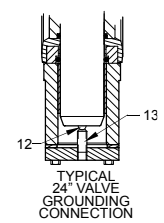
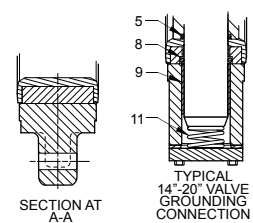
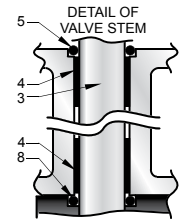
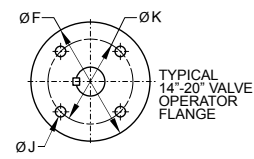
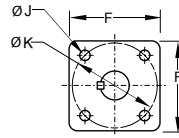
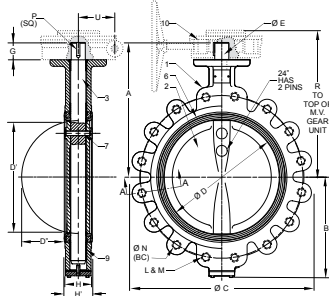


# ML Series\* 14"-24"

**Iron Butterfly Valve**  
**150 psi Non-Shock WOG**  
**Dead End Service to 150 psi Max**  
**Specifications: API-609 MSS SP-67 Type 1**



ABS Type Approved; Cat. A  
 CFR-46



## MATERIALS LIST

ITEM	PART	MATERIALS
1	BODY	CAST IRON ASTM A126 CL. B
		CAST IRON EPOXY COATED
		DUCTILE IRON ASTM A536
		DUCTILE IRON-EPOXY COATED
2	DISC	NP DUCTILE IRON ASTM A536
		ALUMINUM BRONZE ASTM B 148 **
3	STEM	STAINLESS STEEL ASTM A351 CF8M
		STAINLESS STEEL TYPE 416
4	TOP BEARING	REINFORCED NYLON
5	STEM O-RING	EPDM, BUNA, VITON (1)
6	LINER	BUNA
		EPDM
		VITON
		HYPALON
7	STEM PIN	ANSI 4140 OR AISI 6150
8	LINER O-RING	EPDM, BUNA, VITON (1)
9	LOWER BEARING	REINFORCED NYLON
10	OPERATOR	GEAR OPERATOR
		GEAR OPERATOR WITH MEMORY STOP
		GEAR OPERATOR WITH LOCK
		ACTUATOR-AIR/AIR (2)
		ACTUATOR-ELECTRIC (2)
11	GROUNDING SPRING	STAINLESS STEEL TYPE 302
12	GROUNDING BALL	AISI-1022
13	TENSION SCREW	AISI-1020

- (1) - O-Ring Matches Liner; Viton Default if no Direct Match.
- (2) - Consult Automation Department.
- (3) - 316 Stainless Steel used with CF8M Disc.
- \*\* Recommend Aluminum Bronze Disc in Water Service.

## DIMENSIONS

	VALVE SIZE					
	INCHES DN	14	16	18	20	24
A	INCHES	15.50	16.75	18.50	19.75	22.43
	mm	398	425	469	501	569
B	INCHES	11.56	12.69	13.63	15.13	18.06
	mm	258	322	346	384	458
C	INCHES	21.00	23.50	25.00	27.50	32.10
	mm	533	596	635	698	815
D	INCHES	13.25	15.25	17.24	19.24	23.25
	mm	336	387	438	489	591
D <sup>1</sup> (Chord Dia.)	INCHES	12.94	14.77	16.70	18.64	22.49
	mm	329	375	424	474	571
D <sup>11</sup> (Intrusion)	INCHES	5.06	5.59	6.34	7.09	8.55
	mm	128	142	161	180	217
E	INCHES	1.63	1.63	2.13	2.13	2.13
	mm	41	41	54	54	54
F	INCHES	6.50	6.50	9.50	9.50	7.50
	mm	165	165	241	241	190
G	INCHES	2.00	2.00	3.00	3.00	3.06
	mm	50	50	76	76	77
H (Body)	INCHES	3.06	4.00	4.50	5.00	6.06
	mm	77	101	114	127	153
H <sup>1</sup> (Liner)	INCHES	3.19	4.13	4.63	5.13	6.19
	mm	81	104	117	130	157
J	INCHES	0.69	0.69	0.81	0.81	0.81
	mm	17	17	20	20	20
K	INCHES	5.25	5.25	7.50	7.50	7.50
	mm	133	133	190	190	190
L	No. of Holes	12	16	16	20	20
M	Thread Size	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7
N	INCHES	18.75	21.25	22.75	25.00	29.50
	mm	476	540	577	635	749
P (Key Size)	INCHES	0.38	0.38	0.50	0.50	0.50
	mm	9	9	12	12	12
R	INCHES	17.25	18.75	19.63	20.88	25.00
	mm	438	476	458	530	635
U	INCHES	3.13	3.13	4.50	4.50	4.63
	mm	79	79	114	114	117

