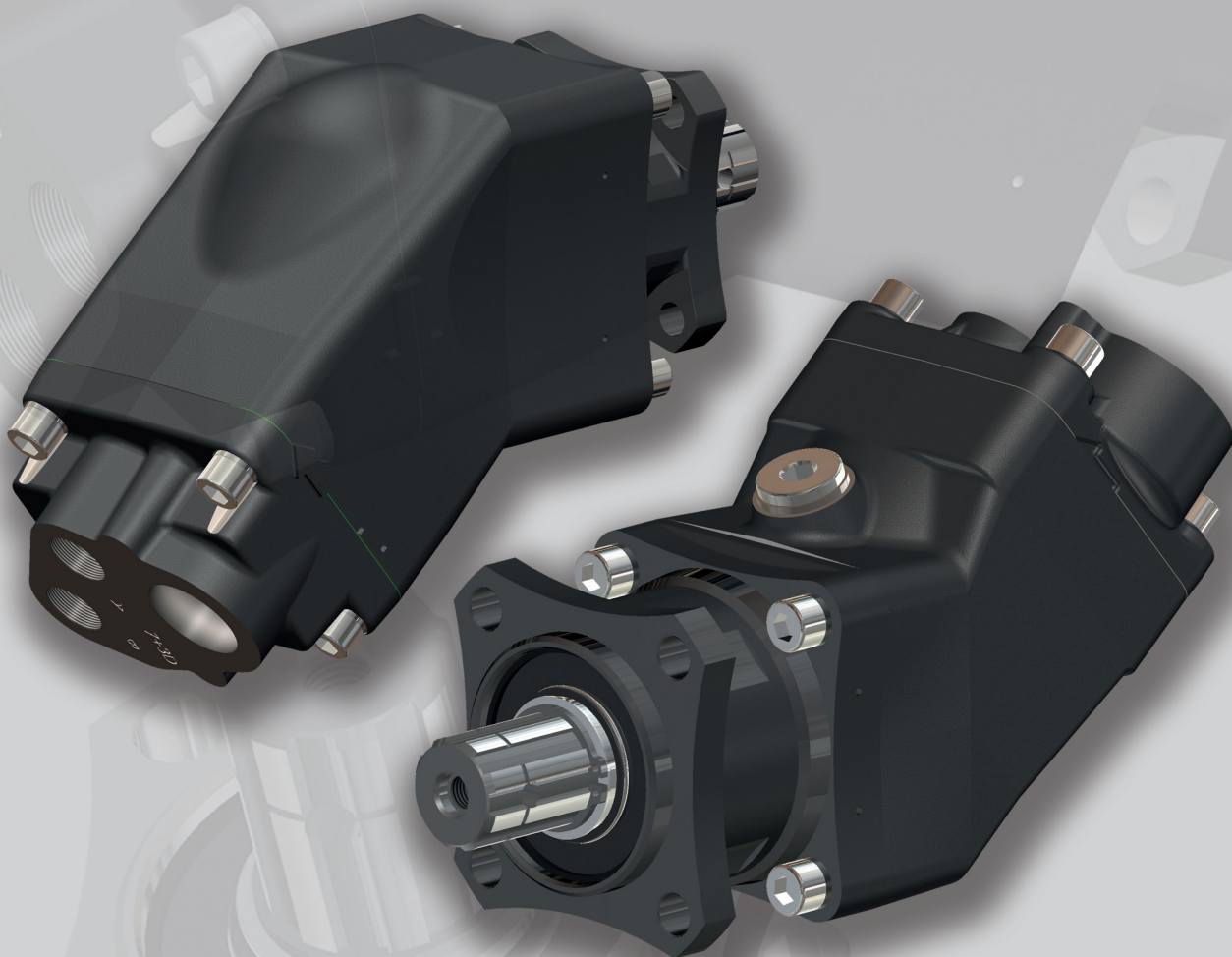




# BENT-AXIS PISTON PUMPS

The bent axis piston pumps series HDS, HDT, MDS and TFP ensure lower noise level thanks to internal gear machining method that improves significantly the mechanical coupling between the cylinder block and the driving gear guaranteeing maximum performances at extremely low noise level.



[www.omfb.com](http://www.omfb.com)

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QUALITY SYSTEM  
CERTIFIED BY DNV GL  
= IATF 16949 =

# A very unique pump

## **Compact size cast iron body.**

Overall dimensions reduced and high resistance to pressure peaks (up to 400 Bar) to match higher working pressure of the latest machines.

## **Hardened splined output shaft.**

Better resistance to the torque driven by the PTO.

## **HNBR and reinforced oil-seals.**

This solution allows the pump to bear back pressures.

## **Operating temperature.**

Special seals allow the pump to operate at a temperature ranging from -40°C and +140°C.

## **Seven pistons.**

The optimal solution to allow a more constant load on bearing and, consequently, a more fluent delivery and less pulsation.

## **Improved suction port.**

Optimised in order to achieve lower noise level.

## **Pistons' barrel driven by the shaft.**

The already proven tapered toothing allows the pistons to work without radial load resulting in a longer resistance to fatigue.

## **Choice of compatible materials for sliding surfaces.**

Sliding surfaces made of steel and nitrated cast iron to guarantee a longer life against contaminated fluid.

## **Tapered roller bearings.**

The tapered roller bearings offer bigger load capacity against high working pressure.

