TKD DualBlock® 3-way Ball Valve

The **TKD DualBlock®** 3 way ball valve, is a fully unionised valve used for diverting or mixing.

- Size range from $^{3}/_{8}$" / d16mm up to 2" / d63mm
- Pressure rating: Maximum working pressure: 16 bar at 20°C
- Patented **DualBlock®** system: The locking device ensures the union nuts are retained in position, even under the most arduous conditions: ie. vibration or thermal expansion
- Easy removal of the valve body from the pipe system, allowing replacement of the valve seals and seats without any additional equipment
- 'T' port or 'L' Port configurations available
- Patented Seat Stop® design ball seat carrier, with micro adjustment of the ball seats and 'take up' of axial pipe loads, all done without needing to drain the system
- VKD 'style' ergonomically designed handle with removable ball seat adjusting tool
- Possibility to fit an electric or pneumatic actuator with a GR-PP Mounting kit with standard drillings (ISO 5211 F03, F04, F05, F07)
- For more information, please visit our website **www.durapipe.co.uk**

Legend

d	Nominal outside diameter
DN	Nominal internal diameter in mm
R	Nominal size or the thread in inches
PN	Nominal pressure in bar (max.working Pressure at 20°C - water)
gms	Weight in grams
PVC-U	Polyvinyl chloride unplasticised
ABS	Acrylontrile Butadiene Styrene
PP	Polypropylene
PVC-C	Polyvinyl chloride chlorinated
HIPVC	High impact PVC
PE	Polyethylene
PTFE	Polytetrafluoroethylene
EPDM rubber	Ethylene Propylene Diene Monomer (M-class)
FPM	Fluorocarbon Rubber
s	Wall thickness (mm)
SDR	Standard dimension ratio = d/s

Dimensions and Standards

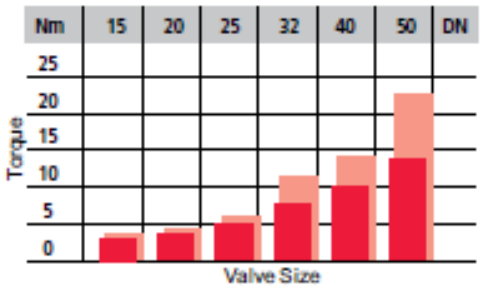
Imperial
The Imperial System is manufactured in accordance with the relevant British Standards: BS 5392 fittings.

Metric
The Metric System is manufactured generally in accordance with the relevant International Standards: ISO 15493, KIWA 49 and 549, DIN 8062 and 8063.

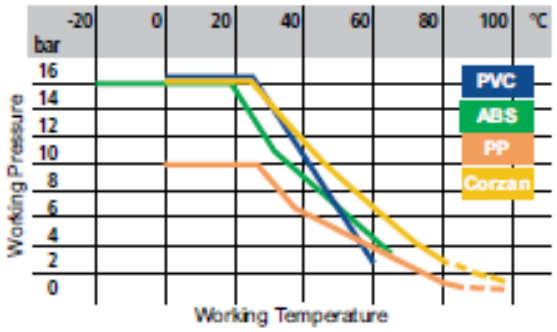
BSP Thread
Threaded fittings conform to the requirements of BS 21/DIN 2999/ISO7. Socket dimensions of metric fittings for solvent welding comply with ISO/DIS 727-1.

Interchangeability
Components in the imperial and metric ranges are not interchangeable.

Technical Data



Torque at working pressure. 10 Bar (Red) and 16 Bar (Pink).



