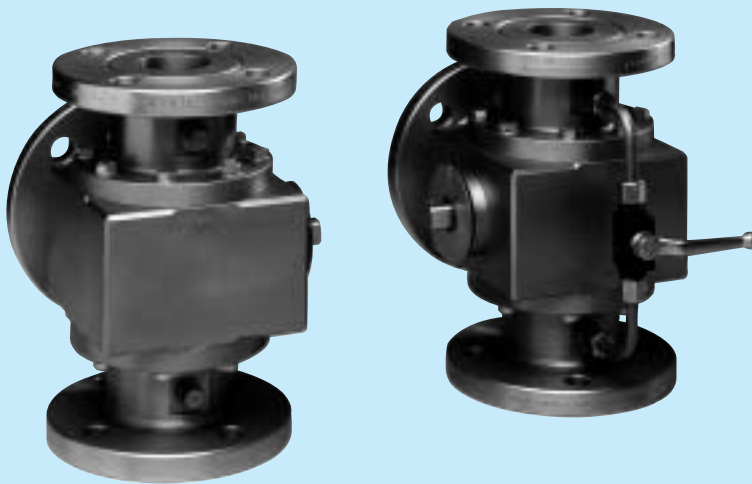


3-Way flanged ball valves Models A, MR and AR



Model MR



Ports:

- A - DIN : DN65 - DN100
- MR - DIN : DN25 - DN50
- MR - ANSI : 1" - 2"
- AR - DIN : DN65 - DN150
- AR - ANSI : 2 ½" - 6"

Models A and AR



Flanges:

- DIN : PN16 - PN40
- ANSI : 150 - 300 Lbs

- Floating ball.
- Trans flow "design".
- Leak-free operation.
- Low torque for easy operation.

Transflow Design

Parker Arlon Ball Valves are designed to transfer flow, without interruption or shutdown. Typical applications are: Lubrication Systems, Shaft-Sealing Oil Systems, Fluid Power Filtration Systems - Fluid Power Heat Exchange Systems.

Parker Arlon's continuous - flow transfer valve design guarantees shock-free uninterrupted flow while simultaneously diverting both inlet and outlet flows from one component to its twin, without altering the continuity of full flow through the valve. A tight shut-off of the idle component is provided to allow for easy maintenance. Parker Arlon ball valves do a leak-free, efficient job in a wide variety of applications for fluids, and process media. (fig. 1)

Mounting

Ensure the balls are aligned in parallel with the couplingshaft when the change-over lever is against the stop on the detention plate. When fitting valves, care should be taken to ensure they are not subjected to any extreme loads applied via heat exchangers or associated vessels. The valve connections should never be exposed to torsional stresses of any kind.

Springloaded Ball-Seat Design

The absolute tightness of the Parker Arlon 3-way 2-seat flanged ball valves is obtained by the floating ball design which gives an automatic, positive seal. Lifting jacks or locking flanges are not necessary.

To guarantee leakfree functioning under the most severe system-circumstances, the valves are provided with two springloaded glass fibre reinforced PTFE ball seats i.e. one in port 'A' and one in port 'B', resulting in an extremely low change-over torque at equalized pressure.

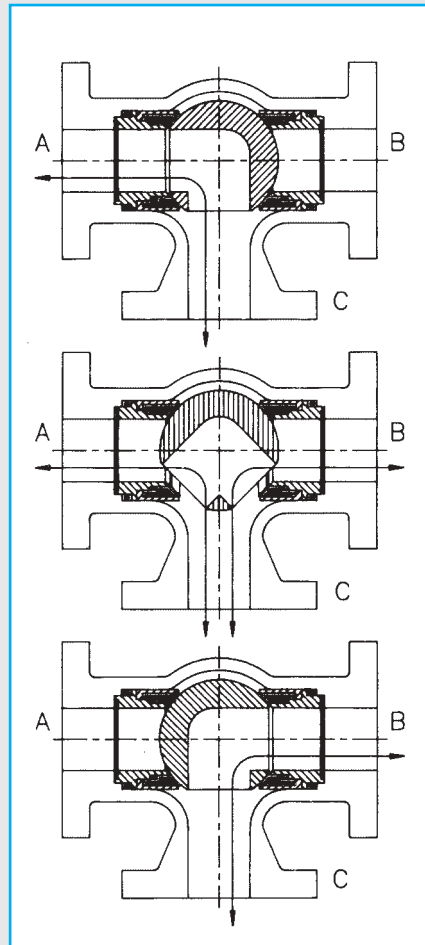
As there is no ball seat mounted on port 'C' it is avoided that this port will be shut off (see valve torque data). (fig. 2)

Stem Seal Design

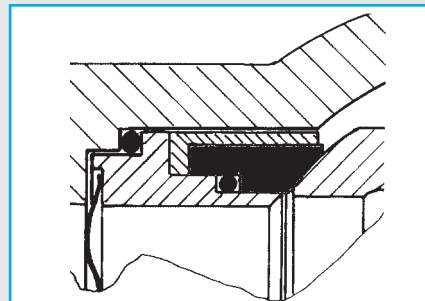
The stem seal design consists of a radial and axial glass fibre reinforced PTFE bushing with a PTFE back-up ring protected double "O"- ring sealing construction. (fig. 3)

Equalizing Line

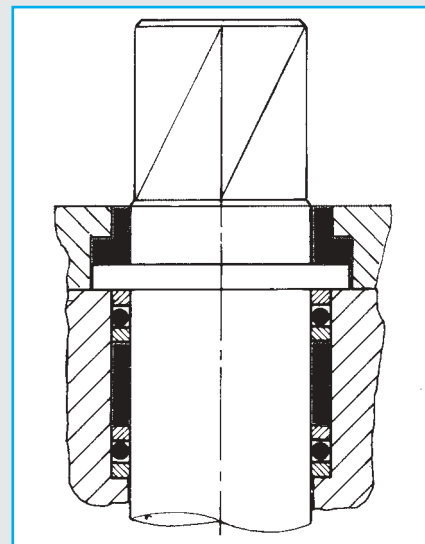
Before changing over, the pressure in the system has to be equalized to avoid pressure shocks and air locks. Our three-way ball valves offer the possibility to mount an integrated pressure equalizing ball valve.



(fig. 1)



(fig. 2)



(fig. 3)

Design Standards

Max. working pressure A:
 - PN 16 16 bar DIN 2633

Max. working pressure MR/AR:
 - PN 16 16 bar DIN 2633
 - PN 40 40 bar DIN 2635
 - 150 lbs ANSI B16.5
 - 300 lbs ANSI B16.5

Connections:

- A: DN65 - DN100
 - MR: DN25 - DN50 1" - 2"
 - AR: DN65 - DN150 2 1/2" - 6"

Maximum operating pressure according to the relevant "flange rating". The maximum seal operating temperature is for NBR : -40° C / +100° C
 for FPM : -20° C / +200° C
 for CR : -45° C / +100° C
 When operating temperatures below -10° C: Utilize stainless steel housings only.