## **3-piece body.**

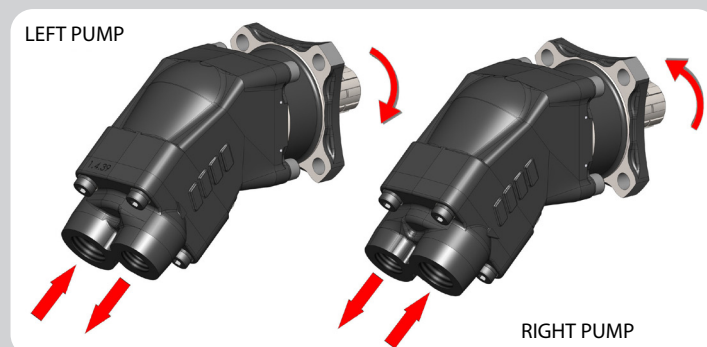
This solution allows constant lubrication of the bearings.

## **By-pass valve option.**

The by-pass valve is mainly used in applications where the pump is permanently driven.

## **Special versions available:**

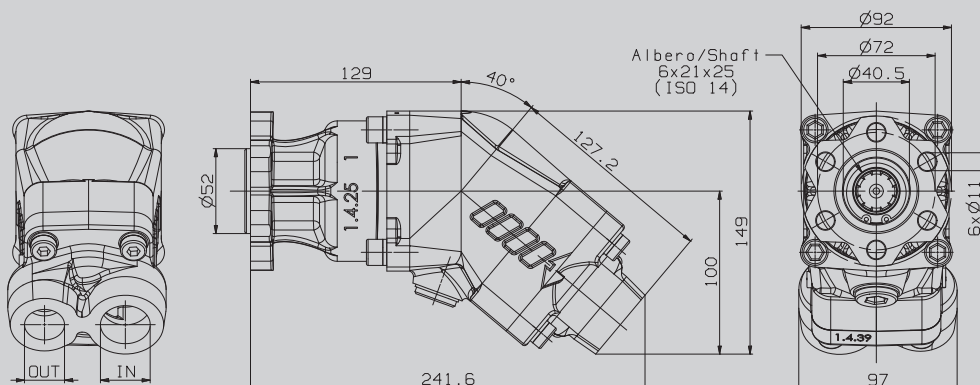
Versions with SAE shafts and UNF ports.



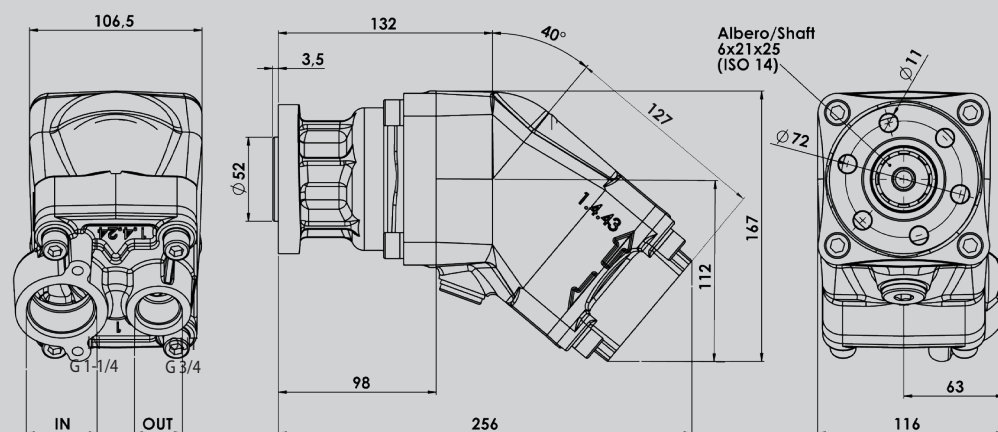
# HDS UNI

Unidirectional bent axis piston pumps with displacement from 12 to 64 cm<sup>3</sup>.

## HDS 12-17-25-34 UNI



## HDS 40-47-55-64 UNI



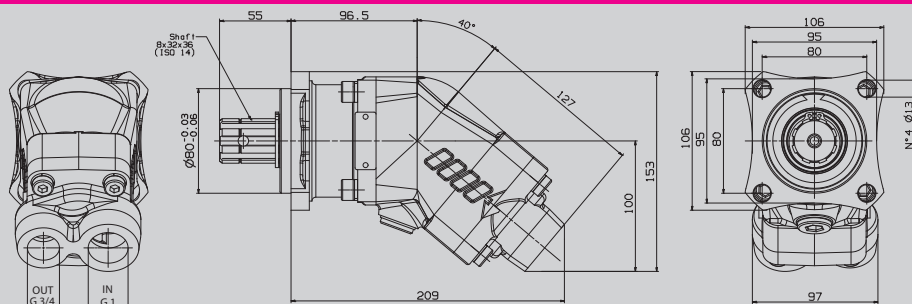
## TECHNICAL FEATURES

| Pump type  | Rotation    |             | Displac.<br>cm <sup>3</sup> | Pressure<br>bar |     | Max speed           |                   |                     | Min speed<br>rpm | Weight<br>kg |
|------------|-------------|-------------|-----------------------------|-----------------|-----|---------------------|-------------------|---------------------|------------------|--------------|
|            | right       | left        |                             | P1              | P3  | rpm<br>without load | rpm<br>continuous | rpm<br>intermittent |                  |              |
| HDS-12 UNI | 60600210123 | 60600210129 | 12,62                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,3          |
| HDS-17 UNI | 60600210173 | 60600210179 | 16,98                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,3          |
| HDS-25 UNI | 60600210253 | 60600210259 | 25,12                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,4          |
| HDS-34 UNI | 60600210343 | 60600210349 | 33,80                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,3          |
| HDS-40 UNI | 60600210403 | 60600210409 | 41,25                       | 350             | 400 | 2700                | 1900              | 2500                | 300              | 11,3         |
| HDS-47 UNI | 60600210473 | 60600210479 | 47,13                       | 350             | 400 | 2700                | 1900              | 2500                | 300              | 11,7         |
| HDS-55 UNI | 60600210553 | 60600210559 | 56,70                       | 300             | 350 | 2700                | 1900              | 2500                | 300              | 11,6         |
| HDS-64 UNI | 60600210643 | 60600210649 | 63,56                       | 280             | 300 | 2700                | 1900              | 2500                | 300              | 11,4         |

