

The background of the entire page is a technical drawing of various industrial valves and pipe fittings, rendered in a light yellow line-art style. The drawing is dense and covers the entire area, providing a technical and industrial context for the product being advertised.

POWELL **VALVES**

DUAL PLATE CHECK VALVES

CARBON AND STAINLESS ALLOYS

WAFER, LUG AND FLANGED BODY

Table of Contents

<u>SUBJECT</u>	<u>PAGE</u>
THE WM. POWELL COMPANY—PROFILE	2-3
HOW TO ORDER	4
DUAL PLATE CHECK VALVES	5-8
ENGINEERING DATA	9-20
TERMS OF SERVICE	21-22

The Wm. Powell Company - Profile

The Wm. Powell Company is very proud of our achievements and our evolution in the past 166 years. We like to refer to ourselves as 166 years young due to our flexibility in changing quickly to our customer and the industry's needs. Our business strategy is to maintain excellent customer service. We will continue to focus on manufacturing the best of class products both in design features and quality, at competitive prices.

The Wm. Powell Company's products include a wide variety of valves in bronze, iron, steel, and corrosion resistant alloys for class 125 to class 4500 pressure service. Our experience as pioneer in the development of industrial valves encompasses over a century and a half of craftsmanship and valve know-how. Through modern engineering, laboratory, research and testing facilities, the Wm. Powell Company has been a leader in changes in our industry. Our on-going program is a long-term commitment to the valve industry and is poised for significant future growth.

Powell Valves has endured a Civil War, World Wars I and II, and the Korean and Vietnam Wars. Powell rebuilt after floods, U.S. economic disaster in the Great Depression, and fierce foreign competition to help put men on the moon. Whether it was the "Manhattan Project", projects on U.S. Nuclear Submarines, Titan or Atlas rockets, in Nuclear Power plants, at Chemical or Petroleum plants, Pulp and Paper mills, or the harshness of cryogenic use, Powell Valve has a long tradition of quality in temperatures from – 425°F to 1500°F and pressures from Class 125 to 4500.

Powell's market base is the Industrial Users: Petrochemical, Industrial Gas, Pulp & Paper, Pharmaceutical, Hydrocarbon processing, Food processing, Mining, Power Generation, Pipeline, Chemical, and Mechanical construction. Powell has formed business partnerships with industrial end-users, contractors, distributors and A&E's in the United States and around the World. Business partnerships formed on competitively priced product, on-time delivery, service and our tradition of product reliability.

Powell's network of support and product availability is unmatched. Powell offers the most complete multi-turn product line from a single source manufacturer. Powell's products are of the highest quality standards, are competitively priced and are produced with modern manufacturing technology and astute materials sourcing, with strategic purchasing & financial ventures in place.

Powell's diverse products and services, industry knowledge, project capabilities and reputation, coupled with our high quality distribution network, create a win-win arrangement where the end-user, contractor, distributor and manufacturer can benefit.

The Wm. Powell Company has made a commitment to our industry to increase growth and market share, with quality competitive products and services and on-time delivery. This is a global commitment.

Powell's end user customers have to react quickly to the demands that are on them to expand their businesses by implementing increased capacity and introducing new products into the market place at low costs and fast turn around times. Powell has addressed our customer's needs by increasing finished product inventory to over \$35,000,000 USD in the U.S.A. and with inventory hubs in Asia and Europe. As an additional advantage to our domestic and global customers, The Wm. Powell Company's Manning, SC facility is a Registered Free Trade Zone.

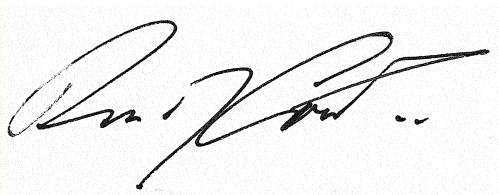
Powell also used its valve knowledge and expertise to construct a modification facility in the U.S.A. to assist customers with their needs, such as, automation, trim changes, end connection changes, additional quality inspections and special service pressure testing requirements, field service, etc...

The Wm. Powell Company is a closely held private corporation that has been in business since 1846. In fact, only nine presidents have led the Company through its 166, plus, years. The fact that we have been a healthy corporation during this period of time, having survived wars, depressions and natural disasters – in a very competitive marketplace – speaks well for itself.

We look forward to further discussing ways that The Wm. Powell Company can capture current and future opportunities together.

Again, The Wm. Powell Company thanks you for your interest in our company, our products and services. Powell looks forward to discussing ways to be your Preferred Valve Supplier. If you should have any questions, or comments, please contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Randy Cowart", is written over a light gray rectangular background.

Randy Cowart

President, CEO & Chairman

The Wm. Powell Company

How to order Powell Dual Plate Check Valves

The figure number system outlined below is designed to cover the most common configurations. If special features are required that are not listed below, please advise the detailed description for accurate processing.

Digit														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Size			Blank	Base Figure Number				End Code	Material Code	Trim	Packing/Gasket	Option Code		
6	.	0		1	5	7	0	Y	C	8	X	X	X	X

Example Code for 6" Class 150 Dual Plate Check, Wafer Style, A216 WCB Carbon Steel, with API Trim 8

Size Code	
Code	Size
2.0	2"
2.5	2-1/2"
3.0	3"
4.0	4"
5.0	5"
6.0	6"
8.0	8"
10.	10"
12.	12"
14.	14"
16.	16"
18.	18"
20.	20"
24.	24"
etc.	etc.

Base Figure Number	
No	Class
1570	150
3070	300
6070	600

End Code	
Code	Type
F	Double Flange Style
Q	LUG
Y	Wafer
Z	Special ends

Material Codes	
Code	ASTM
C	A216 WCB
D	A217 WC6
E	A217 WC9
J	A352 LCB
A	A351 CF8 (304)
M	A351 CF8M (316)
P	A351 CG8M (317)
S	A351 CN7M (Alloy 20)
Z	Special Material

Packing/Gasket	
Code	Option
X	None

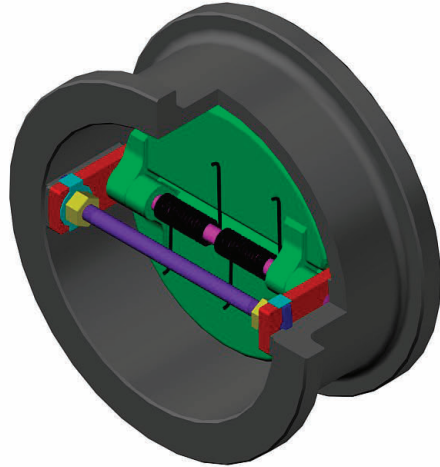
Option Codes	
Code	Option
XXX	No Options
ETH	Threaded Lugs
CNX	Oxygen Clean Non-Ext
NXX	NACE
FA3	PMI

Trim	
Code	Description
0	API Trim 10
2	API Trim 12
3	API Trim 13
5	API Trim 5
6	API Trim 16
8	API Trim 8
9	API Trim 9
A	Integral half HF
B	Integral full HF
C	Integral
D	API Trim 11
E	API Trim 2
H	Integral Seat, CF8M Disc
N	API Trim 8 NACE
Z	Special Trim

API 594 DUAL PLATE CHECK VALVES

ASME CLASSES 150 TO 600

CAST CARBON STEEL, STAINLESS STEEL OR ALLOY STEEL
WAFER, LUG, OR DOUBLE FLANGED



Class	Fig. No.
150	1570
300	3070
600	6070

Item	Applicable Specification
Wall Thickness	API 594
Pressure - Temperature Ratings	ASME B16.34
General Valve Design	API 594 & B16.34
End to End Dimensions	API 594
Flange Design	ASME B16.5
Materials	ASTM

PART	COMMON MATERIAL COMBINATIONS				
Body	A216 WCB	A216 WCB	A216 WCB	A351 CF8M	A351 CF8M
Body Seat	Stellite Facing	Stellite Facing	Integral	Integral	Stellite Facing
Disc	A216 WCB+ 13% CR FACED	A351 CF8M	A351 CF8M	A351 CF8M	A351 CF8M
Hinge Pin	410 SST	316 SST	316 SST	316 SST	316 SST
Stop Pin	410 SST	316 SST	316 SST	316 SST	316 SST
Pin Holder	Carbon Steel	316 SST	316 SST	316 SST	316 SST
Key	410 SST	316 SST	316 SST	316 SST	316 SST
Washer	410 SST	316 SST	316 SST	316 SST	316 SST
Set Screw*	Carbon Steel	316 SST	316 SST	316 SST	316 SST
Lock Nut**	Carbon Steel	316 SST	316 SST	316 SST	316 SST
Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
Eyebolt	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel (Zn plate)	Carbon Steel (Zn plate)

(NOTE) Other materials and trims available.

