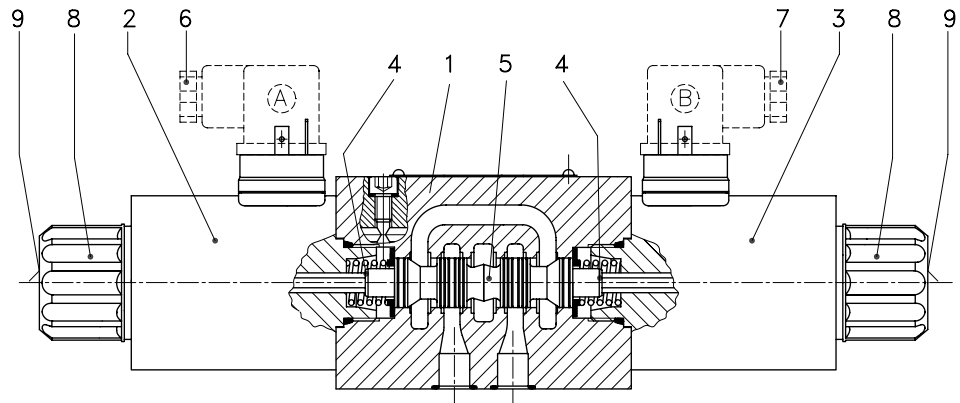


OVERVIEW



P106 001E

DCV 05 directional control valves consist of: housing (1), control spool (5), centering springs (4), and operating solenoids (2, 3).

The three-position directional valves have two solenoids and two springs. The two position directional valves have one solenoid and one return spring.

The operating solenoids are DC and are supplied through connectors A and B (6, 7). For AC supply, the solenoids are provided with rectifiers integrated directly into the connectors.

The connectors must be ordered separately. By loosening nut (8), the solenoid can be rotated in three positions 90° apart.

Provided that the pressure in T-port does not exceed 360 psi [25 bar], the valve can be actuated by manual override (9).

The valve housing (1) is phosphate coated. The operating solenoids (2, 3) are zinc coated.

FEATURES

- 3 position, 4-way and 2 position, 4-way directional valves
- Solenoids can be fixed in three positions 90° apart
- Push button manual override
- Installation dimensions to DIN 24340 and ISO 4401



TECHNICAL DATA

Specifications

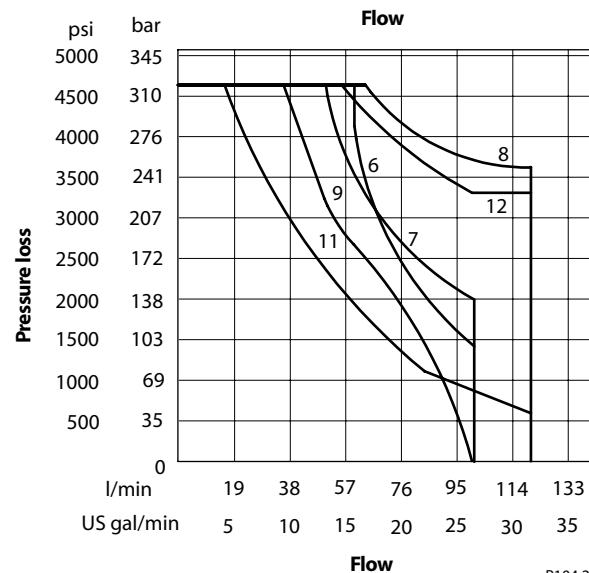
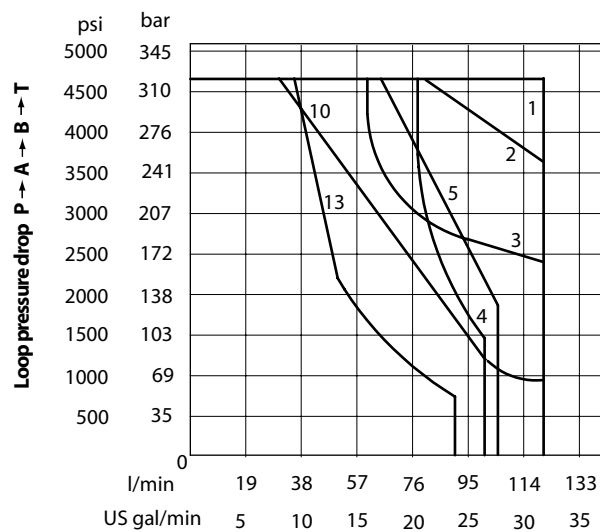
Nominal size	mm [in.]	10 [0.39]
Maximum flow	l/min [US gal/min]	See p-Q characteristics, below
Max. operating pressure	bar [psi]	320 [4640]
Max. back pressure (port T)	bar [psi]	210 [3045]
Pressure drop	bar [psi]	see Δ p-Q characteristics, page 4
Weight – with 1 solenoid with 2 solenoids	Kg [lb]	5.1 [11.25] 6.6 [14.55]