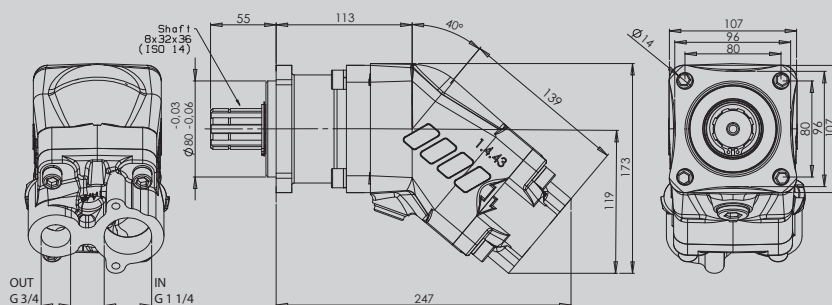
# HDS

Unidirectional bent axis piston pumps with displacement from 12 to 130 cm<sup>3</sup> .

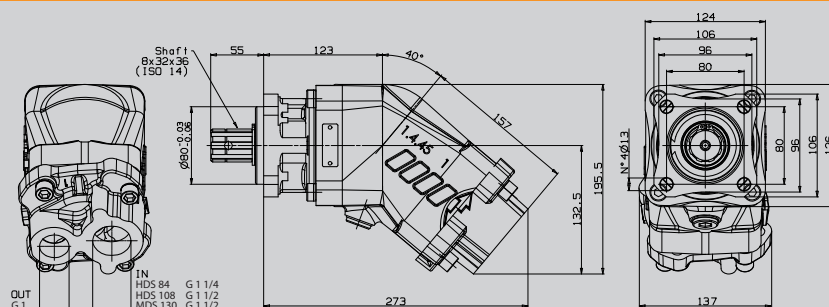
## HDS 12-17-25-34 ISO



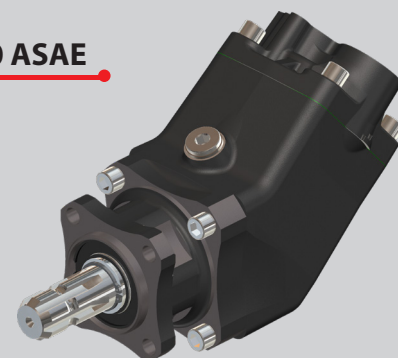
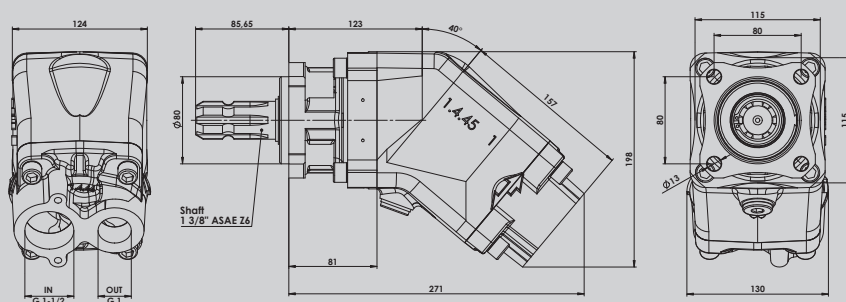
## HDS 40-47-55-64 - MDS 80 ISO



