



HYDRAULIC
HELICAL GEAR
PUMPS

XHP

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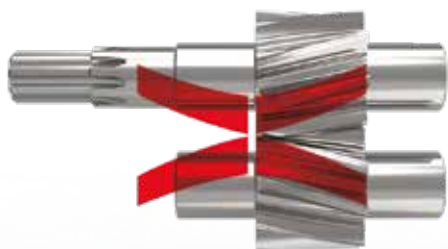
Replaces: 01/03.2024

02/08.2026



Modification from former edition.

X TECHNOLOGY

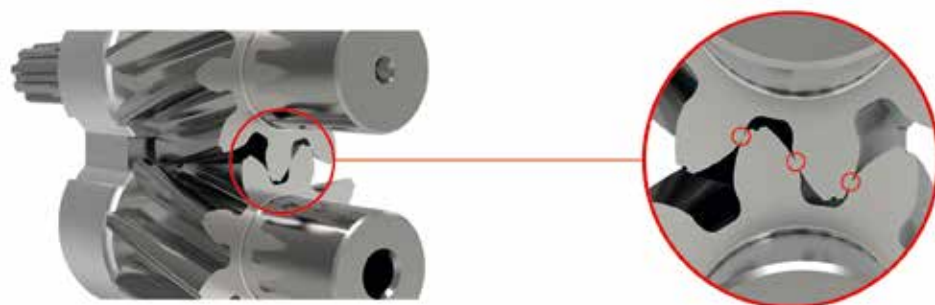


The X technology is a step forward in involute external gear pumps thanks to innovative patented solutions.

PATENTED SOLUTIONS

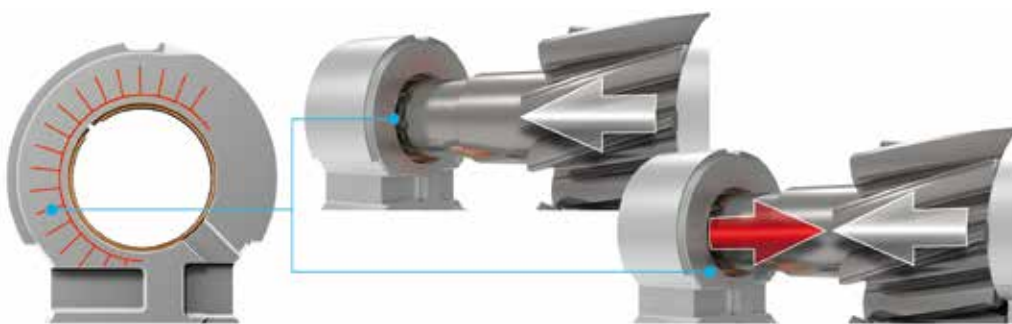
➤ DUAL FLANK

Dual flank meshing combined with helical gear design.



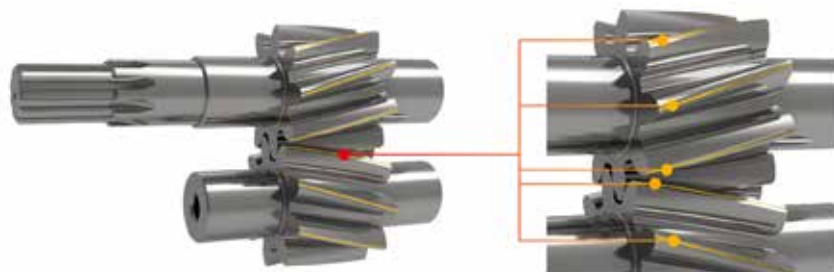
➤ MICRO-GROOVES

Micro-grooves on the bearing block balance the axial forces.



➤ TIP GROOVE

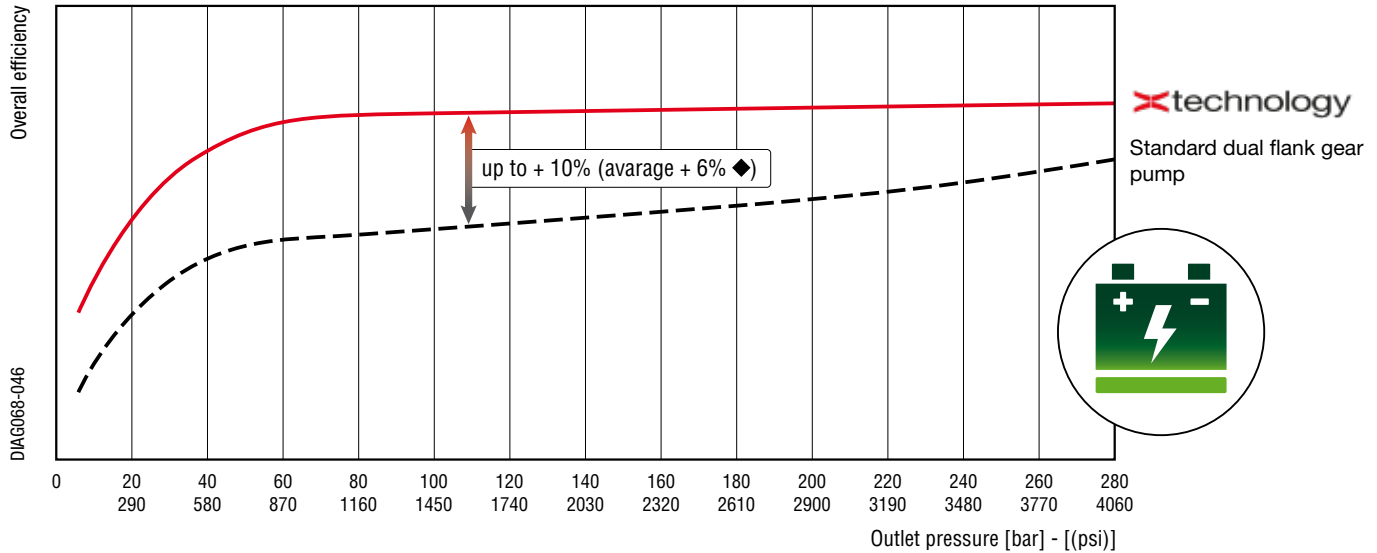
Tip groove on the teeth improves lubrication at high speed.



01/03.2024

X TECHNOLOGY - BENEFITS

➤ SIGNIFICANT INCREASE OF PUMP EFFICIENCY

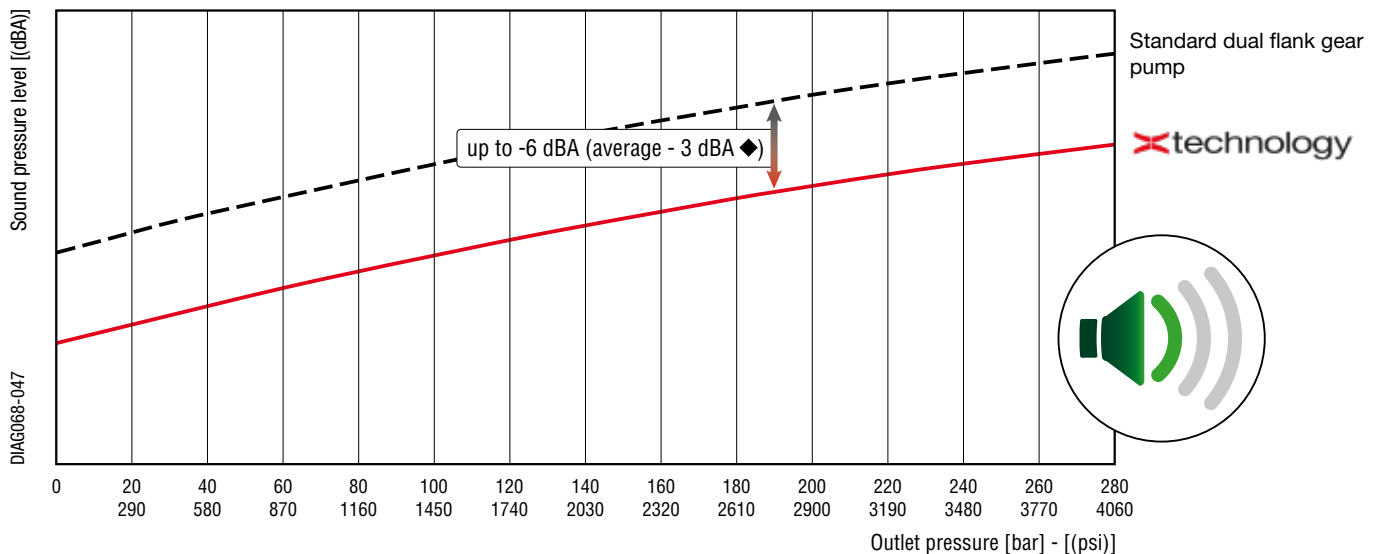


Both volumetric and hydro-mechanical efficiency are improved over the operating range, thanks to:

- ▶ Optimized pump design for higher stiffness
- ▶ Improved lubrication by the tip grooves
- ▶ Better meshing of the helical gears
- ▶ Optimized gear machining process

♦ average over the entire operating range and displacement range.

➤ REMARKABLE REDUCTION OF PUMP NOISE



Thanks to the combination of the dual flank meshing and the high helix angle, the pump noise is further reduced compared to the standard dual flank technology.

In addition, the lower number of teeth of the new X technology reduces pump frequencies by 25%.

This results in a more pleasant sound quality.

♦ average over the entire operating range and displacement range.

01/03.2024

INTRODUCTION

“XHP20” series Cast iron body hydraulic gear pumps with helical gear design.
Three pieces pump - Interchangeable with all Casappa’s group 2 pumps.