**\*Note:** The wetted surface of this product (In any material combination.) contacted by consumable water contains less than one quarter of one percent (.25%) of lead by weight.

\*\*Recommend Aluminum Bronze Disc in Water Service.

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 ⚠ State of California Prop 65 **WARNING:** Cancer and Reproductive Harm. For more information visit [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).



**M****L****2****3****4****V****A**

VALVE SERIES	BODY STYLE	OPERATOR	BODY MATERIAL	DISC MATERIAL	LINER MATERIAL	SPECIAL OPTIONS
H - H SERIES (250 PSI)	L - LUG BODY	1 - VALVE ONLY	2 - CAST IRON*	2 - NICKEL PLATED DUCTILE IRON	B - BUNA-N	S - 316 STEM W/AB OR NP DISC
M - M SERIES	W - WAFER BODY	2 - LEVER HANDLE	3 - DUCTILE IRON	3 - ALUMINUM/BRONZE	E - EPDM	A - EPOXY COATED BODY
O - O SERIES		3 - GEAR OPERATOR		4 - CF8M(316) STAINLESS STEEL	H - HYPALON	AD - ASSEMBLE DRY-NO
U - U SERIES (75 PSI)		5 - GEAR W/MEMORY STOP	*MILWAUKEE VALVE	7 - NYLON COATED DUCTILE IRON	NB - FDA BLACK NEOPRENE	
		9 - GEAR WITH LOCK	RESERVES THE RIGHT TO	8 - EPOXY COATED DUCTILE IRON	NW - FDA WHITE NEOPRENE	
			UPGRADE THE BODY		T - TEFLON OVER BUNA	
			WITHOUT NOTICE FOR NO		(AVAILABLE W/SS DISC ONLY)	
			ADDITIONAL COST.		V - VITON	
		*PNEUMATIC AND ELECTRIC				
		ACTUATION OPTIONS AVAILABLE				

Rev 7/1/2020

# BUTTERFLY FEATURES & OPTIONS

## STANDARD FEATURES

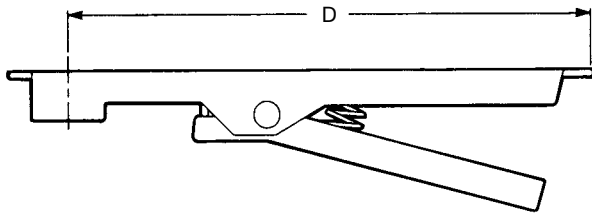
HEAVY DUTY DESIGN  
 PHENOLIC CARTRIDGE DESIGN  
 LOW TORQUE LINER  
 BUBBLE TIGHT SHUT OFF  
 LOW TORQUE POLYMER BEARING STD  
 DEAD END SERVICE (LUG ONLY)  
 FIELD REPAIRABLE

EXTENDED NECK BODY  
 LOW PROFILE DISC  
 BLOWOUT PROOF STEMS  
 STAINLESS STEEL STEMS (416)  
 BI-DIRECTIONAL SHUT OFF (EXCEPT AS NOTED)  
 VACUUM RATINGS TO 29" OF MERCURY

