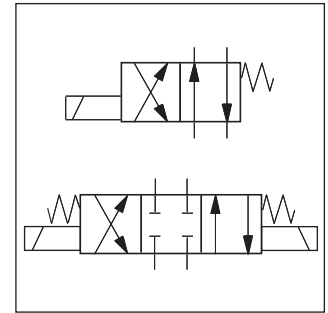
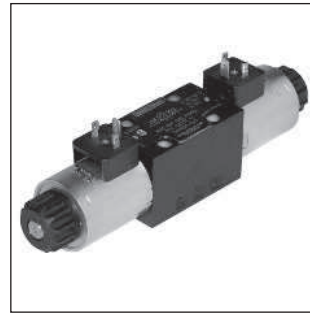


Characteristics

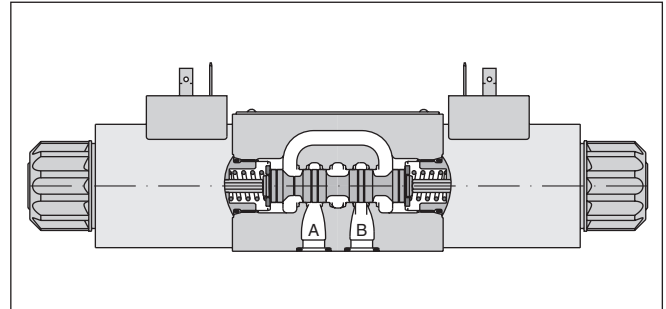
The new NG06 directional control valve is available with both Parker (D1VW) and Denison (4D01) model codes. The new design provides high functional limits up to 80 l/min in combination with a very low, energy-saving pressure drop.

A wide variety of spool options allows to design an unlimited number of hydraulic circuits.

Versions with 8 watt coils, position control, Atex approval, surface protection and connector variants are shown in the following chapters.



2



Technical data

General		Directional spool valve											
Design		Solenoid											
Actuation		DIN NG06 / CETOP 03 / NFPA D03											
Nominal size		DIN 24340 A6 / ISO 4401 / CETOP RP 121-H / NFPA D03											
Mounting interface		unrestricted, preferably horizontal											
Mounting position		unrestricted, preferably horizontal											
Ambient temperature		[°C]	-25...+50										
Weight		[kg]	1.5 (1 solenoid), 2.1 (2 solenoids)										
Hydraulic													
Max. operating pressure		[bar]	P, A B: 350; T: 210 (DC), T: 140 (AC)										
Fluid		Hydraulic oil in accordance with DIN 51524 / 51525											
Fluid temperature		[°C]	-25 ... +70										
Viscosity permitted		[cSt] / [mm²/s]	2.8...400										
Viscosity recommended		[cSt] / [mm²/s]	30...80										
Filtration		ISO 4406 (1999); 18/16/13 (meet NAS 1638: 7)											
Flow max.		[l/min]	80										
Leakage at 50 bar		[ml/min]	Up to 10 per flow path, depending on spool										
Static / Dynamic													
Step response		see table response time											
Electrical characteristics													
Duty ratio		100% ED; CAUTION: coil temperature up to 150 °C possible											
Max. switching frequency		[1/h]	15000										
Protection class		IP 65 in accordance with EN 60529 (plugged and mounted)											
Code		<table border="1"> <tr> <th>K</th> <th>J</th> <th>U</th> <th>G</th> <th>Y</th> <th>T</th> </tr> </table>						K	J	U	G	Y	T
K	J	U	G	Y	T								
Supply voltage		[V]	<table border="1"> <tr> <td>12 V =</td> <td>24 V =</td> <td>98 V =</td> <td>205 V =</td> <td>110V at 50Hz/ 120V at 60Hz</td> <td>230V at 50Hz/ 240V at 60Hz</td> </tr> </table>					12 V =	24 V =	98 V =	205 V =	110V at 50Hz/ 120V at 60Hz	230V at 50Hz/ 240V at 60Hz
12 V =	24 V =	98 V =	205 V =	110V at 50Hz/ 120V at 60Hz	230V at 50Hz/ 240V at 60Hz								
Tolerance supply voltage		[%]	<table border="1"> <tr> <td>±10</td> <td>±10</td> <td>±10</td> <td>±10</td> <td>±5</td> <td>±5</td> </tr> </table>					±10	±10	±10	±10	±5	±5
±10	±10	±10	±10	±5	±5								
Current consumption hold		[A]	<table border="1"> <tr> <td>2.58</td> <td>1.29</td> <td>0.32</td> <td>0.15</td> <td>0.6 / 0.55</td> <td>0.3 / 0.27</td> </tr> </table>					2.58	1.29	0.32	0.15	0.6 / 0.55	0.3 / 0.27
2.58	1.29	0.32	0.15	0.6 / 0.55	0.3 / 0.27								
Current consumption in rush		[A]	<table border="1"> <tr> <td>2.58</td> <td>1.29</td> <td>0.32</td> <td>0.15</td> <td>2.5 / 2.4</td> <td>1.25 / 1.2</td> </tr> </table>					2.58	1.29	0.32	0.15	2.5 / 2.4	1.25 / 1.2
2.58	1.29	0.32	0.15	2.5 / 2.4	1.25 / 1.2								
Power consumption hold			<table border="1"> <tr> <td>31 W</td> <td>31 W</td> <td>31 W</td> <td>31 W</td> <td>70 / 70 VA</td> <td>70 / 70 VA</td> </tr> </table>					31 W	31 W	31 W	31 W	70 / 70 VA	70 / 70 VA
31 W	31 W	31 W	31 W	70 / 70 VA	70 / 70 VA								
Power consumption in rush			<table border="1"> <tr> <td>31 W</td> <td>31 W</td> <td>31 W</td> <td>31 W</td> <td>280 / 290 VA</td> <td>280 / 290 VA</td> </tr> </table>					31 W	31 W	31 W	31 W	280 / 290 VA	280 / 290 VA
31 W	31 W	31 W	31 W	280 / 290 VA	280 / 290 VA								
Solenoid connection		Connector as per EN 175301-803, solenoid identification as per ISO 9461 (code W).											
Wiring min.		[mm²]	3 x 1.5 recommended										
Wiring length max.		[m]	50 recommended										

