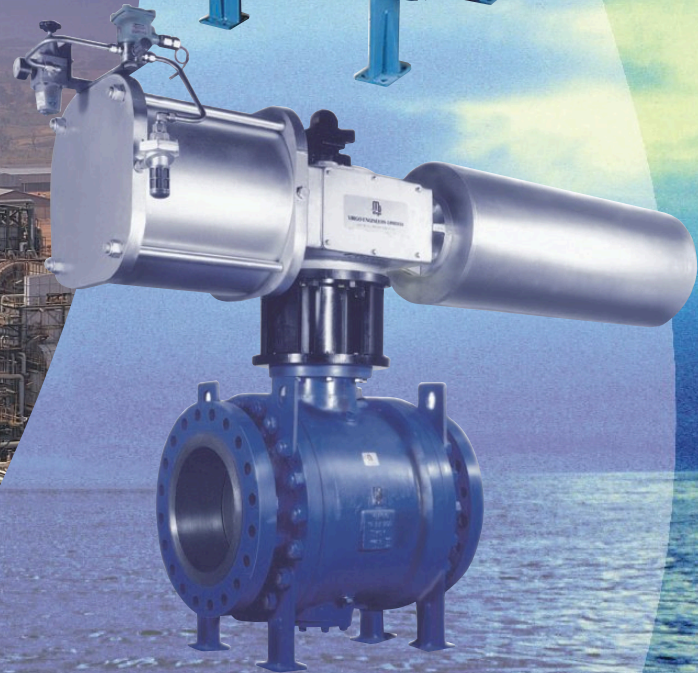




UNIMAC
CONTROL SYSTEMS

TRUNNION MOUNTED BALL VALVES



MANUFACTURING RANGE

Size Range available

Bore	ASME class	Size (Inch/mm)																	
		2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	40"	42"	48"	56"
		50	80	100	150	200	250	300	350	400	450	500	600	750	900	1000	1050	1200	1400
FULL	150#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	300#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	600#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	900#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
	1500#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
	2500#	✓	✓	✓	✓	✓	✓	✓											
REDUCED	150#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	300#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	600#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	900#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
	1500#	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
	2500#	✓	✓	✓	✓	✓	✓	✓											

22", 26", 28", 32", and 34" Valves are also available against specific request

Constructional Variation available

Design	Class/Size					
	150#	300#	600#	900#	1500#	2500#
2-piece (N2)	2"~12"	2"~12"	2"~12"	2"~12"		
3-piece (N3)	2"~56"	2"~56"	2"~56"	2"~36"	2"~24"	2"~12"



SPECIAL TESTING CAPABILITIES

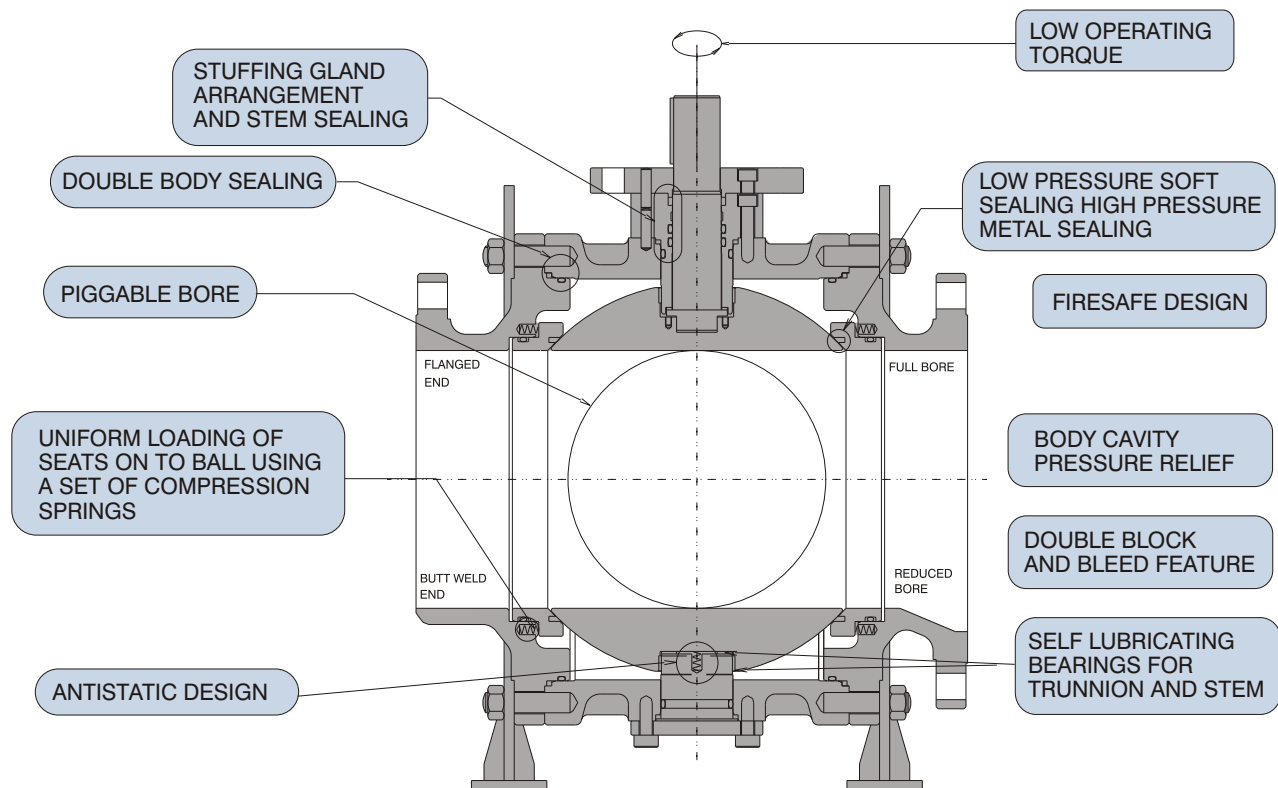
UNIMAC has the latest state-of-the-art testing facility available and are practically equipped to perform most stringent and variety of tests possible on Ball Valves. Few of them are, Fugitive Emission testing, Cryogenic testing, high pressure Nitrogen/Gas testing, Vacuum testing (Helium leak detection), Sulphide stress cracking (SSC) testing and Hydrogen Induced Cracking (HIC) testing.

DESIGN & TESTING STANDARDS

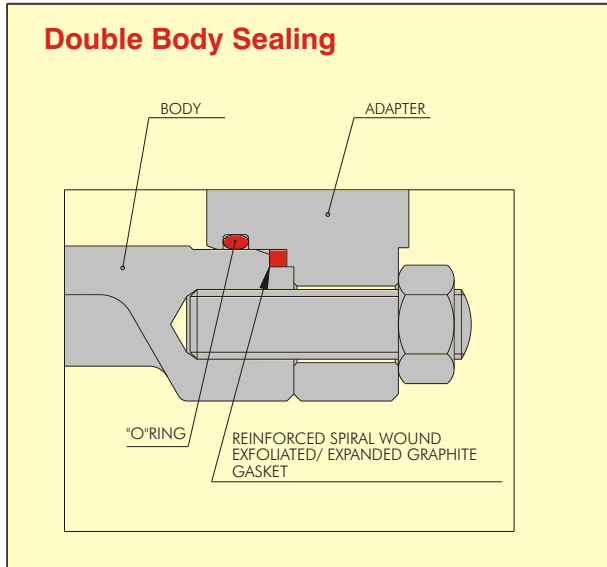
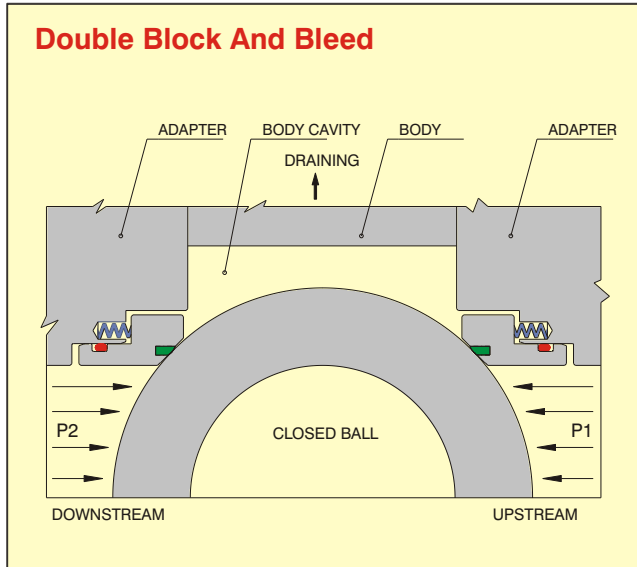
- UNIMAC valves are designed and manufactured as per ASME B 16.34, API 6D & BS 5351/BS EN ISO 17292
These standards cover Pressure - Temperature ratings, minimum shell thickness, bore diameter for each size/class.
- Valve body and trim can be offered as per NACE MR 01-75 compliant.
- Castings inspection as per MSS-SP 53, 54, 55, 59, 93 & 94
- Actuator mounting pad on the valve as per ISO 5211
- Fugitive emission qualification as per ISO 15848, TA - Luft : VDI 2440
MESG 77/312 and EPA 40_CFR 60-F
- Other applicable standards :
 - Valve Bore : API 6D
 - Face to Face : ASME B 16.10 / API 6D
 - Flange dimensions : ASME B 16.5 / B 16.47 / MSS SP 44
 - Butt weld valve ends : ASME B 16.25 / B 31.3 / B 31.4 / B 31.8
 - Pressure tests : API 6D/API 598 / BS EN 12266-1&2
 - Fire safe test : API 607/ API 6FA / BS 6755 Part II / BS EN ISO 10497
 - Drain / Vent / Bypass : MSS SP 45 / API 6D

