

Vickers® by Danfoss
Pressure Relief Valve - Direct Acting

DARV
50-350 L/min

Manifold Mounting
In-line Mounting
Sub-plate Mounting



BC456864499951en-000101

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General Description

Features:

- For manifold mounting cartridge valve
- For In-line threaded mounting
- For manifold mounting
- Three pressure adjustment elements, optional:
 - Wrench adjustable grub screw with protective cap
 - Rotary knob/hand lever
 - Lockable rotary knob

General

Vickers by Danfoss DARV pressure relief valves are direct operated poppet valves.

They are used to limit the pressure in a hydraulic system.

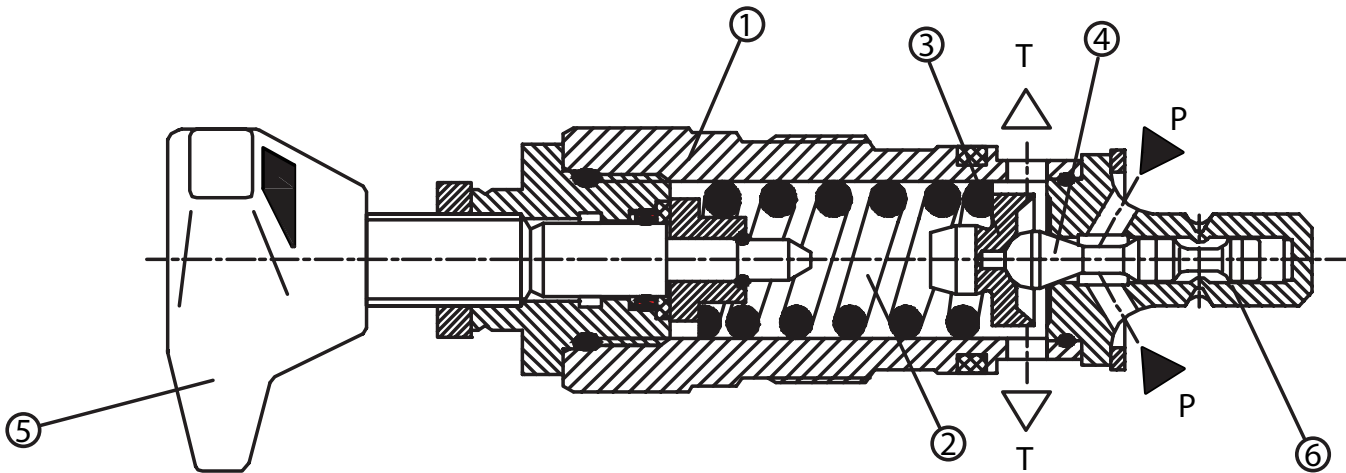
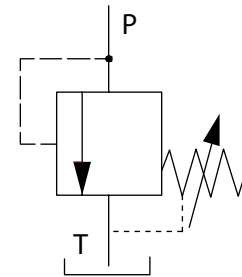
The valves mainly consist of sleeve (1), spring (2), poppet with damping spool (3) pressure (25 to 400 bar) and adjustment element (5). The setting of the system pressure is variable via the adjustment element (5). The spring (2) pushes the poppet (3) onto the seat. The P line is connected to the system

pressure. The system pressure is applied to the poppet area.

If the pressure in P line exceeds the value set at the spring (2), the poppet (3) opens against the spring (2). Now pressure fluid flows from P line into T line. The stroke of the poppet (3) is limited by a pin (6).

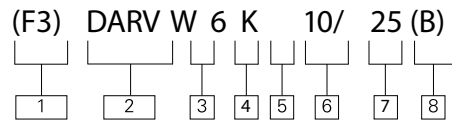
In order to maintain good pressure control over the entire pressure range it is split into seven pressure ranges.