Hydrotesting and leaktest according to API-598 or DIN 3230. The transflow design and available materials comply with API-614.

Materials of Construction

The A model is available with:
 - Casted body and flanges - GGG50

MR American standard:
 - Body: Moulded steel
 - Flanges: Moulded steel
 ASTM-A 105 grade B

MR European standard:
 - Body: Moulded steel S355J2G3
 - Flanges: Specified in DIN norm

AR American standard:
 - Body: Cast steel ASTM-A 216 WCB
 - Flanges: Moulded steel
 ASTM-A 105 grade B

AR European standard:
 - Body: Cast steel GS 45
 - Flanges: Specified in DIN norm

The floatingball and stem are made of Stainless steel AISI-316 as a standard for all ball valve types.

All pressure containing parts are covered by certificates in accordance with:
 EN 10204 /2.2 for valves type "A",
 EN 10204 /3.1.B for valves type "AR",
 EN 10204 /3.1.B for valves type "MR".

Surface protection

All ball valves are delivered from factory provided with a primer suitable for all general paint systems.

Storage

1. During storage the ball valve should be sealed against the entry of contaminant, which may cause damage to the ball and seals.
2. Ensure that the change-over lever is placed against its stop on the detention plate to protect the seals from deformation.

Mounting of Transfer Ball Valves with Flexible Coupling shaft

Ensure the balls are aligned in parallel with the couplingshaft when the change-over lever is against the stop on the detention plate. When fitting valves, care should be taken to ensure they are not subjected to any extreme loads applied via heat exchangers or associated vessels. The valve connections should never be exposed to torsional stresses of any kind.

If operational pressures exceed 5 bar the valves should be pressure equalized prior to change-over (valves with integrated equalizing lines or separated equalizing lines between vessels should be used). Ensure flanges are square when mounted.

Mounting of Transfer Ball Valves, Single or Rigidly Coupled

Ensure the balls are aligned in parallel when the change-over lever is against the stop on the detention plate. When fitting valves, care should be taken to ensure they are not subjected to any extreme loads applied via heat exchangers or associated vessels. The valve connections should never be exposed to torsional stresses of any kind. If operational pressures exceed 5 bar the valves should be pressure equalized prior to change-over (valves with integrated equalizing lines or separated equalizing lines between vessels should be used). Ensure flanges are square when mounted.

Operation

To operate change-over ball valves, pressure must be equalized on both sides of installation and all free air expelled from systems. This prevents excessive loads being applied to change-over levers and aeration of system fluid. Change-over is carried out as follows:

1. Open vent valve unit not in service;
2. Open equalizing line;
3. Close vent valve when all free air has been expelled from system;
4. When pressure has equalized, valve can be changed over in one single movement of change-over lever (90° turn L-bore and 180° turn T-bore). Extreme force should not be used;
5. On completion of change-over equalizing line must be closed.

Lagerung

Während der Lagerung und des Transports sollen die Anschlüsse der Armatur abgedichtet sein, damit keine unerwünschten Fremdkörper in die Anschlüsse eindringen können. Gleichzeitig muss darauf geachtet werden, dass der Schalthebel gegen Anschlag gesetzt ist.

Montage der Doppeldreiwege-Wechselkugelhähne mit Kupplungs-gestänge und Wellengelenken

Die Parker Arlon Wechselkugelhähne müssen so montiert werden, dass die Anschlagscheiben gegenübergestellt sind und mittels der Kupplungs-gestänge gesichert werden. Bei der Montage der Wechselkugelhähne müssen aussergewöhnliche Spannungen auf die Armatur vermieden werden.

Die Anschlüsse dürfen auf keinen Fall auf Torsion belastet werden und die Flansche müssen in gerader Linie stehen. Der Schalthebel soll immer gegen den Anschlag gestellt werden. Ist der Arbeitsdruck höher als 5 bar, so muss - bevor eine Umschaltung erfolgen kann - ein Druckausgleich vorgenommen werden.

Montage der Doppeldreiwege-(starrgekuppelt) und Einfachdreiwege-Wechselkugelhähne

Diese müssen so montiert werden, dass der Schalthebel die Anschlagscheibe sichert. Sonst wie oben ernante Weise.

Umschaltung

Bevor der Einfach- oder Doppeldreiwege-Wechselkugelhahn umgeschaltet werden kann, muss die in Betrieb zu setzende System-hälfte entlüftet und ausgeglichen werden, damit keine Luft in das System dringen kann. Der Umschaltvorgang soll wie folgt ausgeführt werden:

1. Die in Betrieb zu setzende System-Hälfte entlüften;
2. Die Ausgleichsleitung öffnen;
3. Entlüftungshahn schliessen, nachdem das System entlüftet ist;
4. Den Wechselkugelhahn mit einer Bewegung umschalten bis zum Anschlag (leichter Schlag 90 Grad Drehung für T-bore und 180 Grad Drehung für L-bore);
5. Ausgleichsleitung nach Umschalten schliessen.

Précautions durant le stockage

Les orifices entrée et sortie des vannes doivent être protégés afin d'éviter que des impuretés pénètrent à l'intérieur et endommagement la sphère et les joints. Il faut veiller à ce que le levier soit maintenu en position butée contre l'ergot d'indexation afin de prévenir toute déformation des joints.

Montage des vannes à cardans

Les sphères doivent être calées et maintenues en position parallèle contre la butée par la barre d'accouplement. Lors du montage sur tuyauteries, les liaisons ne doivent pas supporter le poids du réfrigérant et ne subir aucune force radiale. Si la pression de travail excède 5 bar, il convient d'adapter séparément ou sur la vanne elle-même un système d'équipression qui équilibrera le système avant de pratiquer une opération de transfert. Les brides doivent être montées en parfait alignement.

Montage des vannes transfert simples où accouplées rigide

Les sphères doivent être calées et maintenues en position parallèle contre la butée.

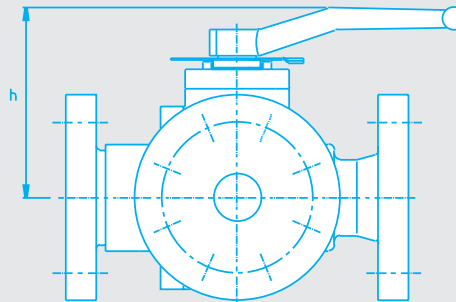
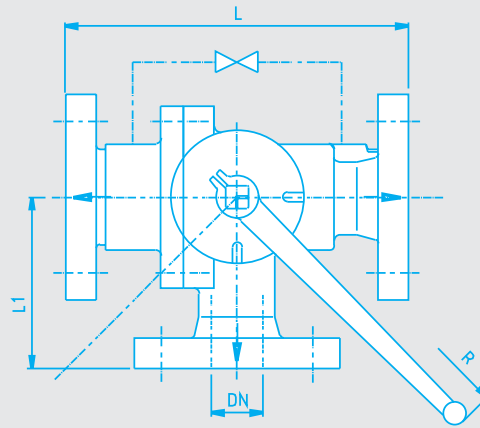
Fonctionnement

Avant chaque manoeuvre, il faut équilibrer la pression et purger l'autre partie du système, ceci afin d'éviter l'entrée d'air. ce transfert s'effectue de la façon suivante:

1. Ouvrez le robinet de purge non en service;
2. Ouvrez la ligne d'équilibrage;
3. Fermez le robinet de purge quand le système est vide d'air;
4. Après équilibrage de la pression, les vannes peuvent être commutées en une opération. (Tournez à 90° L-bore et 180° T-bore). L'opération doit s'effectuer normalement, sans effort important;
5. Après cette opération, fermez la ligne d'équipression.

