

# TYPE 530SB, 730SB, & 9300B DIGESTER BLOW VALVES

These valves are specifically designed for digester blow service, providing the inherent advantages of ball valves for this critical pulp-mill application. Special features give these valves the capability to withstand characteristic extremes in pressure and temperature, passage of corrosive and abrasive media, thermal shock, and flashing.

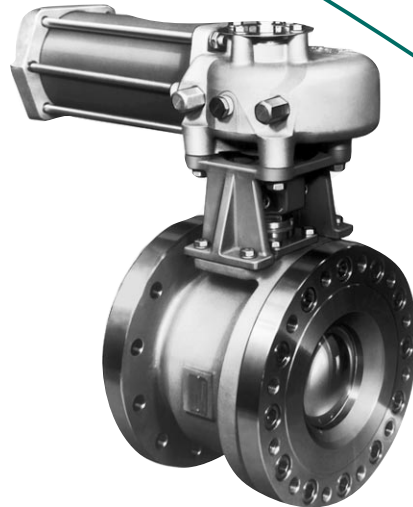
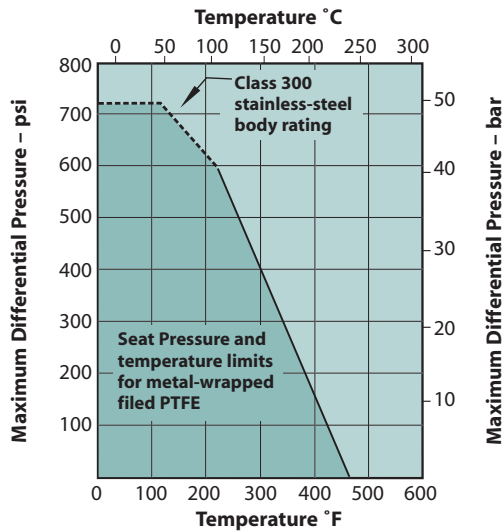
The highest degree of versatility to meet varying digester conditions is provided by the availability of metal-wrapped filled-PTFE seats for operations requiring shutoff capability of polymeric seats. The balls are tunnel-bored with rugged trunnion bearings to provide maximum flow and shock resistance for improved and long-lasting operation

Type 730SB and Type 530SB valves are standard-port configurations. These valves conform to ASME/ANSI Class 300 specifications, except for length, which corresponds to Class 150 specifications. Type 730SB valves are currently available in the 8" and 10" (DN 200 and 250) sizes. Type 530SB valves are currently available in 12" (DN 300) sizes.

Type 9300B valves are full-port designs and conform to ASME/ANSI Class 300 long-pattern specifications. Type 9300B valves are currently available in sizes 6", 8", and 10" (DN 150, 200, and 250).

## VALVE SEAT RATINGS

Seat pressure and temperature limits are shown by the shaded area in the graph below. Seat working limits are based on differential pressure with the valve ball in the fully closed position and refer to seats only. The dotted line indicates the maximum valve body pressure and temperature rating for 316 and 317 stainless steel.



## FLOW DATA

The table below provides flow coefficients for Type 730SB, Type 530SB, and Type 9300B valves covered in this bulletin. The Cv values represent the number of gallons per minute of +60°F water that flows through the valve at a pressure drop of 1 psi. The metric equivalent, Kv, is the flow of water at 16°C through the valve in M<sup>3</sup>/hr at a pressure drop of 1 kg/cm<sup>2</sup>. To convert Cv to Kv, multiply by 0.8569.

## VALVE BODY RATINGS

Valve Size		Cv Values		
		Type 730SB	Type 530SB	Type 9300B
6 inches	150 DN	–	–	5100
8	200	1890	–	9300
10	250	3900	–	15200
12	300	–	6700	–

These are maximum working pressure ratings of the valve body only. The seat ratings determine the practical pressure limitations according to actual service conditions. Test pressures are for hydrostatic test with ball half open.

Body Ratings for 316 stainless steel*			
Temperature °F	Pressure psi	Temperature °C	Pressure bar
-20 to 100	720	-29 to +38	49.6
200	620	100	42.2
300	560	150	38.5
400	515	200	35.7
500	480	250	33.4
Test Pressure	1100	Test Pressure	75

\* Corresponds to ratings of ASME B16-34-2004 for material grades shown in bill of materials on page 2.

