim. D<br>(mm) |
|----------|--------------------|---|---|--------------------------------|-------------|----------------------------------|-------------|---|-------------|------------------|------------------|----------------|----------------|
|          |                    |   |   | without version                | version S,T | without version                  | version S,T | without version                                 | version S,T |                  |                  |                |                |
| PR 411-* | 2                  | 230                                     | 38,6  | 105                            | 210         | 140                              | 320         | 70  | 110         | 226              | 245              | 197            | 139,8          |
| PR 418-* | 2                  | 380                                     | 64,0  | 105                            | 210         | 140                              | 320         | 70  | 110         | 264              | 283              | 235,1          | 177,9          |

\* Please add required variant!

Ordering code on page 14!



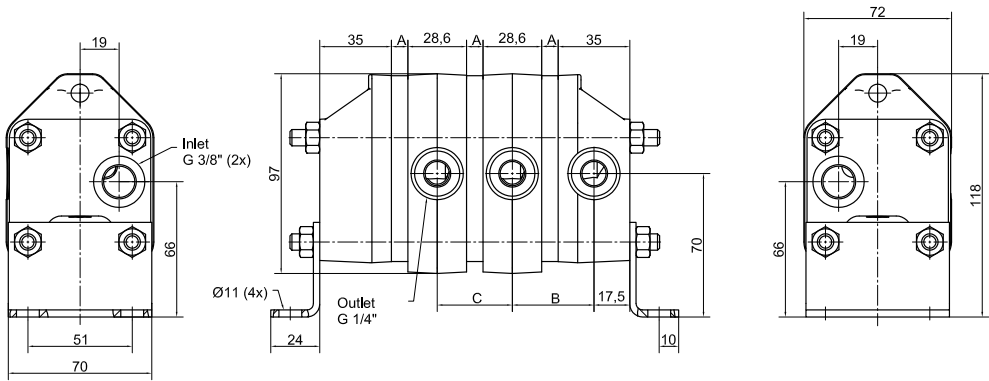


# Flow dividers for several equal or proportional sub-flows

## Series 200-PM

**Different variants available:**  
B: designed for higher pressure  
T: B-Version with increased division accuracy

All versions of Series 200 - PM by default with mounting brackets



max. speed: 3500 rpm

| model    | section label | maximum inlet per section [dm <sup>3</sup> /min.] | displacement per section [cm <sup>3</sup> /rev.] | max. pressure continuous [bar] | max. pressure intermittent [bar] | max. pressure difference between sections [bar] | Dim. section A [mm] | Dim. B [mm] | Dim C off three-way [mm] |
|----------|---------------|---|--|--------------------------------|----------------------------------|---|---------------------|-------------|--------------------------|
| PM 201-* | 201           | 4   | 1.1  | 210                            | 320                              | 175   | 3,6                 | 35,4        | 32,2                     |
| PM 202-* | 202           | 6.5   | 1.9  | 210                            | 320                              | 175   | 5,8                 | 37,6        | 34.4                     |
| PM 203-* | 203           | 9   | 2.5  | 210                            | 320                              | 110   | 8,0                 | 39,8        | 36.6                     |
| PM 204-* | 204           | 11.5  | 3.3  | 210                            | 320                              | 110   | 10,2                | 42,0        | 38.8                     |
| PM 205-* | 205           | 15  | 4.3  | 210                            | 320                              | 110   | 13,4                | 45,1        | 41.9                     |
| PM 207-* | 207           | 20  | 5.6  | 210                            | 320                              | 110   | 17,2                | 49,0        | 45.8                     |
| PM 210-* | 210           | 28.5  | 8.2  | 210                            | 320                              | 110   | 25,4                | 57,2        | 54.0                     |

\* Please add required variant, observe chamber identification!

Ordering code on page 14!

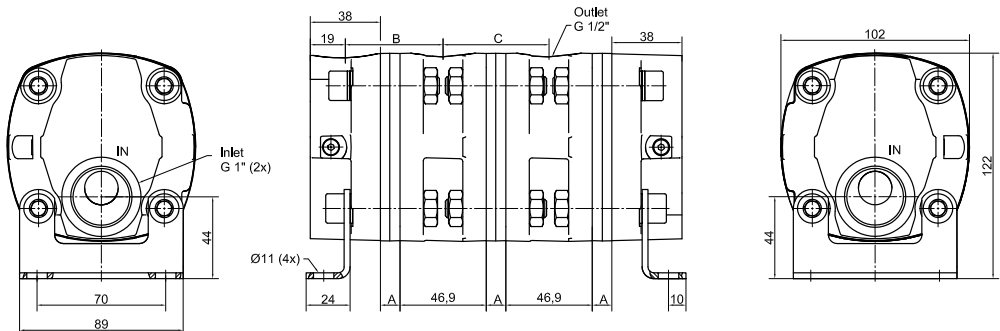
|                           |    |    |    |    |
|---------------------------|----|----|----|----|
| number of sections        | 3  | 4  | 5  | 6  |
| identification of section | 60 | 59 | 58 | 57 |

Chambers can be combined as you wish!

