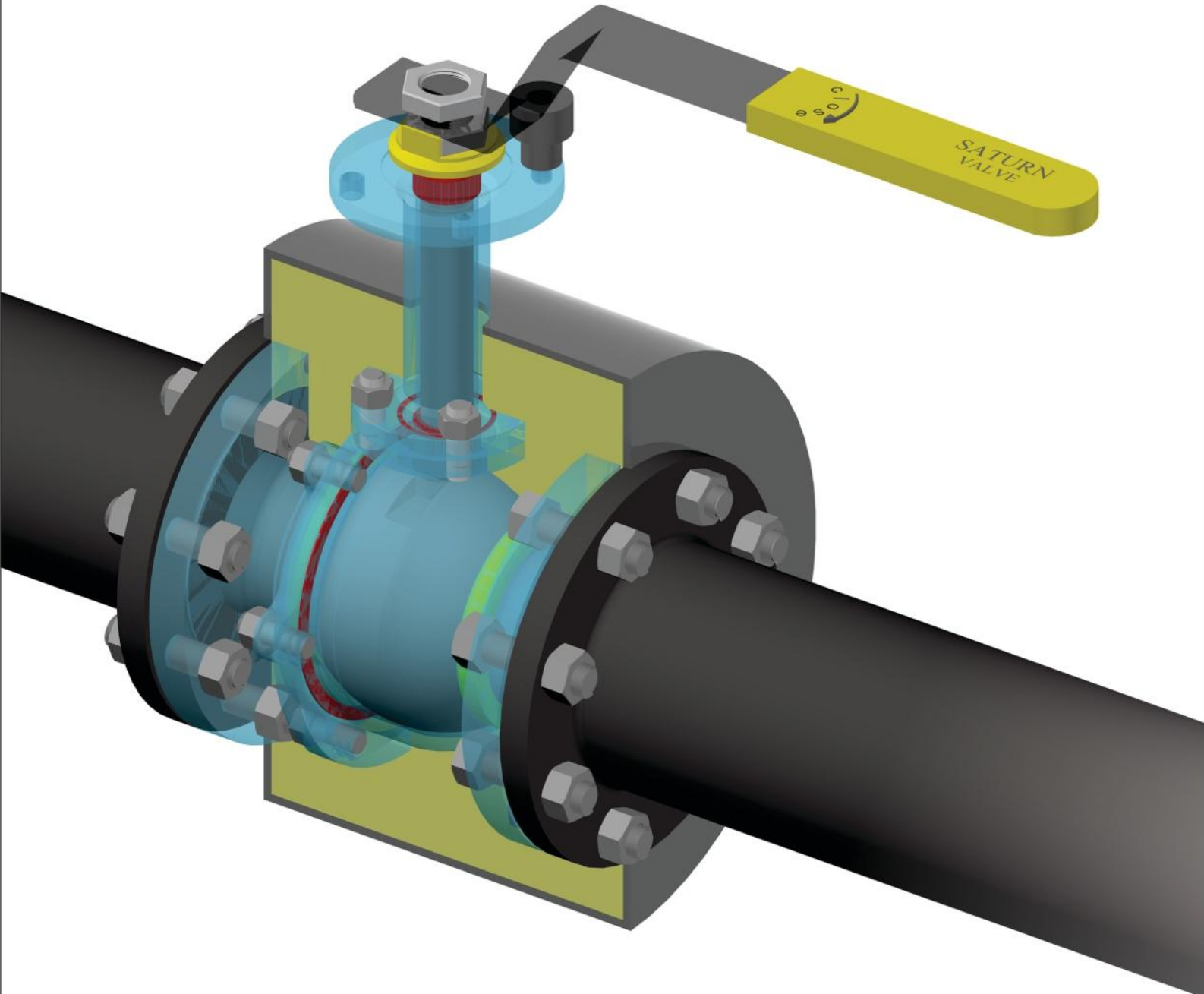


ENGINEERING RE-DEFINED



SATURN<sup>®</sup>  
VALVES



**EXTENDED STEM BALL VALVE**



ISO 9001  
BUREAU VERITAS  
Certification



50  
Years  
OF SERVICE

Mevada Engineering Works Pvt. Ltd. (MEWPL) offers Extended Stem Ball valve for industrial applications like hot & cold water, liquid ammonia etc. where insulation is required to prevent energy loss & easy operation of valve & on line gland maintenance is necessary. Variation of stem extension is available up to 175mm.