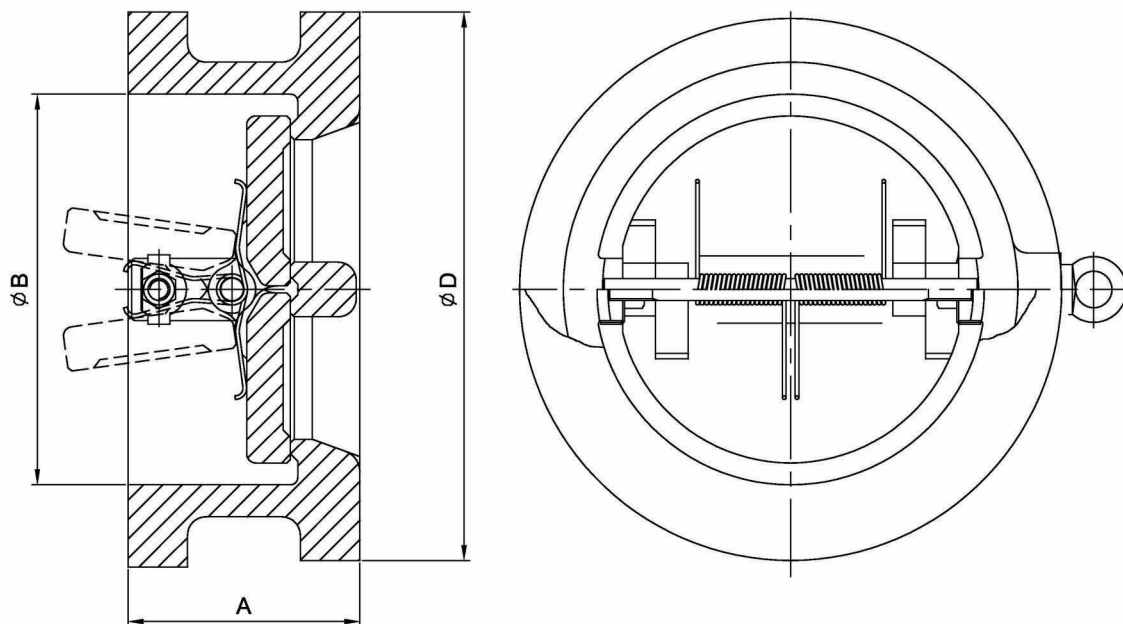
*Sizes 2"-6" only

**Sizes 8" and above only

DESIGN FEATURES:

- **Retainerless body Design** with no external body penetrations eliminating the possibility of outside leakage. Disc assembly secured in place by high strength key.
- **End Gasket Surfaces** are uninterrupted with no screws or lock pins breaking the gasket surface. No gasket restrictions required.
- **Seat faces** lapped for smooth finish and superior sealing
- **High torsion** inconel springs for quick closing
- **Each** valve is shell and seat pressure tested per industry standard API 598
- **Available** in Wafer, Lug and Double Flange styles
- **Each** valve has a unique certification number that is traceable to the valve certification sheet which includes MTR data, pressure test report, inspection report and certificate of
- **Other** available options as follows:
 - Alternate valve materials such as chrome and stainless steel alloys
 - Alternate trim materials.
 - Higher Pressure Classes
 - NACE service.
 - Special cleaning for applications such as oxygen or chlorine.
 - Other options available as specified.

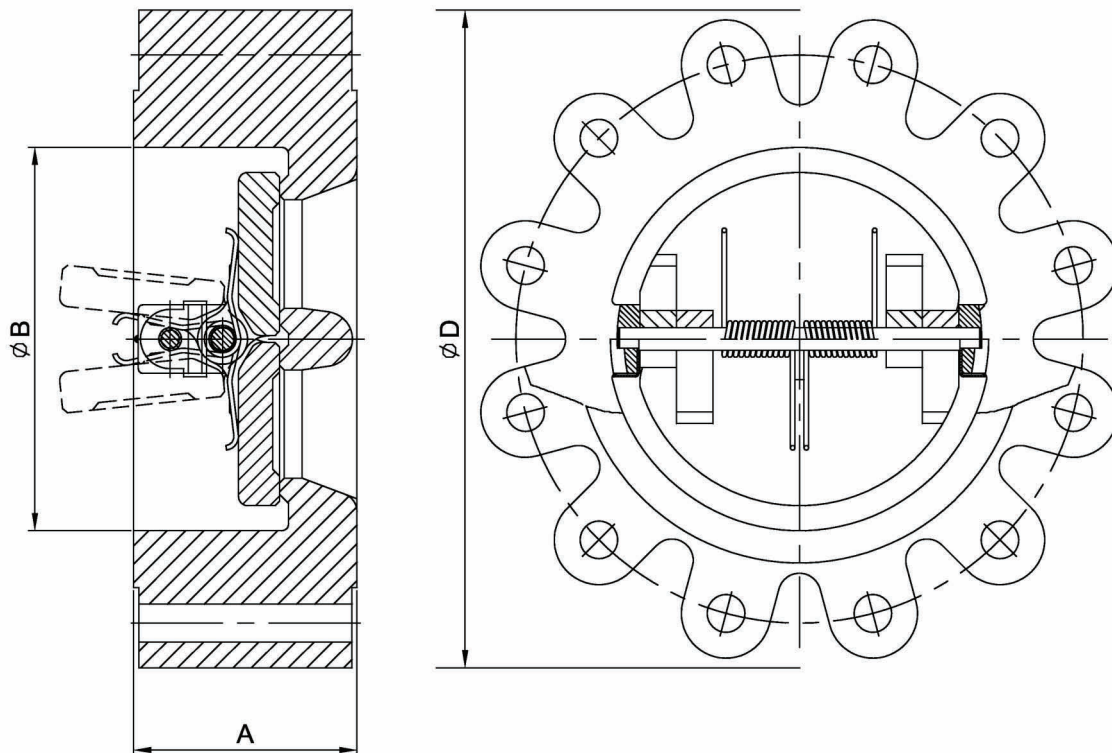
DUAL PLATE CHECK VALVE (WAFER STYLE) DIMENSIONS (CLASS 150—600).



SIZE	ASME 150					ASME 300					ASME 600				
in	A	B	D	WT	lb	A	B	D	WT	lb	A	B	D	WT	lb
mm					KG					KG					KG
2	2 3/8	2 11/16	4	4.5		2 3/8	2 11/16	4 5/16	5.5		2 3/8	2 11/16	4 5/16	5.5	
25	60	68	103	2		60	68	110	2.5		60	68	110	2.5	
3	2 7/8	3 7/16	5 5/16	8.5		2 7/8	3 7/16	5 13/16	10.8		2 7/8	3 7/16	5 13/16	11.3	
80	73	88	135	3.9		73	88	148	4.9		73	88	148	5.1	
4	2 7/8	4 9/16	6 13/16	14.8		2 7/8	4 9/16	7 1/16	17.5		3 1/8	4 9/16	7 9/16	22	
100	73	116	173	6.7		73	116	180	8		79	116	192	10	
6	3 7/8	6 5/8	8 3/4	28		3 7/8	6 5/8	9 13/16	40		5 3/8	6 5/8	10 3/8	57	
150	98	168	221	12.7		98	168	249	18		136	168	264	26	
8	5	8 7/16	11	55		5	8 7/16	12 1/16	71		6 1/2	8 7/16	12 9/16	106	
200	127	214	278	25		127	214	306	32		165	214	319	48	
10	5 3/4	10 3/8	12 3/4	90		5 3/4	10 3/8	14 3/16	109		8 3/8	10 3/8	15 11/16	202	
250	146	264	324	41		146	264	360	50		213	264	398	92	
12	7 1/8	12 1/8	16	150		7 1/8	12 1/8	16 9/16	177		9	12 1/4	17 15/16	284	
300	181	308	408	68		181	308	420	81		229	311	456	129	
14	7 1/4	13 9/16	17 5/8	190		8 3/4	13 9/16	19 1/16	265		10 3/4	13 5/8	19 5/16	380	
350	184	344	448	86		222	344	484	120		273	346	491	172	
16	7 1/2	15 13/16	20 1/4	254		9 1/8	15 13/16	21 3/16	355		12	15 13/16	22 3/16	545	
400	191	402	514	115		232	402	538	161		305	402	564	247	
18	8	17 13/16	21 5/8	315		10 3/8	17 13/16	23 7/16	470		14 1/4	17 7/8	24 1/16	740	
450	203	452	548	143		264	452	595	213		362	454	611	335	
20	8 5/8	19 3/4	23 7/8	400		11 1/2	19 3/4	25 11/16	610		14 1/2	19 15/16	26 13/16	955	
500	219	502	606	182		292	502	652	277		368	506	681	433	
24	8 3/4	23 15/16	28 1/4	590		12 1/2	23 15/16	30 7/16	910		17 1/4	23 11/16	31 1/16	1500	
600	222	608	716	267		318	608	773	412		438	602	789	680	

ADDITIONAL SIZES, MATERIALS AND CLASSES AVAILABLE UPON REQUEST.