Threeway transfer ball valve

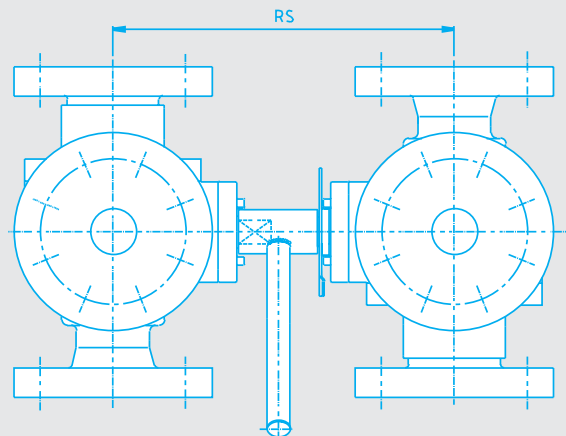
Type	DN	L	L1	h	R	kg	Nm
A	65	310	155	158	350	37	15
	80	310	155	158	350	37	15
	100	350	175	170	350	59	20



Double threeway transfer ball valve rigidly coupled

Type	DN	RS	kg	Nm	R
A	65	300	78	30	350
	80	300	78	30	350
	100	345	127	40	350

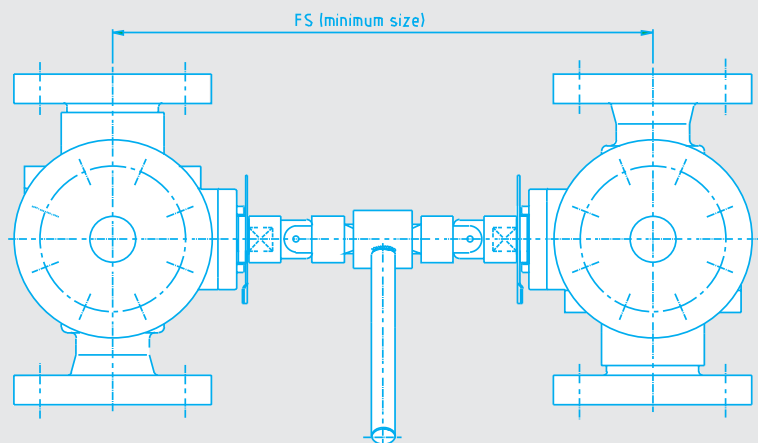
RS = Rigid Size (No other sizes available)



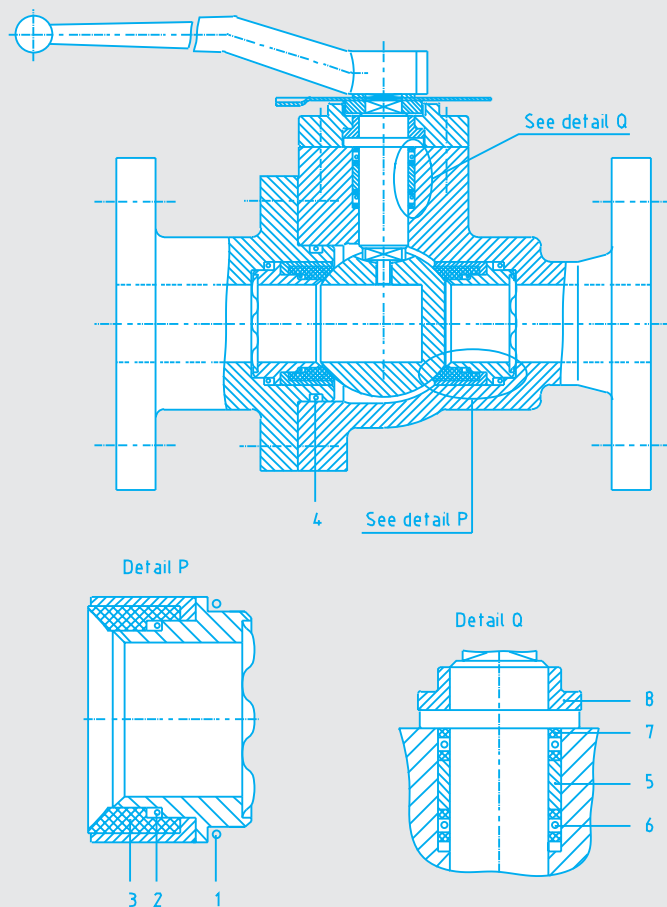
Double threeway transfer ball valve flexibly coupled

Type	DN	FS	kg	Nm	R
A	65	480	80	30	350
	80	480	80	30	350
	100	510	135	40	350

FS = Flexible Size (required sizes to be specified)



Nm = change-over torque at equalized pressure. All sizes in mm.



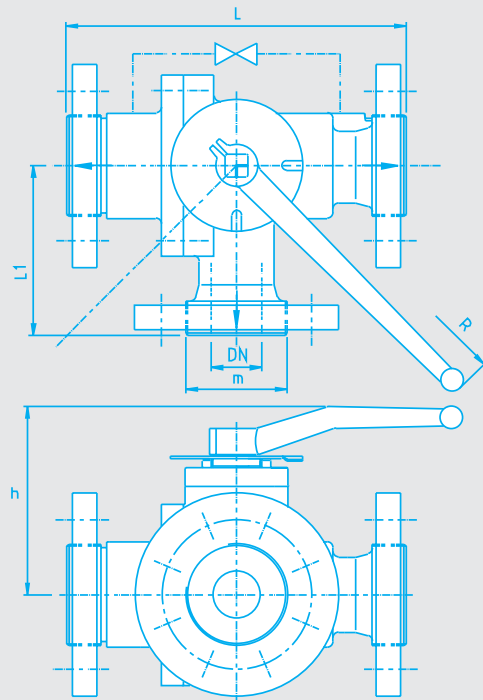
Pos	Description	Material	DN 65/80	DN 100
1	O-ring	NBR 70° shore	Ø 84,5 X Ø 3	Ø 114,5 X Ø 3
			c 81.10.150.20 2	q 81.10.150.25 2
2	O-ring	NBR 70° shore	Ø 79,5 x Ø 3	Ø 104,5 x Ø 3
			c 81.10.150.19 2	81.10.150.23 2
3	Ball Seat	PTFE	Ø 91,5 x Ø 80	Ø 123 x Ø 105
			c 86.15.085.28 2	86.15.085.29 2
4	O-ring	NBR 70° shore	Ø 124,5 x Ø 3	Ø 152 x Ø 3,53
			c 81.10.150.26 1	81.11.150.29 1
5	Bushing	PTFE	Ø 35 x Ø 30 x 18	Ø 35 x Ø 30 x 18
			c 86.17.085.28 1	86.17.085.28 1
6	O-ring	NBR 70° shore	Ø 29,2 x Ø 3	Ø 29,2 x Ø 3
			c 81.10.150.02 2	81.10.150.02 2
7	Back-up Ring	PTFE	Ø 35xØ 30 x1,5	Ø 35xØ 30 x1,5
			c 86.18.082.08 4	86.18.082.08 4
8	Bushing	PTFE	Ø 40,5 x 13,5	Ø 40,5 x 13,5
			c 86.19.085.08 1	86.19.085.08 1

