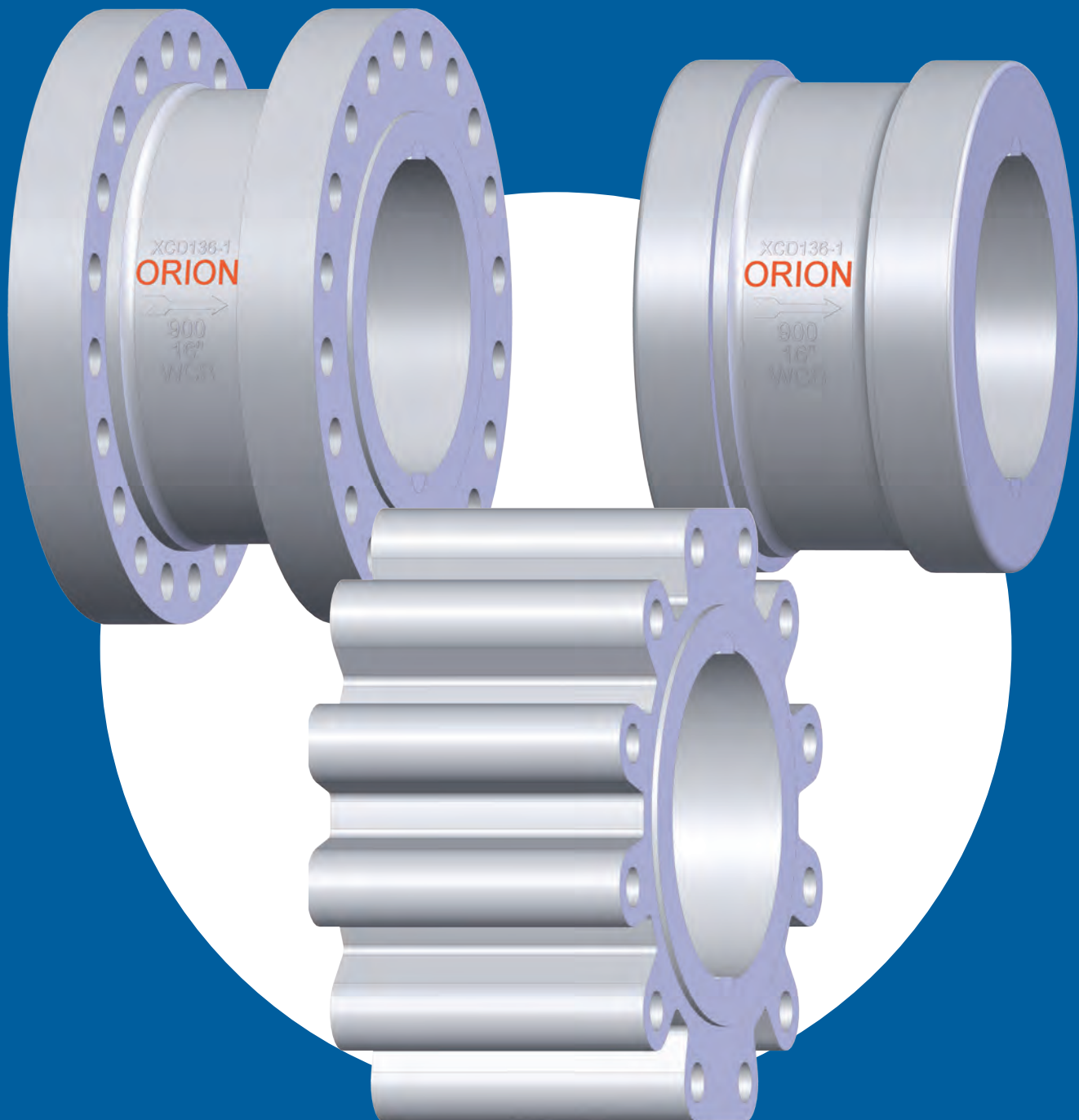




ORION STEEL VALVES

Dual Plate Check Valves

API 594



DUAL PLATE

DUAL PLATE WAFER CHECK VALVES API 594 - p. 84

Class ASME 150 (PN 20) • 300 (PN 50) • 600 (PN 100)
900 (PN 150) • 1500 (PN 250) • 2500 (PN 420)

DUAL PLATE LUG CHECK VALVES API 594 - p. 88

Class ASME 150 (PN 20) • 300 (PN 50) • 600 (PN 100)
900 (PN 150) • 1500 (PN 250) • 2500 (PN 420)

DOUBLE FLANGED CHECK VALVES API 594 - p. 92

Class ASME 150 (PN 20) • 300 (PN 50) • 600 (PN 100)
900 (PN 150) • 1500 (PN 250) • 2500 (PN 420)

