

HYDRAULIC GEAR  
PUMPS  
FOR TRUCK  
APPLICATIONS

**FORMULA**<sup>®</sup>  
S F P

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04/10.2020

**Modification from former edition.**

## INTRODUCTION

“SFP” the new line of hydraulic gear pumps of Formula series is available in groups 3 and 3,5. The main features of new Formula “SFP” line are the noise level reduction, the availability of different ports position and the modular and compact design for direct mounting on PTOs.

### DISPLACEMENTS

From 35,43 cm<sup>3</sup>/rev (2.16 in<sup>3</sup>/rev)  
To 118,31 cm<sup>3</sup>/rev (7.22 in<sup>3</sup>/rev)

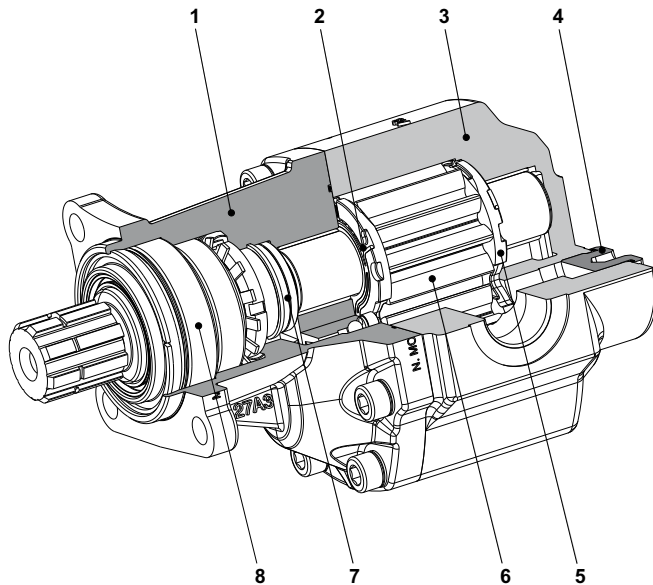
### PRESSURE

Max. constant operating pressure 280 bar (4060 psi)  
Max. system pressure (relief valve setting) 300 bar (4350 psi)  
Max. peak of pressure 310 bar (4495 psi)

### SPEED

Max. 2800 min<sup>-1</sup>

- Two pieces cast iron housing
- High performance also at very low speed
- Different ports position availability
- Low noise level
- Shaft seal system no leakage guarantee
- Modular design
- Direct mounting on the PTOs



1	Mounting flange
2	Seal
3	Body
4	Plug
5	Thrust plate
6	Gear
7	Shaft seal
8	Bearing

03/09.2016

## INSTRUCTIONS

### INSTALLATION

#### PUMP

The direction of rotation of single-rotation pumps must be the same as that of the drive shaft. Check that the coupling flange correctly aligns the transmission shaft and the pump shaft. For pumps version 0 the connection do not generate an axial or radial load on the pump shaft. For pumps version 5 please consult the values indicated in this catalogue.

#### TANK

Tank capacity must be sufficient for the system's operating conditions (~ 3 times the amount of oil in circulation) to avoid overheating of the fluid. A heat exchanger should be installed if necessary. The intake and return lines in the tank must be spaced apart (by inserting a vertical divider) to prevent the return-line oil from being taken up again immediately.

#### LINES

The lines must have a major diameter which is at least as large as the diameter of pump ports, and must be perfectly sealed. To reduce loss of power, the lines should be as short as possible, reducing the sources of hydraulic resistance (elbow, throttling, gate valves, etc.) to a minimum. A length of flexible tubing is recommended to reduce the transmission of vibrations. All return lines must end below the minimum oil level, to prevent foaming. Before connecting the lines, remove any plugs and make sure that the lines are perfectly clean.

#### HYDRAULIC FLUID

Use hydraulic fluid conforming to viscosity data as specified in the first pages of the catalogue. Avoid using mixtures of different oils which could result in decomposition and reduction of the oil's lubricating power.

#### FILTERS

We recommend filtering the entire system flow. Filters on suction and return line must be fitted in according to the contamination class as indicated in the first pages of the catalogue. Casappa recommends to use its own production filters:



### STORAGE

The storage must be in a dry environment. Max storage time in ideal conditions is 24 months. The ideal storage temperature is between 5 °C (41 °F) and 20 °C (68 °F). No problem in case of temperature between -40 °C (-40 °F) and 50 °C (122 °F). Below -40 °C (-40 °F) please consult our pre-sales department.

### STARTING UP

Check that all circuit connections are tight and that the entire system is completely clean. Insert the oil in the tank, using a filter. Bleed the circuit to assist in filling. Set the pressure relief valves to the lowest possible setting. Turn on the system for a few moments at minimum speed, then bleed the circuit again and check the level of oil in the tank. If the difference between pump or motor temperature and fluid temperature exceeds 10 °C (50 °F), rapidly switch the system on and off to heat it up gradually. Then gradually increase the pressure and speed of rotation until the pre-set operating levels as specified in the catalogue are attained.

### COLD START

Cold start is meant short term and low idle. During cold start of the machine the following limits can be applied:

Minimum inlet pressure	0,5 bar abs. (7 psi)
Outlet pressure	≤ 50 bar (725 psi)
Speed	≤ 1500 min <sup>-1</sup>
Minimum temperature	-40 °C (-40 °F)
Max oil viscosity	2000 mm <sup>2</sup> /s (cSt) [9100 SSU]

If the ambient temperature is lower than -20 °C (-4 °F) the system speed and pressure must be limited until the hydraulic oil temperature exceeds -20 °C (-4 °F).

### PERIODICAL CHECKS - MAINTENANCE

Keep the outside surface clean especially in the area of the drive shaft seal. In fact, abrasive powder can accelerate wear on the seal and cause leakage. Replace filters regularly to keep the fluid clean. The oil level must be checked and oil replaced periodically depending on the system's operating conditions.

Replaces: 01/07.2008

04/10.2020

## FEATURES

### WARNING !

Failure or improper use of the product can cause damage at the same product or system.  
 Make sure to have the latest release of this catalogue.

Replaces: 03/09.2016

Construction	External gear type pumps
Mounting	ISO (ZF), ITALIAN (triangular) and SAE flanges
Ports	Threaded
Direction of rotation (looking on drive shaft)	<b>S</b> Anti-clockwise - <b>D</b> clockwise - <b>B</b> Reversible internal drain <span style="float: right;">○</span>
Inlet pressure range for pumps	0,7 ÷ 3 bar abs. (10 ÷ 44 psi)
Fluid temperature range	See table (1)
Fluid	Mineral oil based hydraulic fluids to ISO/DIN and fire resistant fluids [see table (1)]. For other fluids please consult our pre-sales department.
Viscosity range	From 12 to 100 mm <sup>2</sup> /s (cSt) [60 to 456 SSU] recommended Up to 750 mm <sup>2</sup> /s (cSt) [3410 SSU] permitted
Filtering requirement and recommended fluid contamination	See table (2)
Anti-oxidant protection (Salt spray resistance of 300 hours)	<b>VNR01</b> Black painting (standard) no code <span style="float: right;">○</span> <b>VGR01</b> Grey painting <b>VRS01</b> Red painting

**Tab. 1**

Type	Fluid composition	Max pressure bar (psi)	Max speed min <sup>-1</sup>	Temperature °C (°F)			Seals (◆)
				Min	Max continuous	Max peak	
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 5	See page 5	-25 (-13)	80 (176)	100 (212)	<b>N</b>
				-25 (-13)	110 (230)	125 (257)	<b>V</b>
HFA	Oil emulsion in water 5 ÷ 15% of oil	50 (725)	1500	2 (36)	55 (131)	-	<b>N</b>
HFB	Water emulsion in oil 40 % of water	120 (1740)	1500	2 (36)	60 (140)	-	<b>N</b>
HFC	Water - glycol	100 (1450)	1500	-20 (-4)	60 (140)	-	<b>N Bz</b>
HFD	Phosphate ester (●)	150 (2175)	1500	-10 (14)	80 (176)	-	<b>V Bz</b>

(◆) **N**= Buna NBR (standard) - **V**= Viton - **N Bz**= Buna N and viton with Bronze thrust plates - **V Bz**= Viton with Bronze thrust plates.  
 (●) For skydrol phosphate esters please consult our pre-sales department.

○ 04/10.2020

**Tab. 2**

Working pressure bar (psi)	$\Delta p < 140$ (2030)	$140 < \Delta p < 210$ (2030) (3045)	$\Delta p > 210$ (3045)
Contamination class NAS 1638	10	9	8
Contamination class ISO 4406:1999	21/19/16	20/18/15	19/17/14
Achieved with filter $\beta_{10}(c) \geq 200$ according to ISO 16889	-	10 $\mu$ m	10 $\mu$ m
Achieved with filter $\beta_{25}(c) \geq 200$ according to ISO 16889	25 $\mu$ m	-	-

Casappa recommends to use its own production filters:



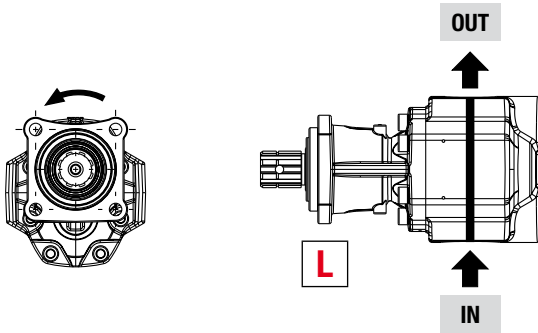
## PORTS POSITION

“SFP” Formula pumps are supplied in version L with 2 ports and in version (L)H with 3 ports, 1 inlet and 2 outlet (1 is plugged). In version (L)H is possible to obtain the version (H)L just switching the plug from the side port to the rear port. Version with rear ports is available on request. Please consult our pre-sales department.

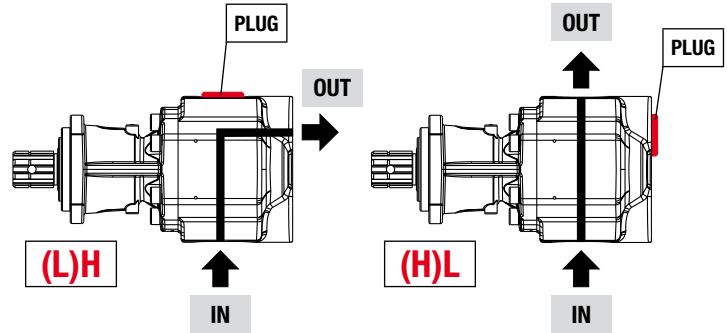
### Anti-clockwise rotation



#### 2 Ports body



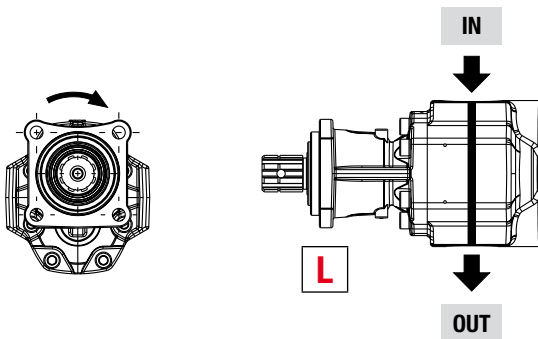
#### 3 Ports body



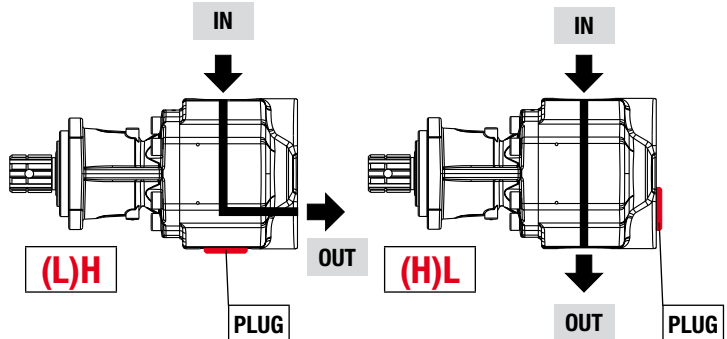
Replaces: 01/07.2008

### Clockwise rotation

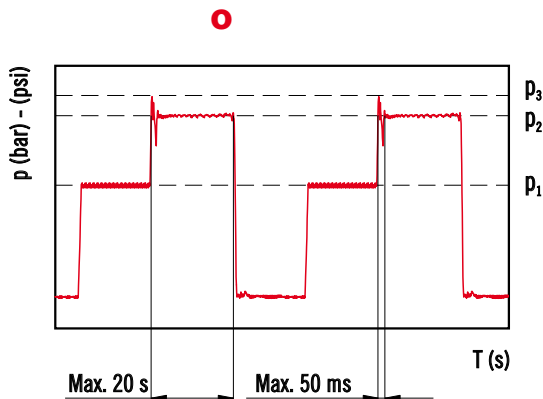
#### 2 Ports body



#### 3 Ports body



## PRESSURE DEFINITION



- $p_1$  Constant operating pressure
- $p_2$  System pressure (relief valve setting)
- $p_3$  Peak of pressure

The peak of pressure is the max pressure allowed and it corresponds to the overshoot of the relief valve.