With electrical connections the protective conductor (PE ⚡) must be connected according to the relevant regulations.

Ordering Code

Directional Control Valve
Series D1VW (PARKER)

D

Directional control valve

1

Size
DIN NG06
CETOP 03
NFPA D03

V

3-chamber valve

W

Wet pin armature solenoid, threaded in tube

□

Spool type

□

Spool position

□

Seals

2

3 position spools	
Code	Spool type
	a 0 b
001	
002	
003	
004	
005	
006	
007	
008 ¹⁾	
009 ¹⁾	
010	
011	
014	
015	
016	
021	
022	
031	
032	
034	
035	
061	
081	
082	
102	
204 ¹⁾	
205 ¹⁾	

2 position spools	
Code	Spool type
	a b
020	
026	
030	
083 ¹⁾	
101	
208	

¹⁾ Consider specific spool position.

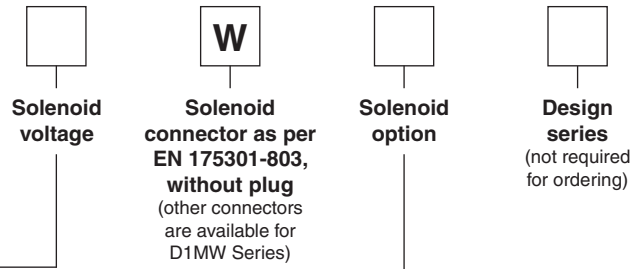
Code	Seals
N	NBR
V	FPM

3 position spools			
Code	Spool position		
C			3 positions. Spring offset in position "0". Operated in position "a" or "b".
	Standard	Spool type 008,009, 204, 205	
E			2 positions. Spring offset in position "0".
	Operated in position "a".	Operated in position "b".	
F			2 positions. Operated in position "0".
	Spring offset in position "b".	Spring offset in position "a".	
K			2 positions. Spring offset in position "0".
	Operated in position "b".	Operated in position "a".	
M			2 positions. Operated in position "0".
	Spring offset in position "a".	Spring offset in position "b".	