Replaces: 01/03.2024

DISPLACEMENTS

From 8,06 cm³/rev (0.49 in³/rev)
To 28,01 cm³/rev (1.71 in³/rev)

PRESSURE

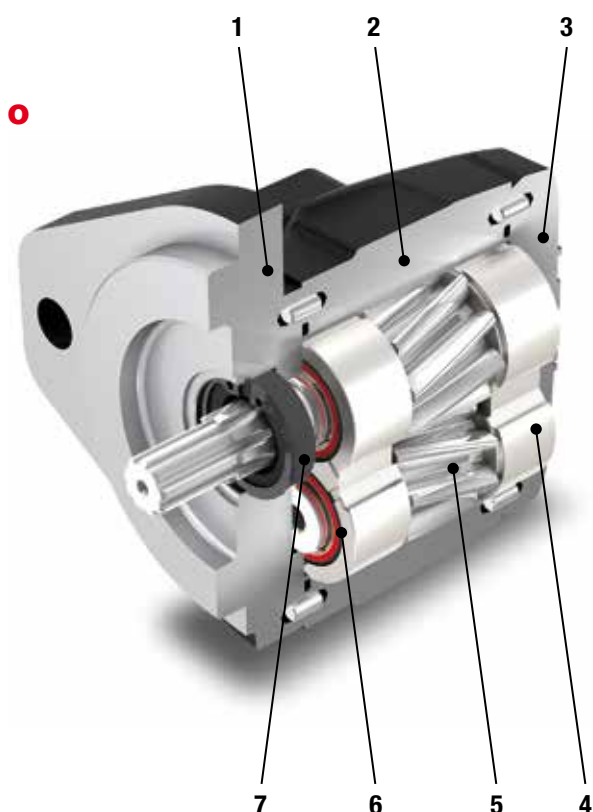
Max. rated pressure (relief valve setting) 280 bar (4060 psi)
Max. peak of pressure 300 bar (4350 psi)

SPEED

Max. 4000 min⁻¹

TYPICAL APPLICATIONS

- Building & Construction
- Material Handling
- Agriculture
- Forestry
- Turf care & Mowers



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

02/08.2026

- High temperature
- High pressure
- High reliability
- Multiple units available in standard version, common inlet and separated stages

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. Flexible couplings should be used (never rigid fittings) which will not generate an axial or radial load on the pump shaft.

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 contact us.

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 temperature and fluid temperature exceeds 10 °C (18 °F), rapidly switch the system on and off to heat it up gradually. Then gradually increase the pressure and speed of rotation until the preset 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 (pumps)	≤ 50 bar (725 psi)
Speed	≤ 1500 min ⁻¹
Minimum temperature	-40 °C (-40 °F)
Max oil viscosity	2000 mm ² /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.



FEATURES

Construction	External helical gear pumps 3-piece construction
Mounting	EUROPEAN - SAE - GERMAN standard flanges
Ports	Threaded or split flange
Direction of rotation (looking at the drive shaft)	Anti-clockwise (S) - clockwise (D)
Inlet pressure range for pumps	0,7 ÷ 3 bar abs. (10 ÷ 44 psi) If p > 1,5 bar abs. (22 psi) specific shaft sealing have to be applied. Please contact us for more information.
Fluid temperature range	See table (1)
Fluid	Mineral oil based hydraulic fluids to ISO/DIN. Please contact us for other fluids
Viscosity range	From 12 to 100 mm ² /s (cSt) [60 to 456 SSU] recommended Up to 750 mm ² /s (cSt) [3410 SSU] permitted
Filtering requirement and recommended fluid contamination	See table (2) page 8

Tab. 1

Type	Fluid composition	Max pressure bar (psi)	Max speed min ⁻¹	Temperature - °C (°F)			Seals (●)	Shaft seals option (◆)
				Min	Max continuous	Max peak		
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 7	See page 7	-25 (-13)	80 (176)	100 (212)	N	D C1
				-25 (-13)	110 (230)	125 (257)	V	
				-25 (-13)	110 (230)	125 (257)	T-PV	

(●) **N** = Buna NBR (standard) - **V** = Viton-FKM - **T-PV** = Hydrogenated buna HNBR seals with Viton-FKM shaft seals

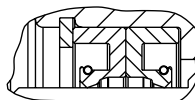
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D (◆) shaft seals with wiper seal

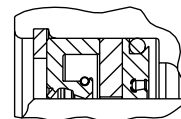
C1 (◆) High pressure special shaft seal with wiper seal

Single rotation pumps

Max inlet pressure:
0,5 bar (7 psi)



Max inlet pressure:
10 bar (145 psi)
@ 2000 min⁻¹



FEATURES

FILTRATION

Tab. 2

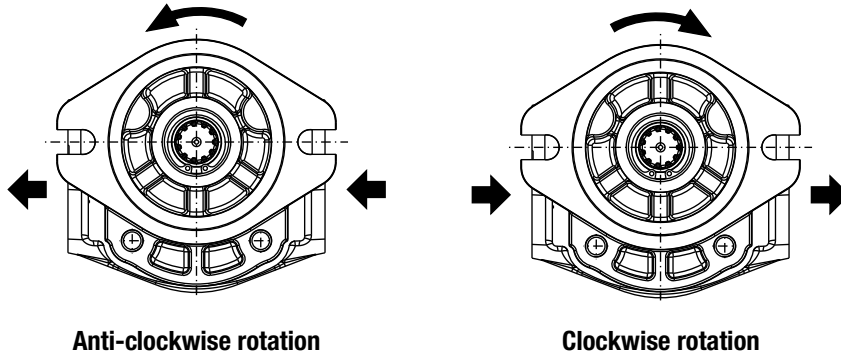
Working pressure bar (psi)	$\Delta p < 140$ $\Delta p < (2030)$	$140 < \Delta p < 210$ $(2030) < \Delta p < (3045)$	$\Delta p > 210$ $\Delta p > (3045)$
Contamination class NAS 1638	10	9	8
Contamination class ISO 4406	21/19/16	20/18/15	19/17/14
Achieved with filter $\beta_{10}(c) \geq 200$ ISO 16889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

Casappa recommends to use its own production filters:

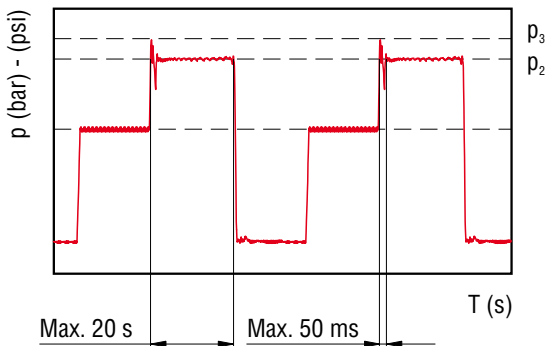


Replaces: 01/03.2024

DEFINITION OF ROTATION DIRECTION LOOKING AT THE DRIVE SHAFT



PRESSURE DEFINITION



p_2 Rated 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.

Please contact us for high frequency applications.

02/08.2026

FEATURES

Replaces: 01/03.2024

Pump type	Displacement cm ³ /rev (in ³ /rev)	Max. outlet pressure 		Max. speed min ⁻¹	Min. speed
		Rated p ₂	Peak p ₃		
		bar (psi)	bar (psi)		
XHP20•8	8,06 (0.49)	280 (4060)	300 (4350)	4000	500
XHP20•10	10,05 (0.61)	280 (4060)	300 (4350)	4000	500
XHP20•12	12,09 (0.74)	280 (4060)	300 (4350)	4000	400
XHP20•14	14,02 (0.86)	280 (4060)	300 (4350)	4000	400
XHP20•16	16,03 (0.98)	280 (4060)	300 (4350)	3500	400
XHP20•18	18,05 (1.10)	280 (4060)	300 (4350)	3500	400
XHP20•20	20,00 (1.22)	280 (4060)	300 (4350)	3500	400
XHP20•22	22,46 (1.37)	280 (4060)	300 (4350)	3500	400
XHP20•24	24,01 (1.46)	260 (3770)	280 (4060)	3000	400
XHP20•26	26,03 (1.59)	260 (3770)	280 (4060)	3000	400
XHP20•28	28,01 (1.71)	230 (3335)	250 (3625)	3000	400

For configuration with common inlet or with SAE threaded ports max. pressure and speed can change.
Please contact us for more information.

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

DESIGN CALCULATIONS FOR PUMP

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

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

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

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

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

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

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XHP20

SINGLE PUMPS DIMENSIONS - SIDE PORTS

L

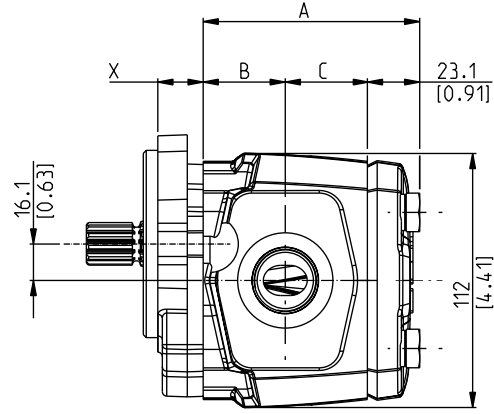
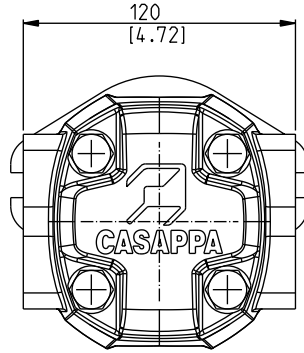
Drive shafts: page 18 ÷ 20

Mounting flange: for X dimension see
page 21 ÷ 24

Ports availability: European, Split, Gas,
SAE and German. See page 25

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DCAT068-001



Replaces: 01/03.2024

Mounting flange and rear cover are
available in cast iron only.