Please note that both relief valve setting and overshoot must be lower than their limits.

If the relief setting is compliant but the overshoot is higher than the limit, the relief setting must be decreased until the overshoot is compliant to Casappa limit.

For high frequency applications please consult our pre-sales department.

04/10.2020

## GENERAL DATA PUMPS

Replaces: 02/04.2012

Pump type	Displacement cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Max. pressure			Intermittent max. speed		Min. speed
		p <sub>1</sub>	p <sub>2</sub>	p <sub>3</sub>	At p <sub>2</sub> press.	Without load	At p <sub>2</sub> press.
		bar (psi)			min <sup>-1</sup>		
<b>SFP 30•34</b>	35,43 (2.16)	280 (4060)	300 (350)	310 (4495)	2800	4200	300
<b>SFP 30•43</b>	45,09 (2.75)	270 (3915)	290 (4205)	300 (4350)	2500	3500	300
<b>SFP 30•51</b>	53,14 (3.24)	250 (3625)	270 (3915)	280 (4060)	2500	3500	300
<b>SFP 30•61</b>	62,80 (3.83)	230 (3335)	250 (3625)	260 (3770)	2500	3500	300
<b>SFP 30•73</b>	75,68 (4.62)	205 (2973)	235 (3408)	240 (3480)	2250	3500	300
<b>SFP 30•82</b>	83,74 (5.11)	195 (2828)	225 (3263)	230 (3335)	2250	3500	300
<b>SFP 35•90</b>	95,99 (5.86)	230 (3335)	250 (3625)	265 (3843)	2250	3500	300
<b>SFP 35•100</b>	104,92 (6.40)	220 (3190)	240 (3480)	255 (3698)	2250	3500	300
<b>SFP 35•112</b>	118,31 (7.22)	205 (2973)	225 (3263)	240 (3480)	2250	3500	300

Pressure values in the table refer to side ports unidirectional pumps.  
 For different configurations and working conditions please consult our pre-sales department.

### Design calculations for pump

<b>Q</b>	l/min (US gpm)	Flow
<b>M</b>	Nm (lbf in)	Torque
<b>P</b>	kW (HP)	Power
<b>V</b>	cm <sup>3</sup> /rev (in <sup>3</sup> /rev)	Displacement
<b>n</b>	min <sup>-1</sup>	Speed
<b>Δp</b>	bar (psi)	Pressure
$\eta_v = \eta_v(V, \Delta p, n)$	(≈ 0,98)	Volumetric efficiency
$\eta_{hm} = \eta_{hm}(V, \Delta p, n)$	(≈ 0,90)	Hydro-mechanical efficiency
$\eta_t = \eta_v \cdot \eta_{hm}$	(≈ 0,88)	Overall efficiency

$$Q = Q_{theor.} \cdot \eta_v \quad [l/min]$$

$$Q_{theor.} = \frac{V \cdot n}{1000} \quad [l/min]$$

$$M = \frac{M_{theor.}}{\eta_{hm}} \quad [Nm]$$

$$M_{theor.} = \frac{\Delta p \cdot V}{62,83} \quad [Nm]$$

$$P_{IN} = \frac{P_{OUT}}{\eta_t} \quad [kW]$$

$$P_{OUT} = \frac{\Delta p \cdot Q}{600} \quad [kW]$$

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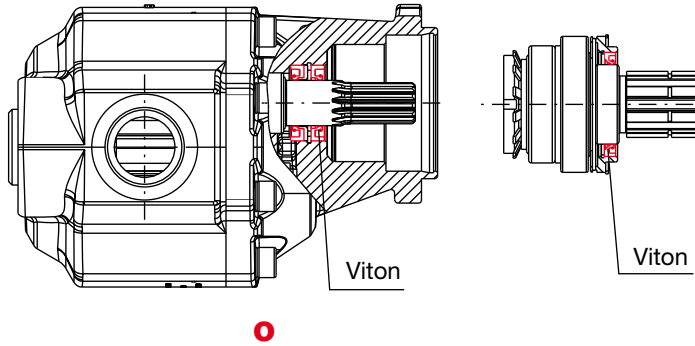
## GENERAL NOTES

Available with different inlet and outlet ports.  
 Seals: Standard pumps are available in version N with Buna NBR seals for temperature up to 80 °C (176 °F).  
 For particular operating conditions please refer to the seals option availability on page 5.

**LEAKAGE FREE**

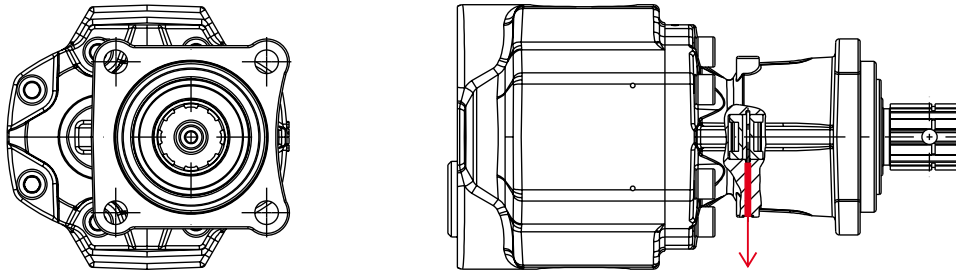
Base pump - version 0

Support kit - version 5



Replaces: 01/07.2008

Two shaft seals on the pump and one on the support guarantee a perfect seal avoiding the oil exchange between the hydraulic circuit and the gear box; catastrophic failures are eliminated. For internal pump seals please refer to page 5.



In case of failure, a safety system between the shaft seals of the pump allows the oil to escape, but doesn't allow the entry of contamination into the pump.

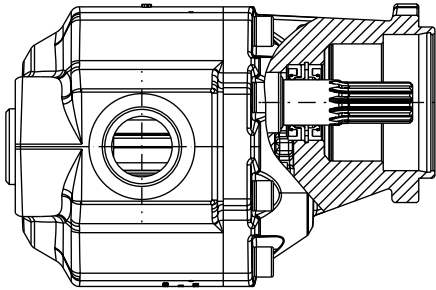
We recommend to mount the pumps with the hole in horizontal position or even better facing down.

04/10.2020

**SFP 30**

**MODULAR DESIGN**

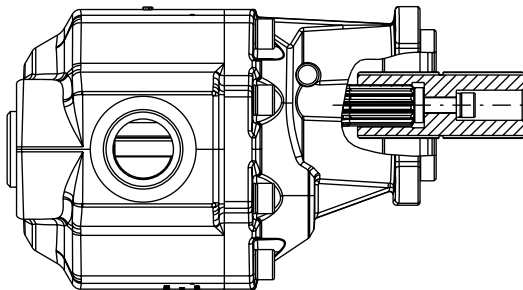
**Base pump - version 0 - L8 Z0**



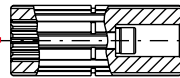
Starting from one pump you can have more versions using different kit.

**ISO standard - version 0 - 16 Z0**

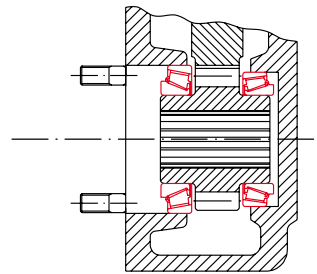
For PTOs applications with bearing



**Coupling kit - version 0**

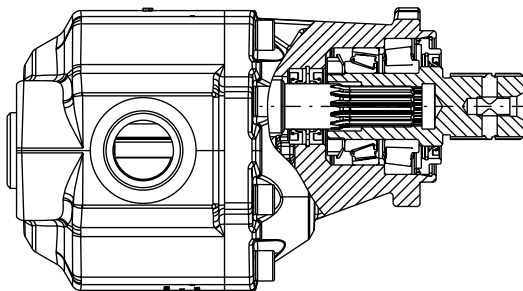


**PTOs with bearing**

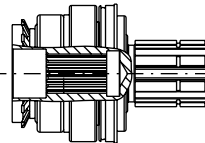


**ISO standard - version 5 - 16 Z0**

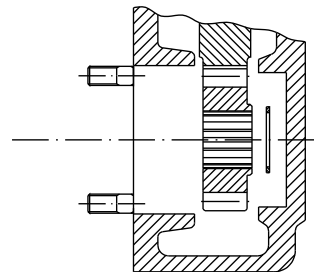
For PTOs applications without bearing



**Support kit - version 5**



**PTOs without bearing**

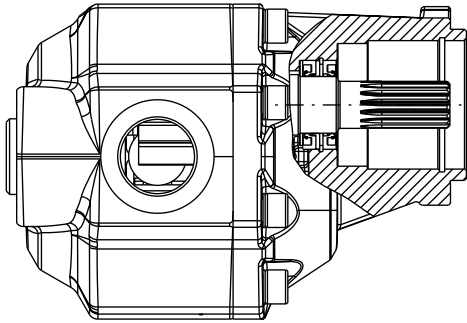


01/07.2008

**SFP 35**

**MODULAR DESIGN**

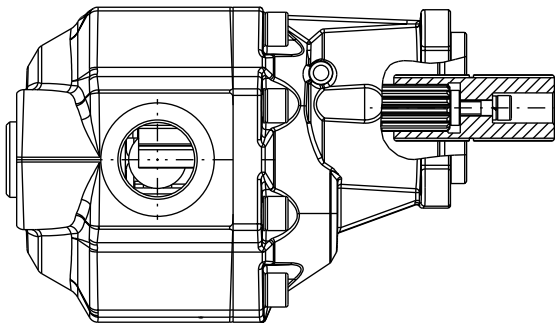
**Base pump - version 0 - F9 Z0**



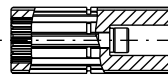
Starting from one pump you can have more versions using different kit.

**ISO standard - version 0 - 16 Z0**

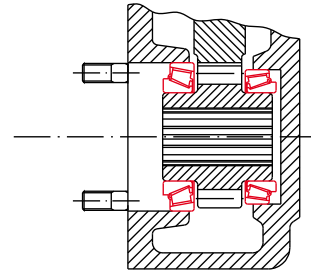
For PTOs applications with bearing



**Coupling kit - version 0**

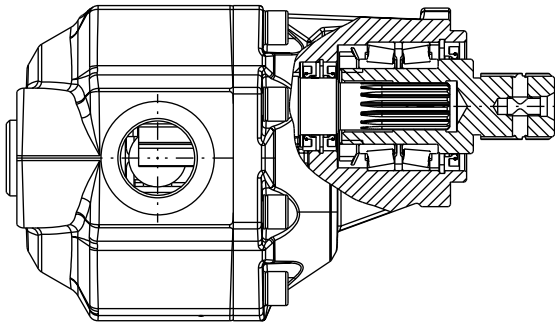


**PTOs with bearing**

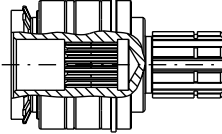


**ISO standard - version 5 - 16 Z0**

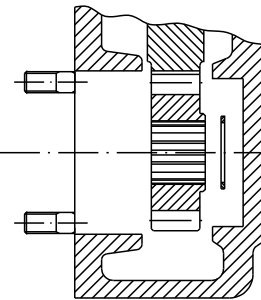
For PTOs applications without bearing



**Support kit - version 5**

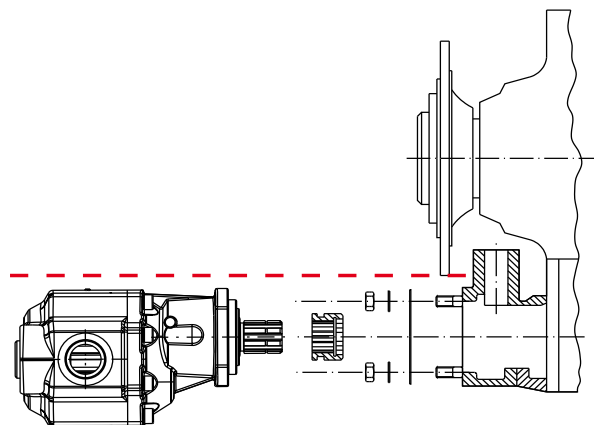


**PTOs without bearing**



**MOUNTING ON DIRECT PTOs WITH ISO FLANGE**

The new Formula SFP 35, specifically designed to avoid interference with the transmission shaft of truck, can be mounted on direct power take-off.