Hydraulics Symbol



Type DARV ...K... 1X/, direct acting pressure relief valve

Series DARV Model Code



1 Seal Options

Blank – Nitrile, for Mineral oil
 Anti-wear hydraulic oil (class L-HM)
 Invert emulsion (class L-HFB)
 Water glycol (class L-HFC)
 F3 - Fluorocarbon seals, for Phosphate Ester (class L_HFD)

2 Direct acting relief valve

3 Adjustment

W - Wrench and cover
 H - Knob
 K - Lockable Knob (Size 6, 8 and 10 only)

4 Size

6 - size 6
 8 - size 8
 10 - size 10
 15 - size 15
 20 - size 20
 25 - size 25
 30 - size 30

5 Mounting Style

K - Cartridge valve (6, 10, 20, 30 only)
 G - In-Line mounting (all sizes)
 P - Subplate mounting (6, 10, 20, 30 only)

6 Design Number

10

8 Pressure Range

25 - 25 bar
 50 - 50 bar
 100 - 100 bar
 200 - 200 bar
 315 - 315 bar
 400 - 400 bar (size 6 to 20 only)

9 Thread type of In-Line mounted valve (G option)

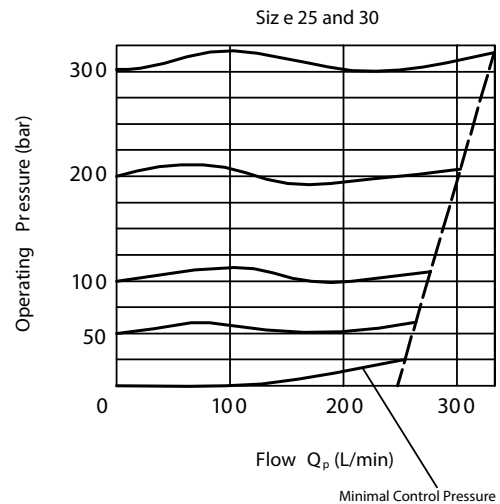
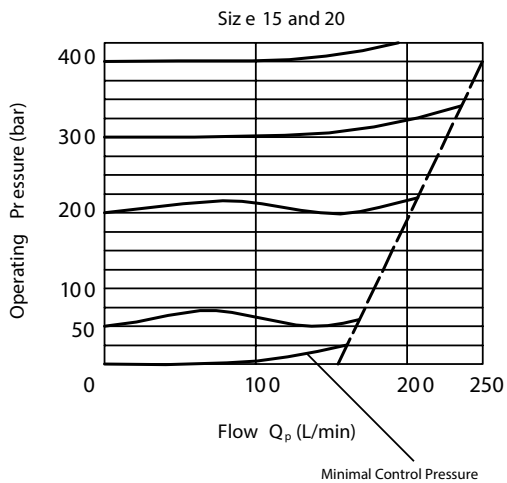
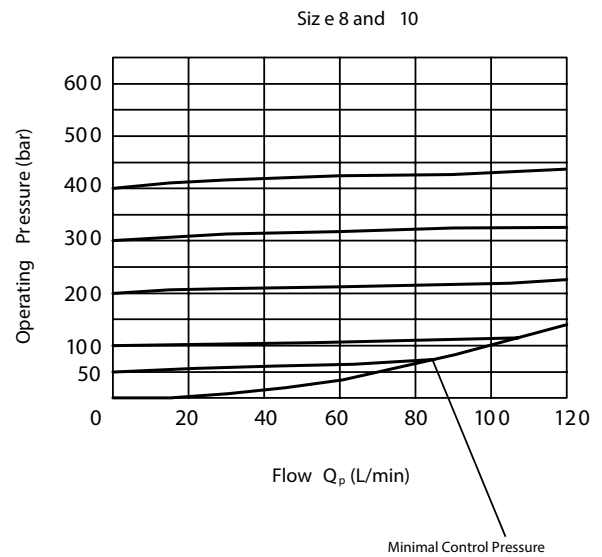
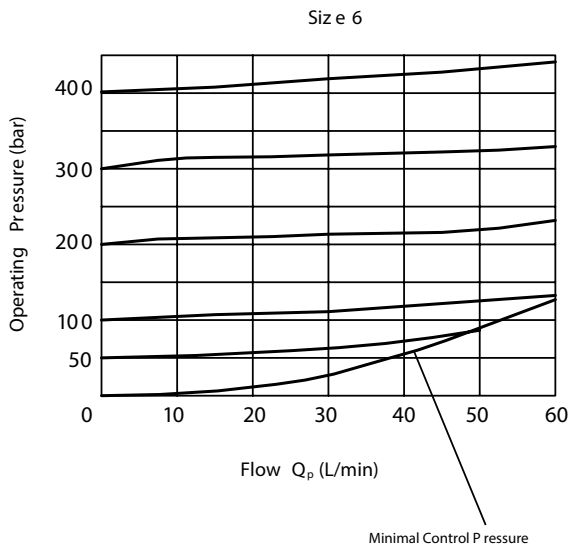
B - BSP thread
 F - Metric thread