## HDS 84-108-130 - MDS 130 ISO



## HDS 130 ASAE



## TECHNICAL FEATURES

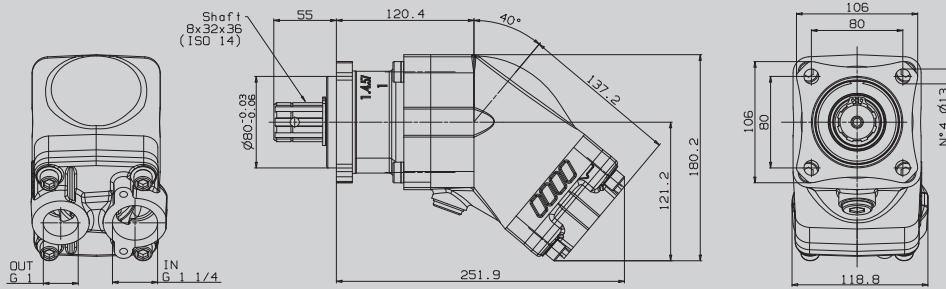
| Pump type    | Rotation    |              | Displac.<br>cm <sup>3</sup> | Pressure<br>bar |     | Max speed           |                   |                     | Min speed<br>rpm | Weight<br>kg |
|--------------|-------------|--------------|-----------------------------|-----------------|-----|---------------------|-------------------|---------------------|------------------|--------------|
|              | right       | left         |                             | P1              | P3  | rpm<br>without load | rpm<br>continuous | rpm<br>intermittent |                  |              |
| HDS-12 ISO   | 60100110123 | 60100110129  | 12,62                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,7          |
| HDS-17 ISO   | 60100110173 | 60100110179  | 16,98                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,7          |
| HDS-25 ISO   | 60100110253 | 60100110259  | 25,12                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,8          |
| HDS-34 ISO   | 60100110343 | 60100110349  | 33,80                       | 350             | 400 | 3000                | 2300              | 3000                | 300              | 8,7          |
| HDS-40 ISO   | 60100110403 | 60100110409  | 41,25                       | 350             | 400 | 2700                | 1900              | 2500                | 300              | 12,3         |
| HDS-47 ISO   | 60100110473 | 60100110479  | 47,13                       | 350             | 400 | 2700                | 1900              | 2500                | 300              | 12,4         |
| HDS-55 ISO   | 60100110553 | 60100110559  | 56,70                       | 350             | 400 | 2700                | 1900              | 2500                | 300              | 12,2         |
| HDS-64 ISO   | 60100110643 | 60100110649  | 63,56                       | 350             | 400 | 2700                | 1900              | 2500                | 300              | 12,2         |
| MDS-80 ISO   | 60300110803 | 60300110809  | 77,25                       | 250             | 300 | 2300                | 1800              | 2100                | 300              | 12           |
| HDS-84 ISO   | 60100110843 | 60100110849  | 84,33                       | 350             | 400 | 2300                | 1500              | 2000                | 300              | 18,9         |
| HDS-108 ISO  | 60100111083 | 60100111089  | 107                         | 350             | 400 | 2300                | 1500              | 2000                | 300              | 18,5         |
| HDS-130 ISO  | 60100111303 | 60100111309  | 131,62                      | 350             | 400 | 2300                | 1750              | 2000                | 300              | 18,3         |
| MDS-130 ISO  | 60300111303 | 60300111309  | 131,62                      | 250             | 270 | 2300                | 1500              | 2000                | 300              | 18,3         |
| HDS-130 ASAE |             | 60100311309F | 131,62                      | 350             | 400 | 2300                | 1750              | 2000                | 300              | 18,7         |



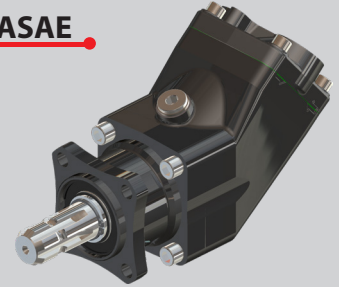
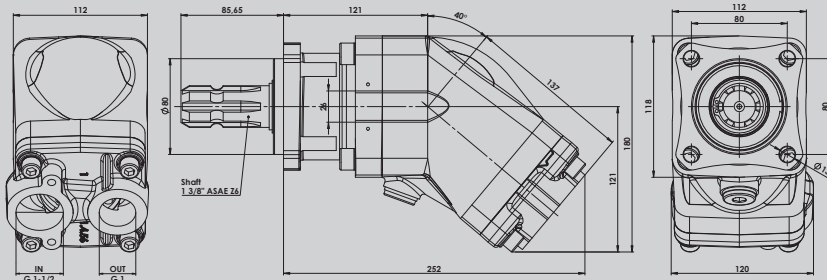
# HDT

Unidirectional bent axis piston pumps with displacement from 75 to 108 cm<sup>3</sup>.

## HDT 75-84-96-108 ISO



## HDT 84-108 ASAE



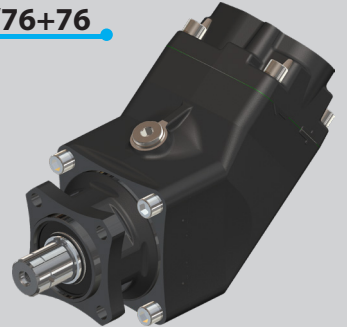
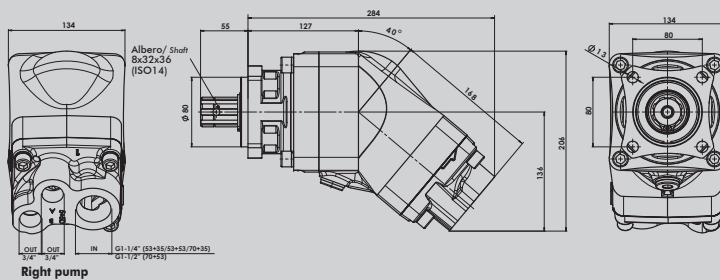
## TECHNICAL FEATURES

| Pump type    | Rotation    |              | Displ.<br>cm <sup>3</sup> | Pressure<br>bar |     | Max speed           |                   |                     | Min speed<br>rpm | Weight<br>kg |
|--------------|-------------|--------------|---------------------------|-----------------|-----|---------------------|-------------------|---------------------|------------------|--------------|
|              | right       | left         |                           | P1              | P3  | rpm<br>without load | rpm<br>continuous | rpm<br>intermittent |                  |              |
| HDT-75 ISO   | 60200110753 | 60200110759  | 75,5                      | 350             | 370 | 2300                | 1500              | 2000                | 300              | 14,9         |
| HDT-84 ISO   | 60200110843 | 60200110849  | 84,2                      | 350             | 370 | 2300                | 1500              | 2000                | 300              | 14,7         |
| HDT-96 ISO   | 60200110963 | 60200110969  | 95,5                      | 350             | 370 | 2300                | 1500              | 2000                | 300              | 14,7         |
| HDT-108 ISO  | 60200111083 | 60200111089  | 107                       | 350             | 370 | 2300                | 1500              | 2000                | 300              | 14,6         |
| HDT-84 ASAE  |             | 60200310849F | 84,2                      | 350             | 370 | 2300                | 1500              | 2000                | 300              | 15           |
| HDT-108 ASAE |             | 60200311089F | 107                       | 350             | 370 | 2300                | 1500              | 2000                | 300              | 15           |

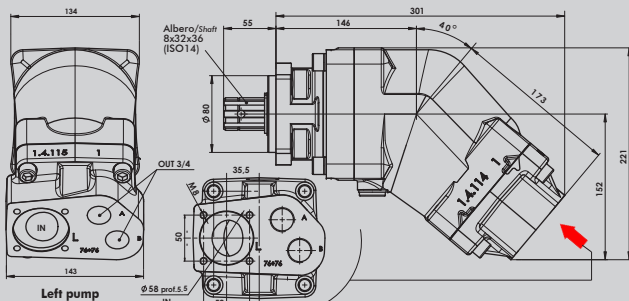
# TWIN-FLOW

Unidirectional bent axis piston pumps with double output.

