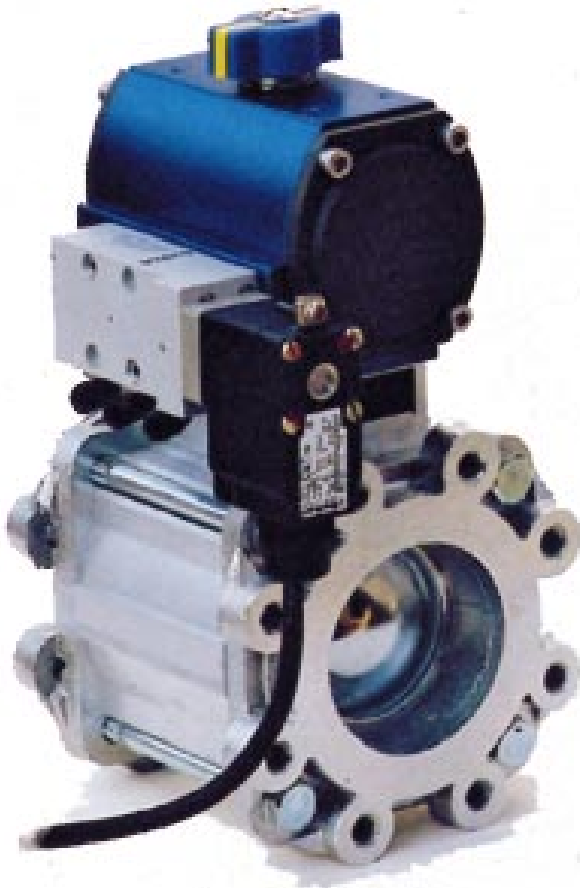


Gard Ball Valve

July 2000, version 2



Business Mission

We shall, in an innovative, environmentally friendly and goal oriented way and in close cooperation with our customers, develop and offer components, systems and services for the distribution of petroleum products. High quality and technical level focussing on the present and long-term needs of the market shall be our guiding star.

Quality Policy

The quality of our products, systems and services shall be of such class that our customers prefer us to other suppliers.

The Gard Ball valve

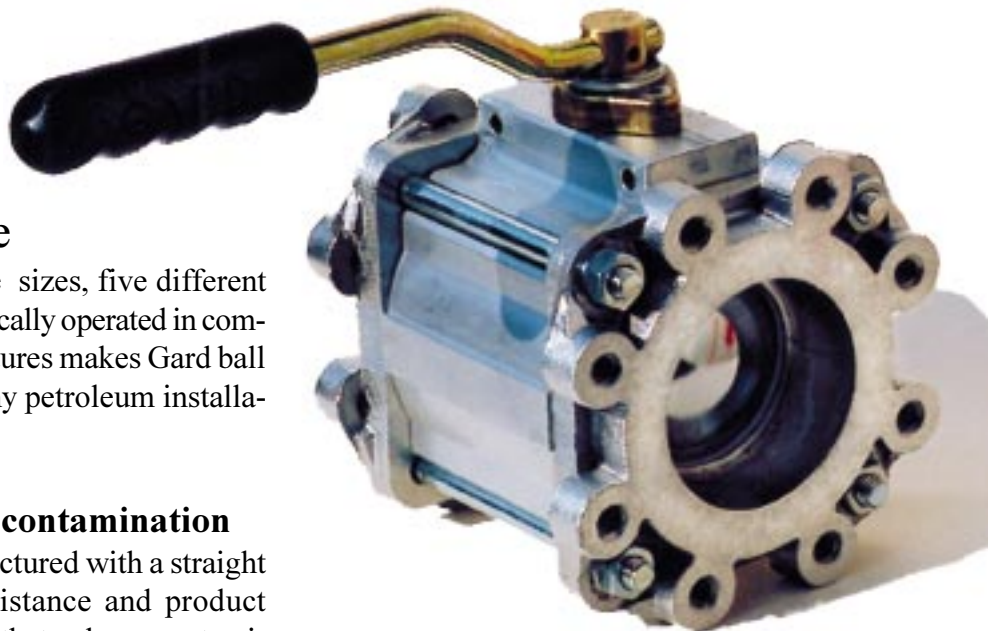
Stop or two-way valve, three sizes, five different flanges, manually or pneumatically operated in combination with many other features makes Gard ball valves the ideal choice for any petroleum installation.