Pump type	A	B	C
	mm (inch)	mm (inch)	mm (inch)
XHP20•8	76 (2.99)	30 (1.18)	22,9 (0,90)
XHP20•10	79,7 (3.14)	31 (1.22)	25,6 (1,01)
XHP20•12	81,4 (3.20)	31,3 (1.23)	27 (1,06)
XHP20•14	84,1 (3.31)	34 (1.34)	27 (1,06)
XHP20•16	86,7 (3.41)	36,6 (1.44)	27 (1,06)
XHP20•18	89,5 (3.52)	33,2 (1.31)	33,2 (1.31)
XHP20•20	92,2 (3.63)	34,6 (1.36)	34,6 (1.36)
XHP20•22	95,5 (3.76)	36,2 (1.43)	36,2 (1.43)
XHP20•24	97,7 (3.85)	37,3 (1.47)	37,3 (1.47)
XHP20•26	100,5 (3.96)	38,7 (1.52)	38,7 (1.52)
XHP20•28	103,3 (4.07)	40,1 (1.58)	40,1 (1.58)

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XHP20

SINGLE PUMPS DIMENSIONS - REAR PORTS

P

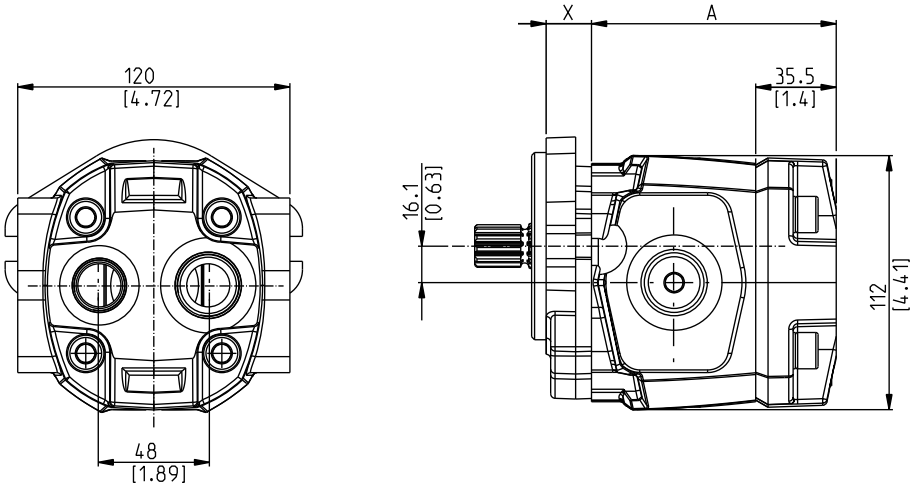
Drive shafts: page 18 ÷ 20
Mounting flange: for X dimension see
page 21 ÷ 24

Ports availability: European, Split, Gas,
SAE and German. See page 25



Replaces: 01/03.2024

DCAT068-002



Mounting flange and rear cover are
available in cast iron only.

Pump type	A
	mm (inch)
XHP20•8	88,4 (3.48)
XHP20•10	92,1 (3.63)
XHP20•12	93,8 (3.69)
XHP20•14	96,5 (3.80)
XHP20•16	99,1 (3.90)
XHP20•18	101,9 (4.01)
XHP20•20	104,6 (4.12)
XHP20•22	107,9 (4.25)
XHP20•24	110,1 (4.33)
XHP20•26	112,9 (4.44)
XHP20•28	115,7 (4.56)

02/08.2026



MULTIPLE PUMPS

XHP series pumps can be coupled together in combination. In applications where the input power requirement of each section varies, the section with the greater requirement must be at the drive shaft end, and progressively smaller to the rear.

Features and performances are the same as the corresponding single pumps, but pressures must be limited according to the transmissible torque of the drive and connecting shafts. To have appropriate data, use the formula below.

The maximum rotational speed is the one of the lowest rated speed of the single units incorporated.

Available with common inlet and separated stages. Please contact us for more information.

Different groups combination XHP20/XLP20 and XHP20/PLP10 are available.

For XLP20 and PLP10 series general data please consult the proper technical catalogue.

M	Nm (lbf in)	Torque
V	cm ³ /rev (in ³ /rev)	Displacement
Δp	bar (psi)	Pressure
$\eta_{hm} = \eta_{hm}(V, \Delta p, n)$		Hydro-mechanical efficiency

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

$$M_{theor.} = \frac{\Delta p \text{ (bar)} \cdot V \text{ (cm}^3\text{/rev)}}{62,83} \text{ [Nm]}$$

NOTE

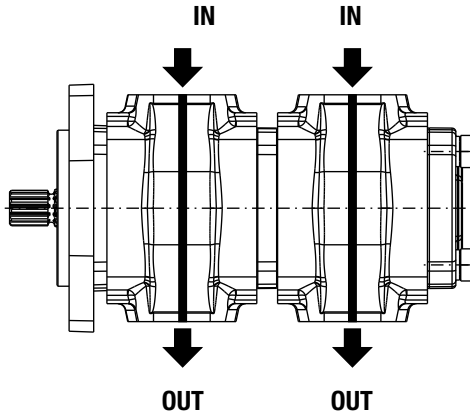
The torque absorbed from the shaft of the first pump results from the sum of the torques of all the single stages. The achieved value must not exceed the maximum torque limit given for the shaft of the first pump.

Replaces: 01/03.2024

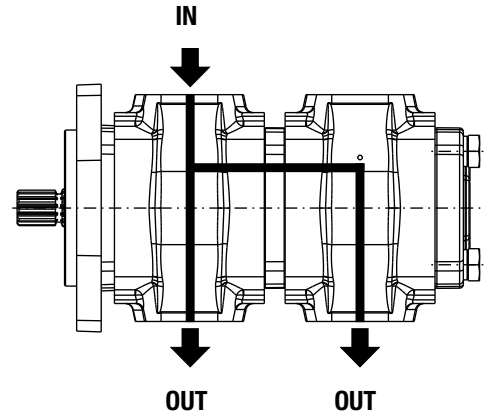
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INLET PORTS CONFIGURATION

STANDARD VERSION



COMMON INLET



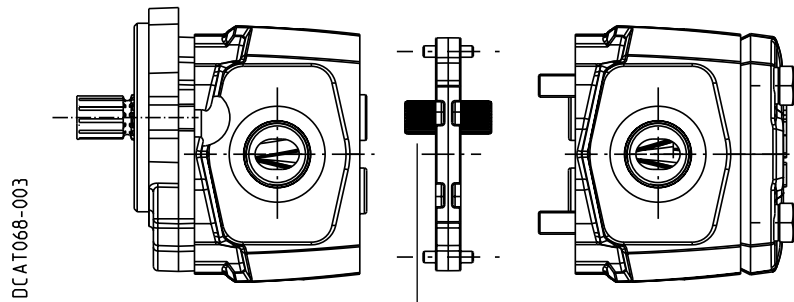
Reduced inlets provide overall systems savings by reducing the cost of redundant inlet hose and fittings. Please contact us for other combinations.

MULTIPLE PUMPS COMBINATION

XHP20/20	STANDARD VERSION	S6
XHP20/20	COMMON INLET VERSION	S7

Front

Rear

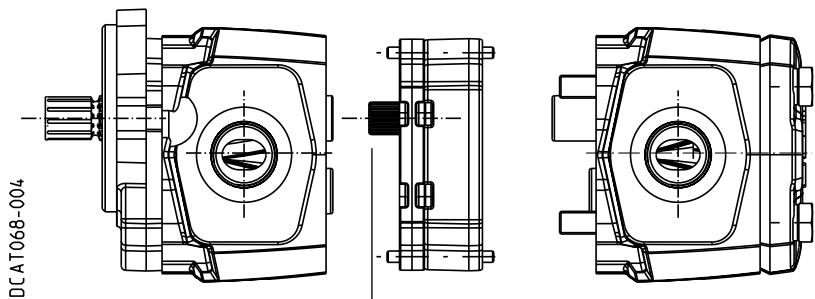


86 MAX 110 Nm (974 lbf in)

XHP20/20	SEPARATED STAGES VERSION	Z6
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Front

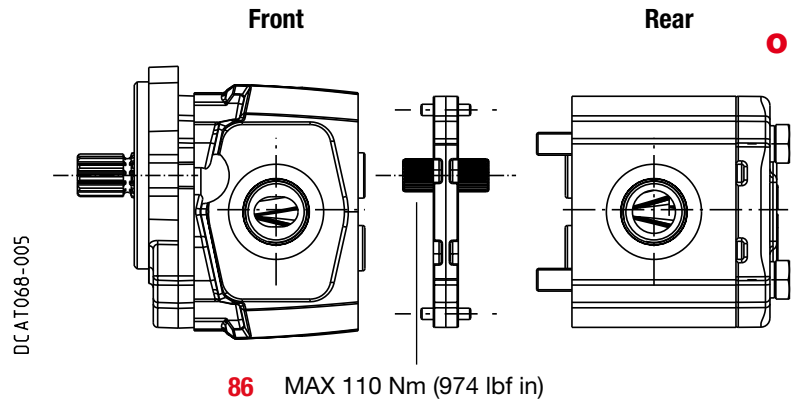
Rear



86 MAX 110 Nm (974 lbf in)

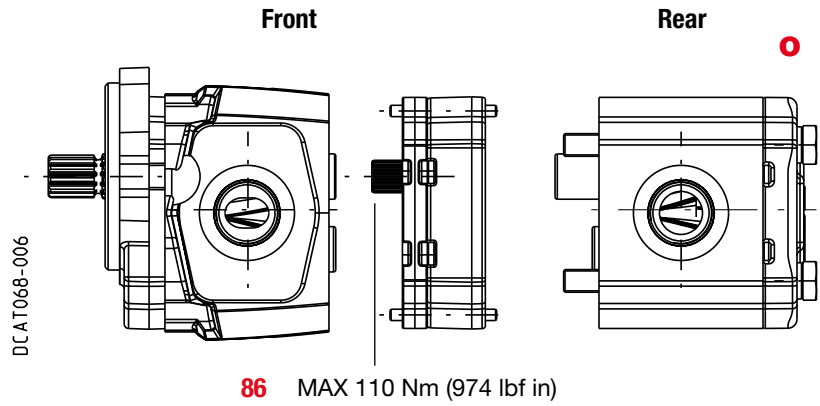
MULTIPLE PUMPS COMBINATION

XHP20/XLP20	STANDARD VERSION	S6
XHP20/XLP20	COMMON INLET VERSION	S7



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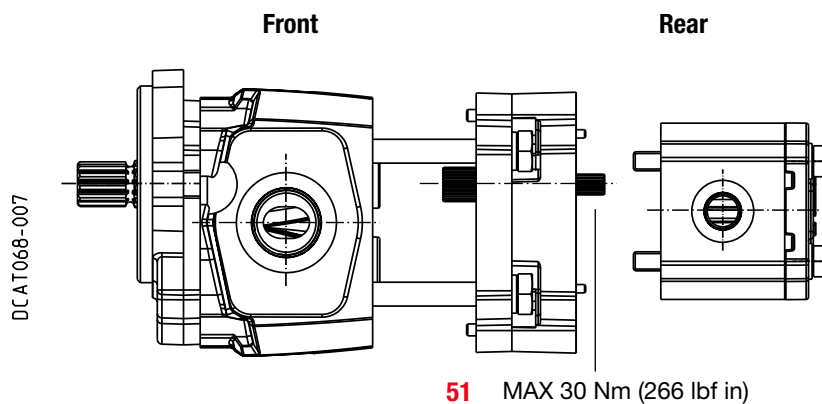
XHP20/XLP20	SEPARATED STAGES VERSION	Z6
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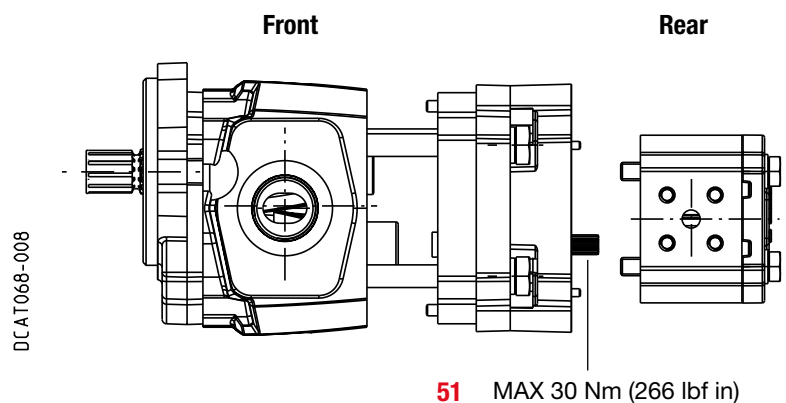
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MULTIPLE PUMPS COMBINATION

