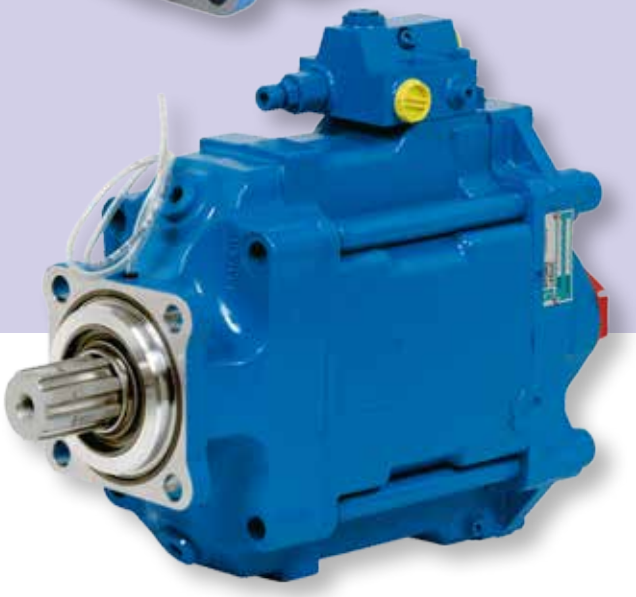
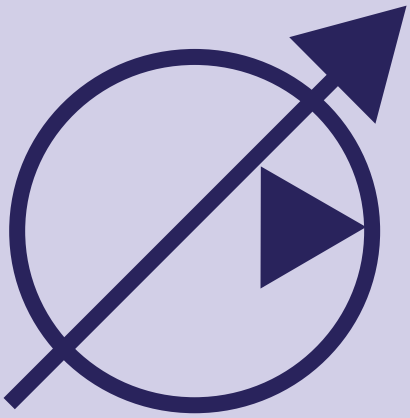
PISTON PUMPS FOR TRUCKS

FIXED DISPLACEMENT

VARIABLE DISPLACEMENT





make it simple

HYDRO LEDUC

Contents

FIXED
DISPLACEMENT
PUMPS

VARIABLE
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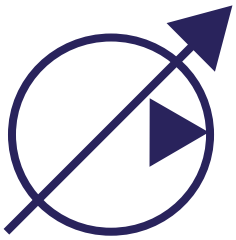
PUMPS



HYDRO LEDUC

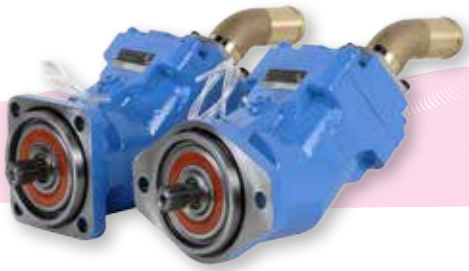
XPi

- Models from 12 to 130 cc/rev
- 380 bar continuous working pressure
- 420 bar peak pressure
- Automatic adjustment to desired direction of rotation
- For use on DIN-mount PTO

XPi series

XAi - SAE

- Models from 18 to 63 cc/rev
- SAE version of XPi bent axis piston pumps
- 380 bar continuous working pressure
- 420 bar peak pressure
- Automatic adjustment to desired direction of rotation
- For use on SAE-mount PTO



XAi - SAE series

PA - PAC - PAD

- Single flow models from 25 to 114 cc/rev
- Twin flow models from 2x25 to 2x75 cc/rev
- Models with two different displacements
- 400 bar continuous working pressure
- 500 bar peak pressure
- Dual direction of rotation
- For use on DIN-mount PTO

PA - PAC - PAD Seriesseries

TXV

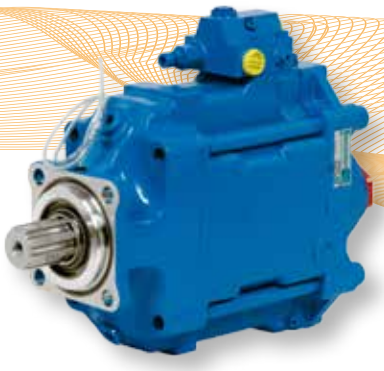
- Variable displacement pumps with Load-Sensing control
- Displacement from 40 to 150 cc/rev
- Maximum operating pressure up to 420 bar depending on model
- For use on DIN-mount PTO

TXVA - SAE

- For use on SAE-mount PTO
- Models available: 75 and 92 cc/rev

TXV indexable

- Able to rotate in either direction
- Models available: 130 and 150 cc/rev



TXV series

XPi series

the intelligent pump

fixed displacement bent axis design

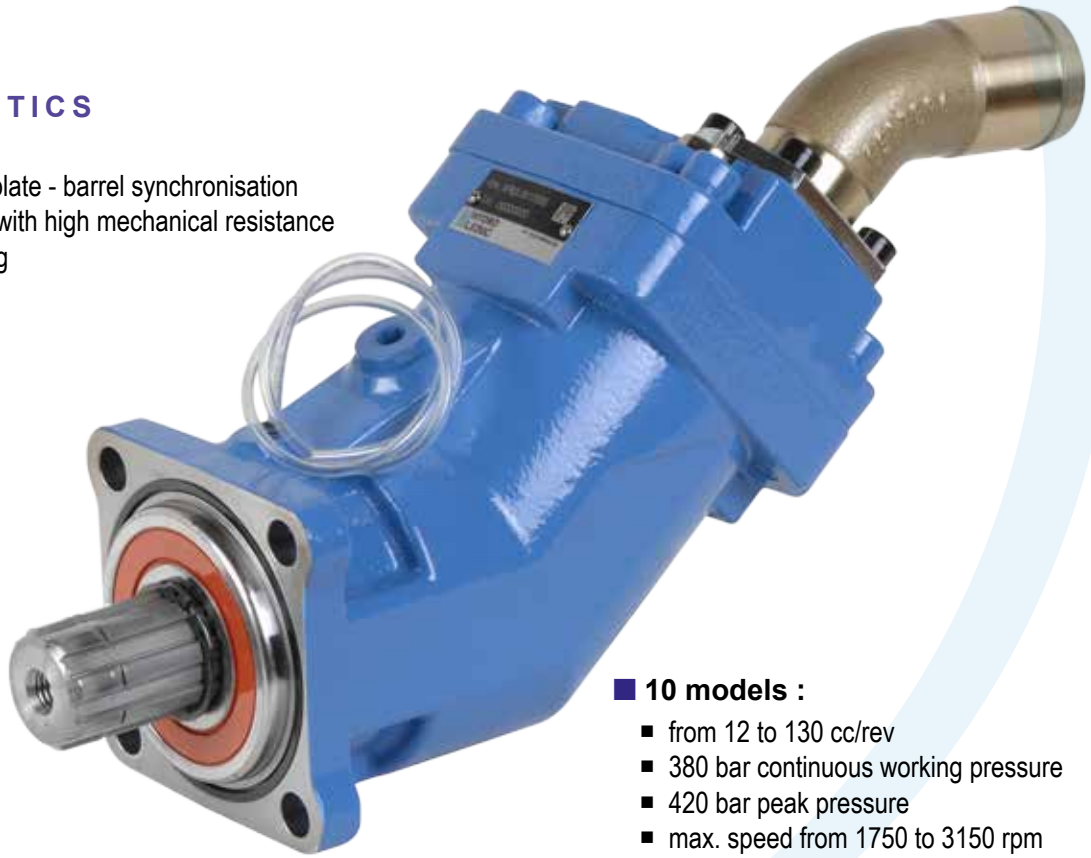
The compact size envelope of XPi pumps, together with their technology, means they can be installed in environments with little space available, and be used at relatively high rotating speeds.

ADVANTAGES

- Pump automatically sets to required direction of rotation
- Mounting and start-up, easier than ever !

CHARACTERISTICS

- 7 pistons
- original idea for plate - barrel synchronisation
- use of materials with high mechanical resistance
- reinforced sealing



10 models :

- from 12 to 130 cc/rev
- 380 bar continuous working pressure
- 420 bar peak pressure
- max. speed from 1750 to 3150 rpm

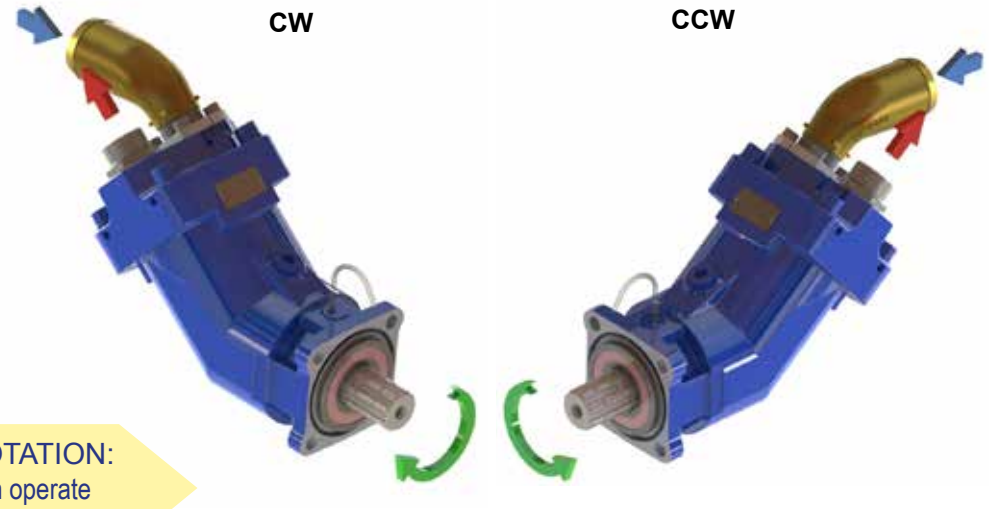
Pump reference		Displac. (cc/rev)	Maximum continuous pressure (bar)	Maximum intermittent peak pressure < 5 seconds (bar)	Maximum rotating speed at absolute pressure 1 bar with inlet line 2" (rpm)	Max. torque absorbed at 380 bar (N.m)	Weight without inlet fitting (kg)	Weight with inlet fitting (kg)	Overhang torque without inlet fitting (N.m)	Overhang torque with inlet fitting (N.m)
XPi 12	0523820	12	380	420	3150	76	9.2	9.65	8.74	9.17
XPi 18	0523810	18	380	420	2900	114	9.25	9.7	8.79	9.21
XPi 25	0523800	25	380	420	2750	159	9.3	9.75	8.84	9.26
XPi 32	0523790	32	380	420	2700	204	11.1	11.55	11.1	11.55
XPi 41	0523780	41	380	420	2550	261	11.15	11.6	11.15	11.6
XPi 50	0523770	50.3	380	420	2450	318	11.2	11.65	11.76	12.23
XPi 63	0523760	63	380	420	2300	401	11.25	11.7	11.81	12.28
XPi 80	0523640	80.4	380	420	2150	509	14.85	15.3	17.82	18.36
XPi 108	0523750	108.3	380	420	1900	687	14.95	15.4	17.94	18.48
XPi 130	0523730	129.8	380	420	1750	827	15.35	15.8	18.73	19.28

INLET

OUTPUT

CW

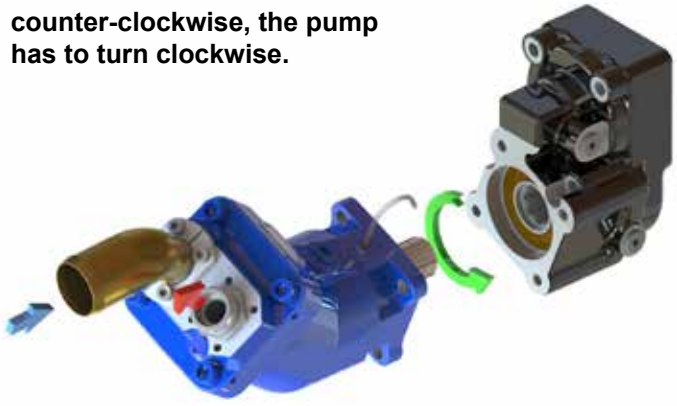
CCW



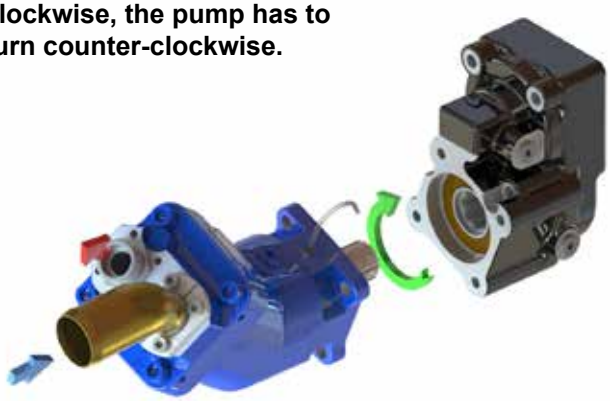
DUAL DIRECTION OF ROTATION:
this *intelligent* pump can operate
in either direction of rotation.

Fit the inlet fitting on required side, depending on the direction of rotation of the PTO, and the pump will set itself accordingly.

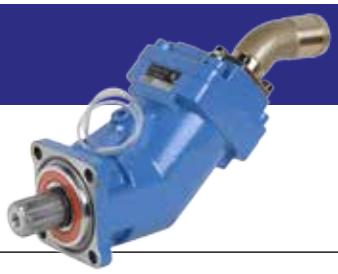
When the PTO turns counter-clockwise, the pump has to turn clockwise.

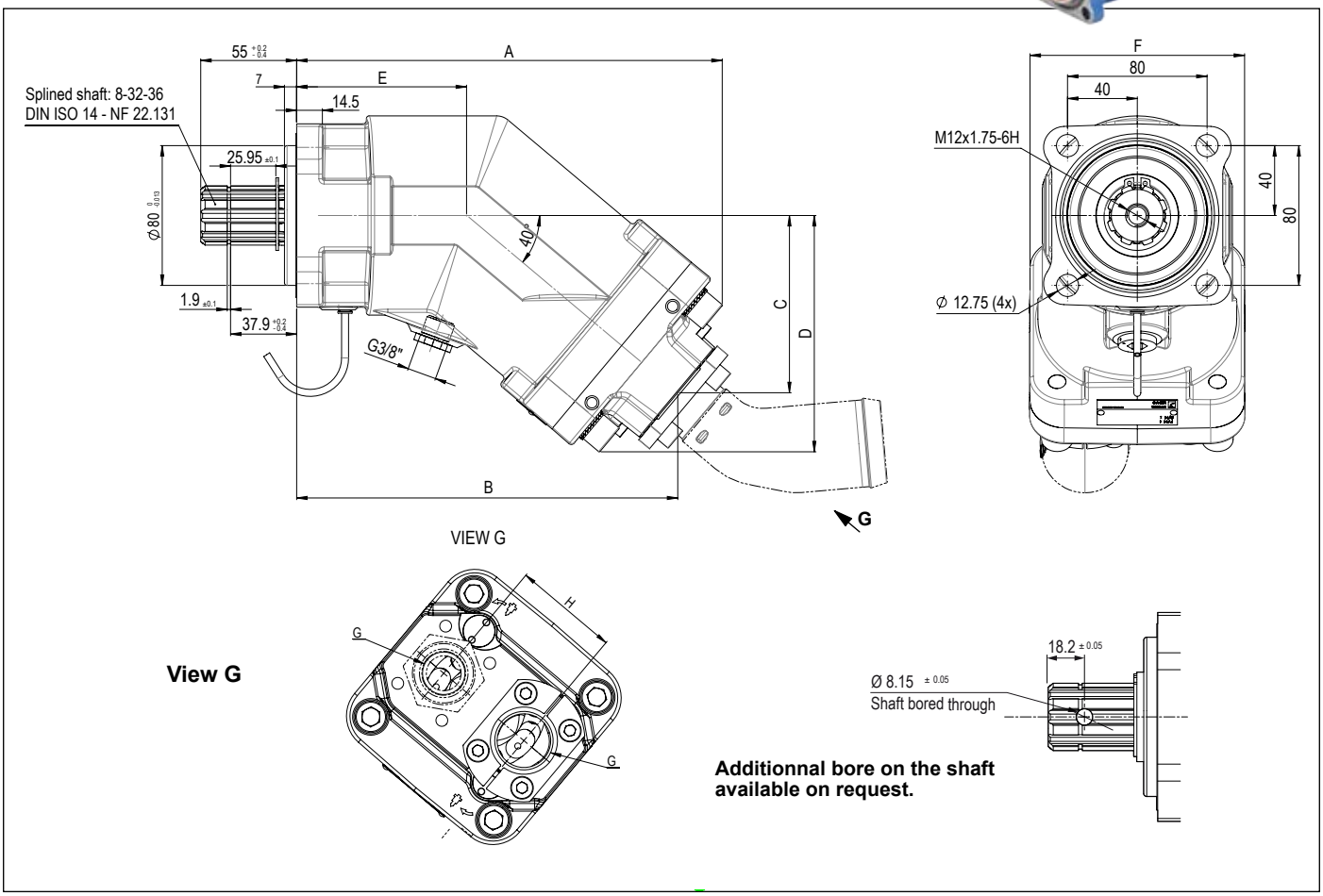


When the PTO turns clockwise, the pump has to turn counter-clockwise.



XPi - Dimensions

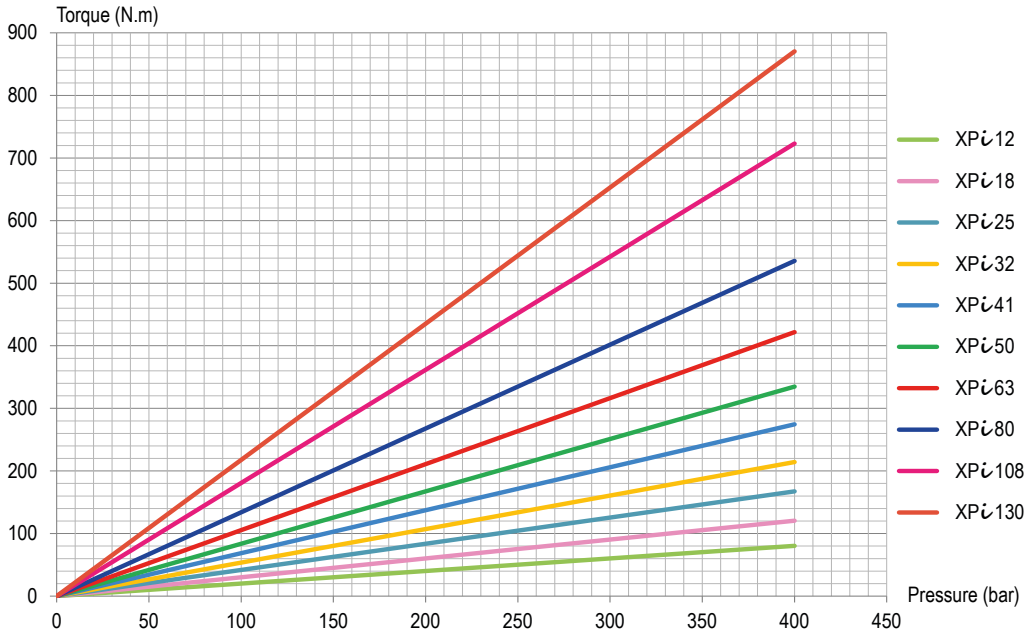




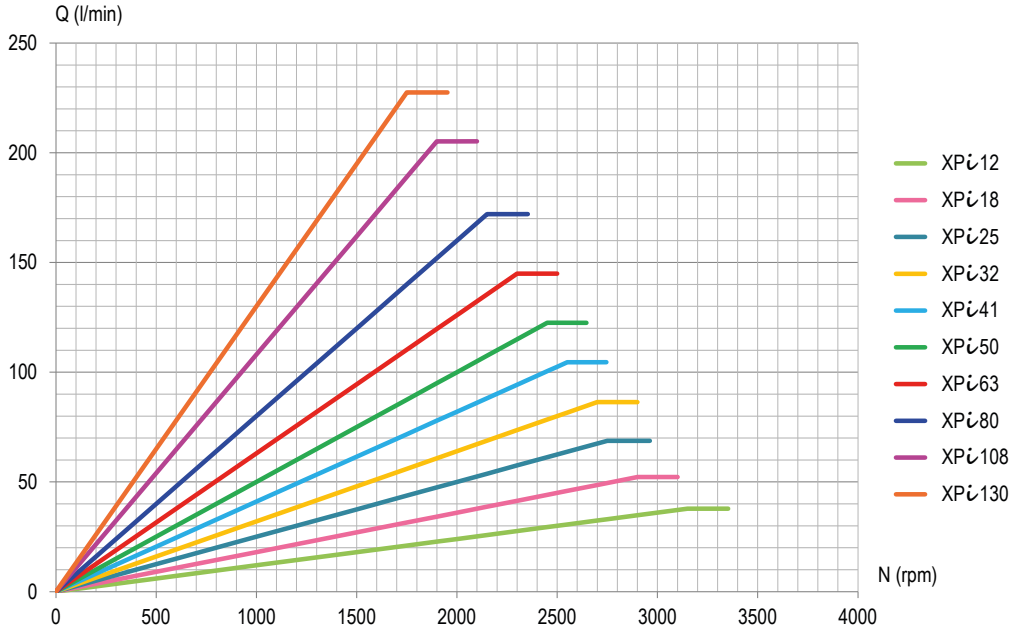
Pump reference		A	B	C	D	E	F	G	H
XPi 12	0523820	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
XPi 18	0523810	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
XPi 25	0523800	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
XPi 32	0523790	202.8	184	82.3	109.1	85.7	108	G 3/4"	54
XPi 41	0523780	202.8	184	82.3	109.1	85.7	108	G 3/4"	54
XPi 50	0523770	214.4	195.6	92	118.9	85.7	108	G 3/4"	54
XPi 63	0523760	214.4	195.6	92	118.9	85.7	108	G 3/4"	54
XPi 80	0523640	241.7	220.9	103.5	133.3	97.4	123	G 1"	60
XPi 108	0523750	241.7	222.5	104.8	133.3	97.4	123	G 1"	60
XPi 130	0523730	244	224.8	106.7	135.2	97.4	123	G 1"	60

Dimensions in mm.