## Series 300 - PR

**Different variants available:**  
S: designed for higher pressure  
T: S-Version with increased division accuracy

All versions of Series 300 - PR by default with mounting brackets



max. speed: 3500 rpm

| model    | section label | maximum inlet per section [dm <sup>3</sup> /min.] | displacement per section [cm <sup>3</sup> /rev.] | max. pressure continuous [bar] | max. pressure intermittent [bar] | max. pressure difference between sections [bar] | Dim. section A [mm] | Dim. B [mm] | Dim C. off three-way [mm] |
|----------|---------------|---|--|--------------------------------|----------------------------------|---|---------------------|-------------|---------------------------|
| PR 304-* | 304           | 24  | 6.8  | 210                            | 320                              | 110   | 10,6                | 53,1        | 57,6                      |
| PR 307-* | 307           | 40  | 11.7   | 210                            | 320                              | 110   | 18,2                | 60,7        | 65.2                      |
| PR 310-* | 310           | 57  | 16.4   | 210                            | 320                              | 110   | 25,4                | 67,9        | 72.4                      |
| PR 312-* | 312           | 70  | 20.5   | 210                            | 320                              | 110   | 31,8                | 74,3        | 78.8                      |
| PR 315-* | 315           | 83  | 24.4   | 210                            | 320                              | 110   | 37,8                | 80,3        | 84.8                      |

\* Please add required variant, observe chamber identification!

Ordering code on page 14!

|                           |    |    |    |    |    |    |
|---------------------------|----|----|----|----|----|----|
| number of sections        | 3  | 4  | 5  | 6  | 7* | 8* |
| identification of section | 60 | 59 | 58 | 57 | 56 | 55 |

# from 7-fold division max. continuous pressure = 150 bar

Chambers can be combined as you wish!

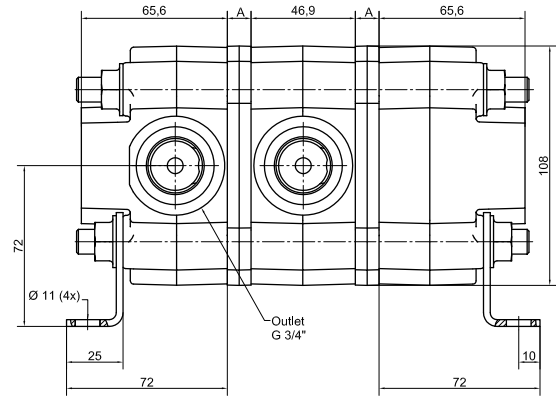
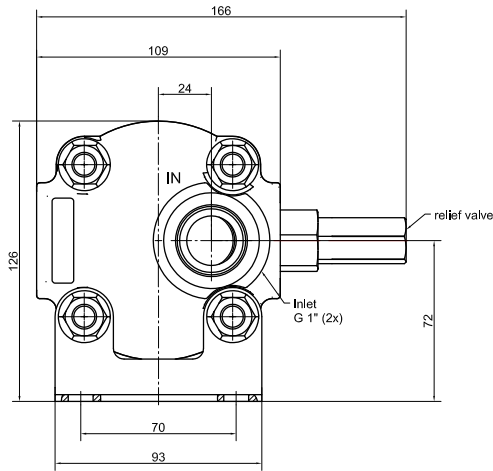
# High-pressure flow divider

## Series 300 - H

without integrated pressure relief valves

## Series 300 - HR

with integrated pressure relief valves



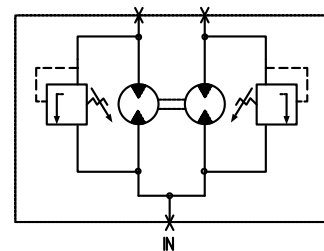
### Different variants available:

- S: standard version
- T: S-Version with increased division accuracy

All versions of Series 300 H and HR by default with mounting brackets

### Hydraulics diagram:

- Two chambers
- Optionally with integrated pressure relief valves
- Adjustment range 35-100 bar (differential pressure)



max. speed: 3500 rpm

| model<br>H or HR | section<br>label | maximum inlet<br>per section<br>[dm <sup>3</sup> /min.] | displacement<br>per section<br>[cm <sup>3</sup> /rev.] | max.<br>pressure<br>continuous<br>[bar] | max.<br>pressure<br>intermittent<br>[bar] | max. pressure<br>difference<br>between<br>sections [bar] | Dim. section<br>A<br>[mm] |
|------------------|------------------|---|--|---|---|--|---------------------------|
| 304-*            | 304              | 24  | 6,8  | 240                                     | 420                                       | 210  | 10,6                      |
| 307-*            | 307              | 40  | 11,7   | 240                                     | 420                                       | 210  | 18,2                      |
| 310-*            | 310              | 57  | 16,4   | 240                                     | 420                                       | 210  | 25,4                      |
| 312-*            | 312              | 70  | 20,5   | 240                                     | 420                                       | 210  | 31,8                      |
| 315-*            | 315              | 83  | 24,4   | 240                                     | 420                                       | 210  | 37,8                      |

\* Please add required variant, observe chamber identification!