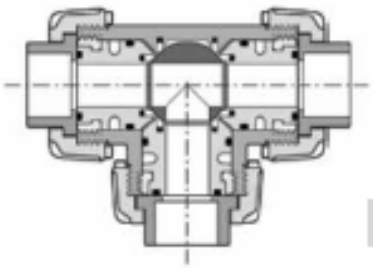
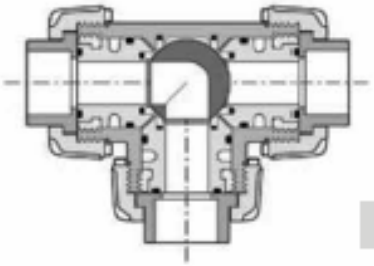
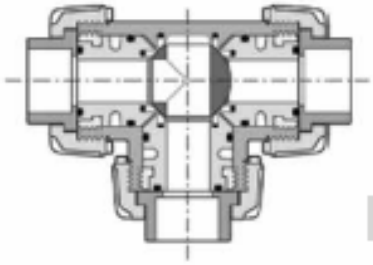
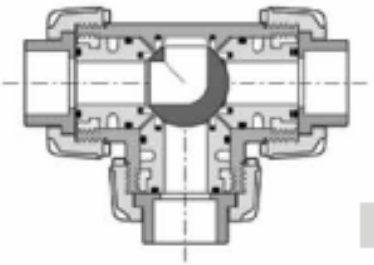
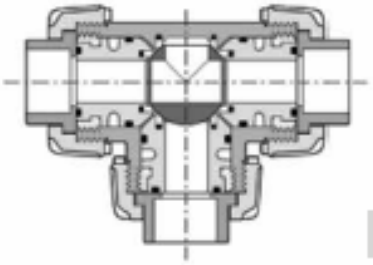
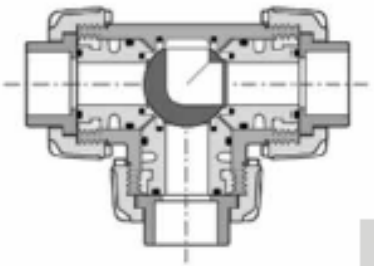
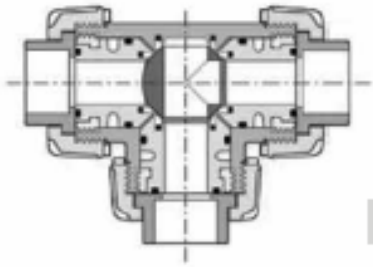
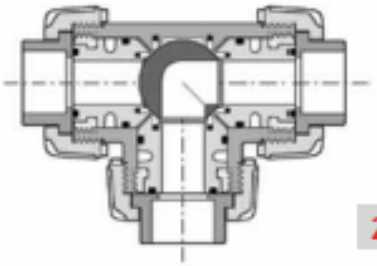
Pressure/temperature rating for water and harmless fluids to which the material is RESISTANT. In other cases a reduction of the PN is required. (25 years with safety factor).

	DN	10	15	20	25	32	40	50
k_{v100} l/m	A	37	55	135	205	390	475	900
	B	25	35	95	140	270	330	620
	C	40	65	145	245	460	600	1200
	D	78	195	380	760	1050	1700	3200
	E	48	73	150	265	475	620	1220

Flow coefficient k_{v100}

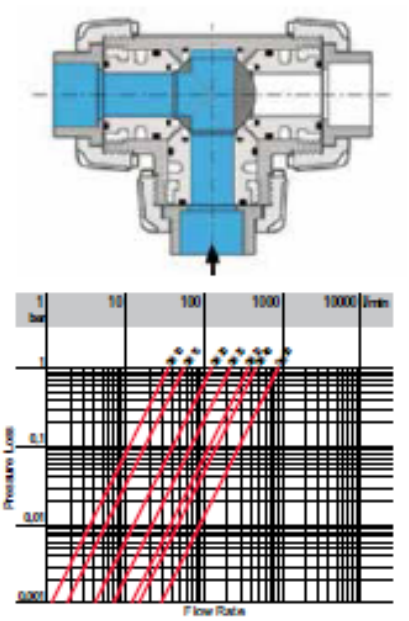
k_{v100} is the number of litres per minute of water at a temperature of 20ºC that will flow through a valve with a one bar pressure differential at a specified rate. The k_{v100} values shown in the table are calculated with the valve fully open.

