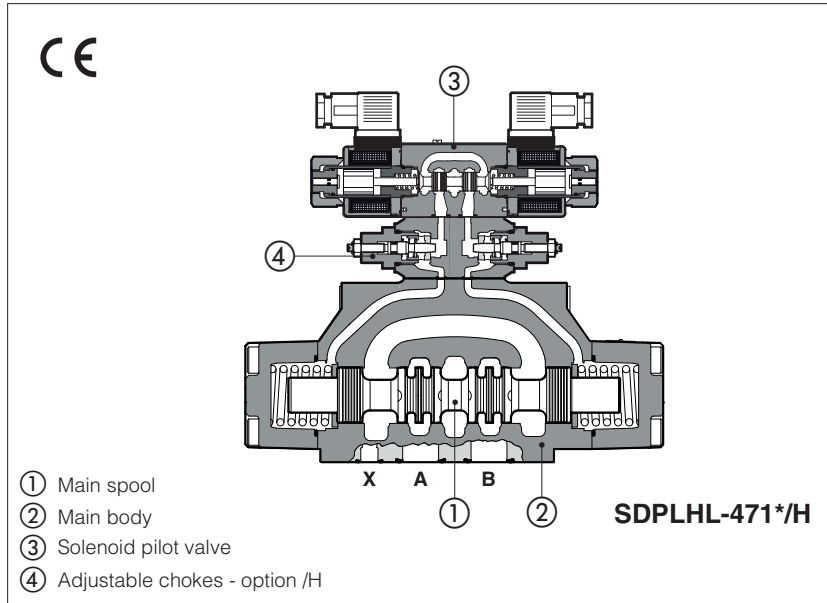


# Solenoid directional valves type SDPLHL

piloted, spool type, max pressure 280 bar



- ① Main spool
- ② Main body
- ③ Solenoid pilot valve
- ④ Adjustable chokes - option /H

Spool type, pilot operated directional solenoid valves available in three or four way configurations.

These valves are specifically designed for medium pressure applications such as in the plastics sector.

They are operated by a directional valve ③ type SDHL (see technical table E018) equipped with threaded solenoids for AC or DC power supply.

Spools ① are fully interchangeable and they are available in a wide range of hydraulic configurations.

The valves can be supplied with different options and special spools to best suit the application requirements, see section ④.

Rugged execution suitable for outdoor use.