c = code number q = quantity for spare part kits per single ball valve

Threeway transfer ball valve

Type	ANSI/DN	L	L1	h	R	m*	kg	Nm	
AR	2 1/2"	65	310	155	158	350	110 x 2	37	15
	3"	80	310	155	158	350	126 x 2	37	15
	4"	100	350	175	170	350	154 x 2	59	20
	5"	125	350	175	170	350	154 x 2	71	20
	6"	150	450	225	230	500	205 x 2	135	40

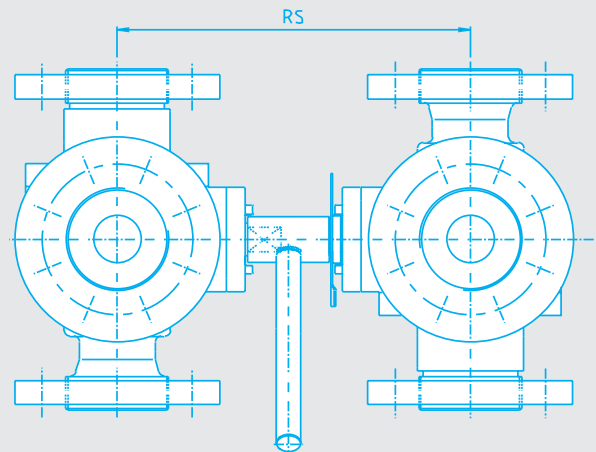
*Thread dimension + diameter of the raised face.



Double threeway transfer ball valve rigidly coupled

Type	ANSI/DN	RS	kg	Nm	R	
AR	2 1/2"	65	300	78	30	350
	3"	80	300	78	30	350
	4"	100	345	127	40	350
	5"	125	345	152	40	350
	6"	150	435	285	80	500

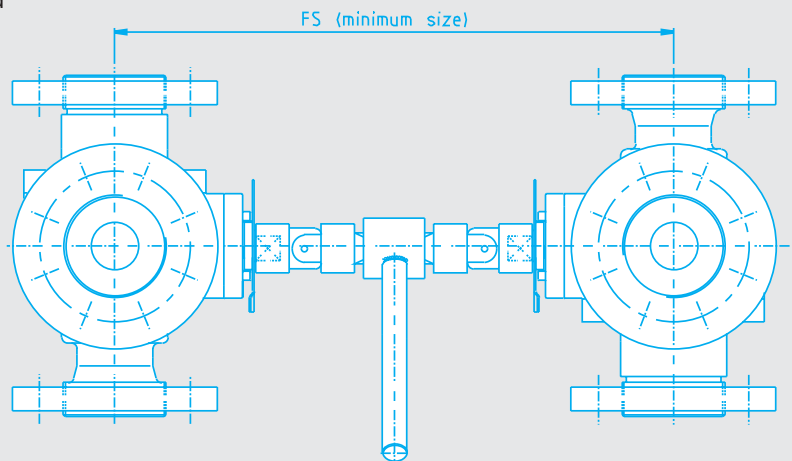
RS = Rigid Size (No other sizes available)



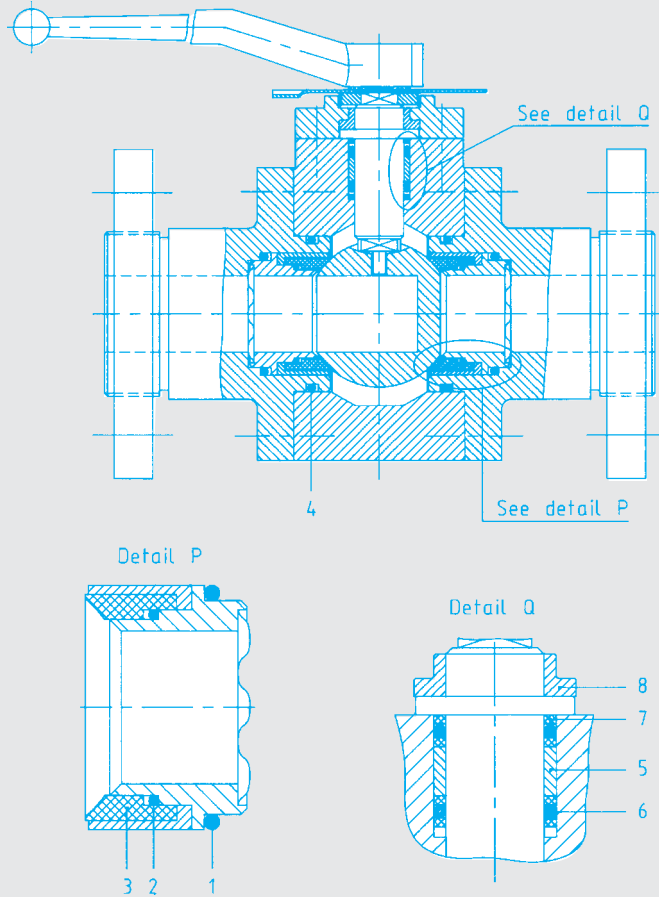
Double threeway transfer ball valve flexibly coupled

Type	ANSI/DN	FS	kg	Nm	R	
AR	2 1/2"	65	480	80	30	205
	3"	80	480	80	30	205
	4"	100	510	135	40	250
	5"	125	520	160	40	250
	6"	150	665	300	80	350

FS = Flexible Size (required sizes to be specified)



Nm = change-over torque at equalized pressure. All sizes in mm.



