

## Engineering Specification

Job Name \_\_\_\_\_  
 Job Location \_\_\_\_\_  
 Engineer \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Tag \_\_\_\_\_

Contractor \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Contractor's P.O. No. \_\_\_\_\_  
 Representative \_\_\_\_\_

# Series 90

## High Performance Lug Double Eccentric Butterfly Valves - Import

### Specification

Series 90 High Performance Lug Double Eccentric Butterfly Valves are most often used in water supply applications and can be used wherever positive shutoff is required to control the flow of liquids, gases, and slurries. It features carbon steel body construction, extended neck, offset disc design, stainless steel shaft, RPTFE seat designed for service at 500° F and gear operators provided as standard. All sizes rated for Class 150.

- Design and manufacture per API 609
- Pressure tested per API 598
- Face to face dimensions per API 609
- Flange dimensions per ASME B16.5, B16.47

### Application:

The Series 90 is used in water applications and controls the flow of liquids, gases, and slurry. Series 90 complies with API 609 and MSS-SP-68 standards and is factory tested and guaranteed bubble tight at 290 psi differential.

### Features:

- Double offset seat design
- Bubble tight shut off
- Operated by gearbox or electric actuator
- Designed for dead-end service to the full pressure rating of the valve



### Pressure/Temperature - Non Shock

Model	Size	Material	Rating
90	2" - 40"	Carbon Steel	290psi

Max. temp. can be limited by seat material. Consult Factory.  
 Not Recommended for Steam Service.

### Materials

DESCRIPTION	MATERIAL	ASTM
Body	Cast Carbon Steel	ASTM A-216 WCB
Stem	Stainless Steel	316L
Disc	Stainless Steel	316
Seat	Reinforced Polytetrafluoroethylene	RPTFE (85% PTFE, 15% GLASS FIBER)
O-ring Seals	Reinforced Polytetrafluoroethylene	RPTFE

### Actuator Options

Electric Actuator  
 Service: On-Off & Modulating  
 Torque Range (in-lb): 347 to 20,000  
 Enclosure: Weatherproof (IP67, Type 4, 4X) or (ATEX/IECEx Ex d IIB T4)  
 Power Supply 110/220V AC 1PH, 50/60Hz,  $\pm 10\%$ , 24V AC/DC  
 Motor: Class F Reversible Motor  
 Limit Switches: (2) Operational & (2) Auxillary, Open / Close, 6A 125/250VAC  
 Mounting: ISO 5211

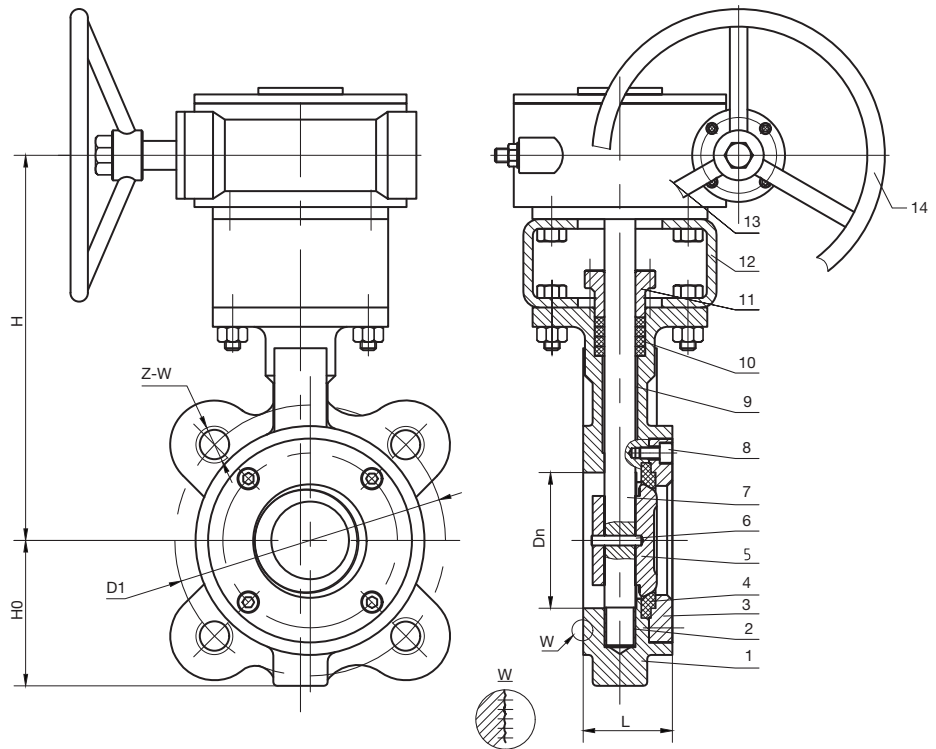
### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

## Dimensions and Weights

2" through 40"

Number	Part Name	Material
1	Body	ASTM A216 Gr. WCB
2	Lower Bushing	304 + PTFE (SF-1)
3	Retainer	ASTM A276 Gr. 304
4	Seal Ring	RPTFE
5	Disc	ASTM A351 Gr. CF8
6	Taper Pin	ASTM A276 Gr. 410
7	Shaft	ASTM A276 Gr. 431
8	Screw	ASTM A193 Gr. B8
9	Upper Bushing	304 + PTFE (SF-1)
10	Packing	Graphite
11	Gland	ASTM 216 Gr. WCB
12	Yoke	ASTM A216 Gr. WCB
13	Wormgear	Assembly Set
14	Handwheel	Carbon Steel