► Torque absorbed as a function of pump output pressure

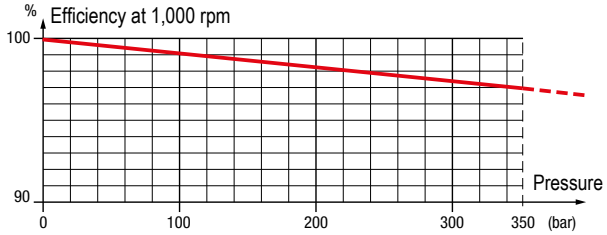


► Flow as a function of rotating speed



► Volumetric efficiency

These graphs are the results of testwork done in HL R&D laboratory, on a specific test bench, with an ISO 46 fluid at 77°F/25°C (100 cSt), the pump is fitted with a 2" inner diameter HL inlet fitting, and tank situated slightly above pump.

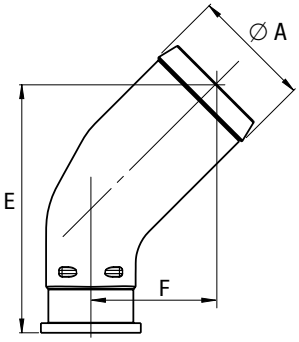


INLET FITTINGS FOR XPi PUMPS

See recommendations of the hosing dimensions on page 38.

All XPi pumps are supplied with their inlet fitting.
Please specify required fitting from the choice below when ordering.

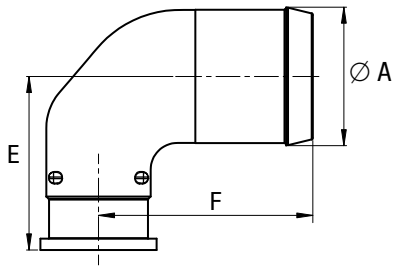
45° elbow fittings



Reference	Ø hose	Ø A	E	F
0517894	1 1/2"	39.1	91.7	46.7
0517896	42	43	91.7	46.7
0517897	1 3/4"	46	91.7	46.7
0517893	2"	51.8	108.4	54.4
0517892	2 1/2"	64.5	125.2	62.2

Dimensions in mm.

90° elbow fittings



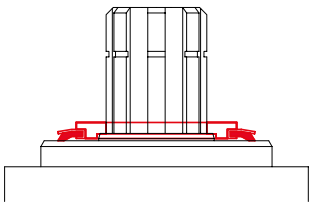
Reference	Ø hose	Ø A	E	F
0517947	1 1/2"	39.1	58.6	79.5
0517946	2"	51.8	64.9	80.2
0517945	2 1/2"	64.5	71.3	87.5

Dimensions in mm.

DEFLECTOR TO PROTECT SHAFT SEALS

This deflector ensures the protection of the pump shaft seals.
In particular, it protects the pump from projections of dirt from the road in cardan drive installations.

Reference: **DEF 054111**

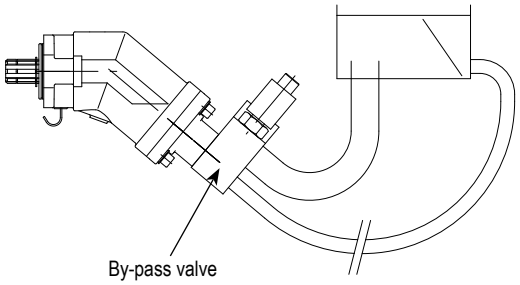


BY-PASS VALVE FOR XPi PUMPS

For XPi pump applications where the pump is driven by a continuous running PTO (PTO which cannot be disengaged), HYDRO LEDUC offers a by-pass valve which is fitted onto the back of the pump.

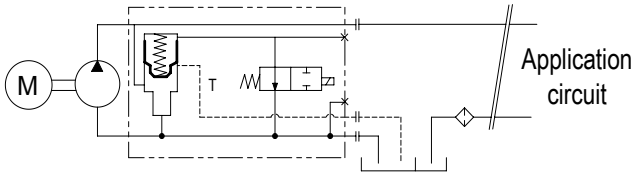
This solution allows the continuous running of the pump:

- without creating problems of fluid overheating;
- without affecting pump service life;
- with no modifications necessary to the hydraulic circuit of the equipment.



LEDUC part number	12 Volts	24 Volts
XPi 12 to XPi 63	BP63 0521180	BP63 0517931
XPi 80 to XPi 130	BP80 0522235	BP80 0522140

▶ How does it work ?



The by-pass valve is a 12 or 24 Volts solenoid valve.

When not activated, it enables pump output to link up to pump inlet.
When it is activated, the pump operates normally (output flow).

If the valve in your circuit limits the oil return to the tank to less than 5l /mn or if the distributor is “closed-center”,
a drain line has to be installed between the By-Pass valve and the tank to assure sufficient oil circulation to avoid the pump overheating.

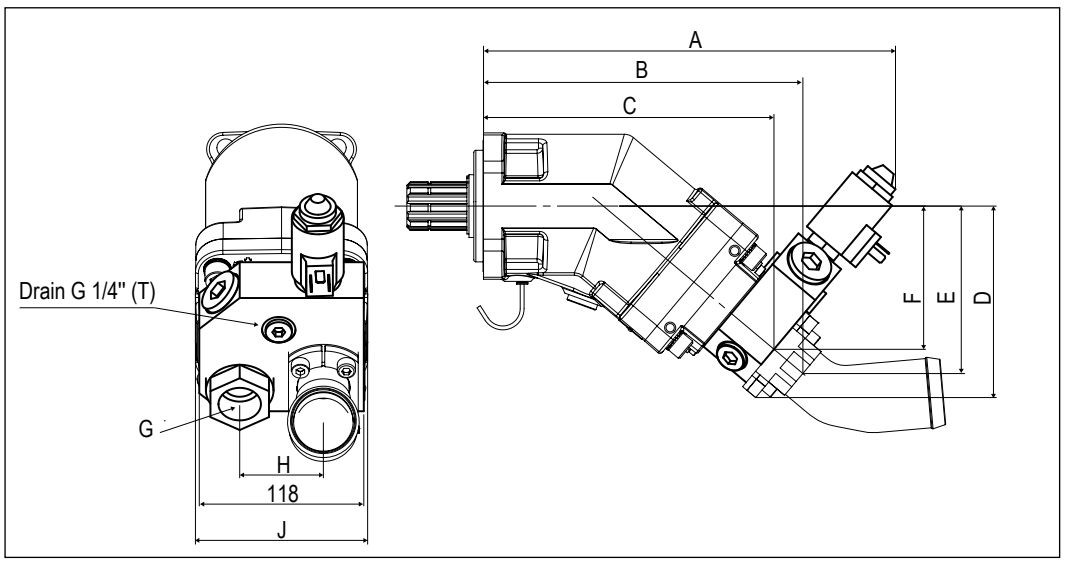
▶ XPi overhang torque with by-pass

Pump reference	Weight		Overhang torque	
	without inlet fitting (kg)	with inlet fitting (kg)	without inlet fitting (N.m)	with inlet fitting (N.m)
XPi 12	12.8	13.25	16.32	16.90
XPi 18	12.85	13.3	16.39	16.96
XPi 25	12.9	13.35	16.44	17.02
XPi 32	14.7	15.15	18.98	19.56
XPi 41	14.75	15.2	19.04	19.62
XPi 50	14.8	15.25	20.05	20.67
XPi 63	14.85	15.3	20.12	20.73
XPi 80	18.45	18.9	27.16	27.82
XPi 108	18.55	19	27.31	27.97
XPi 130	18.95	19.4	28.16	28.93

▶ Dimensions with by-pass valve

Pump reference	A	B	C	D	E	F	G	H	J
XPi 12 / 18 / 25	289.35	223.04	202.19	132.20	114.72	97.58	3/4"	54	108
XPi 32 / 41	295.5	229	208.3	137.3	120.1	102.7	3/4"	54	108
XPi 50 / 63	307.1	240.4	220	147.1	129.7	112.5	3/4"	54	108
XPi 80 / 108	334	269	246.7	157.8	143.9	124.8	1"	60	123
XPi 130	336.3	271.3	249	159.7	145.8	126.7	1"	60	123.5

Dimensions in mm.



XAi series

the intelligent pump - SAE version

fixed displacement bent axis design

The compact size envelope of XAi pumps, together with their technology, means they can be installed in environments with little space available, and be used at relatively high rotating speeds.

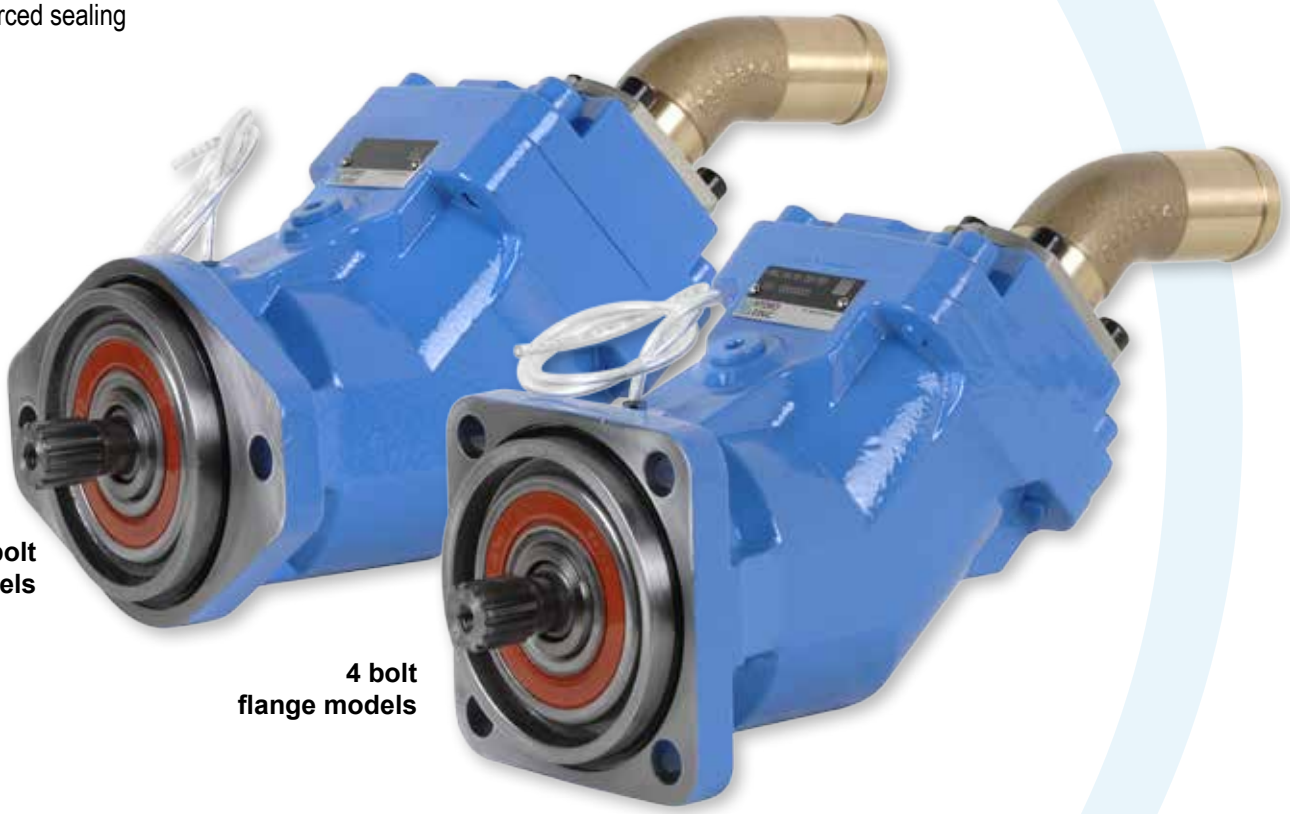
ADVANTAGES

- Pump automatically sets to required direction of rotation
- Mounting and start-up, easier than ever !

CHARACTERISTICS

- 7 pistons
- original idea for plate - barrel synchronisation
- use of materials with high mechanical resistance
- reinforced sealing

- **10 models:**
  - from 18 to 63 cc/rev (1.1 to 3.84 cu.in/rev)
  - 380 bar (5511 psi) continuous working pressure
  - 420 bar (6092 psi) peak pressure
  - maximum speed from 2300 to 2900 rpm



2 bolt flange models

4 bolt flange models

▶ 2 bolt flange - SAE J744

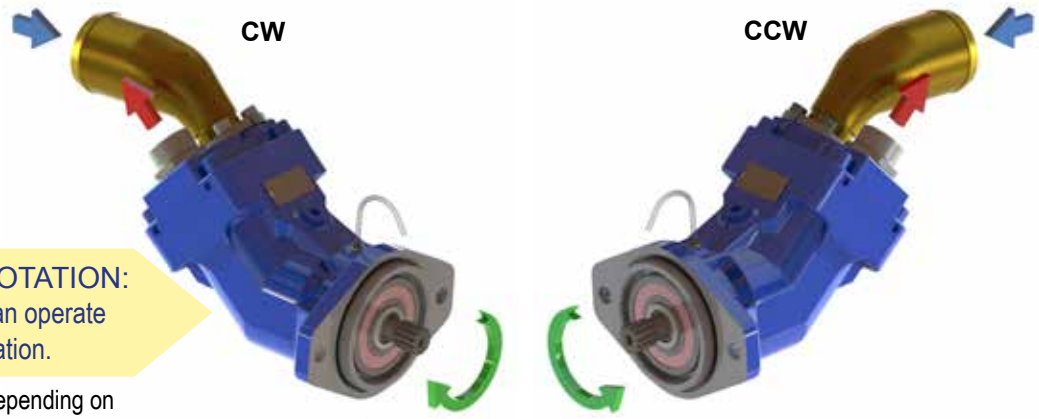
Pump reference	Displac. Cu.in/rev (cc/rev)	Maximum continuous pressure psi (bar)	Maximum intermittent peak pressure psi (bar)	Maximum rotating speed at absolute pressure 14.51 psi (1 bar) rpm	Max. torque absorbed at 5511 psi (380 bar) lbf ft (N.m)	Weight without inlet fitting lbs (kg)	Weight with inlet fitting lbs (kg)	Overhang torque without inlet fitting lbf ft (N.m)	Overhang torque with inlet fitting lbf ft (N.m)
XAi 18 0524085	1.1 (18)	5511 (380)	6092 (420)	2900	84 (114)	22.15 (10.5)	23.14 (10.5)	7.04 (9.54)	7.35 (9.97)
XAi 25 0524095	1.52 (25)	5511 (380)	6092 (420)	2750	117 (159)	22.38 (10.15)	23.36 (10.6)	7.11 (9.64)	7.43 (10.07)
XAi 32 0524105	1.95 (32)	5511 (380)	6092 (420)	2700	150 (204)	26.34 (11.95)	27.67 (12.4)	8.81 (11.95)	9.15 (12.4)
XAi 41 0524115	2.5 (41)	5511 (380)	6092 (420)	2550	192 (261)	26.45 (12)	27.45 (12.45)	8.85 (12)	9.18 (12.45)

▶ 4 bolt flange - SAE J744

Pump reference	Displac. cu.in/rev (cc/rev)	Maximum continuous pressure psi (bar)	Maximum intermittent peak pressure psi (bar)	Maximum rotating speed at absolute pressure 14.51 psi (1 bar) rpm	Max. torque absorbed at 5511 psi (380 bar) lbf ft (N.m)	Weight without inlet fitting lbs (kg)	Weight with inlet fitting lbs (kg)	Overhang torque without inlet fitting lbf ft (N.m)	Overhang torque with inlet fitting lbf ft (N.m)
XAi 18 0524080	1.1 (18)	5511 (380)	6092 (420)	2900	84 (114)	22.59 (10.25)	23.59 (10.7)	7.18 (9.73)	7.49 (10.16)
XAi 25 0524090	1.52 (25)	5511 (380)	6092 (420)	2750	117 (159)	22.71 (10.3)	23.70 (10.75)	7.19 (9.75)	7.53 (10.21)
XAi 32 0524100	1.95 (32)	5511 (380)	6092 (420)	2700	150 (204)	26.68 (12.1)	27.67 (12.55)	8.92 (12.1)	9.26 (12.55)
XAi 41 0524110	2.5 (41)	5511 (380)	6092 (420)	2550	192 (261)	26.78 (12.15)	27.78 (12.6)	8.96 (12.15)	9.29 (12.6)
XAi 50 0524360 XAi 50 0524365	3.07 (50.3)	5511 (380)	6092 (420)	2450	234 (318)	26.89 (12.2)	27.89 (12.65)	9.45 (12.81)	9.80 (13.28)
XAi 63 0524120 XAi 63 0524125	3.84 (63)	5511 (380)	6092 (420)	2300	295 (401)	27.01 (12.25)	28 (12.7)	9.49 (12.86)	9.83 (13.33)

INLET

OUTPUT



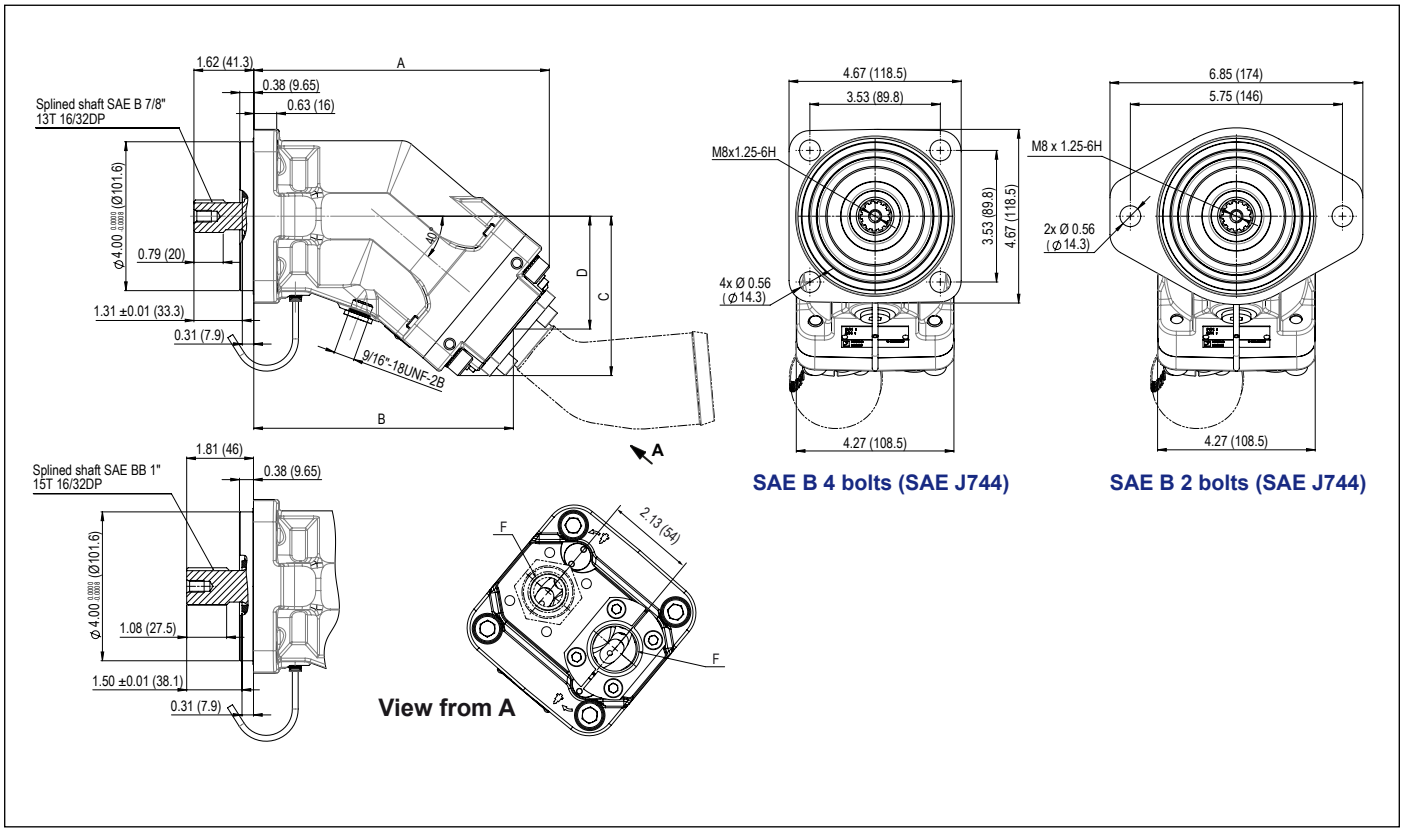
DUAL DIRECTION OF ROTATION:
this *intelligent* pump can operate in either direction of rotation.

Fit the inlet fitting on required side, depending on the direction of rotation of the PTO, and the pump will set itself accordingly.