2 position spools			
Code	Spool position		
	Standard	Spool type 083	
B			2 positions. Spring offset in position "b". Operated in position "a".
D			2 positions. Operated in position "a" or "b". No centre or offset position.
H			2 positions. Spring offset in position "a". Operated in position "b".

Bold letters =
Short-term availability

Ordering Code




Code	Voltage
K	12V =
J	24V =
U ²⁾	98V =
G ²⁾	205V =
Y	110V 50Hz / 120V 60Hz
T	230V 50Hz / 240V 60Hz

²⁾ Rectifier needed for DC solenoid when used with AC input.

Code	Solenoid option
omit	Standard solenoid with manual override
T	without manual override
S2 ³⁾	Soft shift orifice size 0.5 mm.
S3 ³⁾	Soft shift orifice size 0.75 mm.

³⁾ with built-in orifice (DC only)

2

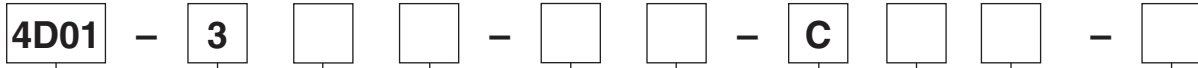


The Parker model code should be used for all new applications. Otherwise also refer to Denison model code.

Further spool types, solenoid voltages and connectors on request.

Ordering Code

2



Directional control valve size DIN NG06 CETOP 03

Body 3-chamber design

Control

Spool type

Spool position

End cap

Design series

Seals

Solenoid voltage

Options

Code	Control
1	1 solenoid
2	2 solenoids
7	2 solenoids and 2 pos. detents (only for spool types 11, 12, 51)

Code	Options
omit	Standard valve
G3 ³⁾	Soft shift with 0.75 mm orifice in anchor tube
32	Solenoid tube without manual override

³⁾ DC only

3 position spools	
Code	Spool type
	a 0 b
01	
02	
03	
07	
08	
09	
10	
13	
14	
46	
55	
56	
64	
65	
AR	
OT	
OX	

Code	Solenoid voltage
G0R	12V =
G0Q	24V =
GAR	98V =
GAG	205V =
W30	110V 50Hz/120V 60Hz
W31	230V 50Hz/240V 60Hz

Code	Seals
1	NBR
5	FPM

Code	End cap
01	for control 1
02	for controls 2 and 7

2 position spools	
Code	Spool type
	a b
11	
12	
51	
52	
71	
81 ¹⁾	
81 ²⁾	

¹⁾ Spool position code 01

²⁾ Spool position code 02

DENISON Hydraulics

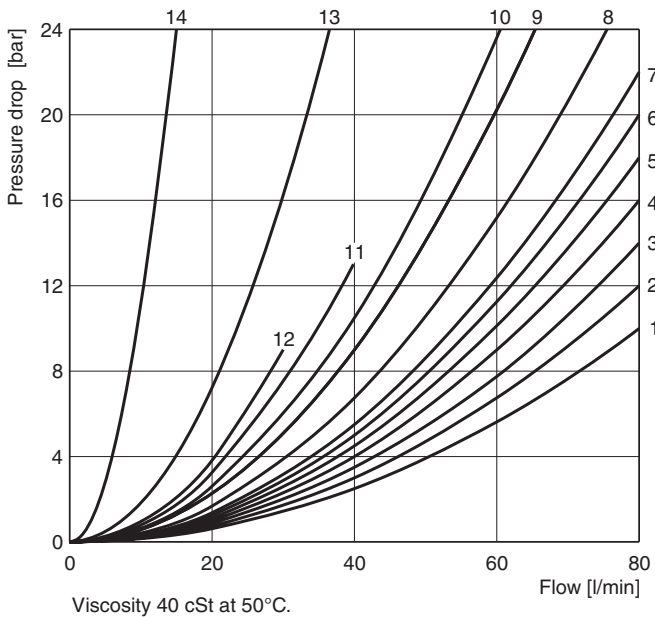
The Denison model code is available for existing applications. For new applications we advise to refer to Parker model code.

3 position spools	
Code	Spool position
03	3 positions. Spring centered to "0".
05	2 positions. Spring centered to "0". Energized to "b".
06	2 positions. Spring centered to "0". Energized to "a".