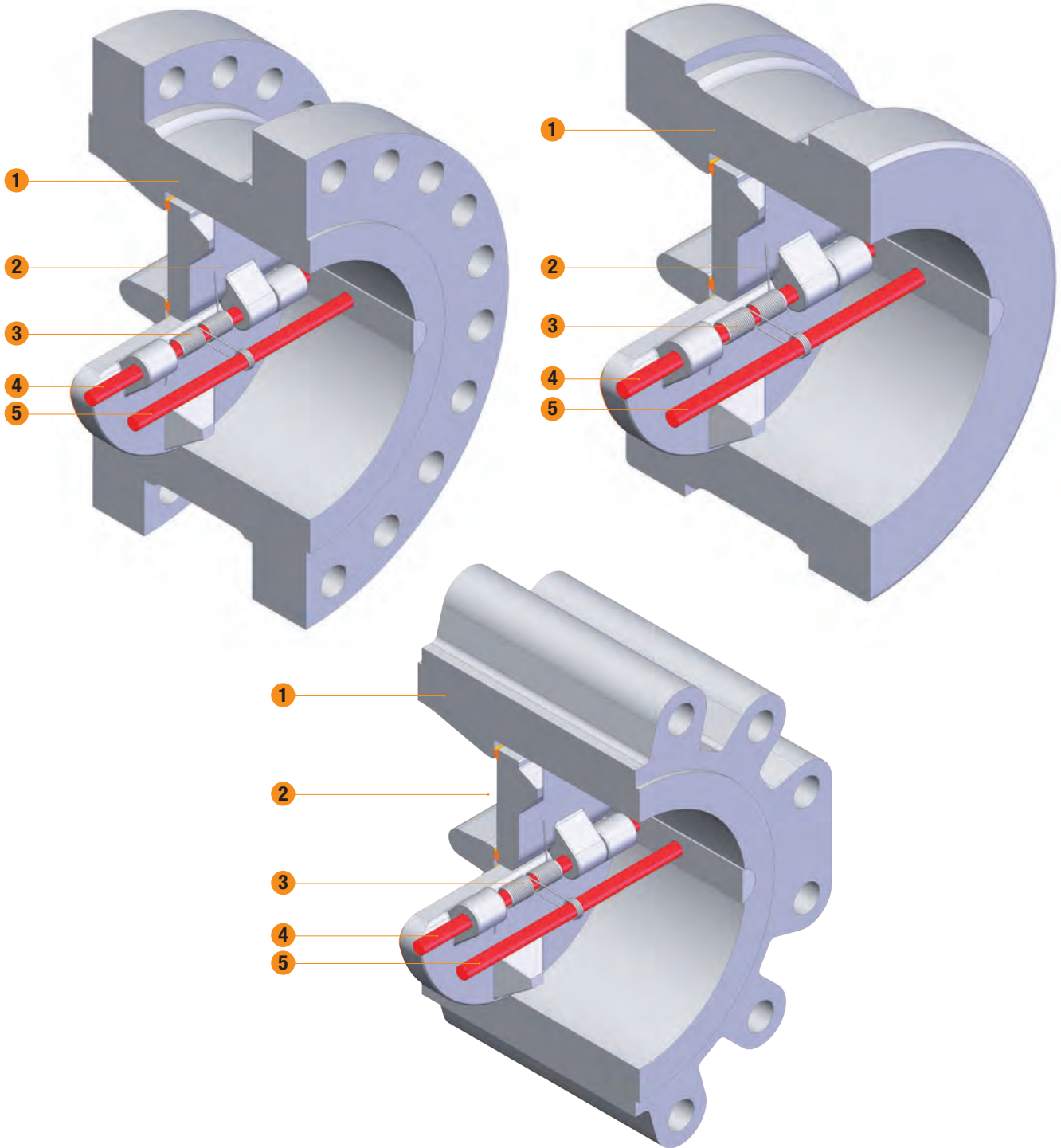
SPECIAL FEATURES - p. 95

INSTALLATION RECOMMENDATION - p. 96

ORION STEEL VALVES

Dual Plate Check Valves

RETAINERLESS DESIGN ACCORDING TO API 594



1 BODY

The body is realized in cast or forged steel, carefully designed in order to minimize the pressure drop. The basic dimensions, wall thickness, face to face and flanges, comply with the relevant API and ASME standards. Two guides are incorporated to ensure correct alignment of the hinge pin. The integral seat is part of trim. Special attention is given to the seating surface which is ground and lapped, for a perfectly tight seal. The total absence of through-body drills (retainerless design) avoids any possible accidental leakage from the system.

2 DISC

The disc is in cast or forged steel. The attachment to the hinge pin allows the rotation and a small translation along the flow. The seating surface is ground and lapped. An integral over-travel stop for the discs is incorporated.