CHARACTERISTICS

p - Q Characteristics

Operating limits for maximum hydraulic power transferred by the directional valve.

For respective spool type – see *Spool Options*, page 5. Measured at viscosity = 35 mm²/s (cSt) [166 SUS] and temperature = 40°C [104°F]



Spool	Curve
Z11	3
C11	4
H11	2
P11	1
Y11	7
B11	5
R11	6
Z51	3
H51	2
P51	1
Y51	7
C51	4
X11	6
B51	5
L21	9
R21	8
J15	1
J75	10
A51	11
M21	12
X25	1
C21	13

P104 203E



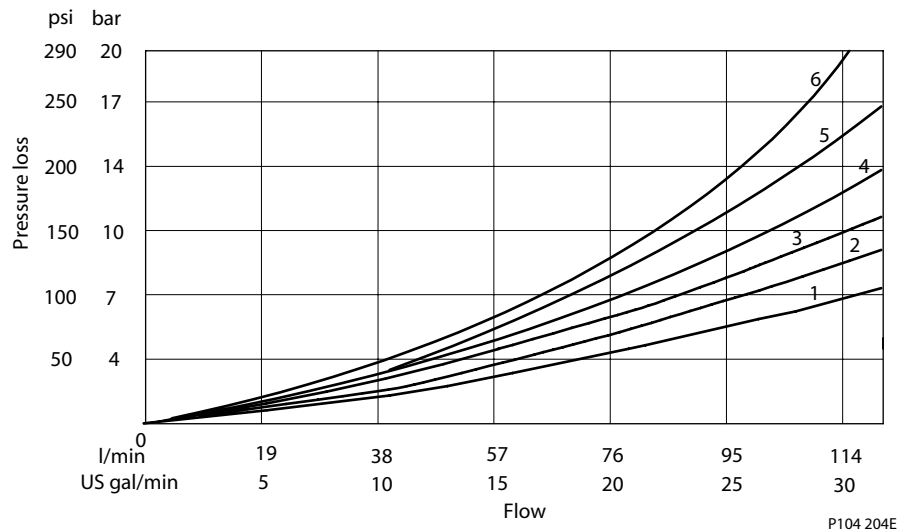
Cartridge Valves Technical Information

Directional control valves DCV 05

CHARACTERISTICS (continued)

p - Q Characteristics

Measured at viscosity = 35 mm²/s (cSt) [166 SUS] and temperature = 40°C [104°F]



Spool	P-A	P-B	A-T	B-T	P-T
Z11	1	1	2	2	
C11	4	3	4	5	1
H11	1	1	2	2	1
P11	1	1	2	2	
Y11	1	1	1	1	
B11	1	1	2	2	
R11	2	1	2	3	
Z51		1	2		
H51		1	2		1
P51		1	2		
Y51		1	1		
C51	4			5	1
X11	2	1	2	3	
B51		1	2		
L21	1	1	1	2	2
R21	1	1	2	3	
J15	1	4	2	3	
J75	1	1			
A51	1	1			
M21	1				
X25	1	2	1		
C21	6	6	6	6	4