Mounting surface: **ISO 4401 size 16, 25**

Max flow **up to 300 and 700 l/min.**

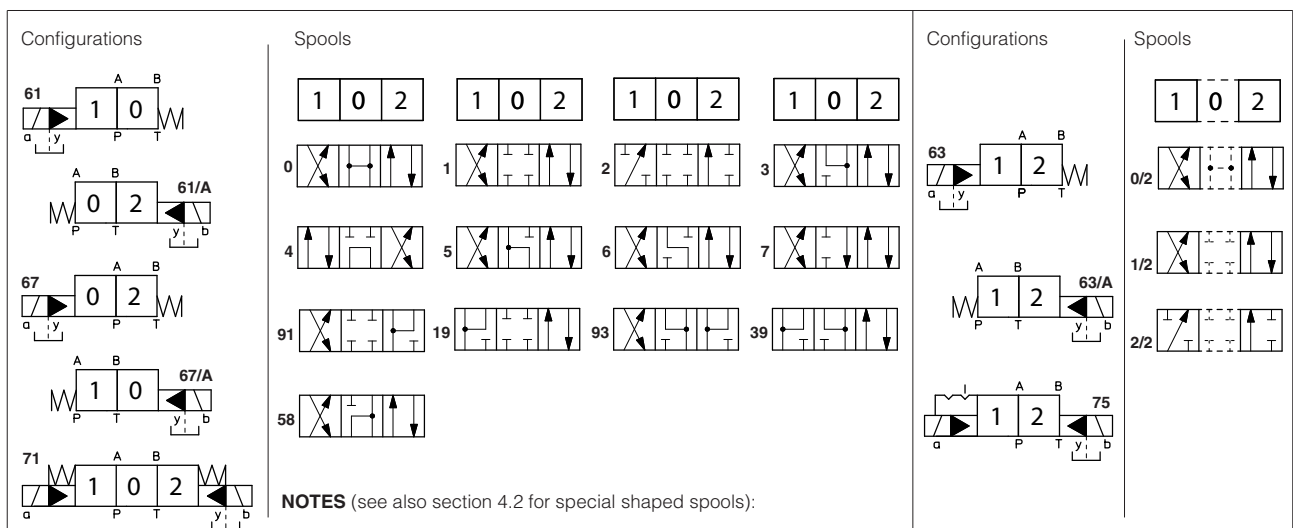
Pressure **up to 280 bar**

## 1 MODEL CODE

<b>SDPLH</b>	<b>L</b>	<b>- 2</b>	<b>61</b>	<b>1</b>	<b>/ A - X</b>	<b>24 DC</b>	<b>**</b>	<b>/ *</b>
Pilot operated directional control valve, Pmax = 280 bar							Series number	Seals material, see section ③: - = NBR <b>PE</b> = FKM
Solenoid pilot valve: <b>L</b> = SDHL compact execution, AC and DC supply							Voltage code, see section ⑤	
Valve size: <b>2</b> = 16 <b>4</b> = 25								
Valve configuration, see section ② <b>61</b> = single solenoid, center plus external position, spring centered <b>63</b> = single solenoid, 2 external positions, spring offset <b>67</b> = single solenoid, center plus external position, spring offset <b>71</b> = double solenoid, 3 positions, spring centered <b>75</b> = double solenoid, 2 external positions, with detent								
Spool type, see section ②								
						<b>X</b> = without connector See section ①① for available connectors, to be ordered separately <b>XK</b> = Deutsch connector		
						Options, see section ④		

**Note:** SDPLHL-\* S PIL version without pilot solenoid valve available on request

## 2 CONFIGURATIONS and SPOOLS (representation according to ISO 1219-1, for functional scheme, see section ④)



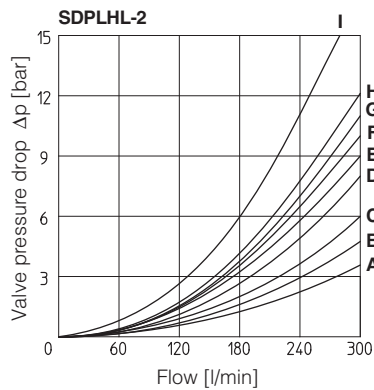


**5 ELECTRIC FEATURES**

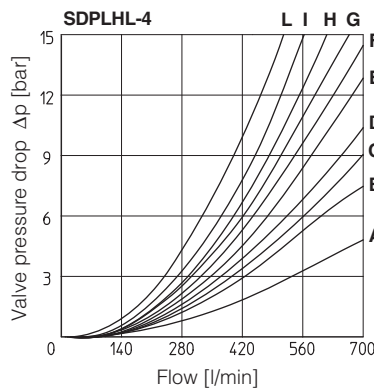
Valve	External supply nominal voltage ± 10%	Voltage code	Type of connector	Power consumption (2)	Code of spare coil	
					X version	XK version
SDPLHL	12 DC	<b>12 DC</b>	666 or 667	29 W	COL-12DC	COLK-12DC
	14 DC	<b>14 DC</b>			COL-14DC	COLK-14DC
	24 DC	<b>24 DC</b>			COL-24DC	COLK-24DC
	28 DC	<b>28 DC</b>			COL-28DC	COLK-28DC
	110/50 AC	<b>110/50/60 AC</b>		58 VA (3)	COL-110/50/60AC (1)	-
	230/50 AC	<b>230/50/60 AC</b>		COL-230/50/60AC (1)	-	

- (1) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10÷ 15% and the power consumption is 58 VA
- (2) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.
- (3) When solenoid is energized, the inrush current is approx 3 times the holding current. Inrush current values correspond to a power consumption of about 150 VA.