Technical Data – Working Positions

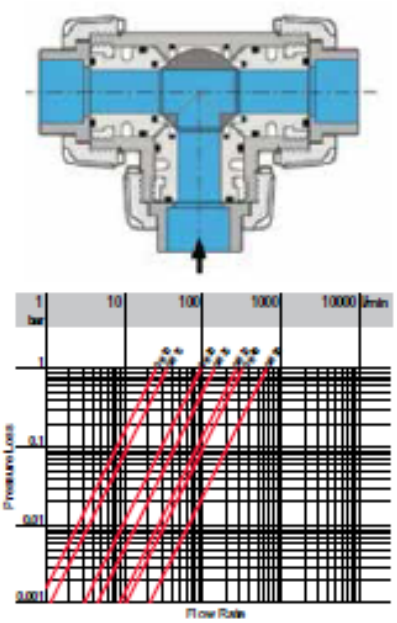
'T' Port		'L' Port	
	0° Mixing		0° Diverting
	90° Diverting		90° Closed
	180° Branch closed/ straight through		180° Closed
	270° Diverting		270° Diverting

Technical Data – Working Positions

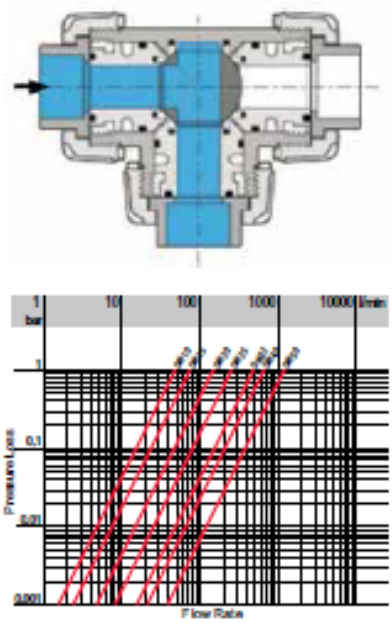
A



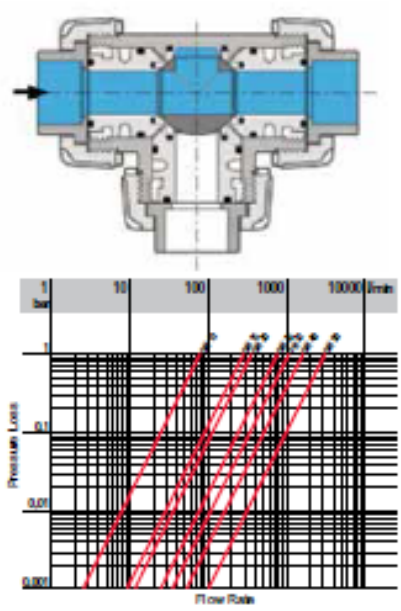
B



C



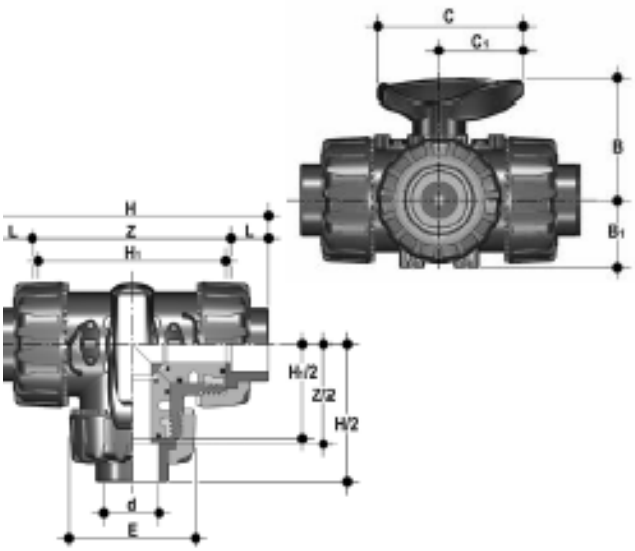
D



E

Pressure loss charts

BS Series Female Ends



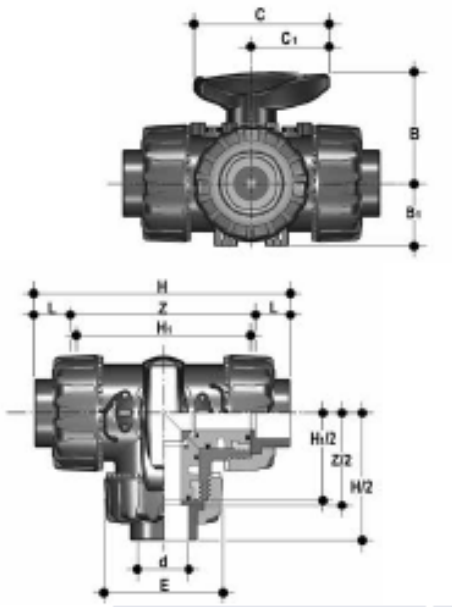
TKDLV - 'T' Port PVC-U
LKDLV - 'L' Port PVC-U
TKDLA - 'T' Port ABS
LKDLA - 'L' Port ABS

DualBlock® 3-way ball valve with BS series female ends for solvent welding

d	DN	PN	E	B	B_1	C	C_1	H	H_1	L	Z
1/2	15	16	54	54	29	67	40	118	80	17	85
3/4	20	16	65	65	34.5	85	49	144.8	100	19	106.8
1	25	16	73	69.5	39	85	49	160	110	22.5	115
1 1/4	32	16	86	82.5	46	108	64	188.6	131	26	136.6
1 1/2	40	16	98	89	52	108	64	219.4	148	30.2	159
2	50	10	122	108	62	134	76	266.6	179	36.2	194.2

	PVC-U - 'T' Port			PVC-U - 'L' Port		ABS - 'T' Port			ABS - 'L' Port	
d	gms	EPDM Code	FPM Code	EPDM Code	FPM Code	gms	EPDM Code	FPM Code	EPDM Code	FPM Code
1/2	305	H0 TTE 102	H0 TTF 102	H0 LTE 102	H0 LTF 102	235	H0 TTA 102	H0 TTB 102	H0 LTA 102	H0 LTB 102