When the PTO turns counter-clockwise, the pump has to turn clockwise.

When the PTO turns clockwise, the pump has to turn counter-clockwise.

XAi SAE version - Dimensions



Dimensions in inches (mm).

► SAE B - 2 bolt mounting configurations (SAE J744)

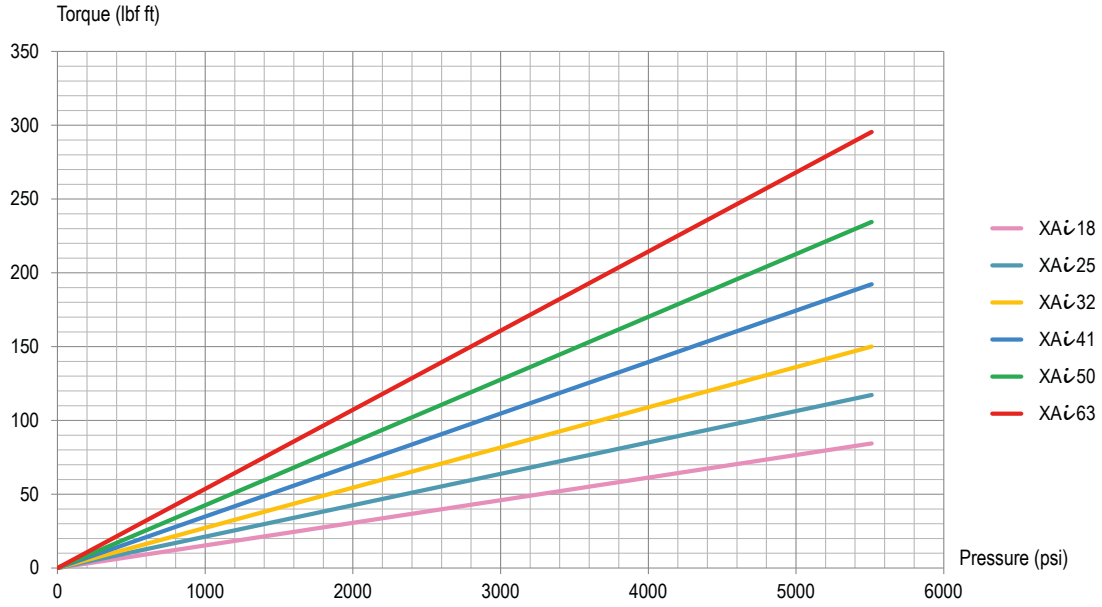
Reference	A	B	C	D	F	Shaft
XAi 18 0524085	7.76 (197.2)	6.79 (172.5)	4.08 (103.7)	2.87 (73)	3/4"-16 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 25 0524095	7.76 (197.2)	6.79 (172.5)	4.08 (103.7)	2.87 (73)	3/4"-16 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 32 0524105	8 (203.2)	7.03 (178.5)	4.28 (108.7)	3.03 (77)	3/4"-16 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 41 0524115	8 (203.2)	7.03 (178.5)	4.28 (108.7)	3.03 (77)	1 1/16"-12 UNF-2B	SAE B 7/8" 13T-16/32DP

► SAE B - 4 bolt mounting configurations (SAE J744)

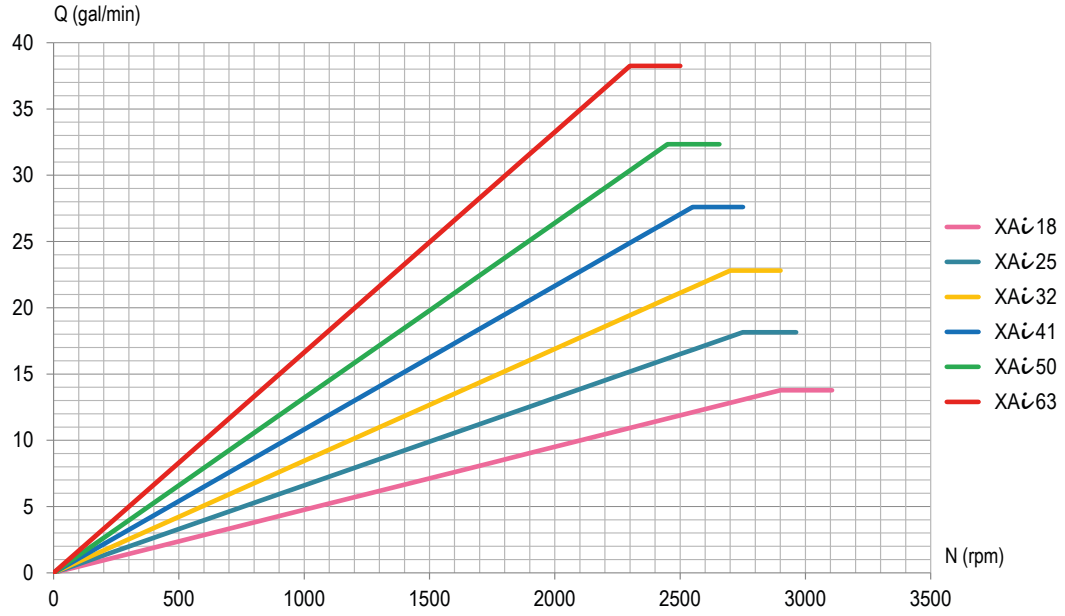
Reference	A	B	C	D	F	Shaft
XAi 18 0524080	7.76 (197.2)	6.79 (172.5)	4.08 (103.7)	2.87 (73)	3/4"-16 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 25 0524090	7.76 (197.2)	6.79 (172.5)	4.08 (103.7)	2.87 (73)	3/4"-16 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 32 0524100	8 (203.2)	7.02 (178.5)	4.28 (108.7)	3.03 (77)	3/4"-16 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 41 0524110	8 (203.2)	7.02 (178.5)	4.28 (108.7)	3.03 (77)	1 1/16"-12 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 50 0524360	8.45 (214.7)	7.48 (190)	4.65 (118.2)	3.4 (86.5)	1 1/16"-12 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 63 0524120	8.45 (214.7)	7.48 (190)	4.65 (118.2)	3.4 (86.5)	1 1/16"-12 UNF-2B	SAE B 7/8" 13T-16/32DP
XAi 50 0524365	8.45 (214.7)	7.48 (190)	4.65 (118.2)	3.4 (86.5)	1 1/16"-12 UNF-2B	SAE BB 1" 15T-16/32DP
XAi 63 0524125	8.45 (214.7)	7.48 (190)	4.65 (118.2)	3.4 (86.5)	1 1/16"-12 UNF-2B	SAE BB 1" 15T-16/32DP

Dimensions in inches (mm).

► Torque absorbed as a function of pump output pressure

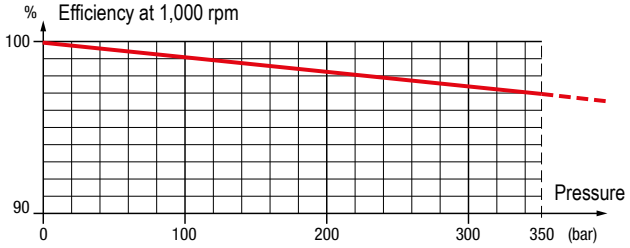


► Flow as a function of rotating speed



► Volumetric efficiency

These graphs are the results of testwork done in HL R&D laboratory, on a specific test bench, with an ISO 46 fluid at 77°F/25°C (100 cSt), the pump is fitted with a 2" inner diameter HL inlet fitting and tank situated slightly above pump.

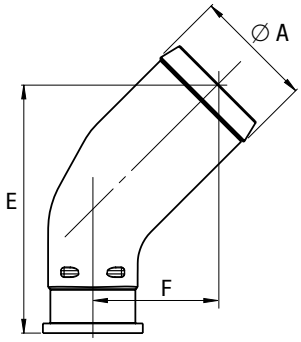


INLET FITTINGS FOR XAi PUMPS

See recommendations of the hosing dimensions on page 38.

All XAi pumps are supplied with their inlet fitting.
Please specify required fitting from the choice below when ordering.

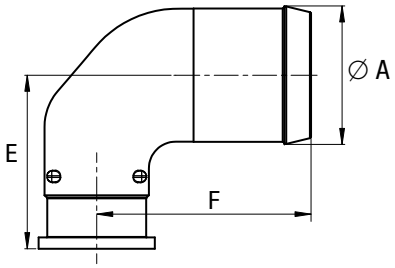
45° elbow fittings



Reference	Ø hose	Ø A	E	F
0517894	1 1/2"	1.54 (39.1)	3.61 (91.7)	1.84 (46.7)
0517896	42	1.69 (43.0)	3.61 (91.7)	1.84 (46.7)
0517897	1 3/4"	1.81 (46.0)	3.61 (91.7)	1.84 (46.7)
0517893	2"	2.04 (51.8)	4.27 (108.4)	2.14 (54.4)
0517892	2 1/2"	2.54 (64.5)	4.93 (125.2)	2.45 (62.2)

Dimensions in inches (mm).

90° elbow fittings



Reference	Ø hose	Ø A	E	F
0517947	1 1/2"	1.54 (39.1)	2.31 (58.6)	3.13 (79.5)
0517946	2"	2.04 (51.8)	2.56 (64.9)	3.16 (80.2)
0517945	2 1/2"	5.54 (64.5)	2.81 (71.3)	3.44 (87.5)

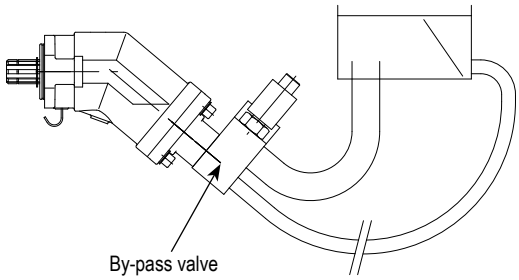
Dimensions in inches (mm).

BY-PASS VALVE FOR XAi PUMPS

For XAi pump applications where the pump is driven by a continuous running PTO (PTO which cannot be disengaged), HYDRO LEDUC offers a by-pass valve which is fitted onto the back of the pump.

This solution allows the continuous running of the pump:

- without creating problems of fluid overheating;
- without affecting pump service life;
- with no modifications necessary to the hydraulic circuit of the equipment.

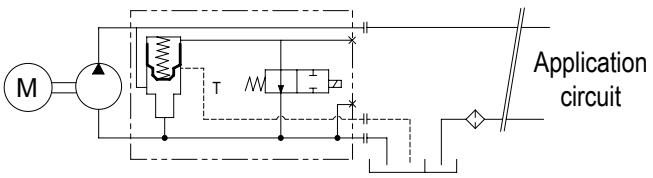


LEDUC part number	12 Volts	24 Volts
XAi 18 to XAi 32	BPA32 0518755	BPA32 0521710
XAi 41 to XAi 63	BPA63 0518520	BPA63 0521715

► How does it work ?

The by-pass valve is a 12 or 24 Volts solenoid valve.

When not activated, it enables pump output to link up to pump inlet.
When it is activated, the pump operates normally (output flow).



If the valve in your circuit limits the oil return to the tank to less than 5l /mn or if the distributor is “closed-center”, a drain line has to be installed between the By-Pass valve and the tank to assure sufficient oil circulation to avoid the pump overheating.

► XAi overhang torque with by-pass

2 bolt flange - SAE J744

Pump reference	Weight		Overhang torque	
	without inlet fitting lbs (kg)	with inlet fitting lbs (kg)	without inlet fitting lbf ft (N.m)	with inlet fitting llbf ft (N.m)
XAi 18 - 2 bolts	28.33 (12.85)	29.32 (13.30)	9.87 (13.38)	12.51 (16.96)
XAi 25 - 2 bolts	28.44 (12.90)	29.43 (13.35)	12.13 (16.45)	12.55 (17.02)
XAi 32 - 2 bolts	32.41 (14.70)	33.40 (15.15)	14 (18.98)	14.43 (19.56)
XAi 41 - 2 bolts	32.52 (14.75)	33.51 (15.20)	10.36 (14.04)	14.47 (19.62)

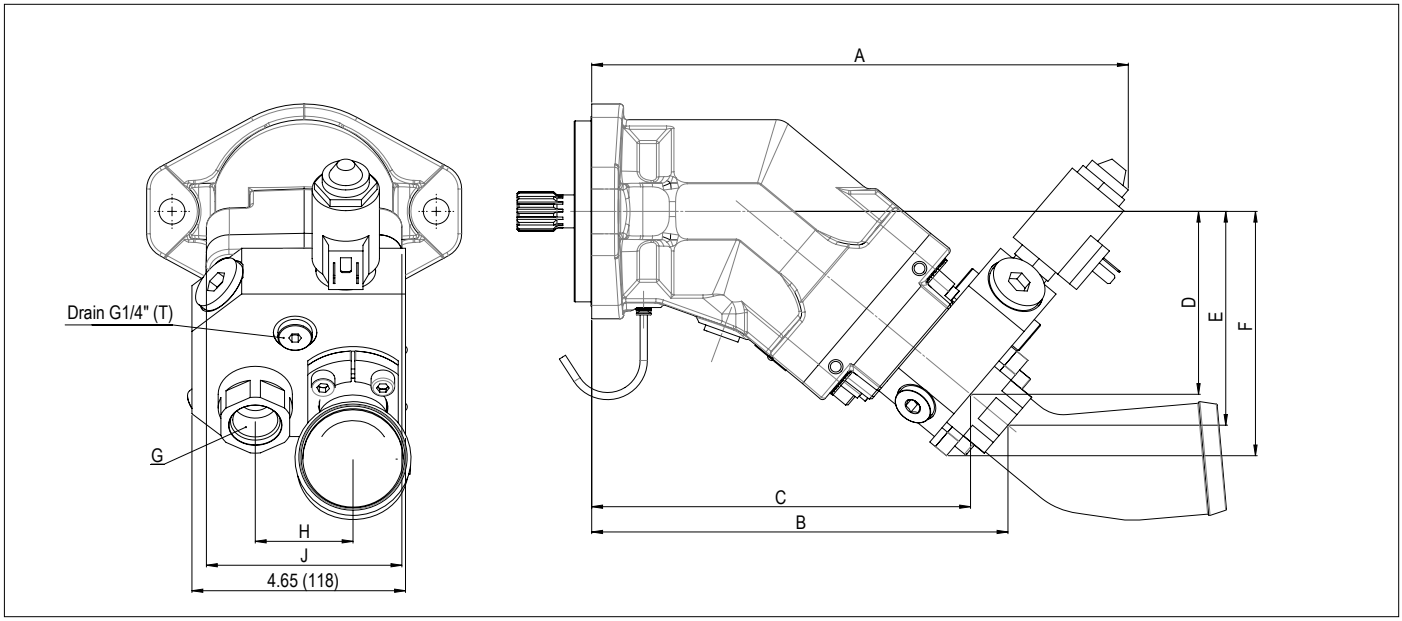
4 bolt flange - SAE J744

Pump reference	Weight		Overhang torque	
	without inlet fitting lbs (kg)	with inlet fitting lbs (kg)	without inlet fitting lbf ft (N.m)	with inlet fitting lbf ft (N.m)
XAi 18 - 4 bolts	28.77 (13.05)	29.76 (13.50)	12.27 (16.64)	12.69 (17.21)
XAi 25 - 4 bolts	28.77 (13.05)	29.76 (13.50)	12.27 (16.64)	12.69 (17.21)
XAi 32 - 4 bolts	32.74 (14.85)	33.73 (15.30)	14.14 (19.17)	14.57 (19.75)
XAi 41 - 4 bolts	32.85 (14.90)	33.84 (15.35)	14.19 (19.24)	14.62 (19.82)
XAi 50 - 4 bolts	32.63 (14.80)	33.62 (15.25)	14.79 (20.05)	15.24 (20.66)
XAi 63 - 4 bolts	32.74 (14.85)	33.73 (15.30)	14.84 (20.12)	15.29 (20.73)

► Dimensions with by-pass valve

Pump reference	A	B	C	D	E	F	G	H	J
XAi 18 / 25	11.43 (290.4)	8.81 (223.9)	8.00 (203.2)	5.20 (132.1)	4.53 (115)	3.84 (97.6)	3/4" - 16UNF - 2B	2.13 (54)	4.25 (108)
XAi 32	11.67 (296.5)	9.06 (230)	8.24 (209.2)	5.41 (137.3)	4.73 (120.1)	4.04 (102.7)	3/4" - 16UNF - 2B	2.13 (54)	4.25 (108)
XAi 41	11.67 (296.5)	9.06 (230)	8.24 (209.2)	5.41 (137.3)	4.73 (120.1)	4.04 (102.7)	1 1/16" - 16UNF - 2B	2.13 (54)	4.25 (108)
XAi 50 / 63	12.13 (308.2)	9.52 (241.7)	8.70 (221)	5.79 (147)	5.11 (129.9)	4.43 (112.5)	1 1/16"- 16UNF - 2B	2.13 (54)	4.25 (108)

Dimensions in inches (mm).



PA | PAC | PAD series

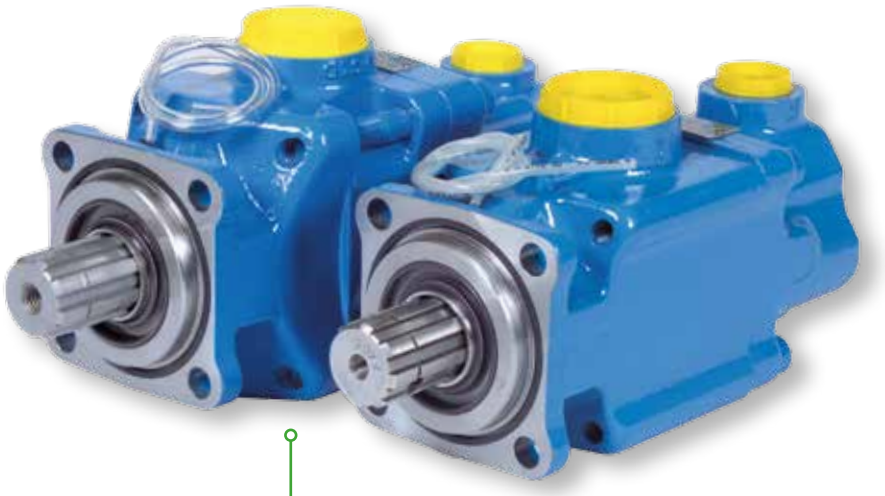
piston pumps

fixed displacement in-line design

ADVANTAGES

- *Of unique design, the PA, PAC and PAD pumps offer a robust solution with **long service life** for high pressure requirements in truck hydraulics.*
- *Relatively insensitive to contamination, these pumps are particularly **well suited to the harshest environments.***
- *The design means the pumps can rotate either clockwise or counter-clockwise **without any user intervention**.*
- *Like all truck pumps designed by HYDRO LEDUC, this range is fitted with the **latest innovation in terms of sealing**:*
  - *Front of pump fitted with two shaft seals: externally, a seal capable of resisting the high temperatures of the gearbox, and internally, a seal adapted to the hydraulic requirements.*
  - *A transparent flexible tube fitted between the two seals, to protect these seals from dirt from the road, and from high pressure water jet during washing of vehicle etc...*

The PA, PAC, PAD pump series comprises three ranges, all designed for truck applications at working pressures up to 5800 psi (400 bar) continuous and 7252 psi (500 bar) peak.



PA pumps

- single flow from 25 to 114 cc/rev
- twin-flow from 2x32 to 2x75 cc/rev
- two different flows: 75 - 40 cc/rev

PAC pumps

Series offering the most compact size envelope:

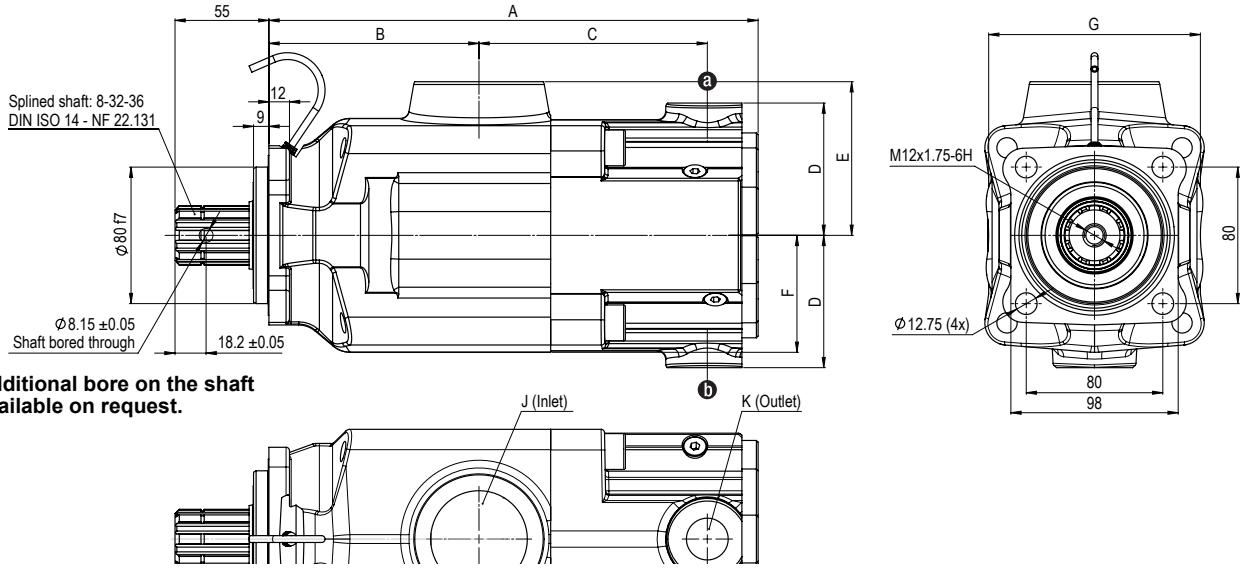
- single flow from 25 to 80 cc/rev
- twin-flow from 2x25 to 2x40 cc/rev

PAD pumps

Two-flow pumps, with 10 pistons, thus offering optimal flow regularity within reduced size envelope:

- twin-flow: 2x32 to 2x67 cc/rev
- two different flows: 55-33 et 67 - 40 cc/rev

PA | PAC | PAD - Dimensions



Additional bore on the shaft available on request.