01/07.2008

**SFP 30**

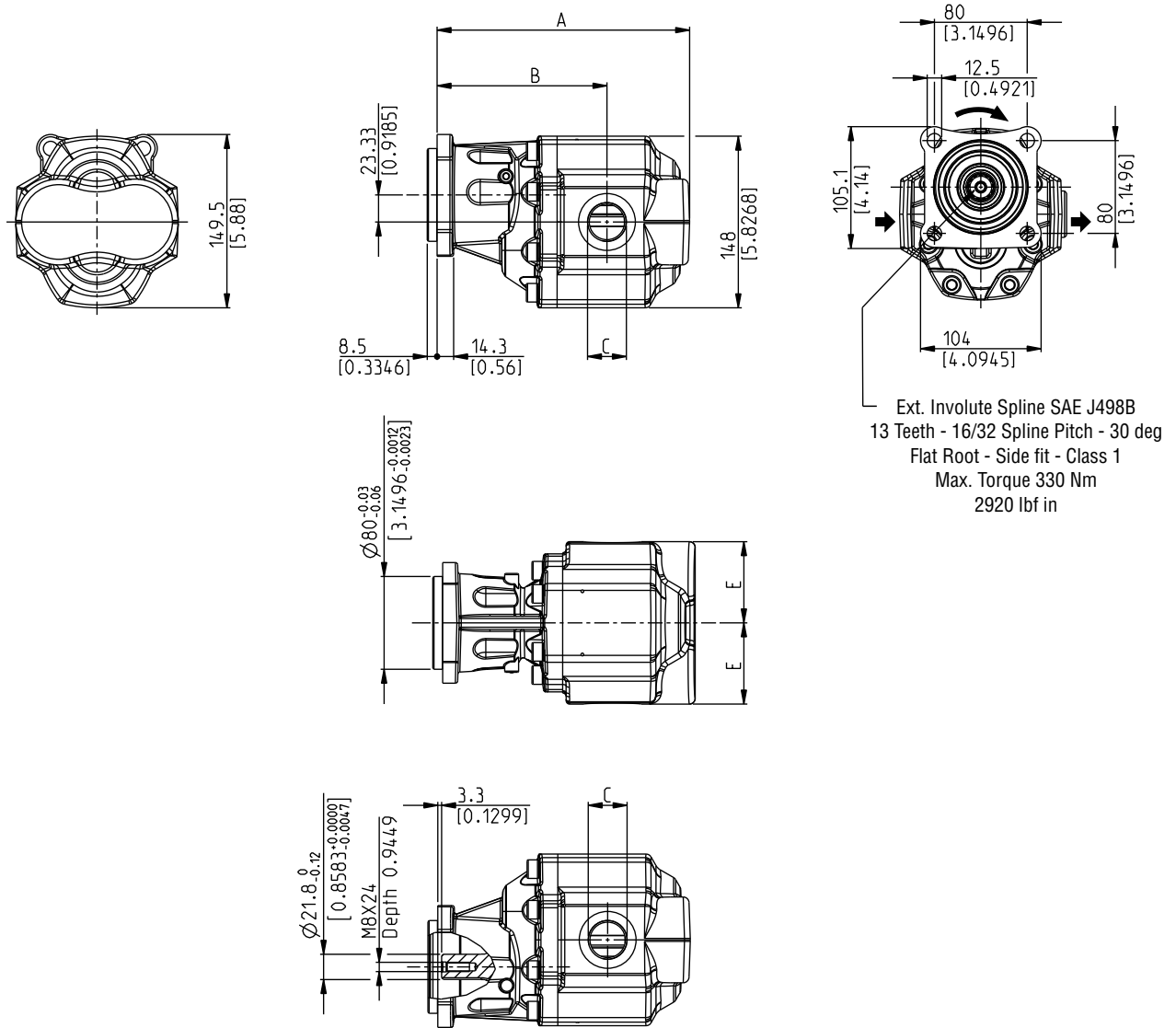
**PUMPS DIMENSIONS - BASE MODEL - VERSION 0**

**L8 Z0 - L**

2 Ports body

Ports availability: GAS  
See pag 28

DCAT\_200\_050



04/10.2020

Pump type			A	B	C	D	E
1	2	3	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)
<b>SFP 30•34</b>	<b>0-L8Z0-LGE/GE-</b>		183,5 (7.224)	130,5 (5.138)	G 3/4	G 3/4	
<b>SFP 30•43</b>			189,5 (7.461)	127,5 (5.020)			64 (2.520)
<b>SFP 30•51</b>	<b>S</b>	<b>N</b>	194,5 (7.657)	132,5 (5.217)			
<b>SFP 30•61</b>	<b>D</b>	<b>V</b>	200,5 (7.894)	138,5 (5.453)	G1	G1	
<b>SFP 30•73</b>	<b>B</b>	<b>N Bz</b>	208,5 (8.209)	141,5 (5.571)			70 (2.756)
<b>SFP 30•82</b>	<b>0-L8Z0-LGF/GF-</b>	<b>V Bz</b>	213,5 (8.406)	146,5 (5.768)			
		<b>-QW-</b>					
		<b>VGR01</b>					
		<b>VRS01</b>					

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 30•34 S0-L8 Z0-L GE/GE-N-QW-VGR01**

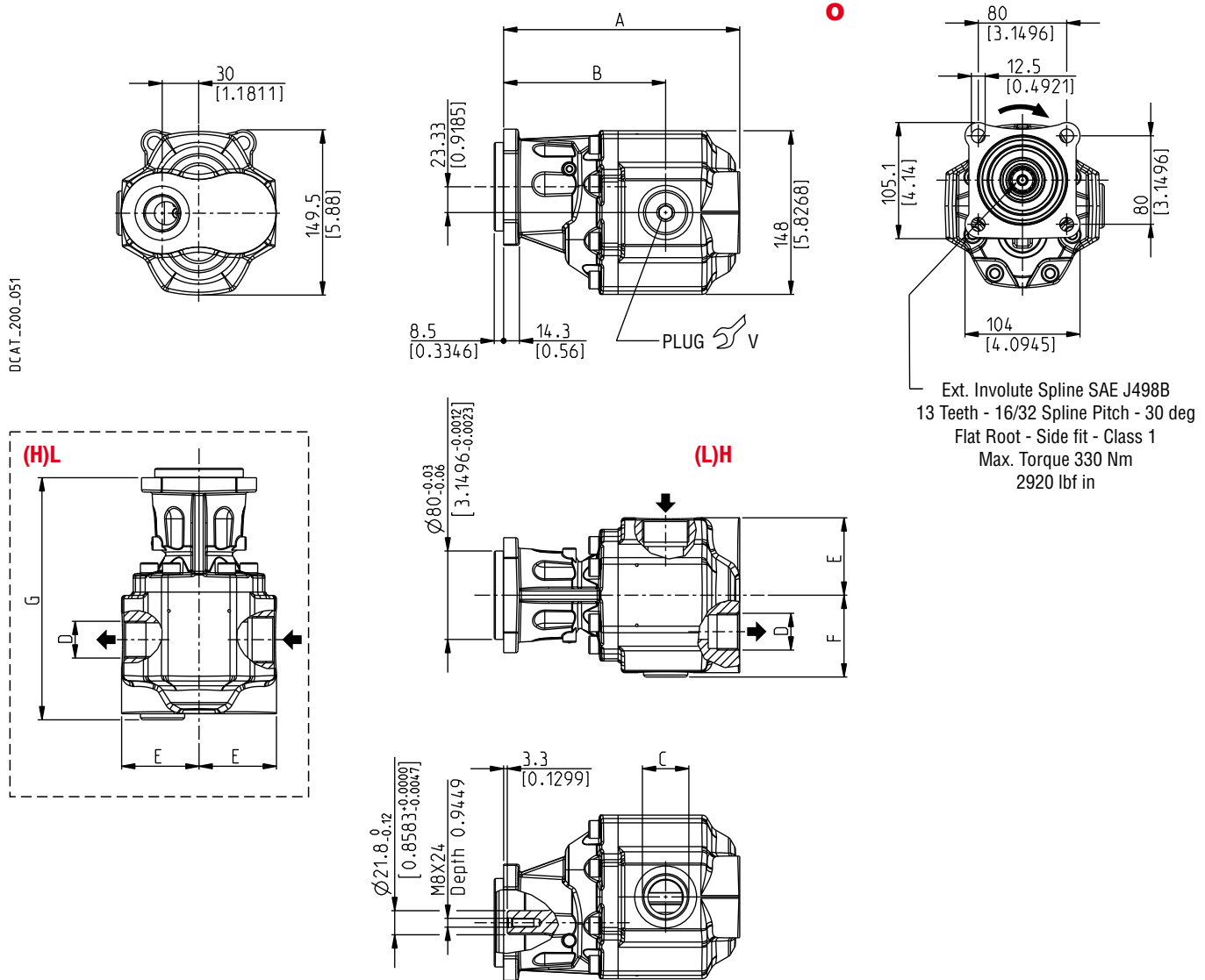
**SFP 30**

**PUMPS DIMENSIONS - BASE MODEL - VERSION 0**

**L8 Z0 - (L)H**

3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28



Replaces: 01/03.2010

Pump type				A	B	C	D	E	F	G	V
1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
<b>SFP 30•34</b>		<b>GE/GE-</b>		183,5 (7.224)	130,5 (5.138)	G 3/4	G 3/4			189 (7.441)	90 <sup>±15</sup> (664 ÷ 929)
<b>SFP 30•43</b>				189,5 (7.461)	127,5 (5.020)			64 (2.520)	68 (2.677)	195 (7.677)	
<b>SFP 30•51</b>	<b>S</b>			194,5 (7.657)	132,5 (5.217)					200 (7.874)	
<b>SFP 30•61</b>	<b>D</b>	<b>0-L8Z0-</b>	<b>(L)H</b>	200,5 (7.894)	138,5 (5.453)	G1	G1			206 (8.110)	130 <sup>±15</sup> (1018 ÷ 1283)
<b>SFP 30•73</b>	<b>B</b>	<b>(H)L</b>	<b>GF/GF-</b>	208,5 (8.209)	141,5 (5.571)					214 (8.425)	
<b>SFP 30•82</b>		<b>GG/GF-</b>		213,5 (8.406)	146,5 (5.768)	G 1 1/4		70 (2.756)	74 (2.913)	219 (8.622)	

1: Rotation - 2: Ports position 3: Seals - 4: Painting. See pag 5.  
Order example:

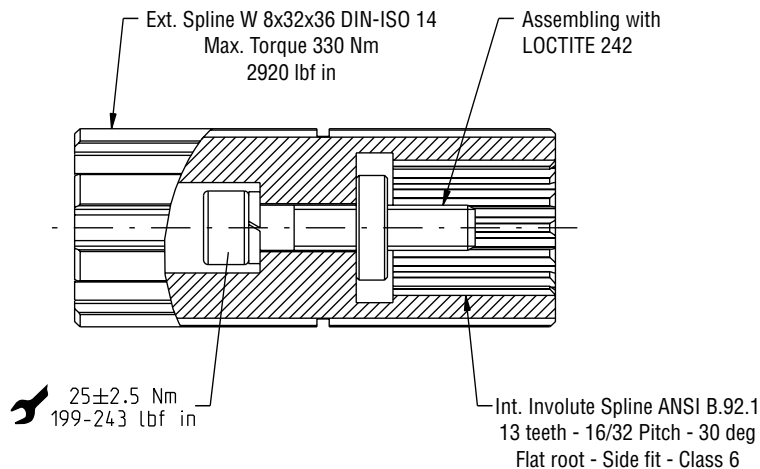
**SFP 30•34 S0-L8 Z0-(L)H GE/GE-N-QW-VGR01**

04/10.2020

**SFP 30**

**COUPLING KIT VERSION 0**

Replaces: 01/07.2008



Ordering Code:

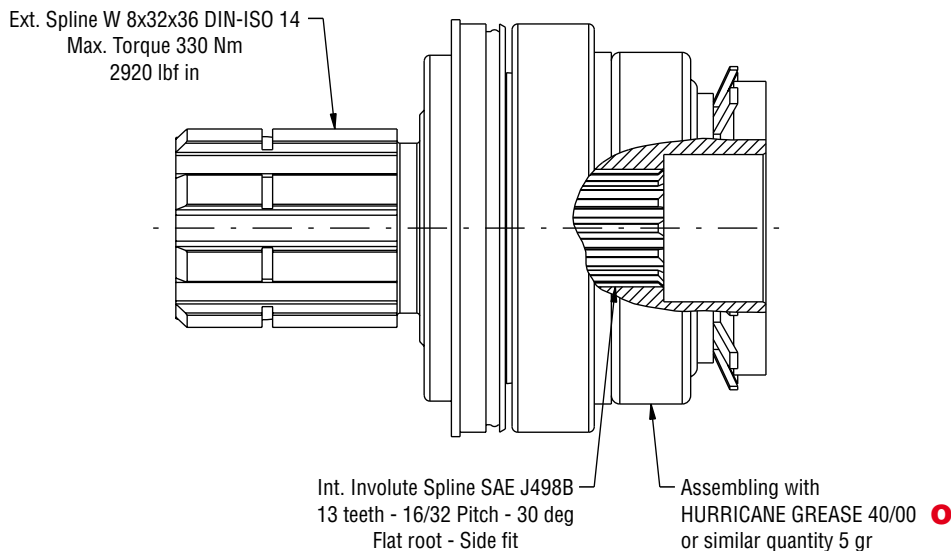
**62024007**

**COUPLING KIT FP 30 - 0 - 16 Z0 - L8**

**SFP 30**

**SUPPORT KIT VERSION 5**

04/10.2020



Ordering Code:

**62024006**

**SUPPORT KIT FP 30 - 5 - 16 Z0 - L8**

**SFP 30**

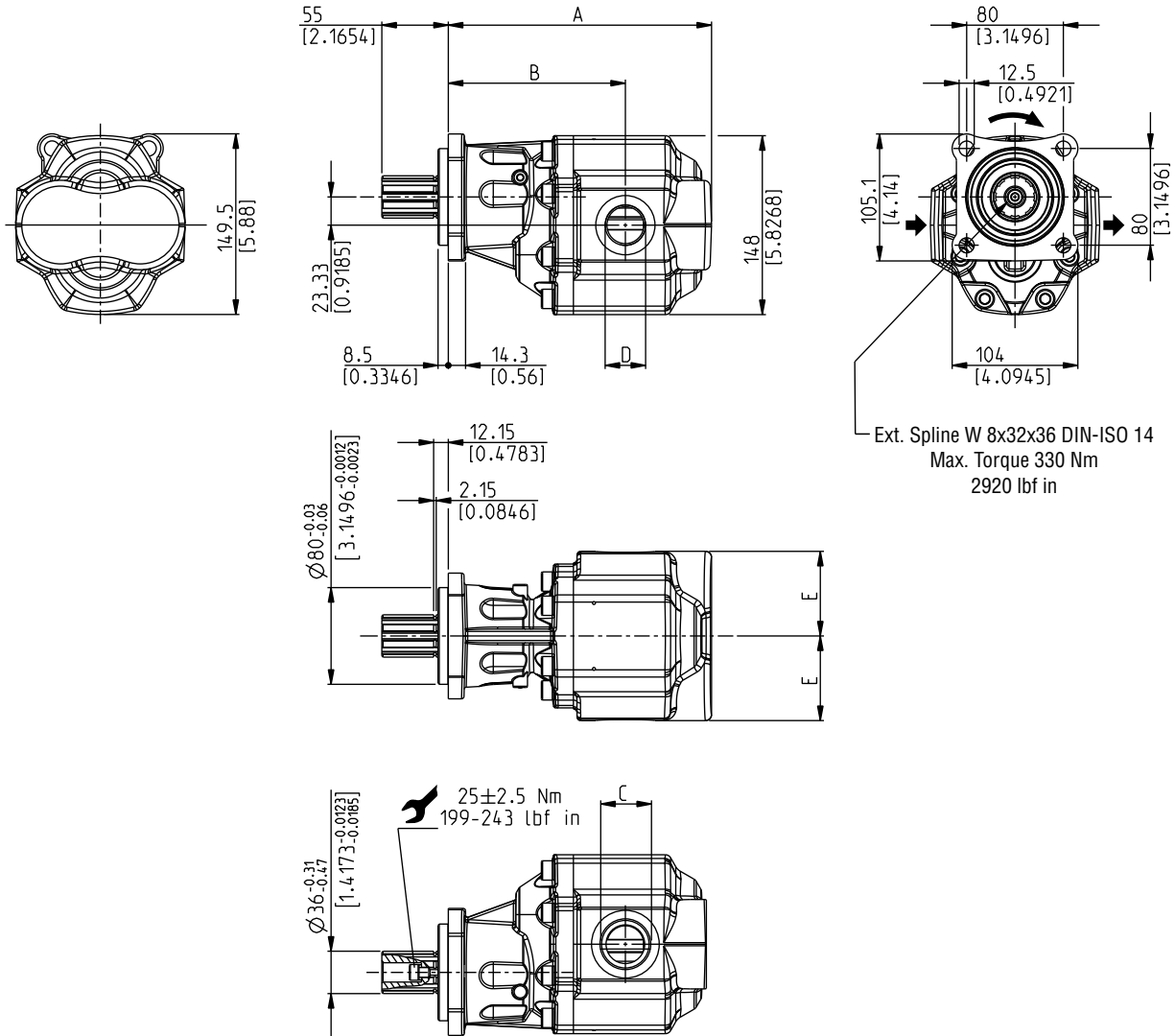
**PUMPS DIMENSIONS - ISO STANDARD - VERSION 0**

**16 Z0 - L**

2 Ports body

Ports availability: GAS  
See pag 28

For PTOs with bearing



DCAT\_200\_053

Pump type				A	B	C	D	E
1	2	3		mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)
<b>SFP 30•34</b>	<b>0-16Z0-LGE/GE-</b>			183,5 (7.224)	130,5 (5.138)	G 3/4	G 3/4	
<b>SFP 30•43</b>				189,5 (7.461)	127,5 (5.020)			64 (2.520)
<b>SFP 30•51</b>				194,5 (7.657)	132,5 (5.217)			
<b>SFP 30•61</b>	<b>0-16Z0-LGF/GF-</b>	<b>-QW-</b>	<b>VGR01 VRS01</b>	200,5 (7.894)	138,5 (5.453)	G1	G1	
<b>SFP 30•73</b>				208,5 (8.209)	141,5 (5.571)			70 (2.756)
<b>SFP 30•82</b>				213,5 (8.406)	146,5 (5.768)			

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 30•34 S0-16 Z0-L GE/GE-N-QW-VGR01**

04/10.2020

**SFP 30**

**PUMPS DIMENSIONS - ISO STANDARD - VERSION 0**

**16 Z0 - (L)H**

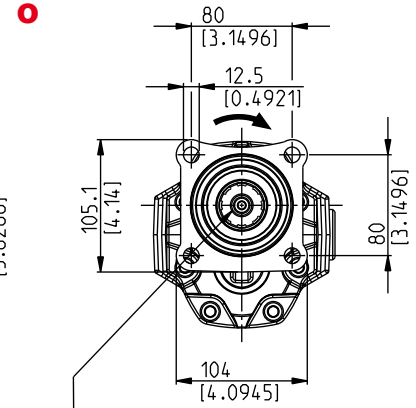
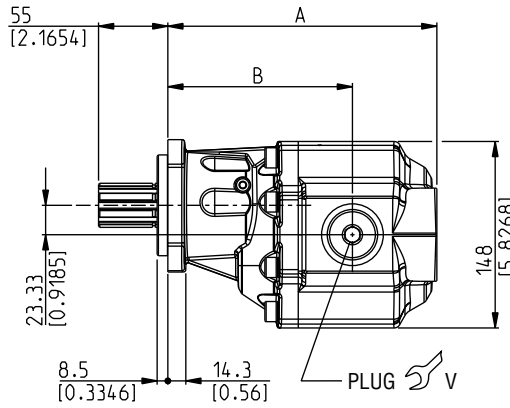
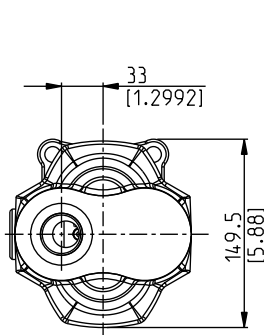
3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28

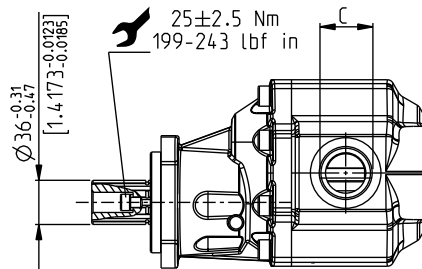
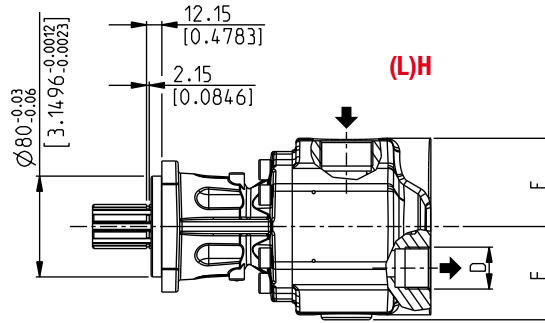
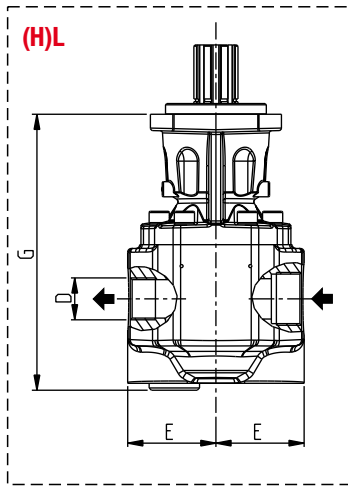
For PTOs with bearing

Replaces: 01/03.2010

DCAT\_200\_054



Ext. Spline W 8x32x36 DIN-ISO 14  
Max. Torque 330 Nm  
2920 lbf in



04/10.2020

Pump type				A	B	C	D	E	F	G	V
1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
SFP 30•34		GE/GE-		183,5 (7.224)	130,5 (5.138)	G 3/4	G 3/4			189 (7.441)	90 ±15 (664 ÷ 929)
SFP 30•43				189,5 (7.461)	127,5 (5.020)			64 (2.520)	68 (2.677)	195 (7.677)	
SFP 30•51	S D	0-16Z0-	(L)H (H)L	194,5 (7.657)	132,5 (5.217)	G1				200 (7.874)	
SFP 30•61	B			200,5 (7.894)	138,5 (5.453)		G1			206 (8.110)	130 ±15 (1018 ÷ 1283)
SFP 30•73				208,5 (8.209)	141,5 (5.571)			70 (2.756)	74 (2.913)	214 (8.425)	
SFP 30•82		GG/GF-		213,5 (8.406)	146,5 (5.768)	G 1 1/4				219 (8.622)	

1: Rotation - 2: Ports position 3: Seals - 4: Painting. See pag 5.  
Order example:

**SFP 30•34 S0-16 Z0-(L)H GE/GE-N-QW-VGR01**

**SFP 30**

**PUMPS DIMENSIONS - ISO STANDARD - VERSION 5**

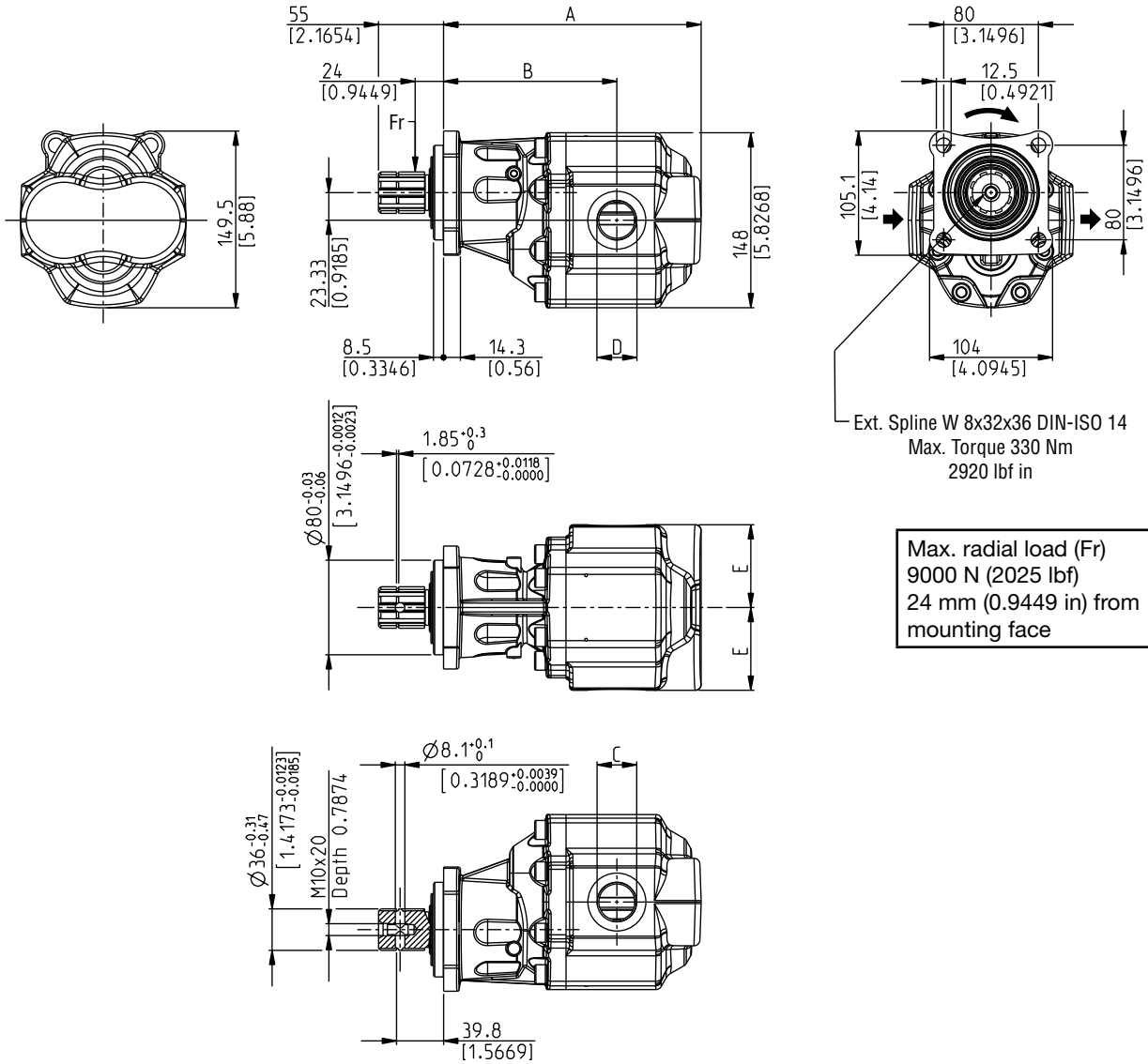
**16 Z0 - L**

2 Ports body

Ports availability: GAS  
See pag 28

For PTOs without bearing

DCAT\_200\_056



Pump type			A	B	C	D	E
1	2	3	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)
<b>SFP 30•34</b>	<b>5-16Z0-LGE/GE-</b>		183,5 (7.224)	130,5 (5.138)	G 3/4	G 3/4	
<b>SFP 30•43</b>			189,5 (7.461)	127,5 (5.020)			64 (2.520)
<b>SFP 30•51</b>	<b>S</b>	<b>N</b>	194,5 (7.657)	132,5 (5.217)			
<b>SFP 30•61</b>	<b>D</b>	<b>V</b>	200,5 (7.894)	138,5 (5.453)	G1	G1	
<b>SFP 30•73</b>	<b>B</b>	<b>N Bz</b>	208,5 (8.209)	141,5 (5.571)			70 (2.756)
<b>SFP 30•82</b>	<b>5-16Z0-LGF/GF-</b>	<b>V Bz</b>	213,5 (8.406)	146,5 (5.768)			
		<b>-QW-</b>					
		<b>VGR01</b>					
		<b>VRS01</b>					

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 30•34 S0-16 Z0-L GE/GE-N-QW-VGR01**

04/10.2020

**SFP 30**

**PUMPS DIMENSIONS - ISO STANDARD - VERSION 5**

**16 Z0 - (L)H**

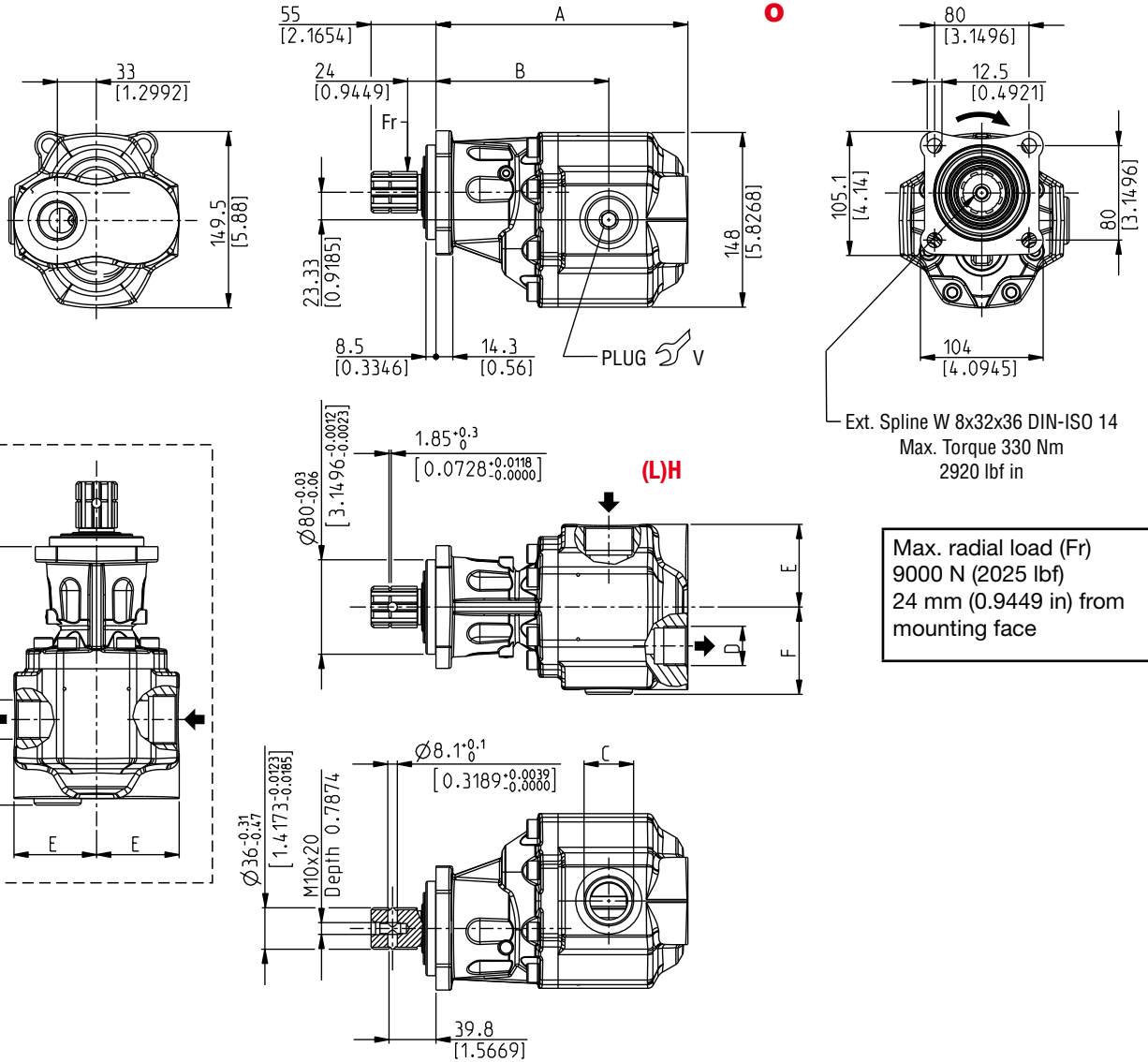
3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28

For PTOs without bearing

Replaces: 01/03.2010

DCAT\_200\_057



04/10.2020

Pump type				A	B	C	D	E	F	G	V
1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
SFP 30•34		GE/GE-		183,5 (7.224)	130,5 (5.138)	G 3/4	G 3/4			189 (7.441)	90 ±15 (664 ÷ 929)
SFP 30•43				189,5 (7.461)	127,5 (5.020)			64 (2.520)	68 (2.677)	195 (7.677)	
SFP 30•51	S D	5-16Z0-	(L)H (H)L	194,5 (7.657)	132,5 (5.217)					200 (7.874)	
SFP 30•61	B		N V N Bz V Bz	200,5 (7.894)	138,5 (5.453)	G1	G1			206 (8.110)	130 ±15 (1018 ÷ 1283)
SFP 30•73				208,5 (8.209)	141,5 (5.571)					214 (8.425)	
SFP 30•82		GG/GF-		213,5 (8.406)	146,5 (5.768)	G 1 1/4		70 (2.756)	74 (2.913)	219 (8.622)	

1: Rotation - 2: Ports position 3: Seals - 4: Painting. See pag 5.  
Order example:

**SFP 30•34 S5-16 Z0-(L)H GE/GE-N-QW-VGR01**

**SFP 30**

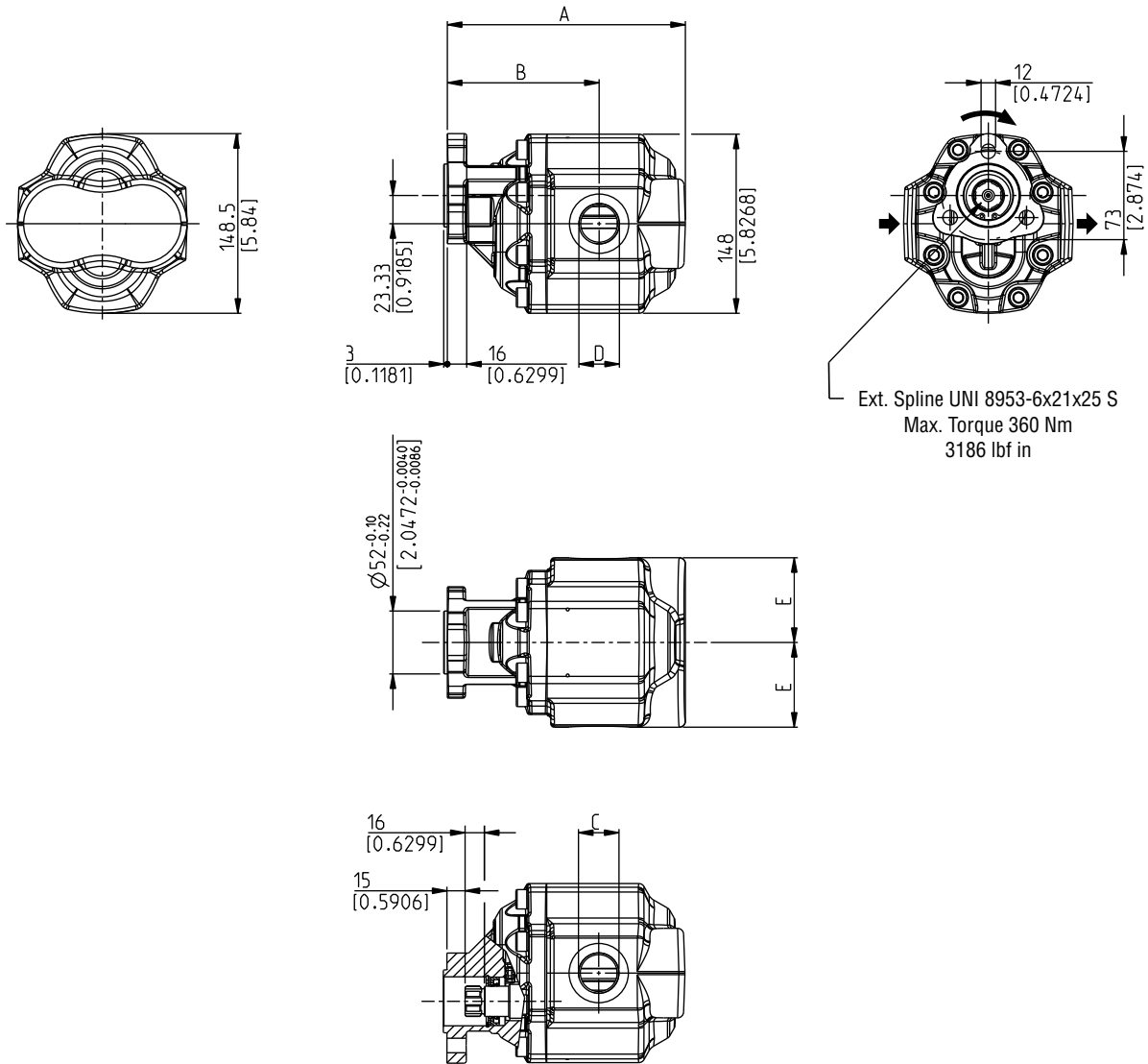
**PUMPS DIMENSIONS - ITALIAN STANDARD - VERSION 0**

**19 T1 - L**

2 Ports body

Ports availability: GAS  
See pag 28

For PTOs with bearing



Ext. Spline UNI 8953-6x21x25 S  
Max. Torque 360 Nm  
3186 lbf in

DCAT\_200\_059

Pump type				A	B	C	D	E		
1	2	3		mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)		
<b>SFP 30•34</b>	<b>0-19T1-LGE/GE-</b>			162,5 (6.398)	109,5 (4.311)	G 3/4	G 3/4			
<b>SFP 30•43</b>				178,5 (7.028)	106,5 (4.193)			64 (2.520)		
<b>SFP 30•51</b>	<b>0-19T1-LGF/GF-</b>	<b>N V -QW- N Bz V Bz</b>	<b>VGR01 VRS01</b>	173,5 (6.831)	111,5 (4.390)					
<b>SFP 30•61</b>				<b>S D B</b>		179,5 (7.067)	117,5 (4.626)	G1	G1	
<b>SFP 30•73</b>						187,5 (7.382)	120,5 (4.744)			70 (2.756)
<b>SFP 30•82</b>				192,5 (7.579)	125,5 (4.941)					

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 30•34 S0-19 T1-L GE/GE-N-QW-VGR01**

