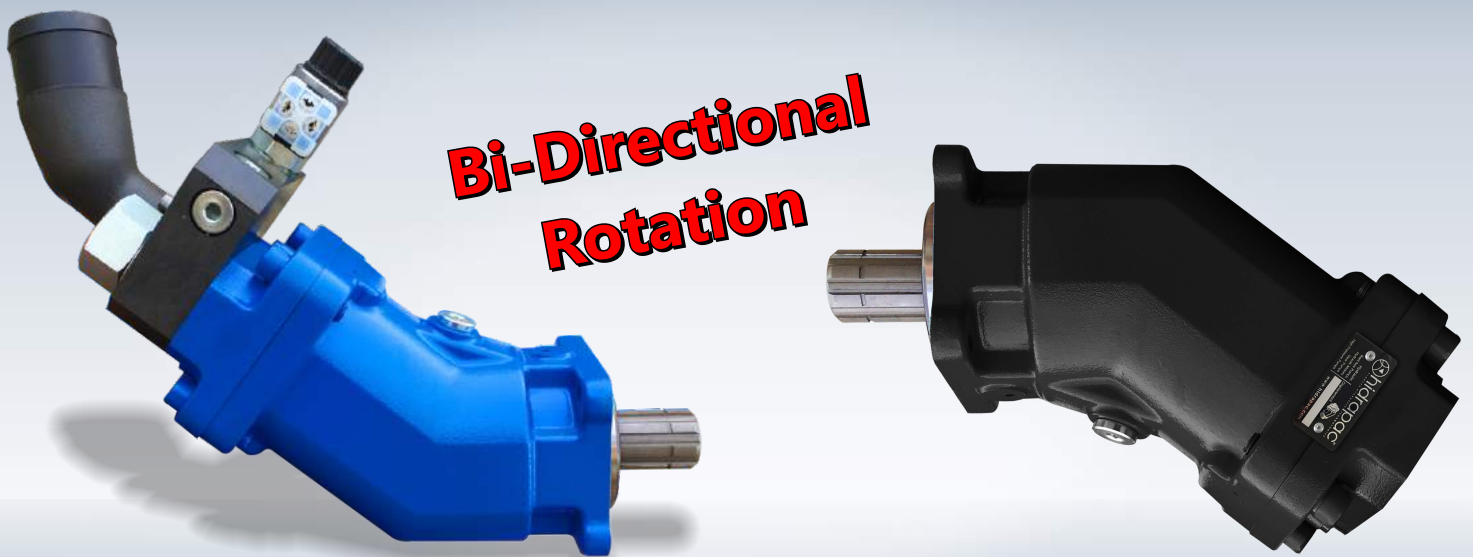


# KFA2

Bent Axis Piston Pump - DIN

Bi-Directional Rotation - New Generation Bent Axis Pump



### KFA2 Pumps have the following advantages ;

- Compact Design,
- Economical Conception,
- High Power Density,
- High Overall Efficiency,
- High Rotating Speeds,
- High Output Pressure,
- 350 bar Cont. Work. Pressure,
- 400 bar Peak Pressure,
- From 5cc to 130cc,
- Reduced Noise Level,
- Increased Reliability,
- No Drain Line Necessary,
- Smaller Installation Dimensions,
- One Piece Pistons with Piston Rings,
- Special Inlet Fittings & Accessories,
- Simple Change of Direction of Rotation

## Other Advantages

New frame sizes to meet market requirements.

Optional by-pass valve.

For use in mobile & industrial and stationary applications areas.

The pump drive shaft bearings are designed to give the service life expected in these areas of operation.

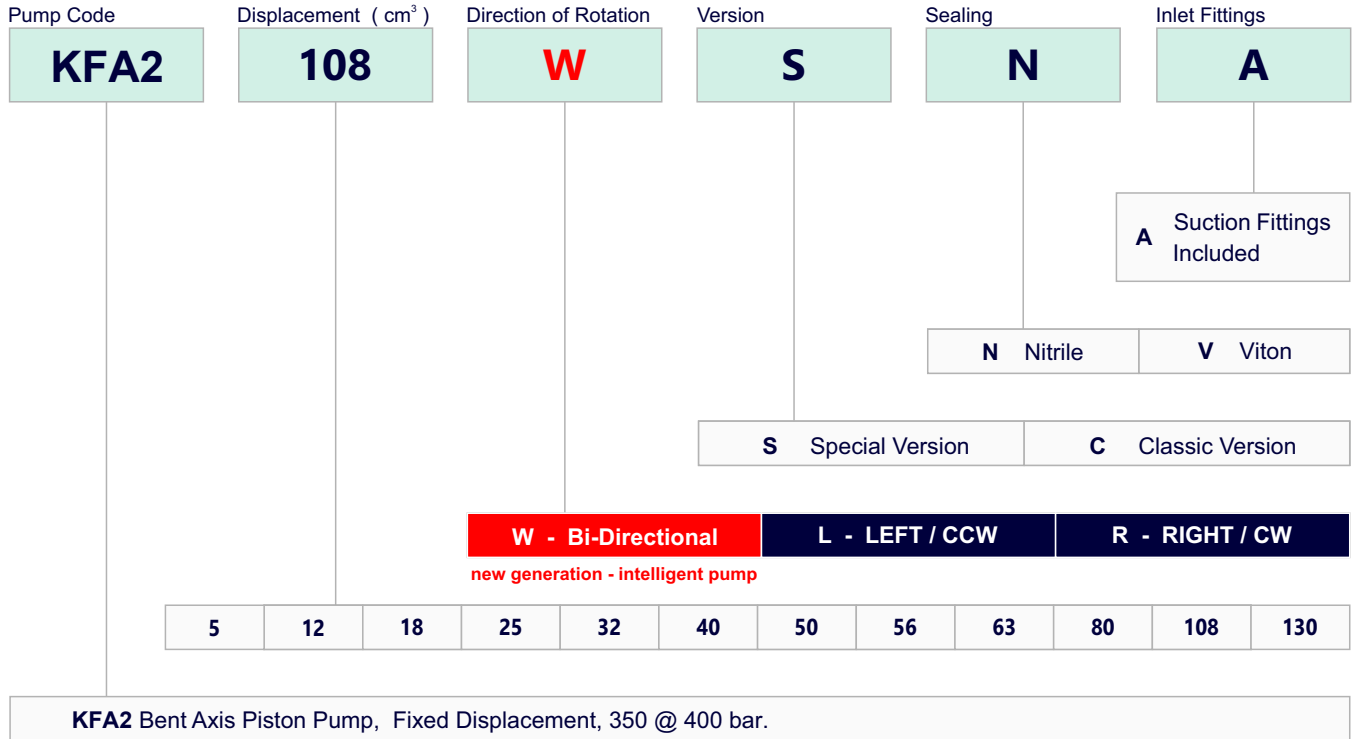
Interchangeable with other bent axis pumps & motors.

40° bent axis design giving high power, small overall dimensions, optimum efficiency and economic design. Flange and shaft designed for direct mounting on truck gearbox PTO's. The fixed displacement bent axis pumps generates a hydraulic fluid flow. It is designed for use in trucks, commercial vehicles and all stationary hydraulic applications. The pump is a fixed pump with rotary group in bent-axis design open circuits. Flow is proportional to drive speed and displacement.

For axial piston units with bent-axis design, the Pistons are arranged diagonally with respect to the drive shaft. The pump motor covers the whole displacement range 5 to 130 cm<sup>3</sup>/rev. The pump has been developed with modern styling and design to satisfy market demand as to designed new generation plate and pistons with give high flow performance, high pressures with high efficiency and very small dimensions.

The pump is available both to DIN and SAE world standards and can be mounted either directly at the gear box or via a drive shaft. If necessary it can also be augmented with a by-pass valve. Other brand bent axis pumps compatible and interchangeable with bent axis pumps motors. Refer to the data sheet and order confirmation for the technical data, operating conditions and operating limits of the bent axis piston pumps.

# Ordering Code of KFA2 Pumps



| Formulas                          |      |  |                                     |
|-----------------------------------|------|--|-------------------------------------|
| <b>Pump Output Flow</b>           | GPM  | $GPM = (\text{Speed (rpm)} \times \text{disp. (cu. in.)}) / 231$                                 | $GPM = (n \times d) / 231$          |
| <b>Pump Input Horsepower</b>      | HP   | $HP = GPM \times \text{Pressure (psi)} / 1714 \times \text{Efficiency}$                          | $HP = (Q \times P) / 1714 \times E$ |
| <b>Pump Efficiency</b>            | E    | Overall Efficiency = Output HP / Input HP  | Eoverall = HPOut / HPIn X 100       |
|                                   |      | Overall Efficiency = Volumetric Eff. × Mechanical Eff.   | EOverall = EffVol. × EffMech.       |
| <b>Pump Volumetric Efficiency</b> | E    | Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) × 100 | EffVol. = QAct. / QTheo. X 100      |
| <b>Pump Mechanical Efficiency</b> | E    | Mechanical Efficiency = Theoretical Torque to Drive / Actual Torque to Drive × 100               | EffMech = TTheo. / TAct. × 100      |
| <b>Pump Displacement</b>          | CIPR | Displcmnt (In.3 / rev.) = Flow Rate (GPM) × 231 / Pump RPM                                       | CIPR = GPM × 231 / RPM              |
| <b>Pump Torque</b>                | T    | Torque = Horsepower × 63025 / RPM  | T = 63025 × HP / RPM                |
|                                   |      | Torque = Pressure (PSIG) × Pump Displacement (CIPR) / 2π   | T = P × CIPR / 6.28                 |

- Horsepower for driving a pump** : For every 1 hp of drive, the equivalent of 1 gpm @ 1500 psi can be produced.
- Horsepower for idling a pump** : To idle a pump when it is unloaded will require about 5% of it's full rated power
- Wattage for heating hydraulic oil** : Each watt will raise the temperature of 1 gallon of oil by 1° F. per hour.
- Flow velocity in hydraulic lines** : Pump suction lines 2 to 4 feet per second, pressure lines up to 500 psi - 10 to 15 ft./sec., pressure lines 500 to 3000 psi - 15 to 20 ft./sec.; all oil lines in air-over-oil systems; 4 ft./sec.

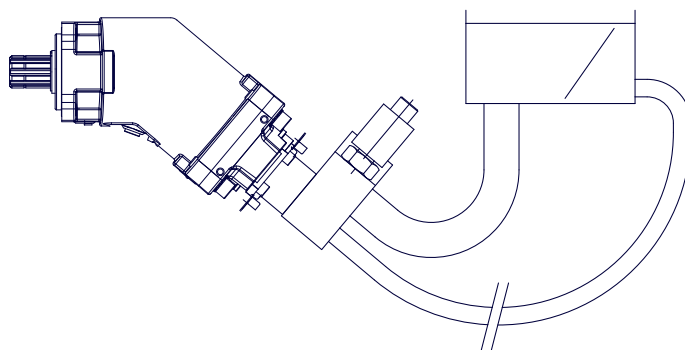
# Technical Data I

|   |                 | 5    | 12    | 18    | 25    | 32    | 40    | 50    | 56    | 63    | 80    | 108   | 130   |
|---|-----------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Displacement</b>                                 | <b>cc</b>       | 5,00 | 12,00 | 18,00 | 25,00 | 32,00 | 40,20 | 50,00 | 56,40 | 63,00 | 80,00 | 108,4 | 130,0 |
| <b>Theoretical oil flow<br/>l/min at pump speed</b> | <b>1000 rpm</b> | 5,00 | 12,00 | 18,00 | 25,00 | 32,00 | 40,20 | 50,00 | 56,40 | 63,00 | 80,00 | 108,4 | 130,0 |
|   | <b>1500 rpm</b> | 7,50 | 18,00 | 27,00 | 37,50 | 48,00 | 60,30 | 75,00 | 84,60 | 94,50 | 120,0 | 162,6 | 195,0 |

|                                     |              |            |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|--------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Maximum Pump Speed</b>           | - Continuous | <b>rpm</b> | 2500 | 2300 | 2300 | 2300 | 2250 | 1900 | 1900 | 1900 | 1900 | 1700 | 1700 | 1600 |
|                                     | - Limited    | <b>rpm</b> | 3300 | 3100 | 2900 | 2700 | 2700 | 2500 | 2500 | 2300 | 2300 | 2100 | 1900 | 1750 |
| <b>Max. Continuous Pressure</b>     | <b>bar</b>   | 350        | 350  | 350  | 350  | 350  | 350  | 350  | 350  | 350  | 350  | 350  | 350  |      |
| <b>Max. Intermit. Peak Pressure</b> | <b>bar</b>   | 400        | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  | 400  |      |
| <b>Max. Torque at 350 bar</b>       | <b>Nm</b>    | 66         | 71   | 105  | 146  | 190  | 240  | 292  | 330  | 360  | 460  | 620  | 746  |      |