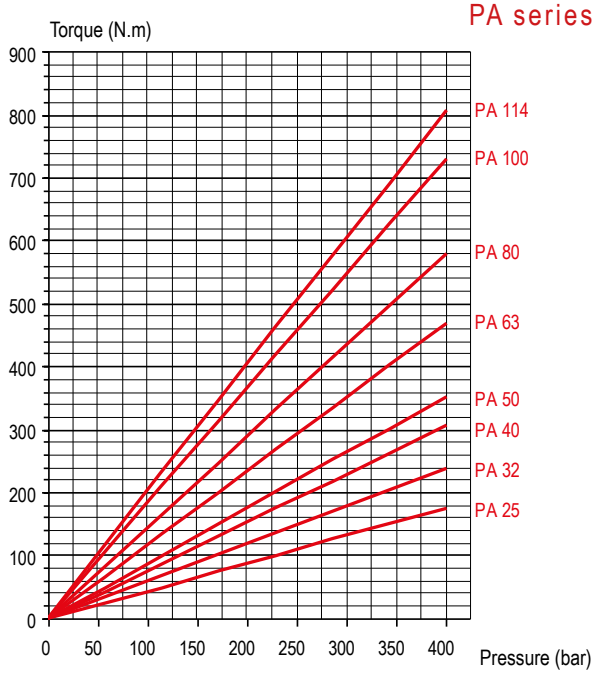
Pump reference		Displac. (cc/rev) a	Displac. (cc/rev) b	A	B	C	D	E	F	G	J	K	Weight (kg)	Overhang torque (N.m)
► **Single flow**														
PA 25	0511510	25	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17
PA 32	0511515	34	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17
PA 40	0511520	43	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17
PA 50	0511525	50	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17
PA 63	0511530	66	-	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	17
PA 80	0511535	82	-	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PA 100	0511565	104	-	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PA 114	0511570	114	-	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PAC 25	0511470	26	-	226	94.9	103.3	62	73.2	54	98	G 1 1/2"	G 3/4"	12.5	12.6
PAC 40	0511460	40	-	226	94.9	103.3	62	73.2	54	98	G 1 1/2"	G 3/4"	12.5	12.6
PAC 50	0511465	50	-	226	94.9	103.3	62	73.2	54	98	G 1 1/2"	G 3/4"	12.5	12.6
PAC 65	0511490	65	-	243	102.5	112.8	63	78	65	107	G 1 1/2"	G 3/4"	16	17.6
PAC 80	0511705	78	-	247	102.5	116.3	63	78	65	107	G 1 1/2"	G 3/4"	17	21.3
► **Twin-flow - 2 x 3 pistons**														
PA 2 x 32	0511545	32	32	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PA 2 x 40	0511550	39	39	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PA 2 x 50	0511555	52	52	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PA 2 x 57	0511560	57	57	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5
PA 2 x 75	0516100	75	75	302	126	147.8	72.5	90	72.5	135	G 2"	G 3/4"	26.8	38.7
PA 75-40	0516810	75	40	302	126	147.8	72.5	90	72.5	135	G 2"	G 3/4"	27.4	38.7
PAC 2 x 25	0511480	25	25	243	102.5	112.8	63	78	65	107	G 1 1/2"	G 3/4"	16	17.6
PAC 2 x 32	0511485	32	32	243	102.5	112.8	63	78	65	107	G 1 1/2"	G 3/4"	16	17.6
PAC 2 x 40	0511710	39	39	247	102.5	116.3	63	78	65	107	G 1 1/2"	G 3/4"	17	21.3
► **Twin-flow - 2 x 5 pistons**														
PAD 2 x 32	0521240	32	32	287	123	133.8	77.5	90	69	124	G 2"	G 3/4"	24.6	34.4
PAD 2 x 40	0521230	40	40	287	123	133.8	77.5	90	69	124	G 2"	G 3/4"	24.6	34.4
PAD 2 x 55	0521210	55	55	287	123	133.8	77.5	90	69	124	G 2"	G 3/4"	24.6	34.4
PAD 2 x 67	0518270	67	67	287	123	133.8	77.5	90	69	124	G 2"	G 3/4"	24.6	34.4
PAD 55-33	0521250	55	33	287	123	133.8	77.5	90	69	124	G 2"	G 3/4"	24.6	34.4
PAD 67-40	0518290	67	40	287	123	133.8	77.5	90	69	124	G 2"	G 3/4"	24.6	34.4

Dimensions in mm.

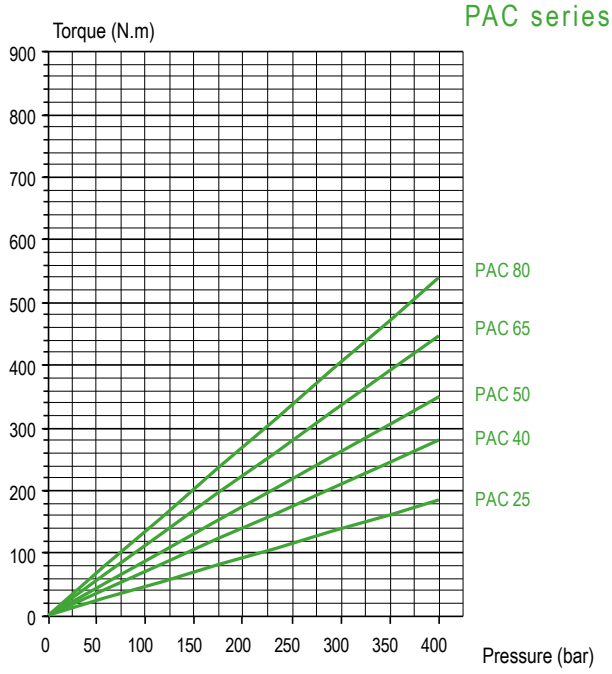
► Torque absorbed as a function of pump output pressure

Single flow models

PA series

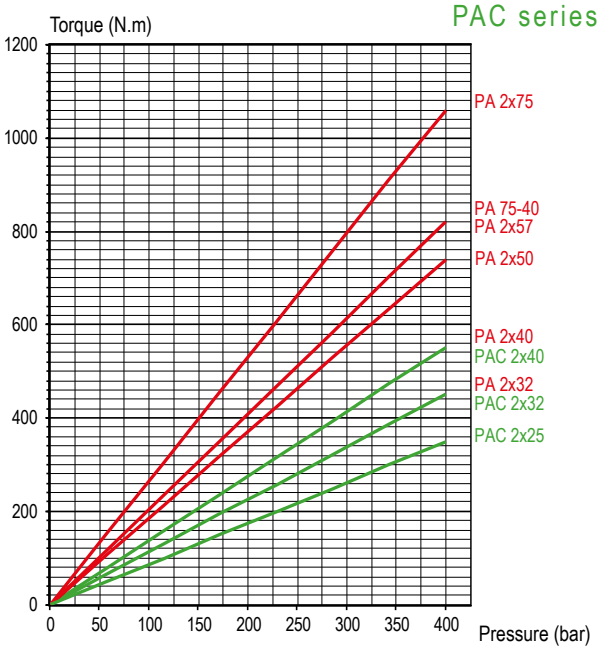


PAC series

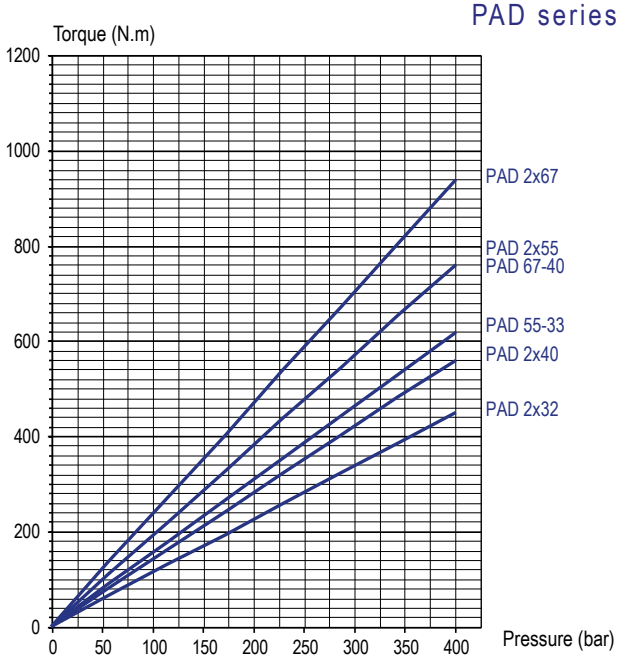


Twin-flow models

PA series
PAC series



PAD series



► Calculation of power to be supplied to the shaft as a function of flow and pressure

$$\mathcal{P} = \frac{\Delta P \times Q}{600}$$

Calculation of torque to determine PTO, as a function of power and speed

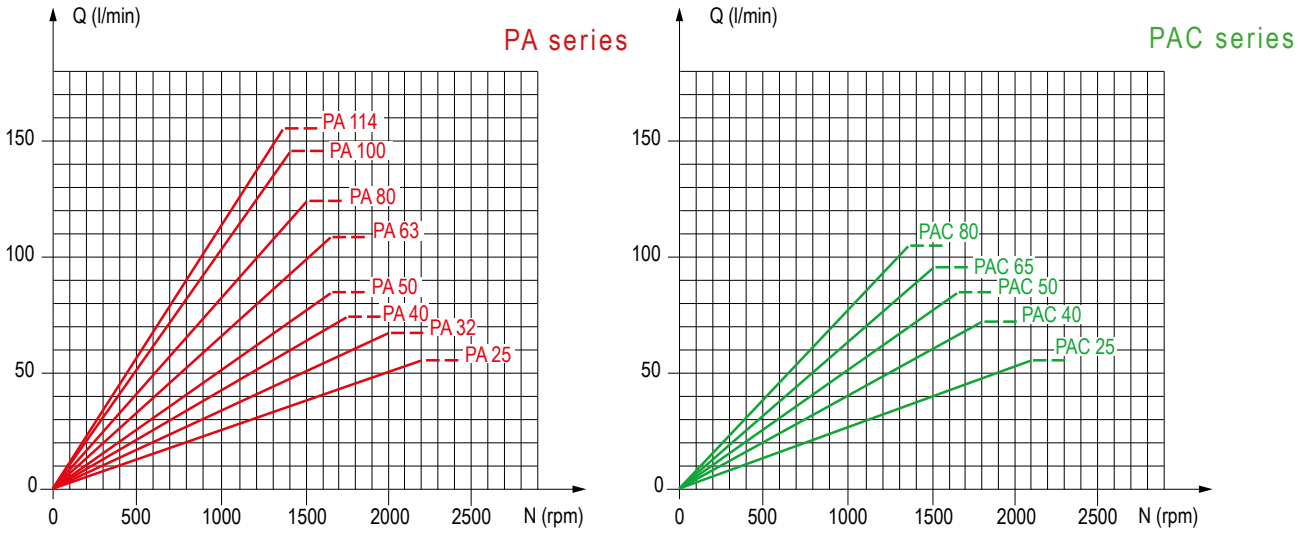
$$C = \frac{\mathcal{P}}{\omega} \times 1000 \quad \text{where} \quad \omega = \frac{\pi N}{30}$$

where:

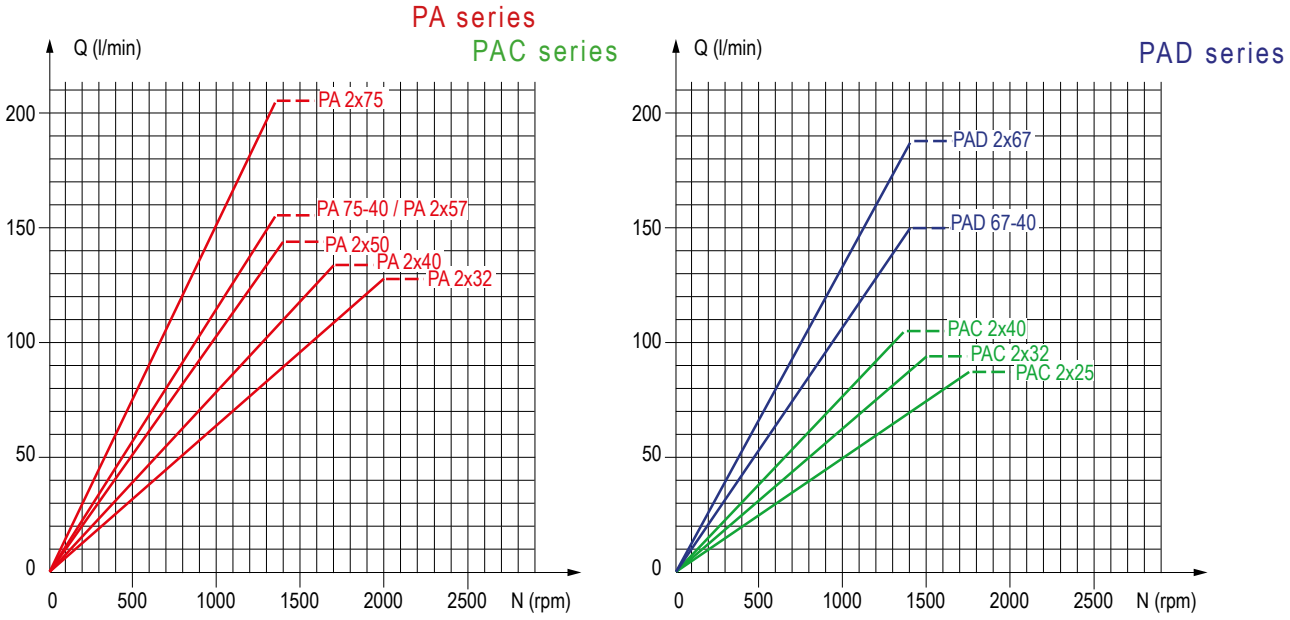
$\mathcal{P}$ = theoretical hydraulic power in kW
C = theoretical torque in N.m
N = rotating speed in rpm
ΔP = differential pressure power in bar
Q = flow in l/min
ω = angular speed in rad/s

► Flow as a function of rotating speed

Single flow models

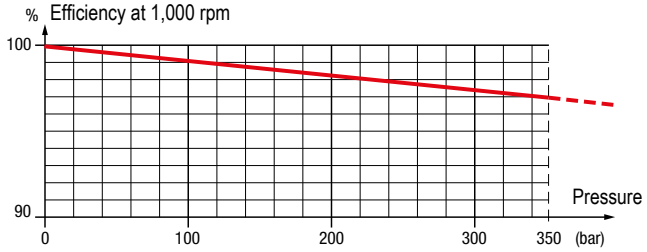


Twin-flow models



► Volumetric efficiency

These graphs are the results of testwork done in HL R&D laboratory, on a specific test bench, with an ISO 46 fluid at 77°F/25°C (100 cSt), the pump is fitted with a 2" inner diameter HL inlet fitting, and oil level at same height as the pump.



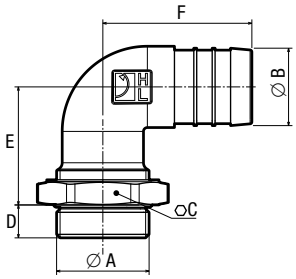
INLET FITTINGS FOR PA | PAC | PAD PUMPS

See recommendations of the hosing dimensions on page 38.

90° elbow fittings, swivel

Reference	A	Ø B	C	D	E	F	Pump types
240131	G 1 1/2"	40	60	17	61	77	PA and PAC
240133	G 1 1/2"	50	60	17	65	82	PA and PAC
240135	G 2"	50	70	17	65	82	PA and PAD

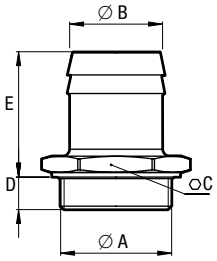
Dimensions in mm.



Straight fittings

Reference	A	Ø B	C	D	E	Pump types
240182	G 1 1/2"	40	56	14	54	PA and PAC
240067	G 1 1/2"	50	52	14	66	PA and PAC
240066	G 1 1/2"	60	64	14	69	PA and PAC
240186	G 1 1/2"	63.5	64	14	69	PA and PAC
240183	G 2"	50	66	14	54	PA and PAD
240170	G 2"	60	66	14	72	PA and PAD
240201	G 1 1/2"	76.2	80	14	89	PA and PAC

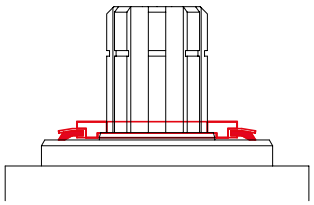
Dimensions in mm.



DEFLECTOR TO PROTECT SHAFT SEALS

This deflector ensures the protection of the pump shaft seals.
In particular, it protects the pump from projections of dirt from the road in cardan drive installations.

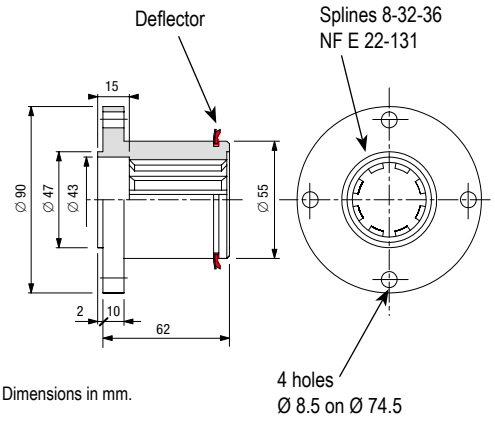
Reference: **DEF 054111**



CARDAN PLATE DIN 90

The PLT 056315 cardan plate enables the pump shaft to be connected to a cardan shaft with interface as on drawing on the right.
Note: the maximum admissible torque is limited by the drive shaft.

Reference: **PLT 056315**



Dimensions in mm.

TXV series

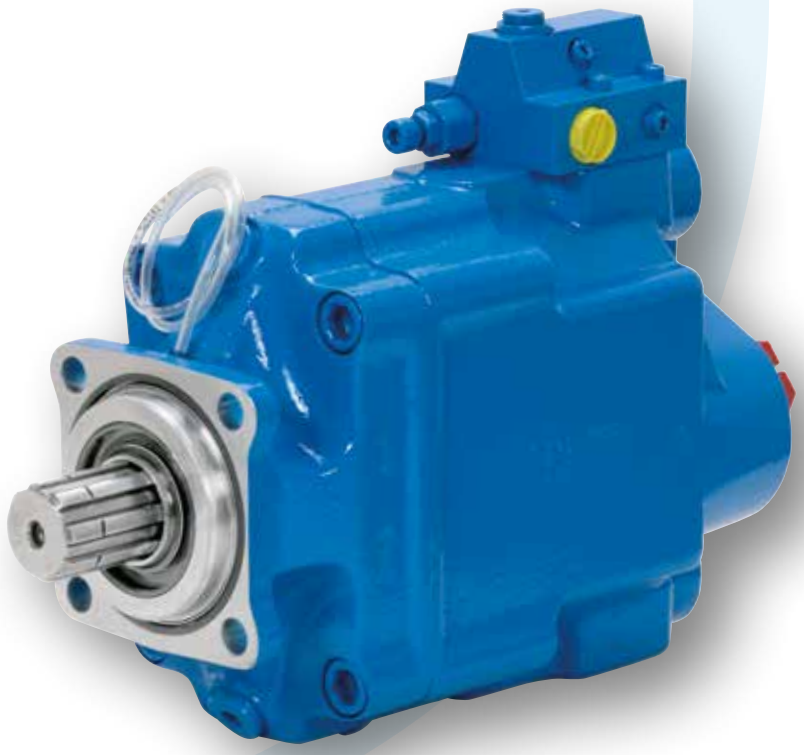
pumps with Load Sensing control

variable displacement piston pumps

ADVANTAGES

- *TXV series pumps are variable displacement with pressure-flow control – called **Load Sensing**. They **self-regulate to give just the flow required for each movement.***
- *Specifically designed for the needs of the truck hydraulics market, TXV pumps are particularly well adapted for applications in:*
  - *loader cranes,*
  - *forestry cranes,*
  - *refuse vehicles,*
  - *salt spreaders, snow and ice equipment,*
  - *construction equipment vehicles.*
- *Extremely compact in size to allow direct flange-mounting on vehicle engine or gearbox PTOs.*
- *TXV pumps are available in 9 models with maximum displacement from 40 to 150 cc/rev.*

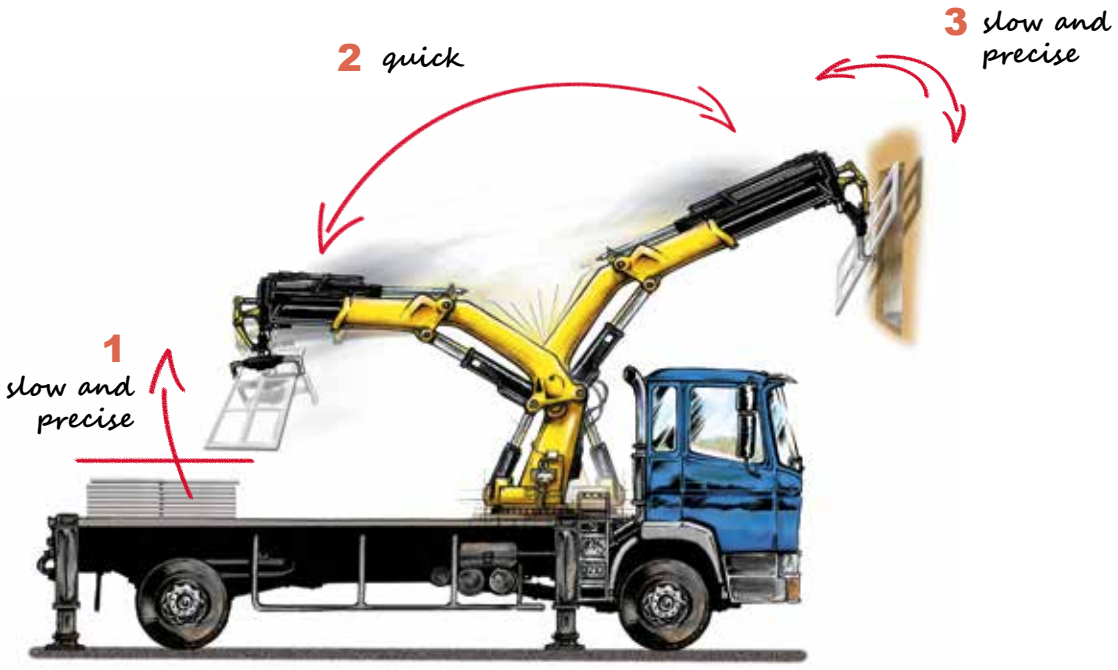
Maximum pressure is up to 420 bar depending on model.