Ordering code on page 14!

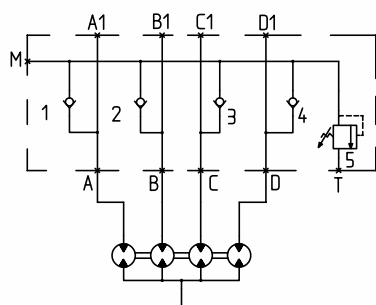
|                           |    |    |    |    |
|---------------------------|----|----|----|----|
| number of sections        | 3  | 4  | 5  | 6  |
| identification of section | 60 | 59 | 58 | 57 |

# Pressure relief units

## Description

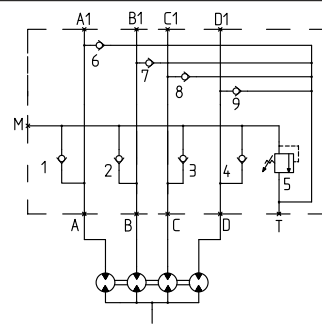
Due to their design, flow dividers by POWER-HYDRAULIK do not require additional pressure relief valves for final position equalization in many applications. If a cylinder has reached the final position, no more oil can flow on this side. The flow divider, in which all gears are located on the same shaft, keeps rotating slowly in order to bring the other cylinders into their final position. The pressure in the chamber of the cylinder which is already in the final position rises in this way. In order to ensure that the maximum permissible pressure is neither exceeded in final position equalization nor in pressure intensification, pressure relief units by POWER-HYDRAULIK are used in many applications. Their task is to monitor and secure the application on the secondary side (on the load side after the flow divider). Consisting of an aluminum control block, check valves and pressure relief valves, the pressure relief units by POWER-HYDRAULIK work according to the principle of absolute safeguarding, i.e. the pressure relief valves open at a certain value and make the excess oil flow into the tank. The setpoint value is usually set on site during commissioning. On request we can also adjust the valves at our test rig. Normally the pressure relief units must be integrated into the pipe. For 2-section and 4-section flow dividers of Series 200 – PR, the pressure relief units can also be flange-mounted directly on the flow divider. If required, all pressure relief units are also available with anti-cavitation valves. These check valves prevent the formation of a vacuum in the respective pipe during the return flow by sucking oil from the tank. Our team will gladly assist you in case of questions.

## Pressure relief units (diagrams for pipe installation)



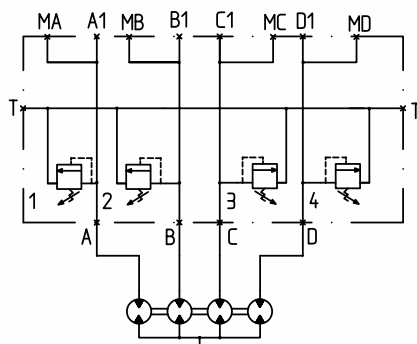
### Pressure relief unit for Series 200

consists of an aluminum control block; each sub-flow is secured by a check valve and a pressure relief valve (in 2-section devices, each sub-flow is secured by a pressure relief valve)  
The example above is a pressure relief unit for 4-section Series 200



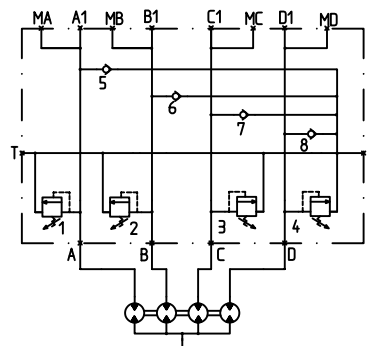
### Pressure relief unit with anti-cavitation valves for Series 200

consists of an aluminum control block; each sub-flow is secured by a check valve and a pressure relief valve, additionally with another check valve for cavitation protection  
in 2-section devices, each sub-flow is secured by a pressure relief valve  
The example above is a pressure relief unit with anti-cavitation valve for 4-section Series 200.



