

**ORION**  
Steel Valves



**ORION** STEEL VALVES  
**API 6A**

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### Pressure ratings

MPa	13.8	20.7	34.5	69.0	103.5	138.0
psi	2000	3000	5000	10000	150000	20000

### Temperature ratings

Temperature Classification	Operating Range			
	°C		°F	
	MIN	MAX	MIN	MAX
K	-60	82	-75	180
L	-46	82	-50	180
N	-29	60	-50	140
P	-18	82	-20	180
S	-18	60	0	140
T	-18	82	0	180
U	-18	121	0	250
V	2	121	35	250

### Material applications for bodies, bonnets and end and outlet connections

Part	Material designations for pressure ratings					
	13.8 MPa (2000 psi)	20.7 MPa (3000 psi)	34.5 MPa (5000 psi)	69.0 MPa (10000 psi)	103.5 MPa (15000 psi)	138.0 MPa (20000 psi)
Body, bonnet	36K,45K 60K, 75K	36K,45K 60K, 75K	36K,45K 60K, 75K	36K,45K 60K, 75K	45K 60K, 75K	60K, 75K
<b>Integral end connection</b>						
Flanged	60K, 75K	60K, 75K	60K, 75K	60K, 75K	75 K	75 K
Threaded	60K, 75K	60K, 75K	60K, 75K			
<b>Loose connectors</b>						
Welding neck	45 K	45 K	45 K	60K, 75K	75 K	75 K
Blind	60K, 75K	60K, 75K	60K, 75K	60K, 75K	75 K	75 K
Threaded	60K, 75K	60K, 75K	60K, 75K	NA	NA	NA

### Material property requirements for bodies, bonnets and end and outlet connections

Material designation	0,2 % offset yield in Strength min		Tensile strength min		Elongation min 50 mm (2 in)	Reduction un area min
	MPa	psi	MPa	psi	%	%
36 K	248	36000	483	70000	21	No req
45 K	310	45000	483	70000	19	32
60 K	414	60000	586	85000	18	35
75 K	517	75000	655	95000	17	35

## Material requirements

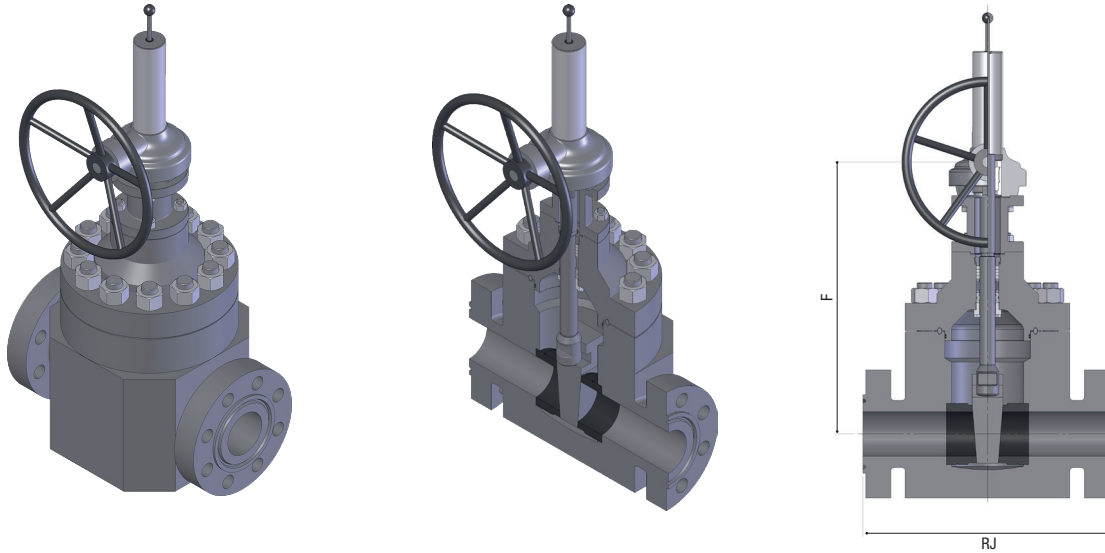
Material class		Minimum material requirements	
		Body, bonnet, end and outlet connections	Pressure-controlling parts, stems and mandrel hangers
AA	General service	Carbon or low-alloy steel	Carbon or low-alloy steel
BB	General service	Carbon or low-alloy steel	Stainless steel
CC	General service	Stainless steel	Stainless steel
DD	Sour service <sup>a</sup>	Carbon or low-alloy steel <sup>b</sup>	Carbon or low-alloy steel <sup>b</sup>
EE	Sour service <sup>a</sup>	Carbon or low-alloy steel <sup>b</sup>	Stainless steel <sup>b</sup>
FF	Sour service <sup>a</sup>	Stainless steel <sup>b</sup>	Stainless steel <sup>b</sup>
HH	Sour service <sup>a</sup>	CRA <sup>c</sup>	CRA <sup>c</sup>

