DN90FC - Directional control valve

Before use, carefully read the GENERAL INSTRUCTIONS FOR USE OF DIRECTIONAL CONTROL VALVES

Nominal flow	**90 l/min** ***23.8 US gpm***
Nominal pressure	**250 bar** ***3625 psi***
Maximum tank pressure	**50 bar** ***725 psi***
Maximum internal leakage (A or B -> P and T) p=100 bar (1450 psi)	**6 cm³/min** ***0.36 in³/min***
Temperature range	**-20°C +85°C NBR seals** ***(max peak +100°C)*** ***-20°C + 130°C HNBR seals***
Oil viscosity	**from 15 mm²/s to 90 mm²/s** ***(15 cSt to 90 cSt)***
Fluid	**Hydraulic fluids as defined in ISO 6743-4 standard**

STANDARD version

Section

Standard

Dimensions per number of sections

Code	N° of sections	L		Weight	
		mm	in	kg	lb
2	2	75.5	2,97	14	30,8

Pressure drop P-T

Testing parameters: Spool type **01**

Pressure drop P-A

Testing parameters: Spool type **01**

Pressure drop B1-T

Testing parameters: Spool type **01**

A Open centre (for fixed pump)

B LS (for Load sensing pump)

Open centre

LS (Load sensing)

Thread ports

Thread Port P

Code	Type	Torque Nm
F	3/4'' GAS ISO 1179	140
N	M22x1.5 ISO 9974	78
J	M22x1.5 ISO 6149	78
E	3/4'' - 16 SAE ISO 11926	50
R	7/8'' - 14 SAE ISO 11926	77

Thread ports A - B

Code	Type	Torque Nm
F	3/4'' GAS ISO 1179	140
N	M22x1.5 ISO 9974	78
J	M22x1.5 ISO 6149	78
E	3/4'' - 16 SAE ISO 11926	50
R	7/8'' - 14 SAE ISO 11926	77

Thread Port T

Code	Type	Torque Nm
F	3/4'' GAS ISO 1179	140
N	M22x1.5 ISO 9974	78
J	M22x1.5 ISO 6149	78
E	3/4'' - 16 SAE ISO 11926	50
R	7/8'' - 14 SAE ISO 11926	77

Thread port T1/LS

Code	Type	Torque Nm
L	1/4'' GAS ISO 1179	28
F	3/4'' GAS ISO 1179	140
3	M14x1.5 ISO 9974	10
N	M22x1.5 ISO 9974	67
J	M22x1.5 ISO 6149	67
P	9/16'' - 18 SAE ISO 11926	28
E	3/4'' - 16 SAE ISO 11926	42
R	7/8'' - 14 SAE ISO 11926	67

A Without lever holder, standard appendix

L Lever holder kit

T Cable setting

Spool types

01 Spool type

Positions

3	1	0	2	4
	P → B A → T BP ┤	P, T ┤ A, B ┤ BP →	P → A B → T BP ┤	

07 Spool type

Positions

3	1	0	2	4
A, B → T P ┤ BP →	P → B A → T BP ┤	P, T ┤ A, B ┤ BP →	P → A B → T BP ┤	

17 Spool type

Positions

3	1	0	2	4
P → A, B T ┤ BP ┤	P → B A → T BP ┤	P, T ┤ A, B ┤ BP →	P → A B → T BP ┤	

01 LS circuit

Positions

3	1	0	2	4
	P → B A → T	P, T ┤ A, B ┤	P → A B → T	

07 LS circuit

Positions

3	1	0	2	4
A, B → T P ┤	P → B A → T	P, T ┤ A, B ┤	P → A B → T	

0A

Neutral position in 0

0T

Neutral position in 0

NS

Neutral position in 0, detent in 3

LC Pressure limiter and anticavitation

VC Anticavitation valve

Straight standard knob

Code	Description	h [mm]	h [in]
A	Straight standard knob	109	4,3
B	Straight standard knob	134	5.28
C	Straight standard knob	184	7,24
D	Straight standard knob	214	8,42
E	Straight standard knob	254	10
F	Straight standard knob	304	11,97

Ergonomic lever

Code	Description	h [mm]	h [in]
L	Straight vertical	180	7.09
O	Bent 15° vertical	180	7.09
R	Bent 30° vertical	180	7.09
M	Straight horizontal	180	7.09
Y	Bent 15° horizontal	180	7.09
Q	Bent 30° horizontal	180	7.09

Lever holder position

A Straight

C Rotated 180°

A With carry-over port T1 (standard)