HYDRAULIC TECHNICAL DATA

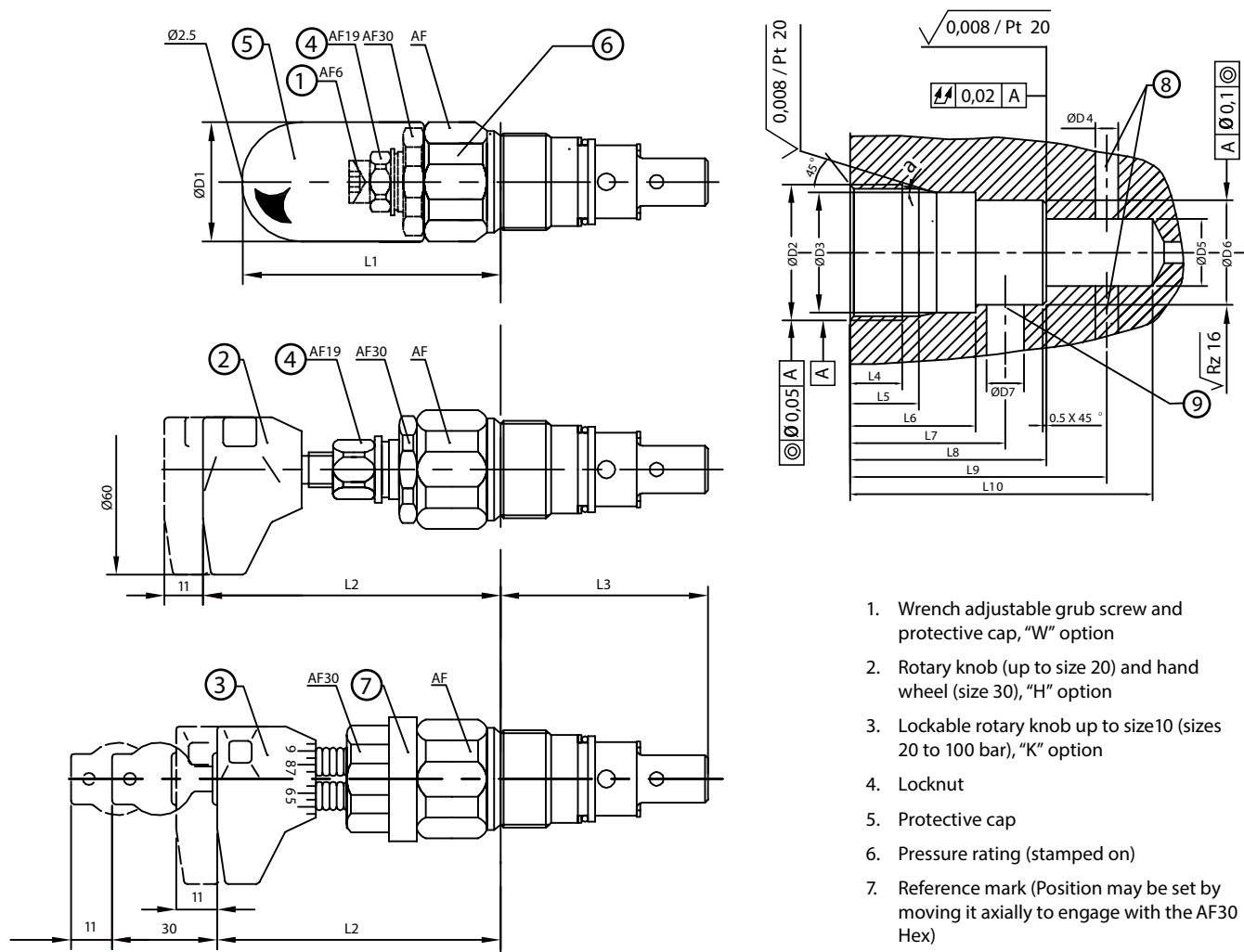
Max. Operating Pressure (Bar)	Size	6	8, 10	15, 20	25, 30
	Port P	400	400	400	315
	Port T	315	315	315	315
Max. Flow Rating (L/min)	Size	6	8, 10	15, 20	25, 30
	(L/min)	50	120	250	350
Fluid temperature range (°C)		-30 to + 80 (with Nitrile seals)			
		-20 to + 80 (with Fluorocarbon seals)			
Fluid Viscosity range (mm ² /s)	10 to 800				
Fluid Cleanliness Level	ISO 19/17/14				

