

TECHNICAL DATA

Displacement ⁽¹⁾	cm ³ /rev	21	28
Charge pump displacement	cm ³ /rev	11	
Max. speed ^(2, 3)	rpm	3600	
Min. speed	rpm	700	
Rated pressure	bar	250	
Peak pressure ^(3, 4)	bar	300	
Rated charge pressure	bar	15 ÷ 25	
Max. charge pressure	bar	35	
Max. case drain pressure ⁽⁵⁾	bar	2	
Suction pressure ⁽⁶⁾	bar	≥ 0,8	
Rotating parts moment of inertia	kg m ²	0,0018	
Drive shaft radial load	N	1200	
Drive shaft axial load	N	950	
Oil operating temperature	°C	-25 ÷ 80	
Viscosity range at operating temperature ⁽⁷⁾	cSt	15 ÷ 60	
Max. permissible contamination level in circuit ⁽⁸⁾	according to ISO 4406:1999	20/18/15	
Filtering cartridge grade ⁽⁸⁾	µm	22	
Connection flange		SAE B	
Standard seals ⁽⁹⁾		NBR	
Installation position and direction		any	
Approx. weight	kg	22	

Notes:

- (1) The same body is used for 21 and 28 cm³ pumps. Displacement limitation can be obtained by means of two setting screws which limit the control piston stroke.
- (2) Stated max. speed value is valid with suction inlet port absolute pressure of 1 bar, in case of use of mineral oil.
- (3) Simultaneous operation at max. speed and max. pressure is not recommended.
- (4) Peak operation must not exceed 1% of every minute.

For short periods or upon cold start:

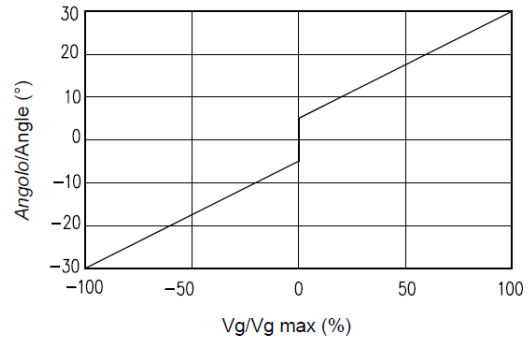
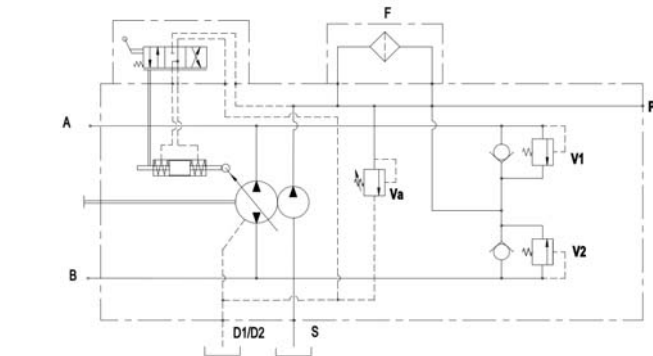
- (5) a case drain pressure of 6 bar is allowed. A higher pressure can damage the main shaft seal or reduce its life.
- (6) an absolute suction pressure of 0,5 bar is allowed.
- (7) a max. viscosity of 800 cSt or a viscosity range of 10 ÷ 15 cSt are allowed. Viscosities less than 10 cSt are not allowed. It is however suggested the use of anticorrosive and antioxidant mineral-base oil with wear-preventing additives
- (8) In order to improve the control of the fluid contamination levels, the pump can be equipped with a boost flow filter positioned on the delivery outlet of the boost pump. Only the flow necessary to reintegrate the oil lost due to leakage will pass through this filter. All the excess flow, which is discharged through the boost pump valve, is therefore not filtered to ensure a longer life of the filter cartridge.
- (9) Specific seals are required in case of use of special fluids: in this event, please contact Lutz-Hydraulik.

CONTROLS

Manual lever with feedback

LF

The pump displacement variation is achieved through a pilot pressure, which can be provided by charge pressure port and can be controlled by a joystick or by a pressure reducing valve (not included).