XHP20/PLP10	STANDARD VERSION	T6
XHP20/PLP10	COMMON INLET VERSION	T7



XHP20/PLP10	SEPARATED STAGES VERSION	Z6
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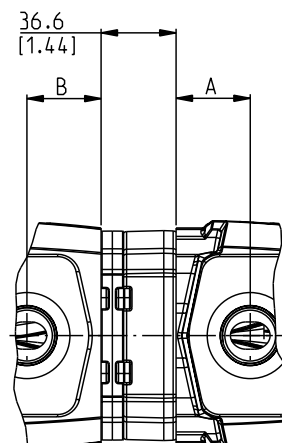
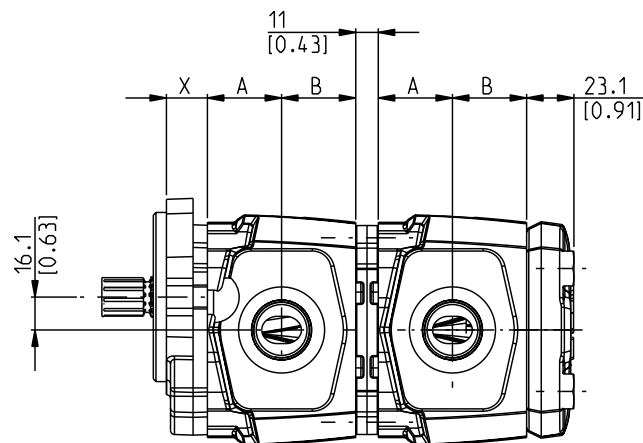
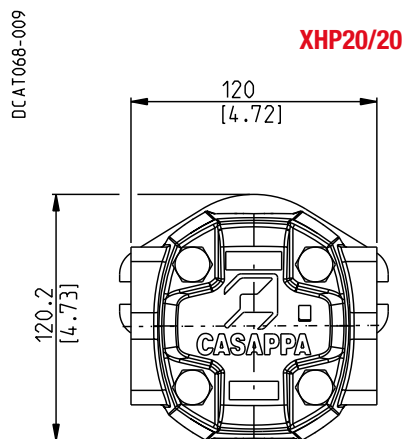
XHP20

MULTIPLE PUMPS DIMENSIONS

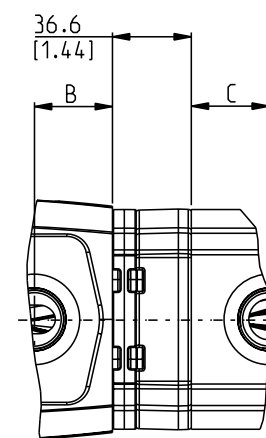
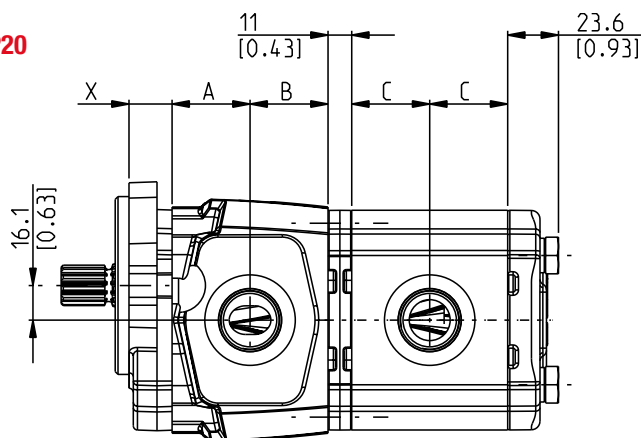
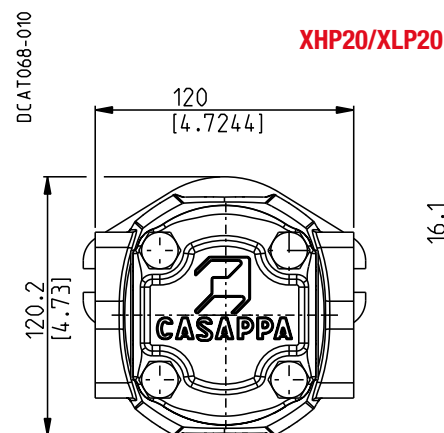
Drive shafts: page 18 ÷ 20

Mounting flange: for X dimension see
page 21 ÷ 24

Ports availability: European, Split, Gas,
SAE and German. See page 25



Separated stages



Separated stages

Mounting flange and rear cover are
available in cast iron only.

Pump type	A	B
	mm (inch)	mm (inch)
XHP20•8	30 (1.18)	22,9 (0,90)
XHP20•10	31 (1.22)	25,6 (1,01)
XHP20•12	31,3 (1.31)	27 (1,06)
XHP20•14	34 (1.34)	27 (1,06)
XHP20•16	36,6 (1.44)	27 (1,06)
XHP20•18	33,2 (1.31)	33,2 (1.31)
XHP20•20	34,6 (1.36)	34,6 (1.36)
XHP20•22	36,2 (1.43)	36,2 (1.43)
XHP20•24	37,3 (1.47)	37,3 (1.47)
XHP20•26	38,7 (1.52)	38,7 (1.52)
XHP20•28	40,1 (1.58)	40,1 (1.58)

Pump type	C
	mm (inch)
XLP 20•8	26,5 (1.04)
XLP 20•10	27,8 (1.09)
XLP 20•12	19,2 (0.75)
XLP 20•14	30,5 (1.20)
XLP 20•16	31,8 (1.25)
XLP 20•18	33,2 (1.31)
XLP 20•20	34,6 (1.36)
XLP 20•22	36,2 (1.43)
XLP 20•24	37,3 (1.47)
XLP 20•26	38,7 (1.52)
XLP 20•28	40,1 (1.58)

Replaces: 01/03.2024

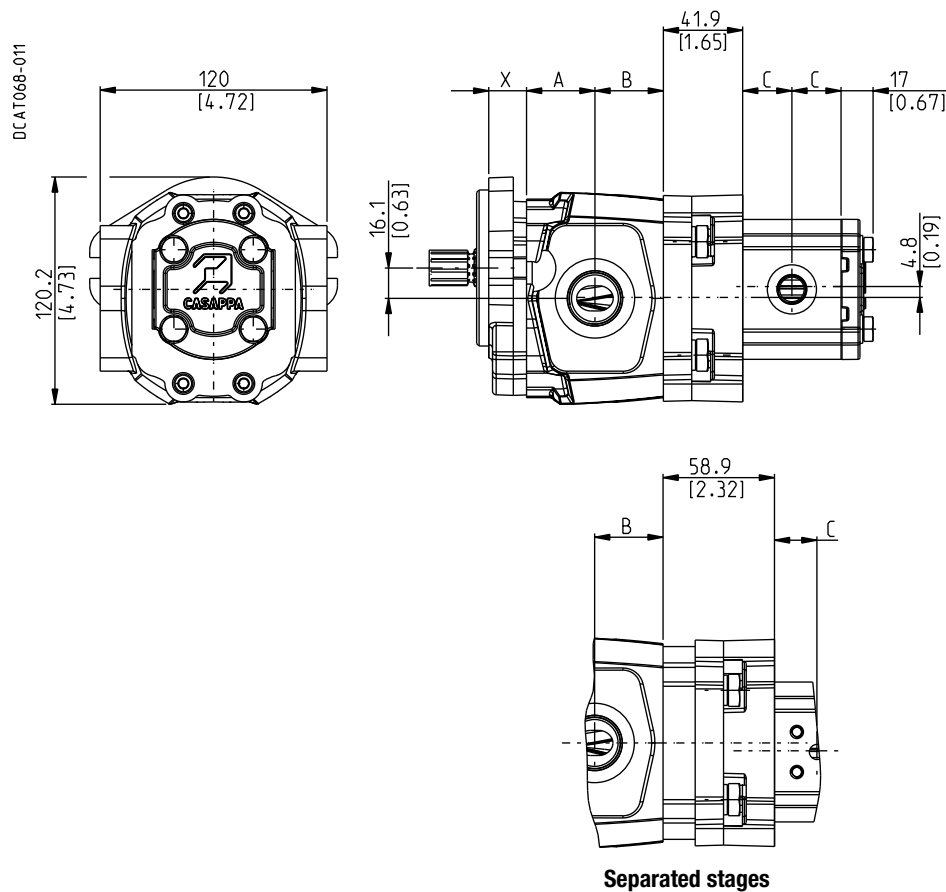
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XHP20

DOUBLE PUMPS DIMENSIONS - XHP20/PLP10

Drive shafts: page 18 ÷ 20

 Mounting flange: for X dimension see
 page 21 ÷ 24

 Ports availability: European, Split, Gas,
 SAE and German. See page 25

 Mounting flange in cast iron only.
 Rear cover in cast iron and aluminum.