**6 FLOW VERSUS PRESSURE DIAGRAMS** Based on mineral oil ISO VG 46 at 50°C



Spool type	Flow direction				
	P→A	P→B	A→T	B→T	P→T
0/2, 1, 3, 6, 7	A	A	D	A	-
1/1, 1/2	B	B	D	E	-
0	A	A	D	E	C
0/1	A	A	D	-	-
2	A	A	-	-	-
2/2	B	B	-	-	-
3/1	A	A	D	D	-
4	C	C	H	I	F
4/8	C	C	G	I	F
5	A	B	F	H	G
19	C	-	-	G	-
39	C	-	-	H	-
58	B	A	F	H	H
91	C	C	E	-	-
93	-	C	D	-	-



Spool type	Flow direction				
	P→A	P→B	A→T	B→T	P→T
1	B	B	B	D	-
1/1	D	E	E	F	-
1/2	E	D	B	C	-
0	D	C	D	E	F
0/1, 3/1, 6, 7	D	D	D	F	-
0/2	D	D	D	E	-
2	B	B	-	-	-
2/2	E	D	-	-	-
3	B	B	D	F	-
4	C	C	H	L	L
5	A	D	D	D	H
19	F	-	-	E	-
39	G	F	-	F	-
58	E	A	B	F	H
91	F	F	D	-	-
93	-	G	D	-	-

**7 OPERATING LIMITS** For a correct valve operation do not exceed the max recommended flow rates (l/min) shown in the below tables

**SDPLHL-2**

Spool	Inlet pressure [bar]			
	70	140	210	280
	Flow rate [l/min]			
0, 1, 3, 6, 7, 8	300	300	300	300
2, 4, 4/8	300	300	240	140
5	260	220	180	100
0/1, 0/2, 1/2	300	250	210	180
58, *9, 9*	300	300	270	200

**SDPLHL-4**

Spool	Inlet pressure [bar]			
	70	140	210	280
	Flow rate [l/min]			
1, 6, 7, 8	700	700	700	600
2, 4, 4/8	500	500	450	400
5, 0/1, 0/2, 1/2	600	520	400	300
0, 3	700	700	600	540
58, *9, 9*	500	500	500	450

**8 SWITCHING TIMES** (average values in m sec)

Valve model	Configuration		Piloting pressure					
			70 bar		140 bar		250 bar	
			Alternating current	Direct current	Alternating current	Direct current	Alternating current	Direct current
<b>SDPLHL-2</b>	71, 61, 67, 61*/A, 67*/A	Switch ON	40	55	30	50	20	40
		Switch OFF	60					
	63, 63*/A	Switch ON	55	80	45	70	35	55
		Switch OFF	95					
<b>SDPLHL-4</b>	71, 61, 67, 61*/A, 67*/A	Switch ON	60	80	45	60	30	45
		Switch OFF	80					
	63, 63*/A	Switch ON	95	115	75	95	50	65
		Switch OFF	130					

**Notes:**

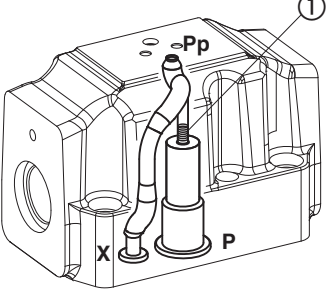
- 1) For configuration 75, times of switching ON and switching OFF are the same: this value is equal to time of switch ON of configuration 63.
- 2) TEST CONDITIONS
  - Nominal voltage supply DC (direct) and AC (alternating) with connector type SP-666. The use of other connectors can affect the switching time;
  - 2 bar of counter pressure on port T;
  - mineral oil: ISO VG 46 at 50°C
- 3) The response time is affected by elasticity of the hydraulic circuit, by variation of hydraulic characteristics and temperature.