## TWIN FLOW 53+35/53+53/70+35/70+53/76+76



TWIN FLOW 53+35  
53+53/70+35/70+53



TWIN FLOW 76+76

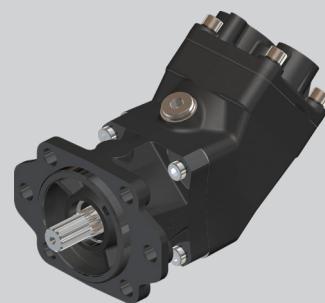
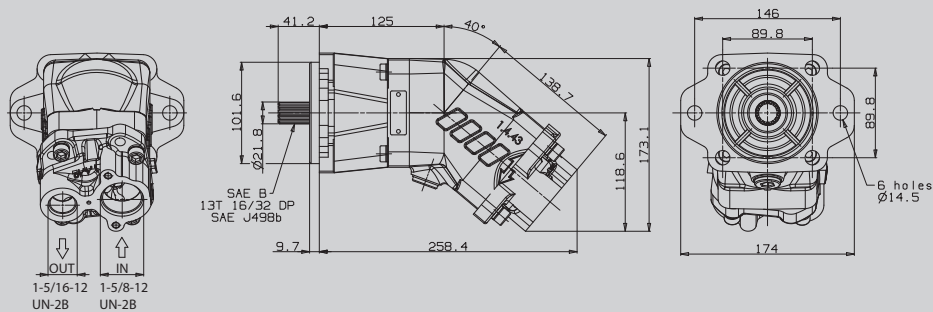
## TECHNICAL FEATURES

| Pump type       | Rotation    |             | Rear cover                 | Pressure<br>bar |     | Max speed           |                                     |                                   | Max. power       |                 |
|-----------------|-------------|-------------|----------------------------|-----------------|-----|---------------------|-------------------------------------|-----------------------------------|------------------|-----------------|
|                 | right       | left        |                            | P1              | P2  | rpm<br>without load | rpm<br>with load on A and B outputs | rpm<br>with load on 1 output only | kW<br>continuous | kW<br>intermit. |
| TWIN-FLOW 53+35 | 60400115033 | 60400115039 | 50002995101<br>50002995209 | 350             | 400 | 2550                | 1800                                | 2100                              | 94               | 107             |
| TWIN-FLOW 53+53 | 60400115053 | 60400115059 | 50002995307<br>50002995405 | 350             | 400 | 2550                | 1800                                | 2100                              | 111              | 127             |
| TWIN-FLOW 70+35 | 60400117033 | 60400117039 | 50002997001<br>50002997109 | 350             | 400 | 2550                | 1800                                | 2100                              | 108              | 123             |
| TWIN-FLOW 70+53 | 60400117053 | 60400117059 | 50002997403<br>50002997501 | 300             | 350 | 2550                | 1650                                | 2100                              | 98               | 114             |
| TWIN-FLOW 76+76 | 60400117673 | 60400117679 | 50002997618<br>50002997609 | 300             | 350 | 2550                | 1500                                | 2100                              | 110              | 129             |

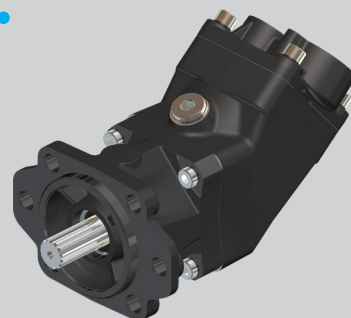
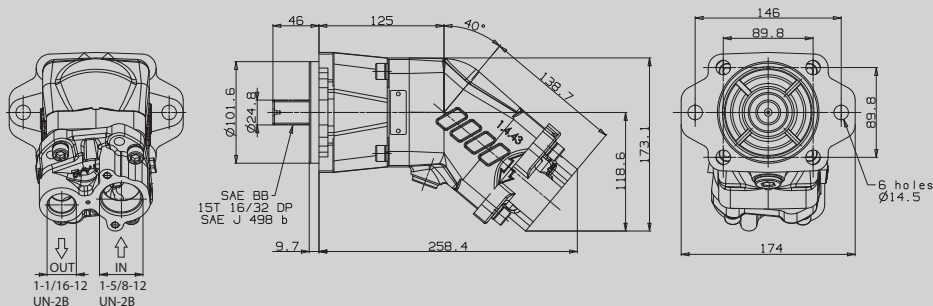
# HDS-MDS SAE

Unidirectional bent axis piston pumps, displacements from 47 to 130 cm<sup>3</sup>, available with shaft and flange SAE-B, SAE-BB and SAE-C.