Quality Systems / Certification : ISO9001-2015, PED, CRN , FIRE SAFE, CRYO

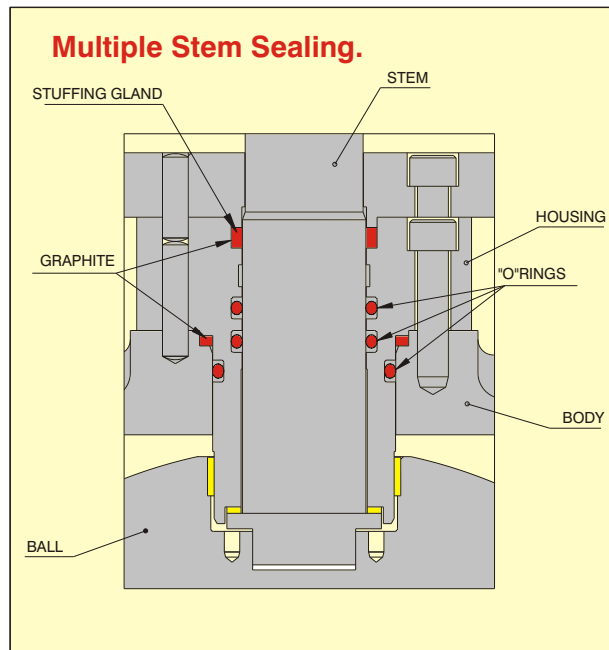
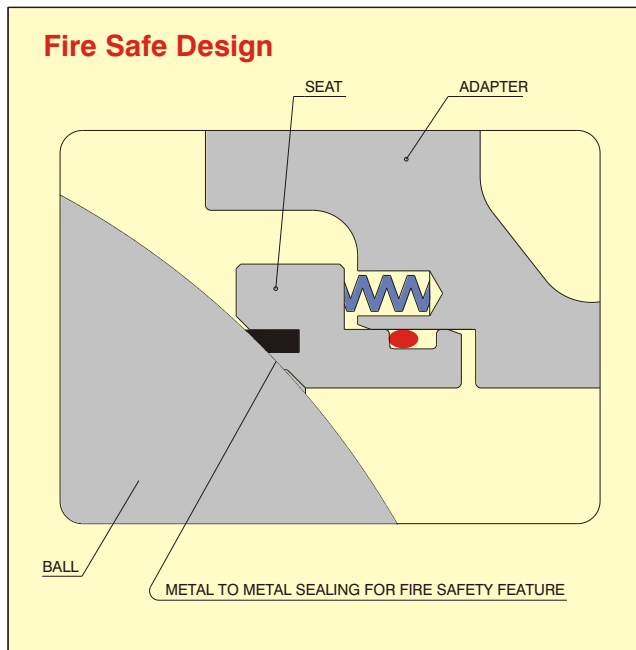
Trunnion Mounted Ball Valve



DESIGN FEATURES



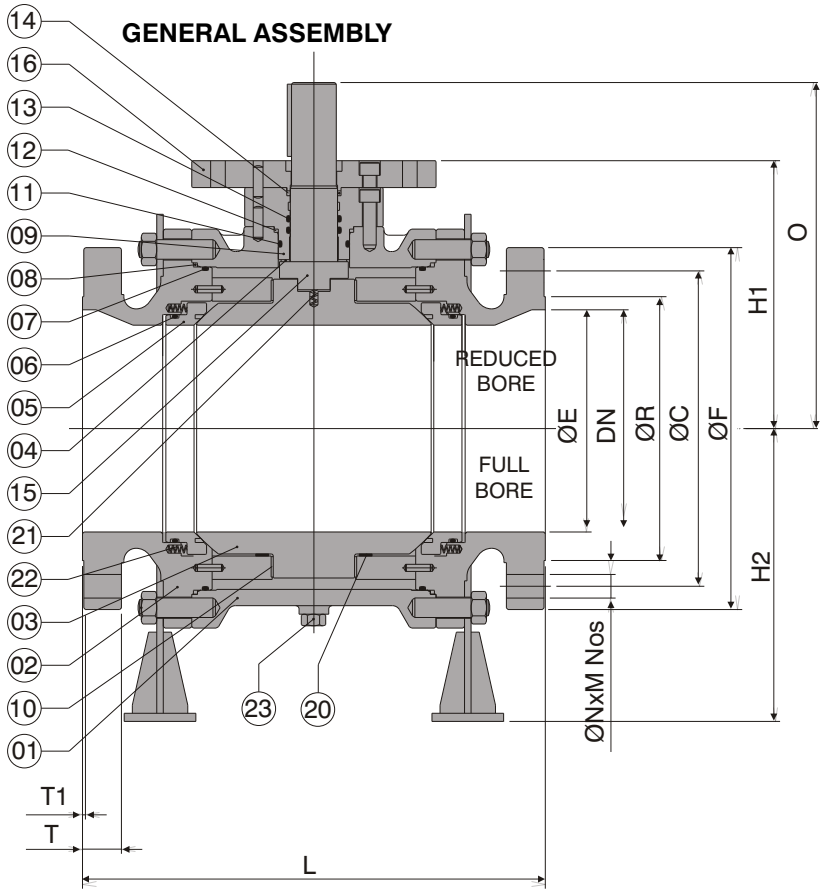
- Spring loaded floating seats maintain contact with the ball and provide tight shut off even at low pressure differential. Independent sealing of upstream and downstream facilitates draining of fluid from the body cavity, and thus the double block and bleed operation.
- Double seal combination of O-ring and spiral wound gasket ensure perfect body joint sealing. UNIMAC valves therefore meet or exceed the fugitive emission requirements across wide range of pressure and temperature applications. Valves are suitable for both above and underground installations.



- In the event of fire, soft insert gets burnt and spring loaded seats ensure metal to metal sealing.
- A triple sealing arrangement in stem area prevents leakage to atmosphere. It includes double sealing with O-rings and graphite seal at the top of stem housing. The blow out proof stem enables positive stem retention.

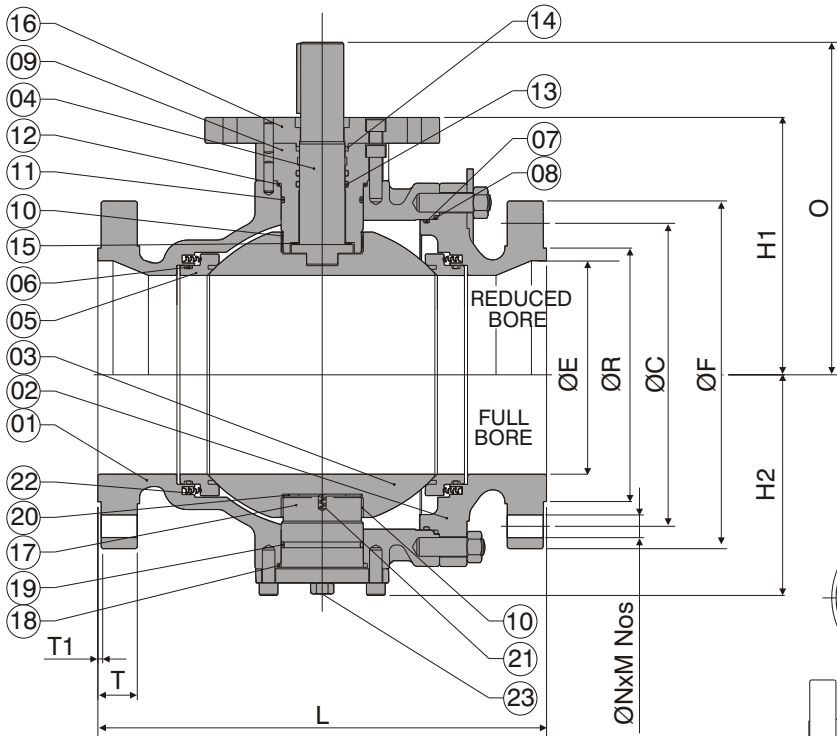
Corrosion Protection and Painting

- ☞ All castings are shot blasted and are subjected to dewatering oil coats. Carbon Steel valves are Zinc phosphated and internally lacquered before final assembly.
- ☞ Valves are thoroughly cleaned and primer coated with Epoxy Zinc Phosphate primer, followed by a final coat of Epoxy Blue shade applied in semi-gloss finish.
- ☞ Valves are shipped in vapor corrosion inhibitor impregnated paper bags with desiccant pouches to prevent corrosion due to saline environment.