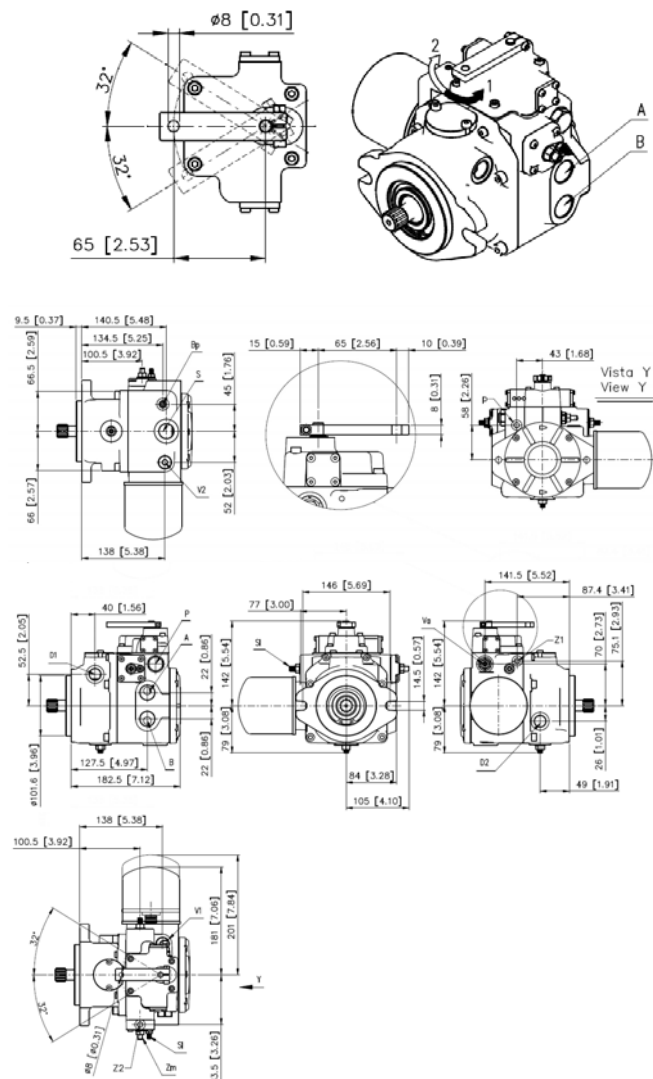


Necessary torque to turn the control lever	Minimum	Nm	0,6
	Maximum	Nm	1,2
Control lever max. torque		Nm	3,0
Control lever rotation	1	2	
Shaft rotation	CW	CCW	CW
Oil outlet port	B	A	A

	Ports	Metric threads	SAE threads
A B	Pressure	3/4" G (BSPP)	7/8" 14 UNF - 2B
Z1 Z2	Pressure gauge	1/8" G (BSPP)	7/16" 20 UNF - 2B
D1 D2	Drain	1/2" G (BSPP)	3/4" 16 UNF - 2B
S	Suction	3/4" G (BSPP)	1 1/16" 12 UNF - 2B
P	Charge pressure gauge	3/4 -16 UNF - 2B	3/4" 16 UNF - 2B
p	Charge pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B

Valves	
Va	Charge pump
V1 V2	Pressure relief
Bp	By-pass
SI	Stroke limiter

Zm	Zero adjustment screw
----	-----------------------

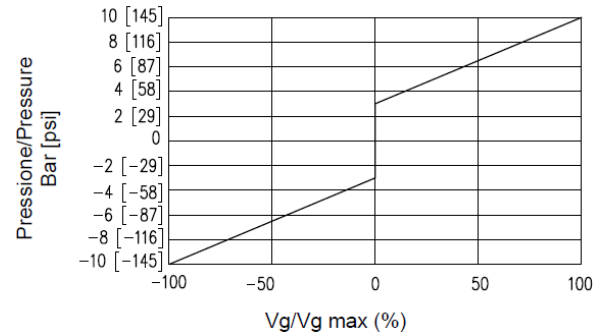
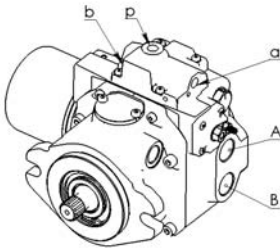
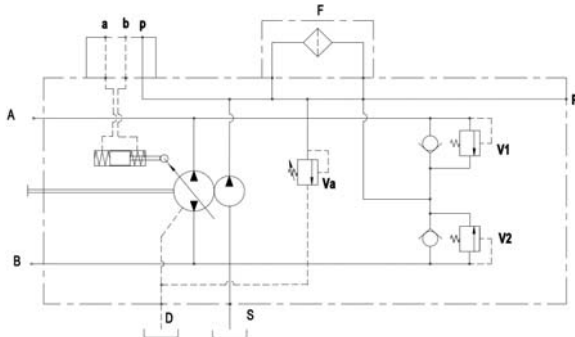


CONTROLS

Hydraulic proportional without feedback

H

The pump displacement variation is achieved through a pilot pressure, which can be provided by charge pressure port and can be controlled by a joystick or by a pressure reducing valve (not included).



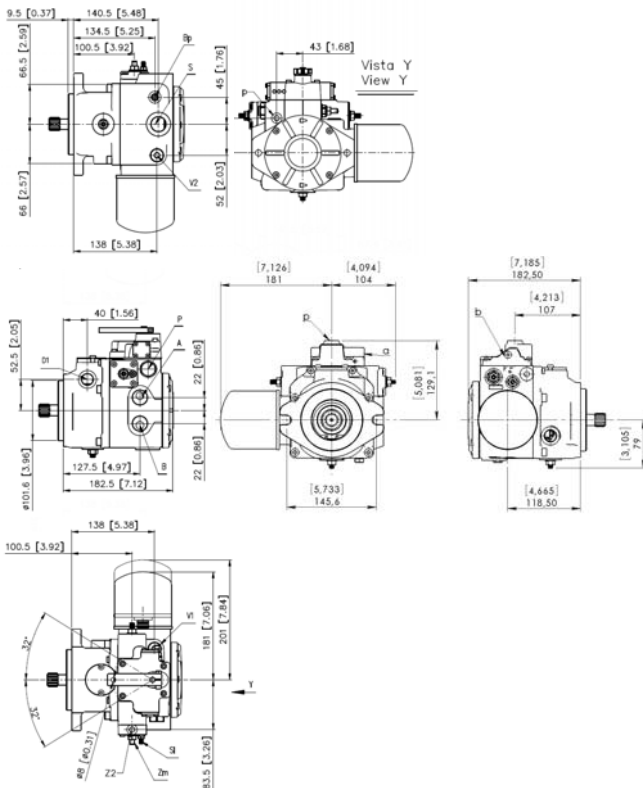
Max. pilot pressure	bar	25
----------------------------	-----	----