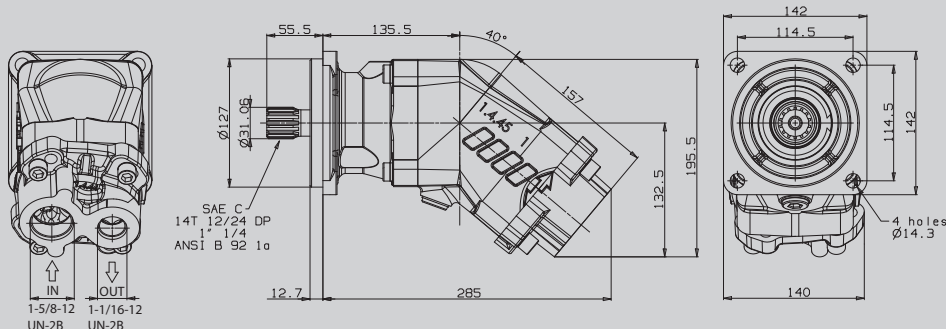
## HDS SAE-B - MDS SAE-B



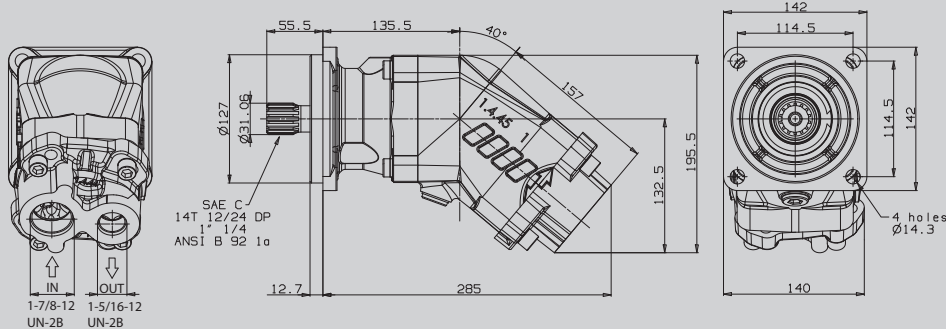
## HDS SAE-BB - MDS SAE-BB



## HDS 47/55/64 SAE-C - MDS 80 SAE-C



## HDS 84/108 SAE-C - MDS 130 SAE-C



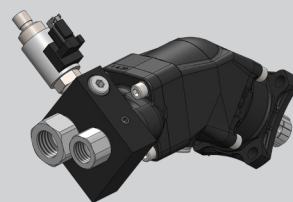
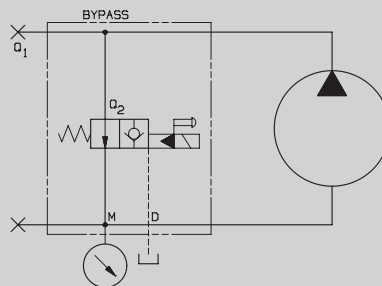
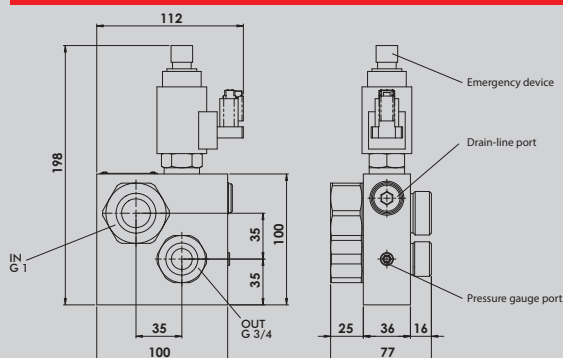
## TECHNICAL FEATURES

| Pump type     | Rotation    |             | Displ.<br>cm <sup>3</sup> | Pressure<br>bar |     | Max speed    |                   |                     | Min speed<br>rpm | Weight<br>kg |
|---------------|-------------|-------------|---------------------------|-----------------|-----|--------------|-------------------|---------------------|------------------|--------------|
|               | right       | left        |                           | P1              | P3  | without load | rpm<br>continuous | rpm<br>intermittent |                  |              |
| HDS-47 SAE-B  | 61307450473 | 61307450479 | 47,13                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 14,2         |
| HDS-55 SAE-B  | 61307450553 | 61307450559 | 56,70                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 14,2         |
| HDS-64 SAE-B  | 61307450643 | 61307450649 | 63,56                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 14,2         |
| HDS-47 SAE-BB | 61307750473 | 61307750479 | 47,13                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 15,2         |
| HDS-55 SAE-BB | 61307750553 | 61307750559 | 56,70                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 15,2         |
| HDS-64 SAE-BB | 61307750643 | 61307750649 | 63,56                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 15,2         |
| MDS-80 SAE-BB | 61307750803 | 61307750809 | 77,25                     | 250             | 300 | 2300         | 1800              | 2100                | 300              | 15,2         |
| HDS-47 SAE-C  | 61408050473 | 61408050479 | 47,13                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 14           |
| HDS-55 SAE-C  | 61408050553 | 61408050559 | 56,70                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 14           |
| HDS-64 SAE-C  | 61408050643 | 61408050649 | 63,56                     | 350             | 400 | 2700         | 1900              | 2500                | 300              | 14           |
| MDS-80 SAE-C  | 61408050803 | 61408050809 | 77,25                     | 250             | 300 | 2300         | 1800              | 2100                | 300              | 14           |
| HDS-84 SAE-C  | 61408050843 | 61408050849 | 84,33                     | 350             | 400 | 2300         | 1500              | 2000                | 300              | 17,8         |
| HDS-108 SAE-C | 61408051083 | 61408051089 | 107                       | 350             | 400 | 2300         | 1500              | 2000                | 300              | 17,8         |
| MDS-130 SAE-C | 61408051303 | 61408051309 | 131,62                    | 250             | 270 | 2300         | 1500              | 2000                | 300              | 17,8         |

# By-pass valves

By-pass valve is used together with Bent Axis HDS-HDT piston pumps in case the pump is always in rotation while the vehicle is turned on (mounting with PTO without engagement or directly on motor).