High flow rate and low contamination

The stop valve ball is manufactured with a straight bore to minimise flow resistance and product residues, an important feature that reduces contamination of sensitive products.

Highest quality

Carefully designed and well tested in combination with only the best materials and high precision manufacturing ensures a long lasting and trouble free life.

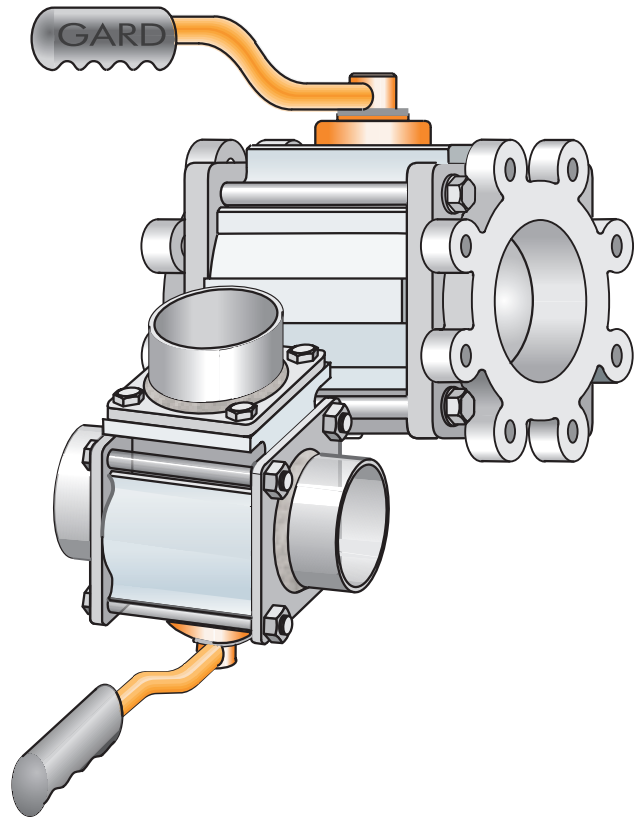


The Gard Ball Valve

The Gard ball valves are manufactured in three sizes 2-, 3-, and 4-inch and each size is available with different flanges or combination of flanges. The valves can be manually operated or fitted with a pneumatic actuator.

The stop valve is normally delivered with a chromium plated brass ball with a straight bore to minimise flow resistance and contamination. This valve can also be ordered with a teflon coated aluminium ball for jet fuel installations. The two-way valve comes with a teflon coated aluminium ball.

Both valve casings are made from extruded aluminium. The stem assembly is made of brass and all stem seals can be serviced without removing the valve. All seals are made of teflon or high quality FPM (Viton) to withstand all commercial petroleum fuel grades.



Stop valve item numbers	2"	3"	4"
Without flanges	420	430	440
Steel, with female tube threading	421	431	441
Steel, with welding socket	422	432	442
Aluminium, female threaded and for welding	423	433	443
Aluminium, TW-standard	---	434	444
Steel, flat	425	435	445

Two-way valve item numbers	2"	3"	4"
Without flanges	4520	4530	4540
Steel, with female tube threading	4521	4531	4541
Steel, with welding socket	4522	4532	4542
Aluminium, female threaded and for welding	4523	4533	4543
Aluminium, TW-standard	---	4534	4544