Pump type	A	B
	mm (inch)	mm (inch)
XHP20•8	30 (1.18)	22,9 (0,90)
XHP20•10	31 (1.22)	25,6 (1,01)
XHP20•12	31,3 (1.23)	27 (1,06)
XHP20•14	34 (1.34)	27 (1,06)
XHP20•16	36,6 (1.44)	27 (1,06)
XHP20•18	33,2 (1.31)	33,2 (1.31)
XHP20•20	34,6 (1.36)	34,6 (1.36)
XHP20•22	36,2 (1.43)	36,2 (1.43)
XHP20•24	37,3 (1.47)	37,3 (1.47)
XHP20•26	38,7 (1.52)	38,7 (1.52)
XHP20•28	40,1 (1.58)	40,1 (1.58)

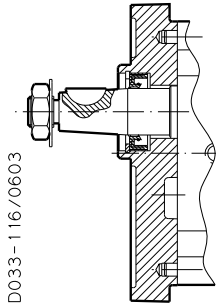
Pump type	C
	mm (inch)
PLP10•1	17,6 (0.69)
PLP10•1,5	18,4 (0.72)
PLP10•2	19,2 (0.76)
PLP10•2,5	20 (0.79)
PLP10•3,15	21 (0.83)
PLP10•4	22,4 (0.88)
PLP10•5	24 (0.94)
PLP10•5,8	25,3 (1.00)
PLP10•6,3	26 (1.02)
PLP10•8	28,7 (1.13)
PLP10•10	32 (1.26)

02/08.2026

OUTBOARD BEARING OPTIONS

VERSION

0



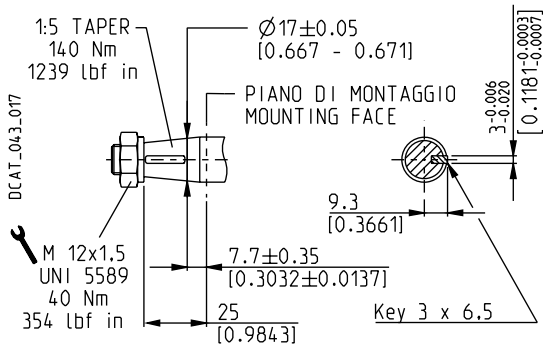
Version for applications with-
out radial and axial load on
the drive shaft.

DRIVE SHAFTS

GERMAN TAPERED 1:5

54

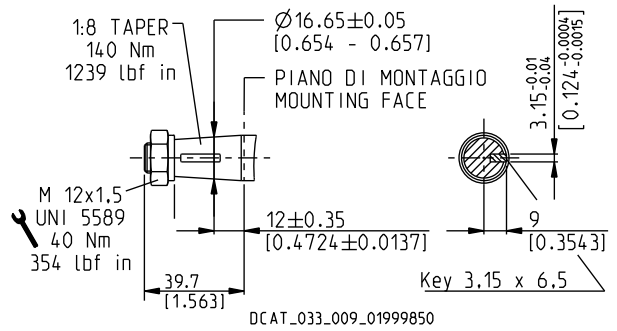
Mounting face refer to flange code **B2**



EUROPEAN TAPERED 1:8

82

Mounting face refer to flange code **E2**



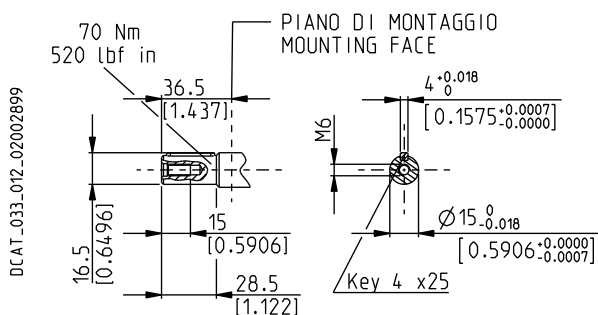
01/03.2024

DRIVE SHAFTS

STRAIGHT

46

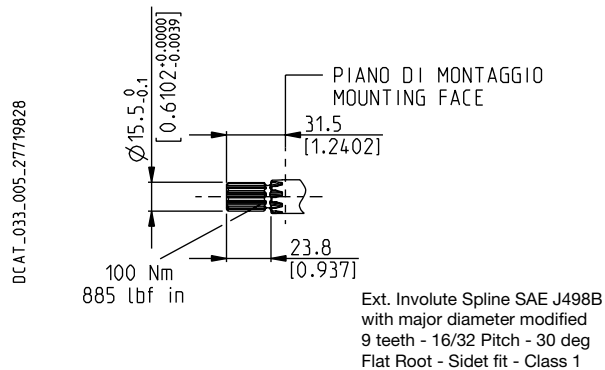
Mounting face refer to flange code **E2**



SAE "A" SPLINE

03

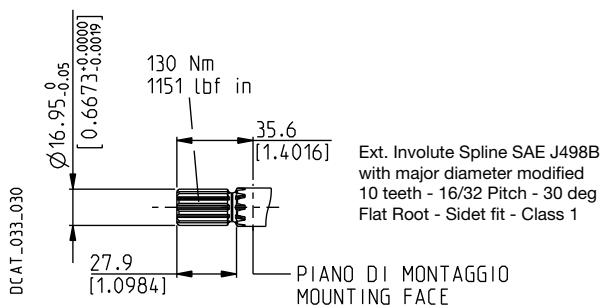
Mounting face refer to flange code **S9**



SPLINE

01

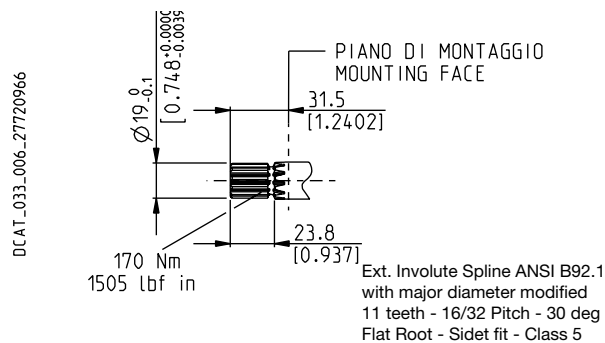
Mounting face refer to flange code **S9**



SAE SPLINE

07

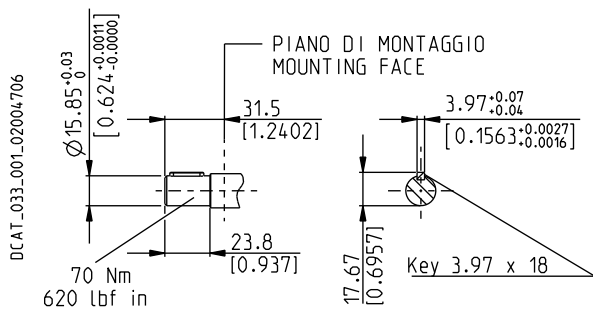
Mounting face refer to flange code **S9**



SAE "A" STRAIGHT

31

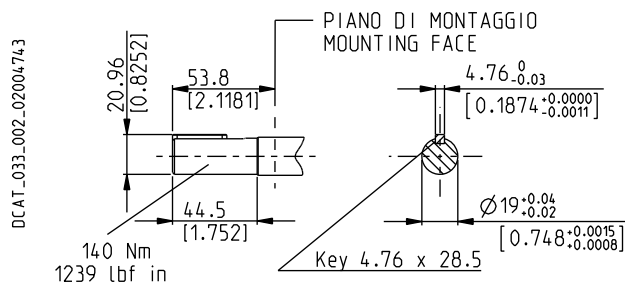
Mounting face refer to flange code **S9**



STRAIGHT

49

Mounting face refer to flange code **S9**



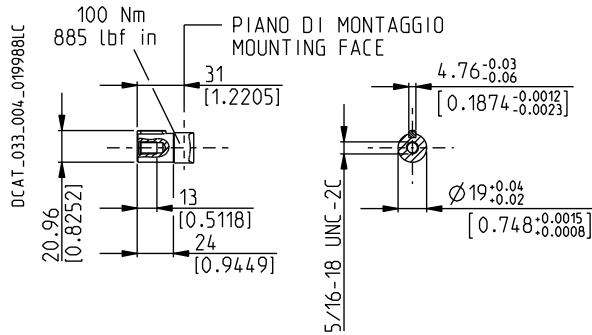
01/03.2024

DRIVE SHAFTS

STRAIGHT

50

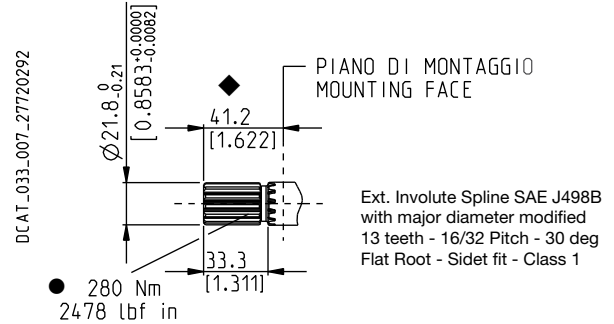
Mounting face refer to flange code **S9**



SAE "B" SPLINE

04

Mounting face refer to flange code **S5**



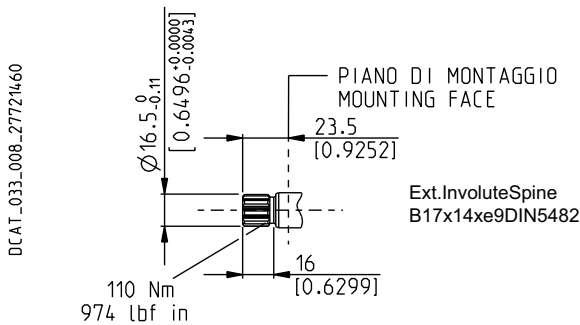
◆ 43,5 (1.713) for 20•8 - 20•10 - 20•12 - 20•14

● 110 Nm (974 lbf in) for 20•8 - 20•10 - 20•12 - 20•14

DIN 5482 SPLINE

12

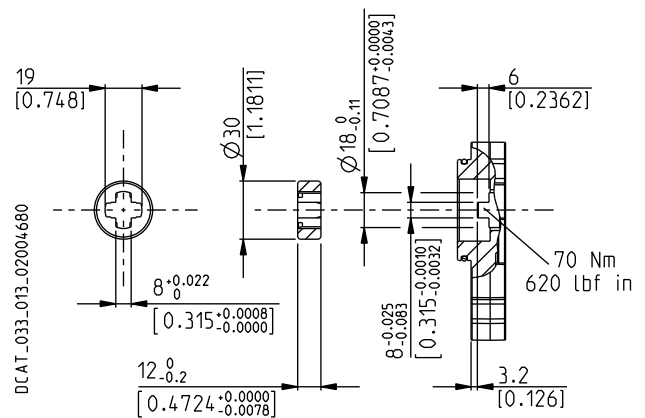
Mounting face refer to flange code **B2**