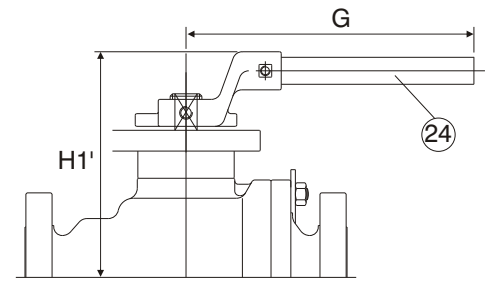
SERIES N3

ITEM NO.	PART NAME
01	BODY
02	BODY ADAPTER
03	BALL
04	STEM
05	SEAT + INSERT
06	O RING (SEAT)
07	O RING (BODY ADAPTER)
08	GASKET (BODY)
09	STEM HOUSING
10	BUSH BEARING
11	O RING (STEM HOUSING)
12	GASKET (STEM HOUSING)
13	O RING (STEM)
14	GASKET (STEM)
15	STEM THRUST WASHER
16	ISO MOUNTING FLANGE
17	TRUNNION
18	GASKET (TRUNNION)
19	O RING (TRUNNION)
20	TRUNNION THRUST WASHER
21	ANTISTATIC SPRINGS
22	SEAT SPRINGS
23	DRAIN PLUG/BLEED VALVE
24	HAND LEVER
25	GEAR BOX

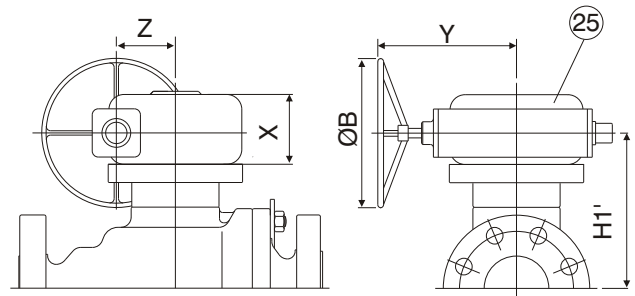


SERIES N2

Lever / Gear Box Details



VALVE WITH LEVER



VALVE WITH GEAR

DIMENSIONAL DETAILS FOR 3 PIECE DESIGN - N3 SERIES

ANSI 300

Dimensions in "inches"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
# 2"x1-1/2"	2.05	1.5	8.5	8.5	9.13	6.5	5	0.75	8	3.6	0.88	0.06	4.33	5.15	3.6	5.63	15.7	-	-	-	-	51	0.99	-
# 3" x 2"	2.99	2.01	11.1	11.1	11.7	8.25	6.62	0.88	8	5.0	1.12	0.06	5.85	6.91	4.33	7.55	15.7	-	-	-	-	88	0.99	-
# 3"	2.99	2.99	11.1	11.1	11.7	8.25	6.62	0.88	8	5.0	1.12	0.06	7.83	9.7	5.91	10.2	-	9.84	3.11	12.2	3.07	136	-	31.9
# 4" x 3"	4.02	2.99	12	12	12.6	10	7.88	0.88	8	6.19	1.25	0.06	7.83	9.7	5.91	10.2	-	9.84	3.11	12.2	3.07	172	-	31.9
4"	4.02	4.02	12	12	12.6	10	7.88	0.88	8	6.19	1.25	0.06	8.43	10.3	7.09	10.8	-	11.8	3.74	12.6	3.07	218	-	31.9
6" x 4"	5.98	4.02	15.9	15.9	16.5	12.5	10.6	0.88	12	8.5	1.44	0.06	8.43	10.3	7.09	10.8	-	11.8	3.74	12.6	3.07	275	-	31.9
6"	5.98	5.98	15.9	15.9	16.5	12.5	10.6	0.88	12	8.5	1.44	0.06	9.5	12.6	9.61	12.3	-	15.7	5.12	13.8	5.18	352	-	96.8
8" x 6"	7.99	5.98	19.8	20.5	20.4	15	13	1.00	12	10.6	1.62	0.06	9.5	12.6	9.61	12.3	-	19.7	5.12	14.5	5.18	682	-	96.8
8"	7.99	7.99	19.8	20.5	20.4	15	13	1.00	12	10.6	1.62	0.06	10.6	13.7	11.6	13.4	-	19.7	4.45	13	5.18	757	-	72.6
10" x 8"	10	7.99	22.4	22	23	17.5	15.3	1.12	16	12.8	1.88	0.06	10.6	13.7	11.6	13.4	-	21.7	5.12	13.4	5.18	860	-	72.6
10"	10	10	22.4	22	23	17.5	15.3	1.12	16	12.8	1.88	0.06	13	17	12.6	16.7	-	21.7	6.69	23.8	8.9	990	-	198
12" x 10"	12	10	25.5	25	26.1	20.5	17.8	1.25	16	15	2.00	0.06	13	17	12.6	16.7	-	23.6	6.69	23.8	8.9	1237	-	198
14" x 10"	13.3	10	30	30	30.6	23	20.3	1.25	20	16.3	2.12	0.06	13	17	12.6	16.7	-	21.7	6.69	23.8	8.9	1336	-	198
12"	12	12	25.5	25	26.1	20.5	17.8	1.25	16	15	2.00	0.06	15	18.8	14.6	18.8	-	19.7	6.69	23.8	8.9	1441	-	198
14" x 12"	13.3	12	30	30	30.6	23	20.3	1.25	20	16.3	2.12	0.06	15	18.8	14.6	18.8	-	19.7	6.69	23.8	8.9	1712	-	198
16" x 12"	15.2	12	33	33	33.6	25.5	22.5	1.38	20	18.5	2.25	0.06	15	18.8	14.6	18.8	-	19.7	6.69	23.8	8.9	1835	-	198
14"	13.3	13.3	30	30	30.6	23	20.3	1.25	20	16.3	2.12	0.06	15.7	25.5	16.2	20.3	-	19.7	6.69	23.8	8.9	2178	-	251
16" x 14"	15.2	13.3	33	33	33.6	25.5	22.5	1.38	20	18.5	2.25	0.06	15.7	25.5	16.2	20.3	-	19.7	6.69	23.8	8.9	2200	-	251
18" x 14"	17.2	13.3	36	36	36.6	28	24.8	1.38	24	21	2.38	0.06	15.7	25.5	16.2	20.3	-	19.7	6.69	23.8	8.9	2486	-	251
16"	15.2	15.2	33	33	33.6	25.5	22.5	1.38	20	18.5	2.25	0.06	18.1	27.1	18.4	22.8	-	29.5	7.87	28.8	13.4	2204	-	484
18" x 16"	17.2	15.2	36	36	36.6	28	24.8	1.38	24	21	2.38	0.06	18.1	27.1	18.4	22.8	-	29.5	7.87	28.8	13.4	3080	-	484
20" x 16"	19.3	15.2	39	39	39.8	30.5	27	1.38	24	23	2.5	0.06	18.1	27.1	18.4	22.8	-	29.5	7.87	28.8	13.4	3333	-	484
18"	17.2	17.2	36	36	36.6	28	24.8	1.38	24	21	2.38	0.06	19.6	31.4	18.7	26.7	-	29.5	13.6	28.8	13.9	3421	-	484
20" x 18"	19.3	17.2	39	39	39.8	30.5	27	1.38	24	23	2.5	0.06	19.6	31.4	18.7	26.7	-	29.5	13.6	28.8	13.9	4484	-	484
20"	19.3	19.3	39	39	39.8	30.5	27	1.38	24	23	2.5	0.06	20.4	32.2	19.9	27.5	-	29.5	13.6	28.8	13.9	5084	-	653
24" x 20"	23.3	19.3	45	45	45.9	36	32	1.62	24	27.3	2.75	0.06	20.4	32.2	19.9	27.5	-	29.5	13.6	28.8	13.9	6158	-	653
24"	23.3	23.3	45	45	45.9	36	32	1.62	24	27.3	2.75	0.06	25.5	32.2	29.3	32.6	-	39.6	10.4	29.9	12	7959	-	988
30" x 24"	28.9	23.3	55	55	56	43	39.3	1.88	28	33.8	3.62	0.06	25.5	32.2	29.3	32.6	-	39.6	10.4	29.9	12	9947	-	988
30"	28.9	28.9	55	55	56	43	39.3	1.88	28	33.8	3.62	0.06	28.6	-	31.4	34.7	-	*	*	*	*	15851	-	*
36" x 30"	34.4	28.9	68	68	69.1	50	46	2.12	32	40.3	4.12	0.06	28.6	-	33.0	34.7	-	*	*	*	*	19815	-	*
36"	34.4	34.4	68	68	69.1	50	46	2.12	32	40.3	4.12	0.06	33.0	-	35.9	39.0	-	*	*	*	*	23662	-	*
40"	38.4	38.4	72	72	70.9	48.8	45.5	1.75	32	42.75	4.5	0.06	38.2	-	39.8	45.8	-	*	*	*	*	31599	-	*
42"	40.2	40.2	72	72	73.1	50.8	47.5	1.75	32	44.8	4.69	0.06	39.8	-	41.9	47.4	-	*	*	*	*	36286	-	*
48"	45.9	45.9	79.5	79.5	80.7	57.8	54	2	32	51.3	5.25	0.06	44.7	-	45.9	53.3	-	*	*	*	*	54972	-	*
56"	53.54	53.54	96.30	96.30	97.44	67.25	63.00	2.38	28	59.75	6.06	0.06	51.18	-	51.97	58.27	-	*	*	*	*	85429	-	*

Legend : RF=Raised Face, BWE=Butt Weld End, RTJ=Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 3 PIECE DESIGN - N3 SERIES