### Pressure-relief unit for Series 300 and 400

consists of an aluminum control block; each sub-flow is secured by a pressure relief valve  
The example above is a pressure relief unit for 4-section Series 300

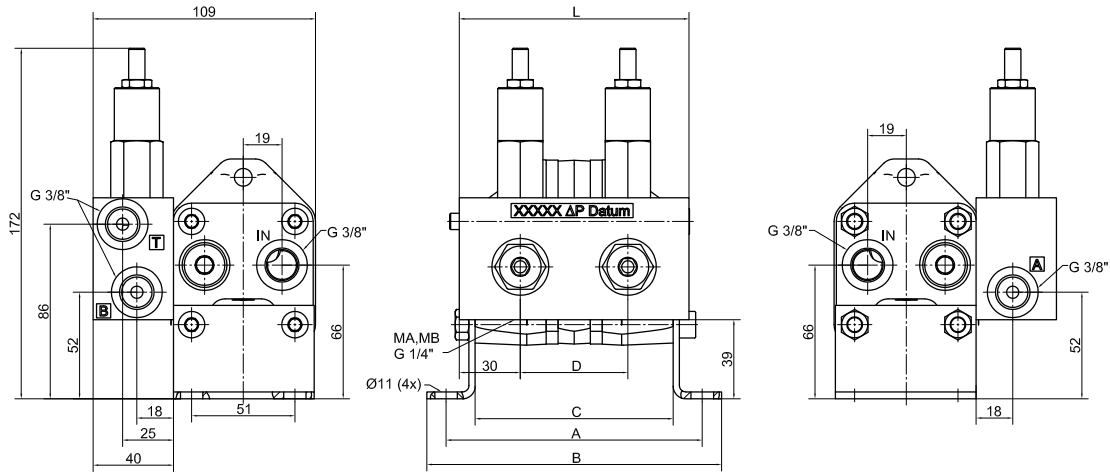


### Pressure-relief unit with anti-cavitation valves for Series 300 and 400

consists of an aluminum control block; each sub-flow is secured by a pressure relief valve, additionally with further check valves for cavitation protection  
The example above is a pressure relief unit with anti-cavitation valves for 4-section Series 300

# Pressure relief unit – flange-mounted, 2 equal sub-flows

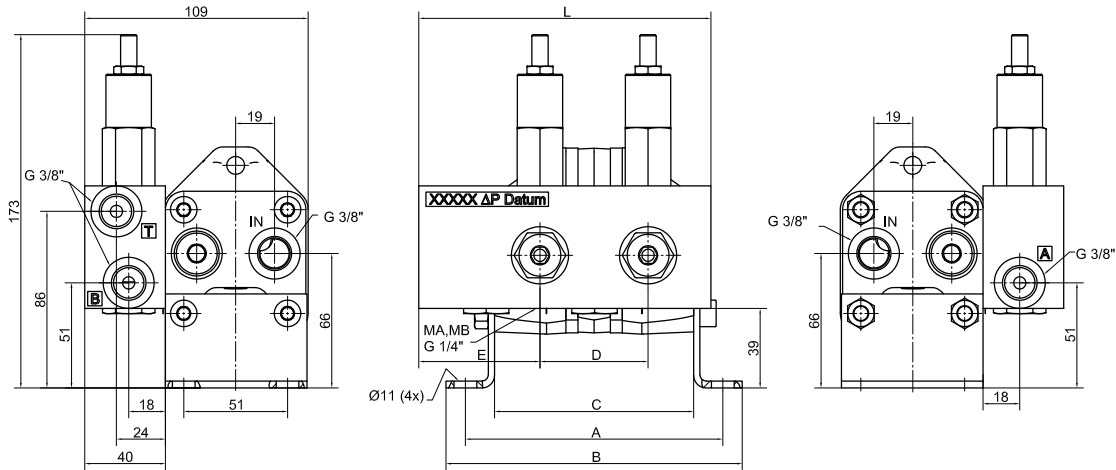
## Series 200 - PR Pressure relief unit



**Different variants available:**  
B: designed for higher pressure  
T: with increased division accuracy  
All versions by default with mounting brackets  
Please state in your query/order whether a pressure relief unit with anti-cavitation valves is required.

| pressure relief unit | Dim. A±2<br>[mm] | Dim. B±2<br>[mm] | Dim. C<br>[mm] | Dim. D<br>[mm] | Dim. L<br>[mm] |
|----------------------|------------------|------------------|----------------|----------------|----------------|
| PR 202               | 126              | 145              | 97,4           | 53             | 113            |
| PR 204               | 135              | 154              | 106,1          | 61,5           | 121            |
| PR 207               | 149              | 168              | 120,1          | 75,5           | 135            |