04/10.2020

**SFP 30**

**PUMPS DIMENSIONS - ITALIAN STANDARD - VERSION 0**

**19 T1 - (L)H**

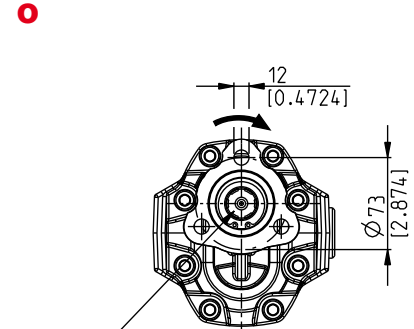
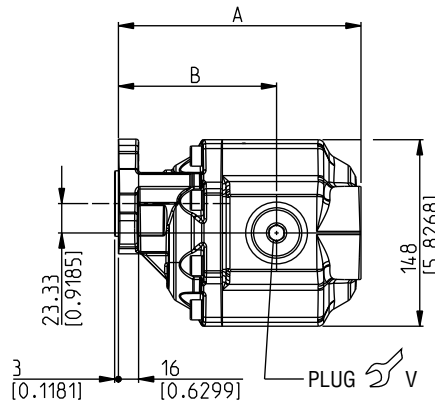
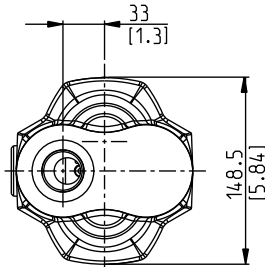
3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28

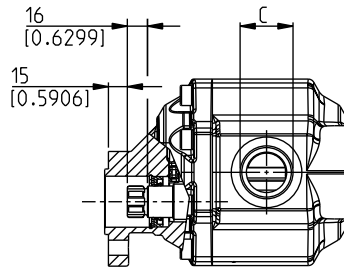
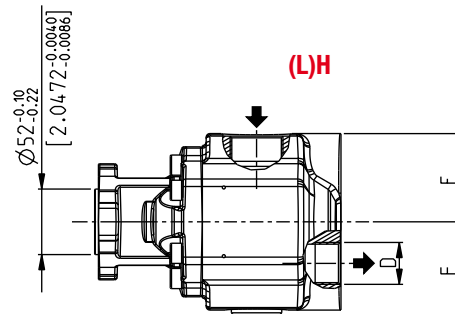
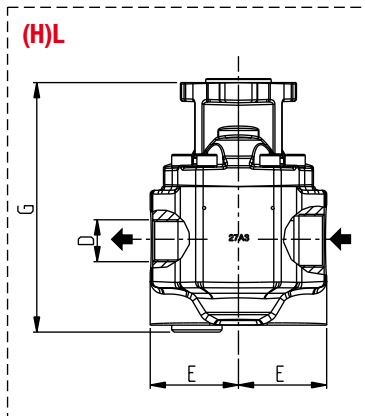
For PTOs with bearing

Replaces: 01/03.2010

DCAT\_200\_060



Ext. Spline UNI 8953-6x21x25 S  
Max. Torque 360 Nm  
3186 lbf in



04/10.2020

	Pump type				A	B	C	D	E	F	G	V
	1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
<b>SFP 30•34</b>			<b>GE/GE-</b>		162,5 (6.398)	109,5 (4.311)	G 3/4	G 3/4			168 (6.614)	90 ±15 (664 ÷ 929)
<b>SFP 30•43</b>					178,5 (7.028)	106,5 (4.193)			64 (2.520)	68 (2.677)	174 (6.850)	
<b>SFP 30•51</b>	<b>S</b>	<b>0-19T1-</b>	<b>(L)H</b>		173,5 (6.831)	111,5 (4.390)					179 (7.047)	
<b>SFP 30•61</b>	<b>D</b>		<b>(H)L</b>		179,5 (7.067)	117,5 (4.626)	G1	G1			185 (7.283)	130 ±15 (1018 ÷ 1283)
<b>SFP 30•73</b>	<b>B</b>		<b>GF/GF-</b>		187,5 (7.382)	120,5 (4.744)			70 (2.756)	74 (2.913)	193 (7.598)	
<b>SFP 30•82</b>					192,5 (7.579)	125,5 (4.941)					198 (7.795)	

1: Rotation - 2: Ports position - 3: Seals - 4: Painting. For more information see page 5.

Order example:

**SFP 30•34 S0-19 T1-(L)H GE/GE-N-QW-VGR01**

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**NOTES**

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04/10.2020

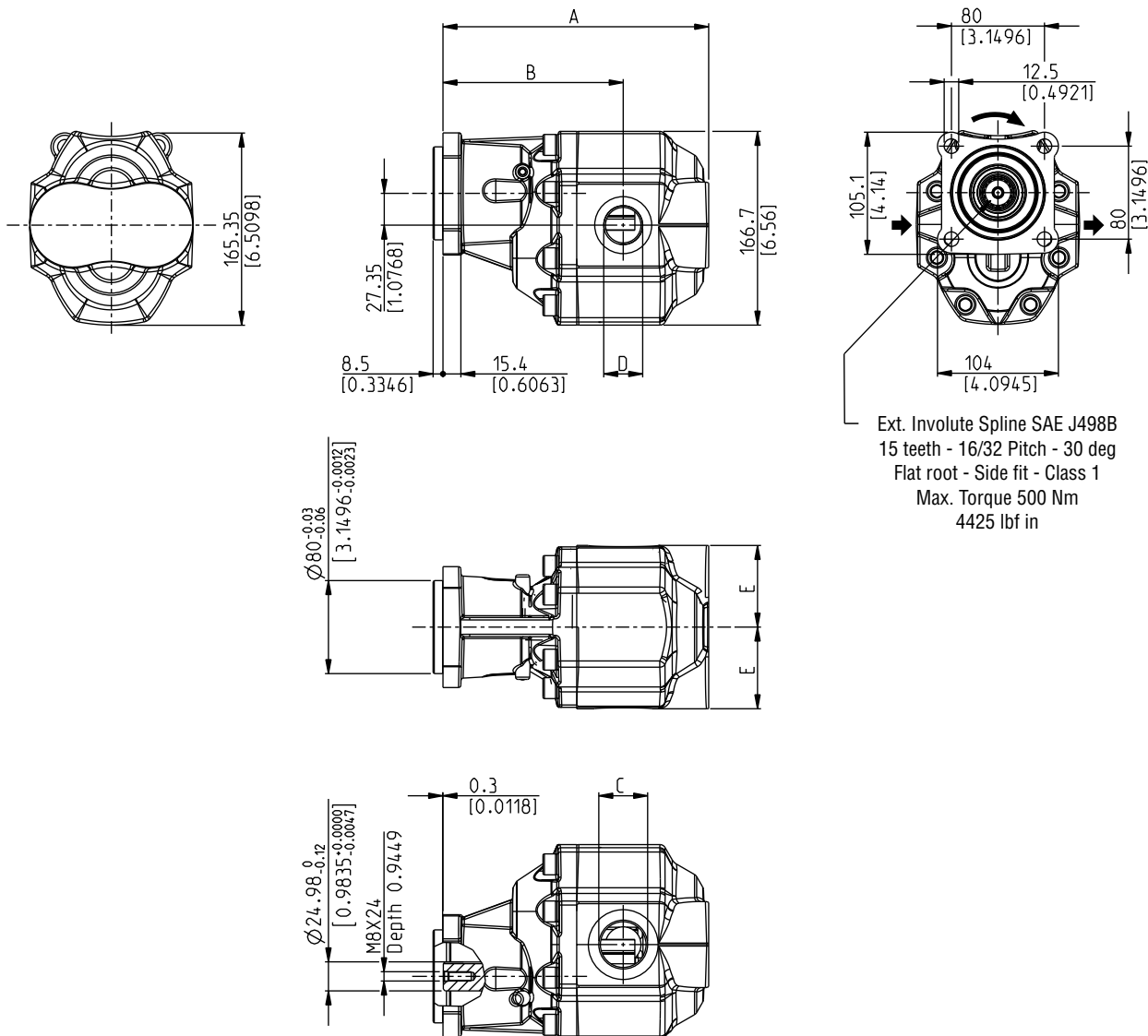
**SFP 35**

**PUMPS DIMENSIONS - BASE MODEL - VERSION 0**

**F9 Z0 - L**

2 Ports body

Ports availability: GAS  
See pag 28



DCAT\_200\_062

04/10.2020

Pump type				A	B	C	D	E
1	2	3		mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)
<b>SFP 35•90</b>				229,5 (9.035)	155 (6.102)			
<b>SFP 35•100</b>	<b>S</b> <b>D</b> 0-F9Z0-LGG/GG-	<b>N</b> <b>V</b> <b>N Bz</b> -QW-	<b>VGR01</b> <b>VRS01</b>	233,5 (9.193)	159 (6.260)	G 1 1/4	G 1 1/4	70,2 (2.764)
<b>SFP 35•112</b>	<b>B</b>	<b>V Bz</b>		239,5 (9.429)	165 (6.496)			

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 35•90 S0-F9 Z0-L GG/GG-N-QW-VGR01**

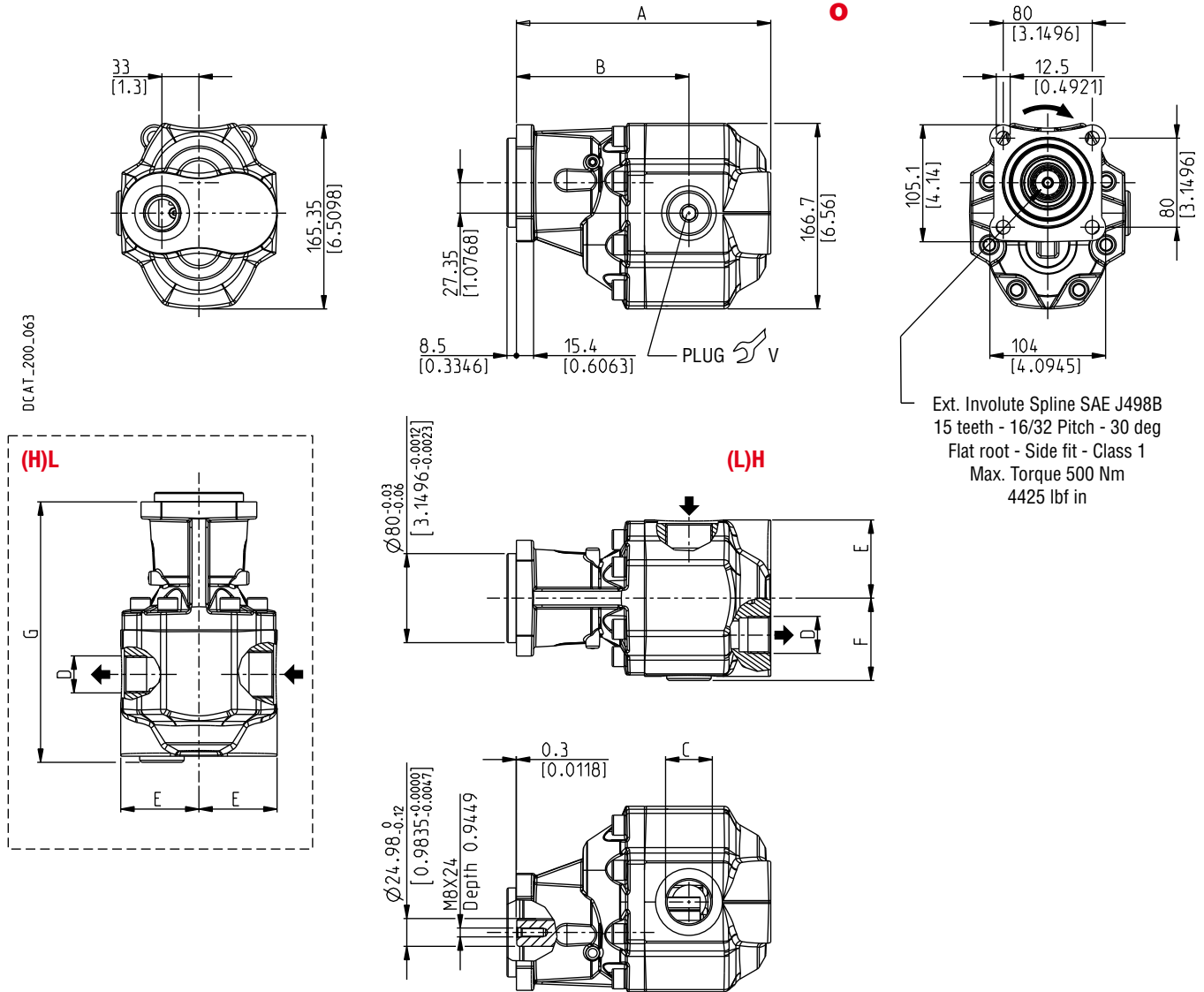
**SFP 35**

**PUMPS DIMENSIONS - BASE MODEL - VERSION 0**

**F9 Z0 - (L)H**

3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28



Replaces: 01/03.2010

Pump type				A	B	C	D	E	F	G	V
1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
<b>SFP 35•90</b>				229,5 (9.035)	155 (6.102)					235 (9.252)	
<b>SFP 35•100</b>	<b>S</b> <b>D</b> <b>B</b>	<b>0-F9Z0-</b> <b>(L)H</b> <b>GG/GG-</b> <b>(H)L</b>	<b>N</b> <b>V</b> <b>N Bz</b> <b>V Bz</b>	<b>-QW-</b>	<b>VGR01</b> <b>VRS01</b>	G 1 1/4	G 1 1/4	70,2 (2.764)	74 (2.913)	239 (9.409)	170 <sup>±15</sup> (1372 ÷ 1637)
<b>SFP 35•112</b>				239,5 (9.429)	165 (6.496)					245 (9.646)	

1: Rotation - 2: Ports position - 3: Seals - 4: Painting. For more information see page 5.

