PISTON PUMPS FOR TRUCKS

FIXED DISPLACEMENT





FIXED



XAi - SAE series

XPi series

The SAE range										•											• •					10)
Dimensions	•••	· ·	•••	•••	•	· ·	:	•••	•	• •		:	• •	 :	•		•	• •		•	• •	•••	:	:	· ·	12	,
Performance										•											•					13	,
Accessories				• •						•	• •	•	• •		•	• •			•	•	• •		•	•		14	

The DIN range......4

PA - PAC series

The range					 											. '	16
Characteristics					 					 						. '	17
Dimensions					 											. '	18
Performances					 											. '	19
Accessories					 											.2	<u>2</u> 1

VARIABLE DISPLACEMENT PUMPS



TXV series

.

The range	. 22
Why use a variable displacement pump ?	.23
How does it work?	. 24
Pressure-flow "Load Sensing" control	. 25
Characteristics	. 26
Performances	. 27
Dimensions	. 28
TXV 130 with through shaft	. 30
TXVA - SAE series	. 32
TXV with constant torque control	. 36
Accessories	. 38
Settings	.41
Installation and start-up recommendations	.42
Shaft sealing	.44
The complete LEDUC product range	46



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



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



PA - PAC

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

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 with Constant Torque - TXV130 with constant torque control - with through shaft version

- Models from 40 to 150 cc/rev



PA - PAC series

3

XPi series

the intelligent pump

fixed displacement bent axis design



The compact size envelope of XP*i* 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
- Innovative 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.	Maximum	Maximum intermittent peak	Max apoad ⁽¹⁾	Max. torque	We	ight	Overhar	ig torque	
Pı refe	ump rence	Displac.	pressure	pressure < 5 seconds	Max speeu.	380 bar ⁽²⁾	without inlet fitting	with inlet fitting 2"	without inlet fitting	with inlet fitting 2"
		(cc/rev)	(bar)	(bar)	(rpm)	(N.m)	(kg)	(kg)	(N.m)	(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

(1) At absolute pressure 1 bar, ISO VG46 fluid at 25°C.

(2) Maximum torque given with a mechanical efficiency at 95%.



5



Pump	reference	A	В	С	D			G	н
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 (with a mechanical efficiency considered at 95%)



Flow as a function of rotating speed



These graphs are the results of testwork done in HYDRO LEDUC R&D laboratory, on a specific test bench with a mineral hydraulic fluid ISO VG46 at 25°C (~100 cSt) - disregarding the volumetric efficiency.

Volumetric efficiency



7

XΡi - Accessories



INLET FITTINGS FOR XPi PUMPS

A See recommendations of the hosing dimensions on page 40.

For high speeds, please consult. All XP*i* pumps are supplied with their inlet fitting. Please specify required fitting from the choice below when ordering.

45° elbow fittings kit



Reference	Ø hose	ØA		
0519370	1 1/2"	39.1	91.7	46.7
0519373	42	43	91.7	46.7
0519374	1 3/4"	46	91.7	46.7
0519371	2"	51.8	108.4	54.4
0519372	2 1/2"	64.5	125.2	62.2

90° elbow fittings kit



Reference	Ø hose	ØA	E	F
0521740	1 1/2"	39.1	58.6	79.5
0521741	2"	51.8	64.9	80.2
0521742	2 1/2"	64.5	71.3	87.5

Dimensions in mm.

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 XP*i* pump applications where the pump is driven by a continuous running PTO (PTO which cannot be disengaged), 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.

\Rightarrow By-pass fitted on the back of the XP*i* pump.

LEDUC references	24 Volts
XPi 12 to XPi 63	BP63 0517931
XPi 80 to XPi 130	BP80 0522140



ML

► How does it work ?

The by-pass valve is a 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).

A drain line has to be installed between the By-Pass valve and the hydraulic tank of the vehicule to ensure sufficient oil circulation and a good cooling into the pump. In any case, the connection to the tank must be done below the oil level.

Μ

► XPi overhang torque with by-pass

Dumo	Wei	ght	Overhan	g torque
reference	without inlet fitting	with inlet fitting 2"	without inlet fitting	with inlet fitting 2"
	(kg)	(kg)	(N.m)	(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	А	В	С	D	E	F	G	Н	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.