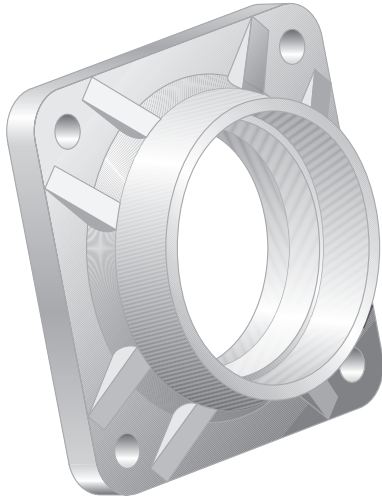
Pneumatic actuators			
<i>Actuator code</i>	<i>Movement</i>	<i>Description</i>	<i>Weight, kg</i>
PK	90°	Double acting	2.6
PKF	90°	With spring return	3.8
PKR	90°	Double acting with 24V solenoid valve, Ex-appr.	3.4
PKRF	90°	Spring return & double acting with 24V solenoid valve, Ex-appr.	4.6
PKP	90°	Double acting with pneumatic 5-2 control valve	3.4
PKFP	90°	Spring return & double acting with pneumatic 5-2 control valve	3.8
PK	180°	Double acting for two-way valve	4.4
PKR	180°	Double acting with 24V solenoid valve, Ex-appr. two-way valve	5.2
PKP	180°	Double acting with pneumatic 5-2 control valve, two-way valve	5.2

When ordering

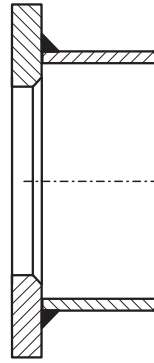
Add the actuator code as prefix to the valve item no. i.e. PKR4544 means a 4-inch two-way valve with TW-flanges and an actuator with a solenoid valve.

Flanges

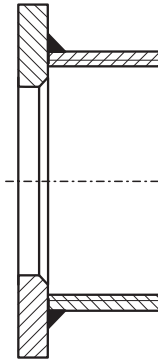
There are five different flanges available in steel and aluminium. The same flanges are used for the stop valve as for the two-way valve with the exception of the two-way valve inlet that in some cases requires an adaptor piece. The threaded holes on the TW-flange are lined with helicoil inserts, M10 for the 3-inch valve and M12 for the 4-inch. The 4-inch aluminium flange is only for welding. Item numbers for flanges see page 7.



Welding socket
Steel



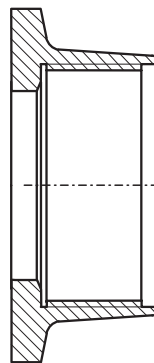
Female threaded
Steel



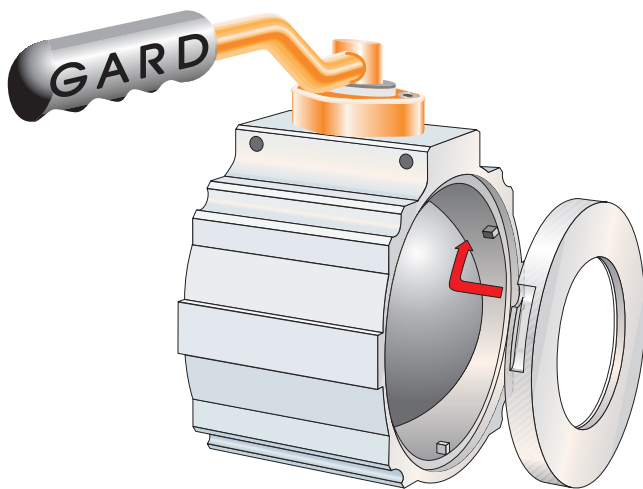
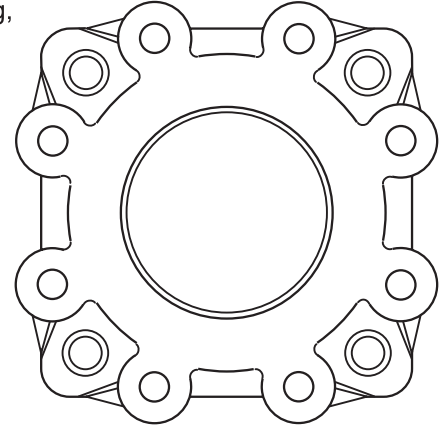
Flat, Steel