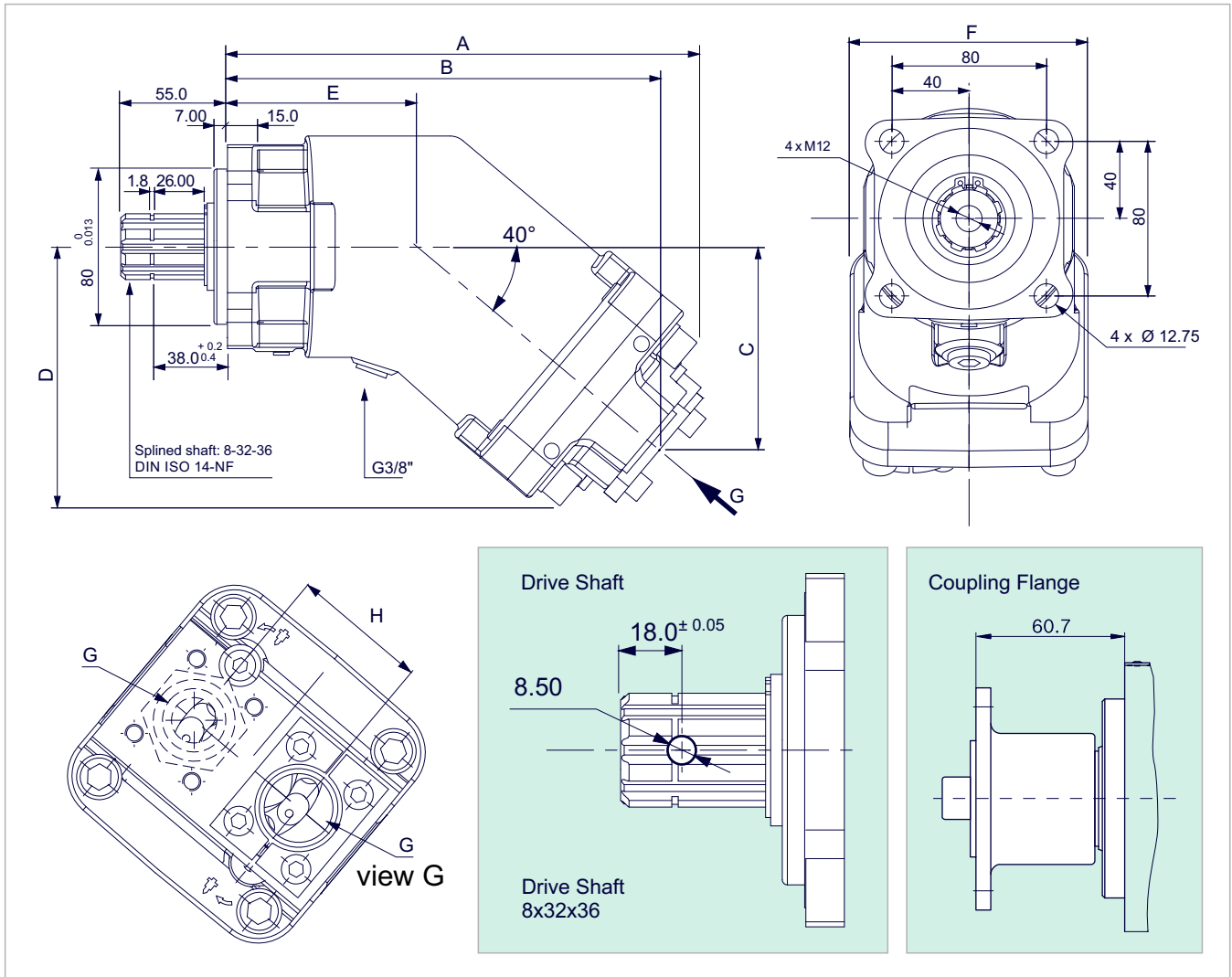
|               |                         |           |      |      |      |      |       |       |       |       |       |       |       |       |
|---------------|-------------------------|-----------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Weight</b> | - Without inlet fitting | <b>kg</b> | 8,20 | 9,00 | 9,00 | 9,50 | 10,50 | 10,50 | 11,00 | 11,50 | 11,50 | 15,00 | 15,50 | 16,50 |
|               | - With inlet fitting    | <b>kg</b> | 8,65 | 9,40 | 9,40 | 9,90 | 10,90 | 10,90 | 11,40 | 11,90 | 11,90 | 15,40 | 15,90 | 17,00 |

|                           |  |                              |      |      |      |      |      |      |      |      |      |    |    |    |
|---------------------------|--|------------------------------|------|------|------|------|------|------|------|------|------|----|----|----|
| <b>Rotation</b>           |  | w                            | w    | w    | w    | w    | w    | w    | w    | w    | w    | w  | w  |    |
| <b>Fluid</b>              |  | Mineral Based Hydraulic Oils |      |      |      |      |      |      |      |      |      |    |    |    |
| <b>Inlet &amp; Outlet</b> |  | 3/4"                         | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 3/4" | 1" | 1" | 1" |



|                        |                         |            |      |      |      |      |       |       |       |       |       |       |       |       |
|------------------------|-------------------------|------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Overhang Torque</b> | - Without inlet fitting | <b>N.m</b> | 8,20 | 8,70 | 8,75 | 8,82 | 11,00 | 11,12 | 11,72 | 11,79 | 11,82 | 17,80 | 17,92 | 19,90 |
|                        | - With inlet fitting    | <b>N.m</b> | 8,65 | 9,15 | 9,19 | 9,23 | 11,52 | 11,40 | 12,20 | 12,24 | 12,28 | 18,33 | 18,45 | 20,45 |

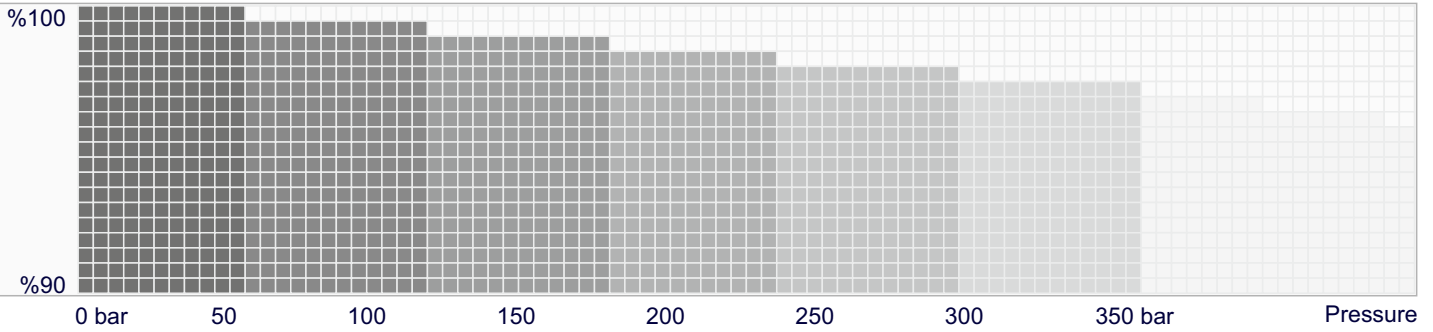
# Technical Data II



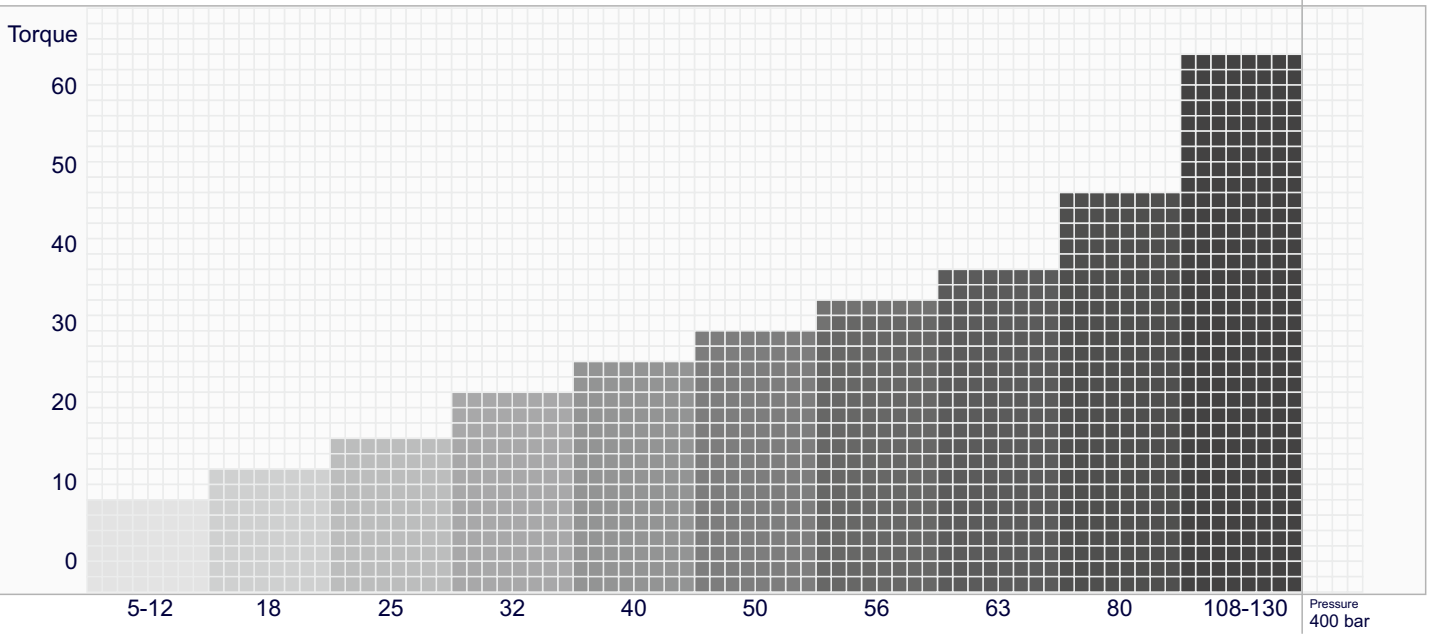
|           | 5     | 12    | 18    | 25    | 32    | 40    | 50    | 56    | 63    | 80    | 108   | 130   |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>cc</b> | 5,00  | 12,00 | 18,00 | 25,00 | 32,00 | 40,20 | 50,00 | 56,40 | 63,00 | 80,00 | 108,4 | 130,0 |
| <b>A</b>  | 195,0 | 195,0 | 195,0 | 195,0 | 202,0 | 202,0 | 215,0 | 215,0 | 215,0 | 242,0 | 242,0 | 242,0 |
| <b>B</b>  | 176,0 | 176,0 | 176,0 | 176,0 | 183,0 | 183,0 | 196,0 | 196,0 | 196,0 | 221,0 | 223,0 | 223,0 |
| <b>C</b>  | 76,0  | 76,0  | 76,0  | 76,0  | 82,0  | 82,0  | 94,0  | 94,0  | 94,0  | 104,0 | 105,0 | 105,0 |
| <b>D</b>  | 104,0 | 104,0 | 104,0 | 104,0 | 108,0 | 108,0 | 118,0 | 118,0 | 118,0 | 132,0 | 132,0 | 132,0 |
| <b>E</b>  | 86,0  | 86,0  | 86,0  | 86,0  | 86,0  | 86,0  | 86,0  | 86,0  | 86,0  | 98,0  | 98,0  | 98,0  |
| <b>F</b>  | 108,0 | 108,0 | 108,0 | 108,0 | 108,0 | 108,0 | 108,0 | 108,0 | 108,0 | 122,0 | 122,0 | 122,0 |
| <b>G</b>  | 3/4"  | 3/4"  | 3/4"  | 3/4"  | 3/4"  | 3/4"  | 3/4"  | 3/4"  | 3/4"  | 1"    | 1"    | 1"    |
| <b>H</b>  | 54    | 54    | 54    | 54    | 54    | 54    | 54    | 54    | 54    | 60    | 60    | 60    |

# Performance

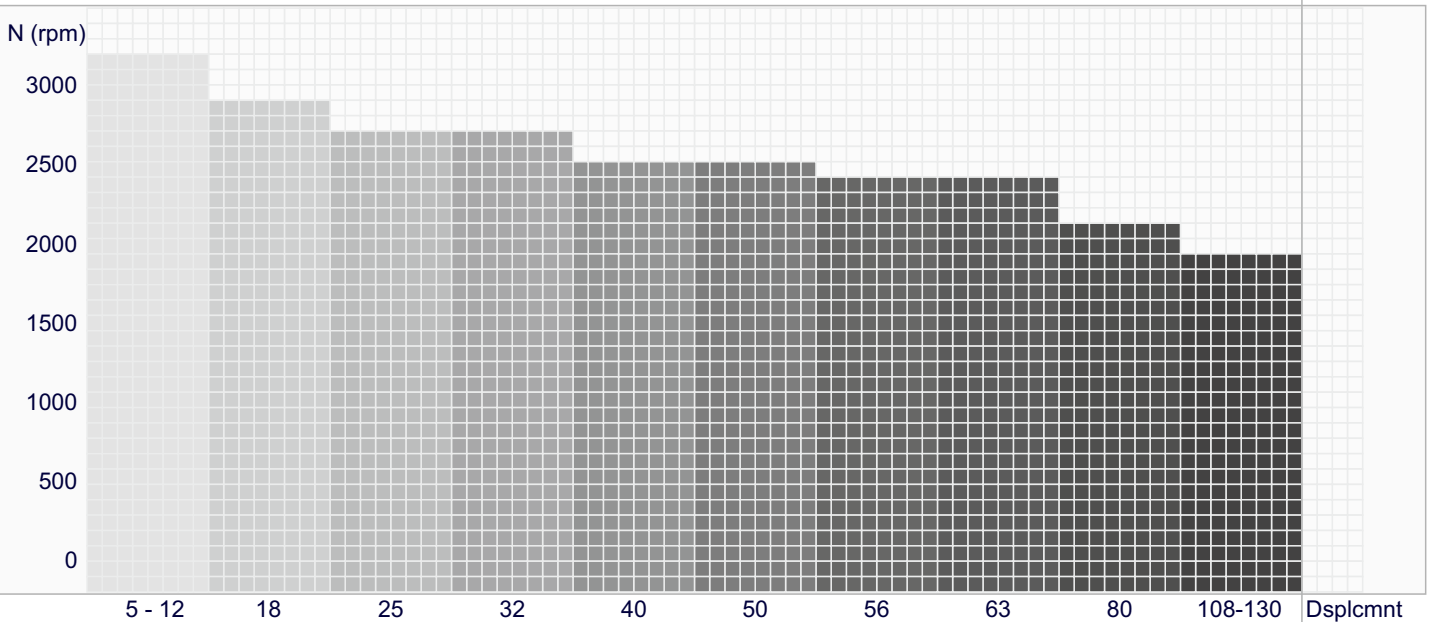
### Efficiency Curves ( 1000 rpm )