3 SPRING

Torsion spring, available in various material, according to the desired service.

4 HINGE PIN

The hinge pin is part of the trim, in forged stainless steel and is machined from ground bar. The hinge pin is held in position in the body with two supports. The pin can be easily removed for valve maintenance. For correct valve functioning it shall be always installed in vertical position, when used in horizontal pipeline.

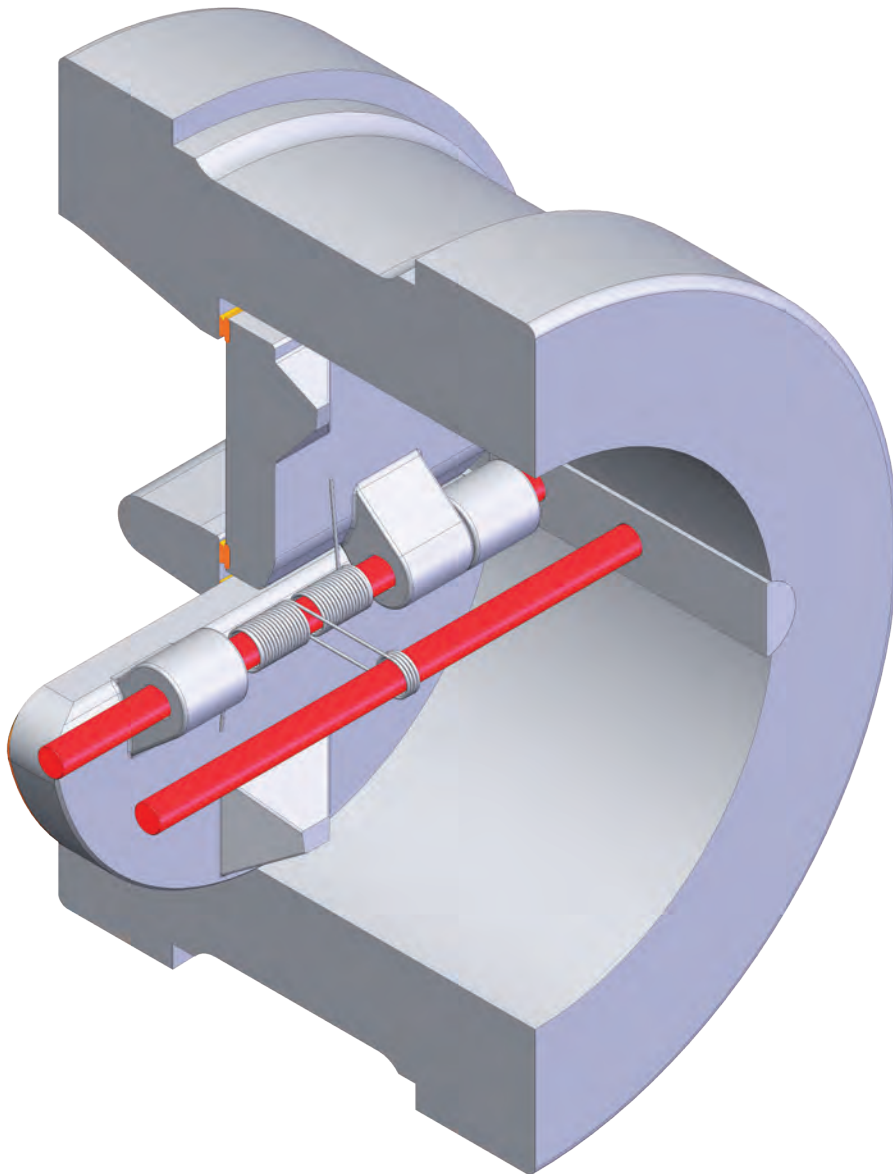
5 STOP PIN

The stop pin is part of the trim. It is machined from ground bar in forged stainless steel. It is held in position parallel to the hinge pin on the same support. It has a double function: it stops the disc and retains the spring's trust. The pin can be easily removed for maintenance of the valve.

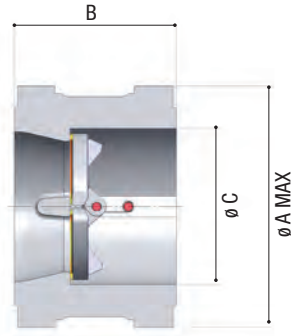
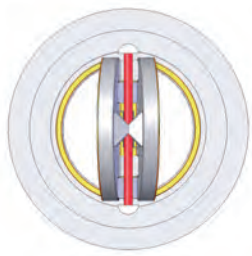
ORION STEEL VALVES

Dual Plate Wafer Check Valves

RETAINERLESS DESIGN ACCORDING TO API 594



Only as Example: For Installation Recommendation, please refer to page 96.