3/4	535	H0 TTE 103	H0 TTF 103	H0 LTE 103	H0 LTF 103	415	H0 TTA 103	H0 TTB 103	H0 LTA 103	H0 LTB 103
1	725	H0 TTE 104	H0 TTF 104	H0 LTE 104	H0 LTF 104	570	H0 TTA 104	H0 TTB 104	H0 LTA 104	H0 LTB 104
1 1/4	1170	H0 TTE 105	H0 TTF 105	H0 LTE 105	H0 LTF 105	895	H0 TTA 105	H0 TTB 105	H0 LTA 105	H0 LTB 105
1 1/2	1600	H0 TTE 106	H0 TTF 106	H0 LTE 106	H0 LTF 106	1250	H0 TTA 106	H0 TTB 106	H0 LTA 106	H0 LTB 106
2	2845	H0 TTE 107	H0 TTF 107	H0 LTE107	H0 LTF 107	2225	H0 TTA 107	H0 TTB 107	H0 LTA 107	H0 LTB 107

Metric Series Female Ends



TKDIV - 'T' Port	PVC-U
LKDIV - 'L' Port	PVC-U
TKDIM - 'T' Port	PP
LKDIM - 'L' Port	PP
TKDIA - 'T' Port	ABS
LKDIA - 'L' Port	ABS
TKDIC - 'T' Port	Corzan
LKDIC - 'L' Port	Corzan

DualBlock® 3-way ball valve with Metric series female ends

d	DN	PN**	B	B_1	C	C_1	E	H	H_1	L	Z	H*	L*	Z*
16	10	16	54	29	67	40	54	118	80	14	90	117	14.5	88
20	15	16	54	29	67	40	54	118	80	16	86	144	16	112
25	20	16	65	34.5	85	49	65	145	100	19	107	158	18	122
32	25	16	69.5	39	85	49	73	160	110	22	116	183.5	20.5	142.5
40	32	16	82.5	46	108	64	86	188.5	131	26	136.5	219	23.5	172
50	40	16	89	52	108	64	98	219	148	31	157	266.5	27.5	211.5
63	50	16	108	62	134	76	122	266.5	179	38	190.5	-	-	-

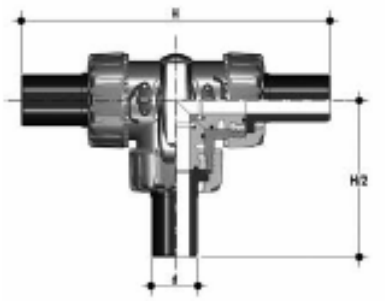
**For PP all sizes are PN10. H*, L* and Z* sizes relate to PP valves only.