Size	Type	Class	Model No.
15-200 mm 1/2" to 8"	Standard	150	BL-X-2-F-F-A1
	Fire Safe	150	BL-FX-2-F-F-A1
	Standard	300	BL-X-2-F-F-A2
	Fire Safe	300	BL-FX-2-F-F-A2
	Standard	*600	BL-X-2-F-F-A3
	Fire Safe	*600	BL-FX-2-F-F-A3

\* Given only for information, dimensions can be provided on request.

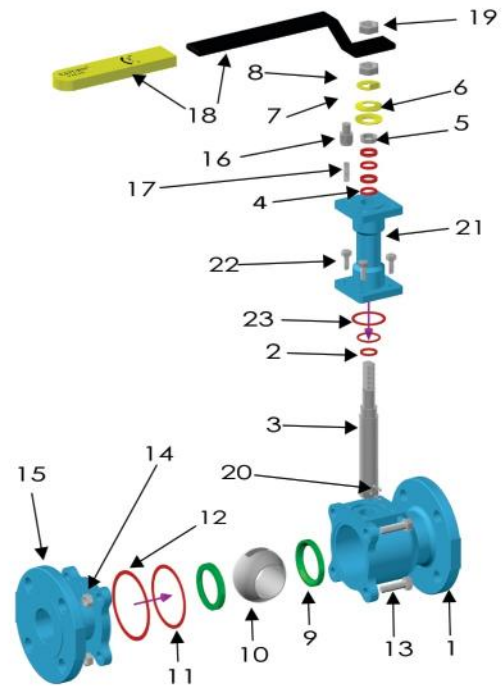
**Cryogenic service Ball valve** is also available to satisfy the need of Road Tankers, Terminal Unloading stations, High purity cryogenic systems, Steel Production plants, LN2, CO2 storage vessels etc. They are designed & manufactured as per BS 6364 and BS EN ISO 17292 and tested as per API 598 & BS EN ISO 12266-1.



Temperature range: -46 °C to -196 °C

## STANDARD COMPLIANCE

DESIGN :- ASME B 16.34, BS EN ISO 17292  
 PRESSURE TESTING :- API 598 / BS EN ISO 12266-1  
 END TO END :- ASME B16.10  
 FLANGE DIMENSIONS :- ASME B16.5 / BS 10 / DIN 1092-1  
 MOUNTING PAD :- ISO 5211 / DIN 3337  
 MATERIAL CERTIFICATION :- DIN 50.049-3 1B  
 NACE MR 01-75 COMPLIANT  
 QUALITY SYSTEMS/CERTIFICATIONS :- ISO 9001