Pressurized pilot port	a		b	
Shaft rotation	CW	CCW	CW	CCW
Oil outlet port	B	A	A	B

	Ports	Metric threads	SAE threads
A B	Pressure	3/4" G (BSPP)	7/8" 14 UNF - 2B
a b	Pilot pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B
Z1 Z2	Pressure gauge	1/8" G (BSPP)	7/16" 20 UNF - 2B
D1 D2	Drain	1/2" G (BSPP)	3/4" 16 UNF - 2B
S	Suction	3/4" G (BSPP)	1 1/16" 12 UNF - 2B
P	Charge pressure gauge	3/4 - 16 UNF - 2B	3/4" 16 UNF - 2B
p	Charge pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B

	Valves
Va	Charge pump
V1 V2	Pressure relief
Bp	By-pass
Sl	Stroke limiter

Zm	Zero adjustment screw
-----------	-----------------------

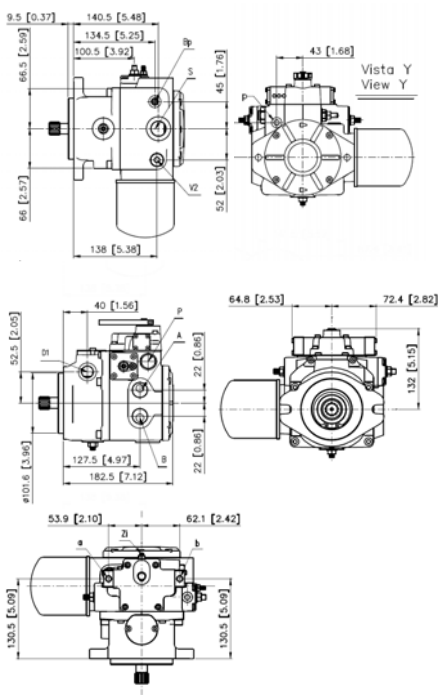
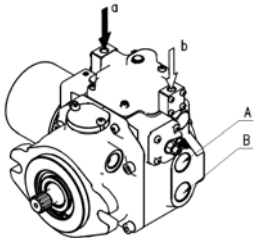
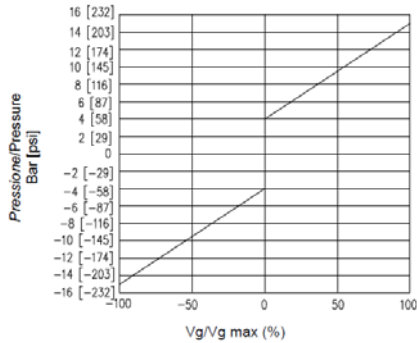
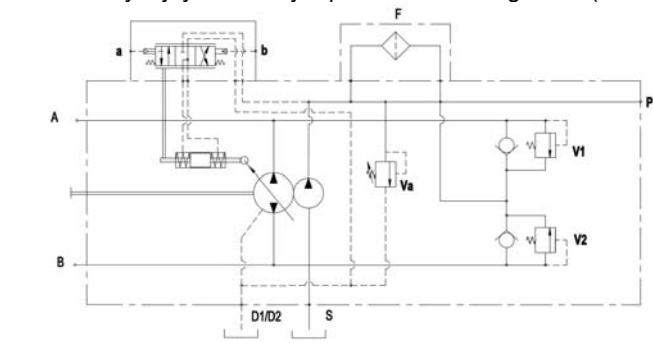


CONTROLS

Hydraulic proportional with feedback

HF

The pump displacement variation is achieved through a pilot pressure, which can be provided by charge pressure port and can be controlled by a joystick or by a pressure reducing valve (not included).



Max. pilot pressure	bar	25
---------------------	-----	----

Pressurized pilot port	a		b	
Shaft rotation	CW	CCW	CW	CCW
Oil outlet port	A	B	B	A