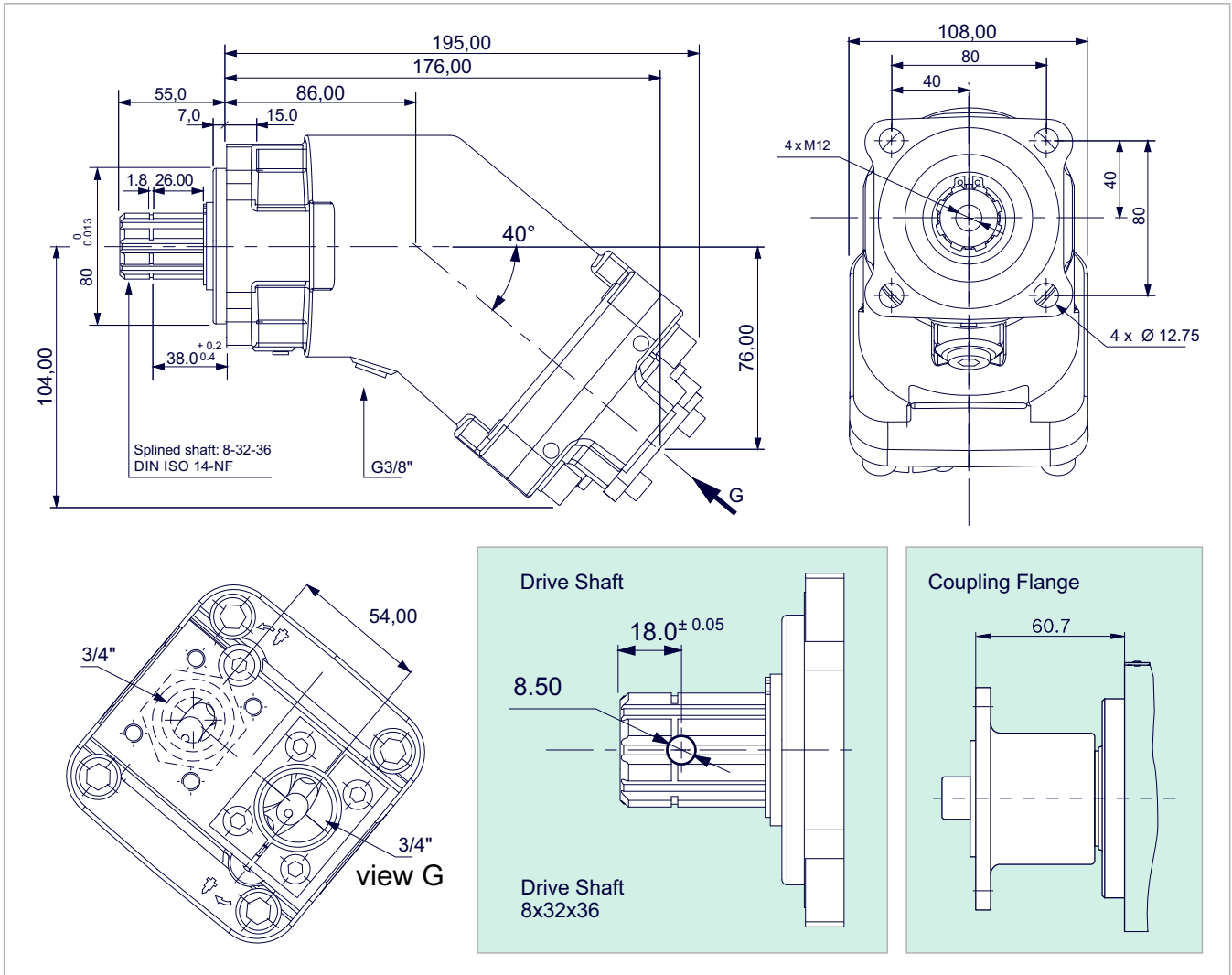
### Torque with Pump Output Pressure



### Flow with Pump Speed

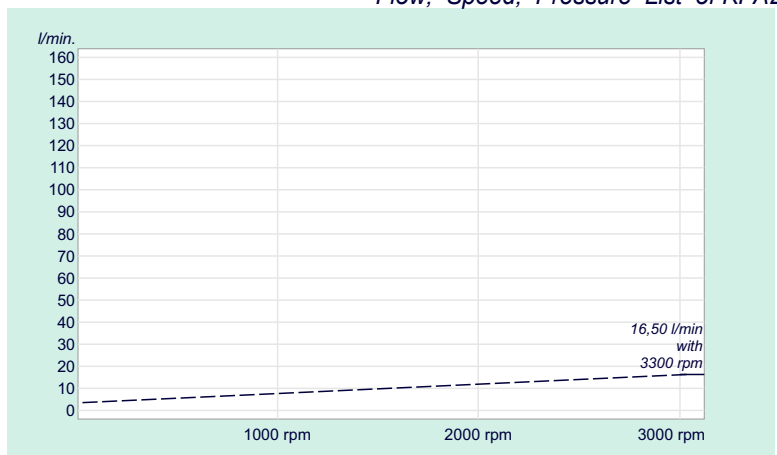


# KFA2 5

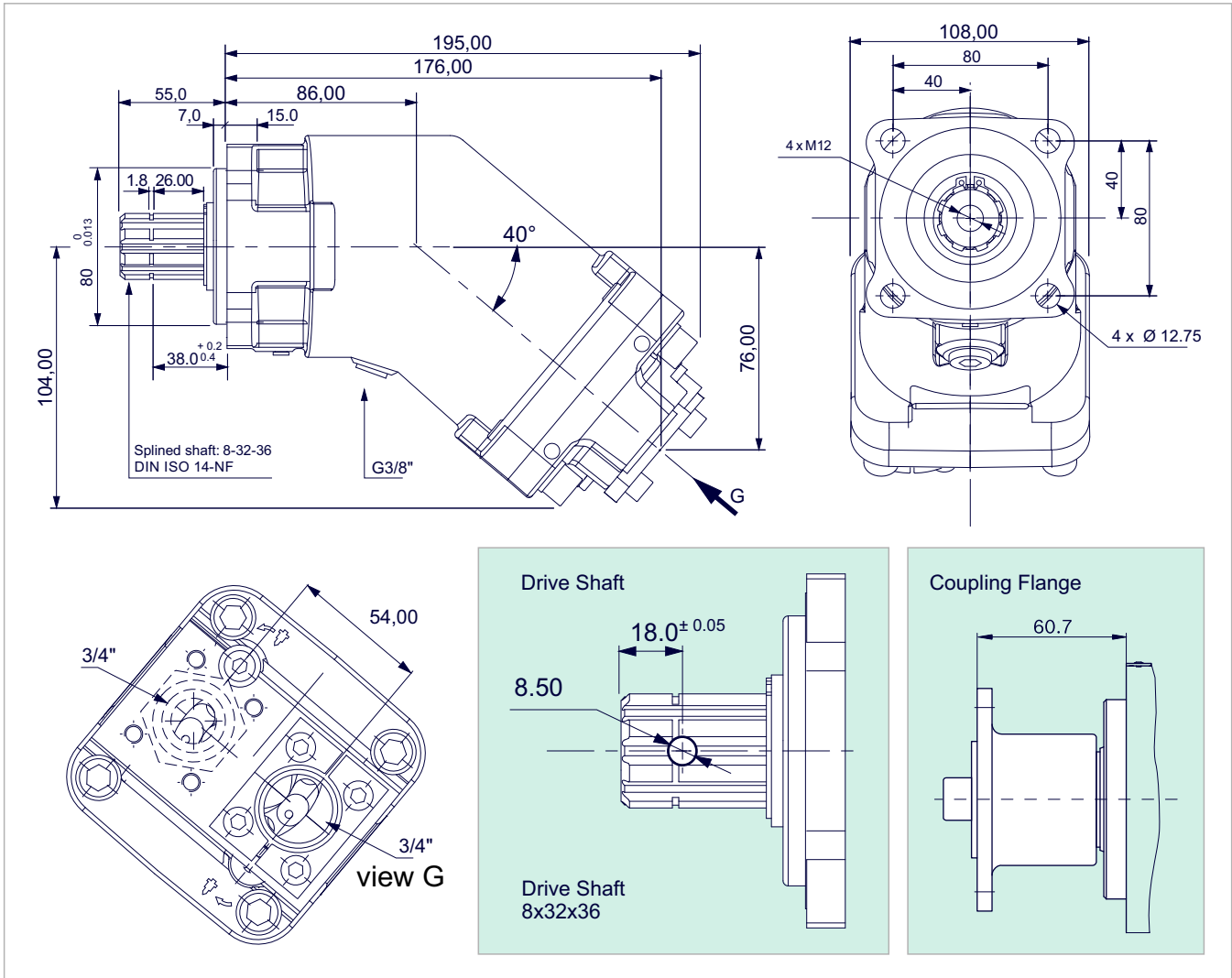


|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 5,00 cc       |
| <b>x 1500 rpm</b>                   | 7,50 cc       |
| <b>Max. Continuous Pump Speed</b>   | 2500 rpm      |
| <b>Max. Limited Pump Speed</b>      | 3300 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 66 Nm         |
| <b>Weight without inlet fitting</b> | 8,20 kg       |
| <b>Weight with inlet fitting</b>    | 8,65 kg       |
| <b>Torque without inlet fitting</b> | 8,20 N.m      |
| <b>Torque with inlet fitting</b>    | 8,65 N.m      |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |

Flow, Speed, Pressure List of KFA2

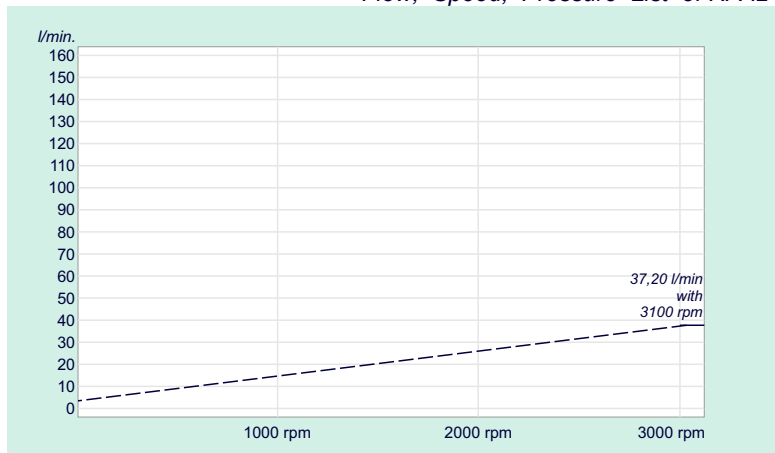


# KFA2 12



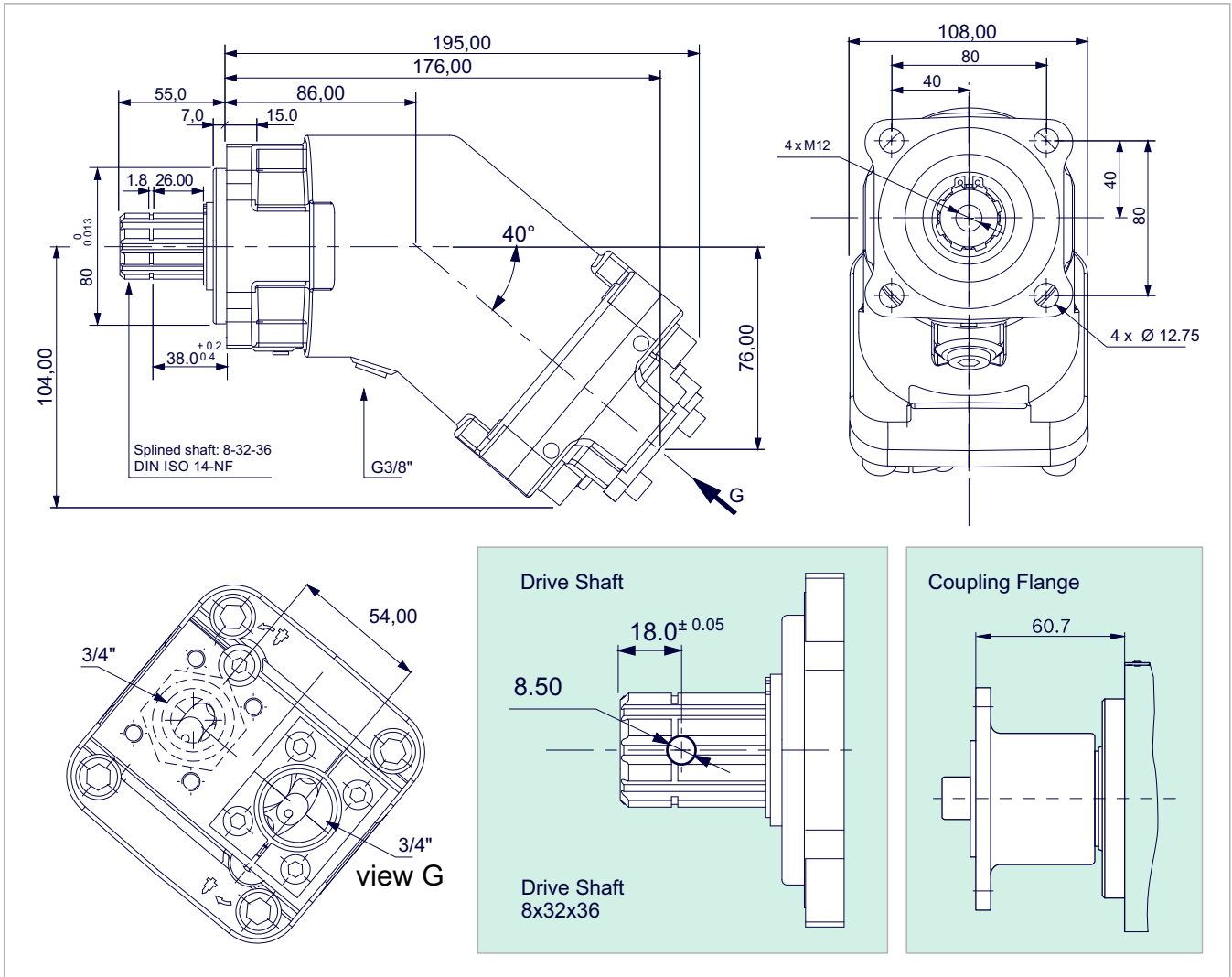
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 12,00 cc      |
| <b>x 1500 rpm</b>                   | 18,00 cc      |
| <b>Max. Continuous Pump Speed</b>   | 2300 rpm      |
| <b>Max. Limited Pump Speed</b>      | 3100 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 71 Nm         |
| <b>Weight without inlet fitting</b> | 9,00 kg       |
| <b>Weight with inlet fitting</b>    | 9,40 kg       |
| <b>Torque without inlet fitting</b> | 8,70 N.m      |
| <b>Torque with inlet fitting</b>    | 9,15 N.m      |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |

Flow, Speed, Pressure List of KFA2

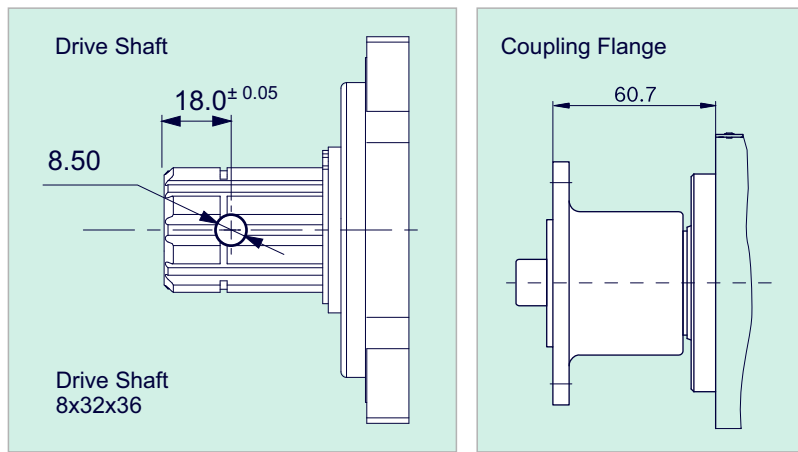




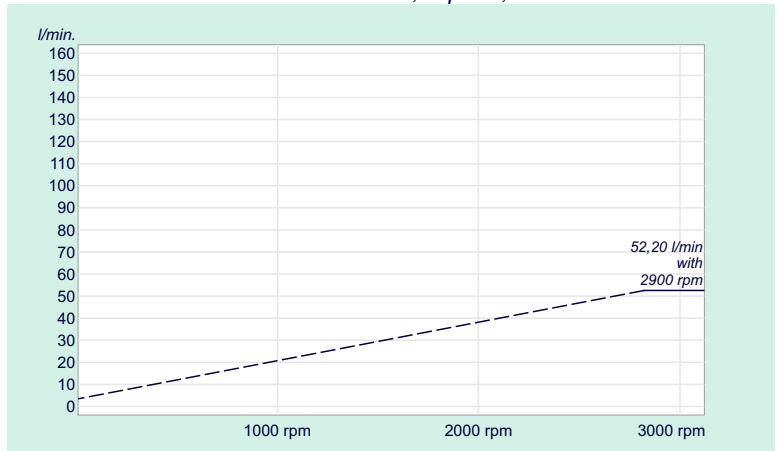
# KFA2 18



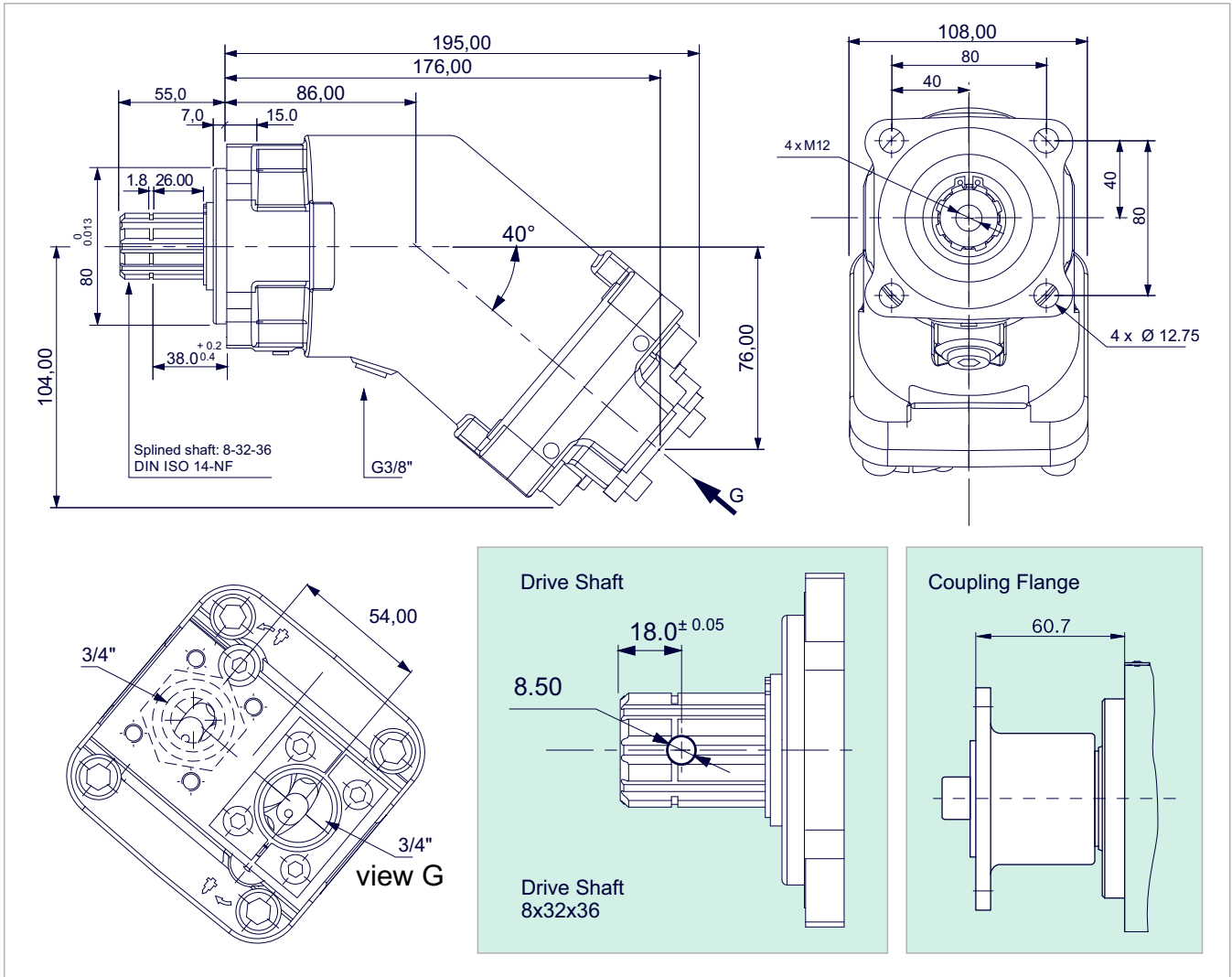
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 18,00 cc      |
| <b>x 1500 rpm</b>                   | 27,00 cc      |
| <b>Max. Continuous Pump Speed</b>   | 2300 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2900 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 105 Nm        |
| <b>Weight without inlet fitting</b> | 9,00 kg       |
| <b>Weight with inlet fitting</b>    | 9,40 kg       |
| <b>Torque without inlet fitting</b> | 8,75 N.m      |
| <b>Torque with inlet fitting</b>    | 9,19 N.m      |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |



Flow, Speed, Pressure List of KFA2

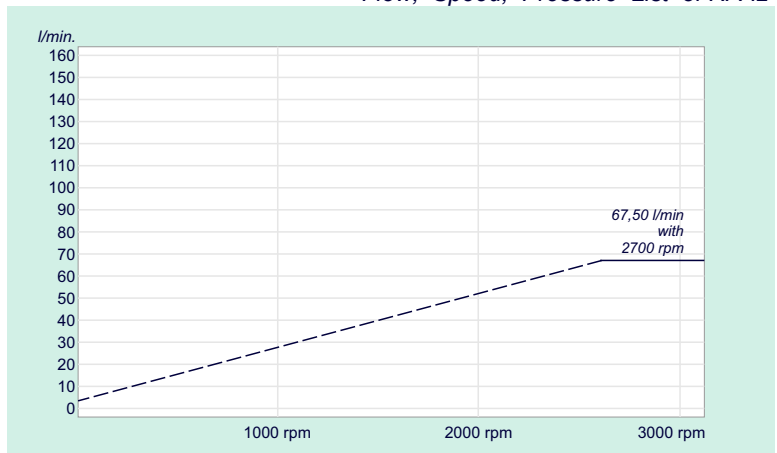


# KFA2 25

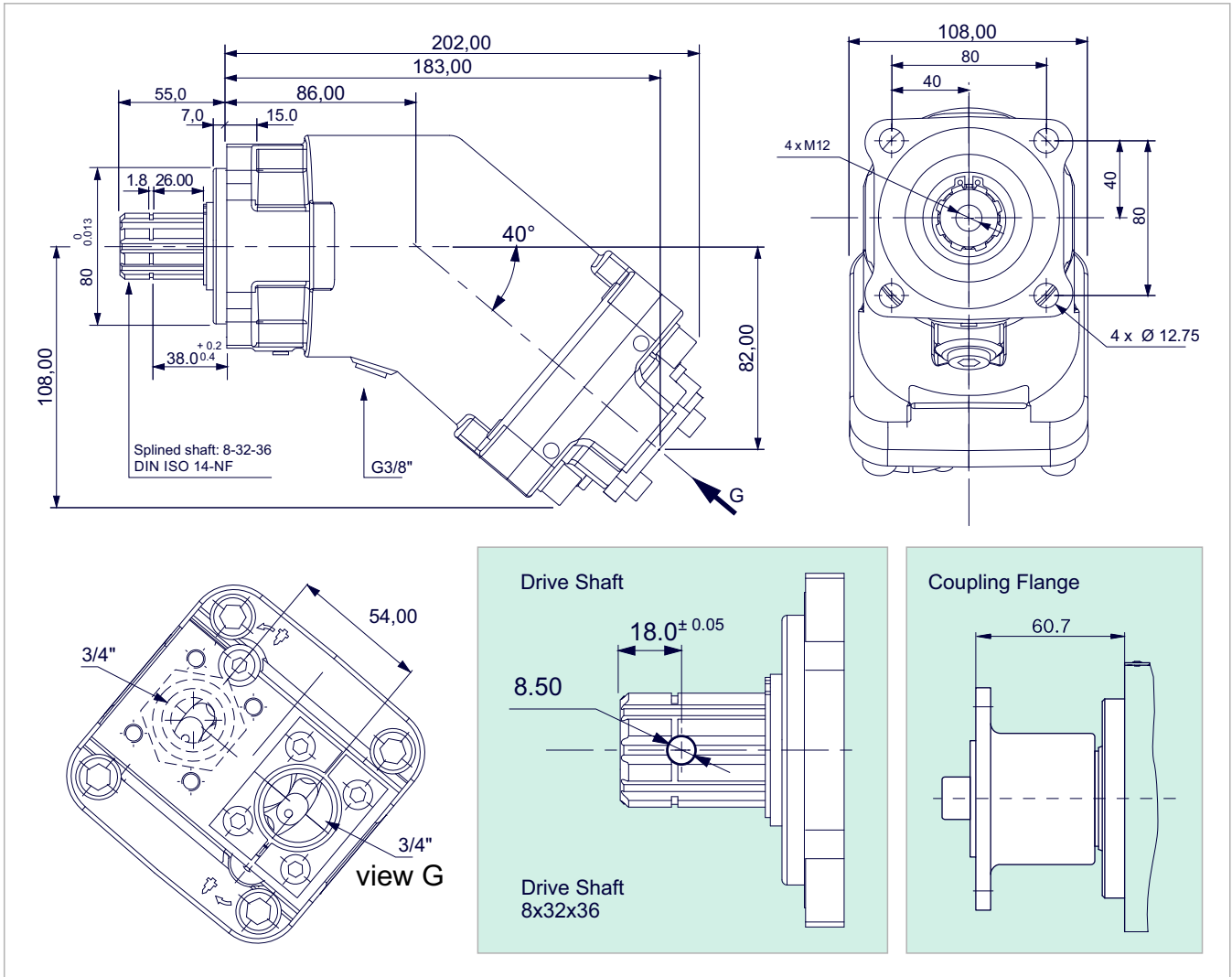


|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 25,00 cc      |
| <b>x 1500 rpm</b>                   | 37,50 cc      |
| <b>Max. Continuous Pump Speed</b>   | 2300 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2700 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 146 Nm        |
| <b>Weight without inlet fitting</b> | 9,50 kg       |
| <b>Weight with inlet fitting</b>    | 9,90 kg       |
| <b>Torque without inlet fitting</b> | 8,82 N.m      |
| <b>Torque with inlet fitting</b>    | 9,23 N.m      |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |

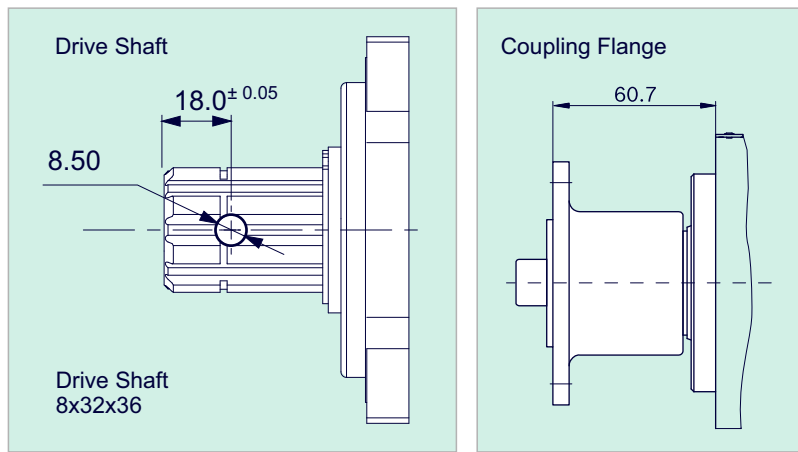
Flow, Speed, Pressure List of KFA2



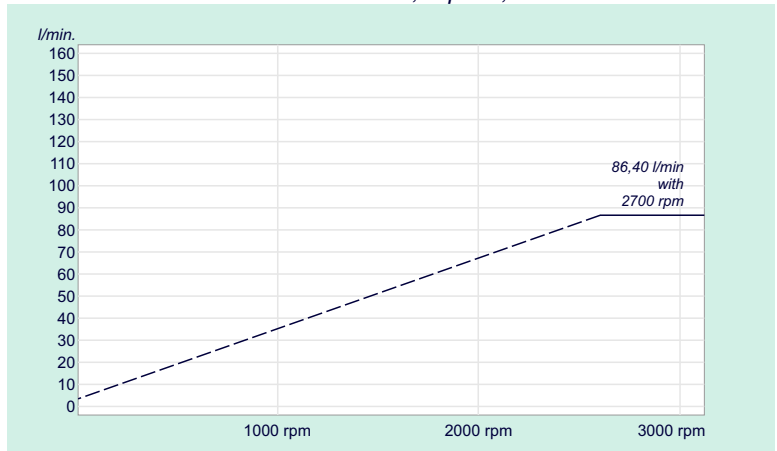
# KFA2 32



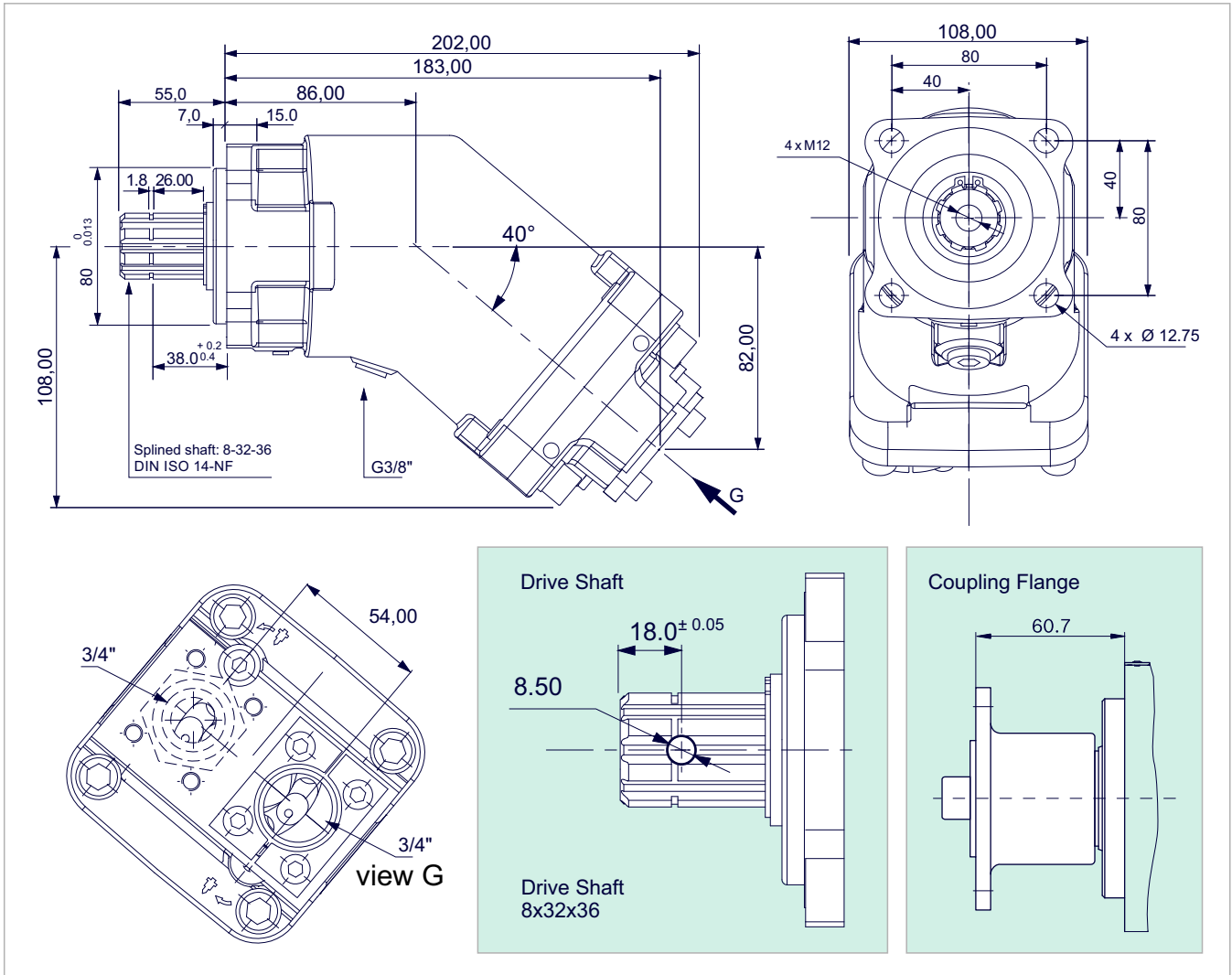
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 32,00 cc      |
| <b>x 1500 rpm</b>                   | 48,00 cc      |
| <b>Max. Continuous Pump Speed</b>   | 2250 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2700 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 190 Nm        |
| <b>Weight without inlet fitting</b> | 10,50 kg      |
| <b>Weight with inlet fitting</b>    | 10,90 kg      |
| <b>Torque without inlet fitting</b> | 11,00 N.m     |
| <b>Torque with inlet fitting</b>    | 11,52 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |



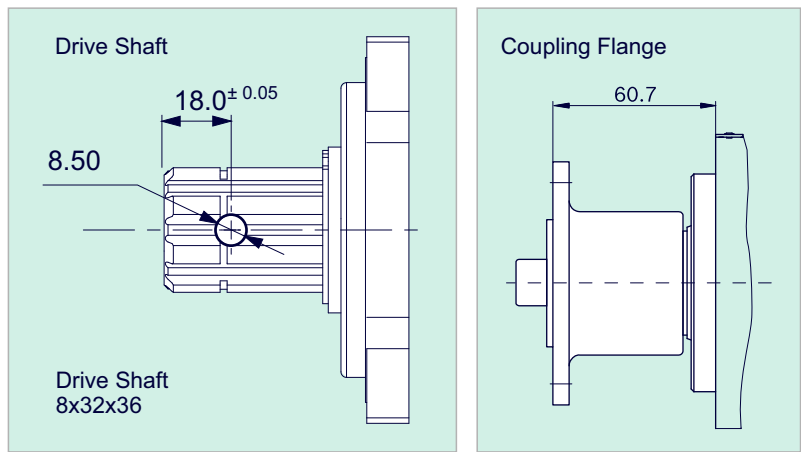
Flow, Speed, Pressure List of KFA2



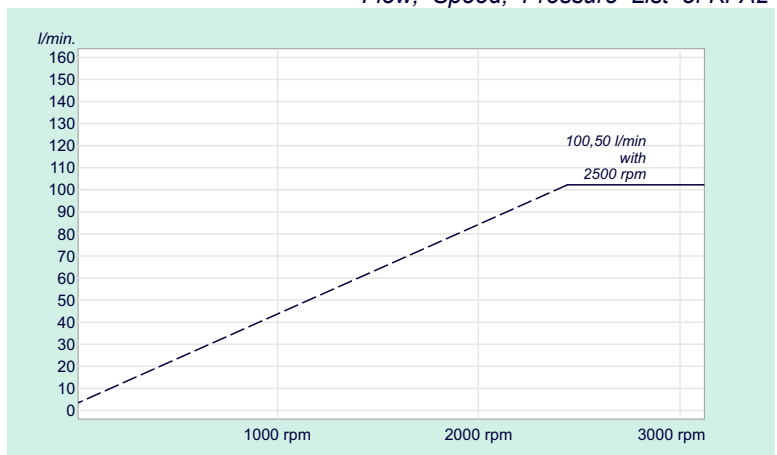
# KFA2 40



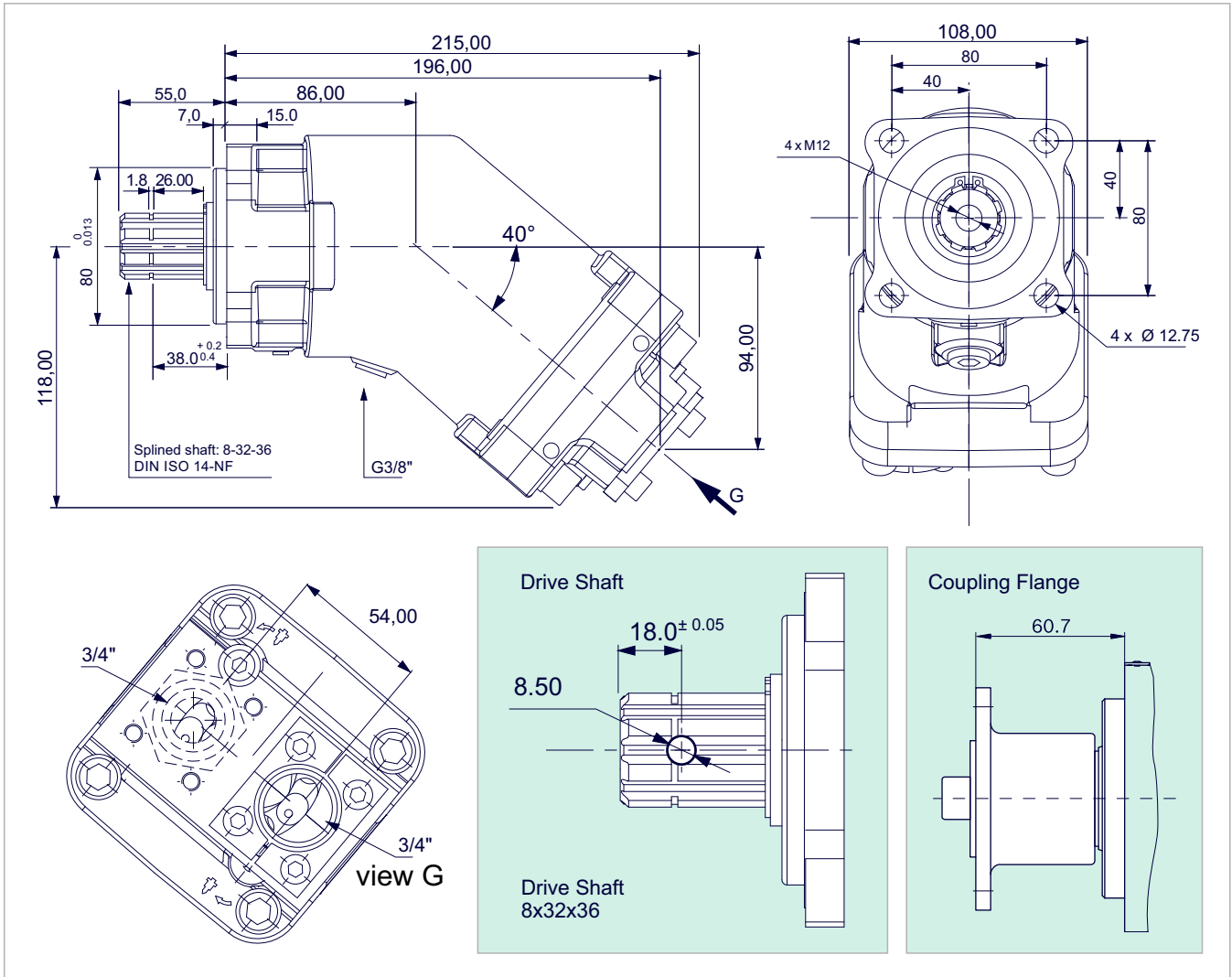
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 40,20 cc      |
| <b>x 1500 rpm</b>                   | 60,30 cc      |
| <b>Max. Continuous Pump Speed</b>   | 1900 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2500 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 240 Nm        |
| <b>Weight without inlet fitting</b> | 10,50 kg      |
| <b>Weight with inlet fitting</b>    | 10,90 kg      |
| <b>Torque without inlet fitting</b> | 11,12 N.m     |
| <b>Torque with inlet fitting</b>    | 11,40 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |



Flow, Speed, Pressure List of KFA2

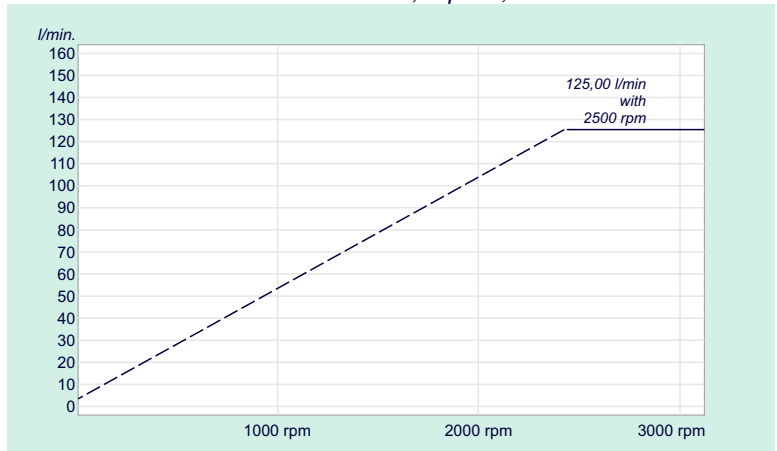


# KFA2 50

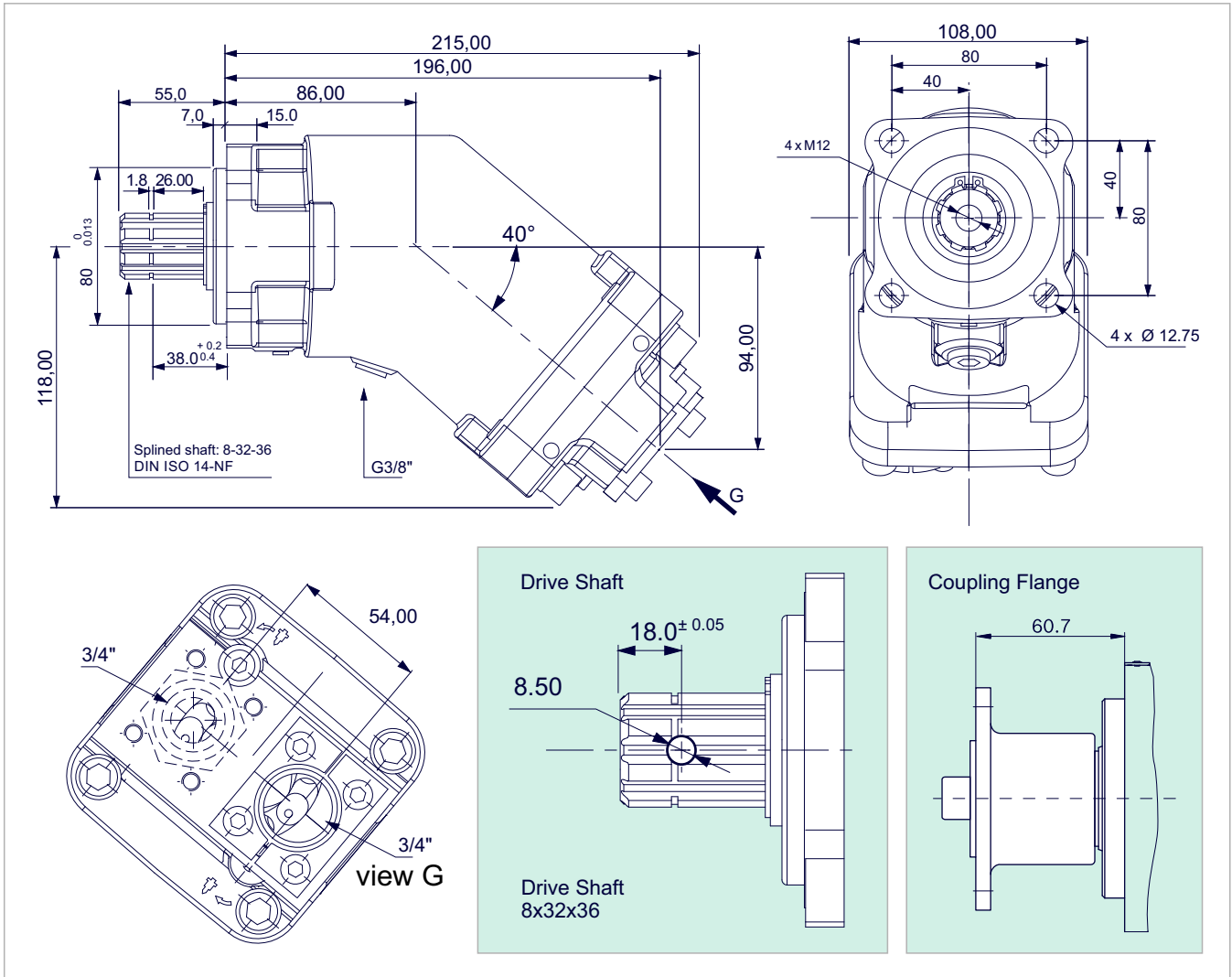


|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 50,00 cc      |
| <b>x 1500 rpm</b>                   | 75,00 cc      |
| <b>Max. Continuous Pump Speed</b>   | 1900 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2500 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 292 Nm        |
| <b>Weight without inlet fitting</b> | 11,00 kg      |
| <b>Weight with inlet fitting</b>    | 11,40 kg      |
| <b>Torque without inlet fitting</b> | 11,72 N.m     |
| <b>Torque with inlet fitting</b>    | 12,20 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |

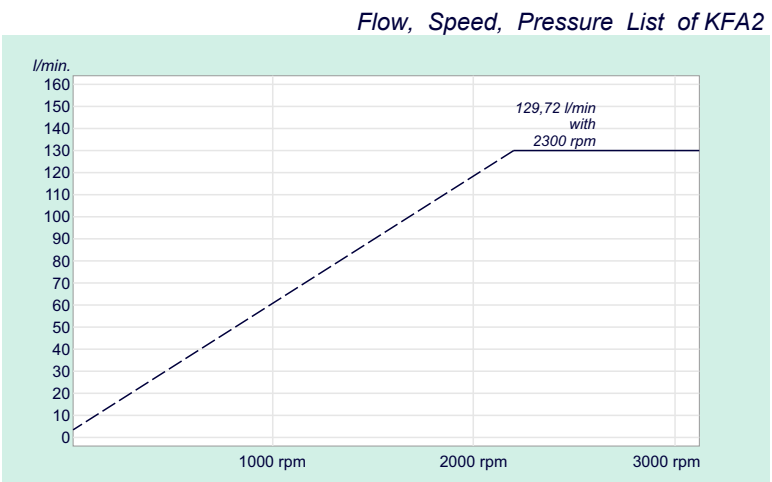
Flow, Speed, Pressure List of KFA2



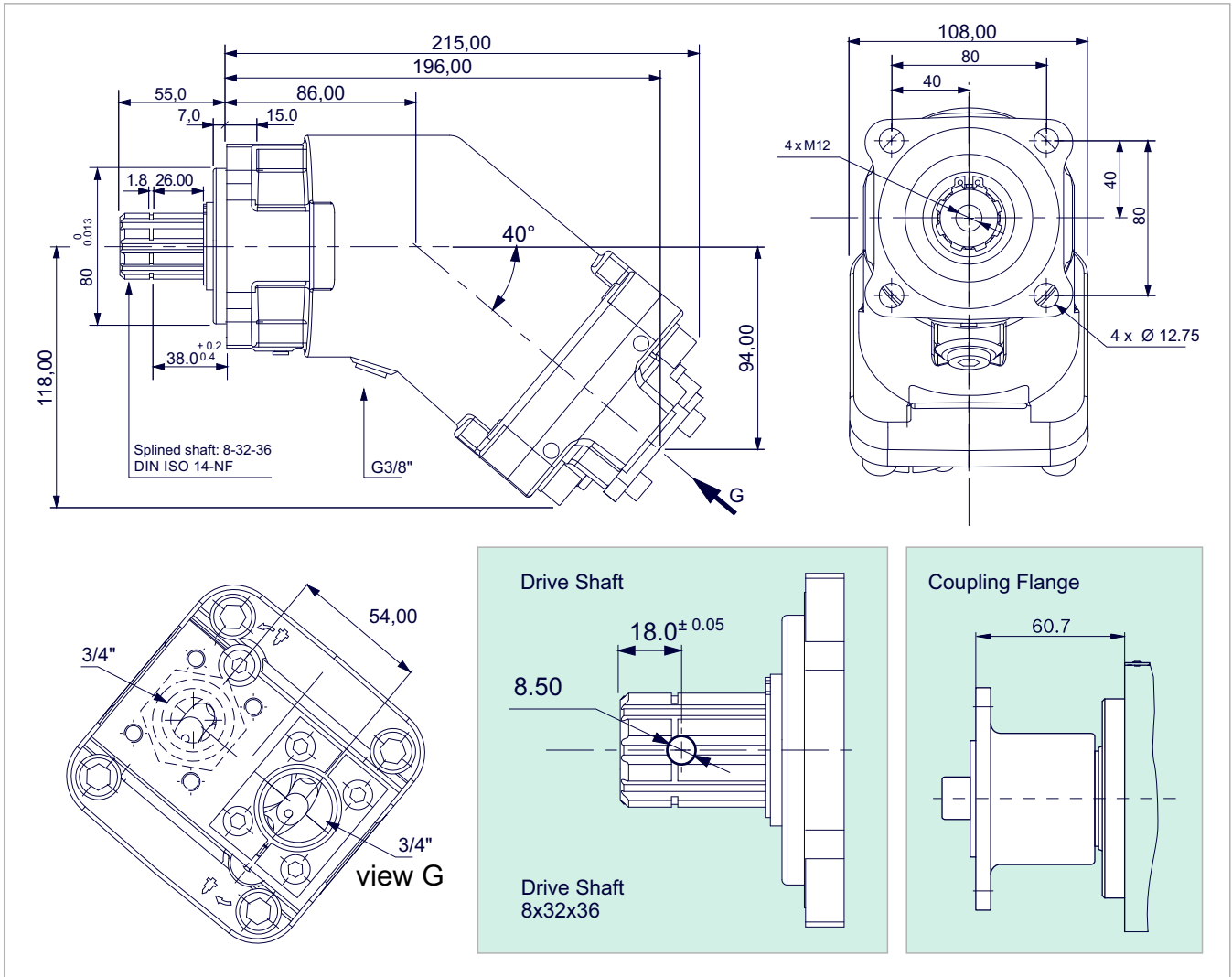
# KFA2 56



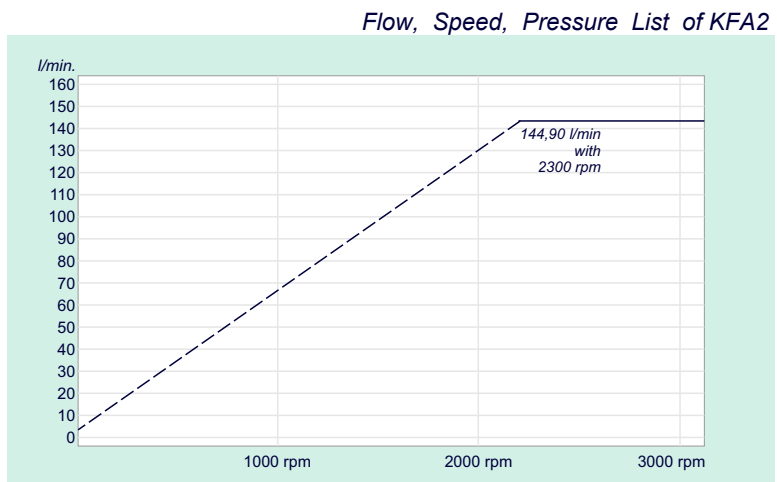
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 56,40 cc      |
| <b>x 1500 rpm</b>                   | 84,60 cc      |
| <b>Max. Continuous Pump Speed</b>   | 1900 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2300 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 330 Nm        |
| <b>Weight without inlet fitting</b> | 11,50 kg      |
| <b>Weight with inlet fitting</b>    | 11,90 kg      |
| <b>Torque without inlet fitting</b> | 11,79 N.m     |
| <b>Torque with inlet fitting</b>    | 12,24 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |



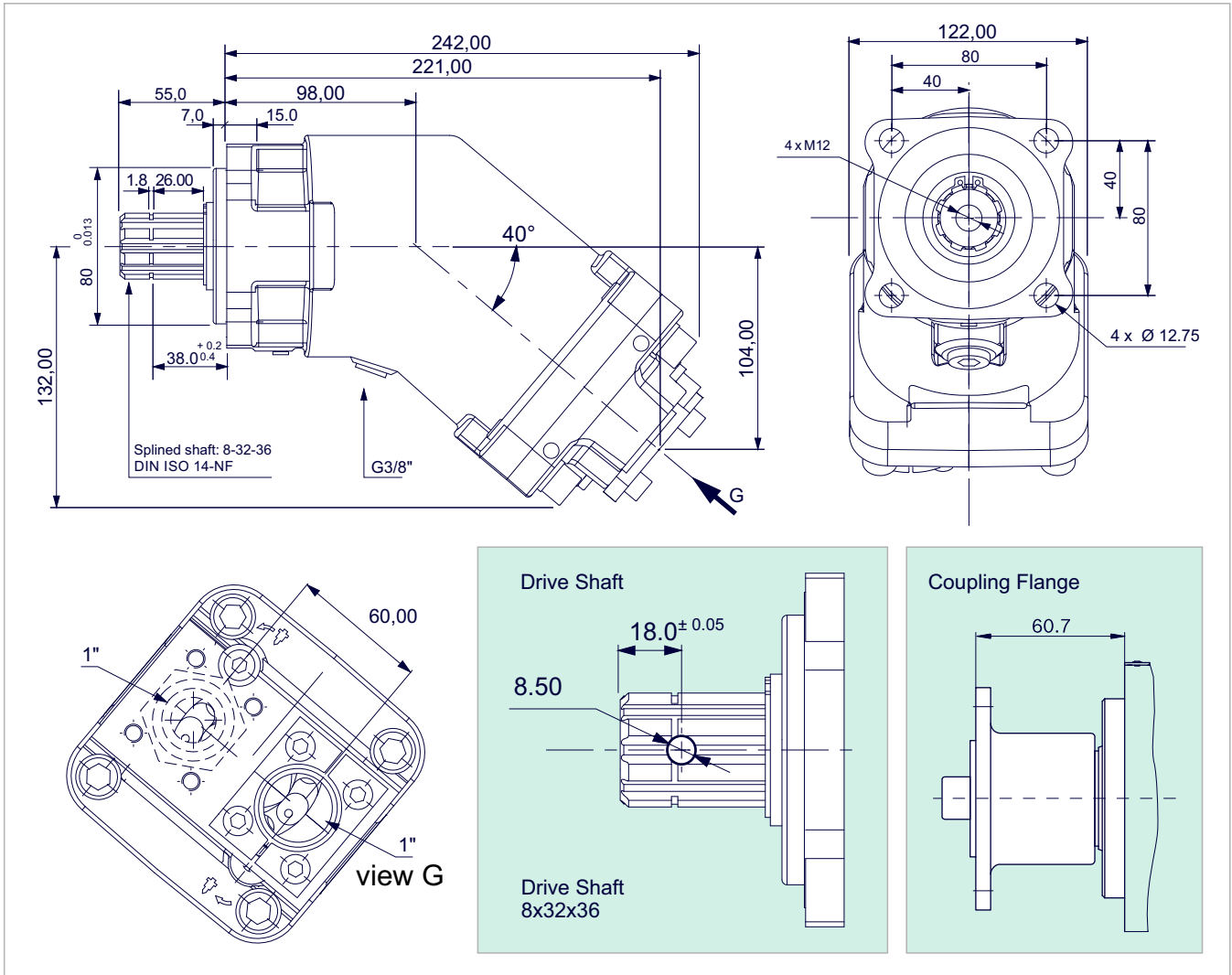
# KFA2 63



|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 63,00 cc      |
| <b>x 1500 rpm</b>                   | 94,50 cc      |
| <b>Max. Continuous Pump Speed</b>   | 1900 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2300 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 360 Nm        |
| <b>Weight without inlet fitting</b> | 11,50 kg      |
| <b>Weight with inlet fitting</b>    | 11,90 kg      |
| <b>Torque without inlet fitting</b> | 11,82 N.m     |
| <b>Torque with inlet fitting</b>    | 12,28 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 3/4"          |

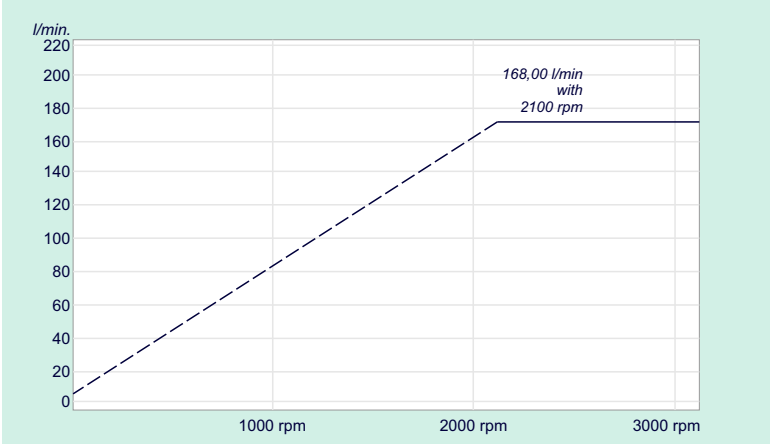


# KFA2 80



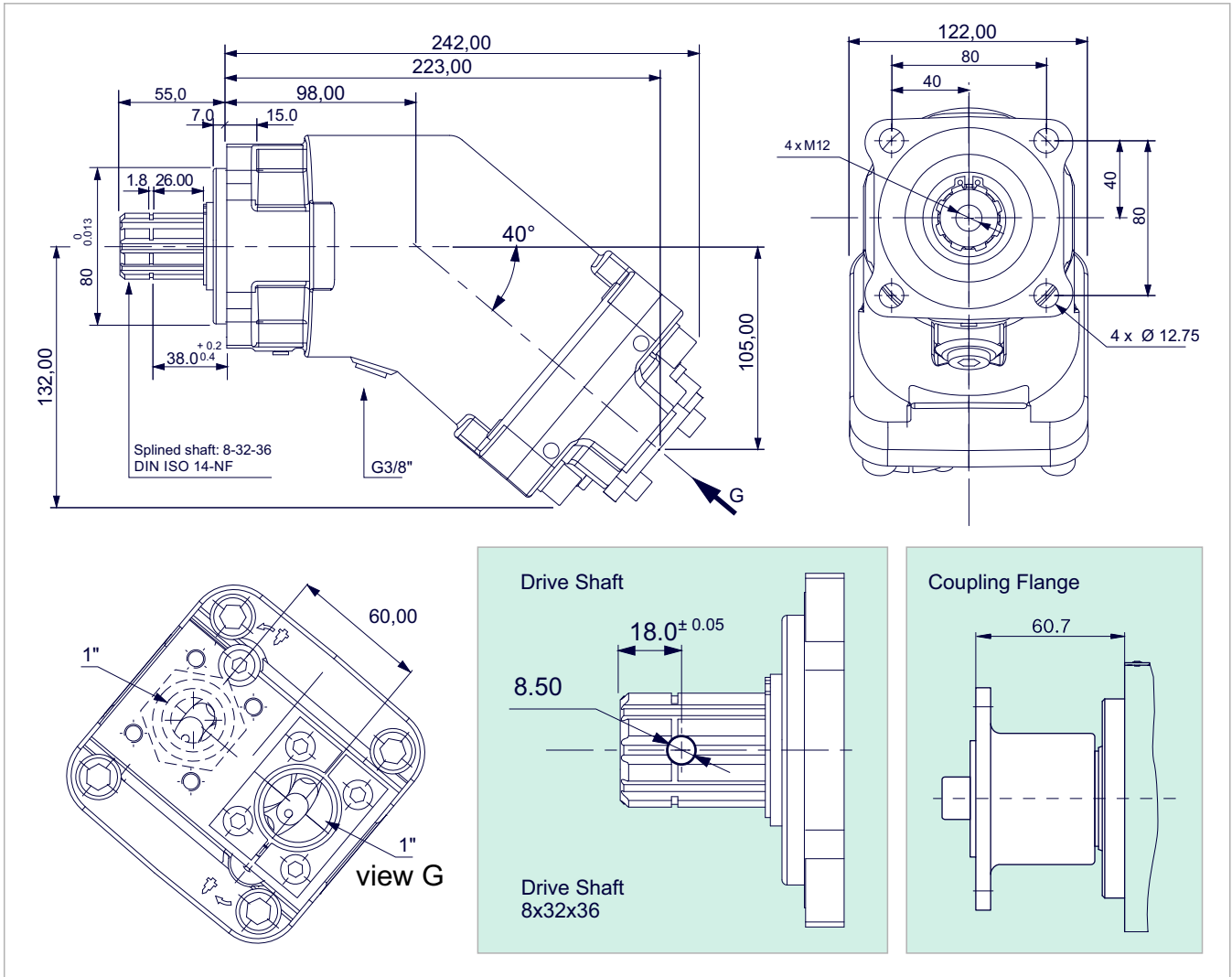
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 80,00 cc      |
| <b>x 1500 rpm</b>                   | 120,00 cc     |
| <b>Max. Continuous Pump Speed</b>   | 1700 rpm      |
| <b>Max. Limited Pump Speed</b>      | 2100 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 460 Nm        |
| <b>Weight without inlet fitting</b> | 15,00 kg      |
| <b>Weight with inlet fitting</b>    | 15,40 kg      |
| <b>Torque without inlet fitting</b> | 17,80 N.m     |
| <b>Torque with inlet fitting</b>    | 18,33 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 1"            |