SR.NO	DESCRIPTION			MATERIAL			
1	BODY	A 216 GR. WCB	A 352 GR. LCB/A 352 GR. LCC	SS304 A 351 GR. CF8	SS304 L A 351 GR. CF3	SS316 A 351 GR. CF8M	SS316 L A 351 GR. CF3M
2	THRUST WASHER			PTFE/GFT/CFT/TFM 1600/PEEK			
3	STEM	SS304/SS316		SS304	SS304 L	SS316	SS316L
4	GLAND SEAL			PTFE/GFT/CFT/GRAPHITE			
5	GLAND SPACER			SS316			
6	BELLEVILLE WASHER			SPRING STEEL ZINC PLATED/SS304			
7	LOCK WASHER			SPRING STEEL ZINC PLATED/SS304			
8	GLAND NUT	SS304		SS316			
9	SEAT			PTFE/GFT/CFT/TFM 1600/PEEK			
10	BALL	A 351 GR. CF8/A 351 GR. CF8M		A 351 GR. CF8	A 351 GR. CF3	A 351 GR. CF8M	A 351 GR. CF3M
11	BODY SEAL PRIMARY			PTFE			
12	BODY SEAL SECONDARY			GRAPHITE			
13	BODY STUD	A 193 GR. B7	A 193 GR. B7M	A 1 93 GR. B7/A 1 93 GR. B8/A 1 93 GR. B8M			
14	BODY NUT	A 194 GR. 2H	A 194 GR. 2HM	A 1 94 GR. 2H/A 1 93 GR. 8/A 1 93 GR. 8M			
15	ADAPTER	A 216 GR. WCB	A 352 GR. LCB/A 352 GR. LCC	A 351 GR. CF8	A 351 GR. CF3	A 351 GR. CF8M	A 351 GR. CF3M
16	STOPPER			CARBON STEEL ZINC PLATED/SS304			
17	GRUB SCREW			HIGH TENSILE ALLOY STEEL			
18	LEVER			CARBON STEEL POWDER COATED/STAINLESS STEEL			
19	LEVER NUT			CARBON STEEL ZINC PLATED/SS304			
20	ANTISTATIC DEVICE			SS316 L			
21	STUFFING BOX	A 216 GR. WCB	A 352 GR. LCB/A 352 GR. LCC	A 351 GR. CF8	A 351 GR. CF3	A 351 GR. CF8M	A 351 GR. CF3M
22	STUFFING BOX BOLT			A 193 GR. B8			
23	STUFFING BOX SEAL			PTFE/GRAPHITE			



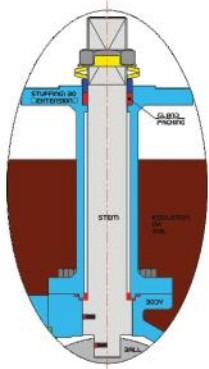
Cryogenic Ball Valve

Extended Pipe Ball Valve

Extended Pipe Wall Mounted Ball Valve

On / Off Ball Valve

# DESIGN FEATURES

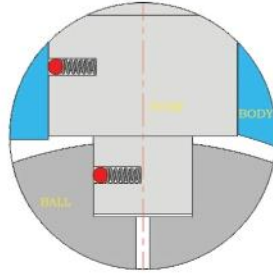


## Extension

Extended length of stem provides solution for use in services where access to operator is difficult or to provide insulation over valve to prevent loss of energy. Extension also provides easy access to gland packing to make maintenance & replacement easy.

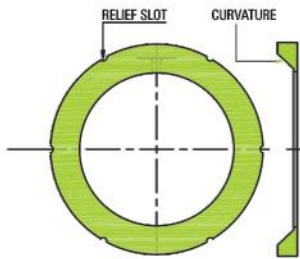
## Blow-out Proof Stem

Stem is retained through bolted stuffing box which prevents ejection of stem under pressure or when gland packing is removed or loosened.



## Anti-Static Device

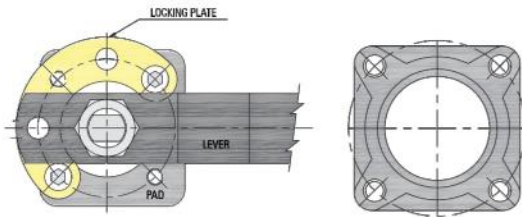
When static are generated due to high velocity of fluid and concentrated on the ball, the spring-loaded pins installed on stem are provided to ensure electrical continuity throughout the ball, stem & body. In addition to this the inter components like graphite body seal & gland seal have good electric conductivity which discharges the static.