Female threaded
also for welding,
Aluminum



Aluminum flange, TW-standard

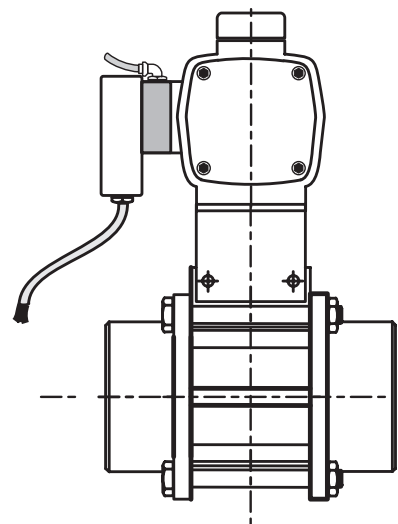
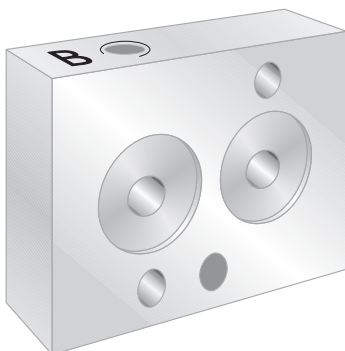


Service friendly

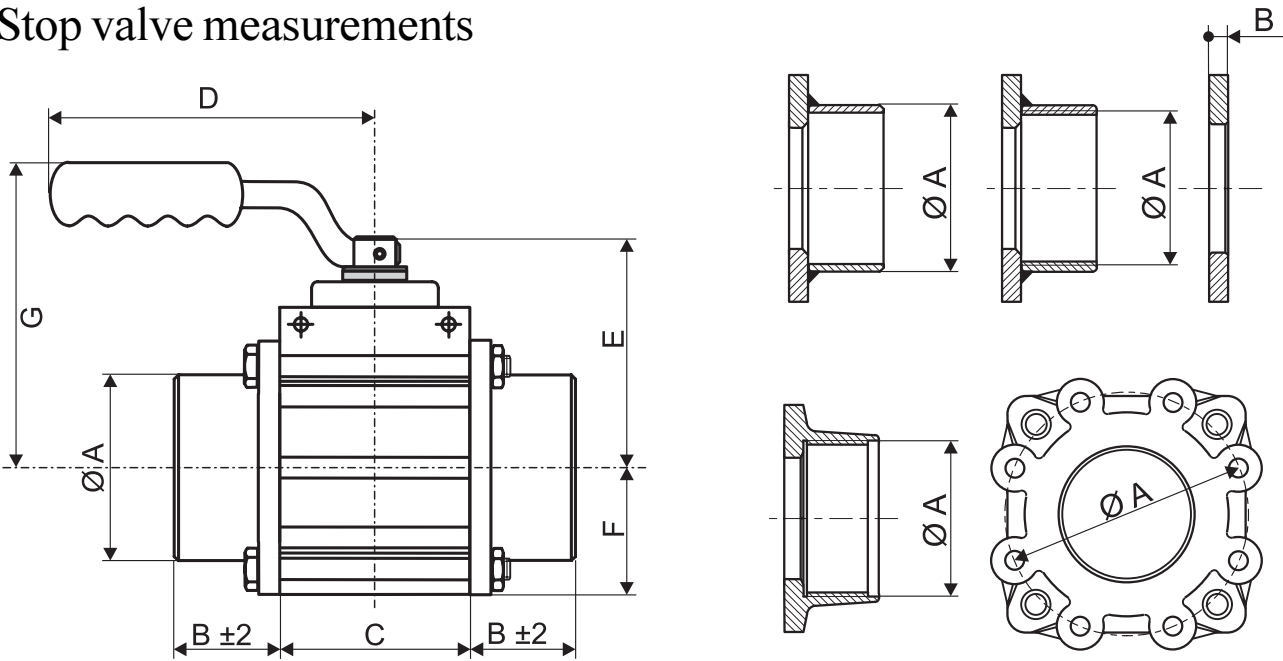
When removing the flanges for service or installation the ball and the main seals are kept in place by the retainer ring that locks to the valve casing with a bayonet catch - much appreciated time saving design. The handle and stem unit can easily be removed for service without dismantling any other parts of the valve.

FCPO

Fitted between the solenoid valve and the actuator this extra pneumatic outlet provides a simultaneous link to other pneumatically controlled equipment.