Why use a variable displacement pump?

- *Installing a TXV variable displacement pump will transform your hydraulic equipment. Slow or rapid movements are done with precision, due to the constant adjustment of pump flow rate.*

- *The pump incorporates a load sensing device to control flow and maximum pressure. This control device is piloted by a proportional valve which informs the pump of the flow needed for the different circuits supplied by the pump, independently of pressure.*



1 & 3

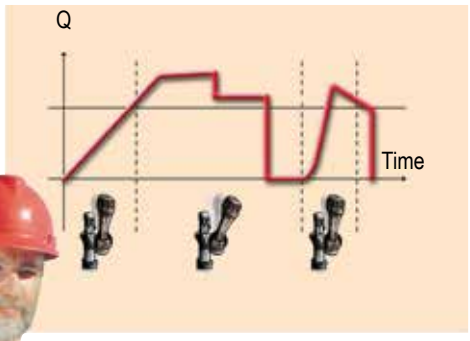
For slow and precise movements, the pump adjusts its flow to whatever the user needs, whilst also controlling maximum circuit pressure.
Oil heating and lamination, and noise level, are considerably reduced compared to a fixed displacement pump.

The motor driving the pump only provides the power actually needed by the equipment, thus ensuring:

- longer service life of that equipment;
- significant gains in energy consumption;
- and overall a more environmentally friendly solution.

2

For rapid movements, the pump supplies the required flow virtually instantaneously.



The proportional movement of the control lever is perfectly reproduced by the pump.

TXV - How does it work ?

- TXV variable displacement pumps are of axial piston design with 11 pistons, thus ensuring optimal regularity of flow and a low noise level.

- The displacement of the pump is proportional to the stroke of the pistons.
  Displacement – and thus flow - is varied by changing the angle α of the swashplate (Fig.1).

- To change displacement from maximum to zero (complete flow cancellation), the swashplate angle goes from α max (Fig. 1) to α min (=0) (Fig. 2).

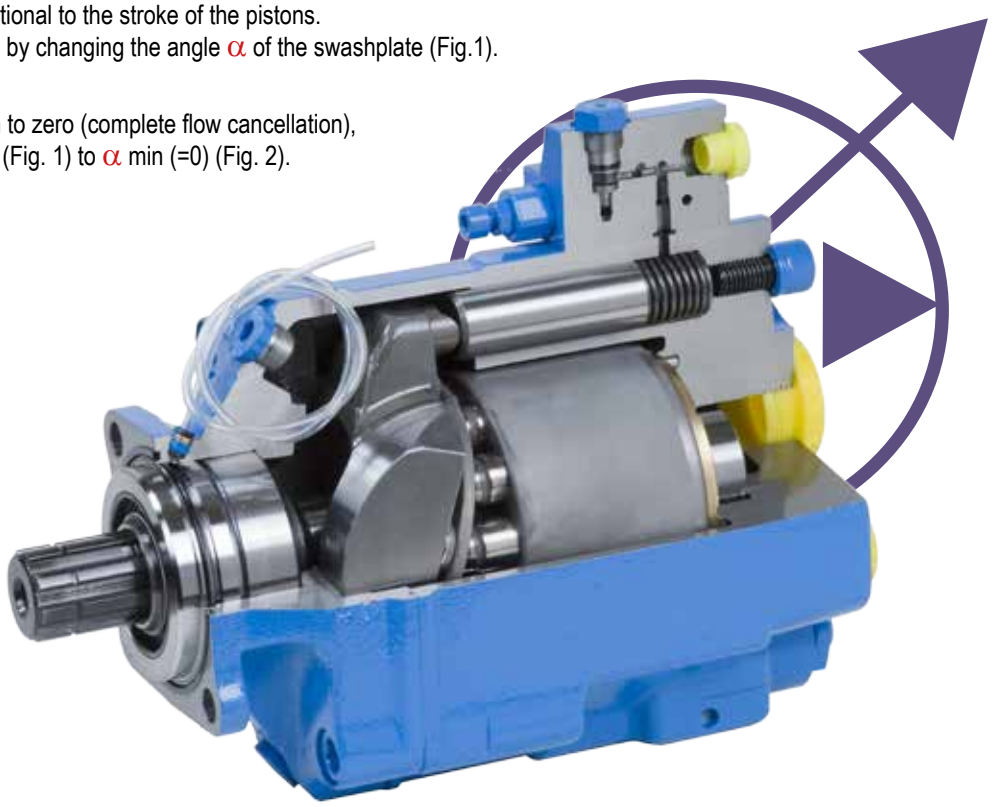


Figure 1 - Maximum displacement

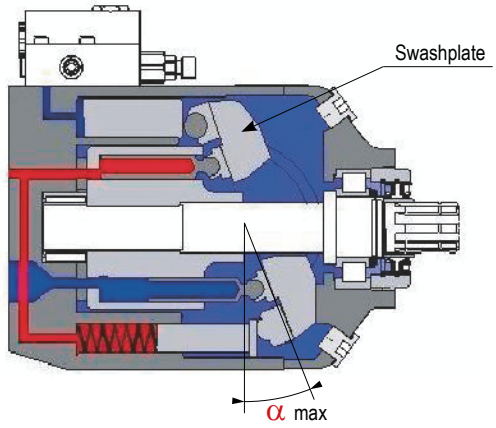
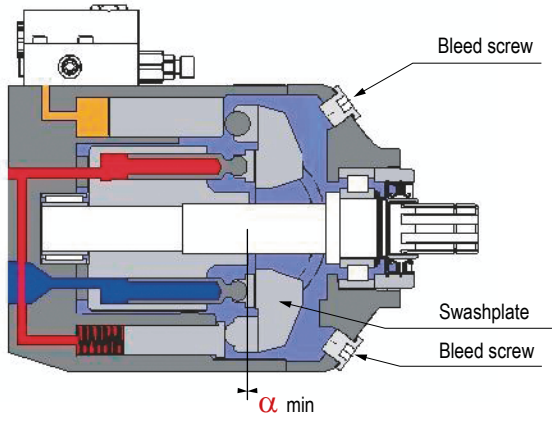
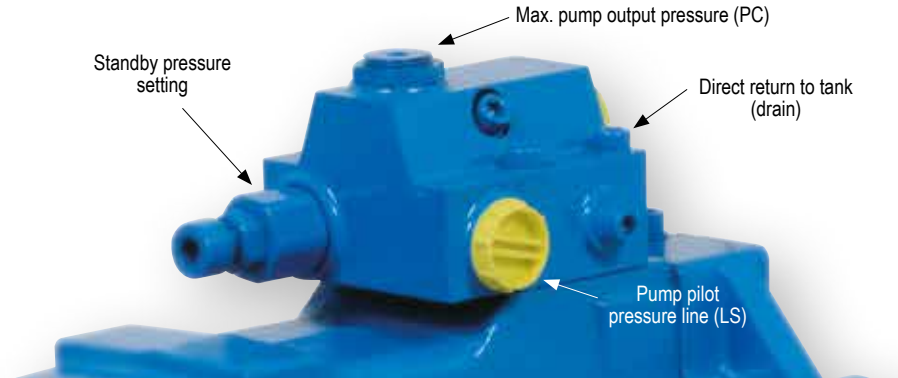
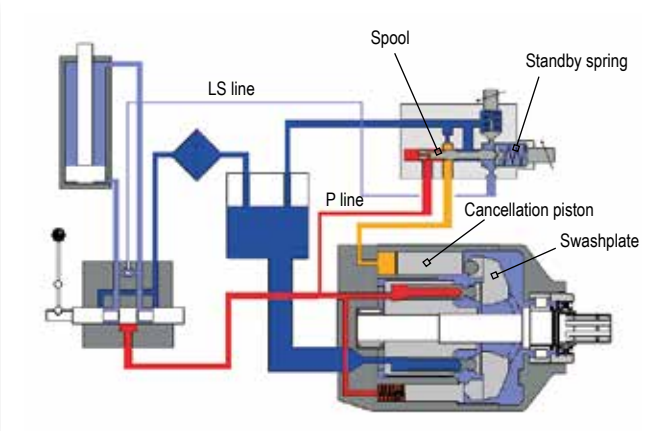


Figure 2 - Zero displacement



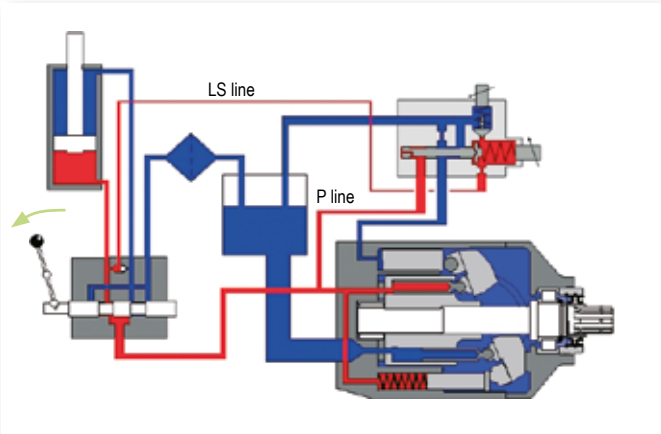
- Setting the servo pump.





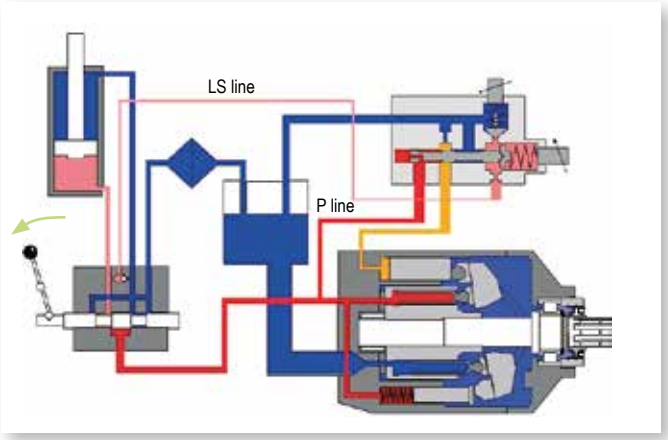
► Zero flow (standby)

The proportional valve is closed.
The pressure in the P line increases until it reaches the value at which the standby spring is set.
Under the pressure in the P line, the spool moves and oil flow supplies the setting piston which moves the swashplate into vertical position (angle α =0): no flow, but standby pressure is maintained.
The pump stays in standby mode.



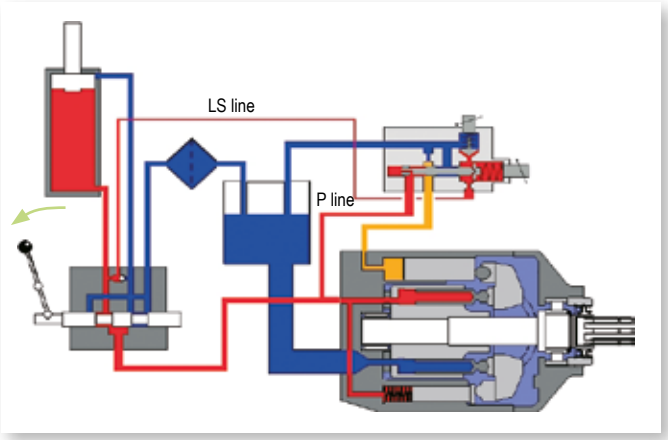
► Full flow

The proportional valve is fully open, allowing passage of pump flow.
The pressure in the LS line is the same as in the P line.
Hydraulic pressure is the same on either side of the spool.
The standby spring holds the spool in its closed position.
The cancellation piston is not supplied with oil.
The swashplate is at maximum angle α: the pump is at full displacement.



► Flow control

As soon as the proportional valve tends to reduce the flow requested by the user, the pressure drop created allows the pump displacement setting piston to be piloted.
This setting piston automatically adjusts pump displacement to match the order given by the proportional valve.



► Zero flow (maximum pressure)

This is the case for example of a cylinder which arrives at a mechanical stop. The proportional valve is still open.
The pressure of the cylinder at a mechanical stop is sensed by the pump pressure relief valve which opens at the set pressure (PC).
This allows the pump displacement setting piston to be supplied and the pump sets itself to a displacement just sufficient to maintain the circuit pressure.

TXV - Characteristics

TXV pumps are available in 9 models from 40 to 150 cc/rev maximum displacement.

Pump reference		Direction of rotation	Maximum displac. (1) (cc/rev)	Max. operating pressure (bar)	Max. peak pressure (intermittent: 5%) (bar)	Max. operating pressure at flow-cancella-tion (bar)	Max. torque at 300 bar (N.m)	Max. speed (2) (rpm)	Weight (kg)	Overhang torque (3) (N.m)
► **Standard pump range**										
TXV 40	0512950 0512955	CW CCW	40	400	420	440	225	3000	26.8	35
TXV 60	0512500 0512505	CW CCW	60	400	420	440	335	2600	26.8	35
TXV 75	0512510 0512515	CW CCW	75	400	420	440	420	2000	26.8	35
TXV 92	0512520 0512525	CW CCW	92	380	400	420	515	1900	26.8	35
TXV 120	0515700 0515705	CW CCW	120	360	380	400	675	2100	26.8	35
TXV 130 *indexable*	0520300	CW / CCW	130	360	380	400	730	1900	27.2	35
TXV 150 *indexable*	0525070	CW / CCW	150	310	330	350	840	1900	27.2	35
TXV 150	0518600 0518605	CW CCW	150	310	330	350	840	2000	27.2	35
► **With through shaft**										
TXV 130	0518700 0518705	CW CCW	130	360	380	400	730	1900	31.1	47.4

(1) TXV pumps can be set for smaller maximum displacements (see page 37).
(2) Higher speed possible depending on flow required : please contact us.
(3) Overhang torque of the pump only.
Viscosity affects maximum possible rotating speed. If viscosity > 400 cSt, please contact us to obtain corresponding speed possibilities.
For *indexable* series: see pages 34 and 35.

► Calculation of power to be supplied to the shaft as a function of flow and pressure

$$\mathcal{P} = \frac{\Delta P \times Q}{600}$$

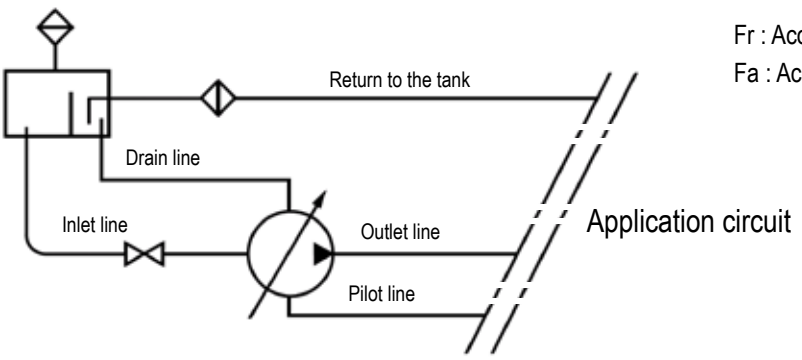
Calculation of torque to determine PTO, as a function of power and speed

$$C = \frac{\mathcal{P}}{\omega} \times 1000 \quad \text{where} \quad \omega = \frac{\pi N}{30}$$

where:

$\mathcal{P}$ = theoretical hydraulic power in kW
C = theoretical torque in N.m
N = rotating speed in rpm
ΔP = differential pressure in bar
Q = flow in l/min
ω = angular speed rad/s

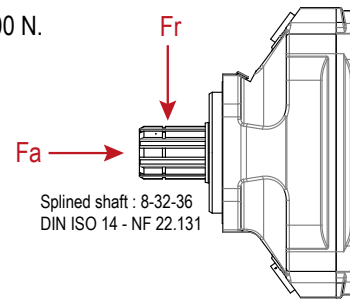
► Ideal installation



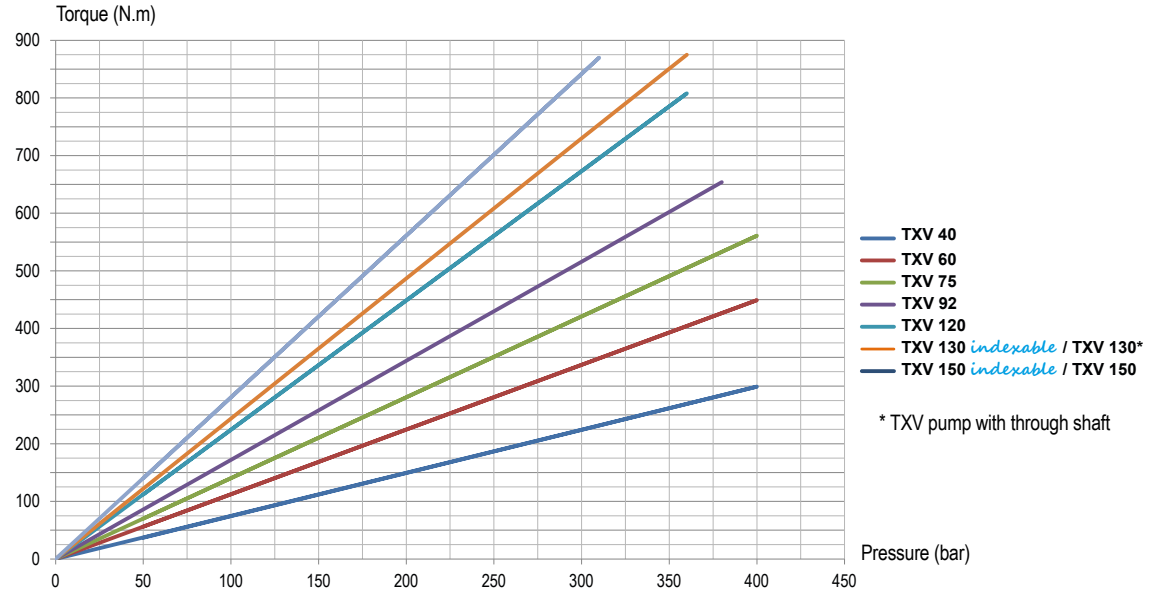
Application circuit

► Force on pump shaft

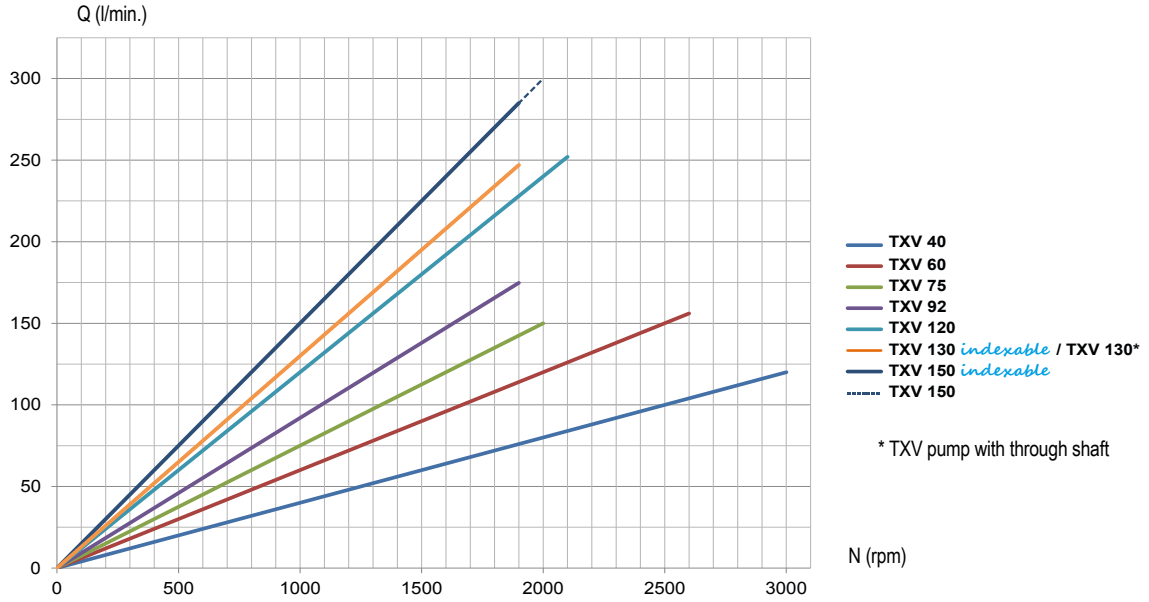
Fr : Acceptable max. radial force = 3000 N
Fa : Acceptable axial force = 1600 N.