ORDER CODE

DCV 05 - □□ - □□□□□ - □□□□□ - □□ - □□ - □

Directional control valves

Nominal size

Operating positions

Code	Description
2	Two positions
3	Three positions

Spool

See *Spool options*, page 5

Voltage

Code	Description
01000	10 VDC / 3.02 A
01200	12 VDC / 2.72 A
02000	20 VDC / 1.51 A
02400	24 VDC / 1.29 A
12060	115 VAC / 0.35 A / 50(60) Hz
24060	230 VAC / 0.17 A / 50(60) Hz

The AC coils correspond with E5 connectors only.

Connector

Code	Description
E1	DIN 43650
E2	DIN 43650 with diode
E5	DIN 43650 with rectifier
E8	Lead wires
E9	Lead wires with diode
E10	Deutsch on lead wires
E11	Deutsch on lead wires with diode

Seals

Code	Description
B	Buna-N
V	Viton

Spool speed control orifice

Code	Description
Omit	None
T2	Nozzle 0.6mm [0.024 in]
T3	Throttle screw

Manual override

Code	Description
00	Standard
N2	Protective rubber boot

Connector plug (DIN 43650)

Code	Description
Omit	No plug
K1	Connector plug
K2	Connector plug with LED

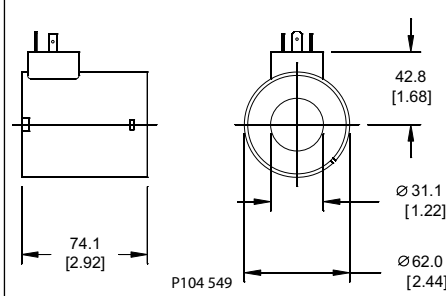
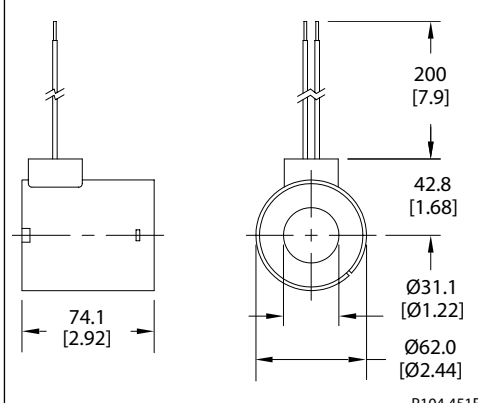
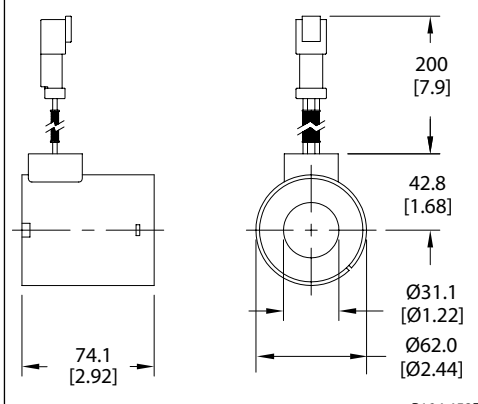
SPOOL OPTIONS

Functional Symbols

Code	Symbol	Transition	Code	Symbol	Transition
Z11*			Y51*		
C11*			C51		
H11*			B51		
P11			Z51*		
Y11*			H51		
Y21			X11		
B11			C11		
C21			H11		
R11*			J15*		
R21*			J75		
A51*			X25		
P51			M21		

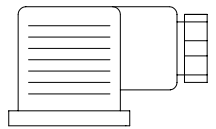
* standard spool option.