ANSI 300

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Kg)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
# 50 x 40	52	38	216	216	232	165	127	19.1	8	91.9	22.4	1.6	110	131	91.5	143	400	-	-	-	-	23	0.4	-
# 80 x 50	76	51	283	283	298	210	168	22.4	8	127	28.4	1.6	149	176	110	192	400	-	-	-	-	40	0.4	-
# 80	76	76	283	283	298	210	168	22.4	8	127	28.4	1.6	199	246	150	259	-	250	79	310	78	62	-	14.5
# 100 x 80	102	76	305	305	321	254	200	22.4	8	157	31.8	1.6	199	246	150	259	-	250	79	310	78	78	-	14.5
100	102	102	305	305	321	254	200	22.4	8	157	31.8	1.6	214	262	180	275	-	300	95	320	78	99	-	14.5
150 x 100	152	102	403	403	419	318	270	22.4	12	216	36.6	1.6	214	262	180	275	-	300	95	320	78	125	-	14.5
150	152	152	403	403	419	318	270	22.4	12	216	36.6	1.6	241	320	244	312	-	400	130	350	132	160	-	43.9
200 x 150	203	152	502	521	518	381	330	25.4	12	270	41.1	1.6	241	320	244	312	-	500	130	369	132	309	-	43.9
200	203	203	502	521	518	381	330	25.4	12	270	41.1	1.6	269	348	295	340	-	500	113	330	132	343	-	32.9
250 x 200	254	203	568	559	584	445	387	28.5	16	324	47.8	1.6	269	348	295	340	-	550	130	340	132	390	-	32.9
250	254	254	568	559	584	445	387	28.5	16	324	47.8	1.6	329	431	320	425	-	550	170	604	226	449	-	89.8
300 x 250	305	254	648	635	664	521	451	31.8	16	381	50.8	1.6	329	431	320	425	-	600	170	604	226	561	-	89.8
350 x 250	337	254	762	762	778	584	514	31.8	20	413	53.8	1.52	329	431	320	425	-	550	170	604	226	606	-	89.8
300	305	305	648	635	664	521	451	31.8	16	381	50.8	1.6	381	478	371	478	-	500	170	604	226	654	-	89.8
350 x 300	337	305	762	762	778	584	514	31.8	20	413	53.8	1.6	381	478	371	478	-	500	170	604	226	776	-	89.8
400 x 300	387	305	838	838	854	648	572	35.1	20	470	57.2	1.6	381	478	371	478	-	500	170	604	226	832	-	89.8
350	387	337	762	762	778	584	514	31.8	20	413	53.8	1.6	399	648	412	516	-	500	170	604	226	988	-	113.8
400 x 350	387	337	838	838	854	648	572	35.1	20	470	57.2	1.6	399	648	412	516	-	500	170	604	226	998	-	113.8
450 x 350	438	337	914	914	930	711	629	35.1	24	533	60.5	1.52	399	648	412	516	-	500	170	604	226	1128	-	113.8
400	387	387	838	838	854	648	572	35.1	20	470	57.2	1.6	460	689	468	578	-	750	200	731	341	1000	-	219.5
450 x 400	438	387	914	914	930	711	629	35.1	24	533	60.5	1.6	460	689	468	578	-	750	200	731	341	1397	-	219.5
500 x 400	489	387	991	991	1010	775	686	35.1	24	584	63.5	1.6	460	689	468	578	-	750	200	731	341	1512	-	219.5
450	438	438	914	914	930	711	629	35.1	24	533	60.5	1.6	497	798	476	677	-	750	345	731	353	1552	-	219.5
500 x 450	489	438	991	991	1010	775	686	35.1	24	584	63.5	1.6	497	798	476	677	-	750	345	731	353	2034	-	219.5
500	489	489	991	991	1010	775	686	35.1	24	584	63.5	1.6	518	818	505	699	-	750	345	731	353	2306	-	296.4
600 x 500	591	489	1143	1143	1165	914	813	41.1	24	692	69.9	1.6	518	818	505	699	-	750	345	731	353	2793	-	296.4
600	591	591	1143	1143	1165	914	813	41.1	24	692	69.9	1.52	648	818	744	828	-	1005	265	760	305	3610	-	439.1
750 x 600	735	591	1397	1397	1422	1092	997	47.8	28	857	91.9	1.52	648	818	744	828	-	1005	265	760	305	4512	-	439.1
750	735	735	1397	1397	1422	1092	997	47.8	28	857	91.9	1.52	727	-	798	881	-	*	*	*	*	7190	-	*
900 x 750	874	735	1727	1727	1756	1270	1168	53.8	32	1022	105	1.52	727	-	838	881	-	*	*	*	*	8988	-	*
900	874	874	1727	1727	1756	1270	1168	53.8	32	1022	105	1.52	837	-	913	991	-	*	*	*	*	10733	-	*
1000	976	976	1778	1778	1800	1238	1156	44.5	32	1086	114	1.52	970	-	1010	1163	-	*	*	*	*	14333	-	*
1050	1020	1020	1829	1829	1858	1289	1207	44.5	32	1137	119	1.52	1010	-	1064	1203	-	*	*	*	*	16459	-	*
1200	1166	1166	2020	2020	2049	1467	1372	50.8	32	1302	133	1.52	1135	-	1166	1353	-	*	*	*	*	24935	-	*
1400	1360	1360	2446	2446	2475	1708.2	1600.2	60.5	28	1517.7	153.9	1.6	1300	-	1320	1480	-	*	*	*	*	38750	-	*

Legend : RF = Raised Face, BWE = Butt weld End, RTJ = Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 3 PIECE DESIGN - N3 SERIES

ANSI 600

Dimensions in "inches"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)			
			RF	BWE	RTJ																	Bare Stem	Operator Lever Gear		
# 2"x1-1/2"	2.05	1.50	11.5	11.5	11.61	6.5	5	0.75	8	3.62	1	0.25	4.36	5.15	3.35	5.60	15.7	-	-	-	-	53	4.0	-	
# 2"	2.05	1.50	11.5	11.5	11.61	6.5	5	0.75	8	3.62	1	0.25	5.85	6.91	4.53	7.55	19.7	-	-	-	-	-	75	5.1	-
# 3"x 2"	2.99	2.01	14.0	14.0	14.13	8.25	6.62	0.88	8	5	1.25	0.25	5.85	6.91	4.53	7.55	19.7	-	-	-	-	-	119	5.1	-
# 3"	2.99	2.01	14.0	14.0	14.13	8.25	6.62	0.88	8	5	1.25	0.25	7.83	11.5	5.91	10.20	39.4	13.8	3.74	12.99	3.07	169	6.7	37	
# 4"x 3"	4.02	2.99	17.0	17.0	17.13	10.75	8.5	1	8	6.19	1.5	0.25	7.83	11.5	5.91	10.20	39.4	13.8	3.74	12.99	3.07	183	6.7	37	
4"	4.02	4.02	17.0	17.0	17.13	10.75	8.5	1	8	6.19	1.5	0.25	8.43	11.5	7.09	10.83	39.4	13.8	3.74	12.99	3.07	264	6.7	37	
6" x 4"	5.98	4.02	22.0	22.0	22.13	14	11.5	1.12	12	8.5	1.88	0.25	8.43	11.5	7.09	10.83	39.4	13.8	3.74	12.99	3.07	354	6.7	37	
6"	5.98	5.98	22.0	22.0	22.13	14	11.5	1.12	12	8.5	1.88	0.25	9.49	12	8.86	12.3	-	21.7	6.18	13.39	5.18	528	-	119	
8" x 6"	7.99	5.98	26.0	26.0	26.14	16.5	13.75	1.25	12	10.62	2.19	0.25	9.49	12.5	8.86	12.3	-	21.7	6.18	13.39	5.18	724	-	119	
8"	7.99	7.99	26.0	26.0	26.14	16.5	13.75	1.25	12	10.62	2.19	0.25	11.10	15	10.67	16.73	-	19.7	6.69	23.78	8.90	1069	-	198	
10" x 8"	10.00	7.99	31.0	31.0	31.14	20	17	1.38	16	12.75	2.5	0.25	11.10	15	15.59	14.90	-	19.7	6.69	23.78	8.90	1232	-	198	
10"	10.00	10.00	31.0	31.0	31.14	20	17	1.38	16	12.75	2.5	0.25	12.95	17.25	13.03	16.75	-	19.7	7.40	23.86	11.06	1320	-	198	
12" x 10"	12.01	10.00	33.0	33.0	33.11	22	19.25	1.38	20	15	2.62	0.25	12.95	17.25	13.03	16.75	-	19.7	7.40	23.86	11.06	1430	-	198	
14" X 10"	13.27	10.00	35.0	35.0	35.12	23.75	20.75	1.5	20	16.25	2.75	0.25	12.95	17.25	13.03	16.89	-	19.7	7.40	23.86	11.06	1612	-	198	
12"	12.01	12.01	33.0	33.0	33.11	22	19.25	1.38	20	15	2.75	0.25	15	19.76	14.53	18.8	-	19.7	8.50	23.86	11.06	1833	-	251	
14" x 12"	13.27	12.01	35.0	35.0	35.12	23.75	20.75	1.5	20	16.25	2.75	0.25	15	19.76	14.53	18.8	-	19.7	8.50	23.86	11.06	2015	-	251	
16" x 12"	15.24	12.01	39.0	39.0	39.13	27	23.75	1.62	20	18.5	3	0.25	15	19.76	14.53	18.8	-	19.7	8.50	23.86	11.06	2572	-	251	
14"	13.27	13.27	35.0	35.0	35.12	23.75	20.75	1.5	20	16.25	2.75	0.25	15.75	24.67	17.05	20.33	-	29.5	13.58	28.78	15.06	3058	-	484	
16" x 14"	15.24	13.27	39.0	39.0	39.13	27	23.75	1.62	20	18.5	3	0.25	15.75	24.67	17.05	20.33	-	29.5	13.58	28.78	15.06	3120	-	484	
18" X 14"	17.24	13.27	43.0	43.0	43.11	29.25	25.75	1.75	20	21	3.25	0.25	18.1	26.92	17.32	22.70	-	29.5	13.58	28.78	15.06	3329	-	484	
16"	15.24	15.24	39.0	39.0	39.13	27	23.75	1.62	20	18.5	3	0.25	18.1	26.92	17.32	22.70	-	29.5	13.58	28.78	15.06	4070	-	301	
18" x 16"	17.24	15.24	43.0	43.0	43.11	29.25	25.75	1.75	20	21	3.25	0.25	18.1	26.92	17.32	22.70	-	29.5	13.58	28.78	15.06	4697	-	301	
20" x 16"	19.25	15.24	47.0	47.0	47.24	32	28.5	1.75	24	23	3.5	0.25	18.1	26.92	17.32	22.70	-	29.5	13.58	28.78	15.06	5513	-	301	
18"	17.24	17.24	43.0	43.0	43.11	29.25	25.75	1.75	20	21	3.25	0.25	20.63	32.2	20.47	27.52	-	29.5	13.58	21.65	18.07	6032	-	651	
20" x 18"	19.25	17.24	47.0	47.0	47.24	32	28.5	1.75	24	23	3.5	0.25	20.63	32.2	20.47	27.52	-	29.5	13.58	21.65	18.07	6483	-	651	
20"	19.25	19.25	47.0	47.0	47.24	32	28.5	1.75	24	23	3.5	0.25	20.4	32.16	19.88	27.52	-	29.5	13.58	21.65	18.07	7509	-	651	
24" x 20"	23.19	19.25	55.0	55.0	55.39	37	33	2	24	27.25	4	0.25	20.4	32.16	19.88	27.52	-	29.5	13.58	21.65	18.07	7557	-	651	
24"	23.19	23.19	55.0	55.0	55.39	37	33	2	24	27.25	4	0.25	25.67	33.16	29.61	32.76	-	39.4	10.43	29.92	12.01	8774	-	968	
30" x 24"	28.94	23.19	65.0	65.0	65.51	44.5	40.25	2.12	28	33.75	4.5	0.25	25.11	-	30.27	32.6	-	39.4	10.43	29.92	12.01	11737	-	968	
30"	28.94	28.94	65.0	65.0	65.51	44.5	40.25	2.12	28	33.75	4.5	0.25	31.69	-	32.76	39.29	-	*	*	*	*	18230	-	*	
36" x 30"	34.41	28.94	82.0	82.0	82.64	51.75	47	2.62	28	40.25	4.88	0.25	31.69	-	32.76	39.29	-	*	*	*	*	23580	-	*	
36"	34.41	34.41	82.0	82.0	82.64	51.75	47	2.62	28	40.25	4.88	0.25	36.02	-	37.28	43.62	-	*	*	*	*	27683	-	*	
40"	38.43	38.43	82.01	82.01	82.64	52	47.75	2.38	32	43.75	6.25	0.25	39.96	-	41.81	48.54	-	*	*	*	*	39813	-	*	
42"	40.16	40.16	82.01	82.01	82.64	55.25	50.5	2.62	28	46	6.62	0.25	41.54	-	43.39	50.12	-	*	*	*	*	46444	-	*	
48"	45.91	45.91	86.61	86.61	87.24	62.75	57.5	2.88	32	52.5	7.44	0.25	46.46	-	47.83	55.04	-	*	*	*	*	68775	-	*	
56"	53.54	53.54	101.81	101.81	102.95	73.00	66.75	3.38	32	60.75	8.56	0.25	53.15	-	53.70	62.52	-	*	*	*	*	106858	-	*	