<sup>a</sup> as defined by ISO 15156 - NACE MR 0175 / <sup>b</sup> in accordance with ISO 15156 - NACE MR 0175 / <sup>c</sup> corrosion resistant alloy

## Body and trim material examples

Material Class	Body* and bonnet	Trim
AA	A 487 GR 4C	Low alloy + N
AA	AISI 4130	AISI 4135 +N/ STL6/ WC
BB	A 487 GR 4C	A 564 GR 630 + N
BB	AISI 4130	AISI 410 stainless steel + STL6/ WC
BB	A 487 GR 4C	A 240 GR F55
BB	A 487 GR 4C	A 240 GR F53
BB	A 217 GR C5	AISI 410 stainless steel + STL6/ WC
CC	A 217 GR CA15	A 564 GR 630 + N
CC	AISI 410 stainless steel	AISI 410 stainless steel + STL6/ WC
DD	A 487 GR 4C	Low alloy +N
DD	AISI 4130	AISI 4135 +N/ STL6/ WC
EE	A 487 GR 4C	A 564 GR 630 + N
EE	AISI 4130	AISI 410 stainless steel + STL6/ WC
EE	A 487 GR 4C	A 240 GR F55
EE	A 487 GR 4C	A 240 GR F53
FF	A 217 GR CA15	A 564 GR 630 + N
FF	AISI 410 stainless steel	AISI 410 stainless steel + STL6/ WC
HH	A 351 GR CF8M	A 564 GR 630 + WC
HH	A182 GR F316	A 564 GR 630 + WC
HH	INCONEL 625	INCONEL 625 + WC

N: nitrided; STL6: Stellite 6; WC: tungsten carbide / \*Body can be manufactured with welded on flanges / Other materials are available upon request.



**WEDGE GATE VALVES API 6A 10000**

VW 10000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16	5" 1/8	7" 1/16
RJ	464	521	565	619	670	737	889
F	438	441	460	459	532	610	751

**WEDGE GATE VALVES API 6A 15000**

VW 15000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16
RJ	457	483	533	589	737
F	440	453	473	498	553

**WEDGE GATE VALVES API 6A 20000**

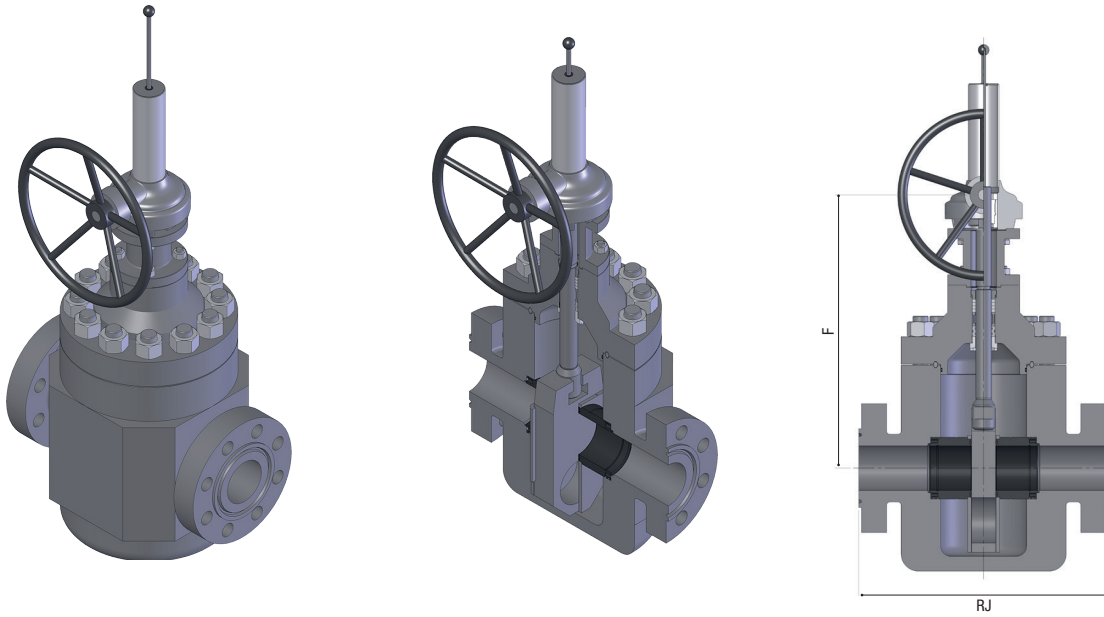
VW 20000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16
RJ	533	584	673	775
F	591	618	670	725