Class ASME 150 (PN 20)

FIGURE NUMBERS - CLASS ASME 250 - ALL SIZES

CD_W: 150 RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	101	120	133	171	219	276	336	405	448
B	60	67	73	73	98	127	146	181	184
C	60	67	90	110	160	215	270	300	330
Approximate WEIGHT (Kg)									
	3	4	5	8	17	30	50	90	110

SIZE	16"	18"	20"	24"	30"	36"	42"	48"
A	511	546	603	714	879	1.044	1.216	1.381
B	191	203	219	222	305	368	432	524
C	380	435	485	575	740	887	1.040	1.192
Approximate WEIGHT (Kg)								
	147	169	221	307	502	817	1.282	1.887

Class ASME 300 (PN 50)

FIGURE NUMBERS - CLASS ASME 300 - ALL SIZES

CD_W: 300 RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	108	127	146	178	247	304	358	419	483
B	60	67	73	73	98	127	146	181	222
C	60	67	90	110	160	215	270	300	330
Approximate WEIGHT (Kg)									
	3	6	6	9	20	39	54	100	166

SIZE	16"	18"	20"	24"	28"	30"	36"	42"	48"
A	537	593	650	771	894	949	1.114	1.162	1.320
B	232	264	292	318	368	368	483	568	629
C	380	435	481	580	656	740	887	1.040	1.192
Approximate WEIGHT (Kg)									
	203	248	324	488	746	850	1.247	2.268	3.867



Class ASME 600 (PN 100)

FIGURE NUMBERS - CLASS ASME 600 - ALL SIZES

CD_W 600: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	108	127	146	191	264	317	397	454	490
B	60	67	73	79	136	165	213	227	273
C	60	67	90	102	155	202	235	290	315
Approximate WEIGHT (Kg)									
	3	5	6	13	38	55	127	172	224

SIZE	16"	18"	20"	24"	30"	36"	42"
A	562	610	680	787	1096	1127	1216
B	305	362	368	438	505	635	701
C	370	427	480	580	740	887	1.040
Approximate WEIGHT (Kg)							
	352	471	558	807	1.687	2.126	2.929

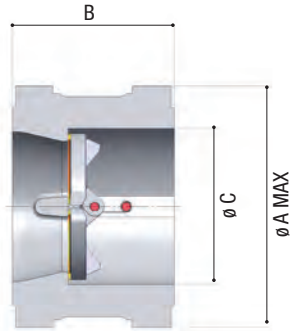
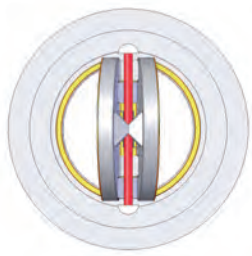
Class ASME 900 (PN 150)

FIGURE NUMBERS - CLASS ASME 900 - ALL SIZES

CD_W 900: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	139	161	165	203	285	355	431	495	517
B	70	83	83	102	159	206	241	292	356
C	58	54	78	102	155	202	245	290	330
Approximate WEIGHT (Kg)									
	6	8	11	19	56	90	189	249	357

SIZE	16"	18"	20"	24"
A	571	635	695	835
B	384	451	451	495
C	370	435	481	580
Approximate WEIGHT (Kg)				
	455	623	693	1.143



Class ASME 1500 (PN 250)

FIGURE NUMBERS - CLASS ASME 1500 - ALL SIZES

CD_W 1500: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	139	161	171	206	279	349	431	517	575
B	70	83	83	102	159	206	248	305	356
C	58	54	78	102	150	185	227	286	320
Approximate WEIGHT (Kg)									
	7	10	12	20	51	121	192	313	469

SIZE	16"	18"	20"	24"
A	638	701	752	898
B	384	468	533	559
C	370	435	481	580
Approximate WEIGHT (Kg)				
	589	827	1.227	2.202

Class ASME 2500 (PN 420)