BILL OF MATERIAL AND PARTS LIST			
Part No.	Part Name	Material	
		316 Stainless Steel	317 Stainless Steel
1	Body	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
2	Body Cap	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
3	Ball	316 Stainless steel	317 Stainless steel
4	Stem	316 Stainless steel	317 Stainless steel
5	Seat	Metal-wrapped filled PTFE	Metal-wrapped filled PTFE
6	Body Seal	PTFE / 316 Stainless steel	PTFE / Alloy 20
7	Secondary Stem Seal	Graphite	Graphite
8	Stem Bearing	Filled PTFE	Filled PTFE
15	Stem Nut	Carbon steel	Carbon steel
21	Compression Ring	Stainless steel	Stainless steel
22	Identification Tag	Stainless steel	Stainless steel
23	Drive Screw	Stainless steel	Stainless steel
25	Stem Retainer Seal	Graphite	Graphite
26	Trunnion Plate	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
27	Trunnion Bearing	Nitronic 60	Nitronic 60
28	Bearing Spacer	Filled PTFE	Filled PTFE
29	Hex Head Cap Screw	ASTM A193 Grade B8, B8C or B8T Class 2	ASTM A193 Grade B8, B8C or B8T Class 2
30	Stem Retainer	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
32	Upper Stem Seal	PTFE	PTFE
33	Key	Carbon steel	Carbon steel
34	Socket Head Cap Screw	ASTM A193 Grade B8, B8C or B8T Class 2	ASTM A193 Grade B8, B8C or B8T Class 2
37	Caution Tag	Stainless steel	Stainless steel
40	Trunnion I.D. Tag	Stainless steel	Stainless steel
41	Roll Pin	Stainless steel	Stainless steel

### VALVE TORQUE DATA

Use these torque tables as a guide for selecting actuators for the digester blow valves described in this bulletin at differential pressures normally encountered in digester blow service.

For torque values and actuator selection at higher differential pressures than those indicated, contact the home office.

Torque output values and actuator selection tables for the different types of Metso actuators are contained in the following bulletin:

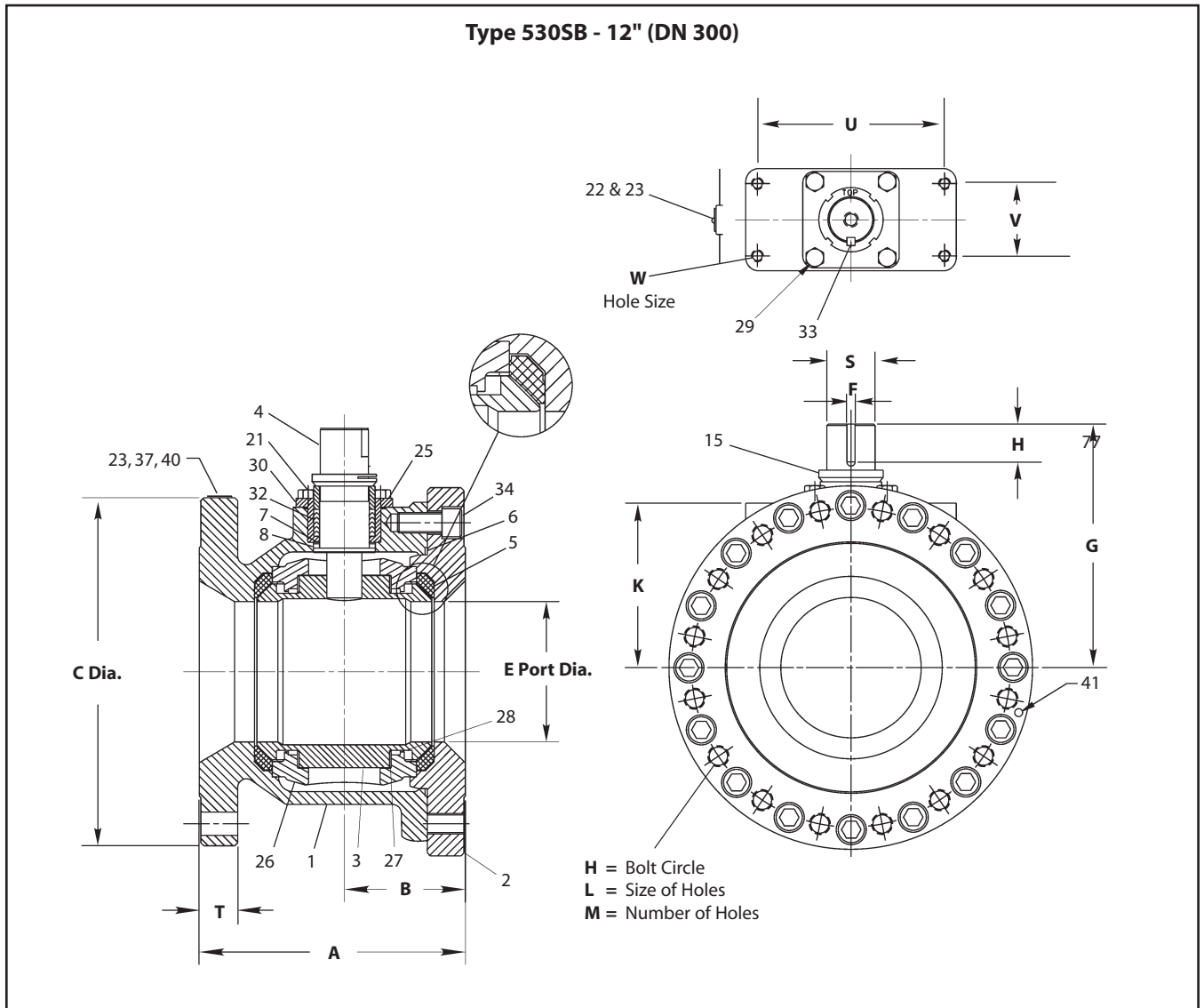
Pneumatic/Hydraulic B-Series Piston Actuators 6B20