## OPERATORS

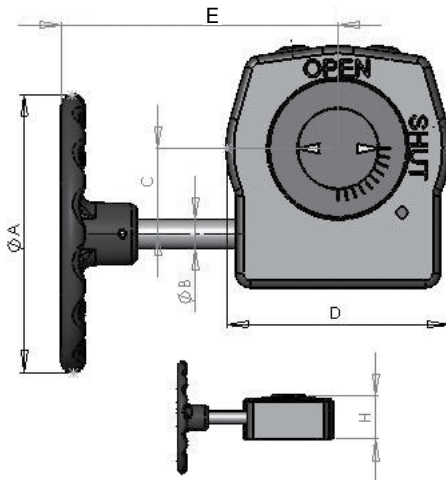
### MANUAL

10 POSITION, PAD LOCKABLE, DUCTILE IRON LEVER HANDLE –STD, EPOXY COATING OPTIONAL.



VALVE SIZE	PART NUMBER	T-DIMENSION (inches)
2, 2-1/2, 3	84016-LL	9.50
4, 5	84016-RL	11.00
6	84016-SL	11.00
8	84016-UL	15.00
10, 12	84016-WL	15.00

WEATHER RESISTENT GEAR OPERATOR, CAST IRON, MEMORY STOP AND LOCKING DEVICE OPTIONAL.



VALVE SIZE	PART NUMBER	GEAR RATIO	ØA	ØB	C	D	E	H
2-3	8115-24N-L	24:1	6.00	0.63	1.80	4.20	8.80	2.30
4-5	8115-24N-R	24:1	6.00	0.63	1.80	4.20	8.80	2.30
6	8115-24N-S	24:1	6.00	0.63	1.80	4.20	8.80	2.30
8	8115-30N-U	30:1	9.00	0.75	2.60	6.03	8.50	3.23
10-12	8115-30N-W	30:1	9.00	0.75	2.60	6.03	8.50	3.23
14-16	8115-48N-16	50:1	12.00	0.75	3.10	6.97	13.40	3.46
18-20	8115-65N-20	80:1	12.00	1.00	4.93	10.30	12.60	4.63
24	8115-78N-24	120:1	16.00	1.00	4.93	10.30	12.60	6.00

## ACTUATORS

PNEUMATIC OPERATORS  
 DOUBLE ACTING OPERATORS  
 SPRING-RETURN ACTUATORS  
 SOLENOID VALVES  
 ACTUATOR BRACKETS  
 LIMIT SWITCHES  
 VALVE POSITIONERS

120 VOLT AC AND DC VOLTAGES  
 NEMA 4 AND 7 HOUSING  
 4-20 mA DC VALVE POSITIONERS  
 ACTUATOR BRACKETS  
 EXTRA LIMIT SWITCHES  
 ELECTRIC ACTUATORS

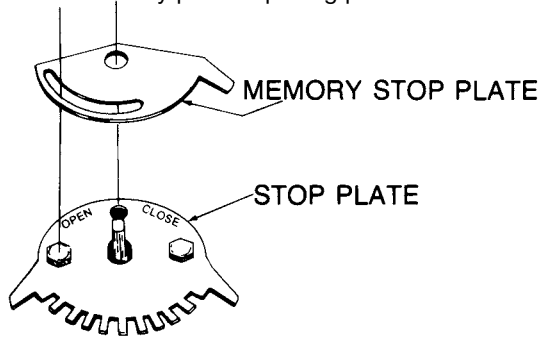
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# OPTIONS & ACCESSORIES

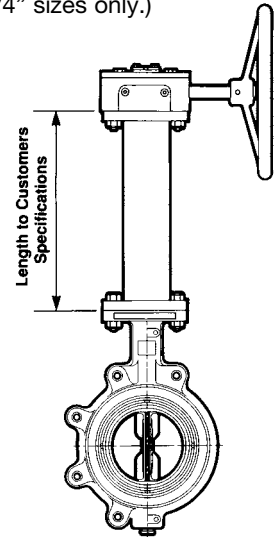
## MEMORY STOP

The "MS" Memory Stop provides an adjustable stop when the valve is used in a balancing application. The Memory Stop can be set to any preset opening point.



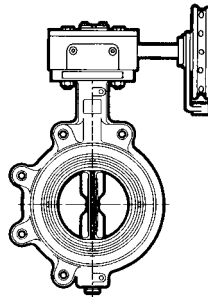
## STEM EXTENSION

Provides means of operation at a required distance away from the valve body. Manual or automatic, actuators are easily adapted to mounting flange on the extension. To order, specify distance from valve mounting-flange to base of operator. (Please note: Butterball® extension stems are available in 1-1/4" and 2-1/4" sizes only.)