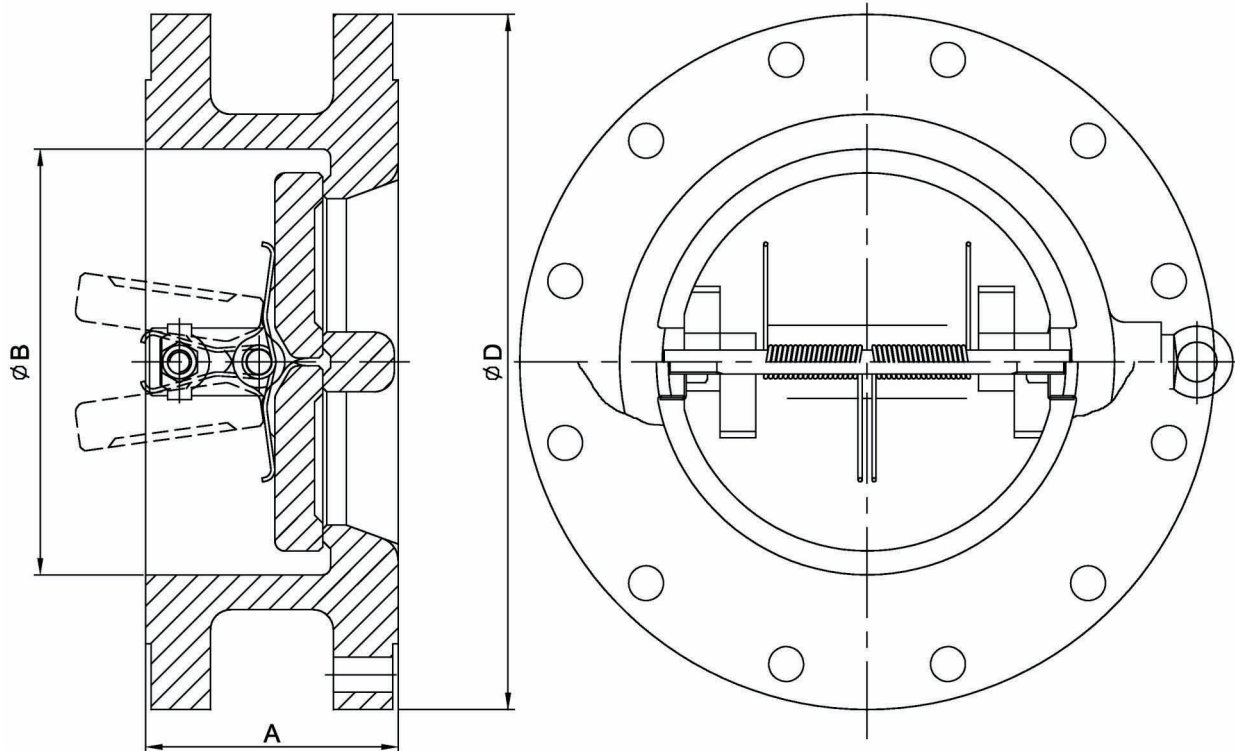
DUAL PLATE CHECK VALVE (LUG STYLE) DIMENSIONS (CLASS 150—600).



SIZE	ASME 150					ASME 300					ASME 600				
in					lb					lb					lb
mm	A	B	D	WT	KG	A	B	D	WT	KG	A	B	D	WT	KG
2	2 3/8	2 11/16	6	7.5		2 3/8	2 11/16	6 1/2	17		2 3/8	2 11/16	6 1/2	17	
25	60	68	150	3.4		60	68	165	7.7		60	68	165	7.7	
3	2 7/8	3 7/16	7 1/2	15.5		2 7/8	3 7/16	8 1/4	30.75		2 7/8	3 7/16	8 1/4	31.3	
80	73	88	190	7.1		73	88	210	14		73	88	210	14.1	
4	2 7/8	4 9/16	9	30		2 7/8	4 9/16	10	54.5		3 1/8	4 9/16	10 3/4	84	
100	73	116	230	13.5		73	116	255	24.8		79	116	275	38	
6	3 7/8	6 5/8	11	50		3 7/8	6 5/8	12 1/2	99		5 3/8	6 5/8	14	160	
150	98	168	280	23		98	168	320	45		136	168	355	73	
8	5	8 7/16	13 1/2	128		5	8 7/16	15	146		6 1/2	8 7/16	16 1/2	302	
200	127	214	345	58		127	214	380	66		165	214	420	137	
10	5 3/4	10 3/8	16	208		5 3/4	10 3/8	17 1/2	232		8 3/8	10 3/8	20	507	
250	146	264	405	95		146	264	445	106		213	264	510	230	
12	7 1/8	12 1/8	19	280		7 1/8	12 1/8	20 1/2	357		9	12 1/4	22	534	
300	181	308	485	127		181	308	520	163		229	311	560	243	

ADDITIONAL SIZES, MATERIALS AND CLASSES AVAILABLE UPON REQUEST.

DUAL PLATE CHECK VALVE (DOUBLE FLANGE STYLE) DIMENSIONS (CLASS 150—600).



SIZE	ASME 150					ASME 300					ASME 600				
in					lb					lb					lb
mm	A	B	D	WT	KG	A	B	D	WT	KG	A	B	D	WT	KG
12	7 1/8	12 1/8	19	289		7 1/8	12 1/8	20 1/2	343		9	12 1/4	22	540	
300	181	308	485	131		181	308	520	157		229	311	560	245	
14	7 1/4	13 9/16	21	509		8 3/4	13 9/16	23	696		10 3/4	13 5/8	23 3/4	988	
350	184	344	535	231		222	344	585	316		273	346	605	447	
16	7 1/2	15 13/16	23 1/2	641		9 1/8	15 13/16	25 1/2	1030		12	15 13/16	27	1580	
400	191	402	595	290		232	402	650	468		305	402	685	716	
18	8	17 13/16	25	775		10 3/8	17 13/16	28	1320		14 1/4	17 7/8	29 1/4	2070	
450	203	452	635	353		264	452	710	599		362	454	745	938	
20	8 5/8	19 3/4	27 1/2	1000		11 1/2	19 3/4	30 1/2	1688		14 1/2	19 15/16	32	2580	
500	219	502	700	455		292	502	775	767		368	506	813	1170	
24	8 3/4	23 15/16	32	1452		12 1/2	23 15/16	36	2875		17 1/4	23 11/16	37	4500	
600	222	608	815	659		318	608	915	1305		438	602	940	2040	

ADDITIONAL SIZES, MATERIALS AND CLASSES AVAILABLE UPON REQUEST.

PAGE

VALVE STANDARDS AND RELATED INFORMATION

10

VALVE PRESSURE/TEMPERATURE RATINGS

11-12

CHEMICAL AND PHYSICAL PROPERTIES

13

TRIM DESCRIPTIONS

14

FLANGE DIMENSIONS

15-16

FLOW DATA

17

CONVERSION DATA

18

NOTE: DATA PROVIDED IN THIS SECTION IS FOR REFERENCE PURPOSES AND IS SUBJECT TO CHANGE. CONSULT CURRENT STANDARDS AND SPECIFICATIONS FOR THE LATEST DATA AND FOR SPECIFIC DETAILS WHICH MAY BE BEYOND THE SCOPE OF THIS CATALOG.

VALVE STANDARDS AND RELATED INFORMATION

1. Steel and Corrosion Resistant Designs

- (A) ASME B16.34 → Valves – Flanged, Threaded, and Welded End

This is the basic ASME valve standard for steel and corrosion resistant alloys. This standard contains requirements such as minimum shell wall thickness, pressure/temperature ratings, and pressure testing requirements.

- (B) API Standard 594 → Check Valves: Flanged, Lug, Wafer, and Butt-welding

This is the basic API valve standard and contains wall thicknesses that are heavier than ASME B16.34. This standard refers to B16.34 for pressure/temperature ratings.

- (C) API Standard 598 → Valve Inspection and Testing

This standard is referenced by both ASME B16.34 and API 594 and contains minimum inspection and pressure test requirements.

- (D) ASME B16.5 → Pipe Flanges and Flange Fittings

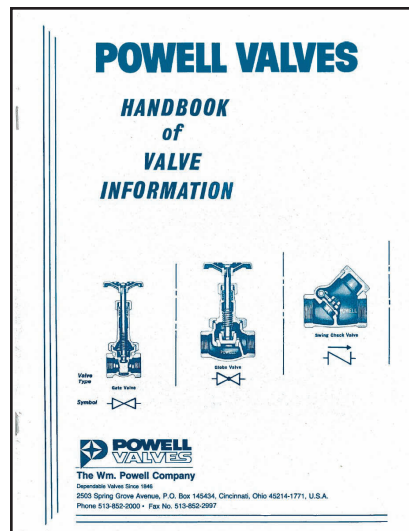
- (E) MSS SP-25 → Standard Marking System for Valves, Fittings, Flanges and Unions

- (F) MSS SP-55 → Quality Standard for Steel Castings for Valves, Flanges, Fittings, and Other Piping Components

2. Powell Publications and Miscellaneous Information

The *Handbook of Valve Information* contains valve selection, storage, installation, operation, and maintenance information for all Powell Valves.