Legend : RF=Raised Face, BWE=Buttweid End, RTJ=Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 3 PIECE DESIGN - N3 SERIES

ANSI 600

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Kg)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	
# 50 x 40	52	38	292	292	295	165.1	127	19.05	8	91.95	25.40	6.4	110.7	130.7	85.0	142	400	-	-	-	-	24	1.8	
# 50	52	38	292	292	295	165.1	127	19.05	8	91.95	25.40	6.4	148.6	175.5	115.0	192	500	-	-	-	-	34	2.3	
# 80 x 50	76	51	356	356	359	209.6	168.1	22.35	8	127.00	31.75	6.4	148.6	175.5	115.0	192	500	-	-	-	-	54	2.3	
# 80	76	76	356	356	359	209.6	168.1	22.35	8	127.00	31.75	6.4	199.0	292.1	150.0	259	1000	350	95	330	78	77	-	17
# 100 x 80	102	76	432	432	435	273.1	215.9	25.4	8	157.23	38.10	6.4	199.0	292.1	150.0	259	1000	350	95	330	78	83	-	17
100	102	102	432	432	435	273.1	215.9	25.4	8	157.23	38.10	6.4	214.1	292.1	180.0	275	1000	350	95	330	78	120	-	17
150 x 100	152	102	559	559	562	355.6	292.1	28.55	12	215.90	47.75	6.4	214.1	292.1	180.0	275	1000	350	95	330	78	161	-	17
150	152	152	559	559	562	355.6	292.1	28.55	12	215.90	47.75	6.4	241.0	304.8	225.0	312	-	550	157	340	132	239	-	54
200 x 150	203	152	660	660	664	419.1	349.3	31.75	12	269.75	55.63	6.4	241.0	317.5	225.0	312	-	550	157	340	132	328	-	54
200	203	203	660	660	664	419.1	349.3	31.75	12	269.75	55.63	6.4	281.9	381.0	271.0	425	-	500	170	604	226	484	-	90
250 x 200	254	203	787	787	791	508	431.8	35.05	16	323.85	63.50	6.4	281.9	381.0	396.0	379	-	500	170	604	226	559	-	90
250	254	254	787	787	791	508	431.8	35.05	16	323.85	63.50	6.4	329.0	438.2	331.0	425	-	500	188	606	281	599	-	90
300 x 250	305	254	838	838	841	558.8	489	35.05	20	381.00	66.55	6.4	329.0	438.2	331.0	425	-	500	188	606	281	649	-	90
350 X 250	337	254	889	889	892	603.3	527.1	38.1	20	412.75	69.85	6.4	329.0	438.2	331.0	429	-	500	188	606	281	731	-	90
300	305	305	838	838	841	558.8	489	35.05	20	381.00	69.85	6.4	381.0	501.9	369.0	478	-	500	216	606	281	831	-	114
350 x 300	337	305	889	889	892	603.3	527.1	38.1	20	412.75	69.85	6.4	381.0	501.9	369.0	478	-	500	216	606	281	914	-	114
400 x 300	387	305	991	991	994	685.8	603.3	41.15	20	469.90	76.20	6.4	381.0	501.9	369.0	478	-	500	216	606	281	1167	-	114
350	337	337	889	889	892	603.3	527.1	38.1	20	412.75	69.85	6.4	400.0	626.6	433.0	517	-	750	345	731	383	1387	-	220
400 x 350	387	337	991	991	994	685.8	603.3	41.15	20	469.90	76.20	6.4	400.0	626.6	433.0	517	-	750	345	731	383	1415	-	220
450 x 350	438	337	1092	1092	1095	743	654.1	44.45	20	533.40	82.55	6.4	400.0	626.6	433.0	517	-	750	345	731	383	1510	-	220
400	387	387	991	991	994	685.8	603.3	41.15	20	469.90	76.20	6.4	459.7	683.8	439.9	577	-	750	345	704	383	1846	-	137
450 x 400	438	387	1092	1092	1095	743	654.1	44.45	20	533.40	82.55	6.4	459.7	683.8	439.9	577	-	750	345	704	383	2131	-	137
500 x 400	489	387	1194	1194	1200	812.8	723.9	44.45	24	584.20	88.90	6.4	459.7	683.8	439.9	577	-	750	345	704	383	2501	-	137
450	438	438	1092	1092	1095	743	654.1	44.45	20	533.40	82.55	6.4	524.0	817.9	520.0	699	-	750	345	550	459	2736	-	295
500 x 450	489	438	1194	1194	1200	812.8	723.9	44.45	24	584.20	88.90	6.4	524.0	817.9	520.0	699	-	750	345	550	459	2941	-	295
500	489	489	1194	1194	1200	812.8	723.9	44.45	24	584.20	88.90	6.4	518.2	816.9	505.0	699	-	749	345	550	459	3406	-	295
600 x 500	589	489	1397	1397	1407	939.8	838.2	50.8	24	692.15	101.60	6.4	518.2	816.9	505.0	699	-	749	345	550	459	3428	-	295
600	589	589	1397	1397	1407	939.8	838.2	50.8	24	692.15	101.60	6.4	622.0	-	681.0	776	-	1000	265	760	305	3980	-	439
750 x 600	735	589	1651	1651	1664	1130	1022	53.85	28	857.25	114.30	6.4	622.0	-	681.0	776	-	1000	265	760	305	5324	-	439
750	735	735	1651	1651	1664	1130	1022	53.85	28	857.25	114.30	6.4	805.0	-	832.0	998	-	*	*	*	*	8269	-	*
900 x 750	874	735	2083	2083	2099	1314	1194	66.55	28	1022.35	123.95	6.4	805.0	-	832.0	998	-	*	*	*	*	10696	-	*
900	874	874	2083	2083	2099	1314	1194	66.55	28	1022.35	123.95	6.4	915.0	-	947.0	1108	-	*	*	*	*	12557	-	*
1000	976	976	2083	2083	2099	1321	1213	60.45	32	1111.25	158.75	6.4	1015.0	-	1062.0	1233	-	*	*	*	*	18059	-	*
1050	1020	1020	2083	2083	2099	1403	1283	66.55	28	1168.40	168.15	6.4	1055.0	-	1102.0	1273	-	*	*	*	*	21067	-	*
1200	1166	1166	2200	2083	2216	1594	1461	73.15	32	1333.50	188.98	6.4	1180.0	*	1215.0	1398	-	*	*	*	*	31196	-	*
1400	1360	1360	2586	2586	2615	1854.2	1695.5	85.9	32	1543.1	217.4	6.4	1350.0	-	1364.0	1588	-	*	*	*	*	48470	-	*