FIGURE NUMBERS - CLASS ASME 2500 - ALL SIZES

CD_W 2500: RF - RAISED FACE • RJ - RING JOINT

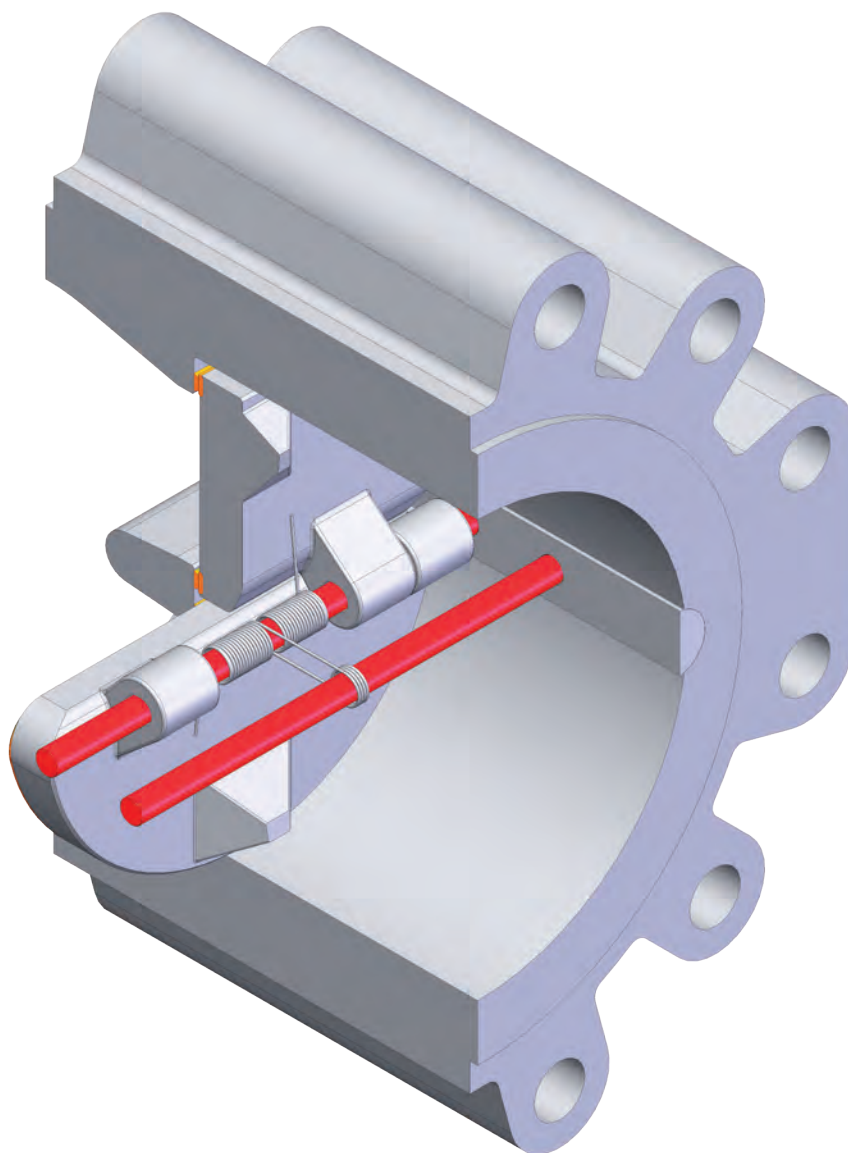
SIZE	2"	2½"	3"	4"	6"	8"	10"	12"
A	142	165	193	231	314	384	472	546
B	70	83	86	105	159	206	254	305
C	58	54	78	100	153	185	234	280
Approximate WEIGHT (Kg)								
	10	13	16	27	67	137	237	395

For size and pressure classes non mentioned in the above tables please contact ORION.

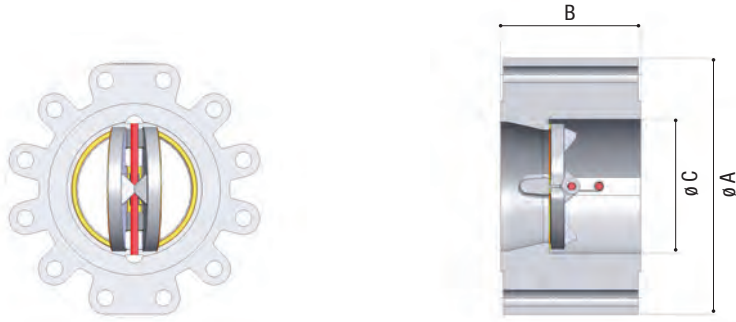
N.B. All dimension are given in millimeters, weight are expressed in Kg. and are not including the operator.

Dimensions and weight may change from above values without notice.

ORION STEEL VALVES
Dual Plate Lug Check Valves
RETAINERLESS DESIGN ACCORDING TO API 594



Only as Example: For Installation Recommendation, please refer to page 96.



Class ASME 150 (PN 20)

FIGURE NUMBERS - CLASS ASME 250 - ALL SIZES

CD_L 150: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	150	180	181,4	222,3	277	345	405	475	535
B	60	67	73	73	98	127	146	181	184
C	60	67	90	110	160	200	245	300	335
Approximate WEIGHT (Kg)									
	5	7	7	13	24	32	54	128	154

SIZE	16"	18"	20"	24"	30"	36"	42"	48"
A	587	635	700	815	985	1170	1345	1510
B	191	203	219	222	305	368	432	524
C	380	435	481	580	740	887	1.040	1.192
Approximate WEIGHT (Kg)								
	190	233	301	394	786	1.293	2.040	3.057