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.



**SINGLE DISC VALVES API 6A 10000**

FW 10000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16	5" 1/8	7" 1/16
RJ	464	521	565	619	670	737	889
F	574	586	609	672	763	862	985

**SINGLE DISC VALVES API 6A 15000**

FW 15000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16
RJ	457	483	533	589	737
F	598	612	662	721	823

**SINGLE DISC VALVES API 6A 20000**

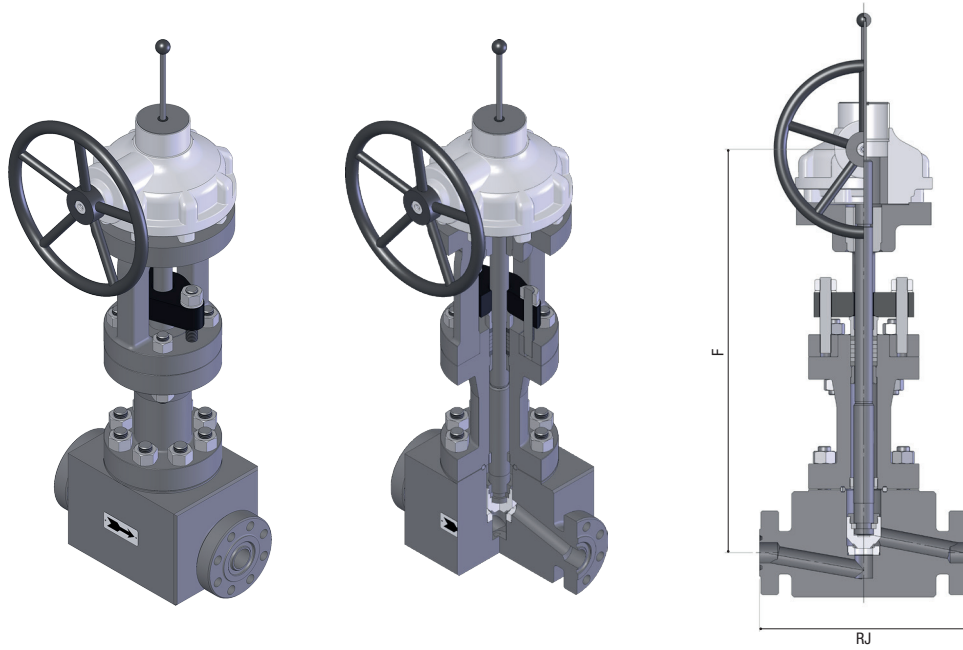
FW 20000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16
RJ	533	584	673	775
F	652	680	720	780

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.



**GLOBE VALVES API 6A 10000**

GW 10000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16	5" 1/8	7" 1/16
RJ	464	521	565	619	670	737	889
F	418	422	448	471	544	622	766

**GLOBE VALVES API 6A 15000**

GW 15000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16
RJ	457	483	533	589	737
F	421	451	512	572	639

**GLOBE VALVES API 6A 20000**

GW 20000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16
RJ	533	584	673	775
F	552	570	624	678

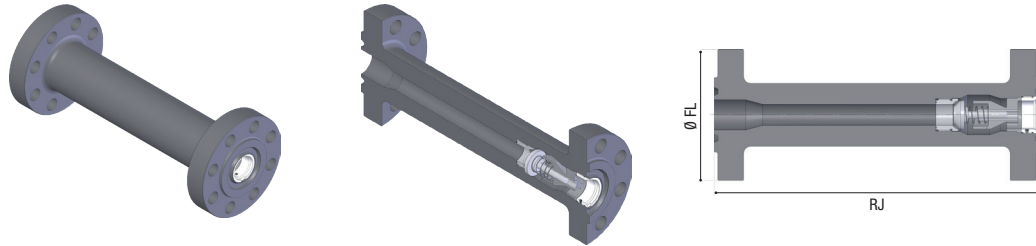
\*API 6A Globe Valves are available in standard configuration or extended bonnet as well.