Order example:

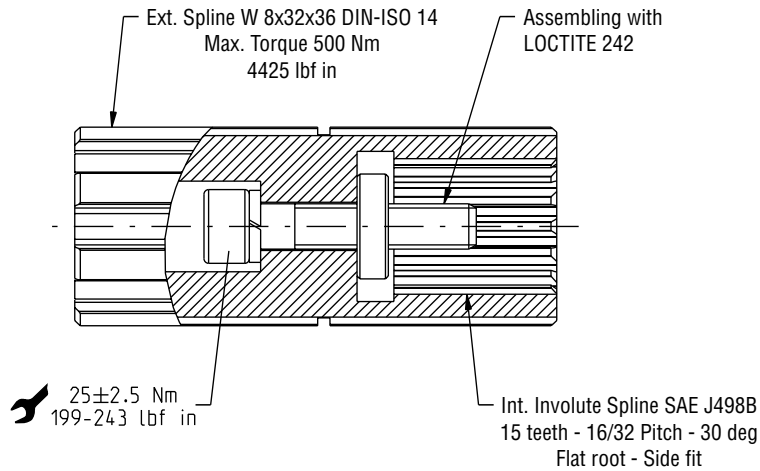
**SFP 35•90 S0-F9 Z0-(L)H GG/GG-N-QW-VGR01**

04/10.2020

**SFP 35**

**COUPLING KIT VERSION 0**

Replaces: 03/09.2016



Ordering Code:

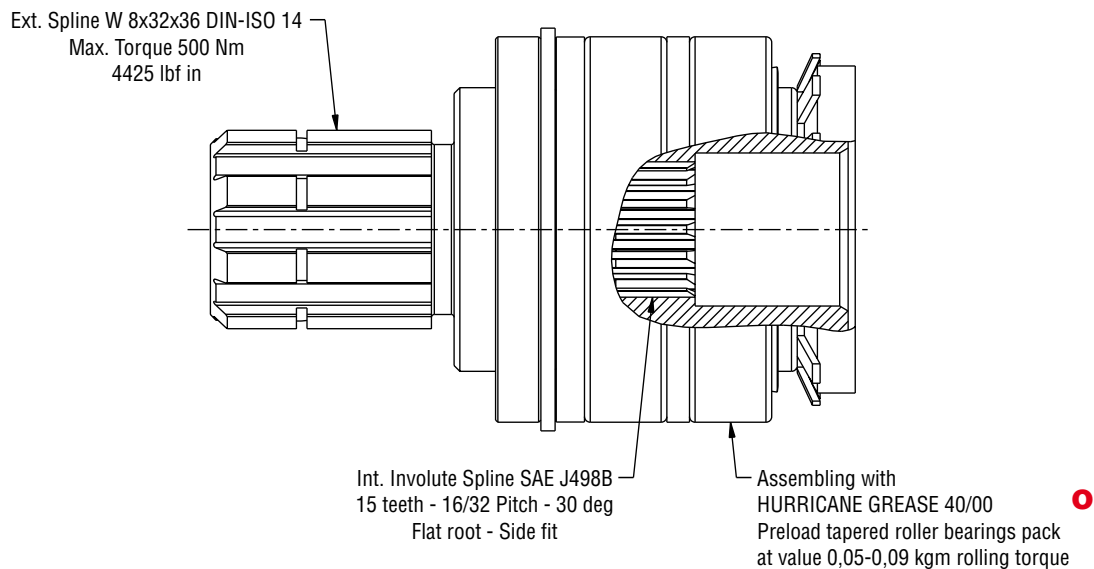
**62100015**

**COUPLING KIT FP 35 - 0 - 16 Z0 - F9**

**SFP 35**

**SUPPORT KIT VERSION 5**

04/10.2020



Ordering Code:

**62100014**

**SUPPORT KIT FP 35 - 5 - 16 Z0 - F9**

**SFP 35**

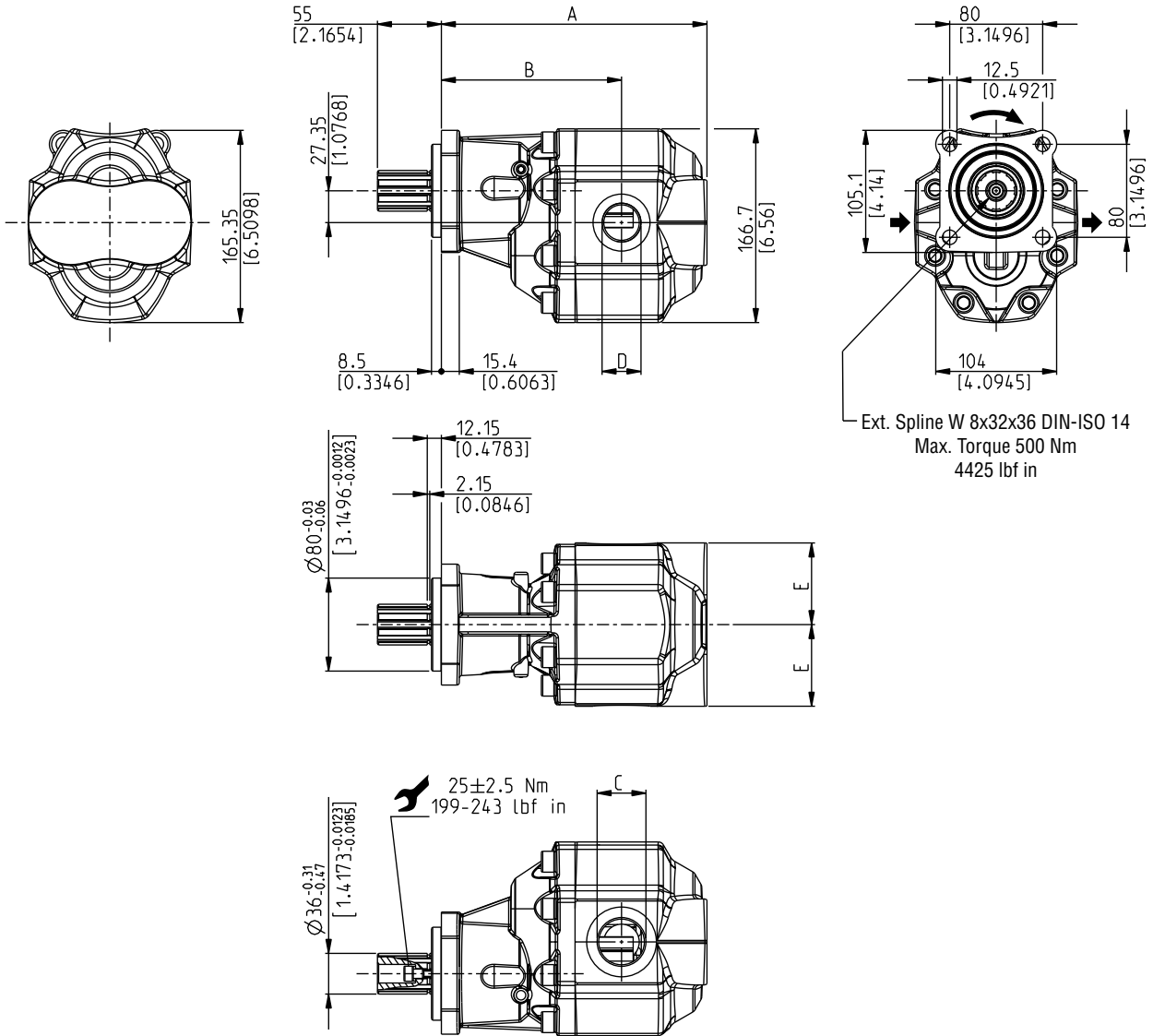
**PUMPS DIMENSIONS - ISO STANDARD - VERSION 0**

**16 Z0 - L**

2 Ports body

Ports availability: GAS  
See pag 28

For PTOs with bearing



DCAT\_200\_065

Pump type			A	B	C	D	E
1	2	3	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)
<b>SFP 35•90</b>			229,5 (9.035)	155 (6.102)			
<b>SFP 35•100</b>	<b>0-16Z0-LGG/GG-</b>	<b>VGR01</b>	233,5 (9.193)	159 (6.260)	G 1 1/4	G 1 1/4	70,2 (2.764)
<b>SFP 35•112</b>		<b>VRS01</b>	239,5 (9.429)	165 (6.496)			

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 35•90 S0-16 Z0-L GG/GG-N-QW-VGR01**

04/10.2020

**SFP 35**

**PUMPS DIMENSIONS - ISO STANDARD - VERSION 0**

**16 Z0 - (L)H**

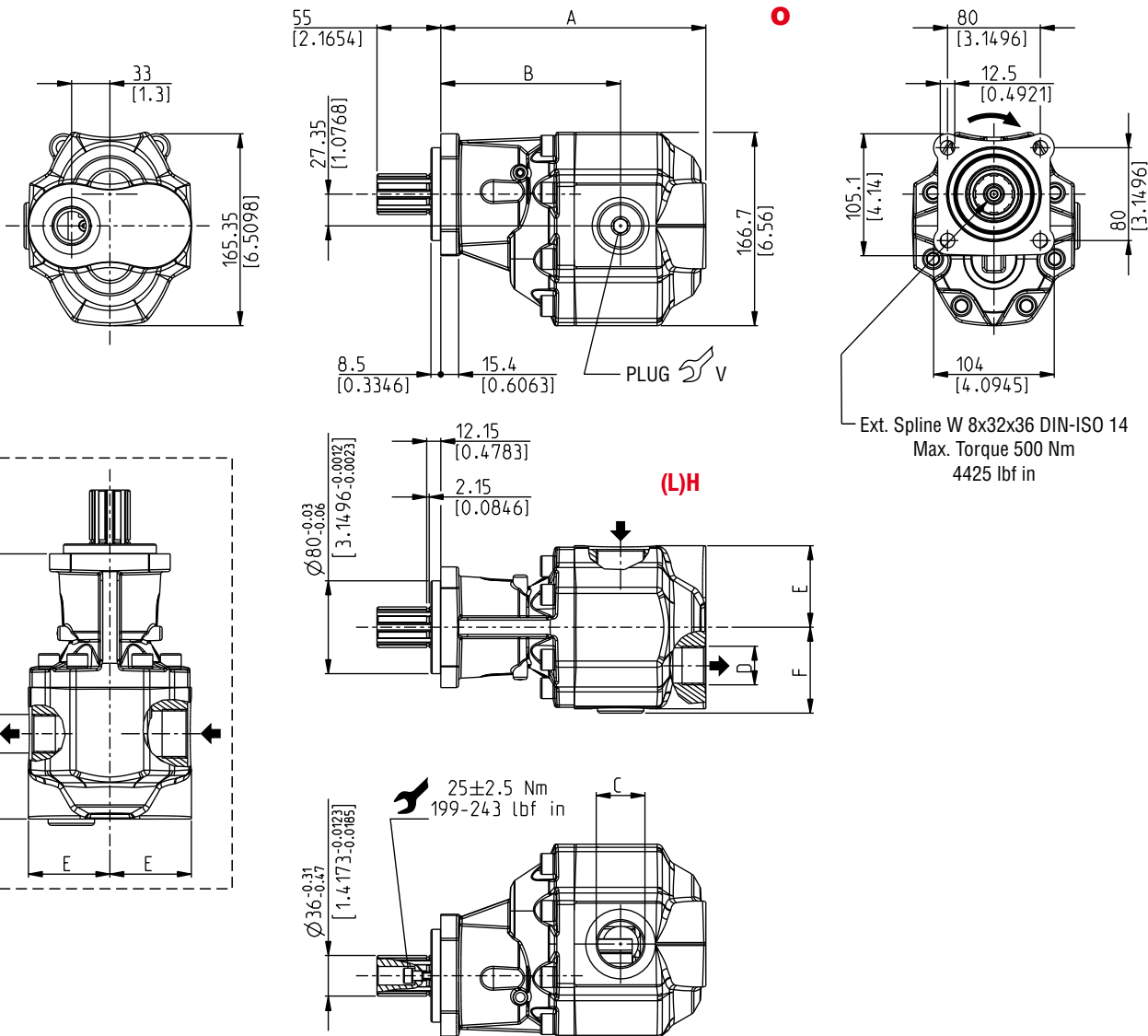
3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28

For PTOs with bearing

Replaces: 01/03.2010

DCAT\_200\_066



04/10.2020

	Pump type				A	B	C	D	E	F	G	V
	1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
<b>SFP 35•90</b>					229,5 (9.035)	155 (6.102)					235 (9.252)	
<b>SFP 35•100</b>	<b>S</b> <b>D</b> <b>B</b>	<b>0-16Z0-</b> <b>(L)H</b> <b>(H)L</b>	<b>GG/GG-</b> <b>(H)L</b>	<b>N</b> <b>V</b> <b>N Bz</b> <b>V Bz</b>			<b>-QW-</b>	<b>VGR01</b> <b>VRS01</b>				
<b>SFP 35•112</b>					239,5 (9.429)	165 (6.496)	G 1 1/4	G 1 1/4	70,2 (2.764)	74 (2.913)	239 (9.409)	170 ±15 (1372 ÷ 1637)
											245 (9.646)	

1: Rotation - 2: Ports position - 3: Seals - 4: Painting. For more information see page 5.