Flow, Speed, Pressure List of KFA2

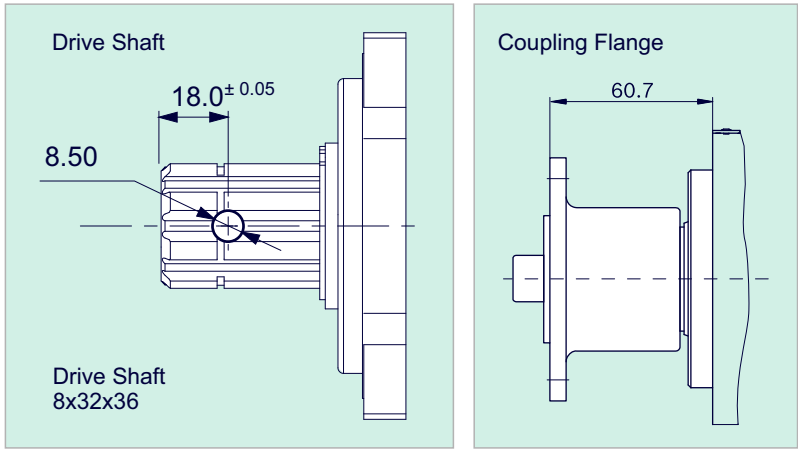




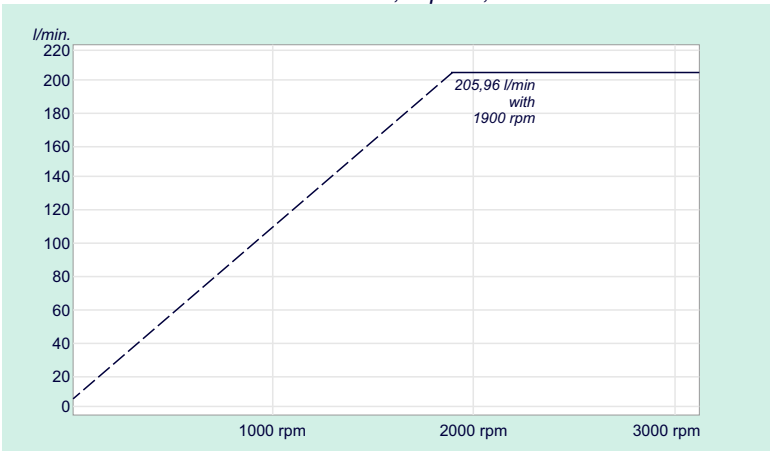
# KFA2 108



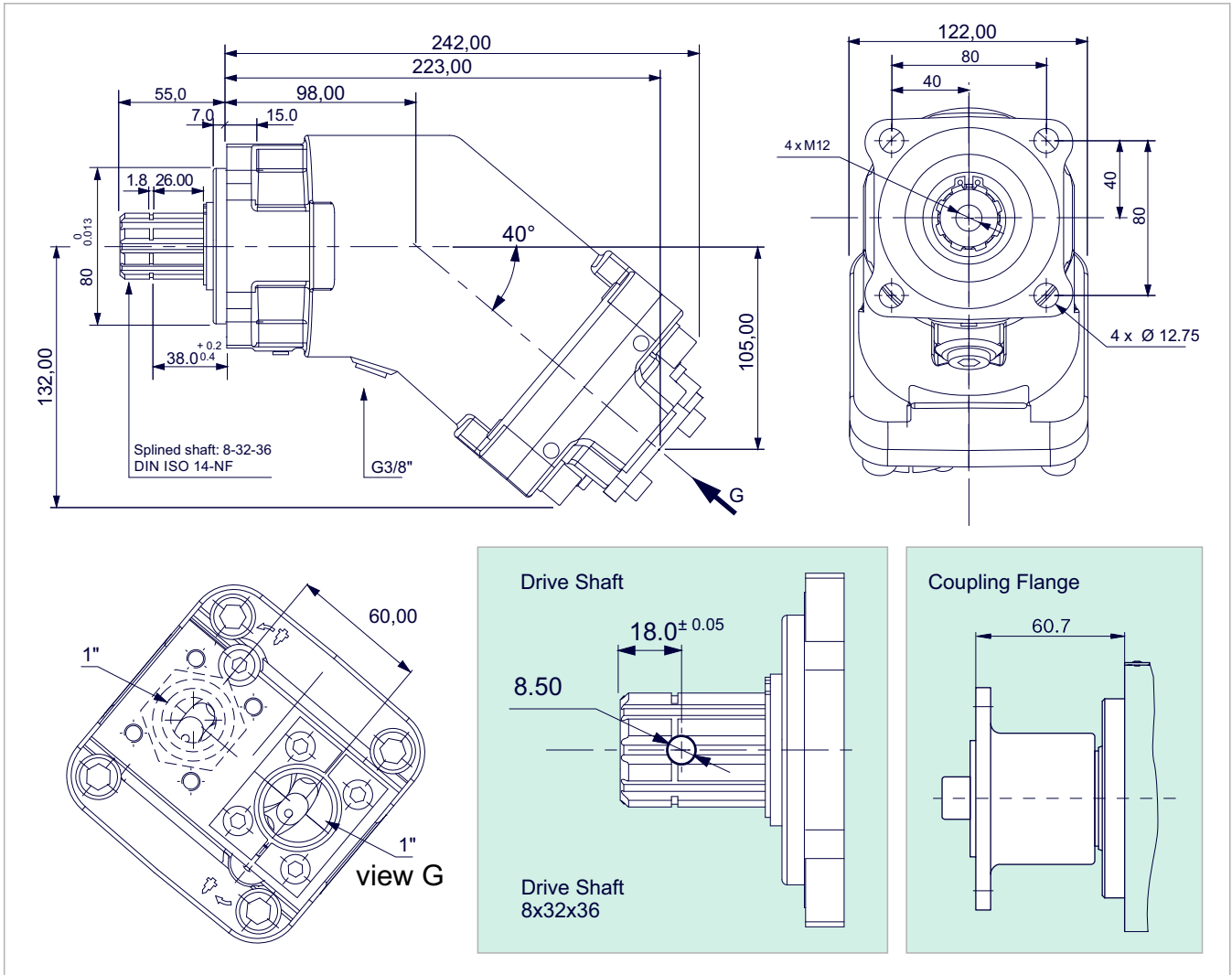
|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 108,40 cc     |
| <b>x 1500 rpm</b>                   | 162,60 cc     |
| <b>Max. Continuous Pump Speed</b>   | 1700 rpm      |
| <b>Max. Limited Pump Speed</b>      | 1900 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 620 Nm        |
| <b>Weight without inlet fitting</b> | 15,50 kg      |
| <b>Weight with inlet fitting</b>    | 15,90 kg      |
| <b>Torque without inlet fitting</b> | 17,92 N.m     |
| <b>Torque with inlet fitting</b>    | 18,45 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 1"            |



Flow, Speed, Pressure List of KFA2

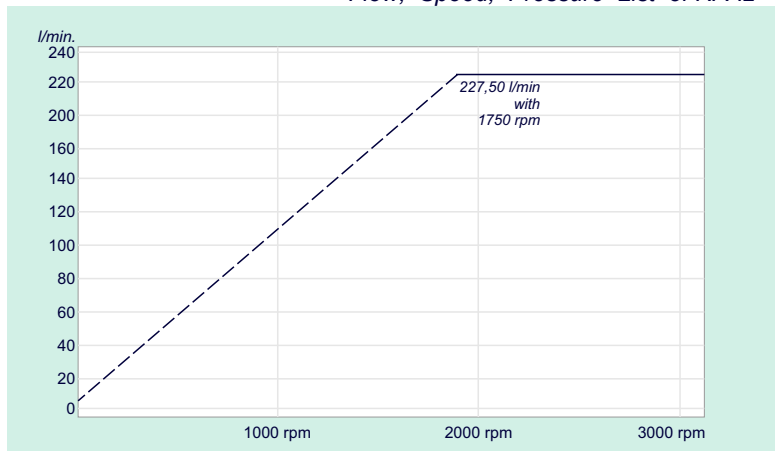


# KFA2 130



|                                     |               |
|-------------------------------------|---------------|
| <b>x 1000 rpm</b>                   | 130,00 cc     |
| <b>x 1500 rpm</b>                   | 195,00 cc     |
| <b>Max. Continuous Pump Speed</b>   | 1600 rpm      |
| <b>Max. Limited Pump Speed</b>      | 1750 rpm      |
| <b>Max. Continuous Pressure</b>     | 350 bar       |
| <b>Max. Intermit. Peak Pressure</b> | 400 bar       |
| <b>Max. Torque at 350 bar</b>       | 746 Nm        |
| <b>Weight without inlet fitting</b> | 16,50 kg      |
| <b>Weight with inlet fitting</b>    | 17,00 kg      |
| <b>Torque without inlet fitting</b> | 19,90 N.m     |
| <b>Torque with inlet fitting</b>    | 20,45 N.m     |
| <b>Rotation</b>                     | CW-CCW        |
| <b>Fluid</b>                        | Min.B.Hyd.Oil |
| <b>Inlet &amp; Outlet</b>           | 1"            |

Flow, Speed, Pressure List of KFA2





# INSTALLATION PROCEDURE

## 1 - CHECKING THE DIRECTION OF ROTATION OF THE PTO

Make sure that the technical specifications between the pump and the PTO are suitable.

## 2 - FILLING



Fill the pump with clean oil by using the bleed screw, use the same oil as your hydraulic circuit (For the oil quality to use, please read our recommendation page 6).

## 3 - INSTALLATION

### 3.1 - PREPARATION

If there is no recommendation from the PTO manufacturer, grease the splines with graphite grease (type Molykote G-Rapid+).

### 3.2 - TIGHTENING

For the tightening torque, please follow the PTO manufacturer's recommendation.

Nota: use only the fixation nuts supplied with the PTO. If mounting by prop shaft, align the pump with the PTO outlet.

No axial or radial load allowed on the drive shaft.

## 4 - INLET FITTING ASSEMBLY

Position the inlet fitting as a function of the direction of rotation. Assemble the inlet fitting according to the diagram on the right. Make sure the o-ring is on the inlet fitting. Tighten the four screws.

In case of threaded inlet fitting maximum speed needs to be reduced (contact our technical department).

## 5 - OIL SUPPLY

Make sure that the hydraulic reservoir and suction line are clean and that the suction line is correctly sealed.

Connect the suction lines and pressure line to the pump.

Then open the tank isolation valve (if there is one) and fill in the hydraulic tank with a filling device including a filter. The preferably cleanliness of the hydraulic oil has to be according to our recommendation: 20/18/15 according to ISO 4406.

## 6 - COMMISSIONING AND PRIMING

Start-up the pump at low speed, until the pump is completely filled and no air remains.

## 7 - CHECKING

Check periodically that the vent tube is not clogged, and that there are no leakages nor any signs of oil in the tube.

In case of leakage, stop the vehicle immediately and check the sealing of the pump.

Check the tightening of the pump-PTO regularly, referring to the specifications given by the PTO manufacturer.

## 8 - CHOICE OF INLET FITTING

The inlet fitting has to be dimensioned as a function of the installation and we recommend to ensure a flow speed between 0.5 and 0.8m/s.

## 9 - HYDRAULIC OIL

We recommend using a mineral hydraulic oil of type HLVP according to DIN 51524-2 or HV according to ISO 11158.

Bio hydraulic oils HEES according to ISO 15380 can be used.

The recommended viscosity of the fluids is between 15 and 400 cSt.

The optimum viscosity is between 20 and 40 cSt.

A viscosity of maximum 1000 cSt is tolerated for start-up at low speed and without load.

The temperature of the fluid should not exceed 80°C.