## Series 200 - PR pressure relief unit + cavitation protection

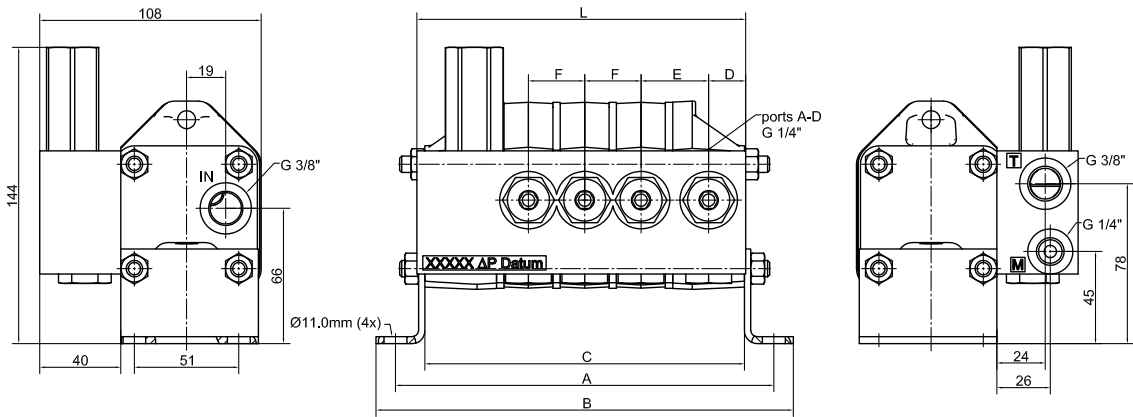


**Different variants available:**  
B: designed for higher pressure  
T: with increased division accuracy  
All versions by default with mounting brackets  
Please state in your query/order whether a pressure relief unit with anti-cavitation valves is required.

| pressure relief unit<br>with anti cavitation | Dim. A±2<br>[mm] | Dim. B±2<br>[mm] | Dim. C<br>[mm] | Dim. D<br>[mm] | Dim. E<br>[mm] | Dim. L<br>[mm] |
|--|------------------|------------------|----------------|----------------|----------------|----------------|
| PR 202                                       | 126              | 145              | 97,4           | 52.9           | 59.3           | 143            |
| PR 204                                       | 135              | 154              | 106,1          | 61.5           | 59.3           | 152            |
| PR 207                                       | 149              | 168              | 120,1          | 75.5           | 30             | 135            |

# Pressure relief unit – flange-mounted, 4 equal sub-flows

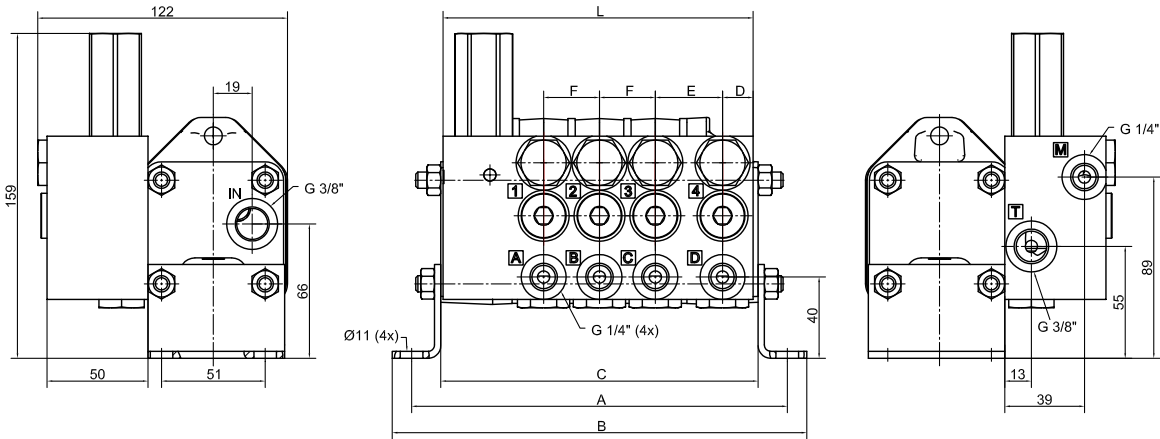
## Series 200 - PR pressure relief unit with cavitation protection



**Different variants available:**  
B: designed for higher pressure  
T: with increased division accuracy  
All versions by default with mounting brackets  
Please state in your query/order whether a pressure relief unit is required.

| pressure relief unit | Dim. A±2 [mm] | Dim. B±2 [mm] | Dim. C [mm] | Dim. D [mm] | Dim. E [mm] | Dim. F [mm] | Dim. L [mm] |
|----------------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| PR 201-59            | 184           | 203           | 156         | 18          | 32.9        | 27.4        | 160         |
| PR 202-59            | 193           | 212           | 165         | 16          | 35.2        | 29.7        | 163         |
| PR 204-59            | 211           | 230           | 182         | 15          | 39.5        | 34.0        | 175         |

## Series 200 - PR pressure relief unit with cavitation protection



**Different variants available:**  
B: designed for higher pressure  
T: with increased division accuracy  
All versions by default with mounting brackets  
Please state in your query/order whether a pressure relief unit with anti-cavitation valves is required.

| pressure relief unit with anti cavitation | Dim. A±2 [mm] | Dim. B±2 [mm] | Dim. C [mm] | Dim. D [mm] | Dim. E [mm] | Dim. F [mm] | Dim. L [mm] |
|---|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| PR 201-59                                 | 184           | 203           | 155         | 15          | 32.9        | 27.4        | 152         |
| PR 202-59                                 | 193           | 213           | 165         | 18          | 35.2        | 29.7        | 162         |
| PR 204-59                                 | 211           | 231           | 183         | 16          | 39.5        | 34.0        | 165         |