**Note:** These valves are not intended for manual handle operation and therefore do not have travel stops.

Valve Operating Torque in lb-ft at Specified Differential Pressures in psi						
Valve Size inches	Type 730SB		Type 530SB		Type 9300B	
	$\Delta p = 100 \text{ psi}$	$\Delta p = 150 \text{ psi}$	$\Delta p = 100 \text{ psi}$	$\Delta p = 150 \text{ psi}$	$\Delta p = 100 \text{ psi}$	$\Delta p = 150 \text{ psi}$
6	—	—	—	—	1100	1700
8	1100	1700	1100	1700	1700	1700
10	1700	1700	1700	1700	1700	2100
12	1700	2100	1700	2100	—	—

Valve Operating Torque in Nm at Specified Differential Pressures in bar						
Valve Size DN	Type 730SB		Type 530SB		Type 9300B	
	$\Delta p = 6.9 \text{ bar}$	$\Delta p = 10.3 \text{ bar}$	$\Delta p = 6.9 \text{ bar}$	$\Delta p = 10.3 \text{ bar}$	$\Delta p = 6.9 \text{ bar}$	$\Delta p = 10.3 \text{ bar}$
6	—	—	—	—	1490	2300
8	1490	2300	1490	2300	2300	2300
10	2300	2300	2300	2300	2300	2850
12	2300	2850	2300	2850	—	—

### DIMENSIONS



Valve Size inches	Approximate Dimensions - inches																Approx Weight lb
	A	B	C	D	E	F	G	H	K	L	M	S	T	U	V	W	
12	14	6.88	20.5	17.75	10	0.75	17.63	3.13	11.13	1.25*	16	3 dia.	2	11.13	5.30	3/4-10	740