► Torque absorbed as a function of pump output pressure



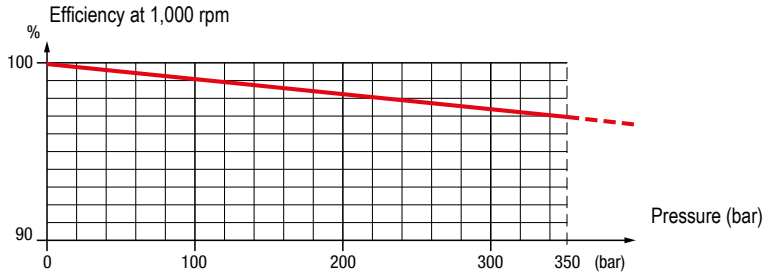
► Flow as a function of rotating speed



Flow as a function of speed, with pump in maximum displacement position and oil level in tank above the pump.

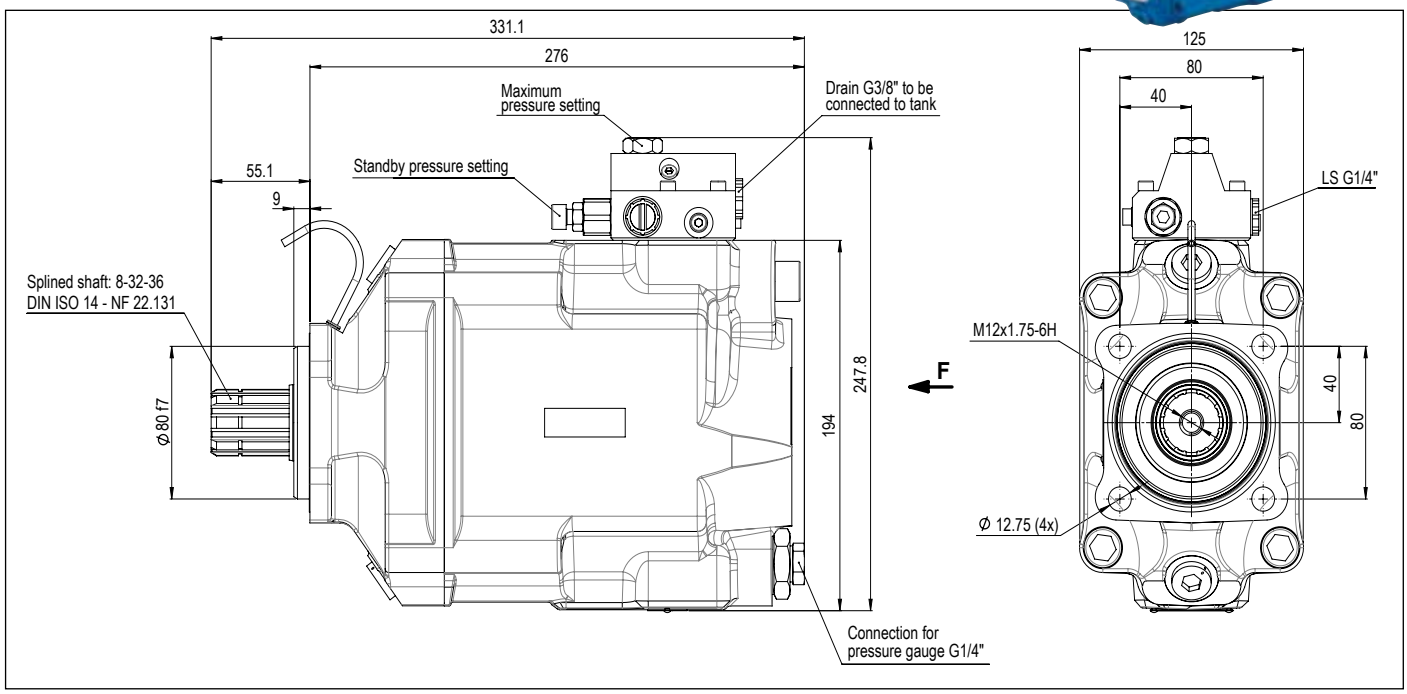
► Volumetric efficiency

These graphs are the results of testwork done in HL R&D laboratory, on a specific test bench, with an ISO 46 fluid at 77°F/25°C (100 cSt), the pump is fitted with an 2" inner diameter HL inlet fitting, and tank situated slightly above pump.



TXV 40 to 120 - Dimensions

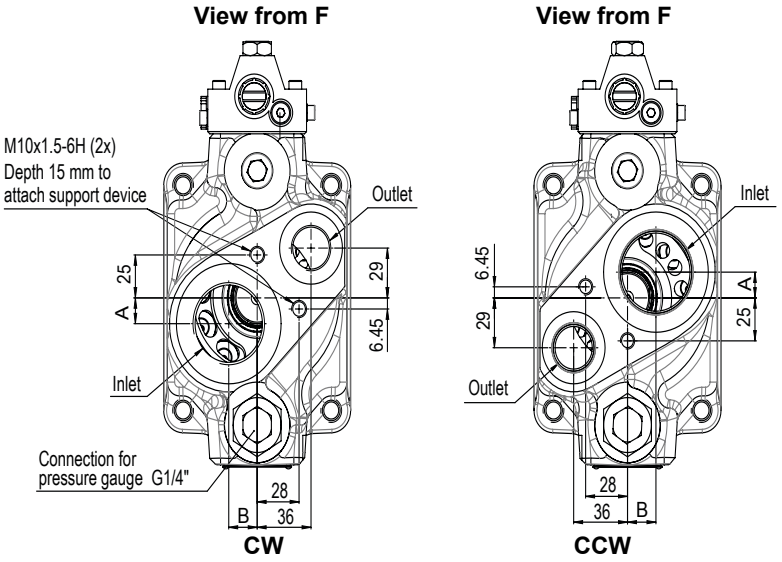
TXV 40 TO 120



Dimensions in mm.

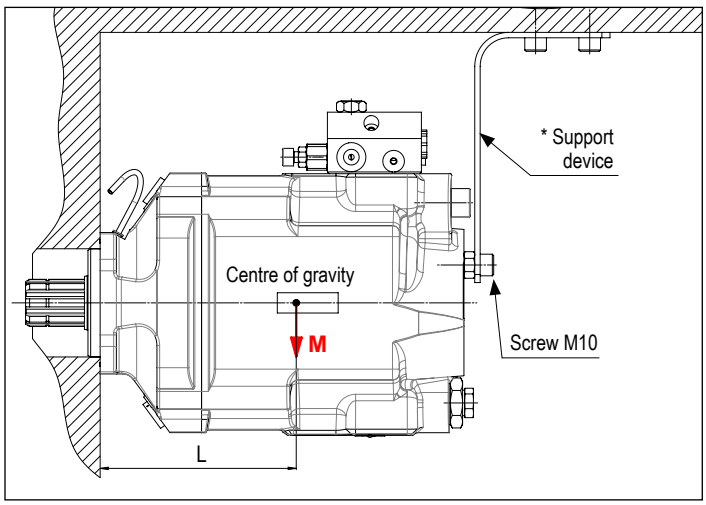
► TXV connections

Pump reference	Outlet (Ø)	Inlet (Ø)	A (mm)	B (mm)
TXV 40 to 92	G 3/4"	G 1"1/2	15	19
TXV 120	G 1"		6	23.57



► Support device

In cases where it is necessary to use a support device for the pump, this must be fixed to the same part which the pump is mounted on.

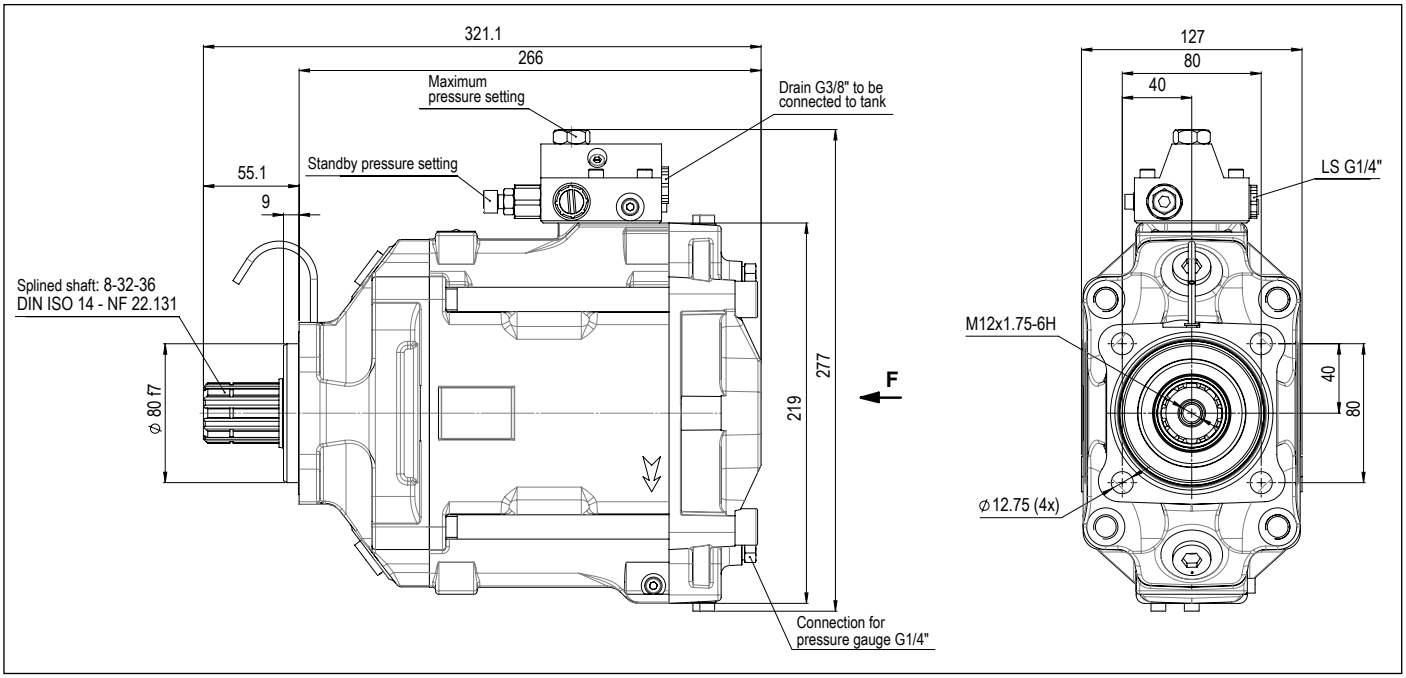


* This support has to be designed to avoid strain on the pump flange

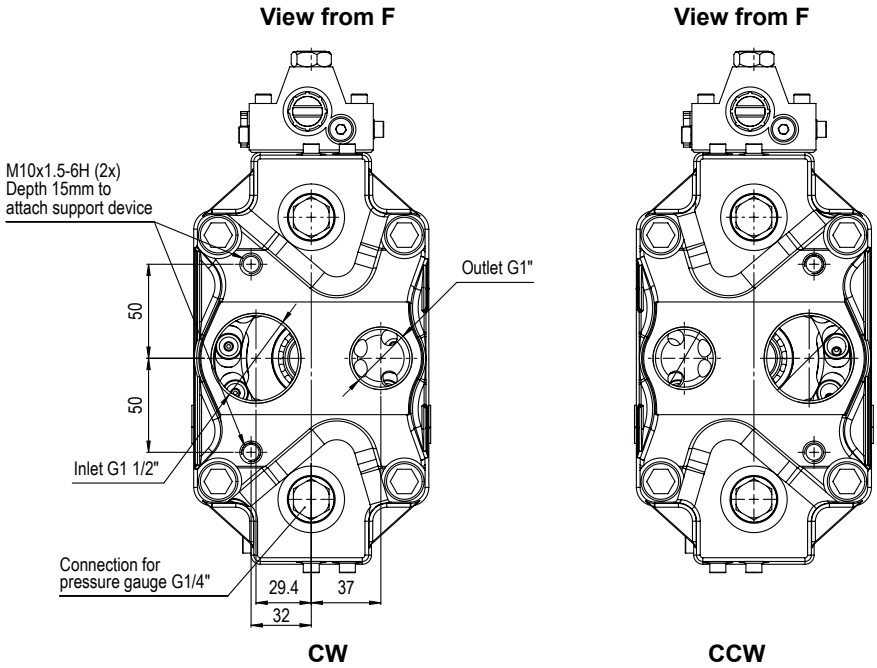
► Mass and position of centre of gravity

	L (mm)	M (kg)
TXV 40 to 92	130	26.8
TXV 120	130	26.8
TXV 150	128	27.2
TXV 130 with through shaft	152.6	31.1

TXV 150



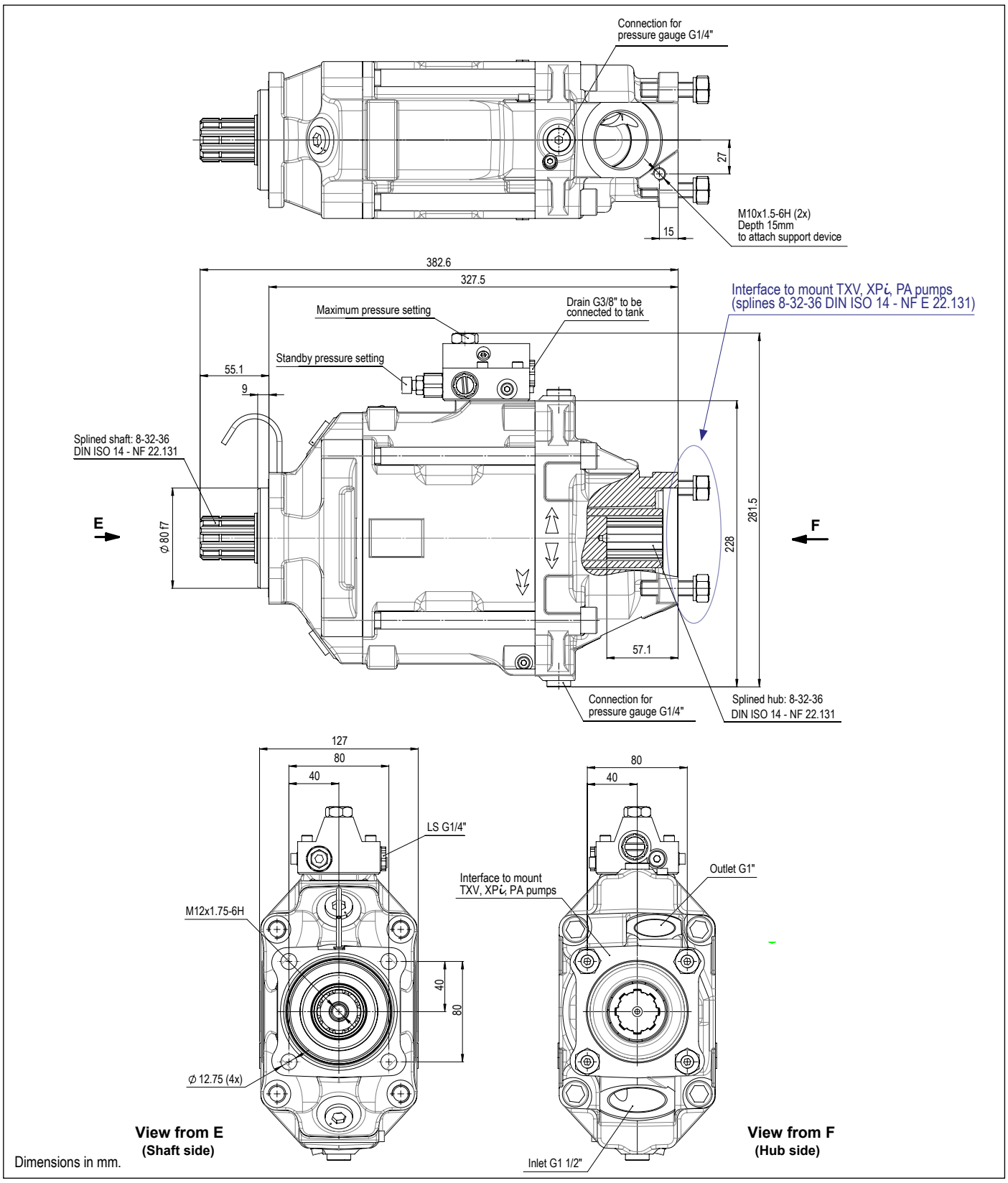
Dimensions in mm.



TXV 130 WITH THROUGH SHAFT PUMP

The TXV 130 pump exists in a “through shaft” version.

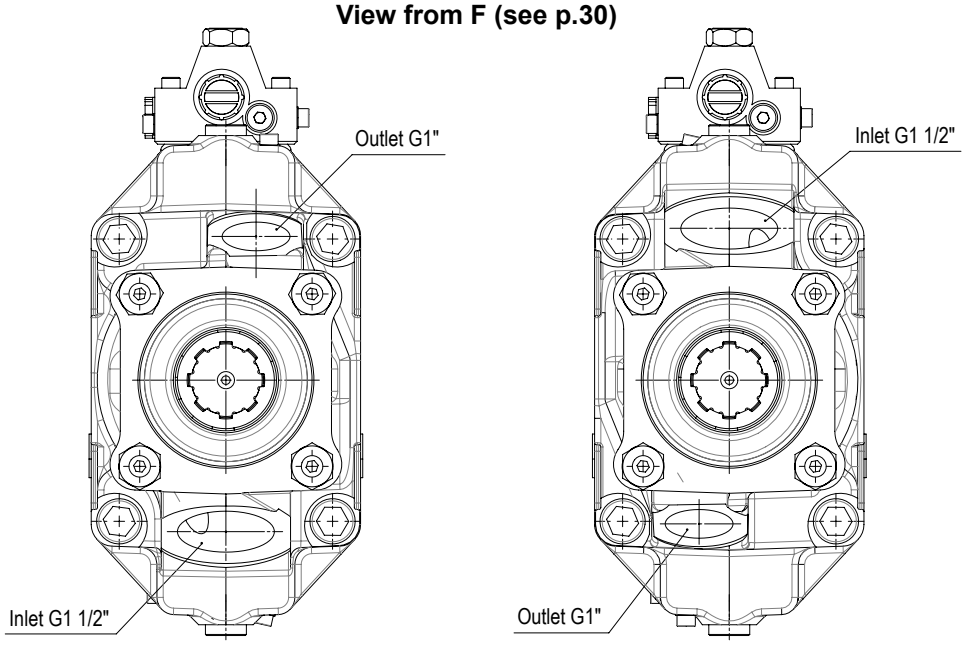
With side porting for inlet and output, this “through shaft” TXV 130 configuration means any LEDUC TXV pump, or fixed displacement XPi or PA pump, can be mounted on the back.
The maximum displacement of the “through shaft” TXV 130 can be factory set, on request, between 60 and 130 cc/rev.
It is important to check that maximum torque to be transmitted by the shaft of the “through shaft” TXV 130 does not exceed 900 N.m.



Dimensions in mm.

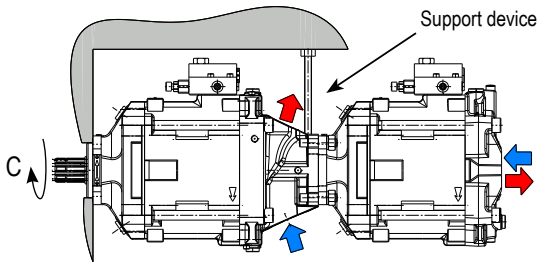
TXV 130 WITH THROUGH SHAFT PUMP

View from F (see p.30)

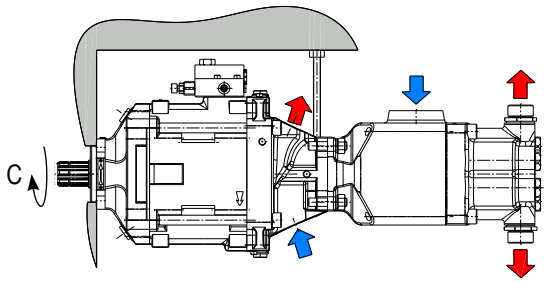


▶ Support device

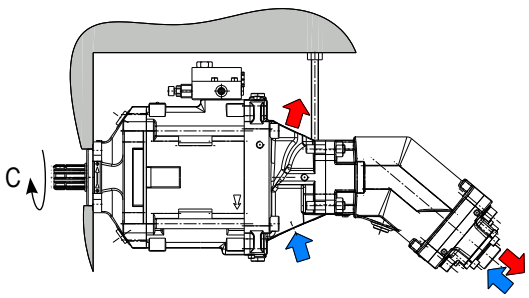
The support device for the pump must be fixed to the same part which the pump is mounted on (see diagram below) and has to be designed to avoid strain on the pump flange.