TERMINAL OPTIONS

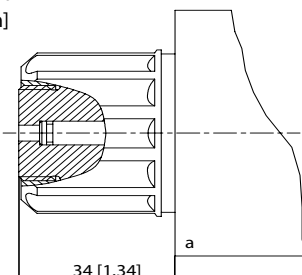
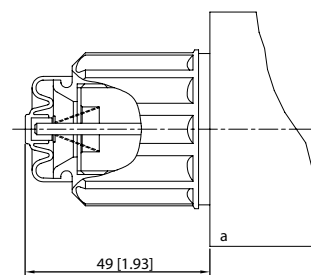
Code	Sketch
E1, E2, E5	 <p>P104 549</p>
E8, E9	 <p>P104 451E</p>
E10, E11	 <p>P104 452E</p>

CONNECTOR OPTIONS

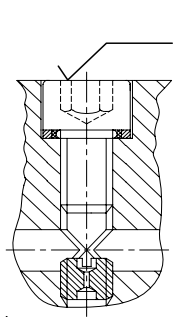
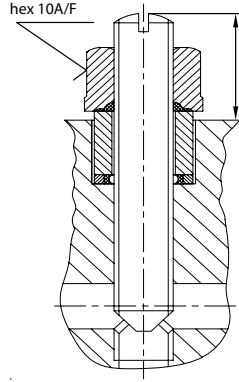
DIN 43650

 P104 439E	Code	Type	Model	Max. input voltage
	K1		Plug B (black)	Without rectifier
Plug A (grey)			Without rectifier	250 VDC 230 VAC
K2		Plug B (black)	Without rectifier and LED	30 VDC 230 VAC
		Plug A (grey)	Without rectifier and LED	30 VDC 230 VAC

MANUAL OVERRIDE OPTION

Standard	Covered by coil nut
Code 00 mm [in]  34 [1.34] a P104 458E	Code N2  49 [1.93] a P104 453E Manual override covered by coil nut