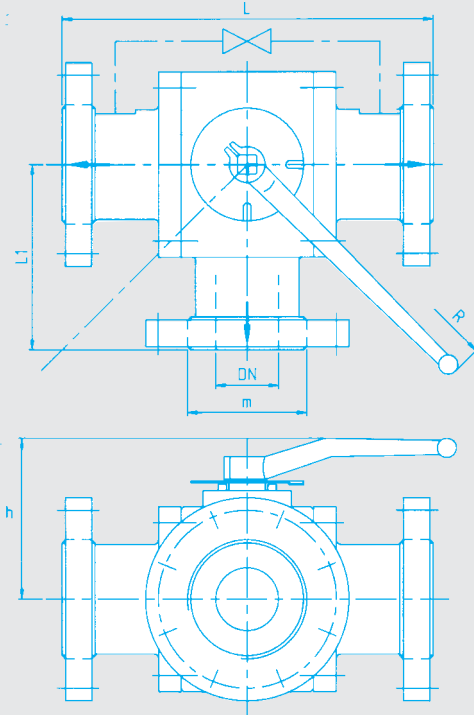
Pos	Description	Material	ANSI 1" DN 25	ANSI 1½" DN 40	ANSI 2" DN 50
1	O-ring	NBR	Ø 34,2 x Ø 3	Ø 49,5 X Ø 3	Ø 59,5 X Ø 3
		70° shore	c 81.10.150.03 2	q 81.10.150.14 2	q 81.10.150.16 2
2	O-ring	NBR	Ø 28,3 x Ø 1,78	Ø 40,95 x Ø 2,62	Ø 52,07 x Ø 2,62
		70° shore	c 81.11.150.48 2	81.11.150.45 2	81.11.150.17 2
3	Ball Seat	PTFE	Ø 36 x Ø 28,8	Ø 51,5 x Ø 41,5	Ø 61,5 x Ø 52,2
			c 86.15.085.23 2	86.15.085.25 2	86.15.085.26 2
4	O-ring	NBR	Ø 44,2 x Ø 3	Ø 69,5 x Ø 3	Ø 79,5 x Ø 3
		70° shore	c 81.10.150.38 2	81.10.150.91 2	81.10.150.19 2
5	Bushing	PTFE	Ø 20 x Ø 16 x 8	Ø 26,7x Ø 22x10	Ø 26,7x Ø 22x10
			c 86.17.085.23 1	86.17.085.25 1	86.17.085.25 1
6	O-ring	NBR	Ø 15,3 x Ø 2,4	Ø 22 x Ø 2,62	Ø 22 x Ø 2,62
		70° shore	c 81.10.150.36 2	81.11.150.13 2	81.11.150.13 2
7	Back-up Ring	PTFE	Ø 20 x Ø 16x1,5	Ø 26,7x Ø 22 x1,5	Ø 26,7x Ø 22 x1,5
			c 86.18.082.03 4	86.18.082.05 4	86.18.082.05 4
8	Bushing	PTFE	Ø 26,5 x 7	Ø 32,5 x 7	Ø 32,5 x 7
			c 86.19.085.03 1	86.19.085.05 1	86.19.085.05 1

c = code number q = quantity for spare part kits per single ball valve

Threeway transfer ball valve

Type	ANSI/DN	L	L1	h	R	m*	kg	Nm
MR	1" 25	180	90	100	205	54 x 2	10	5
	1½" 40	230	115	107	250	74 x 2	16	5
	2" 50	250	125	112	250	92 x 2	22	10

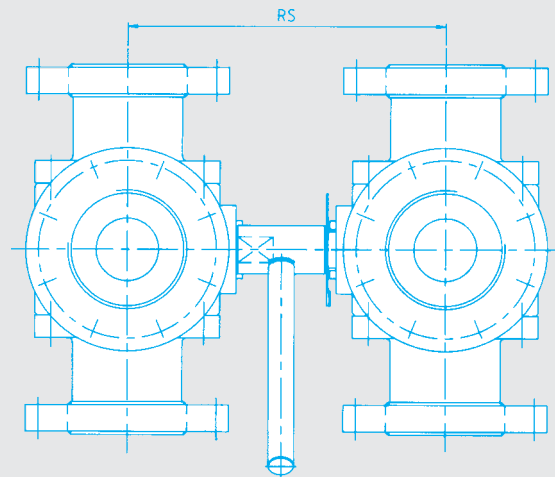
* Thread dimension + diameter of the raised face.



Double threeway transfer ball valve rigidly coupled

Type	ANSI/DN	RS	kg	Nm	R
MR	1" 25	200	24	10	205
	1½" 40	220	35	10	250
	2" 50	235	48	20	250

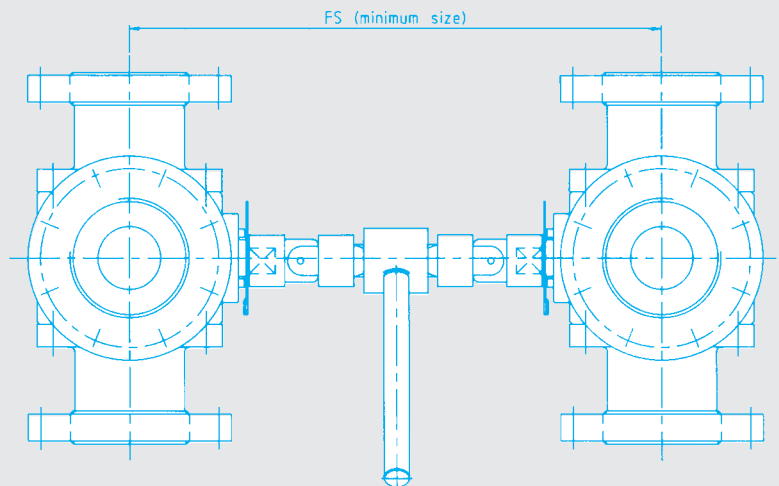
RS = Rigid Size (No other sizes available)



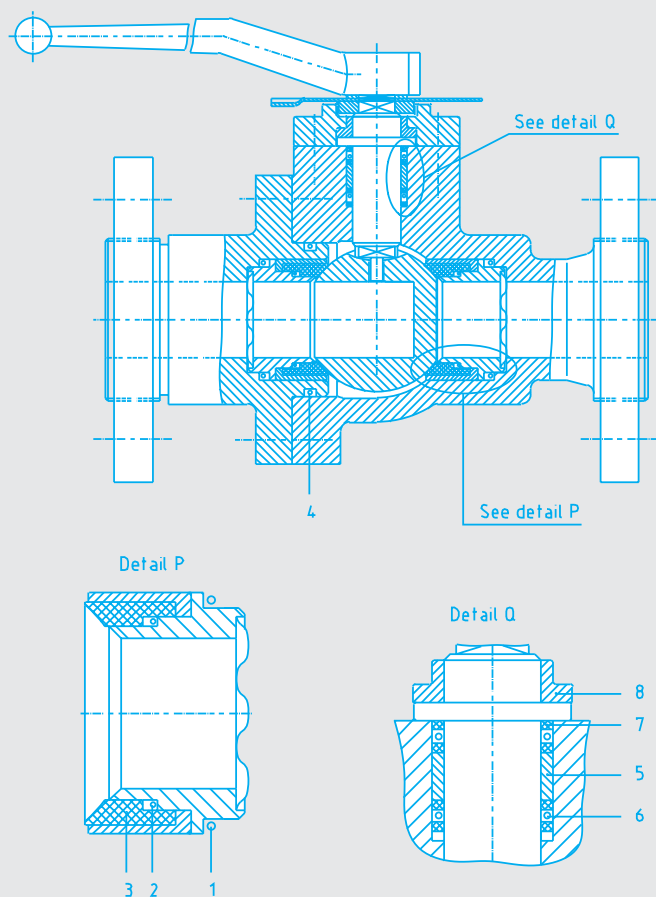
Double threeway transfer ball valve flexibly coupled