Legend : RF = Raised Face, BWE = Buttwd End, RTJ = Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 3 PIECE DESIGN - N3 SERIES

ANSI 2500

Dimensions in "inches"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
2" x 1-1/2"	1.65	1.50	17.8	17.8	17.9	9.25	6.75	1.12	8	3.62	2.00	0.25	5.71	-	7.87	35.43	-	-	*	*	*	158	3.96	-
# 2"	1.65	1.65	17.8	17.8	17.9	9.25	6.75	1.12	8	3.62	2.00	0.25	6.02	8.11	-	8.19	39.37	11.81	*	*	*	226	5.06	*
# 3" x 2"	2.44	1.65	22.8	22.8	23.0	12.00	9.00	1.38	8	5.00	2.63	0.25	6.02	8.11	-	8.19	39.37	11.81	*	*	*	400	5.06	*
3"	2.44	2.44	22.8	22.8	23.0	12.00	9.00	1.38	8	5.00	2.63	0.25	7.64	9.92	-	9.80	-	19.69	*	*	*	521	-	*
4" x 3"	3.43	2.44	26.5	26.5	26.9	14.00	10.75	1.62	8	6.19	3.00	0.25	7.64	9.92	-	9.80	-	19.69	*	*	*	679	-	*
4"	3.43	3.43	26.5	26.5	26.9	14.00	10.75	1.62	8	6.19	3.00	0.25	9.13	11.34	12.20	11.30	-	19.69	*	*	*	976	-	*
6" x 4"	5.16	3.43	36.0	36.0	36.5	19.00	14.50	2.12	8	8.50	4.25	0.25	9.13	11.34	12.20	11.30	-	19.69	*	*	*	1369	-	*
6"	5.16	5.16	36.0	36.0	36.5	19.00	14.50	2.12	8	8.50	4.25	0.25	12.36	15.35	15.16	14.53	-	27.56	*	*	*	2013	-	*
8" x 6"	7.05	5.16	40.2	40.2	40.9	21.75	17.25	2.12	12	10.62	5.00	0.25	12.36	15.35	15.16	14.53	-	27.56	*	*	*	2738	-	*
8"	7.05	7.05	40.2	40.2	40.9	21.75	17.25	2.12	12	10.62	5.00	0.25	16.46	19.41	18.50	18.62	-	27.56	*	*	*	3543	-	*
10" x 8"	8.78	7.05	50.0	50.0	50.9	26.50	21.25	2.62	12	12.75	6.50	0.25	16.46	19.41	18.50	18.62	-	27.56	*	*	*	4147	-	*
10"	8.78	8.78	50.0	50.0	50.9	26.50	21.25	2.62	12	12.75	6.50	0.25	19.17	22.72	21.46	21.34	-	27.56	*	*	*	5139	-	*
12" x 10"	10.43	8.78	56.0	56.0	56.9	30.00	24.37	2.88	12	15.00	7.25	0.25	19.17	22.72	21.46	21.34	-	27.56	*	*	*	6047	-	*
12"	10.43	10.43	56.0	56.0	56.9	30.00	24.37	2.88	12	15.00	7.25	0.25	22.01	28.03	24.41	24.17	-	27.56	*	*	*	7976	-	*

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (kg)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
# 50 x 40	42	38	451	451	454	235	171.4	28.4	8	91.9	50.9	6.4	145	-	200	900	-	-	*	*	*	72	1.8	-
# 50	42	42	451	451	454	235	171.4	28.4	8	91.9	50.9	6.4	153	206	-	208	1000	300	*	*	*	102	2.3	*
# 80 x 50	62	42	578	578	584	304.8	228.6	35.1	8	127	66.7	6.4	153	206	-	208	1000	300	*	*	*	182	2.3	*
80	62	62	578	578	584	304.8	228.6	35.1	8	127	66.7	6.4	194	252	-	249	-	500	*	*	*	237	-	*
100 x 80	87	62	673	673	683	355.6	273	41.1	8	157.2	76.2	6.4	194	252	-	249	-	500	*	*	*	308	-	*
100	87	87	673	673	683	355.6	273	41.1	8	157.2	76.2	6.4	232	288	310	287	-	500	*	*	*	443	-	*
150 x 100	131	87	914	914	927	482.6	368.3	53.8	8	215.9	108	6.4	232	288	310	287	-	500	*	*	*	621	-	*
150	131	131	914	914	927	482.6	368.3	53.8	8	215.9	108	6.4	314	390	385	369	-	700	*	*	*	913	-	*
200 x 150	179	131	1022	1022	1038	562.5	438.2	53.8	12	269.7	127	6.4	314	390	385	369	-	700	*	*	*	1242	-	*
200	179	179	1022	1022	1038	562.5	438.2	53.8	12	269.8	127	6.4	418	493	470	473	-	700	*	*	*	1607	-	*
250 x 200	223	179	1270	1270	1292	673.1	539.8	66.5	12	323.9	165.1	6.4	418	493	470	473	-	700	*	*	*	1881	-	*
250	223	223	1270	1270	1292	673.1	539.8	66.5	12	323.9	165.1	6.4	487	577	545	542	-	700	*	*	*	2331	-	*
300 x 250	265	223	1422	1422	1445	762	619.1	73.2	12	381	184.2	6.4	487	577	545	542	-	700	*	*	*	2743	-	*
300	265	265	1422	1422	1445	762	619.1	73.2	12	381	184.2	6.4	559	712	620	614	-	700	*	*	*	3618	-	*

Legend : RF = Raised Face, BWE = Butt Weld End, RTJ = Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 2 PIECE DESIGN - N2 SERIES
ANSI 150

Dimensions in "inches"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
2"	2.01	2.01	7.00	8.50	7.50	6.00	4.75	0.75	4	3.62	0.62	0.06	2.93	5.20	2.99	4.11	11.42	-	-	-	21	1	-	
3" x 2"	2.99	2.01	8.00	11.12	8.50	7.50	6.00	0.75	4	5.00	0.75	0.06	2.93	5.20	2.99	4.11	11.42	-	-	-	35	1	-	
3"	2.99	2.99	8.00	11.12	8.50	7.50	6.00	0.75	4	5.00	0.75	0.06	3.98	7.20	4.72	5.62	15.74	-	-	-	50	4	-	
4" x 3	4.02	2.99	9.00	12.00	9.50	9.00	7.50	0.75	8	6.19	0.94	0.06	3.98	7.20	4.72	5.62	15.74	-	-	-	85	4	-	
4"	4.02	4.02	9.00	12.00	9.50	9.00	7.50	0.75	8	6.19	0.94	0.06	4.80	8.00	5.50	6.50	17.72	-	-	-	80	5	-	
6" x 4"	5.98	4.02	15.50	18.00	16.00	11.00	9.50	0.88	8	8.50	1.00	0.06	4.80	8.00	5.50	6.50	17.72	-	-	-	140	5	-	
6"	5.98	5.98	15.50	18.00	16.00	11.00	9.50	0.88	8	8.50	1.00	0.06	9.13	10.67	7.36	11.96	-	15.75	4.72	13.00	3.43	287	-	55
8" x 6"	7.99	5.98	18.00	20.50	18.50	13.50	11.75	0.88	8	10.62	1.12	0.06	9.13	10.67	7.36	11.96	-	15.75	4.72	13.00	3.43	375	-	55
8"	7.99	7.99	18.00	20.50	18.50	13.50	11.75	0.88	8	10.62	1.12	0.06	10.41	13.24	8.68	13.25	-	17.72	4.25	14.00	3.62	441	-	55
10" x 8"	10.00	7.99	21.00	22.00	21.50	16.00	14.25	1.00	12	12.75	1.19	0.06	10.41	13.24	8.68	13.25	-	17.72	4.25	13.00	3.62	550	-	55
10"	10.00	10.00	21.00	22.00	21.50	16.00	14.25	1.00	12	12.75	1.19	0.06	12.17	15.00	10.15	15.51	-	19.69	5.12	13.00	5.20	617	-	95
12" x 10"	12.01	10.00	24.00	25.00	24.50	19.00	17.00	1.00	12	15.00	1.25	0.06	12.17	15.00	10.15	15.51	-	19.69	5.12	13.80	5.20	730	-	95
12"	12.01	12.01	24.00	25.00	24.50	19.00	17.00	1.00	12	15.00	1.25	0.06	16.46	20.50	12.80	19.51	-	23.62	6.18	13.80	5.20	810	-	135