	PVC-U - 'T' Port			PVC-U - 'L' Port		ABS - 'T' Port			ABS - 'L' Port	
d	gms	EPDM Code	FPM Code	EPDM Code	FPM Code	gms	EPDM Code	FPM Code	EPDM Code	FPM Code
16	305	H0 TTE 305	H0 TTF 305	H0 LTE 305		-	-	-	-	-
20	305	H0 TTE 306	H0 TTF 306	H0 LTE 306	H0 LTF 306	235	H0 TTA 306	H0 TTB 306	H0 LTA 306	H0 LTB 306
25	535	H0 TTE 307	H0 TTF 307	H0 LTE 307	H0 LTF 307	415	H0 TTA 307	H0 TTB 307	H0 LTA 307	H0 LTB 307
32	725	H0 TTE 308	H0 TTF 308	H0 LTE 308	H0 LTF 308	570	H0 TTA 308	H0 TTB 308	H0 LTA 308	H0 LTB 308
40	1170	H0 TTE 309	H0 TTF 309	H0 LTE 309	H0 LTF 309	875	H0 TTA 309	H0 TTB 309	H0 LTA 309	H0 LTB 309
50	1600	H0 TTE 310	H0 TTF 310	H0 LTE 310	H0 LTF 310	1250	H0 TTA 310	H0 TTB 310	H0 LTA 310	H0 LTB 310
63	2845	H0 TTE 311	H0 TTF 311	H0 LTE 311	H0 LTF 311	2225	H0 TTA 311	H0 TTB 311	H0 LTA 311	H0 LTB 311

	PP - 'T' Port			PP- 'L' Port		Corzan - 'T' Port			Corzan - 'L' Port	
d	gms	EPDM Code	FPM Code	EPDM Code	FPM Code	gms	EPDM Code	FPM Code	EPDM Code	FPM Code
16	-	-	-	-	-	310	H0 TTJ 305	H0 TTK 305	H0 LTJ 305	H0 LTK 305
20	310	H0 TTN 306	H0 TTP 306	H0 LTN 306	H0 LTP 306	310	H0 TTJ 306	H0 TTK 306	H0 LTJ 306	H0 LTK 306
25	550	H0 TTN 307	H0 TTP 307	H0 LTN 307	H0 LTP 307	550	H0 TTJ 307	H0 TTK 307	H0 LTJ 307	H0 LTK 307
32	790	H0 TTN 308	H0 TTP 308	H0 LTN 308	H0 LTP 308	790	H0 TTJ 308	H0 TTK 308	H0 LTJ 308	H0 LTK 308
40	1275	H0 TTN 309	H0 TTP 309	H0 LTN 309	H0 LTP 309	1275	H0 TTJ 309	H0 TTK 309	H0 LTJ 309	H0 LTK 309
50	1660	H0 TTN 310	H0 TTP 310	H0 LTN 310	H0 LTP 310	1660	H0 TTJ 310	H0 TTK 310	H0 LTJ 310	H0 LTK 310
63	2800	H0 TTN 311	H0 TTP 311	H0 LTN 311	H0 LTP 311	2800	H0 TTJ 311	H0 TTK 311	H0 LTJ 311	H0 LTK 311

Flanged ends or locking options also available, please contact the Valve Department.

Accessories

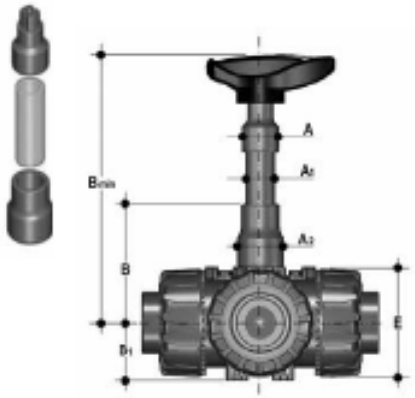


CVDE

End Connector in PE100, long spigot, for electrofusion or butt welding (SDR11)

d	DN	L	H	Product Code
20	15	15	15	HZ PEE M06
25	20	20	20	HZ PEE M07
32	25	25	25	HZ PEE M08
40	32	32	32	HZ PEE M09
50	40	40	40	HZ PEE M10
63	50	50	50	HZ PEE M11

End connectors also available in PP, please speak to the Durapipe Valve Department for details.