TANG

95

Mounting face refer to flange code **B6**



Replaces: 01/03.2024

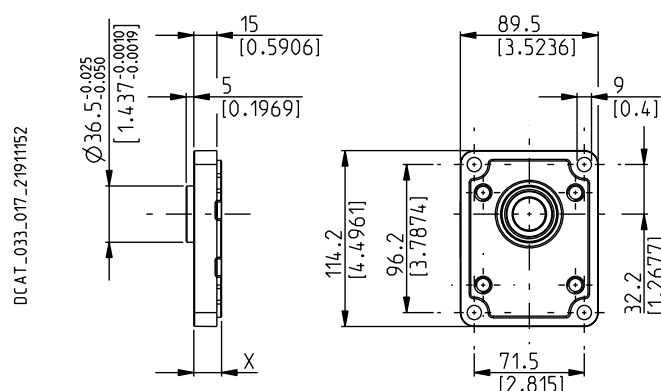
02/08.2026

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

EUROPEAN

E2

Material: cast iron



DRIVE SHAFTS

See page 18 ÷ 20

VERSIONS See page 18	X mm (in)	82	46	03	07	12	31	48	49	50	54
0	18 (0.71)	■	■	●	●	●	●	●	●	●	●

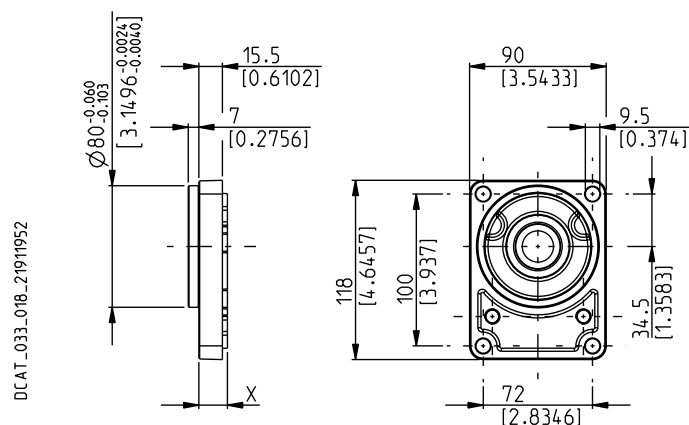
■ Standard combination

● Available combination

GERMAN

B2

Material: cast iron



DRIVE SHAFTS

See page 18 ÷ 20

VERSIONS See page 18	X mm (in)	12	54	01	03	31	46	49	82
0	18,8 (0.74)	■	■	●	●	●	●	●	●

■ Standard combination

● Available combination

01/03.2024

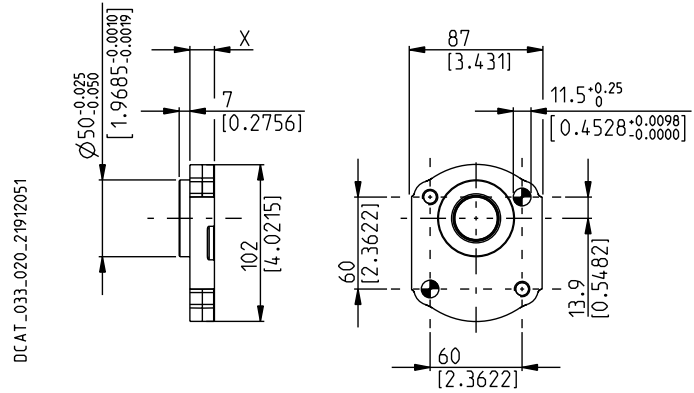
MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 2 BOLTS

B4

Material: cast iron

⊕ Through hole



DRIVE SHAFTS

See page 18 ÷ 20

VERSIONS See page 18	X mm (in)	54	03	12	31	49	82
0	16 (0.63)	■	●	●	●	●	●

■ Standard combination

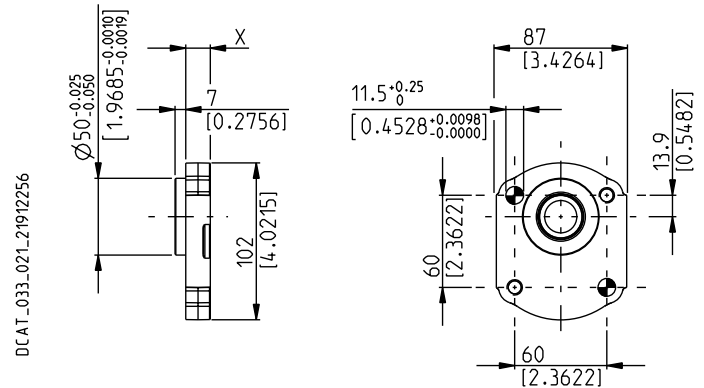
● Available combination

GERMAN 2 BOLTS

B5

Material: cast iron

⊕ Through hole



DRIVE SHAFTS

See page 18 ÷ 20

VERSIONS See page 18	X mm (in)	54	03	12	31	49	82
0	16 (0.63)	■	●	●	●	●	●

■ Standard combination

● Available combination

01/03.2024

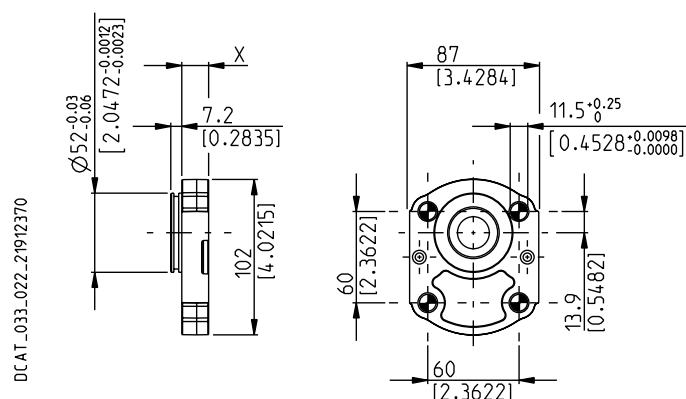
MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 4 BOLTS

B6

Material: cast iron

● Through hole



DRIVE SHAFTS

See page 19 ÷ 20

VERSIONS See page 18	X mm (in)	95	07	12
0	17,7 (0.70)	■	●	●

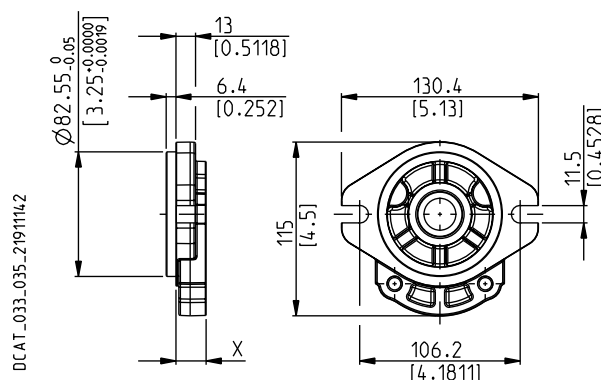
■ Standard combination

● Available combination

SAE "A" 2 BOLTS

S9

Material: cast iron



DRIVE SHAFTS

See page 18 ÷ 20

VERSIONS See page 18	X mm (in)	01	03	07	12	31	46	49	50	54	82
0	20 (0.79)	■	■	■	●	■	●	■	●	●	●

■ Standard combination

● Available combination

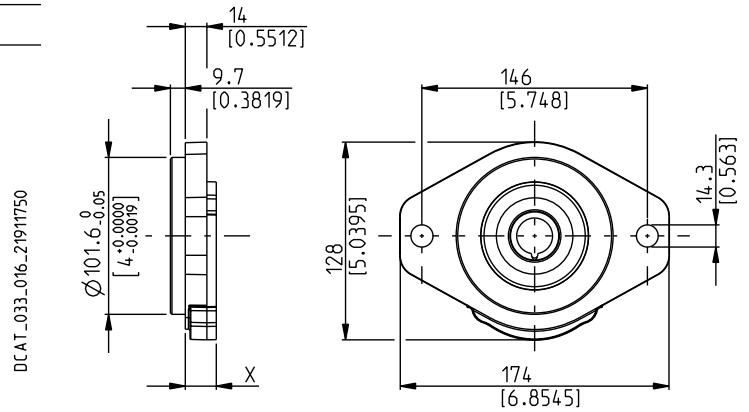
01/03.2024

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "B" 2 BOLTS

S5

Material: cast iron



Replaces: 01/03.2024

DRIVE SHAFTS See page 19 ÷ 20

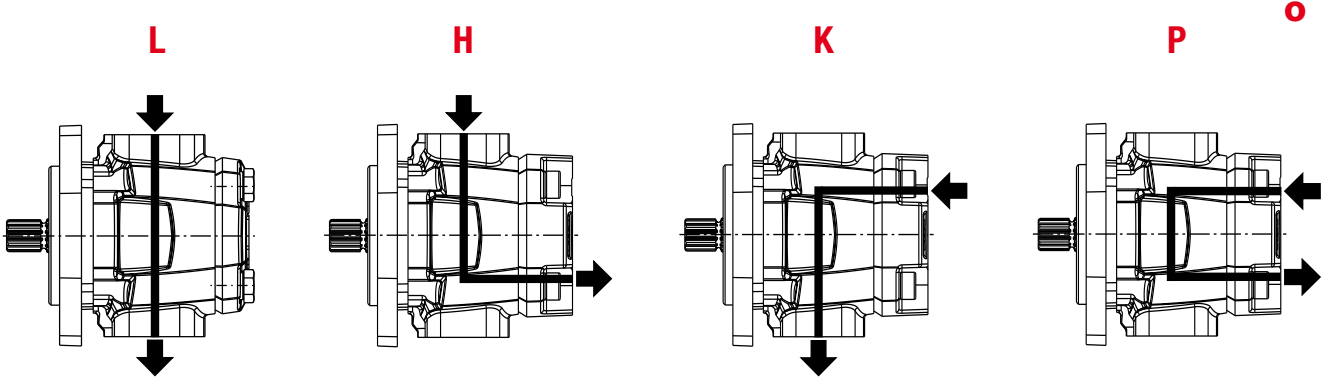
VERSIONS See page 18	X mm (in)		
0	20 (0.79)	●	●