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Kg)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
50	51	51	178	216	191	152.4	120.7	19.1	4	91.9	15.7	1.5	74.5	132.1	76.0	104.5	290.1	-	-	-	10	0.45	-	
80 x 50	76	51	203	283	216	190.5	152.4	19.1	4	127.0	19.1	1.5	74.5	132.1	76.0	104.5	290.1	-	-	-	16	0.45	-	
80	76	76	203	283	216	190.5	152.4	19.1	4	127.0	19.1	1.5	101.0	183.0	120.0	142.7	399.8	-	-	-	23	2	-	
100 x 80	102	76	229	305	241	228.6	190.5	19.1	8	157.2	23.9	1.5	101.0	183.0	120.0	142.7	399.8	-	-	-	39	2	-	
100	102	102	229	305	241	228.6	190.5	19.1	8	157.2	23.9	1.5	122.0	203.2	139.7	165.0	450.1	-	-	-	36	2	-	
150 x 100	152	102	394	457	406	279.4	241.3	22.4	8	215.9	25.4	1.5	122.0	203.2	139.7	165.0	450.1	-	-	-	64	2	-	
150	152	152	394	457	406	279.4	241.3	22.4	8	215.9	25.4	1.5	231.9	271.0	186.9	303.8	-	400	120	330.2	87	130	-	25
200 x 150	203	152	457	521	470	342.9	298.5	22.4	8	266.7	28.4	1.5	231.9	271.0	186.9	303.8	-	400	120	330.2	87	170	-	25
200	203	203	457	521	470	342.9	298.5	22.4	8	266.7	28.4	1.5	264.5	336.3	220.5	336.5	-	450	108	355.6	92	200	-	25
250 x 200	254	203	533	559	546	406.4	362.0	25.4	12	323.9	30.2	1.5	264.5	336.3	220.5	336.5	-	450	108	330.2	92	249	-	25
250	254	254	533	559	546	406.4	362.0	25.4	12	323.9	30.2	1.5	309.0	381.0	257.8	394.0	-	500	130	330.2	132	280	-	43
300 x 250	305	254	610	635	622	482.6	431.8	25.4	12	381.0	31.8	1.5	309.0	381.0	257.8	394.0	-	500	130	350.5	132	331	-	43
300	305	305	610	635	622	482.6	431.8	25.4	12	381.0	31.8	1.5	418.0	520.7	325.1	495.5	-	600	157	350.5	132	367	-	61

Legend : RF= Raised Face, BWE= Butt weld End, RTJ= Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 2 PIECE DESIGN - N2 SERIES
ANSI 300

Dimensions in "inches"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
2"	2.01	2.01	8.50	8.50	9.12	6.50	5.00	0.75	8	3.62	0.88	0.06	2.93	5.20	2.99	4.11	11.42	-	-	-	-	29	1	-
3" x 2"	2.99	2.01	11.12	11.12	11.74	8.25	6.62	0.88	8	5.00	1.12	0.06	2.93	5.20	2.99	4.11	11.42	-	-	-	-	62	1	-
3"	2.99	2.99	11.12	11.12	11.74	8.25	6.62	0.88	8	5.00	1.12	0.06	3.98	7.20	4.72	5.62	21.65	-	-	-	-	82	4	-
4" x 3	4.02	2.99	12.00	12.00	12.62	10.00	7.88	0.88	8	6.19	1.25	0.06	3.98	7.20	4.72	5.62	21.65	-	-	-	-	113	4	-
4"	4.02	4.02	12.00	12.00	12.62	10.00	7.88	0.88	8	6.19	1.25	0.06	4.80	8.00	5.50	6.50	23.62	-	-	-	-	115	5	-
6" x 4"	5.98	4.02	15.88	18.00	16.50	12.50	10.62	0.88	12	8.50	1.44	0.06	4.80	8.00	5.50	6.50	23.62	-	-	-	-	200	5	-
6"	5.98	5.98	15.88	18.00	16.50	12.50	10.62	0.88	12	8.50	1.44	0.06	9.13	10.67	7.36	11.96	-	15.75	5.12	13.8	5.20	320	-	95
8" x 6"	7.99	5.98	19.75	20.50	20.37	15.00	13.00	1.00	12	10.62	1.62	0.06	9.13	10.67	7.36	11.96	-	15.75	5.12	13.80	5.20	400	-	95
8"	7.99	7.99	19.75	20.50	20.37	15.00	13.00	1.00	12	10.62	1.62	0.06	10.41	14.43	8.68	13.25	-	19.69	4.45	23.80	5.20	529	-	198
10" x 8"	10.00	7.99	22.38	22.00	23.00	17.50	15.25	1.12	16	12.75	1.88	0.06	10.41	14.43	8.68	13.25	-	19.69	4.45	23.80	5.20	640	-	198
10"	10.00	10.00	22.38	22.00	23.00	17.50	15.25	1.12	16	12.75	1.88	0.06	12.17	16.18	10.15	15.51	-	21.65	6.69	23.80	8.90	794	-	198
12" x 10"	12.01	10.00	25.50	25.00	26.12	20.50	17.75	1.25	16	15.00	2.00	0.06	12.17	16.18	10.15	15.51	-	21.65	6.69	23.80	8.90	950	-	198
12"	12.01	12.01	25.50	25.00	26.12	20.50	17.75	1.25	16	15.00	2.00	0.06	16.46	20.50	12.80	19.51	-	19.69	7.68	23.80	9.65	970	-	198

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Kg)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
50	51	51	216	216	232	165.1	127.0	19.1	8	91.9	22.4	1.5	74.5	132.1	76.0	104.5	290.1	-	-	-	-	13	0.45	-
80 x 50	76	51	283	283	298	209.6	168.1	22.4	8	127.0	28.4	1.5	74.5	132.1	76.0	104.5	290.1	-	-	-	-	28	0.45	-
80	76	76	283	283	298	209.6	168.1	22.4	8	127.0	28.4	1.5	101.0	183.0	120.0	142.7	549.9	-	-	-	-	37	2	-
100 x 80	102	76	305	305	321	254.0	200.1	22.4	8	157.2	31.8	1.5	101.0	183.0	120.0	142.7	549.9	-	-	-	-	51	2	-
100	102	102	305	305	321	254.0	200.1	22.4	8	157.2	31.8	1.5	122.0	203.2	139.7	165.0	599.9	-	-	-	-	52	2	-
150 x 100	152	102	403	403	419	317.5	269.7	22.4	12	215.9	36.6	1.5	122.0	203.2	139.7	165.0	599.9	-	-	-	-	91	2	-
150	152	152	403	403	419	317.5	269.7	22.4	12	215.9	36.6	1.5	231.9	271.0	186.9	303.8	-	400	130	350.5	132	145	-	43
200 x 150	203	152	502	521	518	381.0	330.2	25.4	12	269.7	41.1	1.5	231.9	271.0	186.9	303.8	-	400	130	350.5	132	181	-	43
200	203	203	502	521	518	381.0	330.2	25.4	12	269.7	41.1	1.5	264.5	366.5	220.5	336.5	-	500	113	604.5	132	240	-	90
250 x 200	254	203	568	559	584	444.5	387.4	28.5	16	323.9	47.8	1.5	264.5	366.5	220.5	336.5	-	500	113	604.5	132	290	-	90
250	254	254	568	559	584	444.5	387.4	28.5	16	323.9	47.8	1.5	309.0	411.0	257.8	394.0	-	550	170	604.5	226	360	-	90
300 x 250	305	254	648	635	664	520.7	450.9	31.8	16	381.0	50.8	1.5	309.0	411.0	257.8	394.0	-	550	170	604.5	226	431	-	90
300	305	305	648	635	664	520.7	450.9	31.8	16	381.0	50.8	1.5	418.0	520.7	325.1	495.5	-	500	195	604.5	245	440	-	90

Legend : RF=Raised Face, BWE=Butt Weld End, RTJ=Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 2 PIECE DESIGN - N2 SERIES