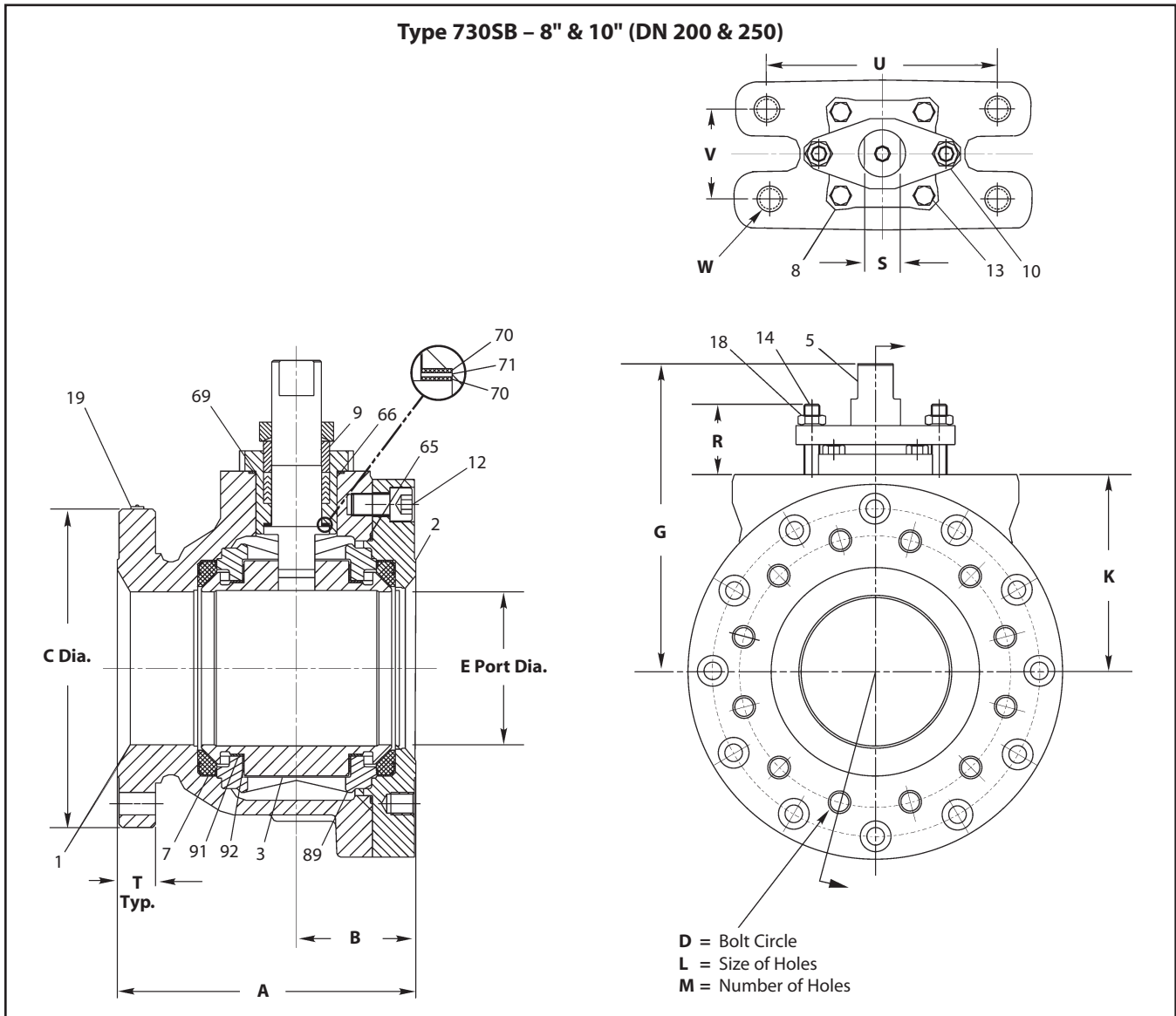
Valve Size DN	Approximate Dimensions - mm																Approx Weight kg
	A	B	C	D	E	F	G	H	K	L	M	S	T	U	V	W	
300	356	175	521	451	254	19	448	80	283	32*	16	76 dia.	51	283	135	3/4-10	336

\* 1-1/8" (29mm) – 8 x 1-1/16" (43mm) deep tapped holes in flange on body cap end

\*\* Screw thread dimensions are in inches.

**DIMENSIONS (continued)**

**Type 730SB – 8" & 10" (DN 200 & 250)**



Valve Size inches	Approximate Dimensions – inches																Approx Weight lb
	A	B	C	D	E	G	K	L	M	P	R	S	T	U	V	W	
8	11.50	5.12	15.00	13.00	6.00	12.07	7.74	1.00*	12	1.25	2.76	1.39	1.68	9.06	3.54	1-8	327
10	13.00	5.85	17.50	15.25	8.00	15.60	10.22	1.13**	16	1.25	2.88	1.82	1.88	9.06	3.54	1-8	576

Valve Size DN	Approximate Dimensions – mm																Approx Weight kg
	A	B	C	D	E	G	K	L	M	P	R	S	T	U	V	W†	
200	292	130	381	330	152	307	197	25*	12	32	70	35	43	230	90	1-8	149
250	330	149	445	387	203	396	260	29**	16	32	73	46	48	230	90	1-8	262

\* 7/8" (22mm) – 9 x 1-1/4" (32mm) deep tapped holes in flange on body cap end.