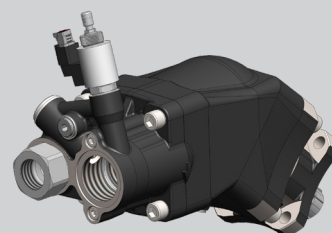
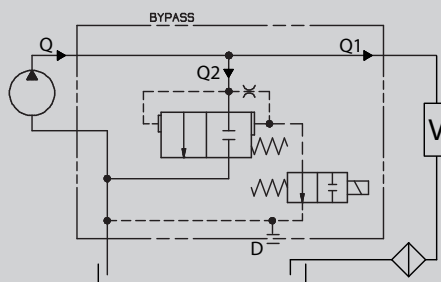
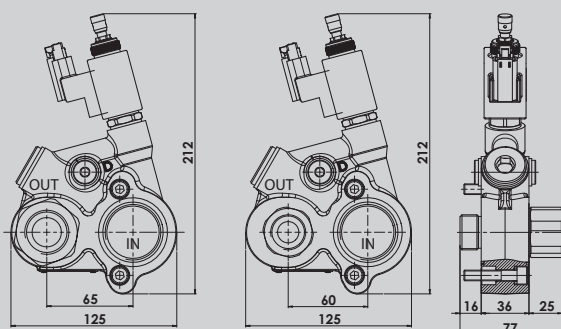
## HDS 12-17-25-34



## HDS - MDS - HDT

### HDT

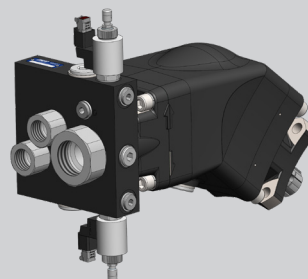
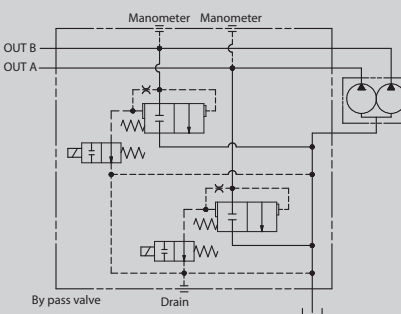
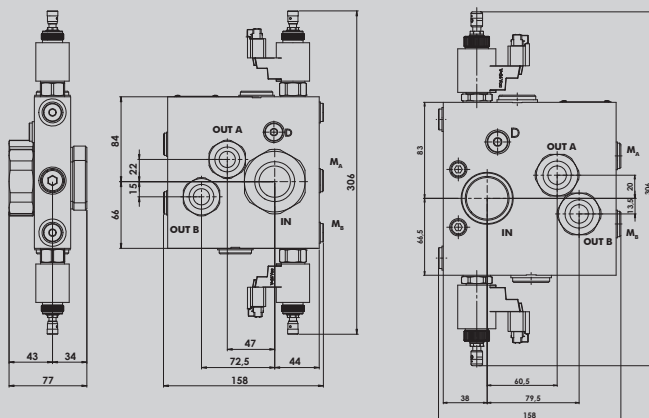
### HDS-MDS



## TWIN FLOW

53+53 / 70+35 / 70+53

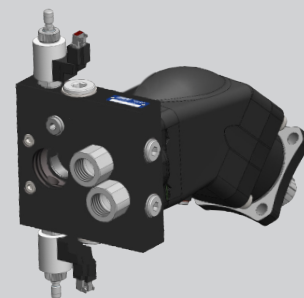
76+76



## TECHNICAL FEATURES

| Pump type       | Order code  |             | Pressure max bar | IN      | OUT   | Manometer | Drain-line | Enclosure | Coil power W |
|-----------------|-------------|-------------|------------------|---------|-------|-----------|------------|-----------|--------------|
|                 | 12V         | 24V         |                  |         |       |           |            |           |              |
| HDS-12 ISO      | 10820012345 | 10820024341 | 400*             | G 1     | G 3/4 | G 1/8     | G 3/8      | IP 66     | 22           |
| HDS-17 ISO      |             |             |                  |         |       |           |            |           |              |
| HDS-25 ISO      |             |             |                  |         |       |           |            |           |              |
| HDS-34 ISO      |             |             |                  |         |       |           |            |           |              |
| HDS-40 ISO      | 10820012498 | 10820024494 | 400*             | G 1 1/4 | G 3/4 | G 3/4     | G 1/4      | IP 66     | 22           |
| HDS-47 ISO      |             |             |                  |         |       |           |            |           |              |
| HDS-55 ISO      |             |             |                  |         |       |           |            |           |              |
| HDS-64 ISO      |             |             |                  |         |       |           |            |           |              |
| MDS-80 ISO      | 10820012872 | 10820024878 | 400*             | G 1 1/2 | G 1   | G 3/4     | G 1/4      | IP 66     | 22           |
| HDS-84 ISO      |             |             |                  |         |       |           |            |           |              |
| HDS-108 ISO     |             |             |                  |         |       |           |            |           |              |
| MDS-130 ISO     |             |             |                  |         |       |           |            |           |              |
| HDT-75          | 10820012881 | 10820024887 | 400*             | G 1 1/4 | G 1   | G 3/4     | G 1/4      | IP 66     | 22           |
| HDT-84          |             |             |                  |         |       |           |            |           |              |
| HDT-96          |             |             |                  |         |       |           |            |           |              |
| HDT-108         |             |             |                  |         |       |           |            |           |              |
| TWIN-FLOW 53+53 | 10820012541 | 10820024547 | 400*             | G 1 1/4 | G 3/4 | G 3/8     | G 1/4      | IP 66     | 22           |
| TWIN-FLOW 70+35 |             |             |                  |         |       |           |            |           |              |
| TWIN-FLOW 70+53 |             |             |                  |         |       |           |            |           |              |
| TWIN-FLOW 76+76 |             |             |                  |         |       |           |            |           |              |

\* See pumps catalogue for related pressure values.