2 position spools	
Code	Spool position
01	2 positions. Spring offset to "b". Energized to "a".
02	2 positions. Spring offset to "a". Energized to "b".
09	2 positions detent. Operated in "a" or "b". No centre or spring offset position.

Further spool types and voltages on request.

Flow curve



Spool		Position "b"			Position "a"			Position "0"				
		P-A	B-T	P-B	P-B	A-T	P-A	P-A	P-B	A-T	B-T	P-T
D1VW	4D01											
001	03	2	2		2	2						
002	01	1	4		1	4		1	1	5	5	2
003	10	3	4		3	6				7		
004	08	2	3		2	3				7	7	
005	13	2	2		2	2		12				
006	46	1	4		1	4		7	7			
007		3	2		2	2			3		2	7
010	BN	3			3							
011	02	2	2		2	2				14	14	
014		3	2		2	2		3		2		7
015	09	3	6		3	4					7	
016	14	2	2		2	2			12			
020B	51	4	4		2	3						
026B	12	4			4							
030B	11	2	3		1	2						
034	AR	4		8	3	3				5	7	
035	OT	3	3		4		8			7	5	
081		13	13		13	13						
082		13	13		13	13						
101B		11	10		10	9						
102	0X	1	4		1	4		5	5	8	8	6
61		1	3		1	3		3	2			
83H	71	5	2		5	2						
104		1			2	5		3		14		14
208	52	3			2							
		P-B	A-T		P-A	B-T		P-A	P-B	A-T	B-T	P-T
008		4	5		4	5						9
009	07	5	5		6	7						7
83B		5	2		5	2						
204	64	1	3		4	3		7		4		7
205	65	4	3		1	3			7		4	5

Spool		Position "b"			Position "a"		
		P-A	P-B	A-B	P-B	A-T	
021	55	2	4		4	2	
		P-A	B-T		P-A	P-B	A-B
022	56	6	2		5	2	
	81	2	2				
	81				2	2	

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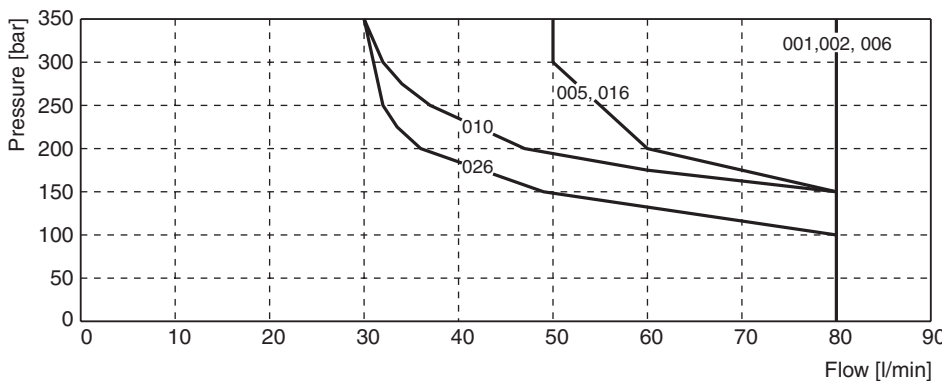
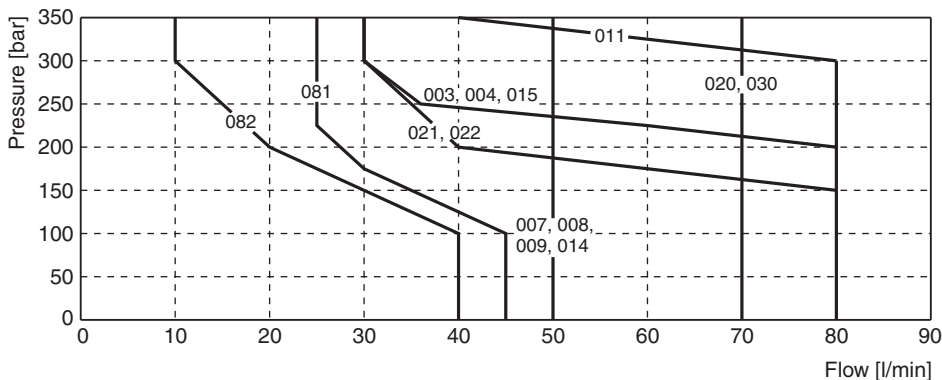
Shift Limits