Stop valve measurements



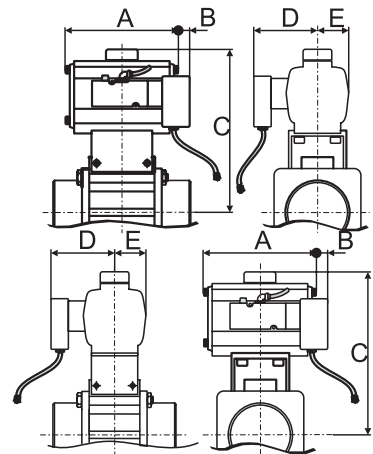
2"	Item no.	ØA	B	C	D	E	F	G	Weight kg
Without flanges	420	--	--	65	190	94	45	125	1.4
Steel female threading	421	w2"	30	65	190	94	45	125	2.8
Steel welding socket	422	60	50	65	190	94	45	125	2.7
Alum. thread/welding	423	60	35	65	190	94	45	125	2.1
Steel flat	425	45	9	65	190	94	45	125	2.4
3"	Item no.	ØA	B	C	D	E	F	G	Weight kg
Without flanges	430	--	--	90	220	110	60	140	2.6
Steel female threading	431	w3"	45	90	220	110	60	140	5.4
Steel welding socket	432	88	50	90	220	110	60	140	4.9
Alum. thread/welding	433	90	45	90	220	110	60	140	3.9
Aluminium TW-standard	434	130	27	90	220	110	60	140	4.4
Steel flat	435	65	11	90	220	110	60	140	4.7
4"	Item no.	ØA	B	C	D	E	F	G	Weight kg
Without flanges	440	--	--	126	220	125	85	155	4.2
Steel female threading	441	w4"	50	126	220	125	85	155	8.2
Steel welding socket	442	114	50	126	220	125	85	155	8.8
Alum. thread/welding	443	110	45	126	220	125	85	155	5.7
Aluminium TW-standard	444	150	25	126	220	125	85	155	6.3
Steel flat	445	90	11	126	220	125	85	155	8.0

Valve measurements with actuator

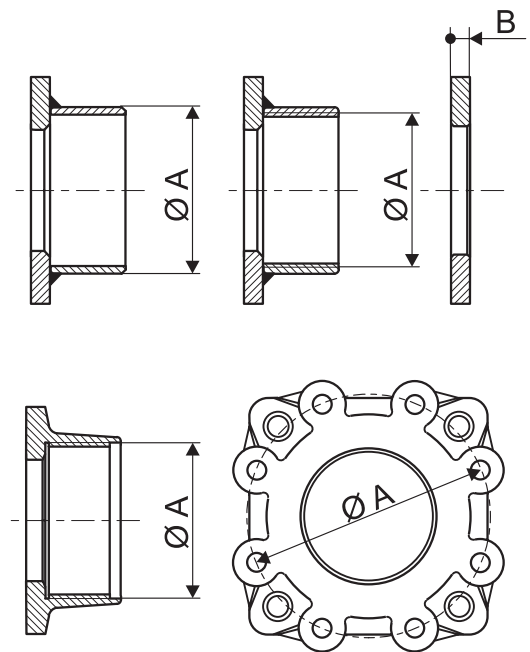
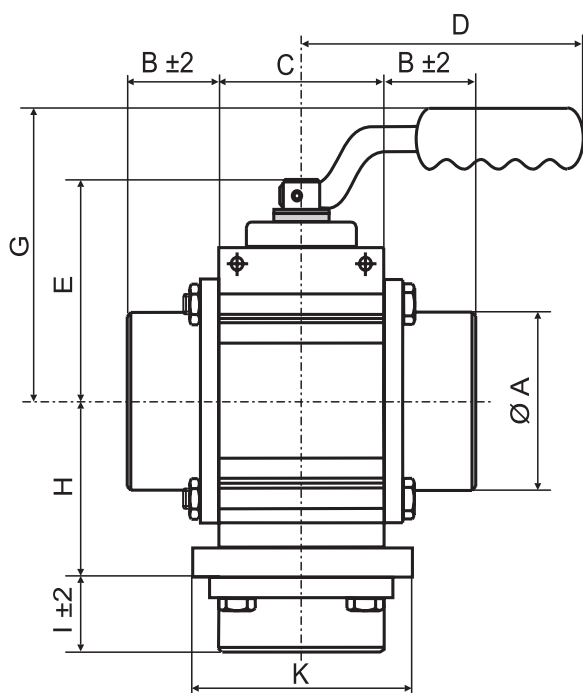
2"	A	B	C	D	E
PK	145	46	204	80	40
PKF	180	30	224	90	48
3"	A	B	C	D	E
PK	145	46	210	80	40
PKF	180	30	230	90	48
4"	A	B	C	D	E
PK	145	46	235	80	40
PKF	180	30	255	90	48