SIZE		DIMENSIONS									
	Dn		D1		L		HO		H		Z-W
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
2"	2 3/16	55	4 3/4	121	1 11/16	43	2 9/16	65	7 11/16	195	4 - 5/8" -11UNC
2 1/2"	2 3/4	70	5 1/2	140	1 13/16	46	3 3/8	85	7 7/8	200	4 - 5/8" -11UNC
3"	3 9/16	90	6	152	1 7/8	48	4 1/8	105	8 7/16	215	4 - 5/8" -11UNC
4"	4 1/8	105	7 1/2	191	2 1/8	54	4 6/8	120	9 1/4	235	8 - 5/8" -11UNC
5"	5 1/8	130	8 1/2	216	2 1/4	57	5 1/8	130	11 1/4	285	8 - 3/4" -10UNC
6"	6 1/8	155	9 1/2	241	2 1/4	57	6 11/16	170	11 13/16	300	8 - 3/4" -10UNC
8"	8 1/16	205	11 3/4	299	2 1/2	64	7 7/8	200	13 3/8	340	8 - 3/4" -10UNC
10"	10 1/16	255	14 1/4	362	2 13/16	71	9 7/16	240	14 15/16	380	12 - 7/8" -9UNC
12"	12	305	17	432	3 3/16	81	11 1/4	285	16 3/4	425	12 - 7/8" -9UNC
14"	14	355	14 1/4	362	3 5/8	92	12 5/8	320	19 7/8	505	12 - 1" -8UNC
16"	15 15/16	405	17	432	4	102	14 3/16	360	20 1/16	510	16 - 1" -8UNC
18"	17 15/16	455	22 3/4	578	4 1/2	114	15 3/16	385	22 1/4	565	16 - 1 1/8" -7UNC
20"	19 7/8	505	25	635	5	127	16 1/8	410	23 1/4	590	20 - 1 1/8" -7UNC
24"	23 13/16	605	29 1/2	749	6	154	17 7/8	454	26 15/16	685	20 - 1 1/4" -7UNC
28"	27 3/4	705	34	864	6 1/2	165	21 7/16	545	29 3/4	755	28 - 1 1/4" -7UNC
30"	29 3/4	755	36	914	7 1/2	190	22 1/16	560	31 1/8	790	28 - 1 1/4" -7UNC
32"	31 11/16	805	38 1/2	978	7 1/2	190	22 5/8	575	32 1/2	825	28 - 1 1/2" -6UNC
36"	35 5/8	905	42 3/4	1086	8	203	25 13/16	655	37 13/16	960	32 - 1 1/2" -6UNC
40"	39 9/16	1005	47 1/4	1200	8 1/2	216	28 9/16	725	39 15/16	1015	36 - 1 1/2" -6UNC

SIZE	TORQUE VALUES, RPTFE SEAT AT DIFFERENT PRESSURES, LBS-IN							
	100 PSI		150 PSI		200 PSI		285 PSI	
	WET	DRY	WET	DRY	WET	DRY	WET	DRY
2"	195	221	221	274	257	327	283	372
2 1/2"	195	221	221	274	257	327	283	372
3"	248	372	274	407	301	451	336	504
4"	389	584	434	655	496	743	575	867
5"	593	894	655	982	743	1115	859	1292
6"	859	1283	965	1443	1097	1646	1292	1938
8"	1531	2292	1726	2593	1991	2983	2363	3549
10"	2283	3425	2620	3921	3062	4594	3682	5523
12"	3346	5027	3877	5815	4585	6868	5567	8355
14"	4806	7213	5558	8329	6550	9824	7939	11913
16"	6390	9577	7417	11125	8789	13179	10709	126064
18"	8098	12143	9497	14241	11356	17038	13966	20950
20"	11922	17879	13869	20799	16471	24702	20109	30163
24"	18277	27411	21525	32288	25853	38784	31916	47874
28"	27597	41395	32349	50777	38687	58025	47874	71328
30"	32288	45006	38010	57928	45639	634424	57928	78157
32"	36978	48617	43670	65080	52591	78887	65080	84985
36"	45192	55468	54016	78887	65788	97624	82268	97624
40"	69036	81029	81427	97801	97358	117759	121255	134930

How to order Mueller Steam Specialty  
Model 90 High Performance Lug Double Eccentric Butterfly Valve

Example: 04.0-90CHH85

This is a 4 lugged body valve with a carbon steel body, 316 SS stem, 316 SS Disc, RPTFE Seat and gear operator.

4.0 - 90 - C H H - 8 - 5

SIZE: \_\_\_\_\_

MODEL: \_\_\_\_\_  
90 - High Performance Lug Double Eccentric Butterfly Valve

BODY: \_\_\_\_\_  
C - Carbon Steel

STEM: \_\_\_\_\_  
H - 316SS (Standard 2" – 40")

DISC: \_\_\_\_\_  
H - 316SS

SEAT: \_\_\_\_\_  
8 - RPTFE

OPERATOR: \_\_\_\_\_  
5 - Gear Operator (Standard for all sizes)  
E - Electric Actuator

**Limited Warranty:** Mueller Steam Specialty warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Any implied warranties that are imposed by law are limited in duration to one year.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights.



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