Flow Curves

(measured at $v = 41 \text{ mm}^2/\text{s}$
and $t = 50^\circ\text{C}$)



DARV Series
 Dimensions mm
 For Manifold Mounting
 "K" Style Mounting

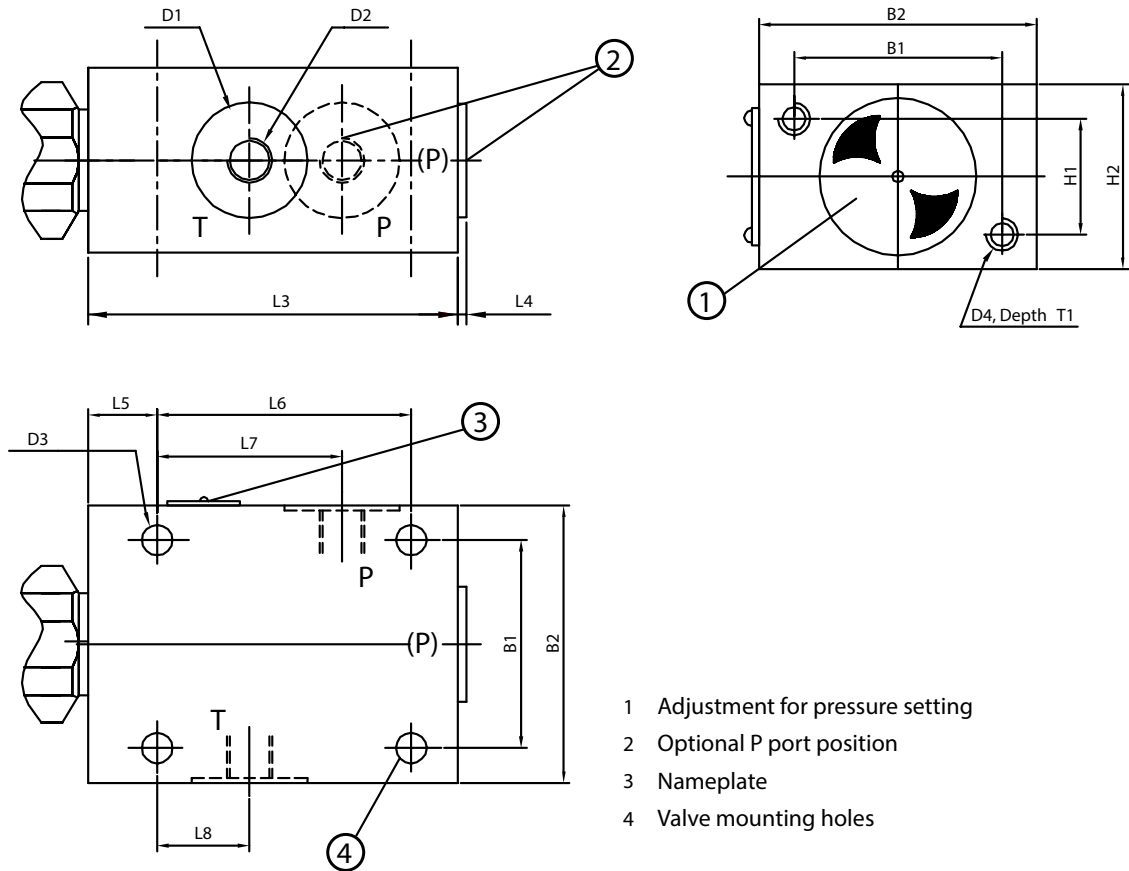


1. Wrench adjustable grub screw and protective cap, "W" option
2. Rotary knob (up to size 20) and hand wheel (size 30), "H" option
3. Lockable rotary knob up to size 10 (sizes 20 to 100 bar), "K" option
4. Locknut
5. Protective cap
6. Pressure rating (stamped on)
7. Reference mark (Position may be set by moving it axially to engage with the AF30 Hex)
8. P port position optional about circumference or end
9. T port position optional about circumference

Size	ØD1	ØD2	ØD3	ØD4	ØD5	ØD6	ØD7	a	L1	L2	L3
6	34	M28 x 1.5	25 ^{H9}	6	15.00	24.90 ^{+0.152 -0.200}	6	15°	72	83	64.50
10	38	M35 x 1.5	32 ^{H9}	10	18.50	31.90 ^{+0.162 -0.200}	10	15°	68	79	79.00
20	48	M45 x 1.5	40 ^{H9}	20	24.00	39.90 ^{+0.162 -0.200}	20	20°	65	77	106.00
30	63	M60 x 2.0	55 ^{H9}	30	38.75	54.90 ^{+0.174 -0.200}	30	20°	83	--	131.00