\*\* 1" (25mm) – 8 x 1-3/8" (35mm) deep tapped holes in flange on body cap end.

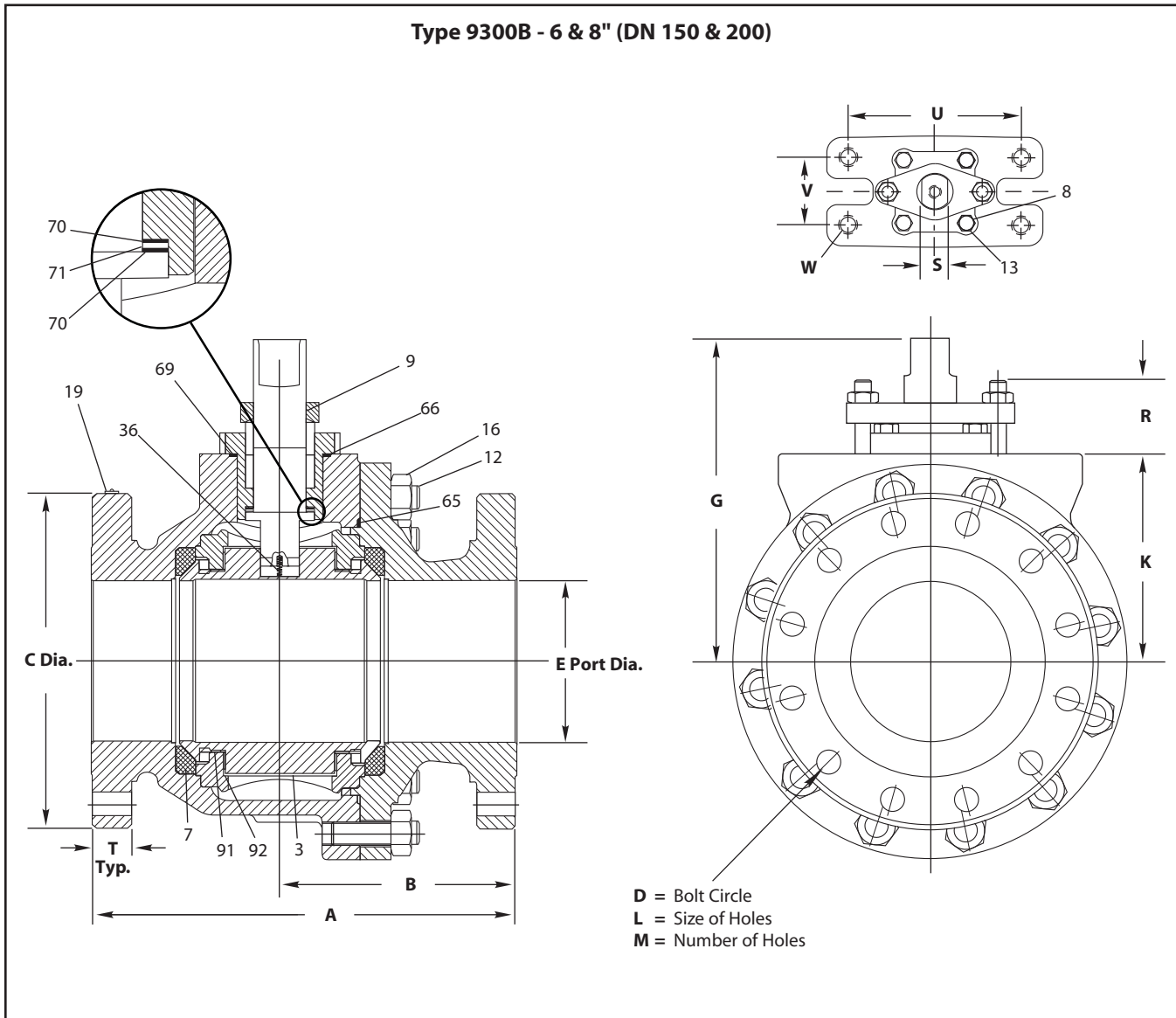
† Screw thread dimensions are in inches.