## Seat Design

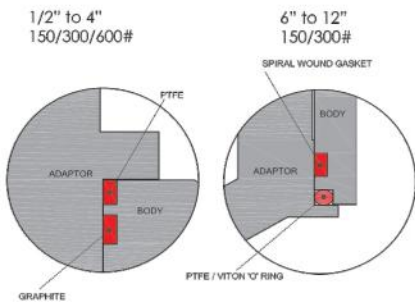
The special design seat feature relief slots or seat O.D. Clearance to relieve pressure past the upstream seat. This design reduces friction, minimize seat wear and lowering operating torque. The curvature design feature minimize between the ball & seat when the valve is in open position, thus it prevent cold flow, lowers torque and reduced wear.

The pressure relief slots design also features automatic pressure relief from upstream in continuous pressure. During closing of the valve, the maximum surge pressure occurs, during which the downstream seat can be forced to intrude into the ball port and valve can become inoperative. The pressure relief slots prevent this potential failure. When pressure causes the upstream seat to move against the ball and ball moves to the downstream seat to effect and maintain a seal, the pressure simply leaks into the ball port through the relief slots.



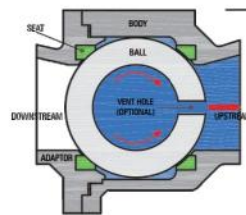
## ISO 5211 MOUNTING PAD

All our Ball valves are Equipped with an Integral mounting pad as per ISO 5211 that facilitates easy mounting of hardware viz. pneumatic Actuator, Gear box, Limit Switch, Locking arrangement, etc.



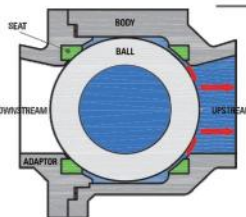
## Vent Hole in Ball (optional)

When the pressure inside the valve body cavity exceeds the line pressure due to thermal expansion of the liquids entrapped in the valve body; to relieve this vapor pressure positively vent hole is provided towards upstream that helps preventing seat life, reduces operational torque and chances of accidents.



## Floating Ball

A Floating Ball design offer efficient bi-directional downstream sealing. When line pressure is applied to the closed ball, it moves slightly (or floats) downstream to maintain contact with the downstream seat where primary sealing occurs. The downstream sealing also overcomes two most common difficulties in the use of conventional ball valves; seat damage & high operating torque.