Order example:

**SFP 35•90 S0-16 Z0-(L)H GG/GG-N-QW-VGR01**

**SFP 35**

**PUMPS DIMENSIONS - ISO STANDARD - VERSION 5**

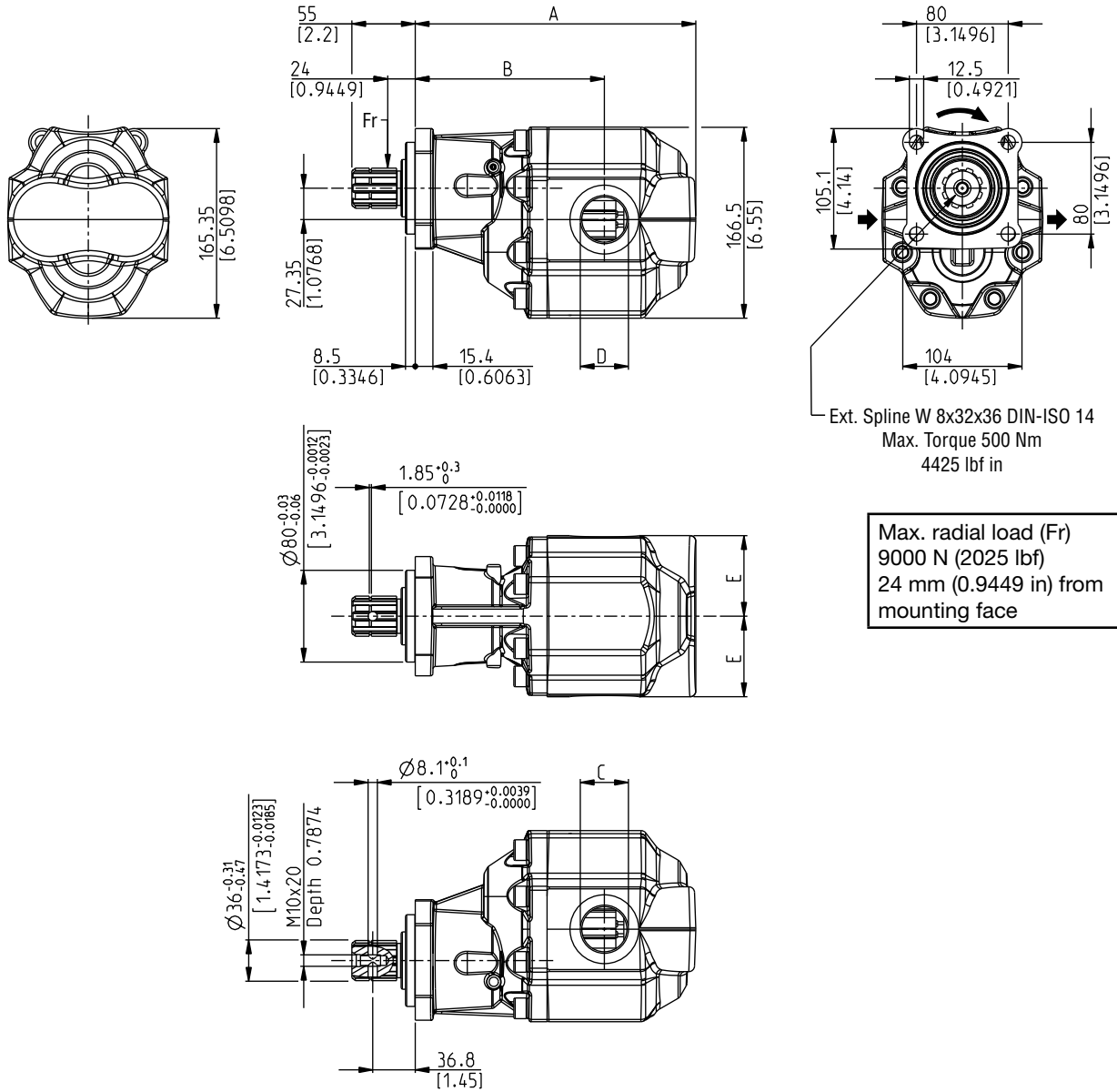
**16 Z0 - L**

2 Ports body

Ports availability: GAS  
See pag 28

For PTOs without bearing

DCAT\_200\_068



Pump type			A	B	C	D	E
1	2	3	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)
<b>SFP 35•90</b>			229,5 (9.035)	155 (6.102)			
<b>SFP 35•100</b>	<b>S</b> <b>D</b> 5-16Z0-LGG/GG-	<b>N</b> <b>V</b> <b>N Bz</b> -QW-	233,5 (9.193)	159 (6.260)	G 1 1/4	G 1 1/4	70,2 (2.764)
<b>SFP 35•112</b>	<b>B</b>	<b>V Bz</b> <b>VGR01</b> <b>VRS01</b>	239,5 (9.429)	165 (6.496)			

1: Rotation - 2: Seals - 3: Painting. For more information see page 5.

Order example:

**SFP 35•90 S5-16 Z0-L GG/GG-N-QW-VGR01**

04/10.2020

**SFP 35**

**PUMPS DIMENSIONS - ISO STANDARD - VERSION 5**

**16 Z0 - (L)H**

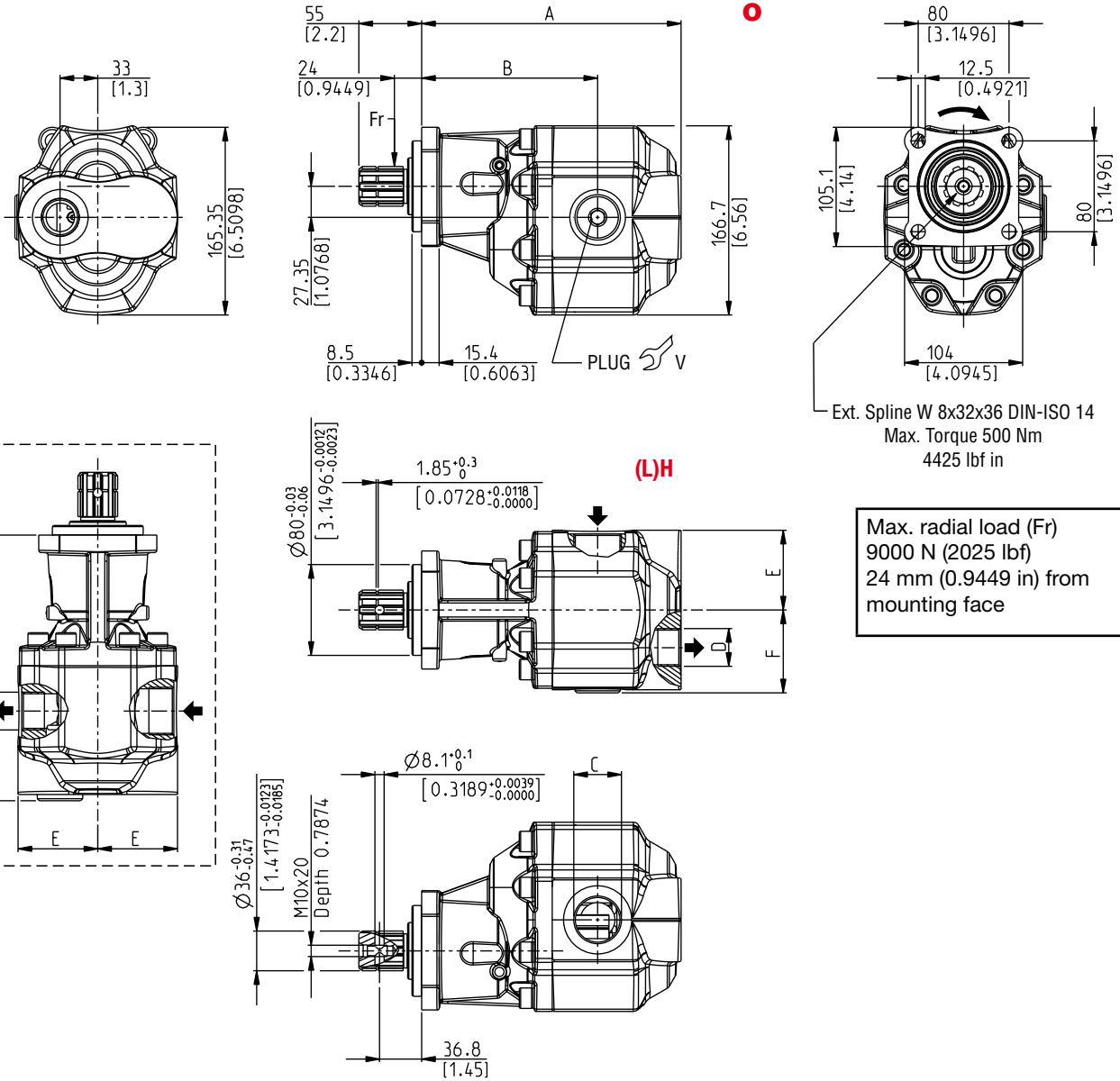
3 Ports body. Standard pumps are supplied in version (L)H

Ports availability: GAS  
See pag 28

For PTOs without bearing

Replaces: 01/03.2010

DCAT\_200\_069



04/10.2020

Pump type					A	B	C	D	E	F	G	V
	1	2	3	4	mm (in)	mm (in)	IN (BSPP)	OUT (BSPP)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
<b>SFP 35•90</b>					229,5 (9.035)	155 (6.102)					235 (9.252)	
<b>SFP 35•100</b>	<b>S</b> <b>D</b> <b>B</b>	<b>5-16Z0-</b> <b>(L)H</b> <b>(H)L</b>	<b>GG/GG-</b> <b>(H)L</b>	<b>N</b> <b>V</b> <b>N Bz</b> <b>V Bz</b>	<b>-QW-</b>	<b>VGR01</b> <b>VRS01</b>	G 1 1/4	G 1 1/4	70,2 (2.764)	74 (2.913)	239 (9.409)	170 ±15 (1372 ÷ 1637)
<b>SFP 35•112</b>					239,5 (9.429)	165 (6.496)					245 (9.646)	

1: Rotation - 2: Ports position - 3: Seals - 4: Painting. For more information see page 5.

Order example:

**SFP 35•90 S5-16 Z0-(L)H GG/GG-N-QW-VGR01**

## PORT SIZES



Tightening torque for low pressure side port.



Tightening torque for high pressure side port.

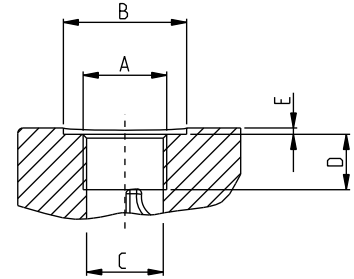
For reversible rotation, please consult only the tightening torque for high pressure side port.

### GAS STRAIGHT THREAD PORTS

**BSPP**

British standard pipe parallel (55°) conforms to UNI - ISO 228

DCAT\_006\_026\_21064779



CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)				
<b>GE</b>	3/4"	G 3/4	39 (1.5354)	24,5 (0.9646)	18 (0.7087)	Max. 1 (0.039)	30 <sup>+2,5</sup> (266 ÷ 288)	90 <sup>+5</sup> (797 ÷ 841)
<b>GF</b>	1"	G 1	49 (1.9291)	30,5 (1.2008)	20 (0.7874)	Max. 1 (0.039) Max. 1,2 (◆) (0.047)	50 <sup>+2,5</sup> (443 ÷ 465)	130 <sup>+10</sup> (1151 ÷ 1239)
<b>GG</b>	1" 1/4	G 1 1/4	56 (2.2047) 60 (◆) (2.362)	39,3 (1.5472)	20 (0.7874)	Max. 1 (0.039) Max. 1,2 (◆) (0.047)	70 <sup>+5</sup> (620 ÷ 664)	170 <sup>+15</sup> (1505 ÷ 1637)

(◆) For SFP 35

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## NOTES

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0 04/10.2020

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**NOTES**

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04/10.2020

Our policy is one of continuous improvement in product. Specification of items may, therefore, be changed without notice.

SFP 04 T A

Edition: 04/10.2020

Replaces: SFP 03 T A



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