The diagram below specifies the shift limits for valves with DC solenoids. Valves with spool position "F" or "M" can only be operated up to 70% of the limits. The specifications apply to a viscosity of 40mm²/s and balanced flow

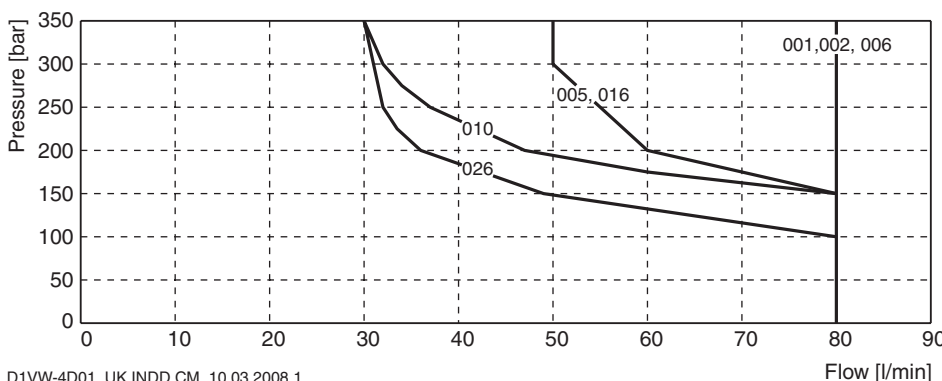
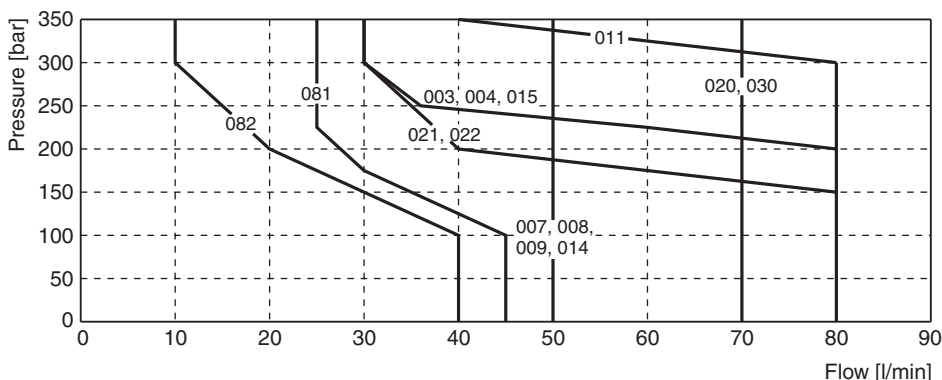
conditions. The shift limits can be considerably lower at unbalanced flow conditions. To avoid flow rates beyond the shift limits, a plug-in orifice can be inserted in the P-port.