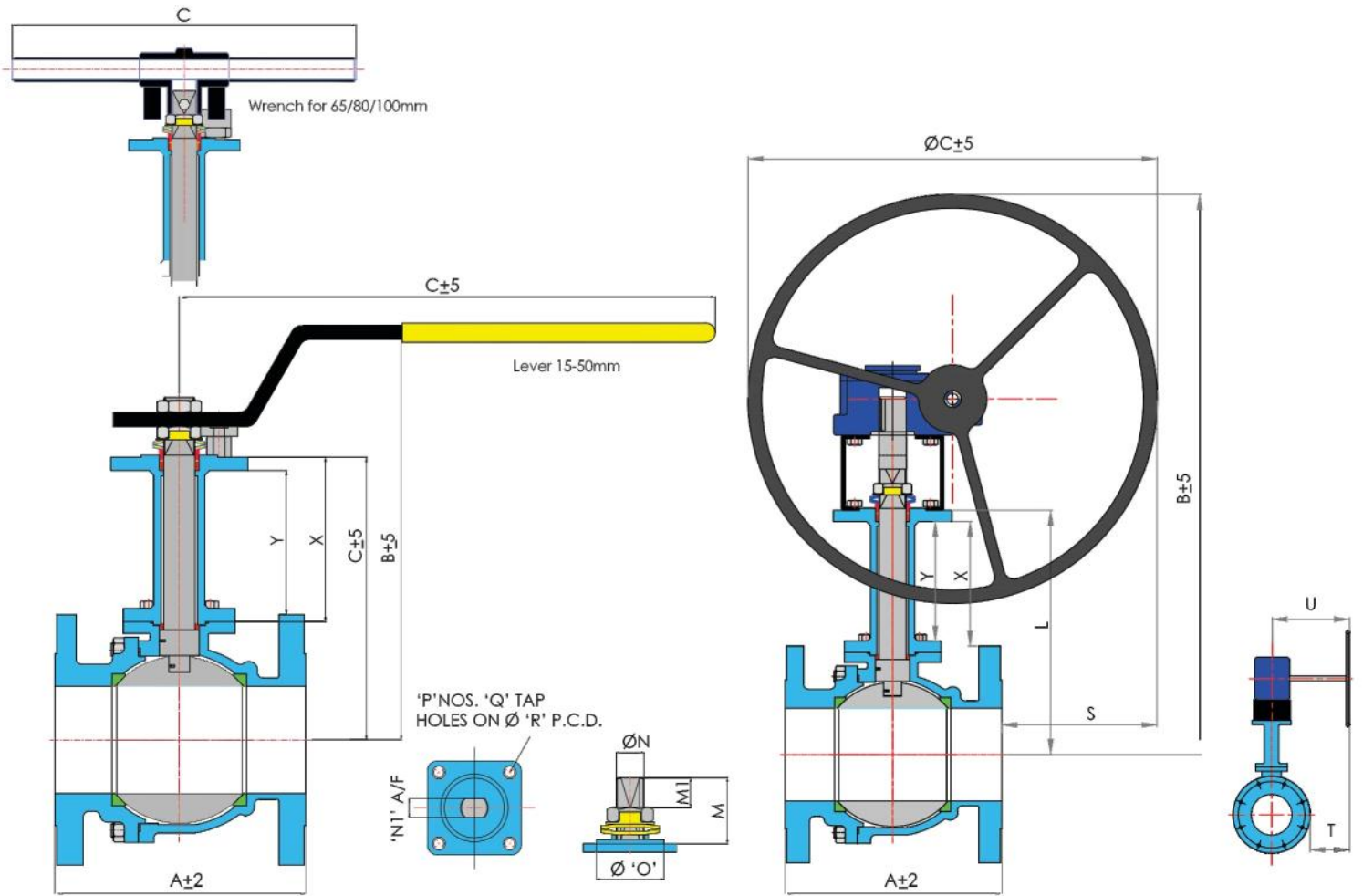
## Double Body Seals

Double body sealing ensures positive body joint sealing against pipeline stresses. The inner body seal of elastomer prevents the contact of the fluid with the outer body seal of graphite having pure carbon.

For 6" & above step is provided with 'O' ring as inner body seal against pipeline stresses & joint expansions.