<b>BILL OF MATERIAL AND PARTS LIST 8" &amp; 10" (DN 200 &amp; 250) 730SB</b>			
Part No.	Part Name	Material	
		316 Stainless Steel	317 Stainless Steel
1	Body	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
2	Body Cap	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
3	Ball	316 Stainless steel	317 Stainless steel
5	Stem	316 Stainless steel	317 Stainless steel
7	Seat	Metal-wrapped filled PTFE	Metal-wrapped filled PTFE
8	Stem Retainer	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
9	Compression Ring	Stainless steel	Stainless steel
10	Compression Plate	Stainless steel	Stainless steel
12	Socket Head Cap Screw	ASTM A-193 Grade B8, B8C, or B8T Class 2	ASTM A-193 Grade B8, B8C, or B8T Class 2
13	Hex Head Cap Screw	ASTM A-193 Grade B8, B8C, or B8T Class 2	ASTM A-193 Grade B8, B8C, or B8T Class 2
14	Bonnet Stud	ASTM A-193 Grade B8, B8C, or B8T Class 2	ASTM A-193 Grade B8, B8C, or B8T Class 2
18	Bonnet Stud Nut	ASTM A-194 Gr 8, 8C, 8M, 8T, 8F	ASTM A-194 Gr 8, 8C, 8M, 8T, 8F
19	Identification Tag	Stainless steel	Stainless steel
65	Body Seal	PTFE / 316 Stainless Steel	PTFE / Alloy 20
66	Stem Retainer Seal	PTFE / 316 Stainless Steel	PTFE / Alloy 20
69	Upper Stem Seal	PTFE	PTFE
70	Stem Bearing	Filled PTFE	Filled PTFE
71	Secondary Stem Seal	Graphite	Graphite
89	Trunnion	316 stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
91	Bearing Spacer	Filled PTFE	Filled PTFE
92	Trunnion Bearing	Nitronic 60	Nitronic 60

<b>BILL OF MATERIAL AND PARTS LIST 6", 8", &amp; 10" (DN 150, 200, &amp; 250) 9300B</b>			
Part No.	Part Name	Material	
		316 Stainless Steel	317 Stainless Steel
1	Body	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
2	Body Cap	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
3	Ball	316 Stainless steel	317 Stainless steel
5	Stem	316 Stainless steel	317 Stainless steel
7	Seat	Metal-wrapped filled PTFE	Metal-wrapped filled PTFE
8	Stem Retainer	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
9	Compression Ring (6" & 8" [152-203 mm] only)	Stainless steel	Stainless steel
10	Compression Plate	Stainless steel	Stainless steel
12	Socket Head Cap Screw	ASTM A-193 Grade B8, B8C, or B85 Class 2	ASTM A-193 Grade B8, B8C, or B85 Class 2
13	Hex Head Cap Screw	ASTM A-193 Grade B8, B8C, or B85 Class 2	ASTM A-193 Grade B8, B8C, or B85 Class 2
14	Bonnet Stud	ASTM A-193 Grade B8, B8C, or B85 Class 2	ASTM A-193 Grade B8, B8C, or B85 Class 2
15	Lockwasher (10" [254 mm] only)	Stainless steel	Stainless steel
16	Body Stud Nut	ASTM A-194 Gr 8, 8C, 8M, 8T, 8F	ASTM A-194 Gr 8, 8C, 8M, 8T, 8F
18	Bonnet Stud Nut	ASTM A-194 Gr 8, 8C, 8M, 8T, 8F	ASTM A-194 Gr 8, 8C, 8M, 8T, 8F
19	Identification Tag	Stainless steel	Stainless steel
36	Grounding Spring	Stainless steel	Stainless steel
65	Body Seal	PTFE / 316 Stainless steel	PTFE / Alloy 20
66	Stem Retainer Seal	PTFE / 316 Stainless steel	PTFE / 316 Stainless steel
69	Upper Stem Seal	PTFE	PTFE
70	Stem Bearing	Filled PTFE	Filled PTFE
71	Secondary Stem Seal	Graphite	Graphite
89	Trunnion Plate	316 Stainless steel ASTM A351 Type CF8M	317 Stainless steel ASTM A351 Type CG8M
91	Bearing Spacer	Filled PTFE	Filled PTFE
92	Trunnion Bearing	Nitronic 60	Nitronic 60
93	Key (10" [254 mm] only)	Carbon steel	Carbon steel