# Ordering code

## Size 200

|    |     |   |    |   |   |   |   |
|----|-----|---|----|---|---|---|---|
| 1  | 2   |   |    | 3 |   |   | 4 |
| PR | 202 | - |    |   |   |   |   |
| PR | 204 | - | 59 |   |   | - | A |
| PM | 202 | - | 5  | - | 7 | - | 0 |
|    |     |   |    |   |   |   | B |

1

PR = standard 2-section or 4-section division  
PM = modular design

2

Chamber sizes  
Standard 2-section sizes: 202, 204, 207  
Standard 4-section sizes: 201, 202, 204  
Other sizes: 201, 202, 203, 204, 205, 207, 210

3

Number of chambers:  
blank = standard 2-section  
from 3 equal sub-flows on

|                           |    |    |    |    |
|---------------------------|----|----|----|----|
| number of sections        | 3  | 4  | 5  | 6  |
| identification of section | 60 | 59 | 58 | 57 |

for Series 200 - PM proportional or 2-section  
division: last digit of the respective chamber

4

Versions:  
blank = standard without mounting brackets  
(only for standard devices)  
A = standard with mounting brackets  
(only for standard devices)  
S = designed for higher pressure, without  
mounting brackets (only standard for PR)  
B = designed for higher pressure, with  
mounting brackets  
T = B-Version with increased division accuracy

## Size 300, 400, high pressure

|    |     |   |    |   |   |   |   |
|----|-----|---|----|---|---|---|---|
| 1  | 2   |   |    | 3 |   |   | 4 |
| PR | 307 | - |    |   |   |   |   |
| PR | 304 | - | 59 |   |   | - | S |
| PR | 307 | - | 0  | - | 2 | - | 5 |
| PR | 304 | - | 04 |   |   | - | T |
| HR | 312 | - | 2  |   |   | - | T |

1

PR series up to max. 210 bar continuous pressure  
H series up to max. 240 bar continuous pressure  
HR series up to max. 240 bar continuous pressure with  
integrated pressure relief valves

2

Chamber sizes  
Standard 2-section sizes: 300: 307, 310, 315  
Other sizes: 304, 307, 310, 312, 315  
Standard 2-fach Baugröße 400 (nur 2-fach): 411, 418

3

Number of chambers:  
blank = standard 2-section  
from 3 equal sub-flows on

|                           |    |    |    |    |
|---------------------------|----|----|----|----|
| number of sections        | 3  | 4  | 5  | 6  |
| identification of section | 60 | 59 | 58 | 57 |

for proportional division: last digit of the respective chamber  
for 2-section division PR series: the last two digits of the chamber for  
2-section division H, HR series: last digit of the chamber

4

Versions (each with mounting brackets):  
blank = standard (307, 310, 315, 411, 418)  
S = designed for higher pressure  
T = B-Version with increased division accuracy