Type	ANSI/DN	FS	kg	Nm	R
MR	1" 25	290	24	10	205
	1½" 40	340	38	10	250
	2" 50	350	50	20	250

FS = Flexible Size (required sizes to be specified)



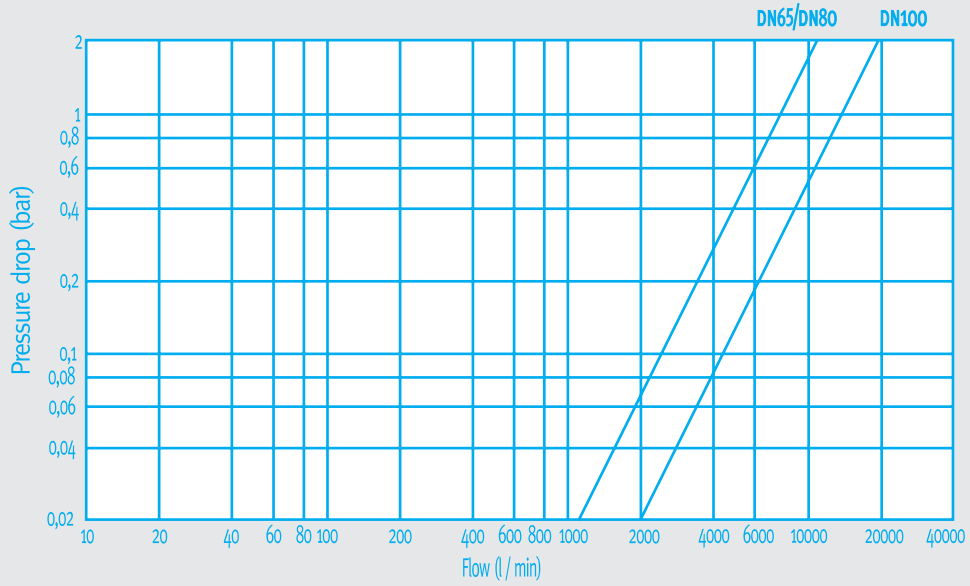
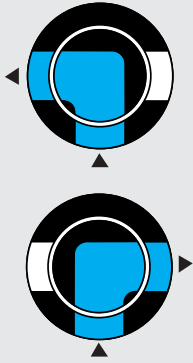
Nm = change-over torque at equalized pressure. All sizes in mm.



Pos	Description	Material	ANSI 2½"-3" DN 65/80	ANSI 4"-5" DN 100/125	ANSI 6" DN 150
1	O-ring	NBR	Ø 84,5 x Ø 3	Ø 114,5 x Ø 3	Ø 164,5 x Ø 5,7
		70° shore	c 81.10.150.20 2	q 81.10.150.25 2	q 81.10.150.29 2
2	O-ring	NBR	Ø 79,5 x Ø 3	Ø 104,5 x Ø 3	Ø 149,2 x Ø 5,34
		70° shore	c 81.10.150.19 2	81.10.150.23 2	81.11.150.47 2
3	Ball Seat	PTFE	Ø 91,5 x Ø 80	Ø 120,5 x Ø 105	Ø 173 x Ø 150,5
			c 86.15.085.28 2	86.15.085.29 2	86.15.085.31 2
4	O-ring	NBR	Ø 124,5 x Ø 3	Ø 152 x Ø 3,53	Ø 22,9 x Ø 8,4
		70° shore	c 81.10.150.26 1	81.11.150.29 1	81.10.150.13 1
5	Bushing	PTFE	Ø 35 x Ø 30 x 18	Ø 35 x Ø 30 x 18	Ø 55 x Ø 45 x 19
			c 86.17.085.28 1	86.17.085.28 1	86.17.085.31 1
6	O-ring	NBR	Ø 29,2 x Ø 3	Ø 29,2 x Ø 3	Ø 44,2 x Ø 5,7
		70° shore	c 81.10.150.02 2	81.10.150.02 2	81.10.150.40 2
7	Back-up Ring	PTFE	Ø 35 x Ø 30 x 1,5	Ø 35 x Ø 30 x 1,5	Ø 55 x Ø 45 x 1,5
			c 86.18.082.08 4	86.18.082.08 4	86.18.082.11 4
8	Bushing	PTFE	Ø 40,5 x 13,5	Ø 40,5 x 13,5	Ø 60,5 x 10
			c 86.19.085.08 1	86.19.085.08 1	86.19.085.11 1

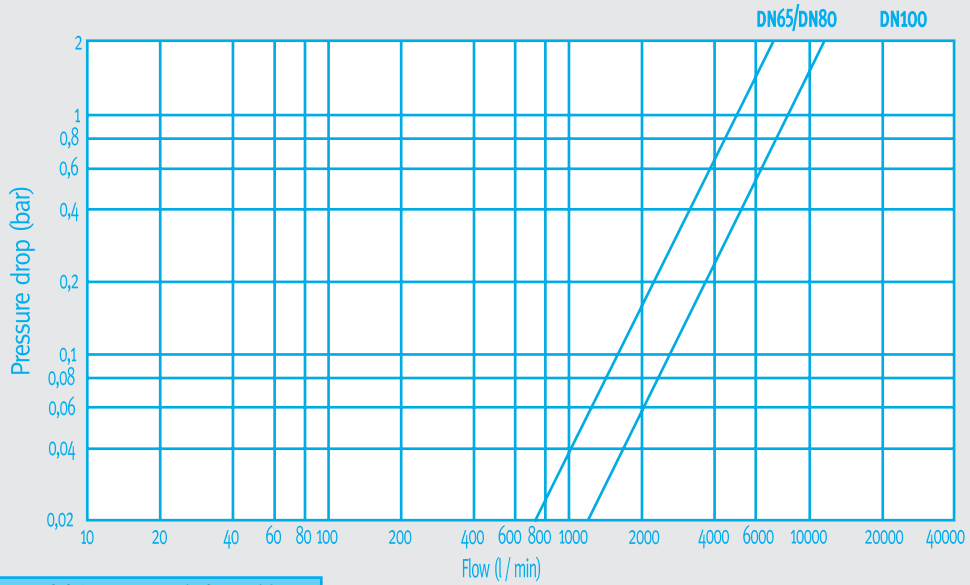
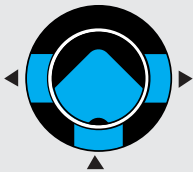
c = code number q = quantity for spare part kits per single ball valve