Standard configuration
3- and 4-inch valves

Standard configuration
2-inch valves



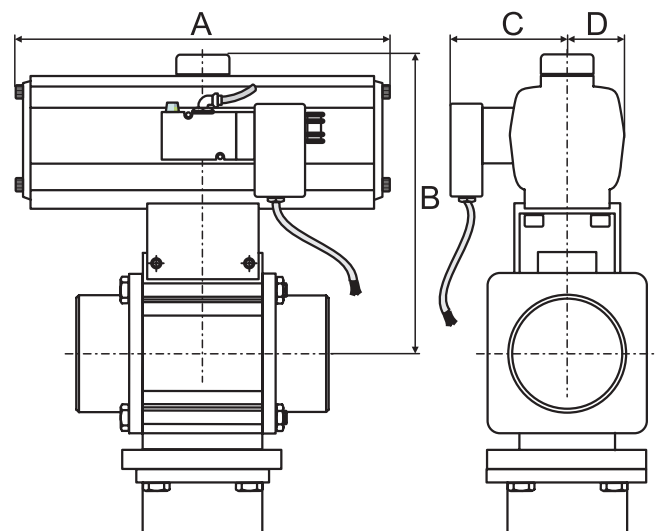
Two-way valve measurements



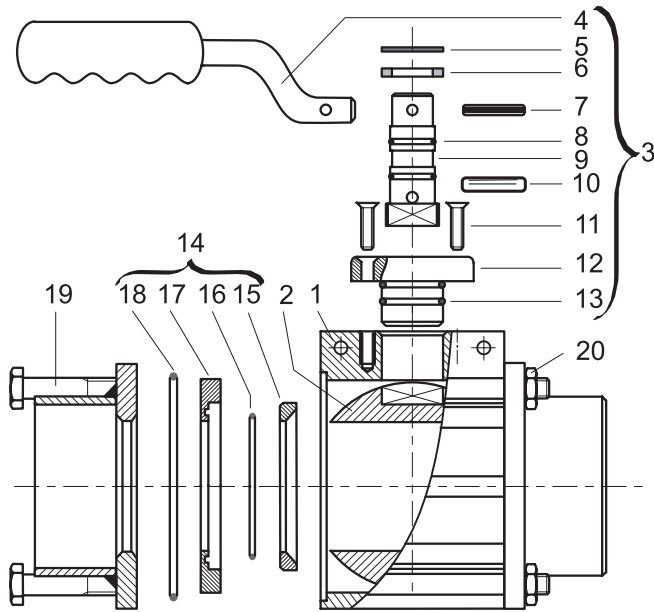
2"	Item no.	ØA	B	C	D	E	G	H	I	K	Weight kg
Without flanges	4520	--	--	65	190	94	125	61	--	65	1.3
Steel female threading	4521	w2"	30	65	190	94	125	61	30	65	3.3
Steel welding socket	4522	60	50	65	190	94	125	61	50	65	3.3
Alum. thread/welding	4523	60	35	65	190	94	125	61	47	65	2.3
3"	Item no.	ØA	B	C	D	E	G	H	I	K	Weight kg
Without flanges	4530	--	--	90	220	110	140	74	--	90	2.3
Steel female threading	4531	w3"	45	90	220	110	140	74	45	90	5.7
Steel welding socket	4532	88	50	90	220	110	140	74	50	90	5.5
Alum. thread/welding	4533	90	45	90	220	110	140	74	55	90	4.3
Aluminium TW-standard	4534	130	27	90	220	110	140	74	40	90	5.2
4"	Item no.	ØA	B	C	D	E	G	H	I	K	Weight kg
Without flanges	4540	--	--	126	220	125	155	112	--	165	4.3
Steel female threading	4541	w4"	50	126	220	125	155	112	50	165	10.3
Steel welding socket	4542	114	50	126	220	125	155	112	50	165	11.4
Alum. thread/welding	4543	110	45	126	220	125	155	112	45	165	6.8
Aluminium TW-standard	4544	150	25	126	220	125	155	112	25	165	7.4