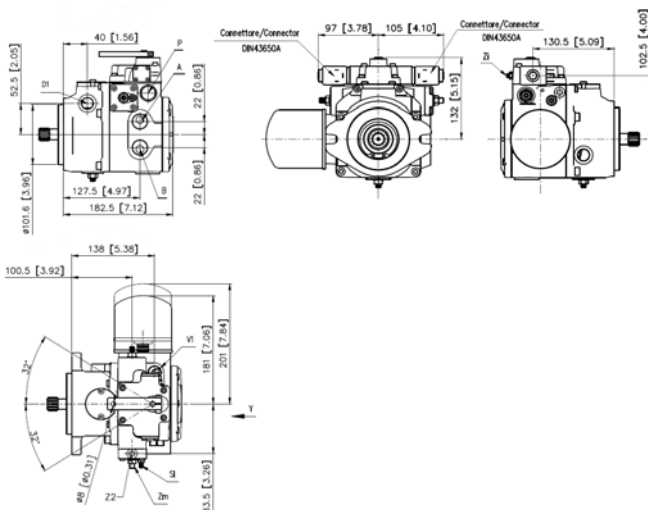
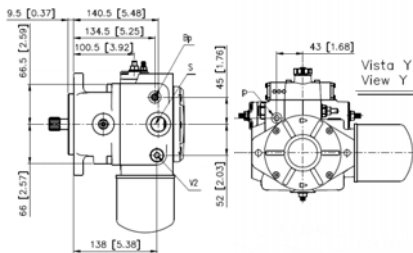
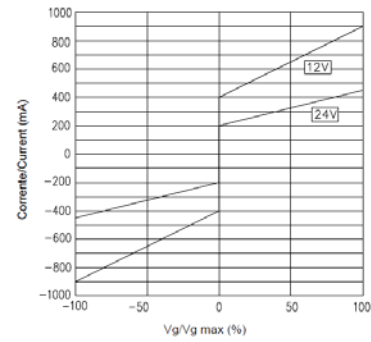
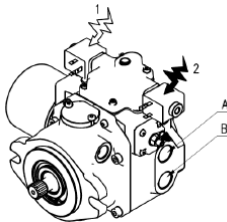
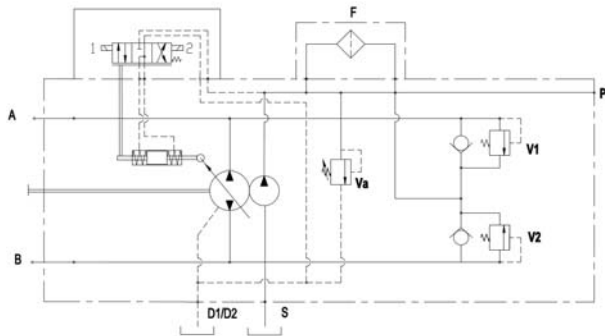
	Ports	Metric threads	SAE threads
A B	Pressure	3/4" G (BSPP)	7/8" 14 UNF - 2B
a b	Pilot pressure	1/8" G (BSPP)	5/16" 24 UNF - 2B
Z1 Z2	Pressure gauge	1/8" G (BSPP)	7/16" 20 UNF - 2B
D1 D2	Drain	1/2" G (BSPP)	3/4" 16 UNF - 2B
S	Suction	3/4" G (BSPP)	1 1/16" 12 UNF - 2B
P	Charge pressure gauge	3/4 -16 UNF - 2B	3/4" 16 UNF - 2B
p	Charge pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B

Valves	
Va	Charge pump
V1 V2	Pressure relief
Bp	By-pass
SI	Stroke limiter

Zi	Hydraulic zero adjustment screw
----	---------------------------------

CONTROLS

Electric proportional with feedback

EF

Energized solenoid	1		2	
Shaft rotation	CW	CCW	CW	CCW
Oil outlet port	A	B	B	A

	Ports	Metric threads	SAE threads
A B	Pressure	3/4" G (BSPP)	7/8" 14 UNF - 2B
Z1 Z2	Pressure gauge	1/8" G (BSPP)	7/16" 20 UNF - 2B
D1 D2	Drain	1/2" G (BSPP)	3/4" 16 UNF - 2B
S	Suction	3/4" G (BSPP)	1 1/16" 12 UNF - 2B
P	Charge pressure gauge	3/4 -16 UNF - 2B	3/4" 16 UNF - 2B
p	Charge pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B

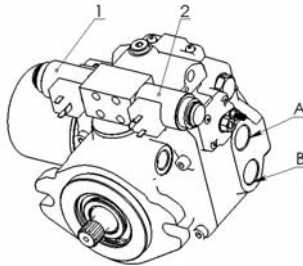
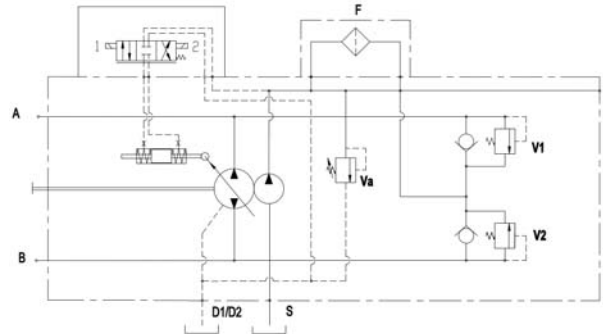
	Valves
Va	Charge pump
V1 V2	Pressure relief
Bp	By-pass
Sl	Stroke limiter
Zi	Hydraulic zero adjustment screw