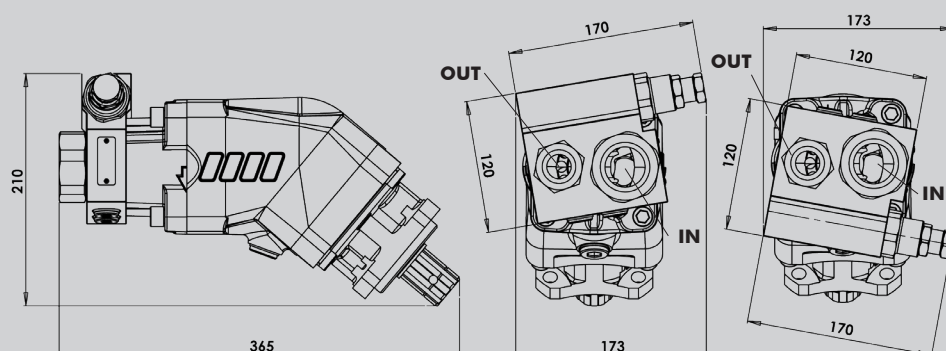


# Relief valve assembly

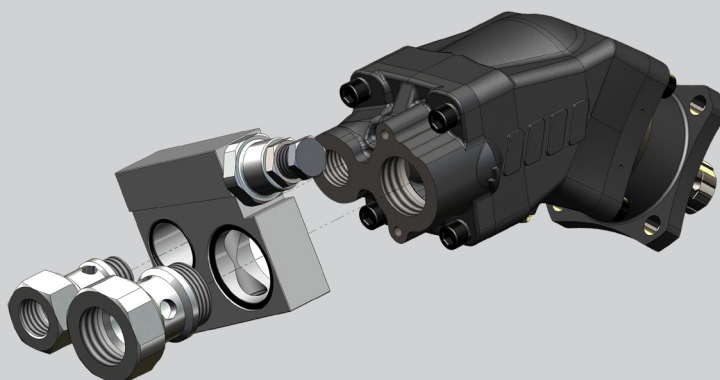
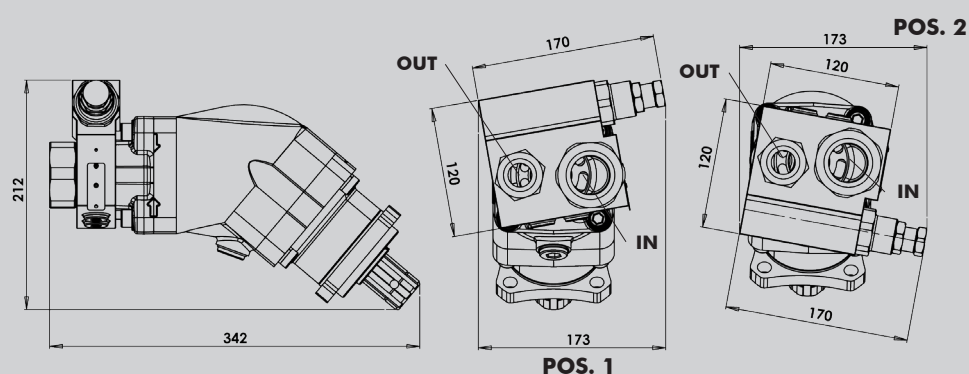
## Relief valve assembly for "HDS-MDS-HDT" bent axis piston pumps

This valve can be directly fitted on the rear cover of the pump in such a way that the return flow goes back to tank through the pump itself saving one hose. The valve protects the pump from peak pressure due to any wrong operations such as closed circuit or coupling not connected. The fitment of the relief valve assembly onto the pump is symmetric, thus it is possible to rotate it by 180° just to avoid any interferences.

### HDS-MDS



### HDT



## TECHNICAL FEATURES

|  | Pump type                                                          | Order code    | Setting pressure<br>bar |         | IN      | OUT   |
|--|--------------------------------------------------------------------|---------------|-------------------------|---------|---------|-------|
|  |                                                                    |               | min.                    | max.    |         |       |
|  | HDS-40 ISO<br>HDS-47 ISO<br>HDS-55 ISO<br>HDS-64 ISO<br>MDS-80 ISO | 108-205-00479 | 45 ± 5                  | 360 ± 5 | G 1 1/4 | G 3/4 |
|  | HDS-84 ISO                                                         | 108-205-00844 | 45 ± 5                  | 360 ± 5 | G 1 1/4 | G 1   |
|  | HDS-108 ISO                                                        | 108-205-01085 |                         |         | G 1 1/2 | G 1   |
|  | MDS-130 ISO                                                        |               |                         |         |         |       |
|  | HDT-75<br>HDT-84<br>HDT-96<br>HDT-108                              | 108-205-50843 | 45 ± 5                  | 360 ± 5 | G 1 1/4 | G 1   |

## HYDRAULIC SCHEME