Valve measurements with actuator

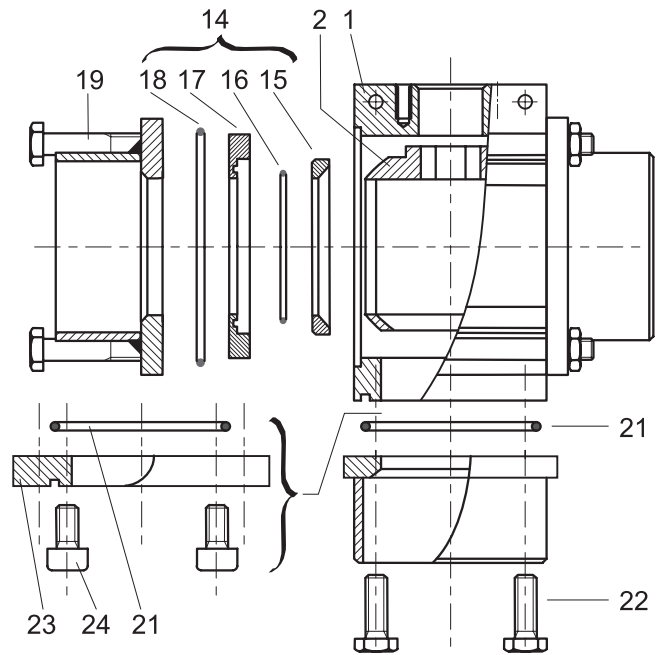
2"	A	B	C	D
PK	235	118	81	35
PKR	235	118	81	35
3"	A	B	C	D
PK	265	220	91	45
PKR	265	220	91	45
4"	A	B	C	D
PK	265	245	91	45
PKR	265	245	91	45



Stop valve spare parts



Two-way valve spare parts



Ref.	Qty	Description	2"	3"	4"
1	1	Casing	303220	303162	303124
2	1	Ball	2486	2487	2488
3	1	Stem Assembly, stop valve only	2495	2500	2500
4	1	-Handle	266048	266418	266418
5	1	-Washer	B401360	B401360	B401360
6	1	-Felt packing	266407	266407	266407
7	1	-Pin	P2308	P2308	P2308
8	2	-O-ring, FPM	R3315	R3315	R3315
9	1	-Stem	402762	402494	402494
10	1	-Pin	P1353	P1353	P1353
11	2	-Screw	S222372	S222372	S222372
12	1	-Stem bush, stop valve only	402419	402419	402419
13	2	-O-ring, FPM	R3339	R3339	R3339
14	1	Seal set	2492	2493	2494
15	2	-Teflon grommet	403216	403217	403218
16	2	-O-ring, FPM	R3261	R3375	R3505
17	2	-Retainer	303219	303165	303117
18	2	-O-ring, FPM	R3497	R3506	R7028
19	4	Screw for steel flange	S3496	S1020	S1024
19	4	Screw for alum. flange	S3471	S1023	S1039
20	4	Nut	M1118	M1561	M1561