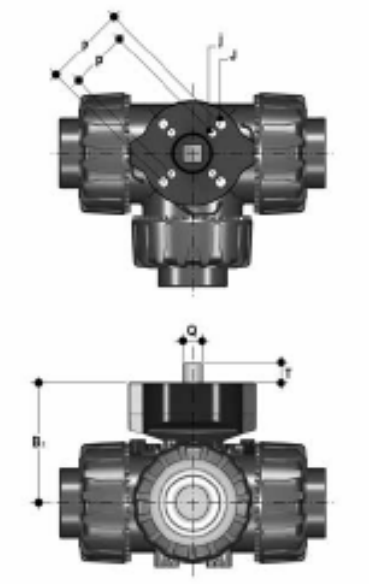


PSKD

Stem Extension Kit. (In PVC-U, Pipe not included)

d	DN	A	A_1	A_2	E	B	B_1	B_{min}	Product Code
3/8 - 16	10	32	25	32	54	70	29	139.5	KTP SKD EF
1/2 - 20	15	32	25	32	54	70	29	139.5	KTP SKD EF
3/4 - 25	20	32	25	40	65	89	34.5	164.5	KTP SKD GG
1 - 32	25	32	25	40	73	93.5	39	169	KTP SKD HH
1 1/4 - 40	32	40	32	50	86	110	46	200	KTP SKD II
1 1/2 - 50	40	40	32	50	98	116	52	206	KTP SKD JJ
2 - 63	50	40	32	50	122	122	62	225	KTP SKD LL

A1 is the size of the standard pipe needed (not included in kit) and can be cut to suit.



PowerQuick

The valve can be supplied actuated, pneumatic or electric, by Durapipe Valve Department. The GR-PP mounting bracket (with standard ISO 5211 drillings) can be supplied for self-actuation and/or retro-fitting of actuators to installed valves.

d	DN	B_1	Q	T	p x j	P x J	Product Code
1/2 - 20	15	58	11	12	F03 x 5.5	F04 x 5.5	KTP QCP EF
3/4 - 25	20	69	11	12	F03 x 5.5	F05 x 6.5	KTP QCP GG
3/4 - 25	20	69	11	12	-	F04 x 5.5	KTP QCP G4
1 - 32	25	74	11	12	F03 x 5.5	F05 x 6.5	KTP QCP HH
1 - 32	25	74	11	12	-	F04 x 5.5	KTP QCP H4
1 1/4 - 40	32	91	14	16	F05 x 6.5	F07 x 7.5	KTP QCP II
1 1/2 - 50	40	97	14	16	F05 x 6.5	F07 x 7.5	KTP QCP JJ
2 - 63	50	114	14	16	F05 x 6.5	F07 x 7.5	KTP QCP LL

Connection to the System

Before proceeding with the installation, please read and familiarise yourself with these instructions.

1. Check that the pipes either side of the valve are axially aligned, in order to avoid mechanical stress on the threaded union joints.
2. Unscrew the union nuts (13 on p48) from the valve body and slide them onto the pipe.
3. Solvent weld, socket fuse or screw the valve end connectors 12 on p48) onto the pipe ends. For correct jointing see the relevant Durapipe material technical catalogues.

Check the three DualBlock® components (26 on p48) are fitted to the valve body (Fig. 2).

DualBlock® is the patented system that allows the union nuts to be locked in position. The locking device ensures the nuts are retained in position, even under the most arduous conditions: i.e. vibration or thermal expansion.

4. Position the valve between the three end connectors (Fig. 3) and screw the union nuts clockwise by hand until a resistance is felt; do not use keys or other tools which may damage the nut Surface.