NOTE: Prior to any installation or maintenance, appropriate precautions must be followed. For example, all pressure must be relieved from the valve and affected piping prior to servicing and proper protective clothing and equipment must be worn.



PRESSURE/TEMPERATURE RATINGS

TABLE 1

ASTM A216 Grade WCB

Upon prolonged exposure to temperatures above 800° F, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800° F.

STANDARD CLASS

Working Pressures by Classes, psig							
Temperature. °F	150	300	600	900	1500	2500	4500
-20 to 100	285	740	1,480	2,220	3,705	6,170	11,110
200	260	680	1,360	2,035	3,395	5,655	10,185
300	230	655	1,310	1,965	3,270	5,450	9,815
400	200	635	1,265	1,900	3,170	5,280	9,505
500	170	605	1,205	1,810	3,015	5,025	9,040
600	140	570	1,135	1,705	2,840	4,730	8,515
650	125	550	1,100	1,650	2,745	4,575	8,240
700	110	530	1,060	1,590	2,665	4,425	7,960
750	95	505	1,015	1,520	2,535	4,230	7,610
800	80	410	825	1,235	2,055	3,430	6,170

TABLE 2

ASTM A352 Grade LCB

Not to be used over 650° F.

STANDARD CLASS

Working Pressures by Classes, psig							
Temperature. °F	150	300	600	900	1500	2500	4500
-50 to 100	265	695	1,395	2,090	3,480	5,805	10,445
200	255	660	1,320	1,980	3,300	5,505	9,905
300	230	640	1,275	1,915	3,190	5,315	9,565
400	200	615	1,230	1,845	3,075	5,125	9,225
500	170	585	1,175	1,760	2,930	4,885	8,795
600	140	550	1,105	1,655	2,755	4,595	8,270
650	125	535	1,065	1,600	2,665	4,440	7,990

PRESSURE/TEMPERATURE RATINGS

TABLE 5

**ASTM A351 Grade CF3M (1)
ASTM A351 Grade CF8M (2)**

- (1) Not to be used over 850° F.
(2) At temperatures over 1000° F, use only when the carbon content is 0.04% or higher. This requirement must be specified by customer when applicable.
(3) For Cryogenic Valves, -20° F rating extends to -423° F.

STANDARD CLASS

Working Pressures by Classes, psig

Temperature, °F	150	200	300	600	900	1500	2500	4500
-20 to 100	275	425	720	1,440	2,160	3,600	6,000	10,800
200	235	365	620	1,240	1,860	3,095	5,160	9,290
300	215	330	560	1,120	1,680	2,795	4,660	8,390
400	195	300	515	1,025	1,540	2,570	4,280	7,705
500	170	275	480	955	1,435	2,390	3,980	7,165
600	140	245	450	900	1,355	2,255	3,760	6,770
650	125	230	440	885	1,325	2,210	3,680	6,625
700	110	220	435	870	1,305	2,170	3,620	6,515
750	95	205	425	855	1,280	2,135	3,560	6,410
800	80	195	420	845	1,265	2,110	3,520	6,335
850	65	185	420	835	1,255	2,090	3,480	6,265
900	50	170	415	830	1,245	2,075	3,460	6,230
950	35	150	385	775	1,160	1,930	3,220	5,795
1000	20	135	365	725	1,090	1,820	3,030	5,450
1050	N/A (a)	135	360	720	1,080	1,800	3,000	5,400
1100	N/A (a)	115	305	610	915	1,525	2,545	4,575
1150	N/A (a)	90	235	475	710	1,185	1,970	3,550
1200	N/A (a)	75	185	370	555	925	1,545	2,775
1250	N/A (a)	60	145	295	440	735	1,230	2,210
1300	N/A (a)	50	115	235	350	585	970	1,750
1350	N/A (a)	45	95	190	290	480	800	1,440
1400	N/A (a)	40	75	150	225	380	630	1,130
1450	N/A (a)	35	60	115	175	290	485	875
1500	N/A (a)	25	40	85	125	205	345	620

NOTE: (a) Flanged end ratings terminate at 1000° F.

CHEMICAL AND PHYSICAL PROPERTIES
CAST CARBON, ALLOY, AND STAINLESS STEELS

TABLE 6

ASTM STANDARD GRADE		A216 WCB	A352 LCB ^x	A351 CF3M 316L	A351 CF8M 316
CARBON (C)	(Min)	-	-	-	-
	(Max)	0.30	0.25	0.03	0.08
MANGANESE (Mn)	(Min)	-	-	-	-
	(Max)	1.00**	1.00**	1.50	1.50
PHOSPHOROUS (P)	(Min)	-	-	-	-
	(Max)	0.04	0.04	0.040	0.040
SULFUR (S)	(Min)	-	-	-	-
	(Max)	0.045	0.045	0.040	0.040
SILICON (Si)	(Min)	-	-	-	-
	(Max)	0.60	0.60	1.50	1.50
COPPER (Cu)	(Min)	-	-	-	-
	(Max)	0.30*	0.30*	-	-
NICKEL (Ni)	(Min)	-	-	9.0	9.0
	(Max)	0.50*	0.50*	13.0	12.0
CHROMIUM (Cr)	(Min)	-	-	17.0	18.0
	(Max)	0.50*	0.50*	21.0	21.0
MOLYBDENUM (Mo)	(Min)	-	-	2.0	2.0
	(Max)	0.20*	0.20*	3.0	3.0
VANADIUM (V)	(Min)	-	-	-	-
	(Max)	0.03*	0.03*	-	-
TUNGSTEN (W)	(Min)	-	-	-	-
	(Max)	-	-	-	-
COLUMBIUM (Cb)	(Min)	-	-	-	-
	(Max)	-	-	-	-
TENSILE STRENGTH	(Min)	70 Ksi	65 Ksi	70 Ksi	70 Ksi
	(Max)	95	90		
YIELD STRENGTH	(Min)	36 Ksi	35 Ksi	30 Ksi	30 Ksi
ELONGATION	(Min)	22%	24%	30%	30%
REDUCTION OF AREA	(Min)	35%	35%	-	-
TEMPERATURE	(Min)	-20F	-50F	-425F	-425F
	(Max)	800F	650F	850F	1500F ^F

*RESIDUAL ELEMENTS – Total must not exceed 1.00 maximum.

**The maximum MANGANESE may increase 0.04%, up to 1.28% maximum, for each reduction of 0.01% below the specified maximum CARBON content.

*** For temperatures below –50°F special cryogenic cleaning may be required. See cryogenic catalog for more information.

^x Impact tests required at –50°F. Minimum 13 ft-lb for two specimens and average of three. Minimum single specimen is 10 ft-lbs

^F For temperatures over 1000° F, minimum CARBON is 0.04. Customer must specify if temperature is over 1000° F and this minimum CARBON is required.

NOTE: Chemical Compositions Are In Units Of Percent.

TRIM DESCRIPTIONS

TABLE 7

API Trim No.	Powell Trim Designation	Seat Nominal Designation	Seat Nominal Composition	Nominal Hardness (HB)	Typical Pin Material
1	1	F6	13 Cr	250(a)	TYPE 410 or 420 (13Cr)
2	E	304	18Cr-8Ni	-	TYPE 304(18Cr-8Ni)
5	5	Hardfaced	Co-CrA (b)	350	TYPE 410 or 420 (13Cr)
8	8	F6 and	13 Cr.	250	TYPE 410 or 420 (13Cr)
		Hardfaced	Co-CrA (b)	350	
9	9	Monel	Ni-Cu Alloy	-	Monel (Ni-Cu)
10	0	316	18 Cr-8Ni	-	TYPE 316 (18Cr-8Ni-Mo)
11	D	Monel and	Ni-Cu Alloy	-	Monel (Ni-Cu)
		Hardfaced	Trim 5 or 5A	350	
12	2	316 And	18Cr-8Ni-Mo	-	TYPE 316 (18Cr-8Ni-Mo)
		Hardfaced	Trim5 or 5A	350	
13	3	Alloy 20	19Cr-29Ni	-	Alloy 20 (19Cr-29Ni)
14	4	Alloy 20 and	19Cr-29Ni	-	Alloy 20 (19Cr-29Ni)
		Hardfaced	Trim5 or 5A	350	
15	R	Hardfaced	Co-Cr-A(b)	350	TYPE 304 (18Cr-8Ni)
16	6	Hardfaced	Co-Cr-A(b)	350	TYPE 316 (18Cr-8Ni-Mo)
17	7	Hardfaced	Co-Cr-A(b)	350	TYPE 347(18Cr-10Ni-Cb)
N/A	H	Equal to Body	316 SST	-	316 SST
Integral ½HF	A	Hardfaced	Equal to Body	-	Equal to Body
Integral Full HF	B	Hardfaced	Hardfaced	-	Equal to Body
Integral	C	Equal to Body	Equal to Body	-	Equal to Body

(a) Minimum 50HB differential hardness between mating seating surfaces

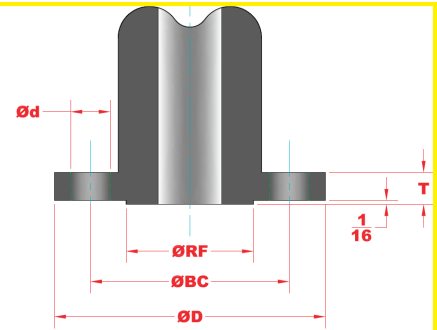
(b) Stellite 6 TM or equal.