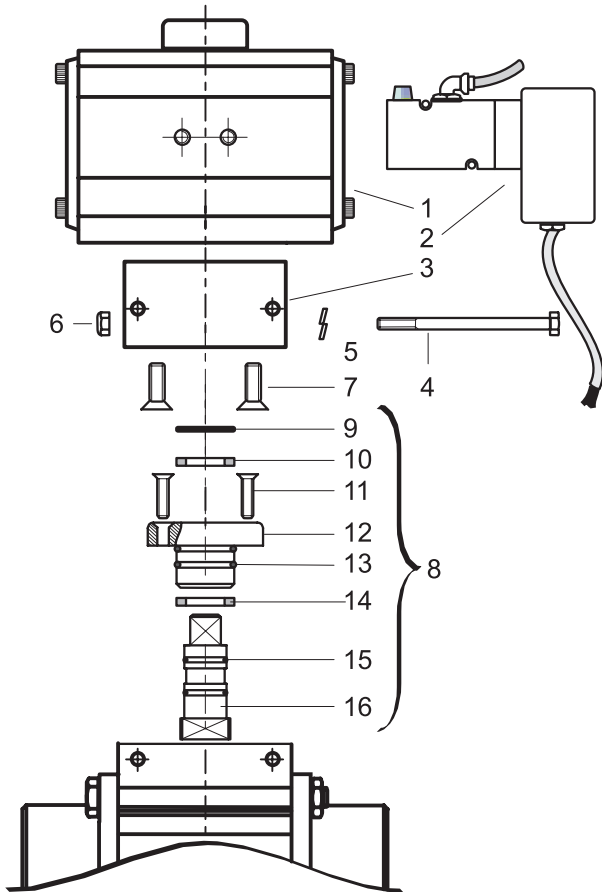
For two-way valves

1	1	Casing	303224	303163	302438
2	1	Ball	302556	302557	302558
3	1	Stem assembly	2497	2498	2501
12	1	-Stem bush	402423	402423	402403
18	2	O-ring, FPM	R3497	R3538	R7028
21	1	O-ring, FPM	R3539	R3497	R7027
22	4	Screw	S3104	S1017	S1017

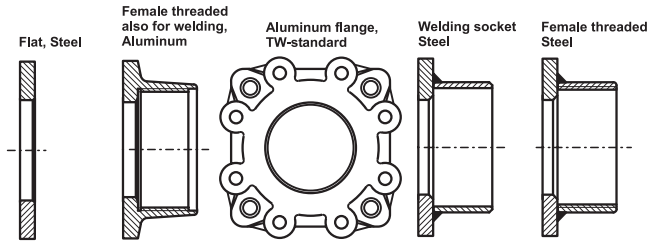
Adaptor for certain inlet flanges

21	1	O-ring, FPM	R3539	R3497	--
22	1	Adaptor piece	402761	260315	--
24	4	Screw	403021	S9491	--

Spare parts for actuator fitted valves



Flanges, spare parts



Size	2"	3"	4"
Steel, threaded	259117	260117	261117
Steel, weld socket	259217	260217	261217
Aluminium	259317	260317	261317***
Alum, TW-stand	--	260417	261417
Steel, flat	402348	402349	402350

Inlet flanges for two-way valves

Size	2"	3"	4"
Steel, threaded	402871	260117**	261117
Steel, weld socket	259217-1	260217-1	261217
Aluminium	259317*	260317**	261317***
Alum, TW-stand	--	260417**	261417
Steel, flat	--	--	402350

* In combination with adaptor piece 402761

** In combination with adaptor piece 260315

*** The 4-inch aluminium flange is only for welding

Ref.	Quant.	Description	2"	3"	4"
1	1	Actuator	See page 2		
2	1	Control valve	See page 2		
3	1	Bracket	303140	303033	303033
4	2	Bolt	--	S3383	S3383
4	4	Screw	S1370	--	--
5	4	Washer, locking	B1625	--	--
6	4	Nut, locking	--	M2116	M2116
7	4	Screw	S2327	S222386	S222386
8	1	Stem Assembly	403013	403013	403013
9	1	-Locking washer	C6124	C6124	C6124
10	1	-Washer, Delrin	401344	401344	401344
11	2	-Screw	S222372	S222372	S222372
12	1	-Stem bush	403011	403011	403011
13	2	-O-ring, FPM	R3339	R3339	R3339
14	1	-Washer, Delrin	401344	401344	401344
15	2	-O-ring, FPM	R3315	R3315	R3315
16	1	-Stem	403012	403012	403012

For ball valve parts see previous page.

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