- Standard combination
- Available combination

02/08.2026

PORTS POSITION AND TYPE

Replaces: 01/03.2024



PORTS TYPE	SIDE PORTS												REAR PORTS			
	European		Split SSM		Split SSS		Gas BSPP		SAE ODT		German		Gas BSPP		SAE ODT	
Pump type	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
XHP20•8	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	BE	BC	GD	GD	OC	OC
XHP20•10	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	BE	BC	GD	GD	OC	OC
XHP20•12	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	BE	BC	GD	GD	OC	OC
XHP20•14	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	BE	BC	GE	GD	OD	OC
XHP20•16	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	BE	BC	GE	GD	OD	OC
XHP20•18	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	BE	BC	GE	GD	OD	OC
XHP20•20	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	BE	BC	GE	GD	OD	OC
XHP20•22	EB	EA	MC	MB	SC	SB	GF	GD	OF	OC	BE	BC	GE	GD	OD	OC
XHP20•24	EB	EA	MC	MB	SC	SB	GF	GD	OF	OC	BE	BC	GE	GD	OD	OC
XHP20•26	EB	EA	MC	MB	SC	SB	GF	GD	OF	OC	BE	BC	GE	GD	OD	OC
XHP20•28	EB	EA	MC	MB	SC	SB	GF	GD	OF	OC	BE	BC	GE	GD	OD	OC

Different inlet and outlet ports are available.
Please contact us for more information.

02/08.2026

PORT SIZES



Tightening torque for low pressure side port.



Tightening torque for high pressure side port.

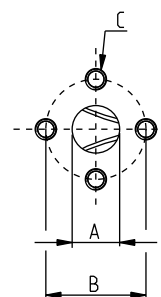
EUROPEAN FLANGED PORTS - 4 Bolts

EUROPEAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
EA	13 (0.51)	30 (1.18)	M 6 13 (0.51)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
EB	19 (0.75)	40 (1.57)	M 8 14 (0.55)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)

DCAT_006_024_21060533



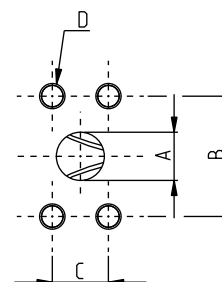
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSM

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C	D		
	mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
MA	12,5 (0.49)	38,1 (1.50)	17,5 (0.69)	M 8 14 (0.55)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
MB	19 (0.75)	47,6 (1.87)	22,2 (0.87)	M 10 14 (0.55)	20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (266 ÷ 288)
MC	25,4 (1.00)	52,4 (2.06)	26,2 (1.03)	M 10 14 (0.55)	20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (266 ÷ 288)

DCAT_006_025_21064252



01/03.2024

PORT SIZES



Tightening torque for low pressure side port.



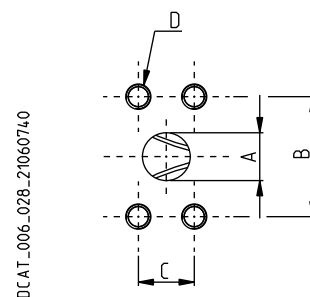
Tightening torque for high pressure side port.

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSS

American straight thread UNC-UNF 60° conforms to ANSI B 1.1

CODE	A	B	C	D		
	mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
SA	12,5 (0.49)	38,1 (1.50)	17,5 (0.69)	5/16-18 UNC-2B 14 (0.55)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)
SB	19 (0.75)	47,6 (1.87)	22,2 (0.87)	3/8 - 16 UNC-2B 14 (0.55)	20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (266 ÷ 288)
SC	25,4 (1.00)	52,4 (2.06)	26,2 (1.03)	3/8 - 16 UNC-2B 14 (0.55)	20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (266 ÷ 288)

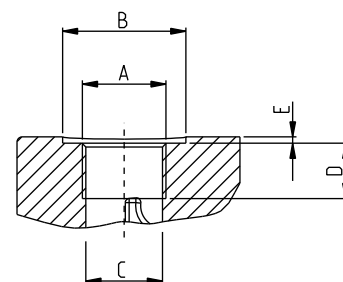


DCAT_006_028_21060740

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)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
GD	1/2"	G 1/2	—	19 (0.75)	17 (0.67)	—	20 ⁺¹ (177 ÷ 186)	50 ^{+2,5} (443 ÷ 465)
GE	3/4"	G 3/4	—	24,5 (0.96)	18 (0.71)	—	30 ^{+2,5} (266 ÷ 288)	90 ⁺⁵ (797 ÷ 841)
GF	1"	G 1	—	30,5 (1.20)	18 (0.71)	—	50 ^{+2,5} (443 ÷ 465)	130 ⁺¹⁰ (1151 ÷ 1239)

01/03.2024

PORT SIZES



Tightening torque for low pressure side port.



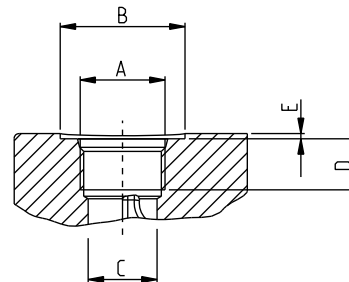
Tightening torque for high pressure side port.

SAE STRAIGHT THREAD PORTS J514

ODT

American straight thread UNC-UNF 60° conforms to ANSI B 1.1

DCAT_006_027_21060524



CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
OC	5/8"	7/8" - 14 UNF - 2B	35 (1.38)	20,5 (0.81)	17 (0.67)	0,5 (0.02)	30 ^{+2,5} (266 ÷ 288)	70 ⁺⁵ (620 ÷ 664)
OD	3/4"	1 1/16" - 12 UNF - 2B	42 (1.65)	24,8 (0.98)	20 (0.79)	0,5 (0.02)	40 ^{+2,5} (354 ÷ 376)	120 ⁺¹⁰ (1062 ÷ 1151)
OF	1"	1 5/16" - 12 UNF - 2B	49 (1.93)	30,5 (1.20)	20 (0.79)	0,5 (0.02)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)

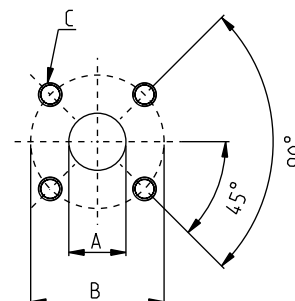
GERMAN FLANGED PORTS - 4 Bolts

GERMAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
BC	15 (0.60)	35 (1.38)	M 6 12 (0.47)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BE	20 (0.79)	40 (1.57)	M 6, 12 (0.47)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)

DCAT_033_028_17681888



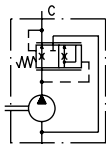
01/03.2024

VALVE OPTIONS

PRIORITY VALVE

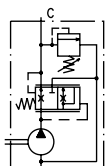
P1

Costant delivery and internal recirculation of excess flow.



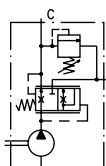
P2

Costant delivery at controlled pressure. Internal recirculation of excess flow and drain valve.



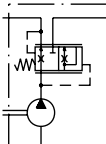
P3

Costant delivery at controlled pressure. Excess flow and drain valve must be connected to tank.



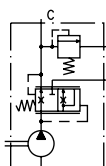
P4

Costant delivery and excess flow can both be used under load.



P5T

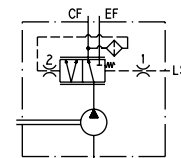
Costant delivery at controlled pressure with drain valve connected to tank. Excess flow can be used under load.



LOAD SENSING VALVE

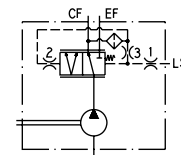
...

Static.



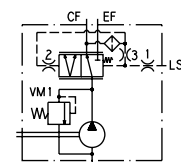
...

Dynamic.



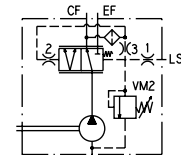
...

Dynamic with relief valve fitted on the main line.



...

Dynamic with relief valve fitted on controlled line.



For more information please refer to our built-in valves technical catalogues.

HOW TO ORDER - SINGLE PUMPS

1	2	3	4	5	6	7	8	9	10					
XHP20•8	S	0	-	82	E2	-	L	EB/EA	-	N	-	D	-	FS

1	Type	Pump type
8,06 cm³/rev (0.49 in³/rev)		XHP20•8
10,05 cm³/rev (0.61 in³/rev)		XHP20•10
12,09 cm³/rev (0.74 in³/rev)		XHP20•12
14,02 cm³/rev (0.86 in³/rev)		XHP20•14
16,03 cm³/rev (0.98 in³/rev)		XHP20•16
18,05 cm³/rev (1.10 in³/rev)		XHP20•18
20,00 cm³/rev (1.22 in³/rev)		XHP20•20
22,46 cm³/rev (1.37 in³/rev)		XHP20•22
24,01 cm³/rev (1.46 in³/rev)		XHP20•24
26,03 cm³/rev (1.59 in³/rev)		XHP20•26
28,01 cm³/rev (1.71 in³/rev)		XHP20•28

2	Rotation	Code
Left		S
Right		D

3	Outboard bearing options	Code
Without outboard bearing		0

4	Drive shaft	Code
European tapered 1:8		82
German tapered 1:5		54
Straight		46
SAE "A" spline (9 teeth)		03
SAE spline (10 teeth)		01
SAE "A" spline (11 teeth)		07
SAE "A" straight		31
SAE "B" spline		04 
Straight		49
Straight		50
DIN 54 82 spline		12
Tang		95

5	Mounting flange	Code
European		E2
German		B2
German 2 bolt		B4
German 2 bolt		B5
German 4 bolt		B6
SAE "A" 2 bolt		S9
SAE "B" 2 bolt		S5

Code	 Ports position	6
L	IN/OUT side	
H	IN side / OUT rear	
K	IN rear / OUT side	
P	IN/OUT Rear	