CONTROLS

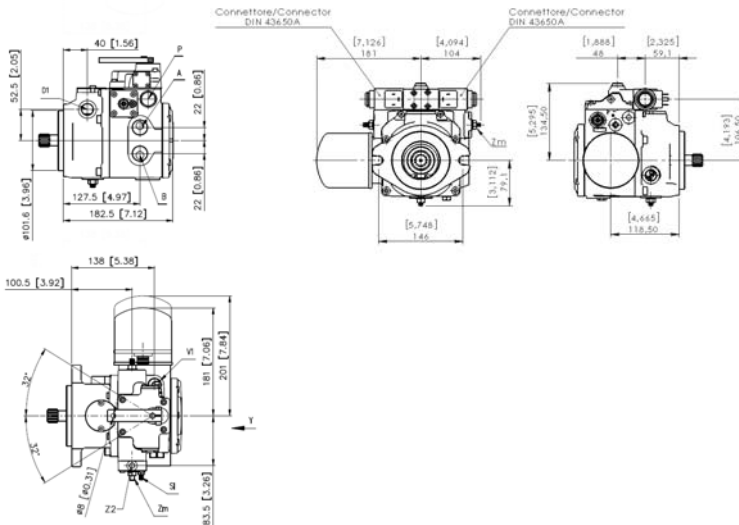
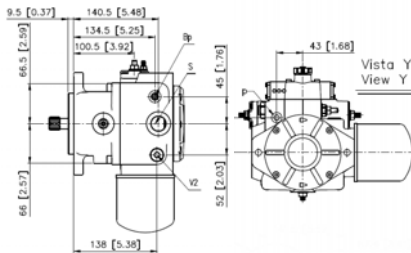
Electric impulse

EI

The pump displacement variation is achieved through inputs of current to one of the two proportional solenoids. There is no zeroing spring, therefore the piston of the servo-control stays in position until a new input of current is given to one of two solenoids.



Energized solenoid	1		2	
Shaft rotation	CW	CCW	CW	CCW
Oil outlet port	A	B	B	A



	Ports	Metric threads	SAE threads
A B	Pressure	3/4" G (BSPP)	7/8" 14 UNF - 2B
Z1 Z2	Pressure gauge	1/8" G (BSPP)	7/16" 20 UNF - 2B
D1 D2	Drain	1/2" G (BSPP)	3/4" 16 UNF - 2B
S	Suction	3/4" G (BSPP)	1 1/16" 12 UNF - 2B
P	Charge pressure gauge	3/4 -16 UNF - 2B	3/4" 16 UNF - 2B
p	Charge pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B

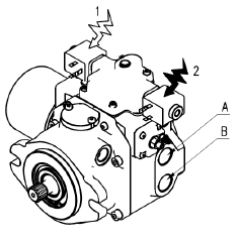
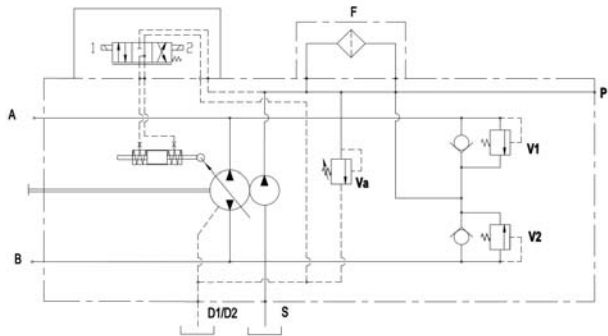
	Valves
Va	Charge pump
V1 V2	Pressure relief
Bp	By-pass
Sl	Stroke limiter
Zm	Zero adjustment screw

CONTROLS

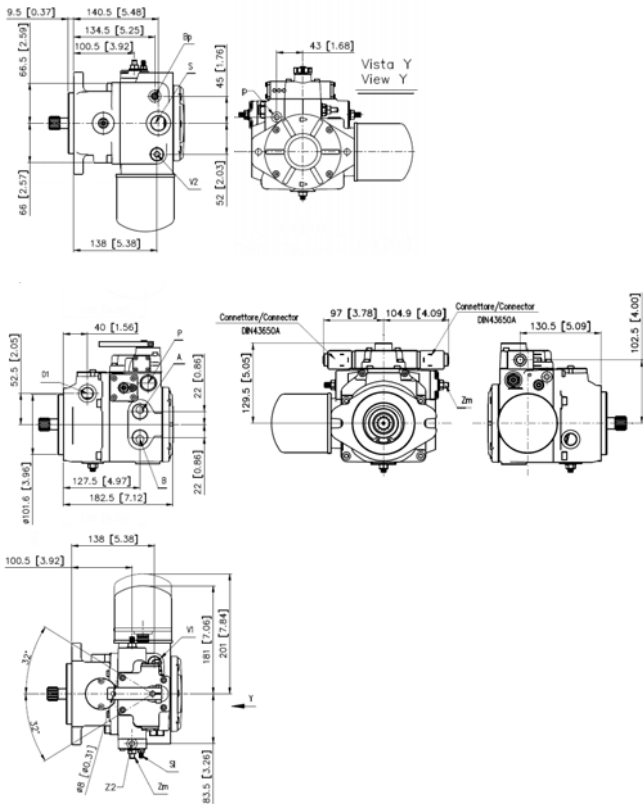
Electric 2 positions

ET

The pump displacement variation is achieved through inputs of current to one of the two proportional solenoids. There is no zeroing spring, therefore the piston of the servo-control stays in position until a new input of current is given to one of two solenoids.