Switch position (normal operation)



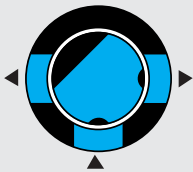
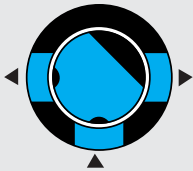
model A			
DN	065	080	100
Cv Value	535	535	945

45° Switch position L-bore



model A at 45° switch position			
DN	065	080	100
Cv Value	350	350	585

45° Switch position T-bore



Ball bore type

L-Bore
(90° Switch)



Not Possible

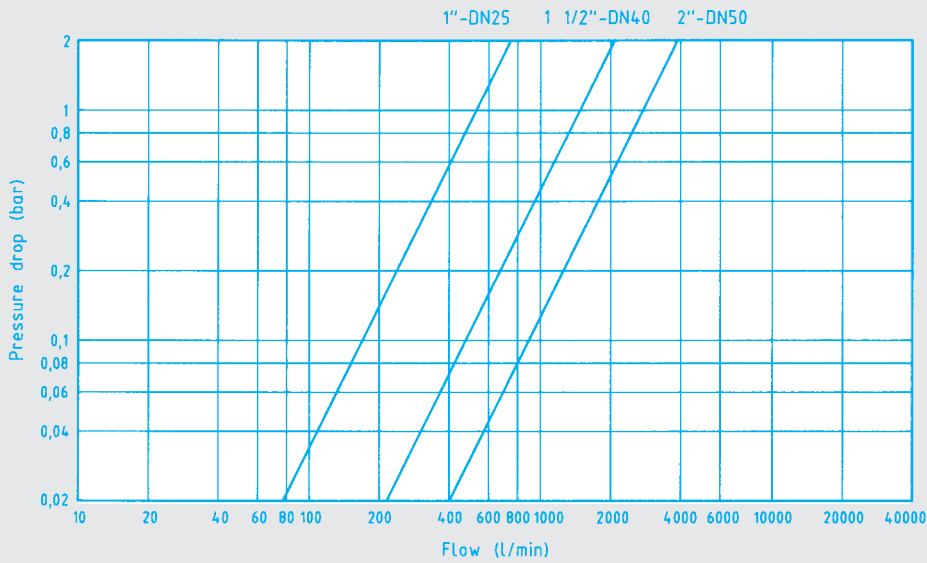
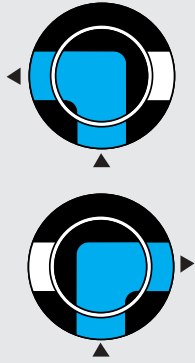
T-Bore
(180° Switch)



Not Possible

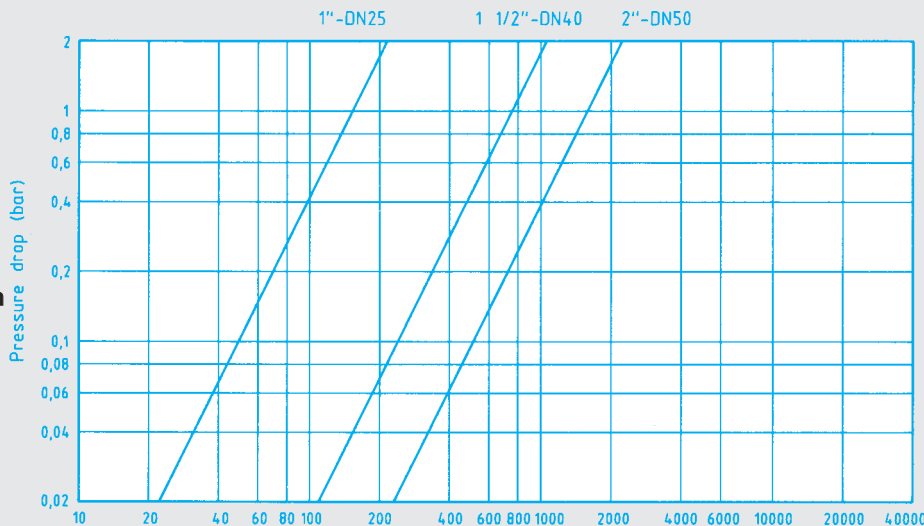
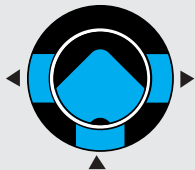
NOTE: All Cv values and curves shown are based on water at 20°C

Switch position (normal operation)

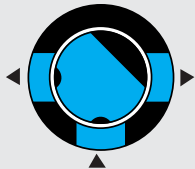


model MR			
ANSI/DN	1" / 025	1 1/2" / 040	2" / 050
Cv Value	38	106	196

45° Switch position L-bore



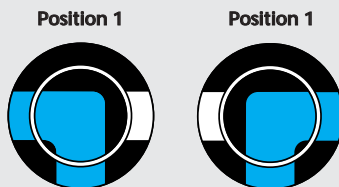
45° Switch position T-bore



model MR at 45° switch position			
ANSI/DN	1" / 025	1 1/2" / 040	2" / 050
Cv Value	11	55	110

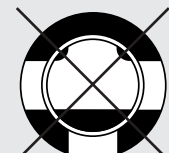
Ball bore type

L-Bore
(90° Switch)



Not Possible

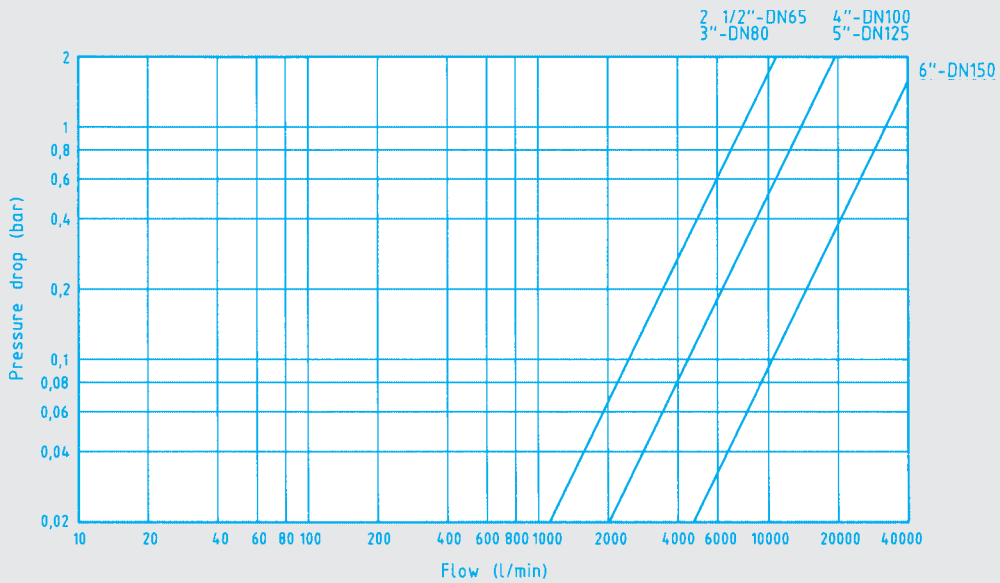
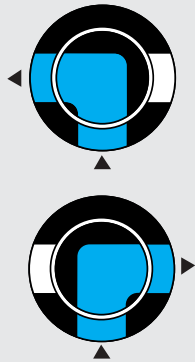
T-Bore
(180° Switch)