Instructions for ordering

Repeat for each section of the valve

DN90FC	1	2	3	4	5 6	7	8	9	10 11	12	13 14	15 16

1 — Number of sections

2	Sections

2 — General options

N	None	**V**	Black paint	**Z**	Zinc plating

3 — Configuration

A	Open centre (for fixed pump)	**B**	LS (for Load sensing pump)

4 — Thread Port P

F	3/4'' GAS ISO 1179	**J**	M22x1.5 ISO 6149	**R**	7/8'' - 14 SAE ISO 11926
N	M22x1.5 ISO 9974	**E**	3/14'' - 16 SAE ISO 11926		

5 6 — Maximum pressure relief valve type

00	VMP replacement plug	**11**	110 bar	**17**	170 bar	**23**	230 bar
06	60 bar	**12**	120 bar	**18**	180 bar	**24**	240 bar
07	70 bar	**13**	130 bar	**19**	190 bar	**25**	250 bar
08	80 bar	**14**	140 bar	**20**	200 bar		
09	90 bar	**15**	150 bar	**21**	210 bar		
10	100 bar	**16**	160 bar	**22**	220 bar		

7 — Sealing type maximum pressure relief valve

G	Grub screw	**P**	Sealed	**N**	None

8 — Thread ports A - B

F	3/4'' GAS ISO 1179	**J**	M22x1.5 ISO 6149	**R**	7/8'' - 14 SAE ISO 11926
N	M22x1.5 ISO 9974	**E**	3/14'' - 16 SAE ISO 11926		

9 — Actuators

A	Without lever holder, standard appendix	**L**	Lever holder kit	**T**	Cable setting

10 11 — Spool types

01	Spool type	**07**	Spool type	**17**	Spool type

12 — Spool options

A	Standard spool	**B**	Nickel-plated spool

13 14 — Spool control

0A	Neutral position in 0	**NS**	Neutral position in 0, detent in 3	**...**	For selection, see the relevant chapter
0T	Neutral position in 0	**...**			

Instructions for ordering

17	18	19	20	21	22	23	24

15 16

Valve type port A

00	None	**13**	LC 130 bar	**18**	LC 180 bar	**23**	LC 230 bar
TP	Processed and plugged	**14**	LC 140 bar	**19**	LC 190 bar	**24**	LC 240 bar
VC	Anticavitation valve	**15**	LC 150 bar	**20**	LC 200 bar	**25**	LC 250 bar
11	LC 110 bar	**16**	LC 160 bar	**21**	LC 210 bar		
12	LC 120 bar	**17**	LC 170 bar	**22**	LC 220 bar		

17 18

Valve type port B

00	None	**13**	LC 130 bar	**18**	LC 180 bar	**23**	LC 230 bar
TP	Processed and plugged	**14**	LC 140 bar	**19**	LC 190 bar	**24**	LC 240 bar
VC	Anticavitation valve	**15**	LC 150 bar	**20**	LC 200 bar	**25**	LC 250 bar
11	LC 110 bar	**16**	LC 160 bar	**21**	LC 210 bar		
12	LC 120 bar	**17**	LC 170 bar	**22**	LC 220 bar		

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Lever options

N	None	**C**	h 184 mm / 7.24 in	**L**	Straight vertical	**Y**	Bent 15° horizontal
S	Without lever	**D**	h 214 mm / 8.42 in	**O**	Bent 15° vertical	**Q**	Bent 30° horizontal
A	h 109 mm / 4.3 in	**E**	h 254 mm / 10 in	**R**	Bent 30° vertical		
B	h 134 mm / 5.28 in	**F**	h 304 mm / 11.97 in	**M**	Straight horizontal		

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Lever holder position

A	Straight	**C**	Rotated 180°	**N**	None

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Thread port T

F	3/4'' GAS ISO 1179	**J**	M22x1.5 ISO 6149	**R**	7/8'' - 14 SAE ISO 11926
N	M22x1.5 ISO 9974	**E**	3/14'' - 16 SAE ISO 11926		

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Thread port T1 / LS

L	1/4'' GAS ISO 1179	**3**	M14x1.5 ISO 9974	**J**	M22x1.5 ISO 6149	**E**	3/14'' - 16 SAE ISO 11926
F	3/4'' GAS ISO 1179	**N**	M22x1.5 ISO 9974	**P**	9/16'' - 18 SAE ISO 11926	**R**	7/8'' - 14 SAE ISO 11926

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Options on port T - T1

A	T open - T1 open (standard)	**B**	T open - T1 plugged	**C**	T plugged - T1 open

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Discharge options

A	With carry-over port T1 (standard)	**B**	Carry-over option port T1	**C**	None