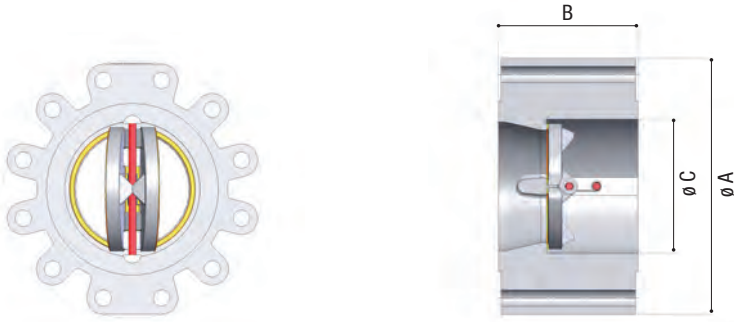
Class ASME 300 (PN 50)

FIGURE NUMBERS - CLASS ASME 300 - ALL SIZES

CD_L 300: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	156	190	200	235	306	371	433	520	585
B	60	67	73	73	98	127	146	181	222
C	60	67	90	110	160	215	270	301	335
Approximate WEIGHT (Kg)									
	5	9	10	14	31	57	82	162	257

SIZE	16"	18"	20"	24"	30"	36"	42"	48"
A	630	710	775	915	1.090	1.270	1.290	1.465
B	232	264	292	318	368	483	568	629
C	380	435	481	580	740	887	1.040	1.192
Approximate WEIGHT (Kg)								
	293	442	579	856	1.294	2.125	2.828	4.631



Class ASME 600 (PN 100)

FIGURE NUMBERS - CLASS ASME 600 - ALL SIZES

CD_L 600: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	156	190	203,3	254	335	396	494	560	587
B	60	67	73	79	136	165	213	229	273
C	60	67	90	102	155	202	235	290	315
Approximate WEIGHT (Kg)									
	5	7	9	17	38	83	185	256	325

SIZE	16"	18"	20"	24"	30"	36"	42"
A	677	745	797	940	1.130	1.315	1.405
B	305	362	368	438	505	635	701
C	372	435	480	580	740	887	1.040
Approximate WEIGHT (Kg)							
	494	721	765	1.388	1.687	3.602	4.451

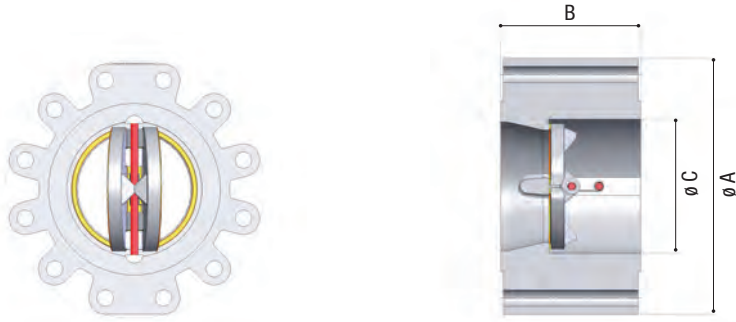
Class ASME 900 (PN 150)

FIGURE NUMBERS - CLASS ASME 900 - ALL SIZES

CD_L 900: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	215	245	240	290	380	461	545	610	640
B	70	83	83	102	159	206	241	292	356
C	58	54	78	110	155	202	245	290	330
Approximate WEIGHT (Kg)									
	18	22	28	45	120	150	341	394	583

SIZE	16"	18"	20"	24"
A	705	785	855	1.040
B	384	451	451	495
C	370	435	481	580
Approximate WEIGHT (Kg)				
	766	1.162	1.343	2.036



Class ASME 1500 (PN 250)

FIGURE NUMBERS - CLASS ASME 1500 - ALL SIZES

CD_L 1500: RF - RAISED FACE • RJ - RING JOINT

SIZE	2"	2½"	3"	4"	6"	8"	10"	12"	14"
A	201	245	247	290	395	485	572	675	750
B	70	83	83	102	159	206	248	305	356
C	45	54	78	102	155	185	227	290	330
Approximate WEIGHT (Kg)									
	10	14	18	28	58	133	294	649	1.119

SIZE	16"	18"	20"	24"
A	825	915	985	1.170
B	384	468	533	559
C	370	435	481	580
Approximate WEIGHT (Kg)				
	1.161	1.813	2.686	3.331

Class ASME 2500 (PN 420)