**9 PLUGS LOCATION FOR PILOT/DRAIN CHANNELS**

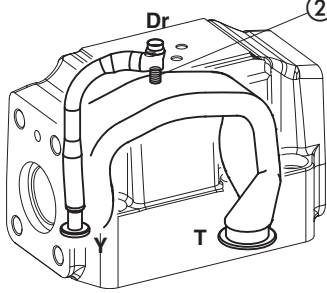
Depending on the position of internal plugs, different pilot/drain configurations can be obtained as shown below. To modify the pilot/drain configuration, proper plugs must only be interchanged. The plugs have to be sealed using loctite 270. Standard valves configuration provides internal pilot and external drain

**SDPLHL-2**

**Pilot channels**

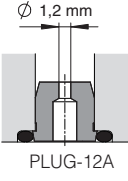


**Drain channels**



**Internal piloting:** Without blinded plug SP-X300F ①;  
**External piloting:** Add blinded plug SP-X300F ①;  
**Internal drain:** Without blinded plug SP-X300F ②;  
**External drain:** Add blinded plug SP-X300F ②.

**Option L9**  
 This option provides a calibrated restrictor PLUG-H-12A (Ø 1,2 mm) in the P port of the pilot valve

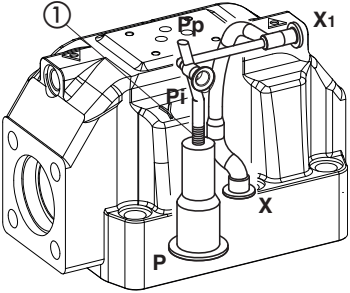


PLUG-12A

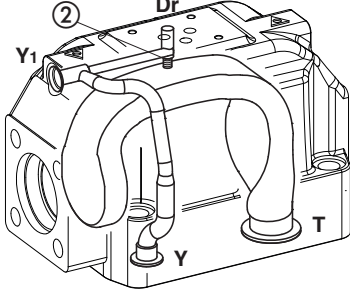
---

**SDPLHL-4**

**Pilot channels**

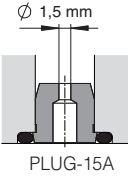


**Drain channels**



**Internal piloting:** Without blinded plug SP-X500F ①;  
**External piloting:** Add blinded plug SP-X500F ①;  
**Internal drain:** Without blinded plug SP-X300F ②;  
**External drain:** Add blinded plug SP-X300F ②.

**Option L9**  
 This option provides a a calibrated restrictor PLUG-H-15A (Ø 1,5 mm) in the P port of the pilot valve



PLUG-15A

**10 ELECTRIC CONNECTORS ACCORDING TO DIN 43650** - the connectors must be ordered separately

Connector code	Function
<b>666</b>	Connector IP65, suitable for direct connection to electric supply source
<b>667</b>	As 666 connector IP65 but with built-in signal led, suitable for direct connection to electric supply source

11 DIMENSIONS FOR SDPLHL-2 [mm]

**SDPLHL-2\***

ISO 4401: 2005

Mounting surface: 4401-07-07-0-05

Fastening bolts:

4 socket head screws M10x50 class 12.9

Tightening torque = 70 Nm

2 socket head screws M6x45 class 12.9

Tightening torque = 15 Nm

Diameter of ports A, B, P, T:  $\varnothing = 20$  mm;

Diameter of ports X, Y:  $\varnothing = 7$  mm;

Seals: 4 OR 130, 2 OR 2043

**P** = PRESSURE PORT

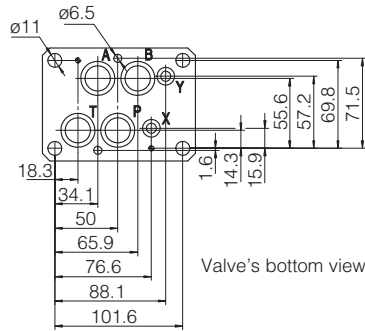
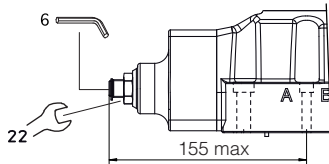
**A, B** = USE PORT