Energized solenoid	1		2	
Shaft rotation	CW	CCW	CW	CCW
Oil outlet port	A	B	B	A

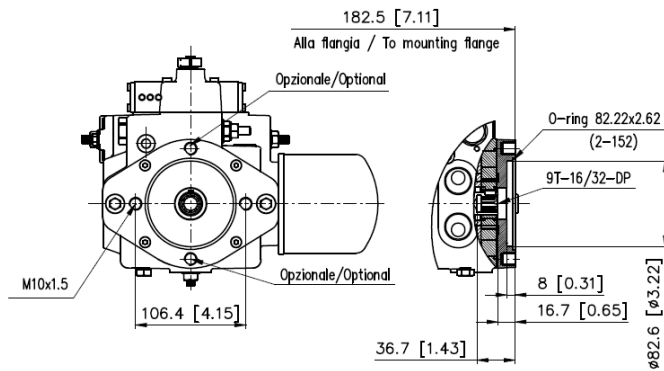


	Ports	Metric threads	SAE threads
A B	Pressure	3/4" G (BSPP)	7/8" 14 UNF - 2B
Z1 Z2	Pressure gauge	1/8" G (BSPP)	7/16" 20 UNF - 2B
D1 D2	Drain	1/2" G (BSPP)	3/4" 16 UNF - 2B
S	Suction	3/4" G (BSPP)	1 1/16" 12 UNF - 2B
P	Charge pressure gauge	3/4 -16 UNF - 2B	3/4" 16 UNF - 2B
p	Charge pressure	1/8" G (BSPP)	7/16" 20 UNF - 2B

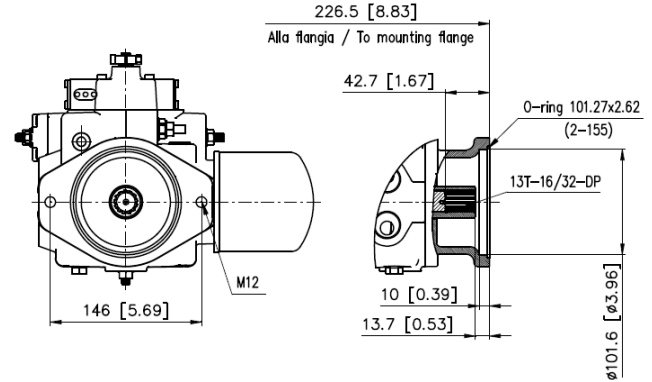
Valves	
Va	Charge pump
V1 V2	Pressure relief
Bp	By-pass
SI	Stroke limiter
Zm	Zero adjustment screw

THROUGH DRIVES

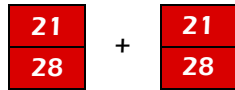
SAE A



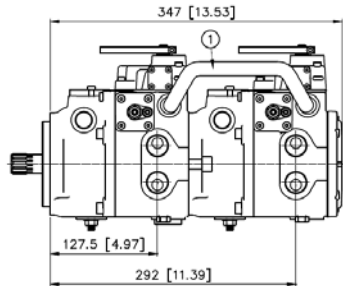
SAE B



TANDEM PUMPS



"Short version"