Example of two TXV pumps.



Example of TXV with a PA pump.



Example of TXV with a XP*i* pump.

Maximum torque transferable by the shaft of the pump driven by the PTO:

C = 900 N.m

That is, the sum of torque for both pumps must be < 900 N.m.

Please consult our Technical Department for advice regarding your installations.

TXVA series

pump with Load Sensing control - SAE version

variable displacement piston pumps

▶ Characteristics

Pump ref.	Direction of rotation	Max. displacement		Maximum operating pressure		Max. peak pressure (intermittent: 5%)		Max. operating pressure at flow-cancellation		Max. torque at 300 bar (4350 psi)		Max. speed	Weight		Overhang torque	
		cu.in/rev	(cc/rev)	psi	(bar)	psi	(bar)	psi	(bar)	lbf ft	(N.m)	rpm	lbs	(kg)	lbf ft	(N.m)
TXVA 75	CW CCW	4.58	(75)	5802	(400)	6092	(420)	6382	(440)	310	(420)	2000	64	(29)	26	(35.2)
TXVA 92	CW CCW	5.61	(92)	5511	(380)	5802	(400)	6092	(420)	380	(515)	1900	64	(29)	26	(35.2)

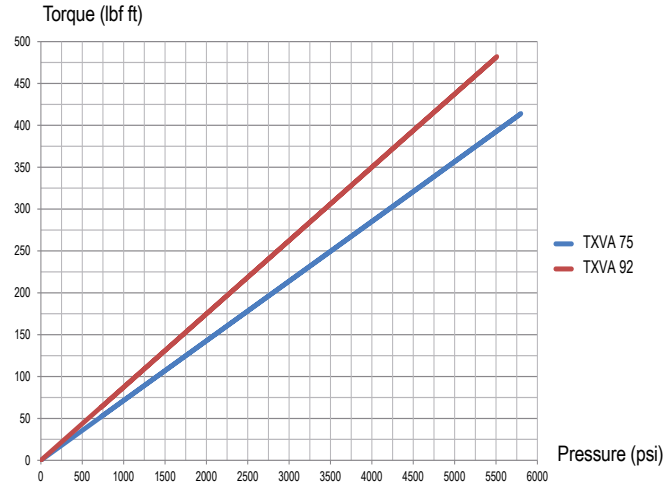
▶ Configurator for TXVA pumps

To obtain order code for your pump, fill in the parameters (❷, ❸, ❹, ❺) depending on the options required, using the table below.

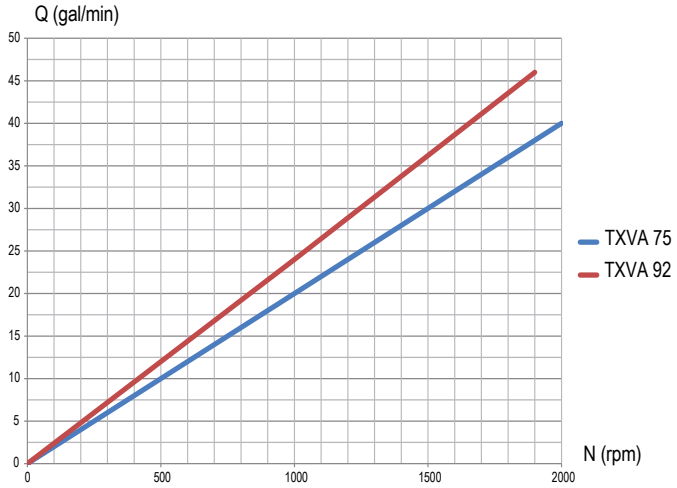
TXVA	...	...	...	...	L1
❶	❷	❸	❹	❺	❻

❶	**TXVA pump**			
❷	**Displacement**		4.60 cu.in/rev (75 cc/rev)	5.60 cu.in/rev (92 cc/rev)
❸	**Direction of rotation**			CW
				CCW
❹	**Flange**		SAE C - 2 bolts	C1
			SAE C - 4 bolts	C2
❺	**Shaft end**	Splined SAE J744	14T 12/24 DP - SAE C	S1
		Keyed SAE J744	Ø1 1/4" UNF 2A - SAE C	K1
❻	**Ports**	Threaded	Inlet: 1 7/8" 12UN 2B	L1
			Outlet: 1 1/16" 12UN 2B	

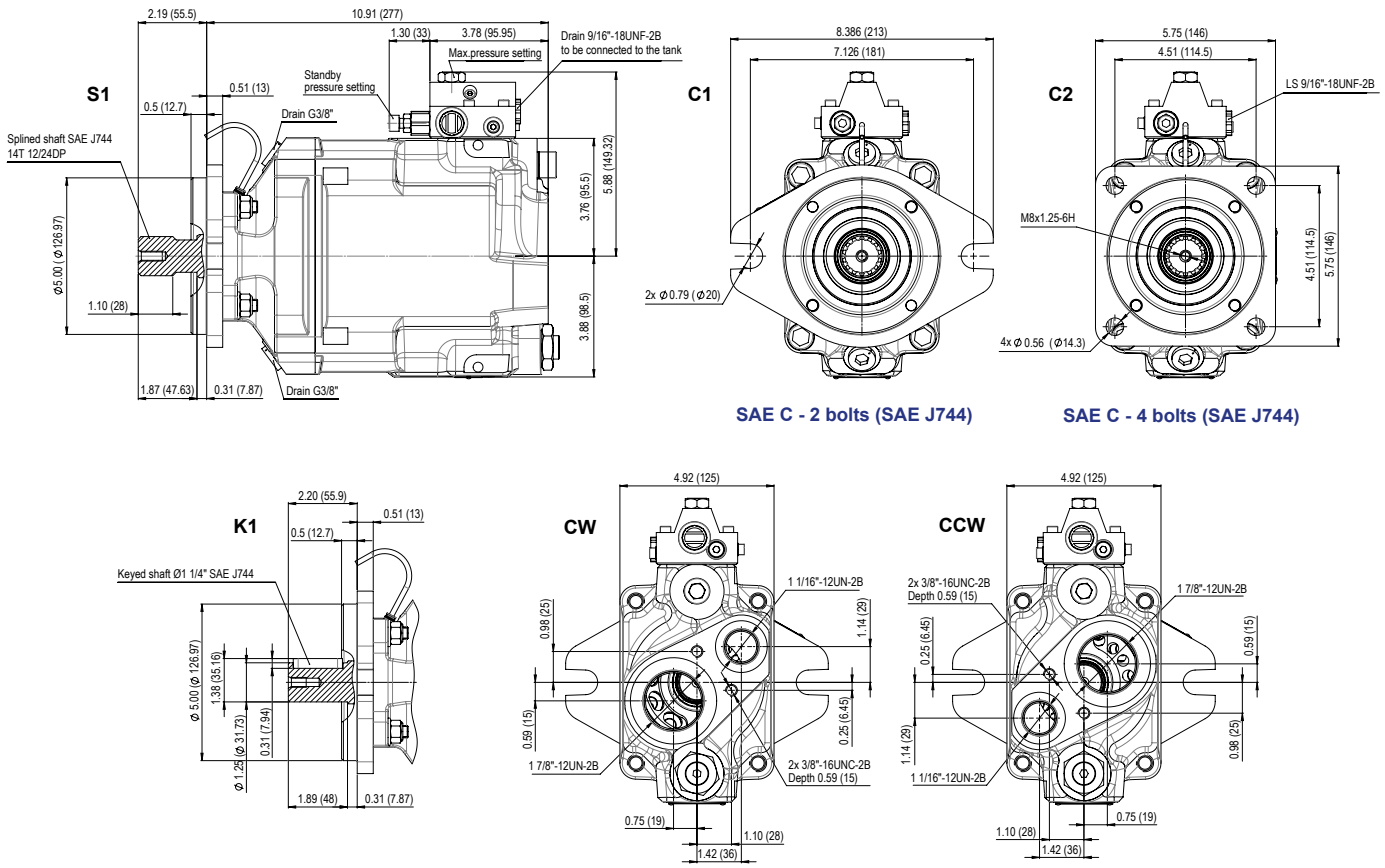
▶ Torque absorbed as a function of pump output pressure



▶ Flow



▶ Dimensions



Dimensions in inches (mm).

TXV *indexable* series

displacements 130 and 150 cc/rev

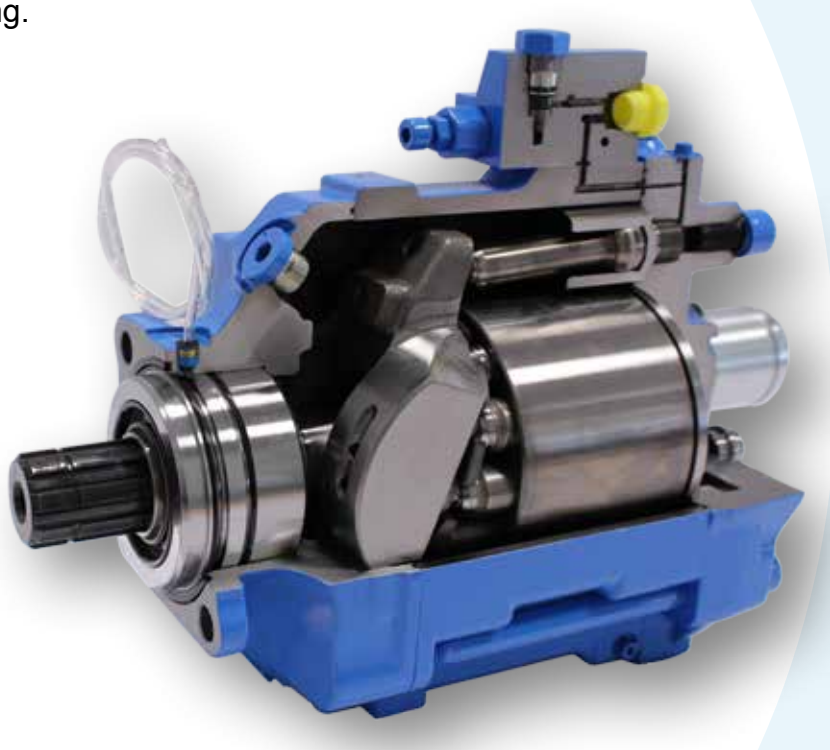
pumps with *Load Sensing* control

variable displacement piston pumps

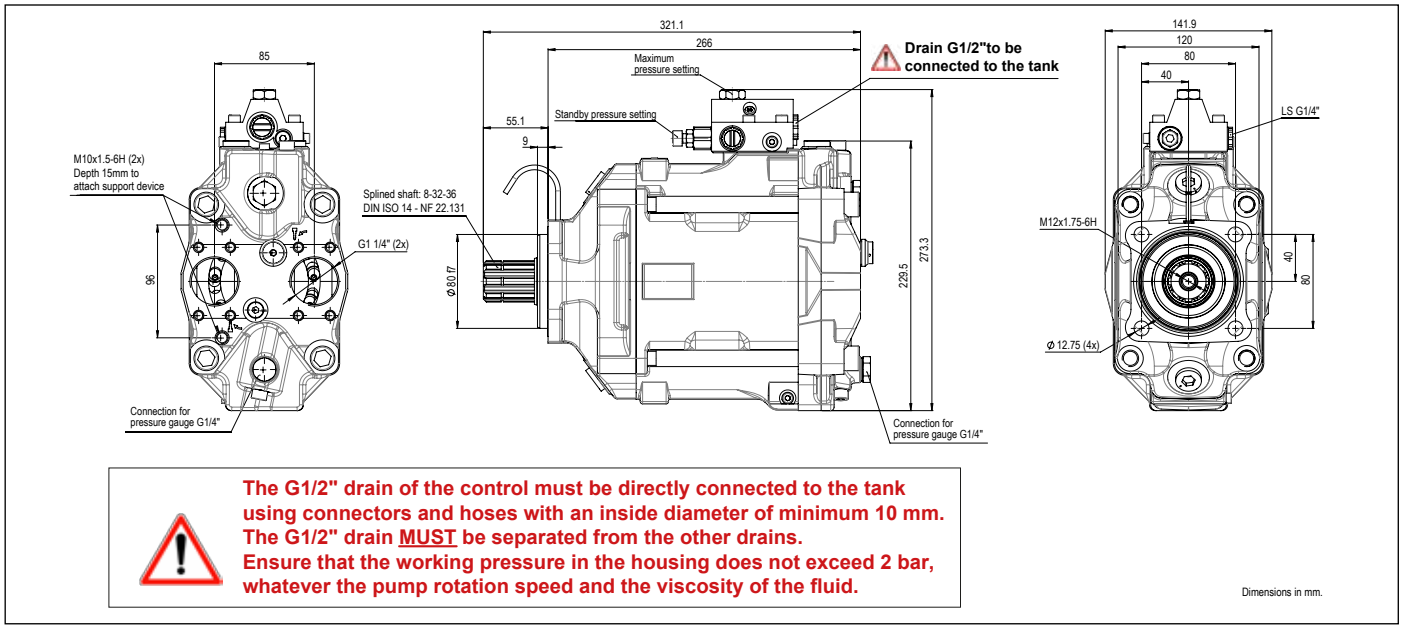
ADVANTAGES OF THE *indexable* SERIES

- Able to rotate in either direction, simply by changing position of the indexing screw !
- Stock optimization: only one reference regardless of direction of rotation !
- Pump supplied with its inlet fitting.

Minimum size envelope
High rotating speeds
High output pressure

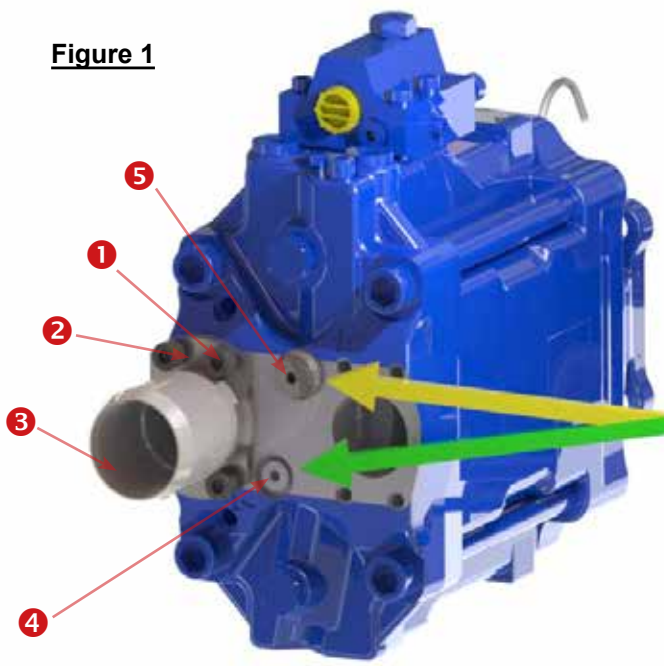


Pump reference		Direction of rotation	Max. displacement (cc/rev)	Maximum operating pressure (bar)	Maximum peak pressure (intermittent: 5%) (bar)	Max. operating pressure at flow-cancellation (bar)	Max. torque at 300 bar (N.m)	Maximum speed (rpm)	Weight (kg)	Overhang torque (N.m)
TXV 130 *indexable*	0520300	CW / CCW	130	360	380	400	730	1900	27.2	35
TXV 150 *indexable*	0525070	CW / CCW	150	310	330	350	840	1900	27.2	35



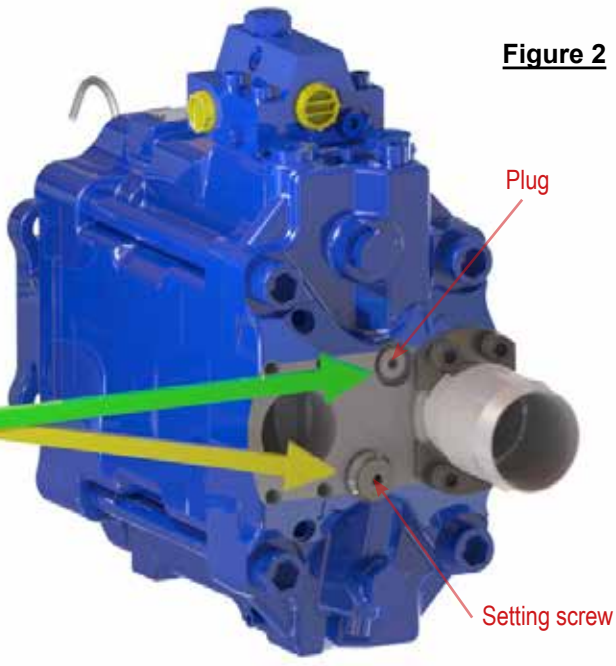
CW pump - Clockwise rotation

Figure 1



CCW pump - Counter-clockwise rotation

Figure 2



► How to change direction of rotation

Figure 1

■ Remove the 4 screws ❶.

■ Take off the 2 half-flanges ❷ and the inlet fitting ❸.
Take care not to lose the seal from the inlet fitting.

■ Remove the plug ❹ and the setting screw ❺.
Do not turn the pump shaft when the setting screw is not in place.

Figure 2

■ Put the setting screw ❺ (with tightening torque of 45 N.m) in the place where the plug ❹ was, and put the plug ❹ where the setting screw ❺ was.

■ Check the inlet fitting ❸ seal is present, and in good condition.

■ Put the inlet fitting ❸, half-flanges ❷ and screws ❶ onto the side where the plug ❹ is.

■ Tighten the screw to 12 N.m torque.

PLEASE NOTE: Unless otherwise specified, TXV pumps are supplied from factory for clockwise (CW) rotation.

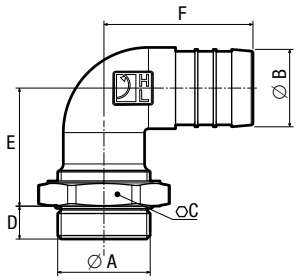
INLET FITTINGS FOR TXV PUMPS (optional)

See recommendations of the hosing dimensions on page 38.

90° elbow fittings, swivel

Reference	A	Ø B	C	D	E	F	Pump type
240131	G 1 1/2"	40	60	17	61	77	TXV
240133	G 1 1/2"	50	60	17	65	82	TXV

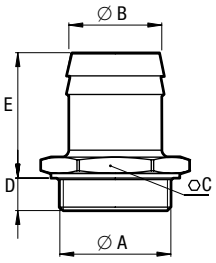
Dimensions in mm.



Straight fittings

Reference	A	Ø B	C	D	E	Pump type
240182	G 1 1/2"	40	56	14	54	TXV
240067	G 1 1/2"	50	52	14	66	TXV
240066	G 1 1/2"	60	64	14	69	TXV
240186	G 1 1/2"	63.5	64	14	69	TXV
240201	G 1 1/2"	76.2	80	14	89	TXV

Dimensions in mm.

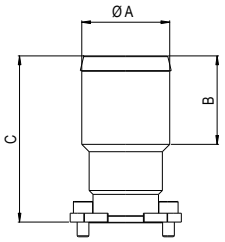


INLET FITTINGS FOR TXV - *indexable* PUMPS

Straight fittings

Reference	Ø A	B	C	Pump type
0523921	50	50	72	TXV *indexable*
0523922	60	57	113	TXV *indexable*
0523924	76.2	74	138	TXV *indexable*

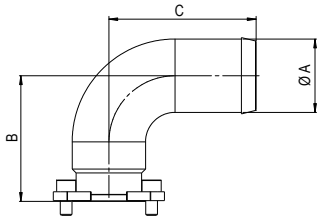
Dimensions in mm.



90° elbow fittings

Reference	Ø A	B	C	Pump type
0523919	50	66	82	TXV *indexable*
C001475	60	85	145	TXV *indexable*
C001476	63	85	145	TXV *indexable*

Dimensions in mm.



FILTER LS

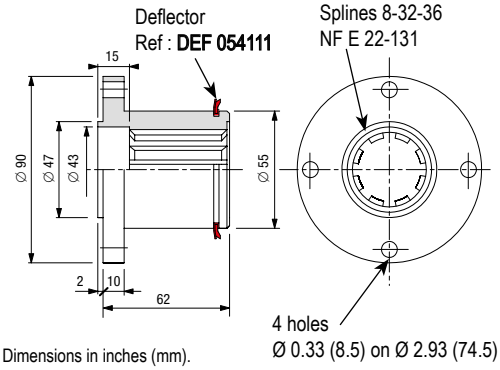
The LS filter protects the TXV's Load Sensing valve against contaminations coming from the hydraulic circuit.

Reference : **230035**

CARDAN PLATE DIN 90

The PLT 056315 cardan plate enables the pump shaft to be connected to a cardan shaft with interface as on drawing on the right.
Note: the maximum admissible torque is limited by the drive shaft.

Reference : **PLT 056315**



Dimensions in inches (mm).

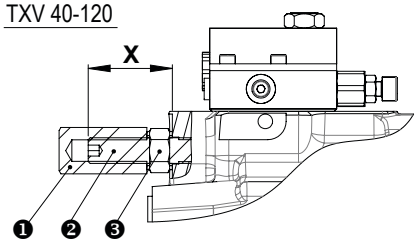
▶ Maximum displacement setting screw

The TXV pumps from 40 to 150 cc/rev are made as standard to be able to use a setting screw:

- Reference : **0518386** for TXV 40 to 120 pumps
- Reference : **0523899** for the TXV 130 and TXV 150 *indexable*

The pump displacement can thus be adjusted to exactly what is needed.