**DIMENSIONS (continued)**

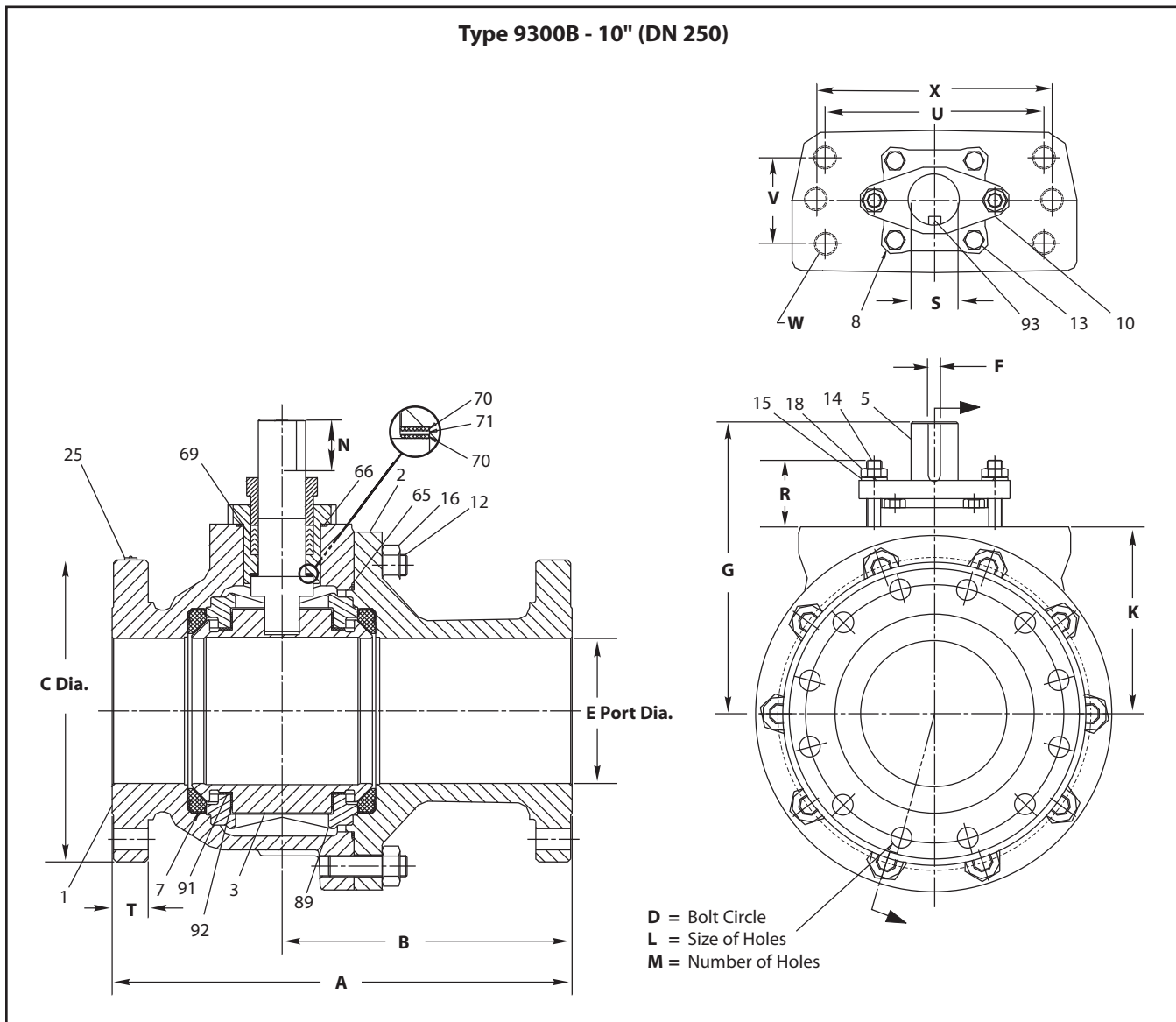
**Type 9300B - 6 & 8" (DN 150 & 200)**



Valve Size inches	Approximate Dimensions - inches															Approx Weight lb	
	A	B	C	D	E	G	K	L	M	P	R	S	T	U	V		W
6	15.88	8.84	12.50	10.63	6.00	12.07	7.74	0.88	12	1.25	2.76	1.39	1.50	9.06	3.54	1"-8 (25 mm)	310
8	16.50	8.22	15.00	13.00	8.00	15.60	10.22	0.88	12	1.25	2.88	1.82	1.64	9.06	3.54	1"-8 (25 mm)	560