Size	L4	L5	L6	L7	L8	L9	L10	AF	Weight (kg)	Tightening torques value in Nm(ft - lb)	
										up to 200 bar	up to 400 bar
6	15	19	30	35	45	56.50	65	32	approx. 0.4	50 (37)	80 (59)
10	18	23	35	41	52	67.50	80	36	approx. 0.5	100 (74)	150 (111)
20	21	27	45	54	70	91.50	110	46	approx. 1.0	150 (111)	300 (221)
30	23	29	45	60	84	113.50	140	60	approx. 2.2	350 (258)	500 (370)

DARV Series
Dimensions mm
For In-Line Mounting
"G" Style Mounting

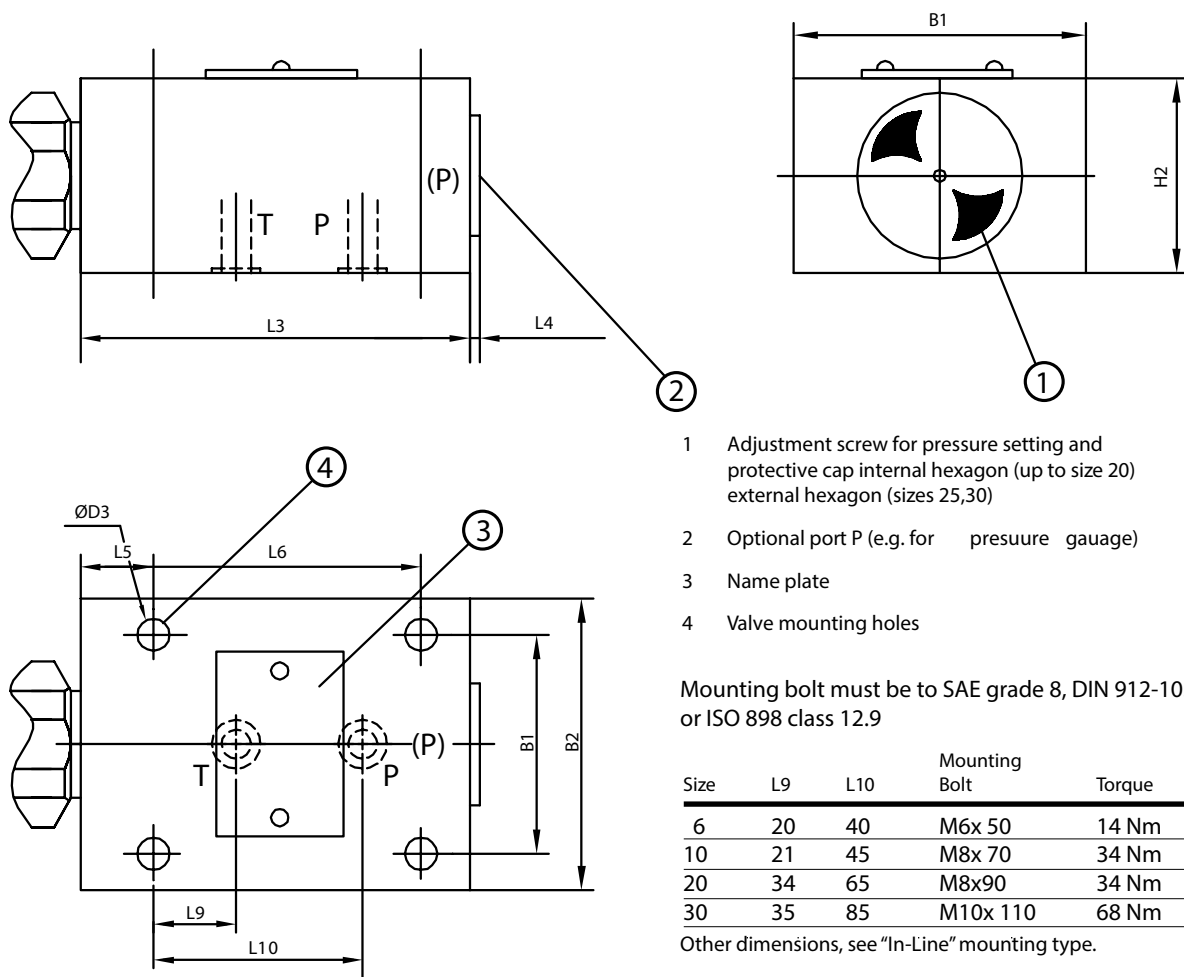


- 1 Adjustment for pressure setting
- 2 Optional P port position
- 3 Nameplate
- 4 Valve mounting holes