The above pictures represent extended bonnet version for cryogenic service.

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.



**AXIAL VALVES API 6A 10000**

RB 10000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16	5" 1/8	7" 1/16
RJ	464	521	565	619	670	737	889
Ø FL	185	200	230	270	315	360	480

**AXIAL VALVES API 6A 15000**

RB 15000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16
RJ	457	483	533	589	737
F	210	220	255	290	360

**AXIAL VALVES API 6A 20000**

RB 20000: RJ - RING JOINT

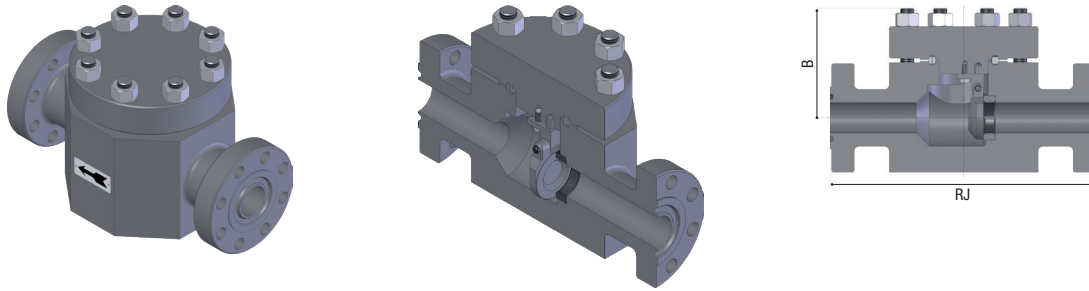
SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16
RJ	533	584	673	775
F	255	285	325	355

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.





**CHECK VALVES API 6A 2000**

RW 2000: RJ - RING JOINT

SIZE	2" 1/16	2" 9/16	3" 1/8	4" 1/16	7" 1/16
RJ	295	333	359	435	562
B	200	214	232	280	303

**CHECK VALVES API 6A 3000**

RW 3000: RJ - RING JOINT

SIZE	2" 1/16	2" 9/16	3" 1/8	4" 1/16	7" 1/16	9"
RJ	371	422	384	460	613	740
B	248	253	258	334	397	478

**CHECK VALVES API 6A 5000**

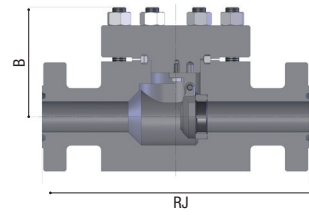
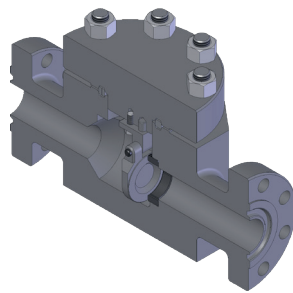
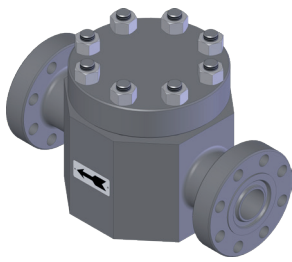
RW 5000: RJ - RING JOINT

SIZE	2" 1/16	2" 9/16	3" 1/8	4" 1/16	7" 1/16
RJ	371	422	473	549	711
B	202	253	288	355	493

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.



**CHECK VALVES API 6A 10000**

RW 10000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16	5" 1/8	7" 1/16
RJ	464	521	565	619	670	737	889
B	224	232	236	259	347	364	452

**CHECK VALVES API 6A 15000**

RW 15000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16	4" 1/16
RJ	457	483	533	598	737
B	256	264	268	291	379

**CHECK VALVES API 6A 20000**

RW 20000: RJ - RING JOINT

SIZE	1" 13/16	2" 1/16	2" 9/16	3" 1/16
RJ	533	584	673	775
B	266	274	278	301