9

Application

circuit



the intelligent pump - SAE version

fixed displacement bent axis design



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 2650 rpm



2 bolt flange models

Characteristics - XAi SAE version

2 bolt flange - SAE J744

Pump	Displac.	Maximum continuous	Maximum peak	Max speed ⁽¹⁾	Max. torque absorbed at	Wei	ight	Overhan	g torque
reference		pressure	pressure < 5 seconds		5511 psi (380 bar) ⁽²⁾	without inlet fitting	with inlet fitting 2"	without inlet fitting	with inlet fitting 2"
	Cu.in/rev (cc/rev)	psi (bar)	psi (bar)	rpm	lbf ft (N.m)	lbs (kg)	lbs (kg)	lbf ft (N.m)	lbf ft (N.m)
XAi 18 0524085	1.1 (18)	5511 (380)	6092 (420)	2400	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)	2650	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)	2600	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)

(1) At absolute pressure 14,50 psi (1 bar), ISO VG46 fluid at 25°C.

(2) Maximum torque given with a mechanical efficiency at 95%.

▶ 4 bolt flange - SAE J744

Pump	Diaplac	Maximum	Maximum peak	Max append(1)	Max. torque absorbed at	We	ight	Overhan	g torque
reference	Dispiac.	pressure	pressure < 5 seconds		5511 psi (380 bar) ⁽²⁾	without inlet fitting	with inlet fitting	without inlet fitting	with inlet fitting
	Cu.in/rev (cc/rev)	psi (bar)	psi (bar)	rpm	lbf ft (N.m)	lbs (kg)	lbs (kg)	lbf ft (N.m)	lbf ft (N.m)
XAi 18 0524080	1.1 (18)	5511 (380)	6092 (420)	2400	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)	2650	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)	2600	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 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)

(1) At absolute pressure 14,50 psi (1 bar), ISO VG46 fluid at 25°C.
 (2) Maximum torque given with a mechanical efficiency at 95%.



11



SAE B - 2 bolt mounting configurations (SAE J744)

Pump type	А	В	С	D	F	Shaft
XAi 18 0524085	7.76 (197.2)	6.79 (172.5)	4.08 (103.7)	2.87 (73)	1 1/16"-12 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)	1 1/16"-12 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)	1 1/16"-12 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)

Pump type	А	В	С	D		Shaft
XAi 18 0524080	7.76 (197.2)	6.79 (172.5)	4.08 (103.7)	2.87 (73)	1 1/16"-12 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)	1 1/16"-12 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)	1 1/16"-12 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 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 (with a mechanical efficiency considered at 95%)

Flow as a function of rotating speed



These graphs are the results of testwork done in HYDRO LEDUC R&D laboratory, on a specific test bench with a mineral hydraulic fluid ISO VG46 at 25°C (~100 cSt) - disregarding the volumetric efficiency.

Volumetric efficiency





INLET FITTINGS FOR XAL PUMPS

A See recommendations of the hosing dimensions on page 40.

For high speeds, please consult.

All XAi pumps are supplied with their inlet fitting.

Please specify required fitting from the choice below when ordering.

45° elbow fittings kit

14



Reference	Ø hose	ØA		
0519370	1 1/2"	39.1	91.7	46.7
0519373	42	43	91.7	46.7
0519374	1 3/4"	46	91.7	46.7
0519371	2"	51.8	108.4	54.4
0519372	2 1/2"	64.5	125.2	62.2

90° elbow fittings kit



Reference	Ø hose	ØA	E	F
0521740	1 1/2"	39.1	58.6	79.5
0521741	2"	51.8	64.9	80.2
0521742	2 1/2"	64.5	71.3	87.5

Dimensions in mm.

Dimensions in mm.

BY-PASS VALVE FOR XA*i* **PUMPS**

For XA*i* pump applications where the pump is driven by a continuous running PTO (PTO which cannot be disengaged), 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.

\Rightarrow By-pass fitted on the back of the XA*i* pump.

Reference	24 Volts	12 Volts
XAi 18 to XAi 63	BPA63 0521715	BPA63 0518520



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

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





A drain line has to be installed between the By-Pass valve and the hydraulic tank of the vehicule to ensure sufficient oil circulation and a good cooling into the pump. In any case, the connection to the tank must be done below the oil level.