2

Valve with standard DC solenoid



Valve with standard AC solenoid



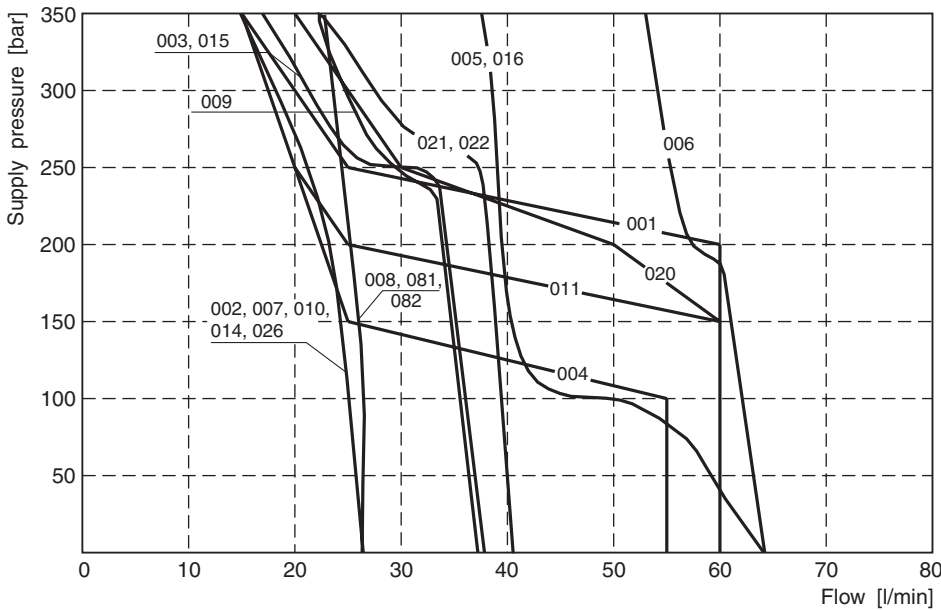
Parker	Denison
001	03
002	01
003	10
004	08
005	13
006	46
007	-
008	-
009	07
010	BN
011	02
014	-
015	09
016	14
020	51
021	55
022	56
026	12
030	11
081	-
082	-
001 F/M	81
204	64
205	65
208	52

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Response Times

Shift limit diagram - Soft shift



2

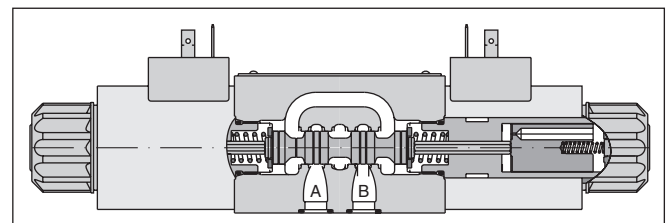
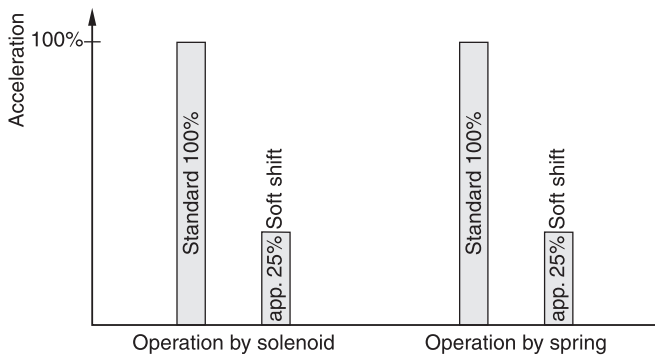
Response times D1VW Standard and Soft Shift

X-Number	Orifice size	3 positions: spool center condition				2 positions	
		Closed		Open		Energize	De-energize
		Energize	De-energize	Energize	De-energize		
(Standard)	-	32 ms (DC) 13 ms (AC)*	40 ms (DC) 20 ms (AC)*	32 ms (DC) 13 ms (AC)*	40 ms (DC) 20 ms (AC)*	32 ms (DC) 13 ms (AC)*	40 ms (DC) 20 ms (AC)*
S2	0.50	200 ms (DC)	650 ms (DC)	700 ms (DC)	650 ms (DC)	175 ms (DC)	225 ms (DC)
S3 (G3)	0.75	125 ms (DC)	325 ms (DC)	550 ms (DC)	550 ms (DC)	100 ms (DC)	100 ms (DC)

* For AC input and soft shift use rectifier plug.

Step response times were obtained under the following conditions: $v = 40 \text{ mm}^2/\text{s}$ at 50°C with the valve operating at nominal pressure and flow. Published response times are nominal and may vary with spool, flow, pressure and temperature.

Acceleration for orifice size 0.75, code "S3" (archived against a valve without soft shift)

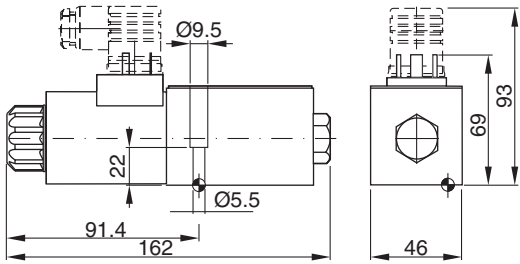


For even softer shifting, the proportional spools 081, 082, 101 and 102 can be used.