Not Possible

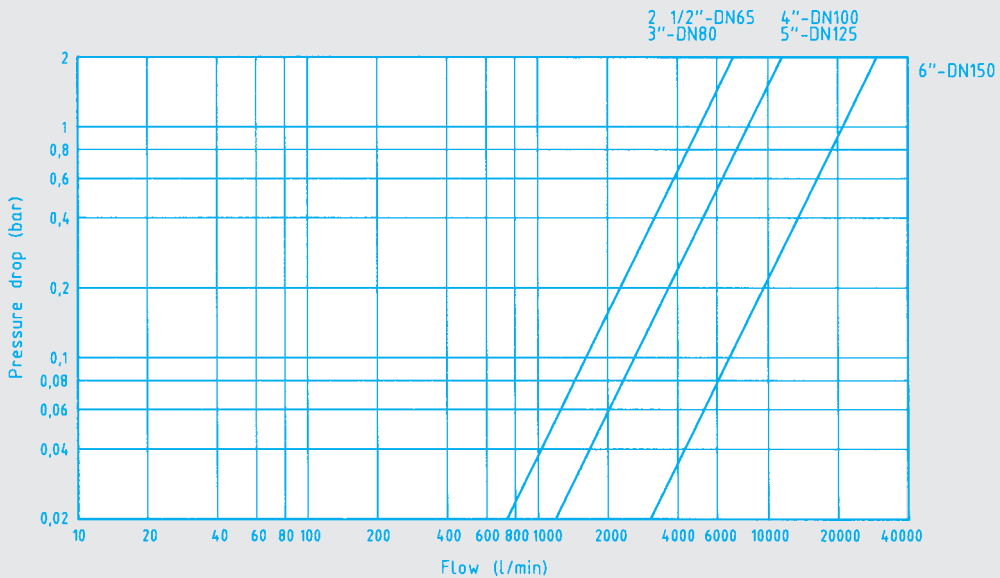
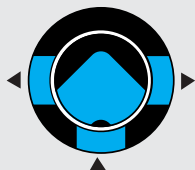
NOTE: All Cv values and curves shown are based on water at 20°C

Switch position (normal operation)

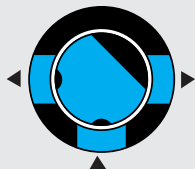


model AR					
ANSI/DN	2 1/2" / 065	3" / 080	4" / 100	5" / 125	6" / 150
Cv Value	535		945		2210

45° Switch position L-bore



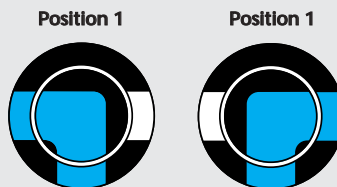
45° Switch position T-bore



model AR at 45° switch position					
ANSI/DN	2 1/2" / 065	3" / 080	4" / 100	5" / 125	6" / 150
Cv Value	350		585		1395

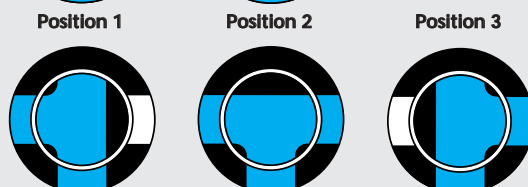
Ball bore type

L-Bore
(90° Switch)



Not Possible

T-Bore
(180° Switch)



Not Possible

NOTE: All Cv values and curves shown are based on water at 20°C

Ordering information

3-Way flanged ball valves

1

Valve type	Code
Single, 3 way	SNG
Rigid coupled, 2x3 way	CMR
Flexible coupled, 2x3 way	CMF

2

Housing Material		Code
A	Ductile iron	AA
MR	Carbon steel	MR
AR	Cast steel	AR

* Note: Please state FS size

3

Connection						
A	MR/AR	Type	Size	Code DIN	Code ANSI	
Flanges acc. to DIN only	Flanges acc. to DIN/ANSI	MR	DN25/1"	025	1	
			DN40/1½"	040	1,5	
			DN50/2"	050	2	
		A	AR	DN65/2½"	065	2,5
				DN80/3"	080	3
				DN100/4"	100	4
				DN125/5"	125	5
				DN150/6"	150	6

4

Flange type		Code
A	DIN 2633 PN16	16
MR/ AR	DIN 2633 PN16	16
	DIN 2635 PN40	40
	ANSI B16,5 150 lbs RF	150
	ANSI B16,5 300 lbs RF	300

5

Flange facing		Code
A	Face finish Ra 3,2 µm	FAF
MR/ AR	Stock finish RA 12,5 µm (standard)	STF
	Smooth finish Ra 3,2 - 6,4 µm	SMF

6

Ball bore type	Code
L-bore 90° switch	L
T-bore 180° switch	T

7

Seal and O-ring material	Code
Buna (NBR)	B
Neoprene (CR)	N
Viton (FPM)	V

8

Equalizing line	Code
Not mounted (plugged)	-
Bore ø 6 mm (standard)	E60
Bore ø 3 mm	E30
Bore ø 1,5 mm	E15

9

Additional	Code
No additional	-
FS-size > 3000 mm	L

Ordering example Ball valve

Std	1	2	3	4	5	6	7	8	9
BV	CMF	MR	1,5	150	STF	L	B	E60	-

Parker Filtration BV
Parker Arlon
Filter Division Europe
Stieltjesweg 8
6827 BV Arnhem
The Netherlands
Phone: +31 26 3760376
Fax: +31 26 3643620
E-mail: arlon@parker.com
www.parkerarlon.nl

Parker Hannifin plc
Filter Division Europe HQ
Shaw Cross Business Park
Dewsbury, West Yorkshire
WF12 7 RD UK
Phone: +44 1924 487000
Fax: +44 1924 487038
E-mail:
filtrationinfo@parker.com
www.parker.com

Parker Hannifin Oy
Finn-Filter
Filter Division Europe
Salmentie 260
FIN - 31700 Urjala As.
Finland
Phone: +358 3 54100
Fax: +358 3 5410100
E-mail:
finnfilter@parker.com
www.finnfilter.fi



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