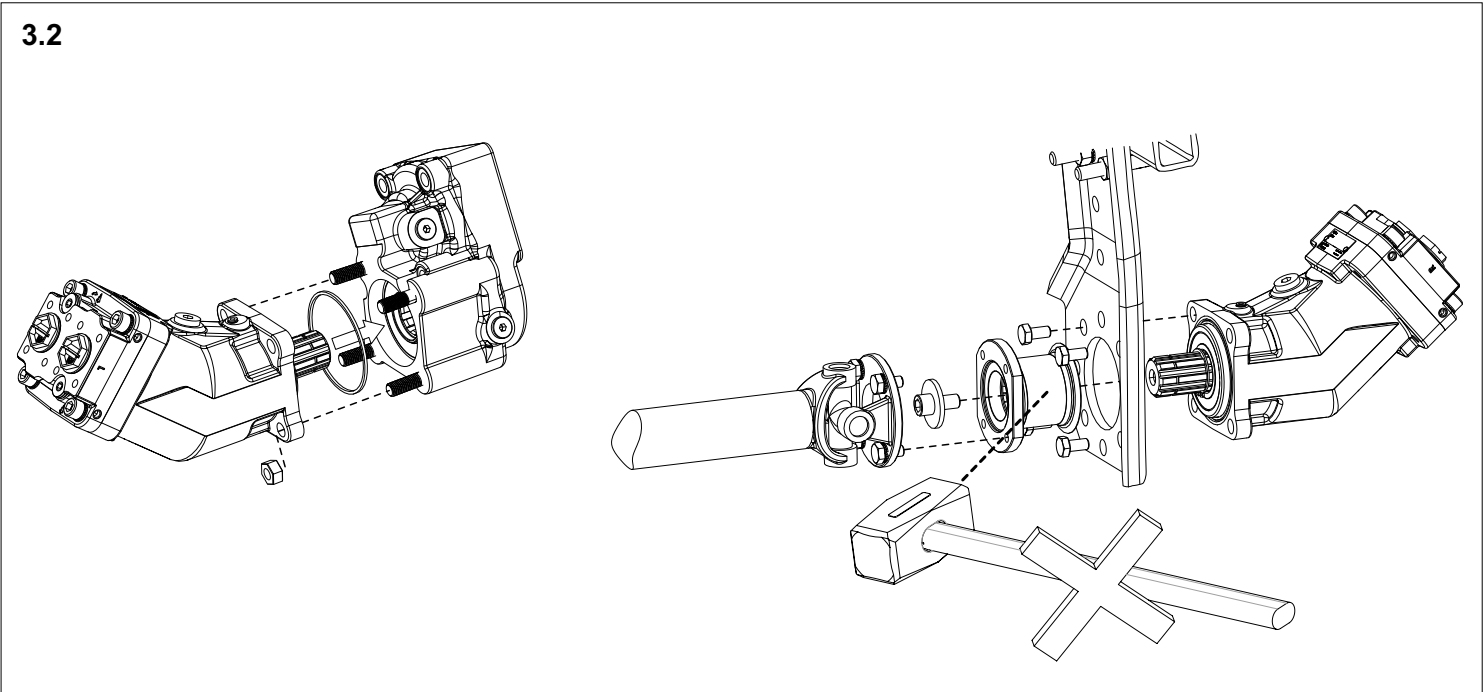
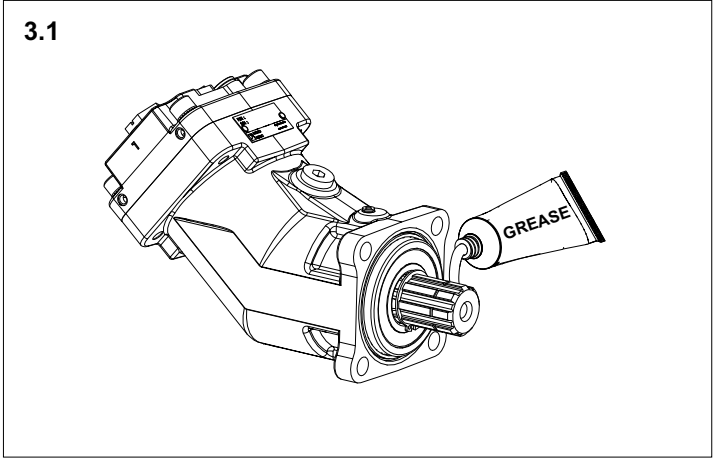
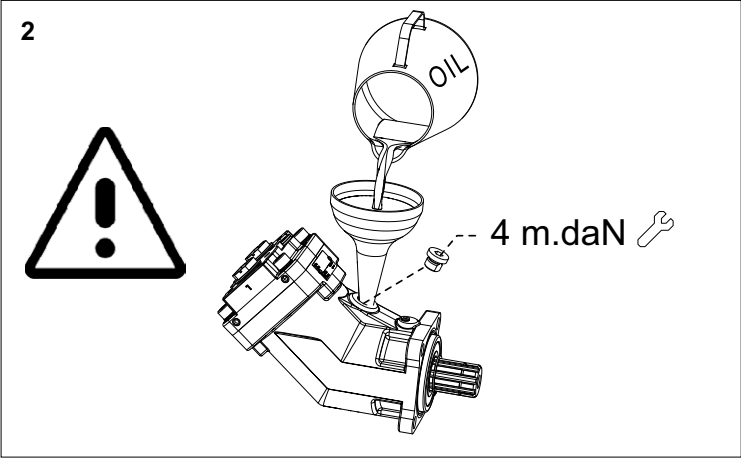
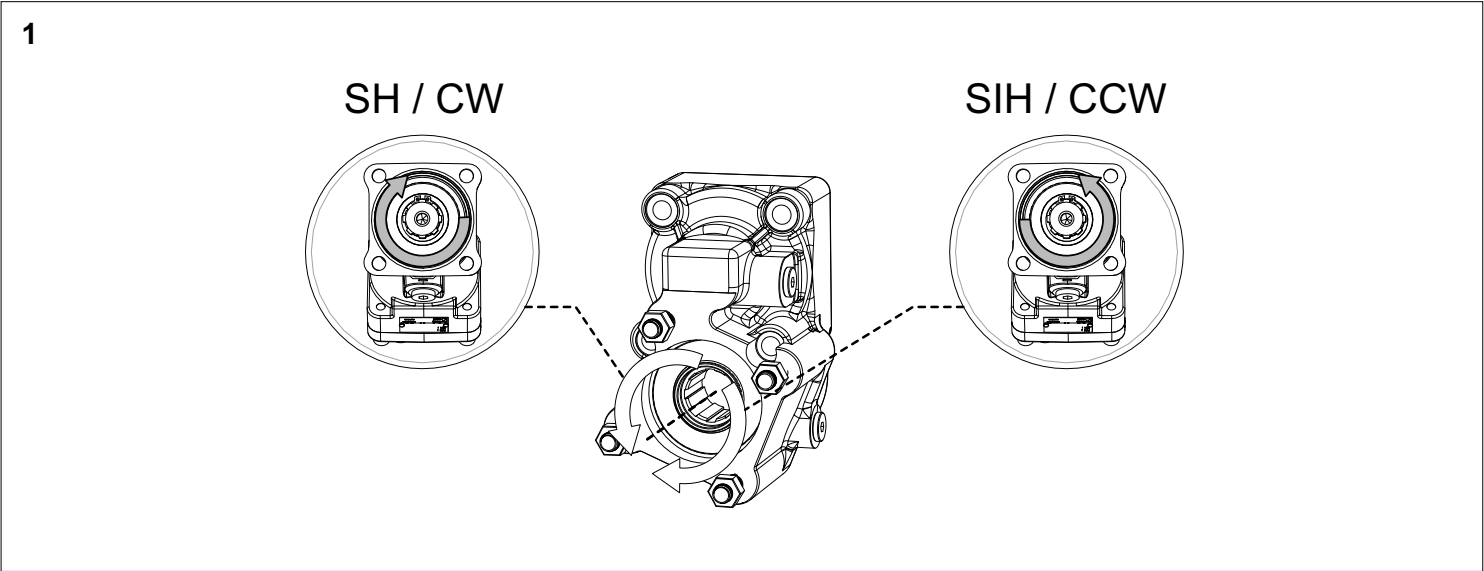
## 10 - FILTRATION

Oil cleanliness for this type of pump is minimum 20/18/15 according to ISO 4406 (or class 9 according to NAS 1638).

## 11 - STORAGE

The pump can be stored for maximum 1 year in its original packing, and in a dry area. Do not expose the product to temperatures below -30 °C and above 80°C.

# INSTALLATION PROCEDURE

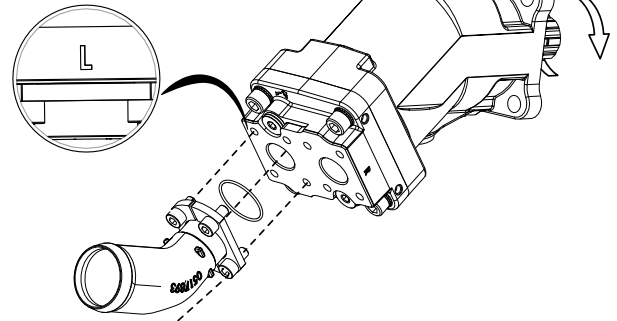
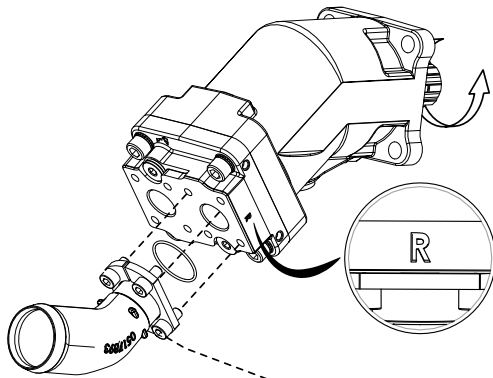


# INSTALLATION PROCEDURE

4

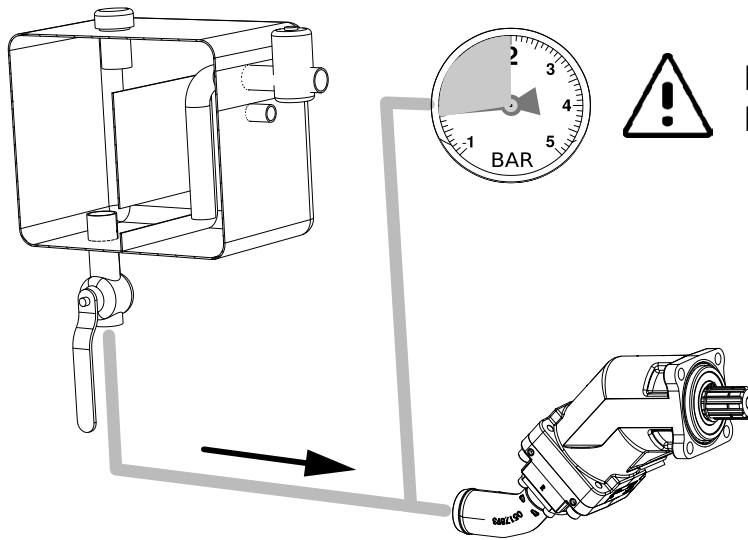
SH / CW

SIH / CCW

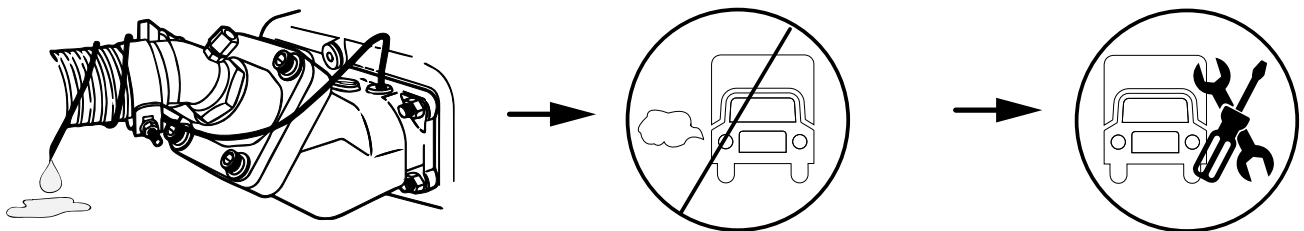


4 \* 2.5 m.daN

5 - 6

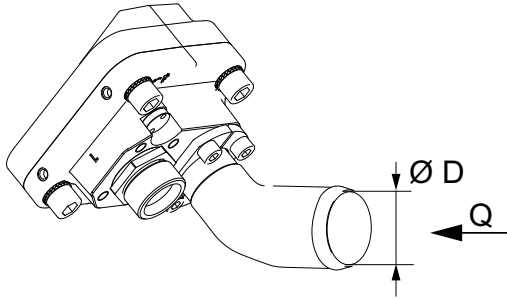


7



# INSTALLATION PROCEDURE

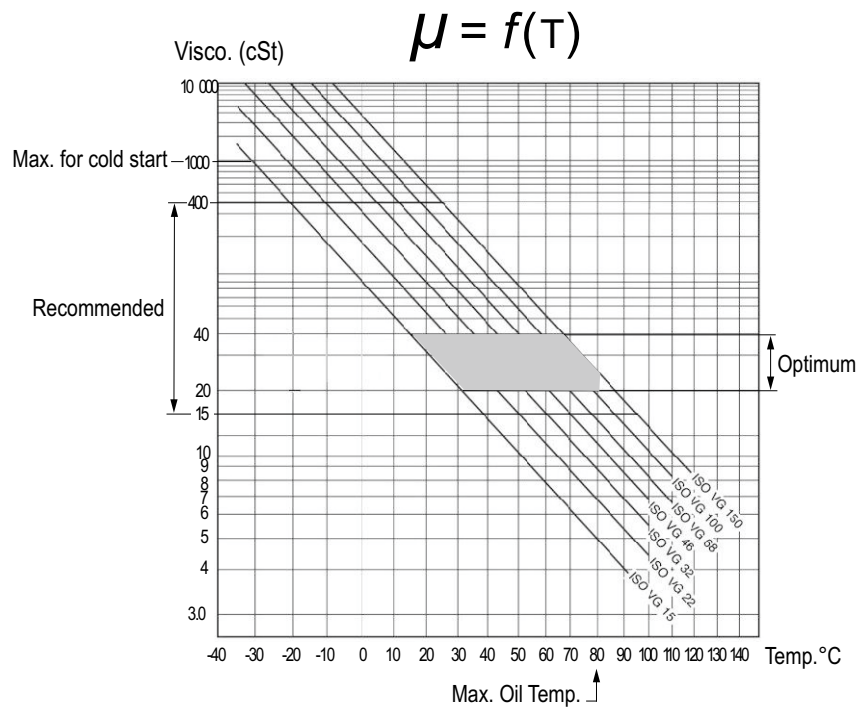
8



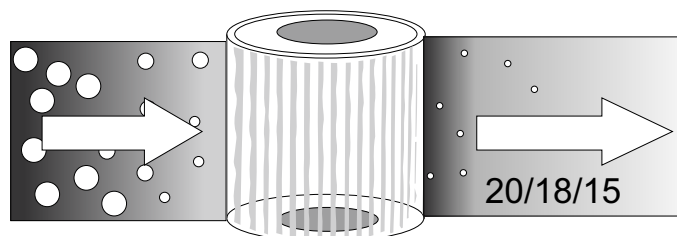
| Ø D           | Q Max*.   |
|---------------|-----------|
| 1½" (39.1 mm) | 60 l/min  |
| 2" (50 mm)    | 120 l/min |
| 2½" (63.5 mm) | 150 l/min |

\* Qmax. recommandé/Qmax. recommended / Qmax. Empfohlen

9



10





# Complete Product Range

## Piston Pumps

## Piston Motors

# DIN

DIN 5462 / ISO 14  
8x32x35  
8x32x36  
DIN 6885



**KFA2**



**KFM2**

# ISO

ISO 3019-2 (4 BOLTS)  
DIN 5480 -W25,30,35,40,45  
DIN 6885 -Ø20,25,30,35,40,45



**A2FO**



**A2FM**

# SAE

SAE B2 C4 - SAE D  
SAE J498b  
SAE J 744



**AA2FO**



**AA2FM**

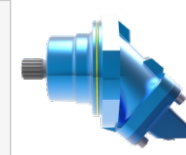
# M2

Fixed Plug-in

DIN 5480 / ISO 3019-2  
W30 - W35 - W40  
M21 - M22 - M23



**A2FD - Dual Flow**



**A2FE - Semi integrated**

# A4

DIN ISO 14  
8x32x36



**A2PP Single Flow**



**A4PD Dual Flow**

# A6

P2 Connection M8x125  
Woodruff key 3x6,5 NF E  
27-653 NF R 124-04  
(2 BOLTS)



**A2HP - High Pressure**



**A2GP - Gear Pump  
A2GM - Gear Motor**