TXV 40-120

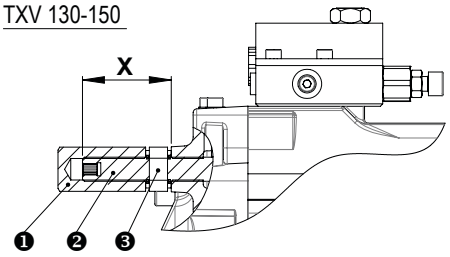


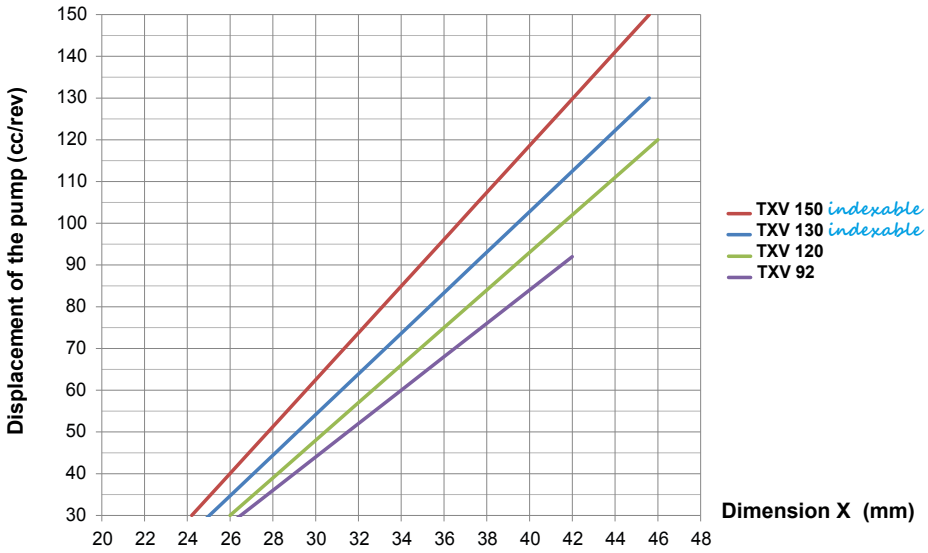
▶ How to set maximum displacement

Unscrew ❶ completely, loosen nut ❸ and screw ❷ to obtain dimension **X** on graph below, and the corresponding displacement (see figure).

- For TXV 150 *indexable*: 1 turn of the screw changes the displacement by 7.5 cc.
- For TXV 130 *indexable*: 1 turn of the screw changes the displacement by 6.5 cc.
- For TXV 120: 1 turn of the screw changes the displacement by 9 cc.
- For TXV 92 to TXV 40: 1 turn of the screw changes the displacement by 8 cc.

TXV 130-150





▶ Standby

TXV pumps are supplied as standard with standby pressure set at 30 bar.
On request, this standby pressure can be set between 25 and 60 bar.

▶ Maximum pressure

Cancellation pressure PC of the pump must be the same as the maximum working pressure of your installation. This PC pressure should be specified in the order.
If no PC setting is specified, pumps will be supplied with PC set at 100 bar.

▶ Relief valve in the entry plate of proportional valve

Must be set 25 to 30 bar higher than the chosen PC pressure.

▶ Response time

Response time of TXV pumps, from zero flow up to full flow, can be adapted.

For further information or advice, please contact our Customer Service Department.

OPTIMIZE THE SERVICE LIFE OF YOUR LEDUC PUMP

► The tank

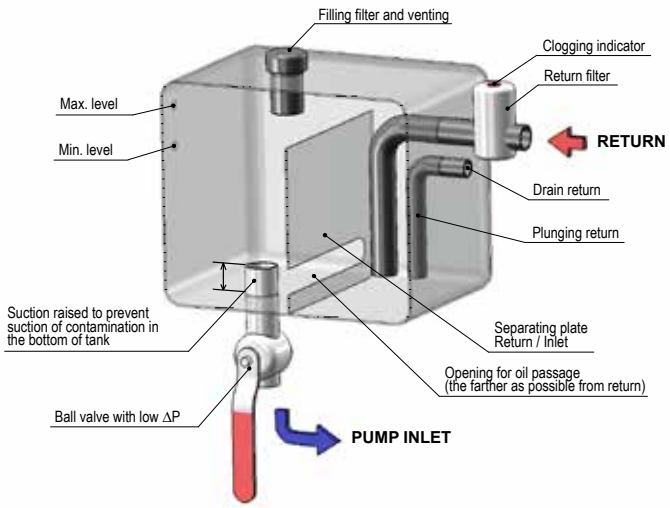
Generally, hydraulic pumps perform better when the tank is above the pump. LEDUC pumps can also operate with oil level beneath the pump.

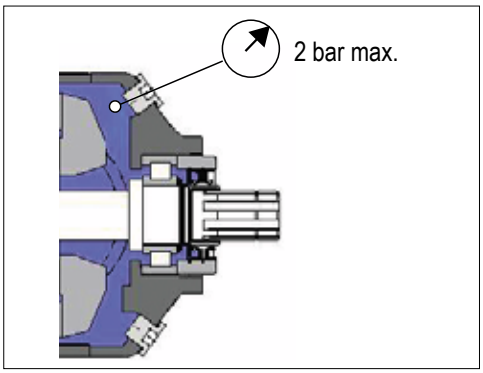
For further information on such installations, please contact our Technical Department.

Correct inlet conditions are between 0.8 to 2 bar absolute pressure.

The tank should preferably have a separation between inlet side and return. This avoids fluid emulsion and the introduction of air into the hydraulic circuit.

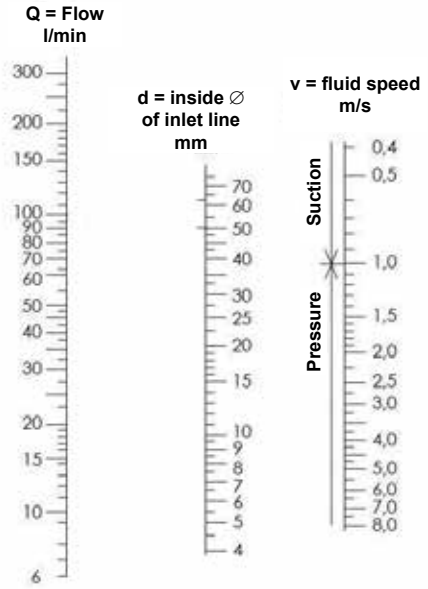
Ensure also that the suction is not from the very bottom of the tank, so as to protect the pump from any deposits (particles).





► Hosing

The supply line should be dimensioned to ensure flow between 0.5 and 0.8 m/second.
Choose as direct a supply line as possible, avoiding sharp bends.



► Filtration

The service life of the pumps is highly dependent on the quality of the hydraulic fluid and level of cleanliness.

We recommend the following minimum cleanliness:

- Cleanliness class 9 according to NAS1638;
- Cleanliness class 6 according to SAE;
- Cleanliness class 20/18/15 according to ISO/DIS 4406.

► Drain pressure

It is essential to drain the pump, to avoid excessive pressures on the shaft seal. Maximum acceptable internal pressure depends on pump rotating speed.
Ensure that the working pressure in the housing does not exceed 2 bar, whatever the pump rotation speed and the viscosity of the fluid.
Other operating may be possible; please consult our Technical Department.

► Preparation of the pump

Before start-up, the pumps should be filled with oil.

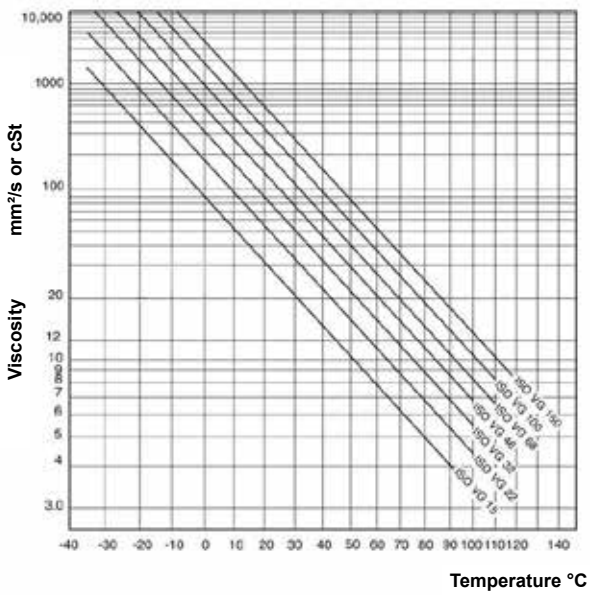
► Fluid

Use a mineral hydraulic oil with viscosity between 10 and 400 cSt. It is in this viscosity range that the pump keeps its volumetric characteristics.

If you wish to use other fluids, please consult our Customer Service Department.

Maximum temperature of fluid in the pump should not exceed 100°C.

Fluid viscosities as a function of temperature



► Drive and assembly recommendations

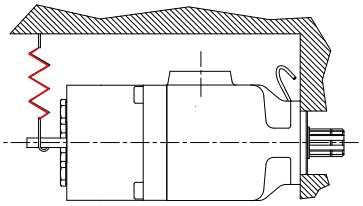
If cardan shaft drive: check the quality and correct installation of the cardan shaft.

For PTO mount applications, be careful to respect the tightening recommendations in terms of pump onto PTO and PTO onto vehicle gearbox.

LEDUC pumps are not designed to withstand any axial load on the pump shaft. Check your installation conforms to this requirement.

► Elastic support device

For pumps with a greater overhang torque than that accepted by the PTO, it is recommended to use an elastic support device to support the weight of the pump.
This support has to be designed to avoid strain on the pump flange.



We do not sell the elastic support.
It must be suitable for the environment of the pump assembly.

► Start-up

- Open the supply valve if there is one.
- Check the valve is in “back to tank” position.
- Partially unscrew the output fitting.
- Start up at low speed, or by successive starts/stops.
- Retighten the output fitting as soon as air bubbles have disappeared.
- Let the pump run for one to two minutes, and check that the flow is regular.
- Check the pump is running correctly, with neither vibrations nor a normal noise.
- After several hours of operation, check the tightening torque of the pump.

► Maintenance

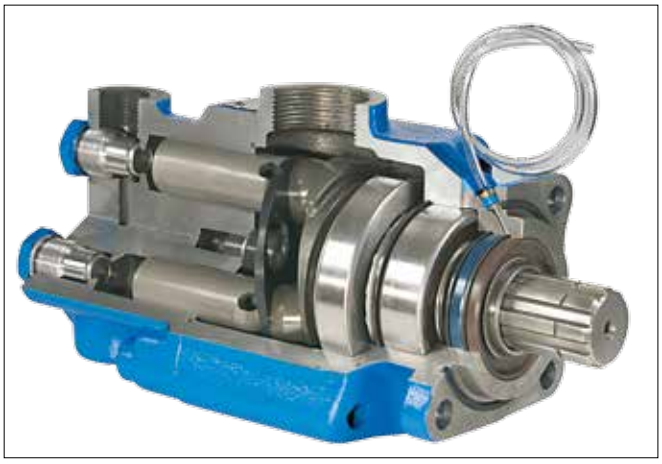
Some regular checks are necessary, namely:
- tightening of pump to PTO;
- cleanliness of fluid;
- state of filter.

LEDUC pumps designed for truck hydraulics are all fitted with reinforced sealing comprising:

- **two radial seals**:
  - an outer seal adapted to the needs of PTOs and gearboxes;
  - an inner seal adapted to the hydraulic requirement.

- **an original protection of the pump shaft seals**.

This is a flexible transparent tube which avoids any entry of contaminants between the two seals, and guarantees high pressure water jet cleaning of vehicle will not damage the sealing area. It also allows air vent of the chamber between the two seals.



WARNING : if you notice any trace of oil in the tube, the tightness of PTO-pump should be checked immediately.

RECOMMENDATIONS FOR ATTACHING THE PROTECTIVE TUBE

☑ Make a siphon with the tube so as to avoid any introduction of dirt from road, and water or damp from high pressure washing of vehicle.

☑ Put the end of the tube downwards, or in a place sheltered from any projections.

☑ Fix the tube in place using a collar/clip.

☒ Avoid attaching the tube to any parts which may move, this could lead to it being damaged or torn off.

☒ Avoid any pinching or folds in the tube when fixing it in place.

☒ Make sure the end of the tube is not blocked.

INFORMATION

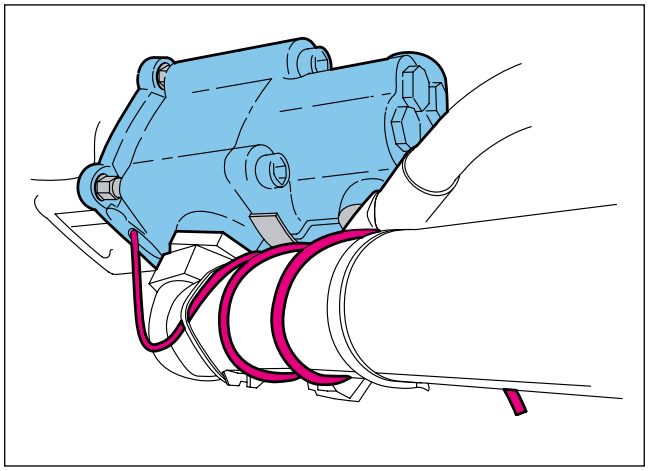
HYDRO LEDUC stresses that on non-sealed PTO installations it is the hydraulic pump which ensures the sealing of the vehicle gearbox.

This is why HYDRO LEDUC offers tried and tested solutions approved by vehicle manufacturers.

Note in particular the pump - PTO sealing via a frontal square section seal ensuring metal to metal contact between pump and PTO.

Do not use paper gasket.

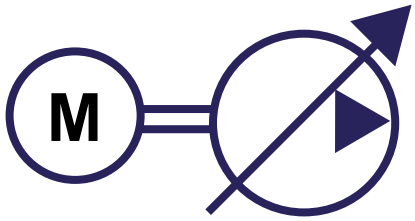
Example of tube attachment



HYDRO LEDUC

GEP573

5kW powerpack



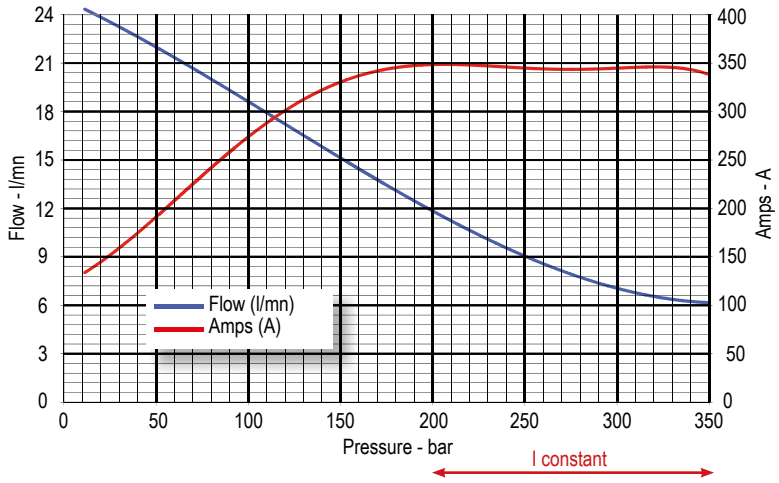
The GEP573 is a unit comprising:

- a 5 kW electric motor; and
- a variable displacement piston pump.

The automatic variation in displacement of the hydraulic pump allows the GEP573 to supply high flow when it is used at low pressure and to reach high pressure by reducing pump output flow.

The unit thus optimizes the power of the electric motor (see graph below).

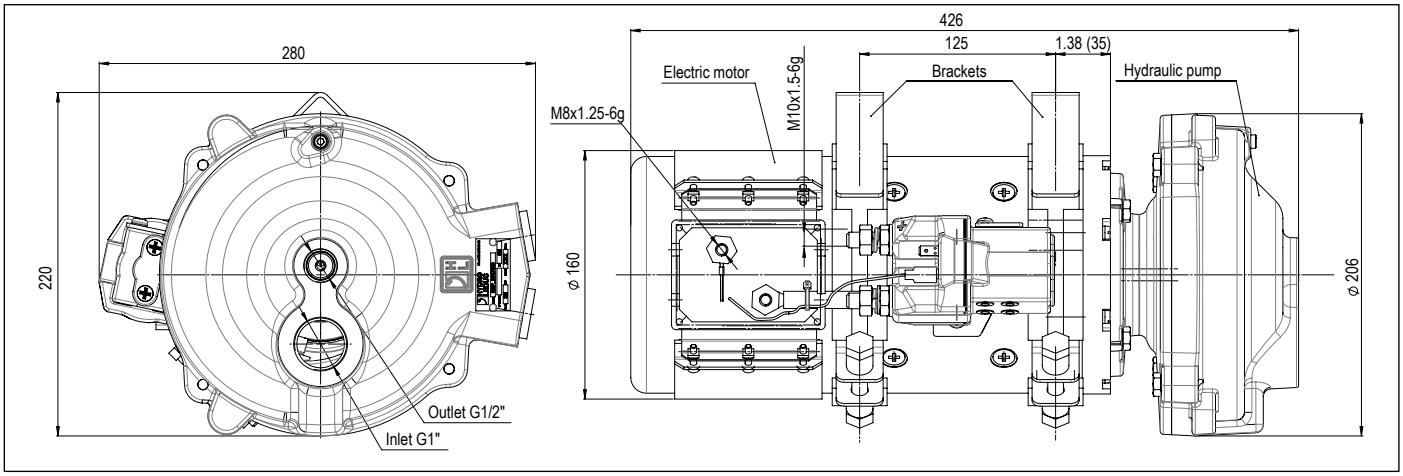
► Flow and current as a function of pressure



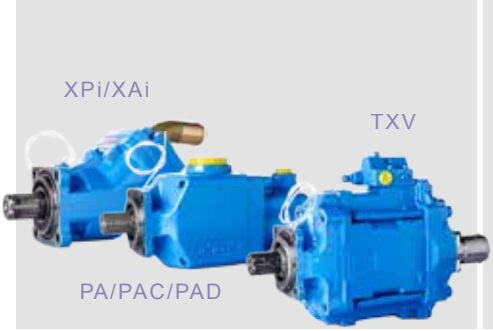
CHARACTERISTICS

- Displacement: 7.3 cc/rev
- Voltage: 24 Vdc
- Max. continuous power: 5000 W
- Max. peak power: 5500 W
- Weight: 37 kg

► Dimensions (in mm)



PISTON PUMPS FOR TRUCKS



HYDRO LEDUC offers 3 types of piston pumps perfectly suited to all truck and PTO-mount applications.

- Fixed displacement from 12 to 130 cc/rev
- Fixed displacement, twin-flow, from 2x25 to 2x75 cc/rev
- Variable displacement, with LS control (load sensing) from 40 to 150 cc/rev.

MOBILE & INDUSTRIAL PUMPS

The W range is composed of fixed displacement pumps, and the DELTA range, of variable displacement pumps. These pumps can operate at high pressures within minimal size.

► W and WA (SAE)* pumps:

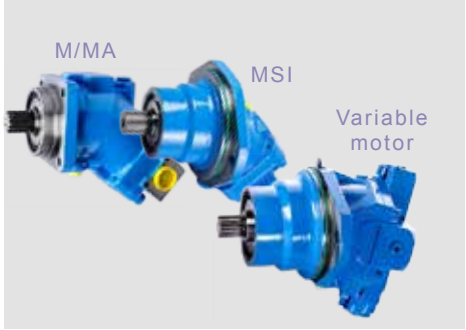
- Fixed displac. from 12 to 125 cc/rev.
- ISO 3019/2 or SAE flanges.
- DIN 5480 or SAE shafts.

► DELTA pumps:

- Variable displac. from 40 to 92 cc/rev
- SAE shafts and flanges.

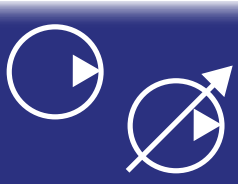
* For SAE version, please ask.

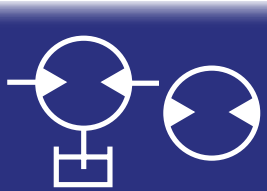
HYDRAULIC MOTORS



Fixed and variable displacement piston motors

- Models from 5 to 180 cc/rev.
- Available in DIN and SAE versions
- In fixed displacement, special drainless motor.





HYDRO LEDUC

Complete catalogues available at www.hydroleduc.com

HYDROPNEUMATIC ACCUMULATORS

Diaphragm, bladder, bladder-diaphragm and piston accumulators.
Capacities from 0.02 to 50 litres

- Operating pressure up to 400 bar
- Accessories for use with hydraulic accumulators.

MICRO HYDRAULICS

This is a field of exceptional HYDRO LEDUC know-how:

- Axial and radial piston pumps, of fixed and variable displacement
- Axial piston micro-hydraulic motors
- Micro-hydraulic units incorporating pump, electric motors, valving, controls, etc.

HYDRO LEDUC offers complete, original and reliable solutions for even the most difficult environments, and within the smallest size envelopes.

A dedicated R&D team means HYDRO LEDUC is able to adapt or create products to meet specific customer requirements.

Working in close cooperation with the decision-making teams of its customers, HYDRO LEDUC optimizes proposals based on the specifications submitted.

a passion for hydraulics

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HYDRO LEDUC

make it simple

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