# Guidelines

| Liters     | Chambers | Model     | Displacement | rpm  |
|------------|----------|-----------|--------------|------|
| <b>10</b>  | 2        | PR 202    | 1,9          | 2640 |
|            | 3        | PM 202-60 | 1,9          | 1760 |
|            | 4        | PR 201-59 | 1,1          | 2280 |
|            | 5        | PM 201-58 | 1,1          | 1820 |
|            | 6        | PM 201-57 | 1,1          | 1520 |
|            | 7        | PM 201-56 | 1,1          | 1300 |
|            | 8        | PM 201-55 | 1,1          | 1140 |
| <b>15</b>  | 2        | PR 204    | 3,3          | 2270 |
|            | 3        | PM 203-60 | 2,5          | 2000 |
|            | 4        | PR 202-59 | 1,9          | 1980 |
|            | 5        | PM 202-58 | 1,9          | 1578 |
|            | 6        | PM 201-57 | 1,1          | 2280 |
|            | 7        | PM 201-56 | 1,1          | 1950 |
|            | 8        | PM 201-55 | 1,1          | 1710 |
| <b>20</b>  | 2        | PR 207    | 5,6          | 1790 |
|            | 3        | PM 204-60 | 3,3          | 2020 |
|            | 4        | PR 204-59 | 3,3          | 1515 |
|            | 5        | PM 202-58 | 1,9          | 2110 |
|            | 6        | PM 202-57 | 1,9          | 1760 |
|            | 7        | PM 201-56 | 1,1          | 2600 |
|            | 8        | PM 201-55 | 1,1          | 2280 |
| <b>30</b>  | 2        | PR 207    | 5,6          | 2680 |
|            | 3        | PM 205-60 | 4,3          | 2330 |
|            | 4        | PR 204-59 | 3,3          | 2272 |
|            | 5        | PM 203-58 | 2,5          | 2400 |
|            | 6        | PM 203-57 | 2,5          | 2000 |
|            | 7        | PM 202-56 | 1,9          | 2260 |
|            | 8        | PM 202-55 | 1,9          | 1980 |
| <b>40</b>  | 2        | PR 307    | 11,7         | 1710 |
|            | 3        | PM 207-60 | 5,6          | 2380 |
|            | 4        | PM 205-59 | 4,3          | 2330 |
|            | 5        | PM 205-58 | 4,3          | 1860 |
|            | 6        | PM 204-57 | 3,3          | 2020 |
|            | 7        | PM 203-56 | 2,5          | 2290 |
|            | 8        | PM 203-55 | 2,5          | 2000 |
| <b>50</b>  | 2        | PR 307    | 11,7         | 2140 |
|            | 3        | PM 210-60 | 8,2          | 2032 |
|            | 4        | PM 210-59 | 8,2          | 1524 |
|            | 5        | PM 205-58 | 4,3          | 2330 |
|            | 6        | PM 205-57 | 4,3          | 1937 |
|            | 7        | PM 204-56 | 3,3          | 2164 |
|            | 8        | PM 204-55 | 3,3          | 1893 |
| <b>60</b>  | 2        | PR 310    | 16,4         | 1829 |
|            | 3        | PR 307-60 | 11,7         | 1709 |
|            | 4        | PR 304-59 | 6,8          | 2205 |
|            | 5        | PM 207-58 | 5,6          | 2142 |
|            | 6        | PM 205-57 | 4,3          | 2330 |
|            | 7        | PM 205-56 | 4,3          | 1993 |
|            | 8        | PM 204-55 | 3,3          | 2272 |
| <b>80</b>  | 2        | PR 310    | 16,4         | 2440 |
|            | 3        | PR 307-60 | 11,7         | 2280 |
|            | 4        | PR 307-59 | 11,7         | 1709 |
|            | 5        | PM 210-58 | 8,2          | 1951 |
|            | 6        | PM 207-57 | 5,6          | 2380 |
|            | 7        | PM 207-56 | 5,6          | 2040 |
|            | 8        | PM 205-55 | 4,3          | 2330 |
| <b>100</b> | 2        | PR 315    | 24,4         | 2050 |
|            | 3        | PR 310-60 | 16,4         | 2032 |
|            | 4        | PR 307-59 | 11,7         | 2140 |
|            | 5        | PR 307-58 | 11,7         | 1709 |
|            | 6        | PR 304-57 | 6,8          | 2450 |
|            | 7        | PM 210-56 | 8,2          | 1742 |
|            | 8        | PM 207-55 | 5,6          | 2232 |