THROUGH DRIVE

1st pump 2nd pump

T

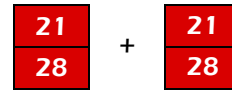
N
A
B

SHAFT

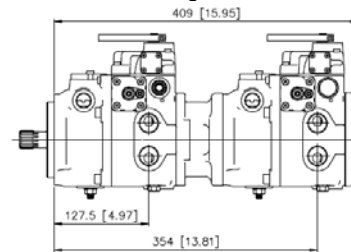
1st pump 2nd pump

15

I13



With SAE B through drive



THROUGH DRIVE

1st pump 2nd pump

B

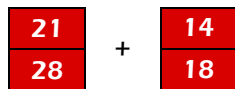
N
A
B

SHAFT

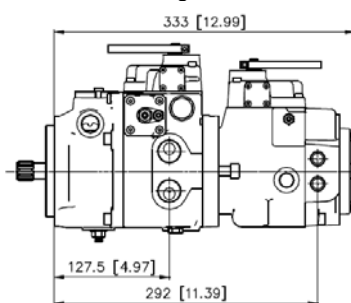
1st pump 2nd pump

15B

13



With SAE A through drive



THROUGH DRIVE

1st pump 2nd pump

A

N
A
1
2

SHAFT

1st pump 2nd pump

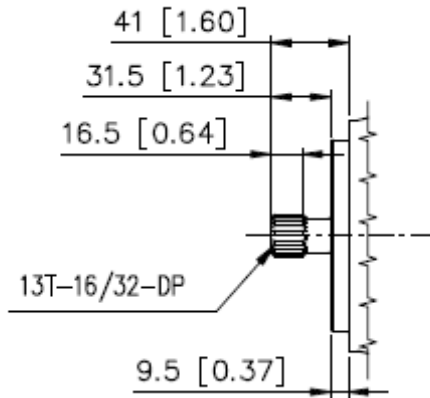
15A

09
09B

SHAFTS

Splined 13 teeth 16/32 pitch

13

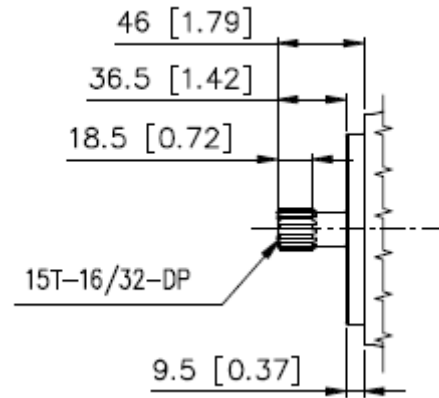


Splined 15 teeth 16/32 pitch

15

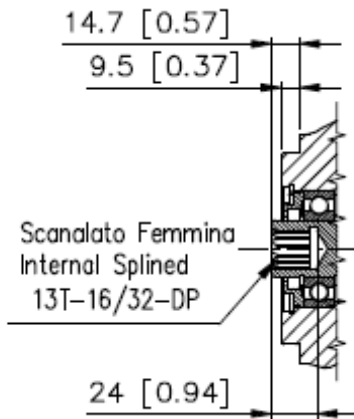
15A

15B



Internal Splined 13 teeth 16/32 pitch

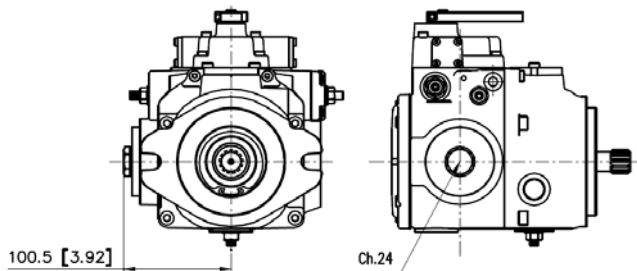
113



OPTIONS

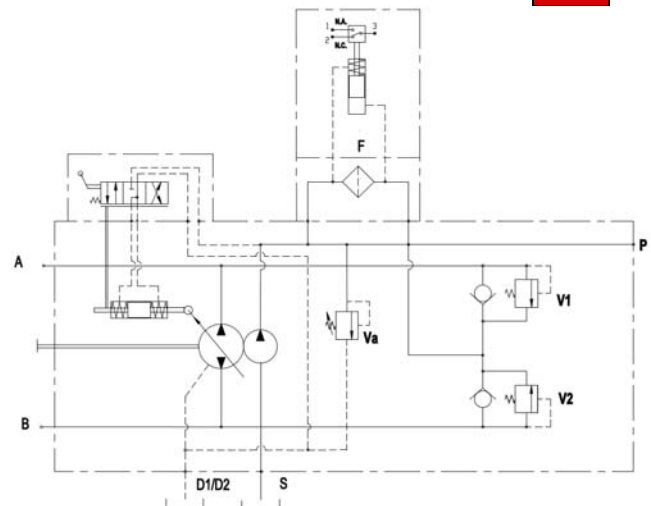
No filter

F



Filter

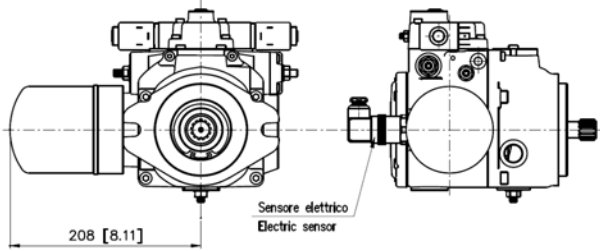
F



OPTIONS

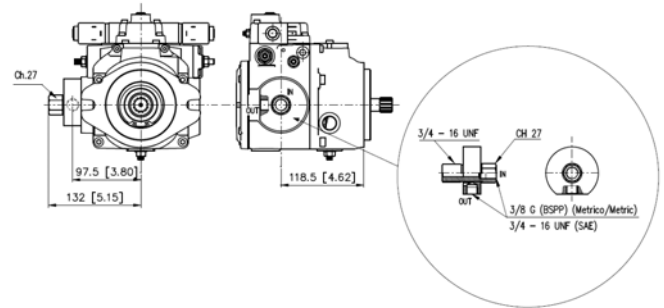
Filter with electric sensor

FE



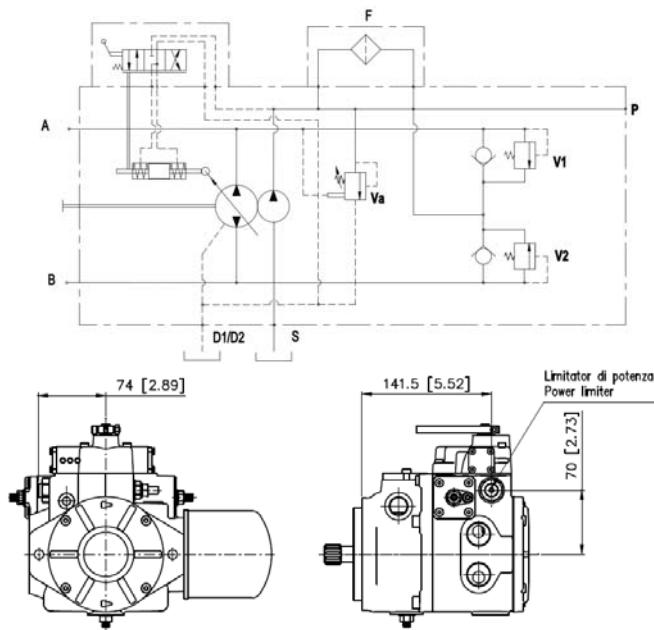
Remote filter fitting

FR



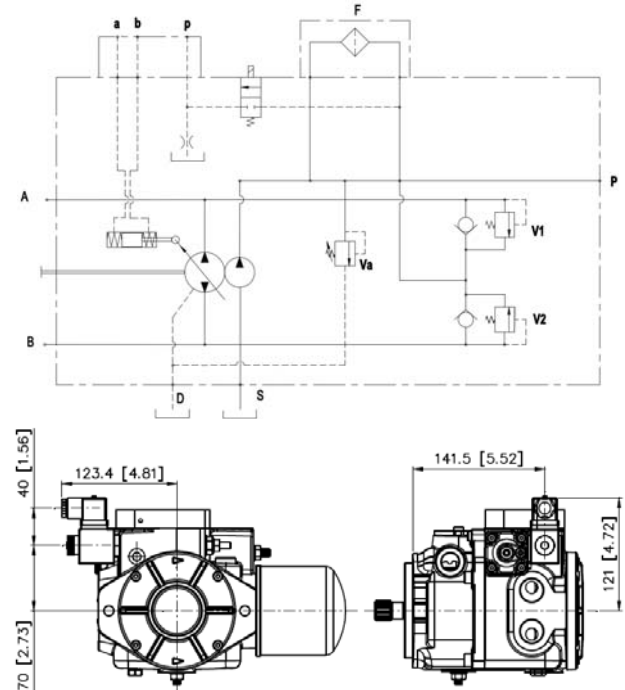
Power limiter

L_



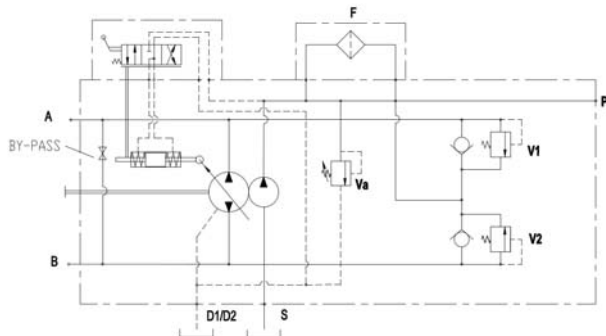
Electric cut-off valve

C_



By-pass

B



MODEL CODE

ASL _ _ (_ _ _) _ (_ _ _) _ _ _ (_) _ _ (_) _ (_ _ _ _ _)
 1 2 3 4 5 6 7 8 9 10

1. SERIES

ASL

2. NOMINAL DISPLACEMENT

21 cm ³ /rev	21
28 cm ³ /rev	28

3. DISPLACEMENT LIMITATION

Without limitation	(no code)
Displacement in cm ³ /rev (up to 27 cm ³ /rev)	- _

4. CONTROL

Manual lever with feedback	LF
Hydraulic proportional without feedback	H
Hydraulic proportional with feedback	HF
Electric proportional without feedback – Voltage in V (either 12 V or 24 V)	E _
Electric proportional with feedback – Voltage in V (either 12 V or 24 V)	EF _