SPOOL SPEED CONTROL ORIFICE OPTION

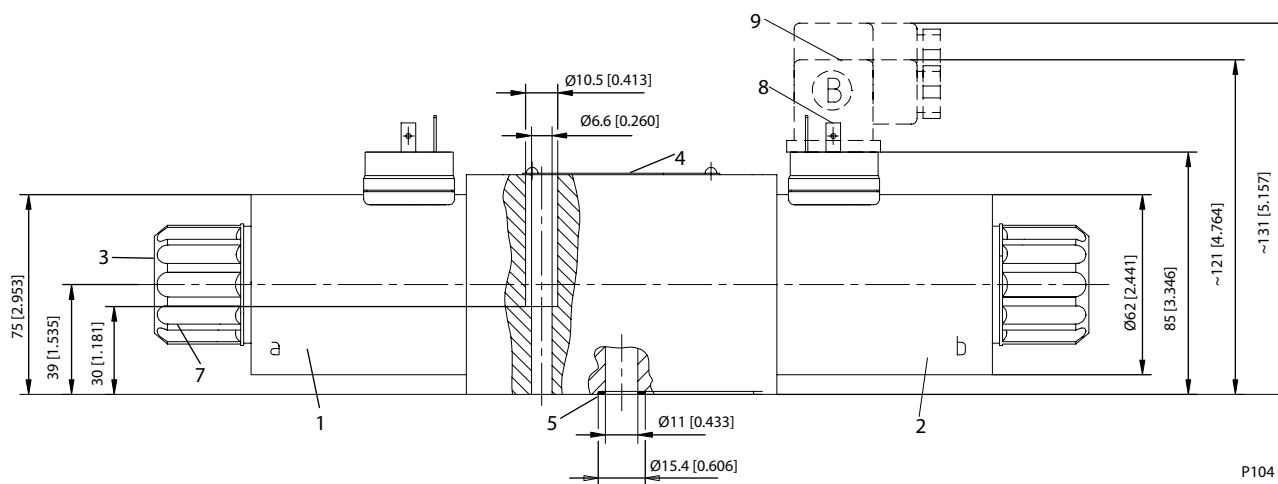
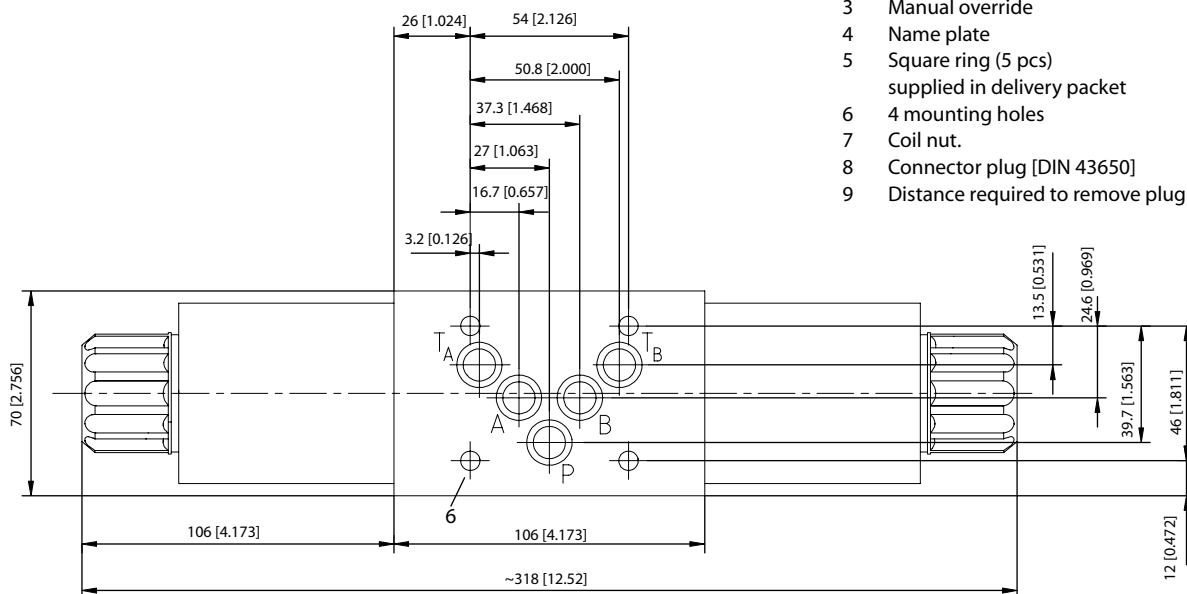
Nozzle 0.6 mm [0.024 in.]	Throttle screw
Code T2 Dimensional sketch  Internal hex 5 A/F P104 459E	Code T3 Dimensional sketch  External hex 10A/F P104 454E

DIMENSIONS

Valve with two solenoids

Dimensions: mm [in]

- 1 Solenoid a
- 2 Solenoid b
- 3 Manual override
- 4 Name plate
- 5 Square ring (5 pcs)
supplied in delivery packet
- 6 4 mounting holes
- 7 Coil nut.
- 8 Connector plug [DIN 43650]
- 9 Distance required to remove plug