► XAi overhang torque with by-pass

2 bolt flange - SAE J744

Pump	We	ight	Overhang torque				
reference	without inlet fitting	with inlet fitting 2"	without inlet fitting	with inlet fitting 2"			
	lbs (kg)	lbs (kg)	lbf ft (N.m)	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	We	ight	Overhang torque			
reference	without inlet fitting	with inlet fitting 2"	without inlet fitting	with inlet fitting 2"		
	lbs (kg)	lbs (kg)	lbf ft (N.m)	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	А	В	С	D	Е		G	Н	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)	1 1/16"- 16UNF - 2B	2.13 (54)	4.25 (108)
XAi 32 / 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)



XA: - SAE series

16 PA | PAC - Presentation

PA | PAC series

piston pumps

fixed displacement in-line design

ADVANTAGES

- Of unique design, the PA and PAC 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 pump series comprises two 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 2x50 to 2x75 cc/rev
- two different flows: 75-40 cc/rev

> PAC pumps

Series offering the most compact size envelope :

- single flow from 40 to 80 cc/rev
- twin-flow from 2x25 to 2x40 cc/rev

PA | PAC - Dimensions



Pumpre	eference	Displac (cc/r	rement rev)	А	в	С	D	E	F	G	J	к	Weight (kg)	Overhang torque (N.m)	Max. speed (rpm)	Max. torque absorbed at 400 bar ⁽¹⁾ (N.m)
► Single	► Single flow															
PA 25	0511510	25	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17	2200	177
PA 32	0511515	34	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17	2000	240
PA 40	0511520	43	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17	1750	304
PA 50	0511525	50	-	261	102	126	47	78	64	107	G 1 1/2"	G 3/4"	15	17	1650	354
PA 100	0511565	104	-	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5	1400	736
PA 114	0511570	114	-	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5	1350	807
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	1800	283
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	1650	354
PAC 65	0511490	65	-	243	102.5	112.8	63	78	65	107	G 1 1/2"	G 3/4"	16	17.6	1500	460
PAC 80	0511705	78	-	247	102.5	116.3	63	78	65	107	G 1 1/2"	G 3/4"	17	21.3	1350	552
► Twin-f	low - 2 x	3 pis	tons													
PA 2 x 50	0511555	52	52	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5	1400	736(2)
PA 2 x 57	0511560	57	57	290	123	138.8	69	90	69	124	G 2"	G 3/4"	23.5	31.5	1350	807(2)
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	1350	1062(2)
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	1350	807(2)
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	1750	354(2)
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	1500	460(2)
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	1350	552 ⁽²⁾

(1) Maximum torque given with a mechanical efficiency at 90%.

(2) Maximum torque for the two pressure ports at 400 bar.

Dimensions in mm.







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

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

$$\mathcal{Q} = Hydraulic power in kW$$

$$Q = Flow in l/min$$

$$\eta_{global} = Volumetric efficiency + mechanical efficiency$$
as a function of the displacement and the pressure
$$C = \frac{Cyl \times \Delta P}{62.8 \times \eta_{meca}}$$

$$\mathcal{Q} = Flow in l/min$$

$$\eta_{global} = Volumetric efficiency + mechanical efficiency$$

$$C = Torque in N.m$$

$$Cyl = Displacement in cc/rev$$

$$\Delta P = Differential pressure at the pump terminals, in bar$$

$$\eta_{meca} = Mechanical efficiency$$

PA | PAC - Performance

Flow as a function of rotating speed





These graphs are the results of testwork done in HYDRO LEDUC R&D laboratory, on a specific test bench with a mineral hydraulic fluid ISO VG46 at 25°C (~100 cSt) - disregarding the volumetric efficiency.

Volumetric efficiency



F

INLET FITTINGS FOR PA | PAC PUMPS

See recommendations of the hosing dimensions on page 40. For high speeds, please consult.

90° elbow fittings, swivel

Reference	Α	ØВ	С	D	Е	F
240131	G 1 1/2"	40	60	17	61	77
240133	G 1 1/2"	50	60	17	65	82
240135	G 2"	50	70	17	65	82

Dimensions in mm.