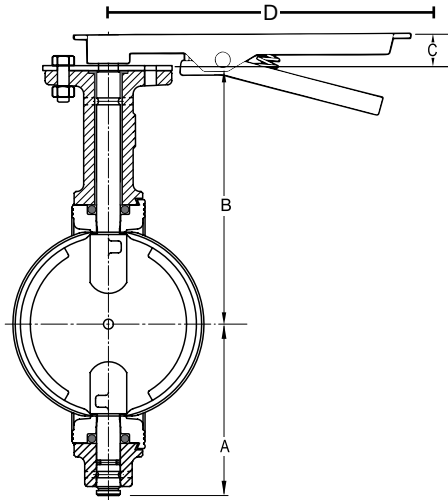


## CHAINWHEEL

The chain wheel provides for remote operation of the valve in high, normally out-of-reach locations. Attaches to the gear operator easily for quick valve open/close response. Sprocket rim is aluminum; chain is steel. Specify the handwheel diameter ("A" dimension) and chain length. Chainwheel sold separately.

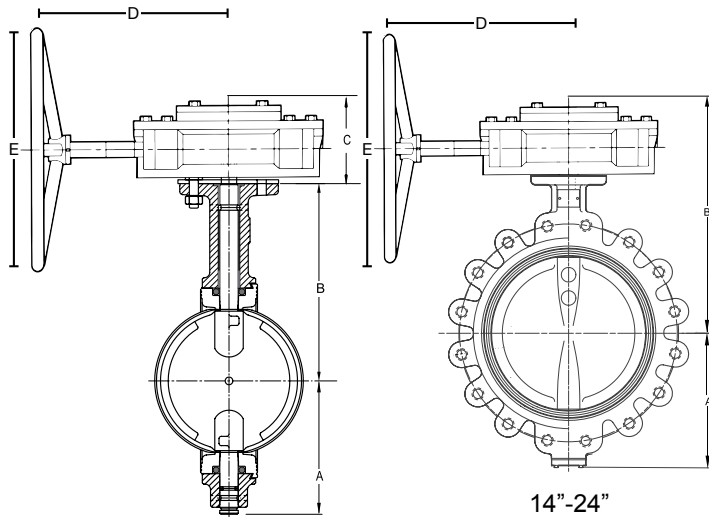


# Butterfly Height With Lever or Gear Operator



2"-12"

Butterfly with Lever Handle						
Size		A	B	C	D	Height
2"	INCHES	3.06	5.50	1.13	9.50	19.19
2 1/2"	INCHES	3.31	6.00	1.13	9.50	19.94
3"	INCHES	3.75	6.25	1.13	9.50	20.63
4"	INCHES	4.25	7.00	1.13	11.00	23.38
5"	INCHES	4.94	7.53	1.13	11.00	13.60
6"	INCHES	5.56	8.00	1.13	11.00	14.69
8"	INCHES	5.56	9.38	1.50	15.00	31.44
10"	INCHES	7.88	10.56	1.50	15.00	34.94
12"	INCHES	9.25	12.06	1.50	15.00	37.81



2"-12"

14"-24"

Butterfly with Gear Operator							
Size		A	B	C	D	E	Height
2"	INCHES	3.06	5.50	2.30	8.80	6.00	10.86
2 1/2"	INCHES	3.31	6.00	2.30	8.80	6.00	11.61
3"	INCHES	3.75	6.25	2.30	8.80	6.00	12.30
4"	INCHES	4.25	7.00	2.30	8.80	6.00	13.55
5"	INCHES	4.94	7.53	2.30	8.80	6.00	14.77
6"	INCHES	5.56	8.00	2.30	8.80	6.00	15.86
8"	INCHES	5.56	9.38	3.23	8.50	9.00	18.17
10"	INCHES	7.88	10.56	3.23	8.50	9.00	21.67
12"	INCHES	9.25	12.06	3.23	8.50	9.00	24.54
14"	INCHES	11.56	17.25	-	13.40	12.00	28.81
16"	INCHES	12.69	18.75	-	13.40	12.00	31.44
18"	INCHES	13.63	19.63	-	12.60	12.00	33.26
20"	INCHES	15.13	20.88	-	12.60	12.00	36.01
24"	INCHES	18.06	25.00	-	12.60	16.00	43.06

**Note:** 30"-48" Please see specification sheet.

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