P104 455E

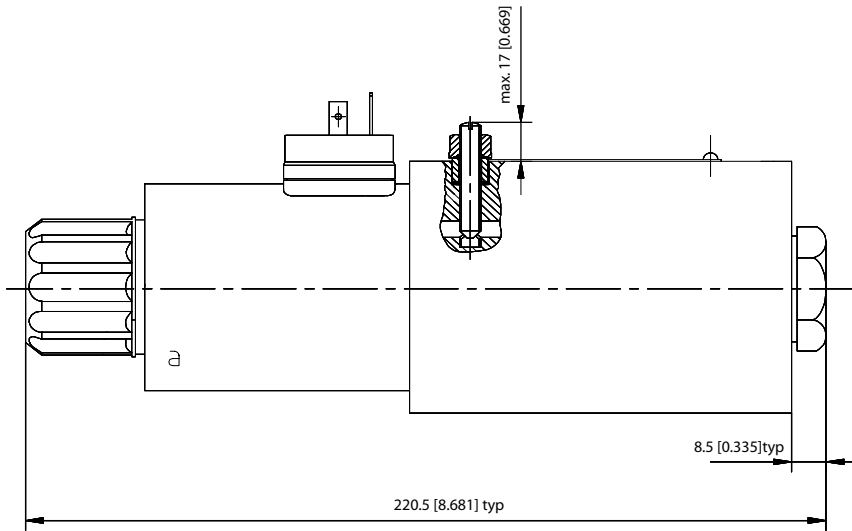


Cartridge Valves Technical Information
Directional control valves DCV 05

DIMENSIONS
(continued)

Valve with one solenoid - side a

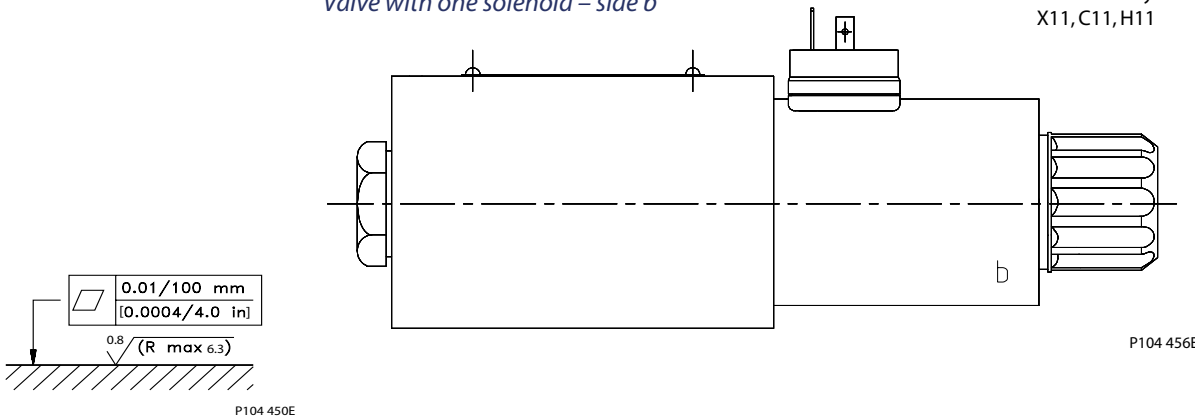
Dimensions: mm [in]



Functional symbols
R11, R21, A51, P51, Y51,
C51, Z51, H51, B51, M21,
X25, J15, J75