Straight fittings

Reference	Α	ØВ	С	D	E
240182	G 1 1/2"	40	55	16	52
240067	G 1 1/2"	48	55	16	64
240066	G 1 1/2"	60	65	16	67
240186	G 1 1/2"	63.5	65	16	67
240183	G 2"	50	65	16	52
240170	G 2"	60	65	16	70
240201	G 1 1/2"	76.2	80	16	87

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 and DIN 100

The 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. The deflector is supplied with the cardan plate.

Туре	LEDUC code	ØA	ØВ	с	D			ØG	н
DIN 90	056315	90	47	43	2	10	62	55	15
DIN 100	0519040	100	57	43	2	10	64	55	15





ØA

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Ø B

00



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 11 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.



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:

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

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



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).





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.

25





TXV pumps are available in 11 models from 40 to 150 cc/rev maximum displacement.

Pur refere	np ence	Direction of rotation	Maximum displac. ⁽¹⁾	Max. opera- ting pressure	Max. peak pressure (intermittent: 5%)	Torque at 300 bar ⁽²⁾	Max.speed at full displa- cement ⁽³⁾	Max.speed in stand-by	Weight	Overhang torque ⁽⁴⁾
			(cc/rev)	(bar)	(bar)	(N.m)	rpm	rpm	(kg)	(N.m)
▶ Standa	ard pump	o range								
TXV 40	0512950 0512955	CW CCW	40	400	420	225	3000	3000	26	34
TXV 60	0512500 0512505	CW CCW	60	400	420	335	2600	3000	26	34
TXV 75	0512510 0512515	CW CCW	75	400	420	420	2000	3000	26	34
TXV 92	0512520 0512525	CW CCW	92	400	420	515	1900	3000	26	34
TXV 120	0515700 0515705	CW CCW	120	380	400	675	2100	3000	26	34
TXV 130	0515300 0515515	CW CCW	130	365	380	730	2100	3000	28,2	38,6
TXV 150	0518600 0518605	CW CCW	150	310	330	840	2000	3000	28,2	38,6

With through shaft*

TXV 130 0518700 0518705 CW CCW 130 365 380 730 1900 3000 31,1 47	',4
--	-----

* For TXV 130 through shaft available with max displacement set at : 60-65-75-85-95-100-110 - other specific set (on request)

(1) TXV pumps can be set for smaller maximum displacements (see page 41).

(2) For a mechanical efficiency at 85%.

(3) Higher speed - at full displacement - possible depending on flow required : please contact us.

Viscosity affects maximum possible rotating speed. If viscosity > 400 cSt, please contact us to obtain corresponding speed possibilities.

(4) Value of the overhang torque of the only pump.

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

ወ	$\Delta P x Q$
x = (ک ^{00 x ŋ} global

Calculation of torque to determine PTO, as a function of the displacement and the pressure

 $C = \frac{Cyl \times \Delta P}{62.8 \times \eta_{meca}}$

Ideal installation



With:		
\mathscr{P}	=	Hydraulic power in kW
ΔP	=	Differential pressure in bar
Q	=	Flow in I/min
С	=	Torque in N.m
Cyl	=	Displacement in cc/rev
n _{meca}	=	Mechanical efficiency
^ŋ global	=	Mechanical efficiency + volumetric efficiency
► Fo	orce	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 (with a mechanical efficiency considered at 85%)



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

These graphs are the results of testwork done in HYDRO LEDUC R&D laboratory, on a specific test bench with a mineral hydraulic fluid ISO VG46 at 25°C (~100 cSt) - disregarding the volumetric efficiency.

Volumetric efficiency



TXV 40 to 120 - Dimensions

TXV 40 TO 120



Dimensions in mm.

TXV connections

Pump	Outlet	Inlet	А	В
reference	(Ø)	(Ø)	(mm)	(mm)
TXV 40 to 92	G 3/4"	0 4114/0	15	19
TXV 120	G 1"	G 1°1/2	6	23.57



Support device

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

Mass and position of centre of gravity

Pump type	L (mm)	Weight (kg)	Overhang torque (N.m)
TXV 40 to 92	130	26	34
TXV 120	130	26	34
TXV 130 and TXV 150	128	28.2	38.6
TXV 130 with through shaft	152.6	31.1	47.4



Dimensions - TXV 130-150 29

TXV 130 - 150



Dimensions in mm.