FIGURE NUMBERS - CLASS ASME 2500 - ALL SIZES

CD_L 2500: RF - RAISED FACE • RJ - RING JOINT

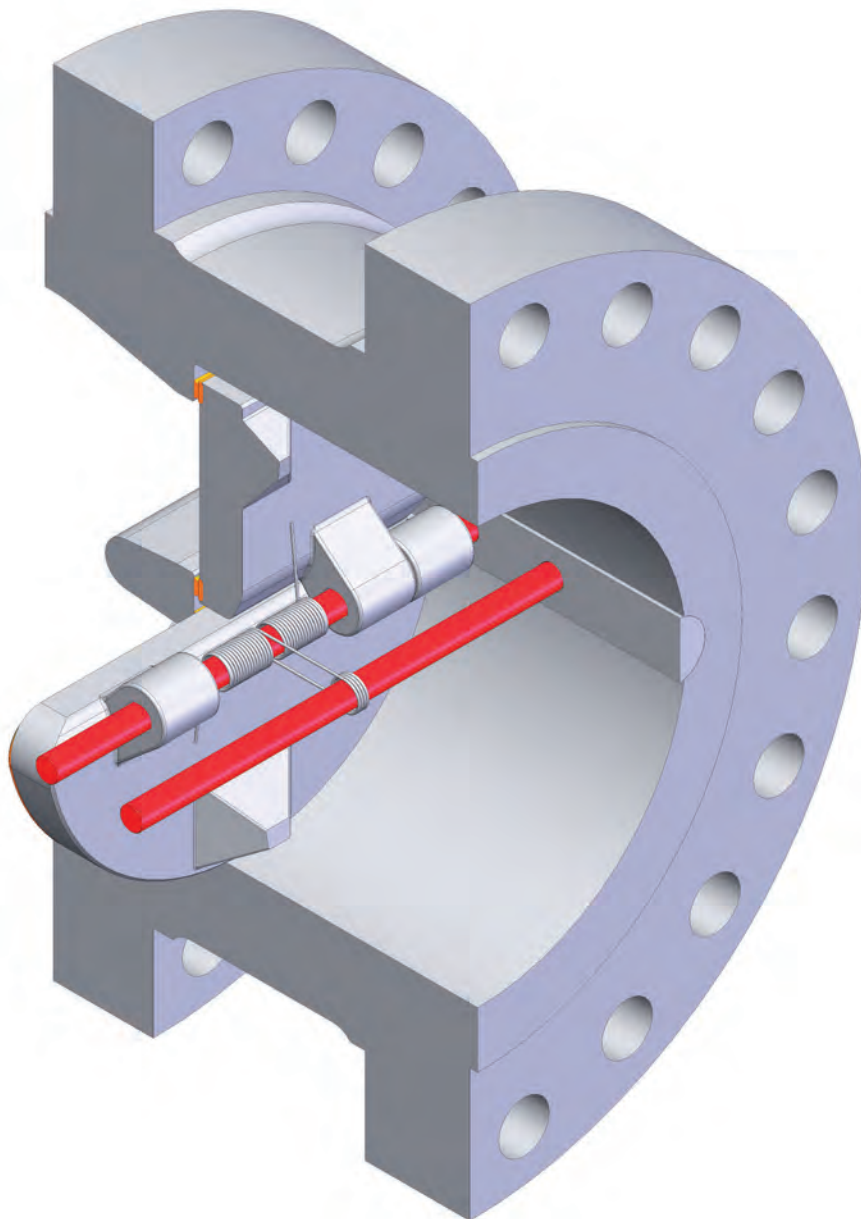
SIZE	2"	2½"	3"	4"	6"	8"	10"	12"
A	210	265	305	328	485	550	675	760
B	70	83	86	105	159	206	254	305
C	45	54	78	102	155	185	235	290
Approximate WEIGHT (Kg)								
	11	17	20	37	53	120	190	305

For size and pressure classes non mentioned in the above tables please contact ORION.

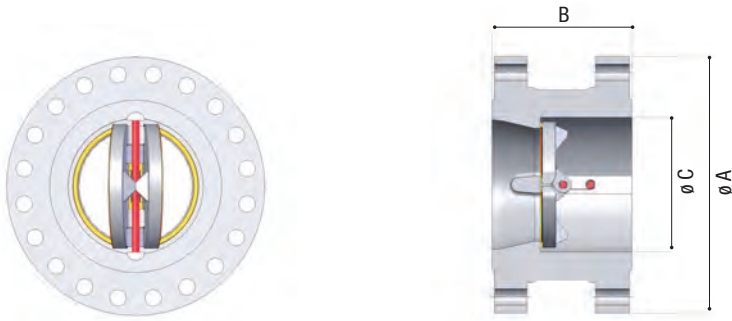
N.B. All dimension are given in millimeters, weight are expressed in Kg. and are not including the operator.

Dimensions and weight may change from above values without notice.

ORION STEEL VALVES
Double Flanged Check Valves
RETAINERLESS DESIGN ACCORDING TO API 594



Only as Example: For Installation Recommendation, please refer to page 96.