Code	Ports IN/OUT	7
GERMAN FLANGED PORTS		
Side	Rear	Type
BE/BC	XHP 20	8-10-12-14-16-18-20-22-24- 26-28

EUROPEAN FLANGED PORTS		
Side	Rear	Type
EA/EA	XHP 20	8-10-12
EB/EA	XHP 20	14-16-18-20-22-24-26-28

SAE FLANGED PORTS (SSM)		
Side	Rear	Type
MA/MA	XHP 20	8-10-12
MB/MA	XHP 20	14-16-18-20
MC/MB	XHP 20	22-24-26-28

SAE FLANGED PORTS (SSS)		
Side	Rear	Type
SA/SA	XHP 20	8-10-12
SB/SA	XHP 20	14-16-18-20
SC/SB	XHP 20	22-24-26-28

GAS STRAIGHT THREAD PORTS (BSPP)			
Side	Rear		Type
GD/GD	GD/GD	XHP 20	8-10-12
GE/GD	GE/GD	XHP 20	14-16-18-20
GF/GD	GE/GD	XHP 20	22-24-26-28

SAE STRAIGHT THREAD PORTS (ODT)			
Side	Rear		Type
OC/OC	OC/OC	XHP 20	8-10-12
OD/OC	OD/OC	XHP 20	14-16-18-20
OF/OC	OD/OC	XHP 20	22-24-26-28

Replaces: 01/03.2024

 02/08.2026

HOW TO ORDER - SINGLE PUMPS

8	Seals (a)	Code
	Buna (standard)	N
	Viton	V
	Hydrogenated buna HNBR seals with Viton-FKM shaft seals	T-PV

9	Shaft seal options	Code
	Standard shaft seal with wiper seal	D
	High pressure special shaft seal with wiper seal	C1

10	Shaft arrangement	Code
	Female spline	FS

- (a) Choose the seals according to the temperature shown on page 7

HOW TO ORDER - XHP 20 DOUBLE PUMPS

1	2	3	4	5	6	7	8	9	10	11				
XHP20•22	-	82	E2	-	L	EB/EA	/							
Front section														
20•18	-		L	**/EA	-	S7	-	S	/	FS	-	N	-	C1
Rear section														

1	Type	Pump type
8,06 cm³/rev (0.49 in³/rev)		XHP20•8
10,05 cm³/rev (0.61 in³/rev)		XHP20•10
12,09 cm³/rev (0.74 in³/rev)		XHP20•12
14,02 cm³/rev (0.86 in³/rev)		XHP20•14
16,03 cm³/rev (0.98 in³/rev)		XHP20•16
18,05 cm³/rev (1.10 in³/rev)		XHP20•18
20,00 cm³/rev (1.22 in³/rev)		XHP20•20
22,46 cm³/rev (1.37 in³/rev)		XHP20•22
24,01 cm³/rev (1.46 in³/rev)		XHP20•24
26,03 cm³/rev (1.59 in³/rev)		XHP20•26
28,01 cm³/rev (1.71 in³/rev)		XHP20•28

2	Drive shaft	Code
European tapered 1:8		82
German tapered 1:5		54
Straight		46
SAE "A" spline (9 teeth)		03
SAE spline (10 teeth)		01
SAE "A" spline (11 teeth)		07
SAE "A" straight		31
SAE "B" spline		04
Straight		49
Straight		50
DIN 54 82 spline		12
Tang		95

3	Mounting flange	Code
European		E2
German		B2
German 2 bolt		B4
German 2 bolt		B5
German 4 bolt		B6
SAE "A" 2 bolt		S9
SAE "B" 2 bolt		S5

Code	Ports position	4
L	IN/OUT side	

Code	Ports IN/OUT	5
GERMAN FLANGED PORTS		

Side	Type
BE/BC	XHP 20 8-10-12-14-16-18-20-22-24- 26-28

EUROPEAN FLANGED PORTS		
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Side	Type
EA/EA	XHP 20 8-10-12
EB/EA	XHP 20 14-16-18-20-22-24-26-28

SAE FLANGED PORTS (SSM)		
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Side	Type
MA/MA	XHP 20 8-10-12
MB/MA	XHP 20 14-16-18-20
MC/MB	XHP 20 22-24-26-28

SAE FLANGED PORTS (SSS)		
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Side	Type
SA/SA	XHP 20 8-10-12
SB/SA	XHP 20 14-16-18-20
SC/SB	XHP 20 22-24-26-28

GAS STRAIGHT THREAD PORTS (BSPP)		
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Side	Type
GD/GD	XHP 20 8-10-12
GE/GD	XHP 20 14-16-18-20
GF/GD	XHP 20 22-24-26-28

SAE STRAIGHT THREAD PORTS (ODT)		
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Side	Type
OC/OC	XHP 20 8-10-12
OD/OC	XHP 20 14-16-18-20
OF/OC	XHP 20 22-24-26-28

01/03.2024

HOW TO ORDER - XHP 20 DOUBLE PUMPS

6	Combination type	Code
	Standard	S6
	Common inlet	S7
	Separate stages	Z6

7	Rotation	Code
	Left	S
	Right	D

8	Outboard bearing options	Code
	Without outboard bearing (standard) no code	...

Code	Shaft arrangement	9
FS	Female spline	

Code	Seals (a)	10
N	Buna (standard)	
V	Viton	
T-PV	Hydrogenated buna HNBR seals with Viton-FKM shaft seals	

Code	Shaft seal options	11
D	Standard shaft seal with wiper seal	
C1	High pressure special shaft seal with wiper seal	

(a) Choose the seals according to the temperature shown on page 7

HOW TO ORDER - XHP 20 DOUBLE PUMPS DIFFERENT GROUPS

XHP20/XLP20

1	2	3	4	5	6	7	8	9	10	11
XHP20•22	-	82	E2	-	L	EB/EA	/			

Front section

XLP20•18	-		L	EB/EA	-	S	/	FS	-	N	-	C1
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Rear section

XHP20/PLP10

1	2	3	4	5	6	7	8	9	10	11
XHP20•22	-	82	E2	-	L	EB/EA	/			

Front section

PLP10•1	-		L	BB/BA	-	S	/	FS	-	N	-	C1
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Rear section

Replaces: 01/03.2024

1	Type (a)	Code
	The same of double pumps XHP 20/20	XHP...

2	Drive shaft	Code
	The same of double pumps XHP 20/20	...

3	Mounting flange	Code
	The same of double pumps XHP 20/20	...

4	Ports position	Code
	Side	L

5	Ports IN/OUT	Code
	The same of double pumps XHP 20/20	../..

6	Combination type	Code
	XHP 20/XLP 20 Standard - No code	S6
	XHP 20/XLP 20 Common inlet	S7
	XHP 20/XLP 20 Separate stages	Z6
	XHP 20/PLP 10 Standard - No code	T6
	XHP 20/PLP 10 Common inlet	T7
	XHP 20/PLP 10 Separate stages	Z6

7	Rotation	Code
	The same of double pumps XHP 20/20	...

Code	Outboard bearing options	8
...	The same of double pumps XHP 20/20	

Code	Shaft arrangement	9
FS	Female spline	

Code	Seals (b)	10
N	Buna (standard)	
V	Viton	
T-PV	Hydrogenated buna HNBR seals with Viton-FKM shaft seals	

Code	Shaft seal options	11
...	The same of double pumps XHP 20/20	

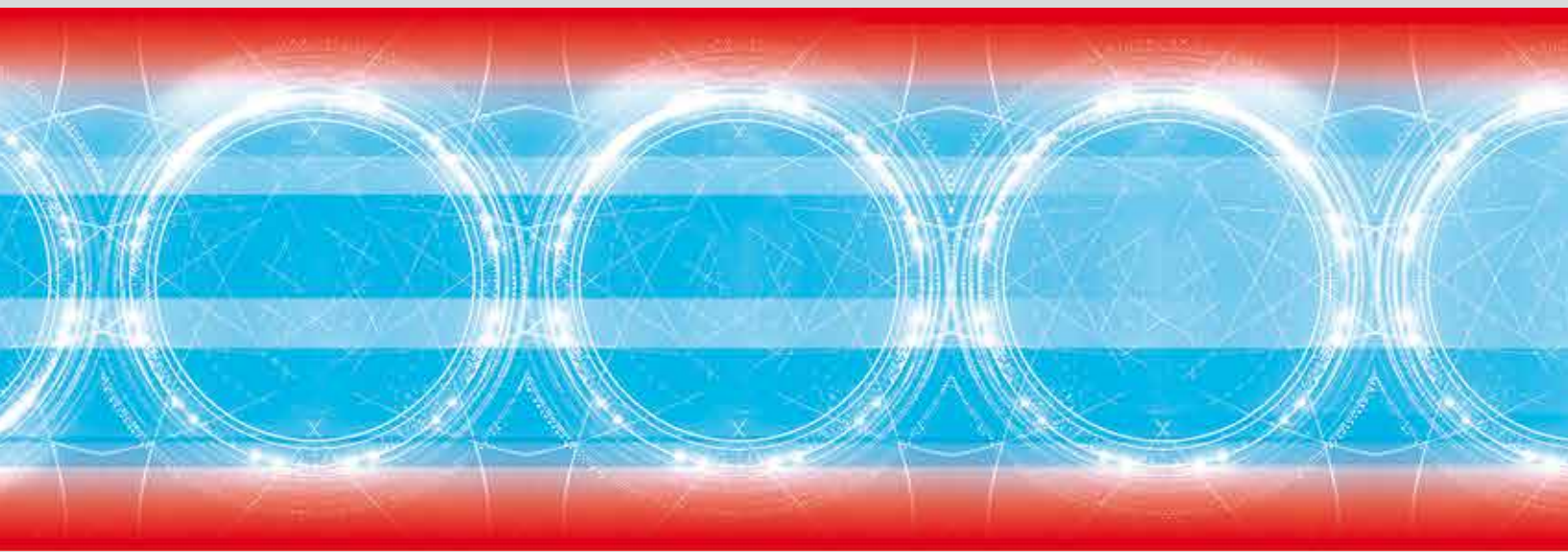
- (a) For XLP20 and PLP10 series general data please consult the proper technical catalogue.
- (b) Not available for PLP10
Please contact us for more information.

02/08.2026

XHP20 02 T A

Edition: 02/08.2026

Replaces: 01/03.2024



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