► TXV130 and 150 connections

Pump	Outlet	Inlet	Α	В
reference	(Ø)	(Ø)	(mm)	(mm)
TXV 130 and TXV 150	0.4"	0 4114/0	00.4	07
TXV 130 with through shaft	G 1"	G 1"1/2	29,4	37



Support device

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

Mass and position of centre of gravity

Pump type	L (mm)	Weight (kg)	Overhang torque (N.m)
TXV 130 et TXV 150	128	28,2	38,6
TXV 130 arbre traversant	152,6	31,1	47,4



TXV 130 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 XP*i* 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 110 cc/rev on request. 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. A closing plate must be used when using the pump alone (see page 37).



TXV 130 THROUGH SHAFT PUMP



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.





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.

TXVA SAE version - Characteristics



TXVA series

variable displacement piston pumps SAE version

Characteristics

Pump ref.	Direc- tion of rotation	Ma displace	ax. ement ⁽¹⁾	Max opei pres	imum rating ssure	Max. peak pressure (intermittent: 5%)		ax. peak ressure 300 bar ermittent: (4350 psi) ⁽²⁾ Max. speed at 5%) (4350 psi) ⁽²⁾ displace- ment ⁽³⁾ Max. speed Weigl		Torque at 300 bar (4350 psi) ⁽²⁾		Max. Torque at speed at full (4350 psi) ⁽²⁾ displace- ment ⁽³⁾ Max. speed Weight		Ove tor	rhang que ⁽⁴⁾
		cu.in/rev	(cc/rev)	psi	(bar)	psi	(bar)	lbf ft	(N.m)	rpm	rpm	lbs	(kg)	lbf ft	(N.m)
TXVA 75	CC CCW	4.60	(75)	5800	(400)	6090	(420)	310	(420)	2000	3000	64	(29)	26	(35.2)
TXVA 92	CC CCW	5.60	(92)	5500	(380)	5800	(400)	380	(515)	1900	3000	64	(29)	26	(35.2)

(1) TXV pumps can be set for smaller maximum displacements (see page 39).

(2) For a mechanical efficiency at 85%.

(3) Higher speed - at full displacement - possible depending on flow required : please contact us.

(4) Value of the overhang torque of the only pump.

Configurator for TXVA pumps

To obtain order code for your pump, fill in the							
parameters (2 , 3 , 4 , 5 , 6 , 7)	TXVA						
depending on the options required,	0	0	6	4	6	6	0
using the table below.							

0	TXVA pump						
0	Displacement	t	75	92			
0	Direction of rotation		Clockwise rotation	(CW)	R		
9	Direction of for	ation	Counterclockwise r	otation (CCW)	L		
•	Elango		SAE C - 2 bolts		C1		
9	Flange		SAE C - 4 bolts		C2		
6	Shaft and	Splined SAE J744	14T 12/24 DP - S	S1			
0	Shart end	Keyed SAE J744	Ø1 1/4" UNF 2A - SAE C				
		UNF	Inlet : 1 7/8" 12UN	1 2B	114		
6	Porte	Threaded	Outlet : 1 1/16" 12	01			
0	FOILS	BSP	Inlet : G1 1/2"		G1		
		Threaded	Outlet : G 3/4"				
			Constant Pressur	e	PC		
7	Control types		Flow-Pressure Regulator				
			Closure Plate				





Torque absorbed as a function of

Flow



Dimensions



Dimensions in inches (mm).

PC | Constant Pressure

The constant pressure regulator maintains the pressure within a hydraulic receiver. As soon as the set pressure is reached, the pump's flow adjusts automatically to match the receiver's consumption. This arrangement prevents overheating and power consumption for all pressure maintenance applications.

Examples:

- Hydraulic press
- Compression molds
- · Manufacturing of bonded composites

IMPORTANT: Without further specifications in the order: PC set at 100 bar.



T (drain G1/2")

IMPORTANT: Without further specifications in the order:

PC set at 100 bar, Stand-by at 30 bar.

LS | Flow-Pressure Regulator

Control of Q and P (LS: "Load-Sensing")

This regulation (LS) allows continuous control of the flow and maximum discharge pressure of the pump. With this arrangement, it is easy to envision all possible combinations:

• High flow and low pressure,

• High pressure and low flow.