Class ASME 150 (PN 20)

FIGURE NUMBERS - CLASS ASME 150 - ALL SIZES

CD_F 150: RF - RAISED FACE • RJ - RING JOINT

SIZE	10"	12"	14"	16"	18"	20"	24"	30"	36"
A	405	485	535	595	635	700	815	985	1.170
B	146	181	184	191	203	219	222	305	368
C	270	301	335	370	435	481	580	740	887
Approximate WEIGHT (Kg)									
	59	115	125	204	194	226	373	589	838

SIZE	42"	48"	56"	60"
A	1.345	1.510	1.745	1.855
B	432	524	584	660
C	1.040	1.192	1.375	1.426
Approximate WEIGHT (Kg)				
	1.471	2.180	3.125	3.598

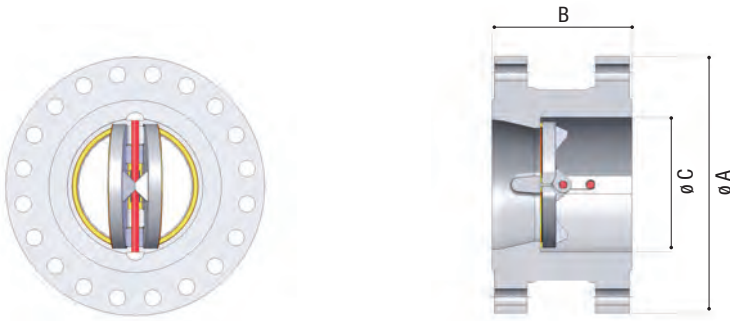
Class ASME 300 (PN 50)

FIGURE NUMBERS - CLASS ASME 300 - ALL SIZES

CD_F 300: RF - RAISED FACE • RJ - RING JOINT

SIZE	12"	14"	16"	18"	20"	24"	30"	36"	42"
A	520	585	650	710	775	915	1.090	1.270	1.290
B	181	222	232	264	292	318	368	483	568
C	301	330	370	435	481	580	740	887	1.040
Approximate WEIGHT (Kg)									
	153	222	366	367	361	468	911	1.816	2.235

SIZE	48"	56"	60"
A	1.465	1.710	1.810
B	629	737	826
C	1.192	584	660
Approximate WEIGHT (Kg)			
	3.078	4.202	4.764



Class ASME 600 (PN 100)

FIGURE NUMBERS - CLASS ASME 600 - ALL SIZES

CD_F 600: RF - RAISED FACE • RJ - RING JOINT

SIZE	12"	14"	16"	18"	20"	24"	30"	36"	42"
A	560	605	685	745	815	940	1.096	1.315	1.405
B	229	273	305	362	368	438	505	635	701
C	290	330	370	435	481	580	740	887	1.040
Approximate WEIGHT (Kg)									
	272	378	489	468	592	856	1.687	2.482	3.261

Class ASME 900 (PN 150)

FIGURE NUMBERS - CLASS ASME 900 - ALL SIZES

CD_F 900: RF - RAISED FACE • RJ - RING JOINT

SIZE	12"	14"	16"	18"	20"	24"
A	610	640	705	785	855	1.040
B	292	356	384	451	451	495
C	290	330	370	435	481	580
Approximate WEIGHT (Kg)						
	454	574	590	656	875	1.289

For size and pressure classes non mentioned in the above tables please contact ORION.

N.B. All dimension are given in millimeters, weight are expressed in Kg. and are not including the operator.

Dimensions and weight may change from above values without notice.

ORION STEEL VALVES Special Features

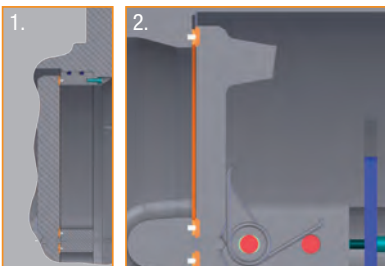
ORION is able to provide more valve preparations not listed in this catalogue as butt weld ends, hub ends or compact flange connections. Please contact ORION Sales Department for technical details as weight or end to end dimension.



DUAL PLATE

SOFT SEATING

- This feature is applicable on all body material
- Renewable seat is an option on all designs to enhance the material selection on trim components



1. Optional renewable seat zero leakage
2. Standard integral seat zero leakage

Installation Recommendation

The best working position for a dual plate check valve is on horizontal pipeline, with the hinge pin installed vertically.

The valve can be used on vertical flowlines as well, provided the flow direction is upward.

For the vertical downward stream installation, please explicitly ask for a special spring to be installed while ordering, in order to compensate the gravity effect on the plates.

EACH ORION DUAL PLATE CHECK VALVE HAS A FLOW INDICATION ARROW EMBOSSED ON THE BODY. FOR THE CORRECT INSTALLATION OF THIS VALVE, MAKE SURE THAT IT IS MATCHING THE FLOW DIRECTION.