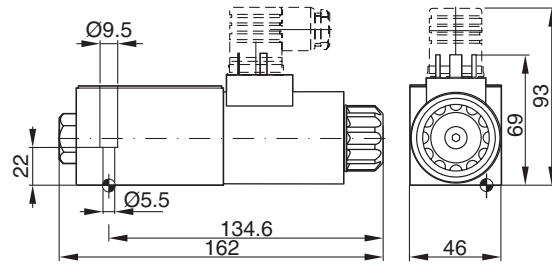
Dimensions

2

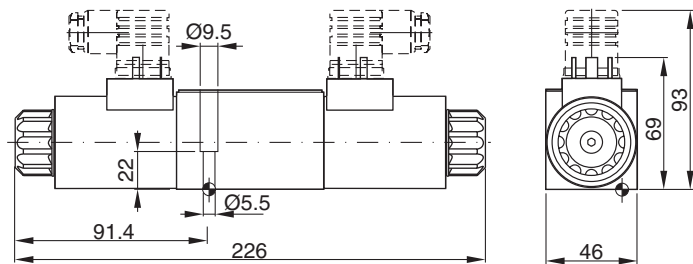
**Interface EN 175301-803, DC solenoid
B, E, F / 01, 06 -style**



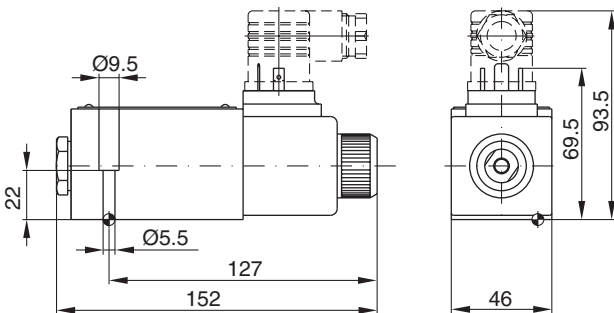
H, K, M / 02, 05 -style



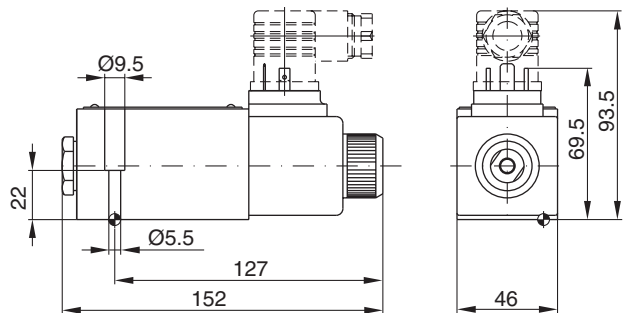
C, D / 03, 09 -style



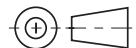
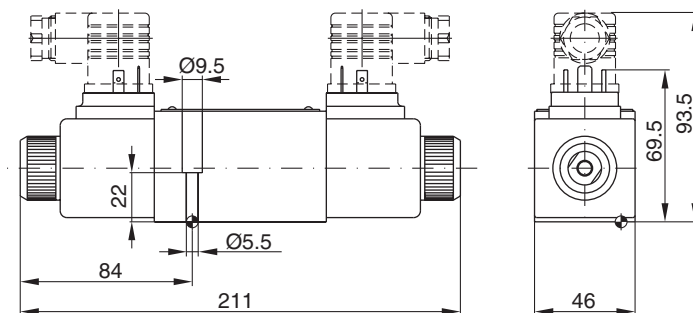
**Interface EN 175301-803, DC solenoid
B, E, F / 01, 06 -style**





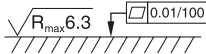


H, K, M / 02, 05 -style



C, D / 03, 09 -style



Surface finish	 Kit	 Kit	 Kit	 Kit
	BK375	4x M5x30 DIN 912 12.9	7.6 Nm ±15%	NBR: SK-D1VW-N-91 FPM: SK-D1VW-V-91

The space necessary to remove the plug per EN 175301-803, design type AF is at least 15 mm.
The torque for the screw M3 of the plug has to be 0.5 to 0.6 Nm.

D1VW-4D01_UK.INDD CM_10.03.2008.1