STEEL VALVE FLANGE DIMENSIONS

All Dimensions in Units of Inches

TABLE 8

CLASS 150



Nominal Pipe Size	Outside Diameter of Flange (D)	Diameter of Bolt Circle (BC)	Diameter of Bolt Holes (d)	Number of Bolts	Thickness (T)	Raised Face Diameter (RF)
1/2	3.50	2.38	0.62	4	0.44	1.38
3/4	3.88	2.75	0.62	4	0.47	1.69
1	4.25	3.12	0.62	4	0.50	2.00
1 1/4	4.62	3.50	0.62	4	0.56	2.50
1 1/2	5.00	3.88	0.62	4	0.62	2.88
2	6.00	4.75	0.75	4	0.68	3.62
2 1/2	7.00	5.50	0.75	4	0.75	4.12
3	7.50	6.00	0.75	4	0.81	5.00
3 1/2	8.50	7.00	0.75	8	0.87	5.50
4	9.00	7.50	0.75	8	1.00	6.19
5	10.00	8.50	0.88	8	0.16	7.31
6	11.00	9.50	0.88	8	1.06	8.50
8	13.50	11.75	0.88	8	1.18	10.62
10	16.00	14.25	1.00	12	1.25	12.75
12	19.00	17.00	1.00	12	1.31	15.00
14	21.00	18.75	1.12	12	1.44	16.25
16	23.50	21.25	1.12	16	1.50	18.50
18	25.00	22.75	1.25	16	1.64	21.00
20	27.50	25.00	1.25	20	1.75	23.00
24	32.00	29.50	1.38	2	1.94	27.25

CLASS 300

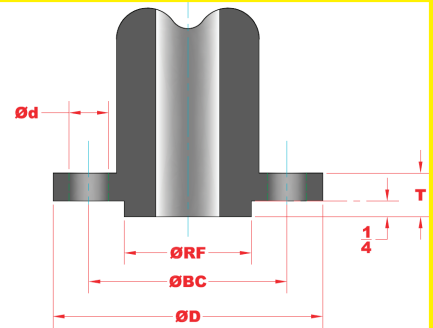
Nominal Pipe Size	Outside Diameter of Flange (D)	Diameter of Bolt Circle (BC)	Diameter of Bolt Holes (d)	Number of Bolts	Thickness (T)	Raised Face Diameter (RF)
1/2	3.75	2.62	0.62	4	0.62	1.38
3/4	4.62	3.25	0.75	4	0.68	1.69
1	4.88	3.50	0.75	4	0.75	2.00
1 1/4	5.25	3.88	0.75	4	0.81	2.50
1 1/2	6.12	4.50	0.88	4	0.87	2.88
2	6.50	5.00	0.75	8	0.94	3.62
2 1/2	7.50	5.88	0.88	8	1.06	4.12
3	8.25	6.62	0.88	8	1.18	5.00
3 1/2	9.00	7.25	0.88	8	1.25	5.50
4	10.00	7.88	0.88	8	1.31	6.19
5	11.00	9.25	0.88	8	1.44	7.13
6	12.50	10.62	0.88	12	1.50	8.50
8	15.00	13.00	1.00	12	1.68	10.62
10	17.50	15.25	1.12	16	1.94	12.75
12	20.50	17.75	1.25	16	2.06	15.00
14	23.00	20.25	1.25	20	2.18	16.25
16	25.50	22.50	1.38	20	2.31	18.50
18	28.00	24.75	1.38	24	2.44	21.00
20	30.50	27.00	1.38	24	2.56	23.00
24	36.00	32.00	1.62	24	2.81	27.25

STEEL VALVE FLANGE DIMENSIONS

All Dimensions in Units of Inches

TABLE 9

CLASS 600



Nominal Pipe Size	Outside Diameter of Flange (D)	Diameter of Bolt Circle (BC)	Diameter of Bolt Holes (d)	Number of Bolts	Thickness (T)	Raised Face Diameter (RF)
1/2	3.75	2.62	0.62	4	0.81	1.38
3/4	4.20	3.25	0.75	4	0.87	1.69
1	4.88	3.50	0.75	4	0.94	2.00
1 1/4	5.25	3.88	0.75	4	1.06	2.50
1 1/2	6.12	4.50	0.88	4	1.13	2.88
2	6.50	5.00	0.75	8	1.25	3.62
2 1/2	7.50	5.88	0.88	8	1.37	4.12
3	8.25	6.62	0.88	8	1.50	5.00
3 1/2	9.00	7.25	1.00	8	1.63	5.50
4	10.75	8.50	1.00	8	1.75	6.19
5	13.00	10.50	1.12	8	1.75	6.19
6	14.00	11.50	1.12	12	2.13	8.50
8	16.50	13.75	1.25	12	2.44	10.62
10	20.00	17.00	1.38	16	2.75	12.75
12	22.00	19.25	1.38	20	2.87	15.00
14	23.75	20.75	1.50	20	3.00	16.25
16	27.00	23.75	1.62	20	3.25	18.50
18	29.25	25.75	1.75	20	3.50	21.00
20	32.00	28.50	1.75	24	3.75	23.00
24	37.00	33.00	2.00	24	4.25	27.25

CLASS 900

Nominal Pipe Size	Outside Diameter of Flange (D)	Diameter of Bolt Circle (BC)	Diameter of Bolt Holes (d)	Number of Bolts	Thickness (T)	Raised Face Diameter (RF)
1/2	4.75	3.25	0.88	4	1.13	1.38
3/4	5.12	3.50	0.88	4	1.25	1.69
1	5.88	4.00	1.00	4	1.37	2.00
1 1/4	6.25	4.38	1.00	4	1.37	2.50
1 1/2	7.00	4.88	1.12	4	1.50	2.88
2	8.50	6.50	1.00	8	1.75	3.62
2 1/2	9.62	7.50	1.12	8	1.87	4.12
3	9.50	7.50	1.00	8	1.75	5.00
4	11.50	9.25	1.25	8	2.00	6.19
5	13.75	11.00	1.38	8	2.25	7.13
6	15.00	12.50	1.25	12	2.44	8.50
8	18.50	15.50	1.50	12	2.75	10.62
10	21.50	18.50	1.50	16	3.00	12.75
12	24.00	21.00	1.50	20	3.37	15.00
14	25.25	22.00	1.62	20	3.63	16.25
16	27.75	24.25	1.75	20	3.75	18.50
18	31.00	27.00	2.00	20	4.25	21.00
20	33.75	29.50	1.12	20	4.50	23.00
24	41.00	35.50	2.62	20	5.75	27.25

FLOW DESIGN AND MAINTENANCE RECOMMENDATIONS

- (1) SWING CHECK VALVES- Minimum ½ psi differential pressure across valve to maintain proper “full open position.
- (2) LIFT CHECK AND NON-RETURN VALVES-
Minimum 2 psi differential pressure across valve to maintain proper “full open position”
- (3) Recommended length of straight pipe before and after check valves to be 10 times pipe diameter to avoid flow turbulence at valve.
- (4) For metal seated check valves at low pressure applications (approximately 50 psi or less), seat leakage may be significantly greater than normal seat test allowable limit.
- (5) RECOMMENDED MAXIMUM FLOW VELOCITIES (APPROXIMATE):

<u>VALVE SIZE</u>	<u>WATER</u> (FT/MIN)	<u>SATURATED STEAM</u> (FT/MIN)	<u>SUPERHEATED STEAM</u> (FT/MIN)
3" and UNDER	1200	7200	9000
4	1200	8800	11000
6	1620	10400	13000
8	1860	12000	15000
10	2100	14400	18000
12	2220	15200	19000
14	2400	16000	20000
16	2400	17600	22000
18	2400	19200	24000
20" and LARGER	2400	20800	26000

- (6) GATE VALVES — Not to be used in throttling services. Open and closed services only.
- (7) GLOBE VALVES— Not to be throttled under 20% open.