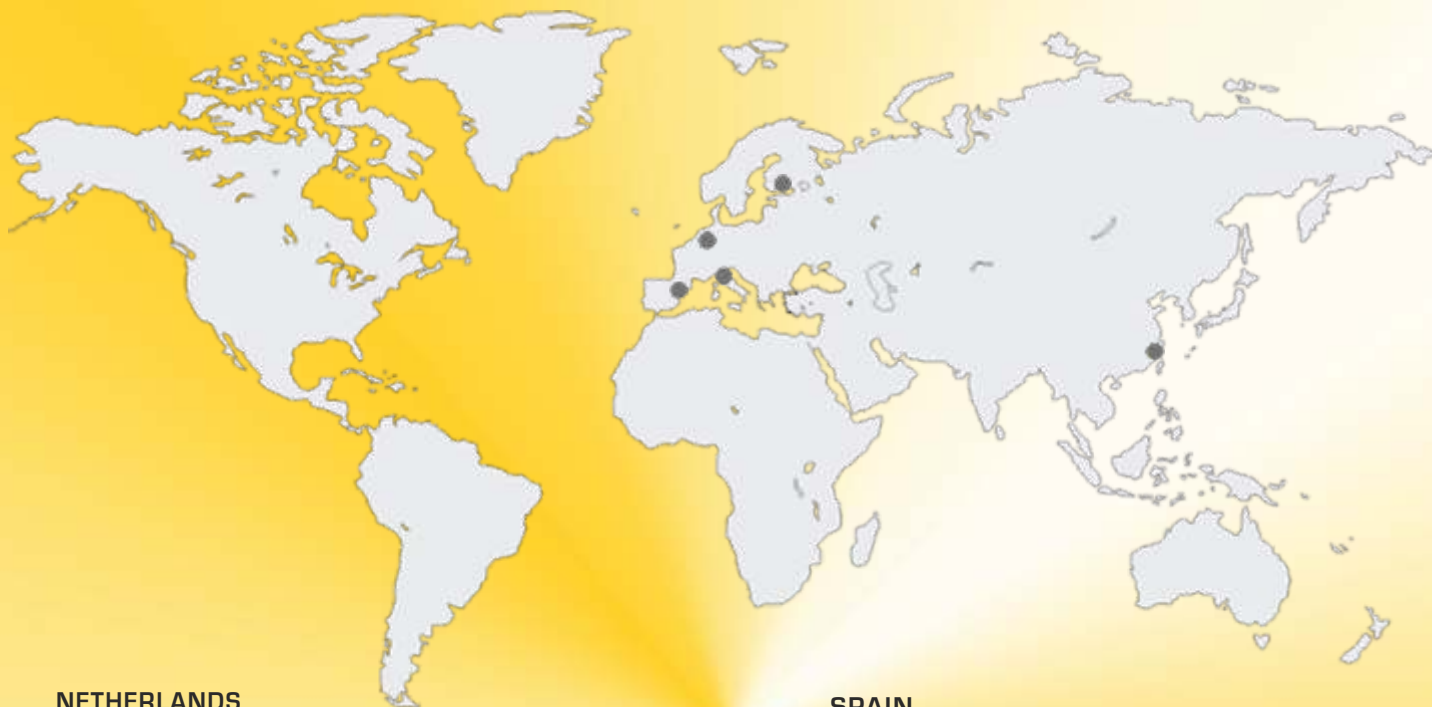
| Liters     | Chambers | Model     | Displacement | rpm  |
|------------|----------|-----------|--------------|------|
| <b>125</b> | 2        | PR 411    | 38,6         | 1619 |
|            | 3        | PR 312-60 | 20,5         | 2032 |
|            | 4        | PR 310-59 | 16,4         | 1905 |
|            | 5        | PR 307-58 | 11,7         | 2140 |
|            | 6        | PR 307-57 | 11,7         | 1780 |
|            | 7        | PR 307-56 | 11,7         | 1526 |
|            | 8        | PR 304-55 | 6,8          | 2297 |
| <b>175</b> | 2        | PR 411    | 38,6         | 2270 |
|            | 3        | PR 315-60 | 24,4         | 2390 |
|            | 4        | PR 312-59 | 20,5         | 2134 |
|            | 5        | PR 310-58 | 16,4         | 2134 |
|            | 6        | PR 310-57 | 16,4         | 1778 |
|            | 7        | PR 307-56 | 11,7         | 2140 |
|            | 8        | PR 307-55 | 11,7         | 1869 |
| <b>150</b> | 2        | PR 411    | 38,6         | 1950 |
|            | 3        | PR 312-60 | 20,5         | 2440 |
|            | 4        | PR 310-59 | 16,4         | 2290 |
|            | 5        | PR 310-58 | 16,4         | 1829 |
|            | 6        | PR 307-57 | 11,7         | 2140 |
|            | 7        | PR 307-56 | 11,7         | 1831 |
|            | 8        | PM 210-55 | 8,2          | 2286 |
| <b>200</b> | 2        | PR 411    | 38,6         | 2590 |
|            | 3        | PR 315-60 | 24,4         | 2740 |
|            | 4        | PR 315-59 | 24,4         | 2049 |
|            | 5        | PR 312-58 | 20,5         | 1951 |
|            | 6        | PR 310-57 | 16,4         | 2032 |
|            | 7        | PR 310-56 | 16,4         | 1742 |
|            | 8        | PR 307-55 | 11,7         | 2140 |
| <b>225</b> | 2        | PR 418    | 64           | 1757 |
|            | 4        | PR 315-59 | 24,4         | 2305 |
|            | 5        | PR 312-58 | 20,5         | 2195 |
|            | 6        | PR 310-57 | 16,4         | 2290 |
|            | 7        | PR 310-56 | 16,4         | 1959 |
|            | 8        | PR 310-55 | 16,4         | 1714 |
| <b>250</b> | 2        | PR 418    | 64           | 1960 |
|            | 4        | PR 315-59 | 24,4         | 2570 |
|            | 5        | PR 315-58 | 24,4         | 2049 |
|            | 6        | PR 312-57 | 20,5         | 2032 |
|            | 7        | PR 310-56 | 16,4         | 2180 |
|            | 8        | PR 310-55 | 16,4         | 1905 |
| <b>300</b> | 2        | PR 418    | 64           | 2350 |
|            | 5        | PR 315-58 | 24,4         | 2459 |
|            | 6        | PR 315-57 | 24,4         | 2049 |
|            | 7        | PR 312-56 | 20,5         | 2090 |
|            | 8        | PR 310-55 | 16,4         | 2290 |
| <b>350</b> | 2        | PR 418    | 64           | 2740 |
|            | 5        | PR 315-58 | 24,4         | 2870 |
|            | 6        | PR 315-57 | 24,4         | 2390 |
|            | 7        | PR 315-56 | 24,4         | 2049 |
|            | 8        | PR 312-55 | 20,5         | 2134 |
| <b>400</b> | 6        | PR 315-57 | 24,4         | 2740 |
|            | 7        | PR 315-56 | 24,4         | 2341 |
|            | 8        | PR 315-55 | 24,4         | 2049 |

The stated data are exclusively intended to describe examples of speed and must not be understood as guaranteed features in the legal sense. Please do not hesitate to contact us in case of questions.



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