**T** = TANK PORT

**X** = EXTERNAL OIL PILOT PORT

**Y** = DRAIN PORT

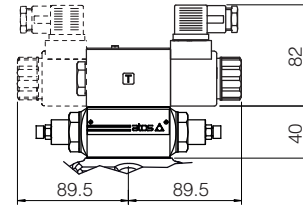
**Stroke adjustment device for option /S**



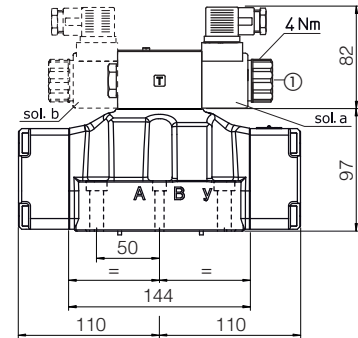
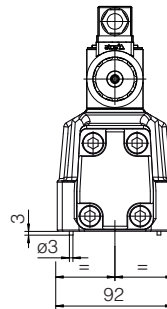
Valve's bottom view

Mass (Kg)	
SDPLHL-26	9,7
SDPLHL-27	9,9
Option /S	+1,0
Option H	+1,0

**SDPLHL-2\*/H**



**SDPLHL-2\***



Overall dimensions refer to valves with connectors type 666

① Standard manual override PIN

12 DIMENSIONS FOR SDPLHL-4 [mm]

**SDPLHL-4\***

ISO 4401: 2005

Mounting surface: 4401-08-08-0-05

Fastening bolts:

6 socket head screws M12x60 class 12.9

Tightening torque = 125 Nm

Seals: 4 OR 4112; 2 OR 3056

Diameter of ports A, B, P, T:  $\varnothing = 24$  mm;

Diameter of ports X, Y:  $\varnothing = 7$  mm;

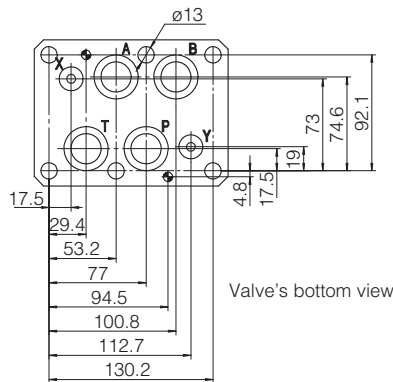
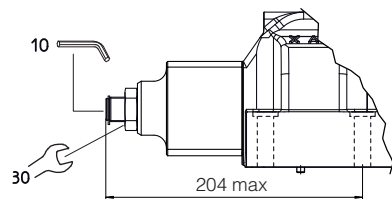
**P** = PRESSURE PORT

**A, B** = USE PORT

**T** = TANK PORT

**X** = EXTERNAL OIL PILOT PORT

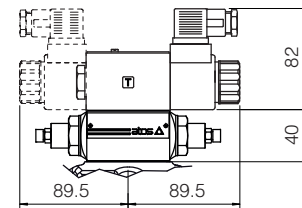
**Y** = DRAIN PORT



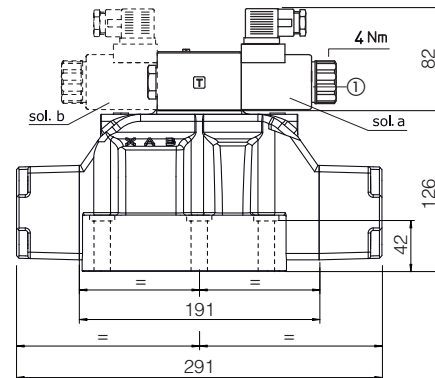
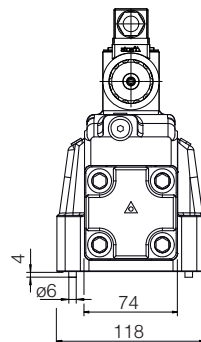
Valve's bottom view

Mass (Kg)	
SDPLHL-46	17,2
SDPLHL-47	17,4
Option /S	+1,5
Option H	+1,0

**SDPLHL-4\*/H**



**SDPLHL-4\***



Overall dimensions refer to valves with connectors type 666

① Standard manual override PIN