**FOR MAINTENANCE AND SAFETY INFORMATION, SEE THE POWELL
HANDBOOK OF VALVE INFORMATION, AS DESCRIBED ON PAGE 25.**

COMPARISON CHART OF VALVE SIZE/NOMINAL PIPE SIZE

TABLE 10

<u>METRIC NOMINAL SIZE</u> (DN)	<u>ENGLISH NOMINAL SIZE</u> (NPS)
8	1/4
10	3/8
15	1/2
20	3/4
25	1
32	1-1/4
40	1-1/2
50	2
65	2-1/2
80	3
100	4
150	6
200	8
250	10
300	12
350	14
400	16
450	18
500	20
600	24

CONVERSION FACTORS

	TO CONVERT FROM	TO	MULTIPLY BY
LENGTH	INCHES(IN)	MILLIMETERS(MM)	25.4
	INCHES(IN)	CENTIMETERS(CM)	2.54
	FEET(FT)	INCHES(IN)	12
WEIGHT	POUNDS(LB)	KILOGRAMS(KG)	0.4536
	POUNDS(LB)	NEWTONS(N)	4.448
PRESSURE*	PSI	KILOGRAMS/M ²	703
	PSI	KILOGRAMS/CM ²	0.0703
	PSI	KILOGRAMS/MM ²	0.000703
	PSI	BAR	0.0689
	PSI	ATMOSPHERE	0.068
	PSI	KILOPASCAL	6.895
	PSI	MEGAPASCAL	0.006895
	PSI	NEWTON/MM ²	0.006895
	PSI	IN.WATER**	27.68
	PSI	FT.WATER**	2.307
	PSI	IN.MERCURY**	2.036
	PSI	PSF	144
AREA	SQ.INCH(IN ²)	SQ.CENTIMETERS(CM ²)	6.452

TEMPERATURE

TO CONVERT FROM DEGREES CENTIGRADE (C) TO DEGREES FAHRENHEIT (F): $F = 1.8 * C + 32$

TO CONVERT FROM FAHRENHEIT (F) TO DEGREES CENTIGRADE (C): $C = 0.556 * (F - 32)$

NOTE: MOST FACTORS ARE ROUNDED OFF AND NOT EXACT CONVERSIONS.

*- PSI = POUNDS PER SQUARE INCH AND PSF = POUNDS PER SQUARE FOOT.

**_- WATER AT 60F. MERCURY AT 32F.

MEASUREMENT EQUIVALENTS

FRACTION				DECIMAL	MILLIMETERS
			1/64	0.0156	0.3969
		1/32		0.0313	0.7938
				0.0394	1.0000
			3/64	0.0469	1.1906
	1/16			0.0625	1.5875
			5/64	0.0781	1.9844
				0.0787	2.0000
		3/32		0.0938	2.3813
			7/64	0.1094	2.7781
				0.1181	3.0000
1/8				0.1250	3.1750
			9/64	0.1406	3.5719
		5/32		0.1563	3.9688
				0.1575	4.0000
			11/64	0.1719	4.3656
	3/16			0.1875	4.7625
				0.1969	5.0000
			13/64	0.2031	5.1594
		7/32		0.2188	5.5563
			15/64	0.2344	5.9531
				0.2362	6.0000
1/4				0.2500	6.3500
			17/64	0.2656	6.7469
				0.2756	7.0000
		9/32		0.2813	7.1438
			19/64	0.2969	7.5406
	5/16			0.3125	7.9375
				0.3150	8.0000
			21/64	0.3281	8.3344
		11/32		0.3438	8.7313
				0.3543	9.0000
			23/64	0.3594	9.1281
3/8				0.3750	9.5250
			25/64	0.3906	9.9219
				0.3937	10.0000
		13/32		0.4063	10.3188
			27/64	0.4219	10.7156
				0.4331	11.0000
	7/16			0.4375	11.1125
			29/64	0.4531	11.5094
		15/32		0.4688	11.9063
				0.4724	12.0000
			31/64	0.4844	12.3031
1/2				0.5000	12.7000

FRACTION				DECIMAL	MILLIMETERS
				0.5118	13.0000
			33/64	0.5156	13.0969
		17/32		0.5313	13.4938
			35/64	0.5469	13.8906
				0.5512	14.0000
	9/16			0.5625	14.2875
			37/64	0.5781	13.6844
				0.5906	15.0000
		19/32		0.5938	15.0813
			39/64	0.6094	15.4781
5/8				0.6250	15.8750
				0.6299	16.0000
			41/64	0.6406	16.2719
		21/32		0.6563	16.6688
				0.6693	17.0000
			43/64	0.6719	17.0656
	11/16			0.6875	17.4625
			45/64	0.7031	17.8594
				0.7087	18.0000
		23/32		0.7188	18.2563
			47/64	0.7344	18.6531
				0.7480	19.0000
3/4				0.7500	19.0500
			49/64	0.7656	19.4469
		25/32		0.7813	19.8438
				0.7874	20.0000
			51/64	0.7969	20.2406
	13/16			0.8125	20.6375
				0.8268	21.0000
			53/64	0.8281	21.0344
		27/32		0.8438	21.4313
			55/64	0.8594	21.8281
				0.8661	22.0000
7/8				0.8750	22.2250
			57/64	0.8906	22.6219
				0.9055	23.0000
		29/32		0.9063	23.0188
			59/64	0.9219	23.4156
	15/16			0.9375	23.8125
				0.9449	24.0000
			61/64	0.9531	24.2094
		31/32		0.9688	24.6063
				0.9843	25.0000
			63/64	0.9844	25.0031
1				1.0000	25.4000

March, 2011 THE WILLIAM POWELL COMPANY

GENERAL TERMS AND CONDITIONS OF SALE

1. TERMS EXCLUSIVE: The terms and conditions of the purchase order or requisition to which these GENERAL TERMS AND CONDITIONS OF SALE (these "Terms and Conditions") relate or are attached (each, an "Order"), are exclusive and represent the full and final agreement of The William Powell Company, an Ohio corporation ("Powell") and the purchaser ("Purchaser") as they relate to the goods, materials, services or labor covered in the Order (all, whether or not tangible property or goods, the "Products"), and may not be added to, modified, superseded or altered except by written agreement or modification signed by Powell's authorized representative, notwithstanding any additional or other proposals, terms and conditions which may now or in the future appear on Purchaser's Orders or other forms (notification of objection thereto being given hereby), in whatever form transmitted, and notwithstanding any shipment of Products, acceptance of payments or other similar acts of Powell.

2. SALE BY AGENT OR REPRESENTATIVE: These Terms and Conditions shall govern the liability and obligations of Powell in regard to the transaction in Products, whether the sale was procured directly by Powell or indirectly through an authorized sales representative.

3. CONTRACT: Orders may be submitted to Powell in writing (which will include via an electronic transmission) or orally, provided, however, that if Purchaser fails to provide a detailed, formal written Order (a) within ten (10) days of an oral Order or (b) before shipment of the Order, whichever is earlier, then Product descriptions, quantities, specifications, etc., as set forth in Powell's acknowledgement, acceptance and/or invoice, shall be conclusive and binding on both parties, and discrepancies shall be for Purchaser's account. All Orders are subject to credit approval and acceptance by Powell. An Order shall be deemed to have been accepted by Powell upon the first to occur of the following: (i) Powell's first shipment or other tender of the Order or (ii) acceptance thereof by Powell in writing.

4. PERMISSIBLE VARIATIONS: Powell has the right, prior to the delivery of Products to Purchaser and without the giving of notice to Purchaser, to make any changes in the composition, fabrication or design of the Products which, in the opinion of Powell, do not affect the general characteristics or properties of the Products. In addition, Powell may make any change or any variation in the Products, whether of quality or quantity, which is within governmental or professional standards or specifications applicable at the time of manufacture without giving notice to Purchaser. Purchaser will accept any Products which may incorporate any changes in the composition, fabrication or design.

5. PRICES: Prices for Products are quoted and payable in U.S. dollars ("USD"). Prices stated in general price lists are subject to change without prior notice, at Powell's sole discretion. Prices that are provided in a specific quotation will remain firm for thirty (30) days of the issued date of the written quotation. All prices are exclusive of freight costs, taxes and duties. All taxes (including, without limitation, sales, use, stamp, value added and other taxes) duties, fees, charges and assessments by whomsoever levied on or with respect to the Products, and whether levied against Purchaser or Powell, are for Purchaser's account and, unless invoiced, shall be paid by Purchaser directly to the appropriate governmental agency.