Electric impulse – Voltage in V (either 12 V or 24 V)	EI _
Electric 2 positions – Voltage in V (either 12 V or 24 V)	ET _
Electro-hydraulic – Voltage in V (either 12 V or 24 V)	EH _
Automotive	A

SHAFT END

5. THROUGH DRIVE

	13	15	15A	15B	I13	
No through drive	•				•	N
SAE A			•		•	A
SAE B				•		B
Tandem “short version”		•				T

6. PRESSURE RELIEF VALVE

Pressure in bar : 10 (e.g.: 17 for 170 bar, 20 for 200 bar and so on; from 140 bar to 350 bar)	_
--	---

MODEL CODE

ASL _ _ (_ _ _) _ (_ _ _) _ _ _ (_) _ _ (_) _ (_ _ _ _)
 1 2 3 4 5 6 7 8 9 10

7. ROTATION DIRECTION

CW	R
CCW	L

8. SHAFT END

	Single pump	Tandem 1 st pump	Tandem 2 nd pump	
Splined 13 teeth 16/32 pitch, standard, for SAE A through drive	•		•	13
Splined 15 teeth 16/32 pitch, for tandem “short version”	•			15
Splined 15 teeth 16/32 pitch, for SAE A through drive	•			15A
Splined 15 teeth 16/32 pitch, for SAE B through drive	•	•		15B
Internal Splined 13 teeth 16/32 pitch, for SAE A through drive	•	•		I13

9. PORT THREADS

Metric (BSPP)	M
SAE (UNF) – only for orders of at least 100 pieces	S

10. OPTIONS – more than one can be chosen

No options	N
Filter	F
Filter with electric sensor	FE
Remote filter fitting	FR
By-pass	B
Additional control pressure gauge ports	G
Exchange valve	V
Hydraulic inching	IH
Mechanical inching	IM
Power limiter – Destroke pressure in bar : 10 (either 270 bar or 320 bar, i.e.: 27 for 370 bar, 32 for 320 bar)	L__
Electric cut-off valve – Voltage in V (either 12 V or 24 V)	C__
Operator safety – Voltage in V (either 12 V or 24 V; not available with “Tandem short version”)	S__

For tandem pumps, both pumps model codes must be stated, divided by a “+”

EXAMPLES

ASL28 LF A 27 R 15 M N ASL28-25 E12 B 35 L 13B M F V ASL28 H B 40 R 15B M F + ASL21 H A 40 R 1 13 5 M F