Valve Size DN	Approximate Dimensions - mm															Approx Weight kg	
	A	B	C	D	E	G	K	L	M	P	R	S	T	U	V		W
150	381	225	318	270	152	307	197	22	12	32	70	35	38	230	90	1"-8 (25 mm)	141
200	419	209	381	330	203	396	260	22	12	32	73	46	42	230	90	1"-8 (25 mm)	255

**DIMENSIONS (continued)**



Valve Size inches	Approximate Dimensions - inches																	Approx Weight lb	
	A	B	C	D	E	F	G	K	L	M	N	P	R	S	T	U	V		W
10	22.38	12.19	17.50	15.25	10.00	0.75	23.39	11.82	1.13	16	2.75	2.76	3.38	2.75	1.88	12.10	4.72	1-1/4"-7 (32 mm)	968

Valve Size DN	Approximate Dimensions - mm																	Approx Weight kg	
	A	B	C	D	E	F	G	K	L	M	N	P	R	S	T	U	V		W
250	568	310	445	387	254	19	594	300	29	16	70	70	86	70	48	307	120	1-1/4"-7 (32 mm)	439

## HOW TO ORDER TYPE 530SB, 730SB, AND 9300B DIGESTER BLOW VALVES

1	2	3	4	5	6	7	8	9
8"	730S	B	7	1	36	00	WTT	2

1	Size				
inches	6	8	10	12	See page 1 for specific availability.
DN	150	200	250	300	

2	Series	inches	DN	Body Style
730S	8, 10	200, 250	Standard-port, ASME/ANSI Class 300, Class 150 face-to-face	
			Full-port, ASME/ANSI Class 300, long-pattern face-to-face	
9300	6, 8, 10	150, 200, 250	Standard-port, ASME/ANSI Class 300, Class 150 face-to-face	
530S	12	300	Standard-port, ASME/ANSI Class 300, Class 150 face-to-face	

3	Special Service
B	Digester Blow Valve

4	Valve Type
7	Trunnion

5	End Connection
1	Standard Raised Face

6	Body Materials
36	316 Stainless Steel
37	317 Stainless Steel

7	Ball/Stem Material
00	Same as body

8	Seat & Seal Code
WTT	Metal-wrapped Filled PTFE (730S and 9300)
WN	Metal-wrapped Filled PTFE (530S only)

9	Body Fasteners
2	ASTM A193 Gr. B8, B8C, or B8T ASTM A-194 Gr 8, 8C, 8M, 8T, 8F

Subject to change without prior notice.

### Metso Automation Inc.

**Europe**, Levytie 6, P.O. Box 310, 00811 Helsinki, Finland.  
Tel. +358 20 483 150. Fax +358 20 483 151

**North America**, 44 Bowditch Drive, P.O. Box 8044, Shrewsbury, MA 01545, USA.  
Tel. +1 508 852 0200. Fax +1 508 852 8172

**Europe**, 6-8 rue du Maine, 68271 Wittenheim Cedex, France.  
Tel. +33 (0)3 89 50 64 00. Fax +33 (0)3 89 50 64 40

**South America**, Av. Independência, 2500- Iporanga, 18087-101, Sorocaba-São Paulo  
Brazil. Tel. +55 15 2102 9700. Fax +55 15 2102 9748/49

**Asia Pacific**, 238A Thomson Road, #25-09 Novena Square Tower A, 307684 Singapore.  
Tel. +65 6511 1011. Fax +65 6250 0830

**China**, 19/F, the Exchange Beijing, No. 118, Jianguo Lu Yi, Chaoyang Dist, 100022 Beijing, China.  
Tel. +86-10-6566-6600. Fax +86-10-6566-2575

**Middle East**, Roundabout 8, Unit AB-07, P.O. Box 17175, Jebel Ali Freezone, Dubai,  
United Arab Emirates. Tel. +971 4 883 6974. Fax +971 4 883 6836

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