6. SHIPPING TERMS: Delivery of Products to Canada, the United States and Mexico shall be F.O.B. (as defined in the Uniform Commercial Code as in effect in the State of Ohio) Powell's plant of manufacture. Delivery of Products outside of Canada, United States and Mexico shall be Ex Works (as defined by INCOTERMS 2000) Powell's plant of manufacture. All transportation expenses, freight and insurance shall be paid by Purchaser, and risk of delay, loss or damage incurred in transit shall be borne by Purchaser, who shall be responsible to file any such claims with the relevant carrier(s) or insurers.

Upon tender of delivery, title shall pass to Purchaser, subject to Powell's right of stoppage in transit and to Powell's security interest in the Products, as set forth in Section 8.

If the Products are held by Powell subject to receiving instructions from Purchaser or in any case where Powell, in its sole discretion, determines any part of the Products should be held for Purchaser's account, Powell may invoice the Products, and Purchaser agrees to make payment in accordance with these Terms and Conditions. Products invoiced and held at any location by Powell will be held at Purchaser's risk, and Powell may charge for (but is not obligated to carry) insurance and storage.

If Purchaser has declared or manifested an intention not to accept delivery in accordance with these Terms and Conditions, no tender will be necessary, but Powell may, at its option, give notice to Purchaser that Powell is ready and willing to deliver and such notice will constitute a valid tender of delivery.

7. INSPECTION AND ACCEPTANCE: Each shipment shall be inspected by Purchaser for observable damage and/or non-conformity at the time of delivery of the Products. Failure to so inspect shall constitute a waiver of Purchaser's rights of inspection and shall constitute an unqualified acceptance of the Products. If, after such inspection, Purchaser attempts to reject any Products, Purchaser shall fully specify all claimed damage or non-conformity in writing in a notice of rejection sent to Powell within five (5) days of delivery of the Products. Purchaser's failure to so specify shall constitute a waiver of that damage or non-conformity. Partial deliveries shall be accepted by Purchaser and paid for according to these Terms and Conditions.

8. PAYMENT TERMS: Payment shall be due net thirty (30) days from the date of invoice. Overdue accounts shall be subject to a carrying charge of one and one-half percent (1.5%) per month or portion of a month on the unpaid balance until paid in full. In the event Purchaser shall default on its obligations hereunder, Purchaser shall be liable for all of Powell's costs and expenses of collection, including reasonable attorneys' fees. Powell may, at its option, cancel and/or sell any unshipped Products should Purchaser fail to fulfill the complete terms of payment. Purchaser will have no right to offset any amounts against any payment or other obligation which Powell may owe to Purchaser. Powell hereby reserves a security interest in the Products to secure Purchaser's payment of the purchase price and any other amounts owed by Purchaser, and Purchaser agrees that Powell may (but is not obligated to) take such action as Powell deems advisable to evidence and perfect such interest and that Purchaser will cooperate with Powell in the taking of such actions.

9. CREDIT APPROVAL: Notwithstanding the provisions of Section 8, Powell may at any time decline to make any shipment or delivery or perform any work except upon receipt of payment or upon terms and conditions or security satisfactory to Powell, including, but not limited to, requiring that Purchaser provide Powell one or more letters of credit.

10. LEAD TIMES: Estimated lead times, if specified, are approximate only and are not guaranteed. Failure to ship on or near the estimated date shall not entitle Purchaser to any remedy or to cancel the Order without charge. Estimated lead times are provided Ex Works Powell's plant in weeks after receipt of Order. Estimated lead times are stated on a net basis and do not include any additional lead time due to scheduled and/or unscheduled plant shutdowns. Scheduled plant shutdowns include a two (2) week shutdown each winter and each summer. Estimated lead times are quoted on the basis of material availability and plant loading at the time of quotation, which are subject to change. Purchaser should confirm any estimated lead times at time of Order.

11. MINIMUM ORDER CHARGE: With respect to any Order that includes spare, replacement or component parts ("Parts") as Products, a minimum Order charge of One Hundred USD (\$100) shall apply. With respect to any Order that includes valves ("Valves") as Products, a minimum Order charge of Three Hundred Fifty USD (\$350) shall apply.

12. RETURN OF PRODUCTS: No Products shall be returned to Powell without Powell's prior written agreement. Products returned by Purchaser shall be returned in the same condition as when delivery was affected by Powell. Only Products that are new, unused and in a condition suitable for immediate resale shall be considered for return. Powell reserves the right to assess a minimum thirty-five percent (35%) restocking charge for Products returned for reasons other than defects or non-conformity.

13. CANCELLATION/SUSPENSION: Purchaser shall not cancel or suspend an Order without Powell's prior written consent, which such consent Powell shall be under no obligation to provide. In the event of cancellation or suspension of an Order without Powell's prior written consent, in addition to Powell's other rights and remedies available hereunder and under applicable law, Purchaser shall pay cancellation charges as follows: (a) Order entered in Powell's system, but no engineering yet initiated, 5%, (b) Engineering work has begun and orders for casings and/or outside purchased parts have been placed, 25%, (c) Castings poured and/or components made, but not yet received at Powell's location, 75%, (d) Castings poured and/or components made and received at Powell's location, 85%, (e) Manufacturing process started, 95% and (f) Components finished, 100%.

Powell may cancel all or part of an Order immediately upon the happening of any of the following: Purchaser is delinquent on any of its obligations hereunder or under any order or transaction with Powell, insolvency of Purchaser; the appointment of a custodian as that term is defined in Title 11 U.S.C., as amended (the "Bankruptcy Code"), or the commencement of a case under any chapter of the Bankruptcy Code or the bankruptcy, receivership, insolvency or similar laws of any country for, by or against Purchaser; Purchaser's suspension or termination of business or assignment for the benefit of creditors; or any event, whether or not similar to the foregoing, which materially impairs Purchaser's ability to perform hereunder. Powell's rights to cancel or postpone set forth herein may be exercised by Powell without liability.

14. CORRECTIONS: Powell reserves the right to make corrections to price lists, quotations, invoices or other contract documents in the event of clerical or typographical errors.

15. COUNTRY OF ORIGIN: Powell reserves the right to furnish Products from any of its plants at its sole discretion and does not represent that the Products listed

herein originate from any specific country. Any costs affected by country of origin, including, but not limited to, customs duties, are not included in the purchase price and are for Purchaser's account.

16. INFORMATION REGARDING PRODUCTS: Purchaser acknowledges that it has received and is familiar with Powell's and any other manufacturer's labeling and literature concerning the Products and will forward such information to its employees, agents and customers.

17. POWELL PRODUCT WARRANTY: For a period of (a) ninety (90) days from tender of delivery with respect to Parts and (b) the earlier of (i) eighteen (18) months from tender of delivery or (ii) twelve (12) months from installation with respect to Valves, Powell warrants to Purchaser that the Parts and/or Valves, as applicable, of its own manufacture are free of defects in material and workmanship, under normal use and proper operation. If any such Products fail to comply with such warranty, Powell, at Powell's option, shall either: (i) replace such defective Products; (ii) furnish replacement parts for repairing Products (iii) issue written authorization for Purchaser or others to replace or repair, without charge to Purchaser, at costs comparable to Powell's normal manufacturing costs, those parts proven defective; or (iv) refund all monies paid by Purchaser to Powell for such Products and, at the sole discretion of Powell, have the Products returned to Powell at Powell's expense. Finished materials and accessories purchased from other manufacturers are warranted only to the extent of the manufacturer's warranty to Powell (to the extent transferable by Powell to Purchaser). Any alteration in material or design of the Products or component parts thereof by Purchaser or others and/or the undertaking of repairs or replacement by Purchaser or its agents without Powell's written consent shall relieve Powell of all responsibility herewith.

Powell's obligations under this warranty shall be conditioned upon (a) Purchaser's notifying Powell of any alleged defect(s) in a writing that references Purchaser's Order number and provides complete identification of any allegedly defective Products within ten (10) days of the discovery of the damage or defect, and (b) Powell's satisfying itself upon inspection that its warranty has been breached. Purchaser may not bring any action under or arising from an Order or these Terms and Conditions unless such action is commenced within one year after the cause of action accrues.

EXCEPT AS SET FORTH IN THIS SECTION 17, POWELL MAKES NO WARRANTY CONCERNING THE PRODUCTS WHATSOEVER; POWELL DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF NON-INFRINGEMENT AND THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE OBLIGATIONS SET FORTH IN THIS SECTION 17 ARE POWELL'S SOLE OBLIGATIONS AND PURCHASER'S EXCLUSIVE REMEDY. POWELL SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, AND PURCHASER HEREBY WAIVES, FOR ITSELF AND ITS SUCCESSORS AND ASSIGNS, (A) ANY AND ALL CLAIMS FOR PUNITIVE DAMAGES AND (B) ALL CLAIMS OF NEGLIGENCE OR STRICT LIABILITY OR BOTH. WITHOUT LIMITATION TO THE FOREGOING, IN NO EVENT SHALL POWELL BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT OR FOR THE LOSS OF USE OF ANY OTHER PRODUCT, PROCESS, EQUIPMENT, OR FACILITIES OF PURCHASER OR OF THE END-USER, WHETHER PARTIALLY OR WHOLLY DUE TO DEFECTS IN MATERIAL AND/OR WORKMANSHIP AND/OR DESIGN OF POWELL'S PRODUCT, AND IN NO EVENT SHALL POWELL BE LIABLE FOR REMOVAL OF APPURTENANCES OR INCIDENTALS SUCH AS CONNECTIONS, PIPE WORK AND SIMILAR ITEMS OF OBSTRUCTION OR FOR ANY COSTS BROUGHT ABOUT BY NECESSITY OF REMOVING THE PRODUCT FROM ITS POINT OF INSTALLATION.