T drain: (U1: 9/16"-18UNF-2B G1: G1/2")



36

ADVANTAGES OF THE CONSTANT TORQUE REGULATION

- **TXV** pumps with constant torque control which ensures regulation to maintain Pressure X Flow = Constant
- Control device available for the entire range of TXV pumps from 40 to 150 cc/rev., including the TXV130 model with through shaft
- Maximum torque between 90 and 700 Nm depending on models
- Torque/power adjustment screw

Characteristics

Pump	Reference	Direction of rotation	Max. displace- ment ⁽¹⁾	Max. operating pressure	Max. peak pressure (intermittent 5%)	Max. torque range ⁽³⁾	Max. speed at full displace- ment ⁽²⁾	Max. speed in stand-by mode	Weight	Overhang torque
			(cc)	(bar)	(bar)	(daN.m)	(rpm)	(rpm)	(kg)	(N.m)
TYV 40	P002685	CW	40	400	420	0 to 12 5	2000	2000	0E 0	24
1/1/40	P002686	CCW	40	400	420	91043.5	3000	3000	23.0	34
	P002673	CW	60	400	420	0 to 12 5	2600	2000	0E 0	24
120 00	P002674	CCW	00	400	420	91043.5	2000	3000	23.0	34
TYV 75	P002683	CW	75	400	120	0 to 13 5	2000	3000	25.8	34
17/12	P002684	CCW	75	400	420	91043.5	2000	3000	23.0	34
TXV 02	P002681	CW	02	400	420	0 to 12 5	1000	2000	0E 0	24
17/ 92	P002682	CCW	92	400	420	91043.5	1900	3000	23.0	34
TYV/ 120	P002441	CW	120	380	400	12 to 56 5	2100	3000	25.8	34
174 120	P002442	CCW	120	500	400	12 (0 30.3	2100	3000	23.0	34
TXV/ 130	P002763	CW	130	365	380	13 to 60 5	2100	3000	28	38.6
174 130	P002764	CCW	150	303	500	13 10 00.5	2100	3000	20	50.0
TVV/ 160	P002765	CW	150	210	220	15 to 70	2000	2000	<u> </u>	20.6
174 120	P002766	CCW	100	310	330	15 10 70	2000	3000	20.2	30.0
TXV 130	P002741	CW	120	265	200	12 to 60 5	1000	2000	21.1	17.1
version)	P002743	CCW	150	305	300	13 10 00.5	1900	3000	51.1	47.4

(1) The pumps can be set for a lower maximum displacement.

(2) Higher speed possible - at full displacement - depending on flow required : please contact Customer Service.

(3) Required torque setting to be specified on order.

Torque and flow as a function of pressure :



Constant torque control device :



Standard pumps dimensions :



► TXV130 model with through shaft :



194

Drain G1/2"

219 227 284

Pressure gauge connectionG1/4"

L<u>S G1</u>/4"

Å

0

INLET FITTINGS FOR TXV PUMPS (optional)

See recommendations of the hosing dimensions on page 40. For high speeds, please consult.

90° elbow fittings, swivel

Reference	А	ØВ	С	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

Straight fittings

Reference		ØВ		D		Pump type
240182	G 1 1/2"	40	55	16	52	TXV
240067	G 1 1/2"	48	55	16	64	TXV
240066	G 1 1/2"	60	65	16	67	TXV
240186	G 1 1/2"	63.5	65	16	67	TXV
240201*	G 1 1/2"	76.2	80	16	87	TXV

*Except for TXV130 model with through shaft.

Dimensions in mm.





LS adapter with integrated filter | LEDUC CODE

Filter fitting for LS line connection

Kit reference	LS dimension	Type of pump		
0525567	G1/4"	TXV		
C001144	9/16-18 UNF	TXVA (SAE)		

- Technical characteritics
- It protects the LS regulator against contamination coming from the circuit.
- Filter can be removed for maintenance.
- Filtration: 150 microns.

Drawings for both versions of the kit (dimensions in mm):





SEAL + FILTER | LEDUC CODE K000028

The LS filter protects the TXV's Load Sensing valve against contaminations coming from the hydraulic circuit. Mounted as standard on all TXV pumps.



KIT CLOSING PLATE + SEAL | LEDUC CODE P001512

FOR TXV 130 THROUGH SHAFT



CARDAN PLATE - DIN 90 and DIN 100

The 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. The deflector is supplied with the cardan plate.