   The nuts are now locked in position. To unlock them push in the lever on the DualBlock® device (away from the teeth of the union nut and unscrew the nut anti-clockwise (Fig. 4)

If the TKD valve is fitted with the Handle Locking device (supplied separately), to operate the valve it is required to lift the block device (17 on p48) before being able to turn the handle (Fig. 5).

The fitting of a padlock is possible so the valve can be locked in a choice of four positions. (Fig. 6)

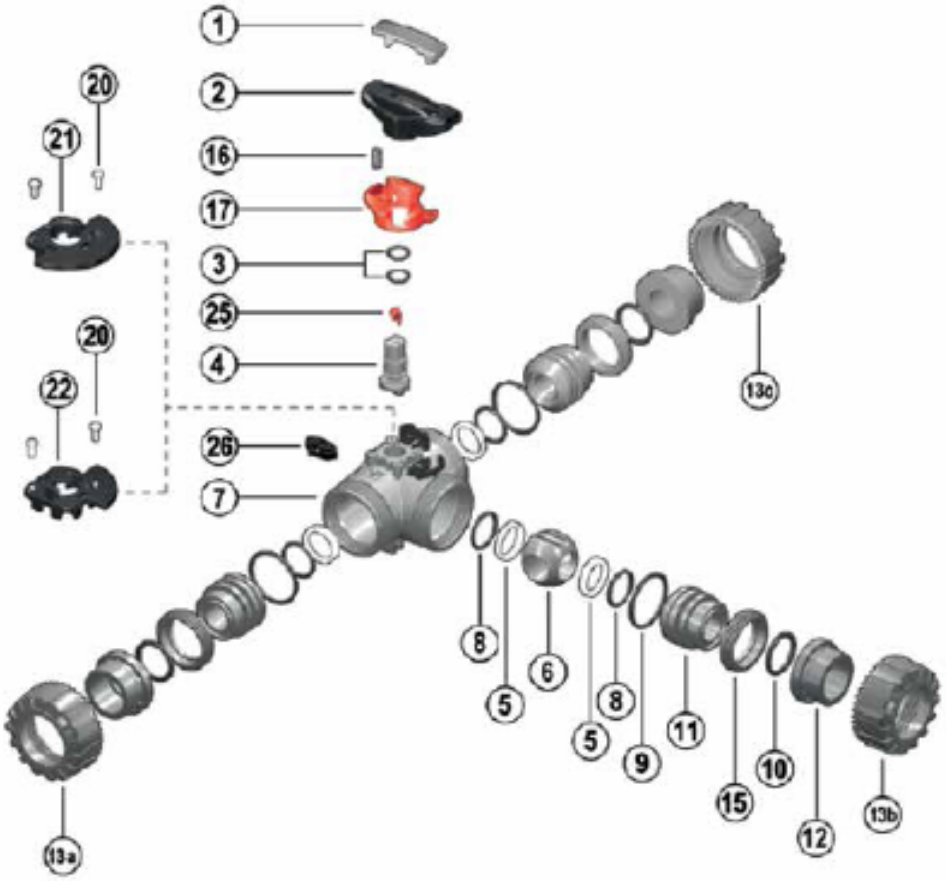

Fig.2


Fig.3


Fig.4


Fig.5


Fig.6



Position	Components	Material
1	Handle insert tool	PVC-U
2	Handle	HIPVC
3*	Stem O-ring	EPDM/FPM
4	Stem	Valve material
5*	Ball seat	PTFE
6	Ball	Valve material
7	Body	Valve material
8*	Ball seat O-ring	EPDM/FPM
9*	Carrier O-ring	EPDM/FPM
10*	Socket seal O-ring	EPDM/FPM
11	Ball seat carrier	Valve material
12*	End connector	Valve material
13*	Union nut	Valve material
15	Ball seat carrier stop ring	Valve material
16**	Spring (SHKD)	Stainless steel
17**	Safety handle block (SHKD)	PP-GR
20**	Drive fastener for LTKD	POM
21**	LTKD – 180º	POM
22**	LTKD – 90º	POM
25	Position indicator	POM

*Spare Parts **Accessories