Purchaser (a) recognizes that the limitations contained in this Section 17 are material factors in Powell's sale of the Products at the price(s) specified, and (b) agrees that any accommodation to Purchaser by Powell, whether for sales policy reasons or otherwise, shall not be taken to establish any liability of Powell or any contract term inconsistent with this Agreement.

Purchaser shall neither make nor purport to make (a) any warranty to any person by or on behalf of Powell or (b) any warranty or representation inconsistent with this Section 17.

18. COMPLIANCE WITH LAWS: Powell certifies that the Products produced by it, if any, were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act of 1938, as amended, and the Regulations and Orders of the Administrator of the Wage and Hour Division issued under Section 14 thereof.

Powell shall endeavor to comply with all applicable Ohio and United States federal laws. Powell is not responsible for compliance with any other laws or regulations, or with any Product standard or specification, whether of general or particular application, unless Purchaser has furnished specific written notice thereof prior to Powell's entry of Purchaser's Order.

All sales of Products are conditioned upon and subject to strict compliance with United States export control laws, rules and regulations, including, without limitation, the Export Administration Act, the Export Administration Regulations, the Arms Control Act, the International Traffic in Arms Regulations, the Trading With the Enemy Act, the International Economic Powers Act and the Foreign Assets Control Regulations, as they may be amended and supplemented from time to time (each, an "Export Law" and collectively, the "Export Laws"). For any sale of Products requiring a license, permit or other approval under any Export Law ("Restricted Products"), Powell shall determine the feasibility of obtaining such license, permit or other approval ("Export Approval") and whether it will fill the order for the Restricted Products in light of required Export Approval. In the event Powell applies for Export Approval for the Restricted Products, it shall do so at Purchaser's cost and expense and Purchaser agrees to reimburse Powell for any cost or expenses (including Powell's reasonable attorneys' fees) incurred by Powell in pursuing Export Approval. Powell shall not be under any obligation to ship any such Restricted Products unless and until such Export Approval is granted, and only in strict compliance with the terms and conditions of such Export Approval. Purchaser shall be responsible for timely obtaining and maintaining any required import license, permit or approval necessary to import any Restricted Products into Purchaser's country and any other required governmental authorization ("Import Approval"). Powell shall not be liable if any Export Approval or Import Approval is delayed, denied, revoked, restricted or not renewed, and Purchaser shall not be relieved thereby of its obligations to pay Powell for the Restricted Products or Powell's costs and expenses of obtaining Export Approval in respect of Restricted Products under the Export Laws.

For Products other than Restricted Products, Purchaser (or its designated export agent) shall be responsible for the timely application for any required export authorization and the payment of any required fees, duties, taxes, tariffs, levies or other charges necessary to export the Products out the United States of America and shall be responsible for timely obtaining and maintaining any required Import Approval and the payment of any required fees, duties, taxes, tariffs, levies or other charges necessary to import the Products into Purchaser's country. Powell shall not be liable if any export authorization or Import Approval is delayed, denied, revoked, restricted or not renewed, and Purchaser shall not be relieved thereby of its obligations to pay Powell for the Products.

Purchaser shall not make any disposition of any Products purchased hereunder, by way of transshipment, reexport, diversion or otherwise, other than in and to the ultimate end user and country of destination specified on Purchaser's order or declared as the ultimate end user and country of ultimate destination on Powell's invoices, except as the Export Laws or Export Approval may expressly permit. Purchaser shall not distribute or resell any Product to or within any country or to any individual, government authority or other entity that is presently or at any time in the future subject to sanctions of the United States government, or is in violation of any Export Laws or other United States federal laws, statutes, codes, Executive Orders, decrees, rules or regulations relating to terrorism, drug trafficking or money laundering, or is designated under any such authority as being subject to sanctions or connected in any way to terrorism, drug trafficking or money laundering, including, without limitation, on the Specially Designated Nationals List and Block Persons List maintained by the Office of Foreign Assets Control (OFAC), United States Department of the Treasury, and the Denied Persons List, the Entity List and the Unverified List maintained by the Bureau of Industry and Security, United States Department of Commerce.

Purchaser shall indemnify and hold harmless Powell from and against any damages, liabilities or expenses of any kind incurred by Powell as a result of Purchaser's direct or indirect breach of any term or condition related to the Export Laws.

19. SAFETY: Purchaser warrants that it will comply with all laws, regulations, standards and requirements which are applicable to the use of the Products and Purchaser's business.

20. CONFIDENTIALITY: Purchaser will not disclose or otherwise disseminate, directly or indirectly, any of the terms of these Terms and Conditions or any other information of Powell given to or received by Purchaser or its associates or agents, unless Purchaser received Powell's written permission or such information is required to be disclosed by law or becomes part of the public domain through no fault of Purchaser, its associates or agents.

21. GOVERNING LAW; JURISDICTION AND VENUE: These Terms and Conditions shall be governed by and construed in accordance with the internal laws of the State of Ohio, without regard to such state's choice of law principles. These Terms and Conditions shall not be governed by or construed in accordance with the United Nations Convention on the International Sale of Goods, 1980, for any purpose. Customer and Powell hereby submit to the jurisdiction and venue of the state and federal courts in Cincinnati, Hamilton County, Ohio over any controversy relating to or arising from these Terms and Conditions. Notwithstanding the foregoing, Powell's right to institute or defend any proceedings in any jurisdiction, in or out of the United State of America, shall not be limited.

22. SEVERABILITY: If any of the provisions of these Terms and Conditions are deemed invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions will in no way be affected or impaired thereby.

23. FORCE MAJEURE: Delivery of all or any part of the Products is contingent upon Powell's ability to obtain supplies, raw materials and services through its regular and usual sources of supply. If by reason of any contingency beyond Powell's reasonable control, including (but not limited to) war, governmental requests, restrictions or regulations, fire, flood, casualty, accident, or other acts of God, strikes or other difficulties with employees, delay or inability to obtain labor, equipment, material and services through Powell's usual sources, failure or refusal of any carrier to transport materials, delay in transport thereof, or any other similar occurrence, Powell is not able to meet anticipated deliveries, Powell shall not be liable therefore and may, in its discretion without prior notice to Purchaser, postpone the delivery date(s) under this document for a time which is reasonable under all the circumstances. If during the occurrence of any of the foregoing contingencies, Powell holds any of the Products, Powell may invoice and hold the same for the account of Purchaser and Purchaser agrees to make payment at the maturity of the invoice so rendered.

24. ASSIGNMENT: No right or interest in the contract arising from these Terms and Conditions shall be assigned by Purchaser and no delegation of any obligation owed by Purchaser shall be made without the prior written permission of Powell. As used herein, "Purchaser" and "Powell" include the respective heirs, executors, personal representatives, successors and permitted assigns of each.

25. REMEDIES CUMULATIVE; NO WAIVER: The individual rights and remedies of Powell reserved herein shall be cumulative and additional to any other or further remedies provided in law or equity or in this document. Waiver by Powell of performance or breach of any provision hereof by Purchaser, or failure of Powell to enforce any provision hereof which may establish a defense or limitation of liability, shall not be deemed a waiver of future compliance therewith or a course of performance modifying such provision, and such provision shall remain in full force and effect as written.

26. LIMITATION OF LIABILITY: UNDER NO CIRCUMSTANCES SHALL POWELL BE LIABLE TO PURCHASER UNDER OR IN CONNECTION WITH ORDERS FOR PRODUCTS AND THESE TERMS AND CONDITIONS, WHETHER ANY CLAIM FOR RECOVERY IS BASED UPON OR ARISES OUT OF THEORIES OF BREACH OF CONTRACT, BREACH OF WARRANTY, INDEMNIFICATION, NEGLIGENCE, TORT (INCLUDING STRICT LIABILITY) OR OTHERWISE, IN EXCESS OF AN AMOUNT EQUAL TO THE NET CONTRACT VALUE OF THE PRODUCTS PROVIDED BY POWELL TO PURCHASER DURING THE MOST RECENTLY ENDED CALENDAR QUARTER.



Established 1846



POWELL **VALVES**

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