Size	ØD1	D2 (Metric)	D2 (BSP)
6	25	M14 x 1.5	G 1/4"
(8)10	(28)34	(M18 x 1.5) M22 x 1.5	(G 3/8") G 1/2"
(15)20	(42)47	(M27 x 2) M33 x 2	(G 3/4") G 1"
(25)30	(56)61	(M42 x 2) M48 x 2	(G 1-1/4") G 1-1/2"

Size	ØD3	D4	B1	B2	H1	H2	L3	L4	L5	L6	L7	L8	T1	Weight (kg)
6	6.60	M6	45	60	25	40	80	4.00	15	55	40	20	10	approx. 1.5
(8)10	9.00	M8	60	80	40	60	100	4.00	20	70	49	21	20	approx. 3.7
(15)20	9.00	M8	70	100	50	70	135	5.50	20	100	65	34	20	approx. 6.4
(25)30	11.00	M10	100	130	60	90	180	5.50	25	130	85	35	25	approx. 13.9

DARV Series
 Dimensions mm
 For Subplate Mounting
 P Style Mounting



- 1 Adjustment screw for pressure setting and protective cap internal hexagon (up to size 20) external hexagon (sizes 25,30)
- 2 Optional port P (e.g. for pressure gauge)
- 3 Name plate
- 4 Valve mounting holes

Mounting bolt must be to SAE grade 8, DIN 912-10.9 or ISO 898 class 12.9

Size	L9	L10	Mounting Bolt	Torque
6	20	40	M6x 50	14 Nm
10	21	45	M8x 70	34 Nm
20	34	65	M8x90	34 Nm
30	35	85	M10x 110	68 Nm

Other dimensions, see "In-Line" mounting type.

Released Part Numbers

Assembly Number	Model Code
DARV-W-6-G-10/200B	02-413460
DARV-W-6-K-10/100	02-413461
DARV-W-6-K-10/200	02-413462
DARV-W-6-K-10/315	02-413463
DARV-W-6-K-10/400	02-413464
DARV-W-6-P-10/10	02-413465
DARV-W-6-P-10/200	02-413466
DARV-W-6-P-10/315	02-413467
F3-DARV-W-6-P-10/315	02-413468
DARV-W-10-G-10/100B	02-413469
F3-DARV-W-10-G-10/100B	02-413470
DARV-W-10-G-10/200B	02-413471
DARV-W-10-G-10/315B	02-413472
DARV-W-10-K-10/100	02-413473
DARV-W-10-K-10/200	02-413474
DARV-W-10-K-10/315	02-413475
DARV-W-10-K-10/400	02-413476
DARV-W-10-P-10/200	02-413477
F3-DARV-W-10-P-10/200	02-413488
DARV-W-10-P-10/315	02-413479
DARV-W-20-G-10/200B	02-413512
DARV-W-20-G-10/315B	02-413513
DARV-W-20-K-10/100	02-413514
DARV-W-20-K-10/200	02-413515
DARV-W-20-K-10/315	02-413516
DARV-W-20-K-10/400	02-413517
DARV-W-20-P-10/100	02-413518
DARV-W-20-P-10/200	02-413519
F3-DARV-W-20-P-10/200	02-413520
DARV-W-20-P-10/315	02-413521
F3-DARV-W-20-P-10/315	02-413522
DARV-W-20-P-10/400	02-413523
DARV-W-25-G-10/100B	02-413524
DARV-W-25-G-10/200B	02-413525
DARV-W-25-G-10/315B	02-413526
DARV-W-30-G-10/200B	02-413527
DARV-W-30-K-10/200	02-413528
DARV-W-30-K-10/315	02-413529
DARV-W-30-P-10/200	02-413530
F3-DARV-W-30-P-10/200	02-413531
DARV-W-30-P-10/315	02-413532

* Bold items are preferred products

Products we offer:

- Cartridge valves
- DCV directional control valves
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- Electric machines
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- Hydrostatic pumps
- Orbital motors
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