Note: Dual body seal arrangement is provided only in Fire safe ball valves

# DIMENSIONS



VALVE SIZE	A	FULL BORE CLASS 150																C	S	T	U					
		ISO PAD DIMENSIONS								EXTENSION HEIGHT (X)																
		← EXTENSION HEIGHT (X) → INSULATION THICKNESS FROM FLANGE O.D. TO LOWER SURFACE OF ISO PAD (Y)				← EXTENSION HEIGHT (X) → TOTAL HEIGHT OF ISO PAD FROM CENTER OF THE PORT HEIGHT (L)				M	M1	Ø N	A/F N1	Ø O	P	Q	PCD Ø R					ISO 5211	100	125	150	175
15	108	70	95	120	145	129.5	154.5	179.5	204.5	15	9.5	11.1	6.3	25	4	M5	36	F03	157.0	182.0	207.0	232.0	125	-	-	-
20	118	70	95	120	145	133	158	183	208	16.5	7.5	11.1	6.3	30	4	M5	42	F04	164.0	189.0	214.0	239.0	125	-	-	-
25	127	70	95	120	145	139.5	164.5	189.5	214.5	24.7	12	12.7	7.9	30	4	M5	42	F04	175.2	200.2	225.2	250.2	150	-	-	-
40	154	70	95	120	145	146	171	196	221	32.7	13.7	14.3	9.5	35	4	M6	50	F05	189.0	214.0	239.0	264.0	180	-	-	-
50	178	70	100	125	150	160	185	210	235	34	15	17	11.1	55	4	M8	70	F07	203.0	228.0	253.0	278.0	200	-	-	-
80	203	75	105	130	155	188.5	213.5	238.5	263.5	40	20.6	23.8	15.9	70	4	M10	102	F10	271.9	296.9	321.9	346.9	335	-	-	-
100	229	80	105	130	155	208	233	258	283	45.5	21.2	28.6	19	70	4	M10	102	F10	306.3	331.3	356.3	381.3	335	-	-	-
150 LEVER	267	120	145	170	195	273	298	323	348	66.5	39.4	35	22.2	85	4	M12	125	F12	378.1	403.1	428.1	453.1	500	-	-	-
150 GEAR	267	120	145	170	195	273	298	323	348	-	-	-	-	-	-	-	-	-	507.5	532.5	*	*	350	121.5	143	283
200 GEAR	292	130	160	185	210	320	345	370	395	156	20.28	30	-	85	4	M12	125	F12	693	718	505.72	*	600	239	160	332

ALL DIMENSIONS ARE IN MM

\*DIMENSIONS WILL BE FURNISHED ON CLIENTS REQUEST

VALVE SIZE	A	FULL BORE CLASS 300																C	h	S	T	U					
		ISO PAD DIMENSIONS								EXTENSION HEIGHT (X)																	
		← EXTENSION HEIGHT (X) → INSULATION THICKNESS DISTANCE AVAILABLE TO ACCOMMODATE INSULATION THICKNESS (Y)				← EXTENSION HEIGHT (X) → ISO PAD HEIGHT (L)				M	M1	Ø N	A/F N1	Ø O	P	Q	PCD Ø R						ISO 5211	100	125	150	175
15	140	70	95	120	145	129.5	154.5	179.5	204.5	15	9.5	11.1	6.3	25	4	M5	36	F03	157.0	182.0	207.0	232.0	125	22	-	-	-
20	152	65	90	115	140	133	158	183	208	16.5	7.5	11.1	6.3	30	4	M5	42	F04	164.0	189.0	214.0	239.0	125	22	-	-	-
25	165	65	90	115	140	139.5	164.5	189.5	214.5	24.7	12	12.7	7.9	30	4	M5	42	F04	175.2	200.2	225.2	250.2	150	23	-	-	-
40	190	55	80	105	130	146	171	196	221	32.7	13.7	14.3	9.5	35	4	M6	50	F05	189.0	214.0	239.0	264.0	180	24	-	-	-
50	216	65	90	115	140	160	185	210	235	34	15	17	11.1	55	4	M8	70	F07	203.0	228.0	253.0	278.0	200	24	-	-	-
80	282	70	95	120	145	188.5	213.5	238.5	263.5	40	20.6	23.8	15.9	70	4	M10	102	F10	271.9	296.9	321.9	346.9	335	64	-	-	-
100	305	70	95	120	145	208	233	258	283	45.5	21.2	28.6	19	70	4	M10	102	F10	306.3	331.3	356.3	381.3	335	74	-	-	-
150 LEVER	403	100	125	150	175	273	298	323	348	66.5	39.4	35	22.2	85	4	M12	125	F12	378.1	403.1	428.1	453.1	500	78	-	-	-
150 GEAR	403	100	125	150	175	273	298	323	348	-	-	-	-	-	-	-	-	-	507.5	532.5	*	*	350	40	124	283	
200 GEAR	419	120	145	170	195	322	347	372	397	156	20.28	30	-	85	4	M12	125	F12	-	-	-	-	600	175	141	332	

ALL DIMENSIONS ARE IN MM



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