Туре	LEDUC code	ØA	ØВ	С	D	Е	F	ØG	н
DIN 90	056315	90	47	43	2	10	62	55	15
DIN 100	0519040	100	57	43	2	10	64	55	15



FCV - FLUID VALVE CIRCULATION | LEDUC CODE: 0524940

The fluid circulation (FCV) is designed for applications where the hydraulic variable displacement pump

is used in standby mode for a long period of time, for example engine PTO, to protect the pump against overheating.

Technical characteristics

- The valve flow varies between 20 and 22 l/min for a ΔP at 30 bar.
- Maximum pressure is 420 bar.
- The closing pressure is 2 bar min. and 7 bar max.

Dimensions





Schematics



Setting of the control pressure



Settings - TXV 41

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*

*Except TXV through shaft and constant torque.

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

How to set maximum displacement

Unscrew **1** completely, loosen nut **3** and screw **2** to obtain dimension **X** on graph below, and the corresponding displacement (see figure).

• For TXV 150 : 1 turn of the screw changes the displacement by 7.5 cc.

- For TXV 130 : 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.



SETTING OF THE REGULATION

Stand-by

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

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 fluid speed 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.

We recommend using of a return filter of 20 µm absolute maximum.

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 clean hydraulic oil. (minimum 50%).



Fluid

Use a mineral hydraulic oil type HLVP according to DIN 51502 (or HV according to ISO 11158) with viscosity between 10 and 400 cSt. It is in this viscosity range that the pump keeps its volumetric characteristics.

The optimal viscosity range is between 20 and 30 cSt. A maximum viscosity of 1000 cSt is accepted when starting up at low speed and without pressure.

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

Maximum temperature of fluid in the pump should not exceed 80°C.



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. (according to the PTO manufacturer's specifications). If the mounting on the PTO is not lubricated, grease the splines with graphite grease (example Molycote G rapide).

LEDUC pumps are not designed to withstand any axial or radial 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 This support has avoid strain on the pump. to be designed to 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.
- Start up at low speed, or by successive starts/stops.
- 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 on the PTO according to the PTO manufacturer's specifications.

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 :

- <u>an outer seal</u> 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.



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 has to be done via the seal C002510 supplied with the pump.

Example of tube attachment





NOTES

PISTON PUMPS FOR TRUCKS

PUMPS FOR MOBILE & INDUSTRIAL APPLICATIONS

HYDRAULIC MOTORS



HYDRO LEDUC offers 3 ranges of piston pumps perfectly suited for truck applications, mountable on power take-off.

- Fixed displacement from 12 to 130 cm³/rev
- Fixed displacement, dual flow, from 2x25 to 2x75 cm³/rev
- Variable displacement, with LS (load sensing) control, from 40 to 150 cm³/rev.



The W series consists of fixed displacement pumps, and the TXVA series consists of variable displacement pumps. These pumps are capable of operating at high pressures while occupying minimal space.

► W Series (ISO) and WA Series (SAE)*

- Fixed displacements from 5 to 180 cm³/
- rev
 Flanges according to ISO 3019/2 or SAE standards
- Shafts according to DIN or SAE standards

TXVA Series

- Variable displacements up to 92 cm³/ rev
- SAE shafts and flanges

* For the SAE version, please contact our Customer Service.



Axial Piston Motors with Constant and Variable Displacement

- Models from 5 to 180 cc/rev
- DIN and SAE Versions
- Constant Displacement, Motors without Leak Oil Connection Special Version.



Complete catalog: www.hydroleduc.com

HYDROPNEUMATIC AC-CUMULATORS

MICROHYDRAULIC



Diaphragm, Bladder, Bladder-Diaphragm, and A specific Piston Accumulators in spherical and cylindrical expertise. designs.

- Storage capacities from 0.02 to 50 liters
- Operating pressures up to 400 bar
- Accessories for operating hydraulic pressure accumulators.



A specific field of application for Hydro Leduc's expertise.

- Axial and radial piston pumps with constant and variable displacement.
- Axial piston micro-hydraulic motors.
- Micro-hydraulic components (electric drives, valves, control devices, etc).
- HYDRO LEDUC offers a comprehensive range of reliable solutions for extreme applications and compact spaces.

Our development team takes care of your individual requirements.

In close collaboration with the decision-makers in your organization, we work together with you to develop solutions according to your specifications.

A passion for hydraulics

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