Valve with one solenoid - side b

Functional symbols
X11, C11, H11

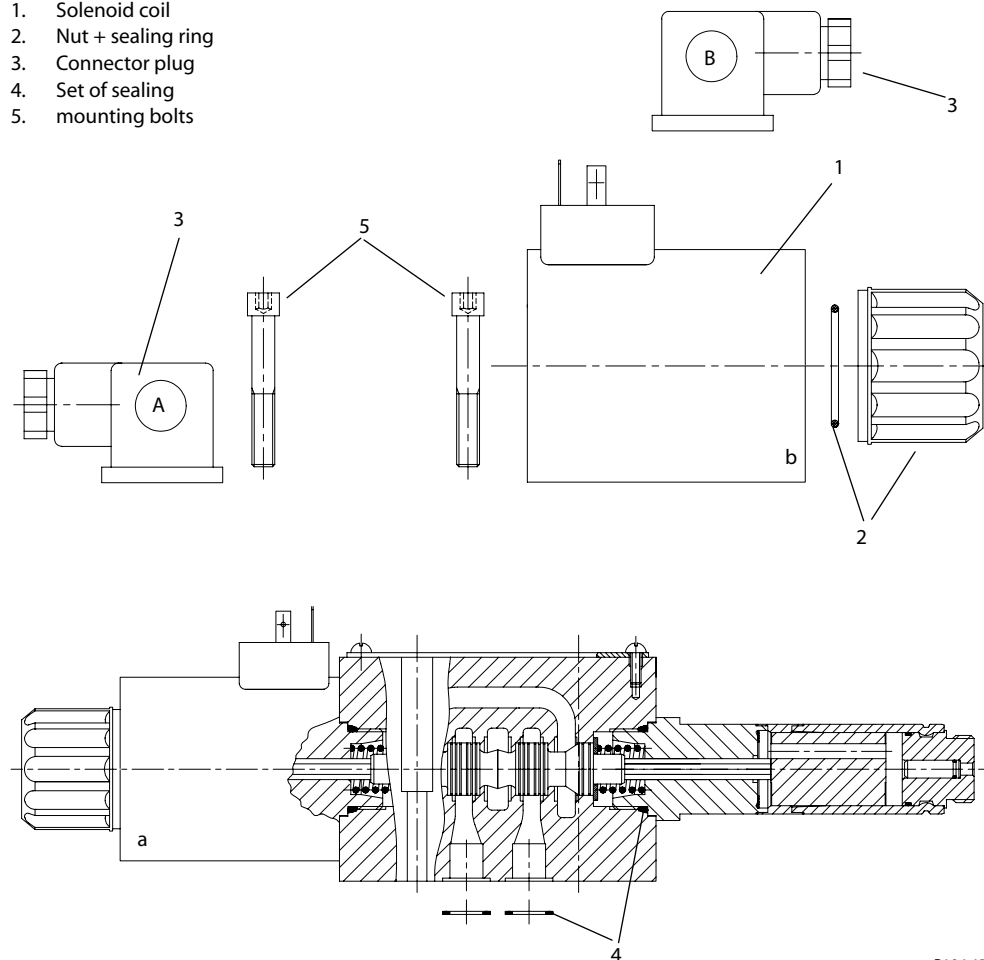


Required surface finish of
interface

Directional control valves
DCV05

REPLACEMENT PARTS

1. Solenoid coil
2. Nut + sealing ring
3. Connector plug
4. Set of sealing
5. mounting bolts



P104 457E

Solenoid

Voltage	Connector						
	E1	E2	E5	E8	E9	E10	E11
Ordering number							
01000	Consult factory	Consult factory	Consult factory	158-8086	Consult factory	Consult factory	Consult factory
01200	158-8019	Consult factory	Consult factory	158-8087	Consult factory	158-8102	158-8099
02000	Consult factory	Consult factory	Consult factory	158-8088	Consult factory	Consult factory	Consult factory
02400	158-8021	Consult factory	Consult factory	158-8089	Consult factory	158-8104	158-8100
11550	Consult factory	Consult factory	Consult factory	Not available			
23050	Consult factory	Consult factory	Consult factory				



Cartridge Valves Technical Information

Directional control valves DCV 05

REPLACEMENT PARTS (continued)

Solenoid nut

Manual override Code	Type of nut	Ordering number
No Code	Standard nut	158-8068
N1	Nut with rubber cap	Consult factory

Connector (DIN 43650)

Code	Model	Connector plug A	Connector plug B
		gray	black
Ordering number			
K1	No rectifier or LED	158-8076	158-8075
K2	With LED	Consult factory	Consult factory

Seal kit

Type	Ordering number
Buna-N	158-8023
Viton	158-8094

Mounting bolts – set

Type	Ordering number
M6 x 40 bolts	158-8024
1/4-20 bolts	158-8095



Cartridge Valves Technical Information
Directional control valves DCV 05

Directional control valves
DCV05