ANSI 600

Dimensions in "inches"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
2 x 1 1/2"	2.01	1.50	11.50	11.50	11.62	6.50	5.00	0.75	8	3.62	1.25	0.25	4.37	5.72	3.45	5.63	15.75	-	-	-	-	48	4	-
2"	2.01	2.01	11.50	11.50	11.62	6.50	5.00	0.75	8	3.62	1.25	0.25	4.92	6.87	3.74	6.63	19.70	-	-	-	-	55	5	-
3" x 2"	2.99	2.01	14.00	14.00	14.12	8.25	6.62	0.88	8	5.00	1.50	0.25	4.92	6.87	3.74	6.63	19.70	-	-	-	-	95	5	-
# 3"	2.99	2.99	14.00	14.00	14.12	8.25	6.62	0.88	8	5.00	1.50	0.25	6.50	10.80	5.39	8.86	39.37	13.78	3.74	13.00	3.07	143	10	37
# 4" x 3	4.02	2.99	17.00	17.00	17.12	10.75	8.50	1.00	8	6.19	1.75	0.25	6.50	10.80	5.39	8.86	39.37	13.78	3.74	13.00	3.07	195	10	37
# 4"	4.02	4.02	17.00	17.00	17.12	10.75	8.50	1.00	8	6.19	1.75	0.25	7.76	12.12	5.94	10.16	39.37	13.78	3.74	13.00	3.07	214	15	37
# 6" x 4"	5.98	4.02	22.00	22.00	22.12	14.00	11.50	1.12	12	8.50	2.13	0.25	7.76	12.12	5.94	10.16	39.37	13.78	3.74	13.00	3.07	293	15	37
6"	5.98	5.98	22.00	22.00	22.12	14.00	11.50	1.12	12	8.50	2.13	0.25	9.37	13.31	7.40	12.30	-	19.70	6.18	13.80	5.20	463	-	198
8" x 6"	7.99	5.98	26.00	26.00	26.12	16.50	13.75	1.25	12	10.62	2.44	0.25	9.37	13.31	7.40	12.30	-	19.70	6.18	13.80	5.20	670	-	198
8"	7.99	7.99	26.00	26.00	26.12	16.50	13.75	1.25	12	10.62	2.44	0.25	11.10	15.10	15.60	14.10	-	19.70	6.69	23.86	8.90	1014	-	198
10" x 8"	10.00	7.99	31.00	31.00	31.12	20.00	17.00	1.38	16	12.75	2.75	0.25	11.10	15.10	15.60	14.10	-	19.70	6.69	23.86	8.90	1322	-	198
10"	10.00	10.00	31.00	31.00	31.12	20.00	17.00	1.38	16	12.75	2.75	0.25	12.95	17.44	13.10	16.75	-	19.70	7.40	23.86	11.06	1720	-	251
12" x 10"	12.01	10.00	33.00	33.00	33.12	22.00	19.25	1.38	20	15.00	2.87	0.25	12.95	17.44	13.10	16.75	-	19.70	7.40	23.86	11.06	2160	-	251
12"	12.01	12.01	33.00	33.00	33.12	22.00	19.25	1.38	20	15.00	2.87	0.25	14.37	19.13	19.17	18.17	-	19.70	8.50	23.86	11.06	1852	-	251

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Kg)		
			RF	BWE	RTJ																	Bare Stem	Operator Lever	Gear
50 x 40	51	38	292	292	295	165.1	127.0	19.1	8	91.9	31.8	6.4	111.0	145.3	87.6	143.0	400.0	-	-	-	-	22	2	-
50	51	51	292	292	295	165.1	127.0	19.1	8	91.9	31.8	6.4	125.0	174.5	95.0	168.5	500.4	-	-	-	-	25	2	-
80 x 50	76	51	356	356	359	209.6	168.1	22.4	8	127.0	38.1	6.4	125.0	174.5	95.0	168.5	500.4	-	-	-	-	43	2	-
# 80	76	76	356	356	359	209.6	168.1	22.4	8	127.0	38.1	6.4	165.0	274.3	137.0	225.0	1000	350	95	330.0	78	65	5	17
# 100 x 80	102	76	432	432	435	273.1	215.9	25.4	8	157.2	44.5	6.4	165.0	274.3	137.0	225.0	1000	350	95	330.0	78	88	5	17
# 100	102	102	432	432	435	273.1	215.9	25.4	8	157.2	44.5	6.4	197.0	307.8	150.9	258.0	1000	350	95	330.0	78	97	7	17
# 150 x 100	152	102	559	559	562	355.6	292.1	28.5	12	215.9	54.1	6.4	197.0	307.8	150.9	258.0	1000	350	95	330.0	78	133	7	17
150	152	152	559	559	562	355.6	292.1	28.5	12	215.9	54.1	6.4	238.0	338.1	188.0	312.4	-	500	157	350.5	132	210	-	90
200 x 150	203	152	660	660	664	419.1	349.3	31.8	12	269.7	62.0	6.4	238.0	338.1	188.0	312.4	-	500	157	350.5	132	304	-	90
200	203	203	660	660	664	419.1	349.3	31.8	12	269.7	62.0	6.4	281.9	383.5	396.2	358.1	-	500	170	606	226	460	-	90
250 x 200	254	203	787	787	791	508.0	431.8	35.1	16	323.9	69.9	6.4	281.9	383.5	396.2	358.1	-	500	170	606	226	600	-	90
250	254	254	787	787	791	508.0	431.8	35.1	16	323.9	69.9	6.4	328.9	443.0	332.7	425.5	-	500	188	606	281	780	-	114
300 x 250	305	254	838	838	841	558.8	489.0	35.1	20	381.0	72.9	6.4	328.9	443.0	332.7	425.5	-	500	188	606	281	980	-	114
300	305	305	838	838	841	558.8	489.0	35.1	20	381.0	72.9	6.4	365.0	485.9	487.0	461.5	-	500	216	606	281	840	-	114

Legend : RF=Raised Face, BWE=Buttweid End, RTJ= Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

DIMENSIONAL DETAILS FOR 2 PIECE DESIGN - N2 SERIES

ANSI 900

Dimensions in "inches"

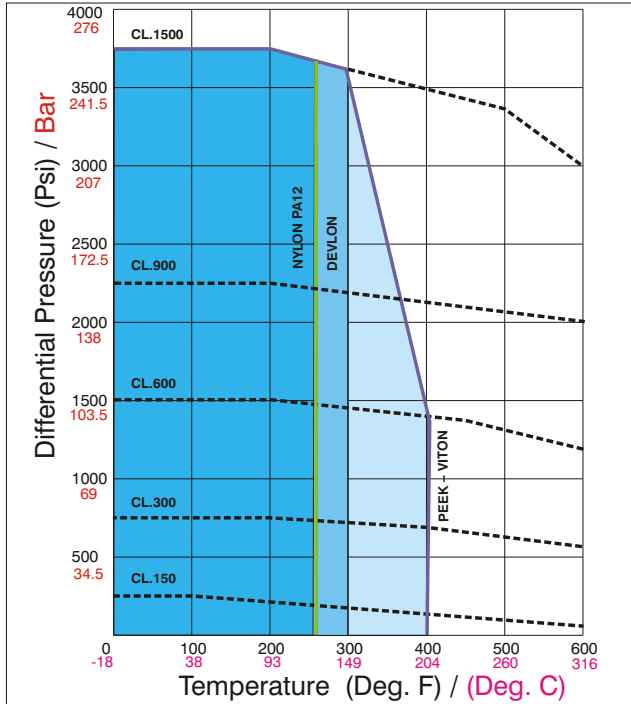
SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Lb)	
			RF	BWE	RTJ																	Bare Stem	Operator Lever
2 x 1 1/2"	2.01	1.50	14.49	14.49	14.61	8.50	6.50	1.00	8	3.62	1.5	0.25	4.37	5.98	3.35	5.63	15.75	-	-	-	-	75	4
2"	2.01	2.01	14.49	14.49	14.61	8.50	6.50	1.00	8	3.62	1.5	0.25	5.85	7.99	4.72	7.56	27.56	-	-	-	-	117	5
3" x 2"	2.91	2.01	15.00	15.00	15.12	9.50	7.50	1.00	8	5.00	1.5	0.25	5.85	7.99	4.72	7.56	27.56	-	-	-	-	131	5
# 3"	2.91	2.91	15.00	15.00	15.12	9.50	7.50	1.00	8	5.00	1.5	0.25	6.50	10.06	5.91	8.82	39.37	13.78	3.74	12.99	3.07	187	10
# 4" x 3	4.02	2.91	17.99	17.99	18.11	11.50	9.25	1.25	8	6.19	1.75	0.25	6.50	10.06	5.91	8.82	39.37	13.78	3.74	12.99	3.07	254	10
# 4"	4.02	4.02	17.99	17.99	18.11	11.50	9.25	1.25	8	6.19	1.75	0.25	7.76	11.69	7.09	10.16	39.37	17.72	4.25	14.37	3.31	281	15
# 6" x 4"	5.98	4.02	24.02	24.02	24.13	15.00	12.50	1.25	12	8.50	2.19	0.25	7.76	11.69	7.09	10.16	39.37	17.72	4.25	14.37	3.31	374	15
6"	5.98	5.98	24.02	24.02	24.13	15.00	12.50	1.25	12	8.50	2.19	0.25	10.08	14.00	8.43	13.07	-	23.62	6.69	23.78	8.90	626	-
8" x 6"	7.99	5.98	29.02	29.02	29.13	18.50	15.50	1.50	12	10.62	2.5	0.25	10.08	14.00	8.43	13.07	-	27.56	6.69	23.78	8.90	767	-
8"	7.99	7.99	29.02	29.02	29.13	18.50	15.50	1.50	12	10.62	2.5	0.25	11.81	15.60	9.92	15.59	-	19.69	6.69	23.78	8.90	879	-
10" x 8"	10.00	7.99	32.99	32.99	33.11	21.50	18.50	1.50	16	12.75	2.75	0.25	11.81	15.60	9.92	15.59	-	19.69	6.69	23.78	8.90	1726	-
10"	10.00	10.00	32.99	32.99	33.11	21.50	18.50	1.50	16	12.75	2.75	0.25	13.70	18.10	11.54	19.07	-	23.62	8.50	23.86	11.06	1866	-
12" x 10"	12.01	10.00	37.99	37.99	38.11	24.00	21.00	1.50	20	15.00	3.12	0.25	13.70	18.10	11.54	19.07	-	23.62	8.50	23.86	11.06	2169	-
12"	12.01	12.01	37.99	37.99	38.11	24.00	21.00	1.50	20	15.00	3.12	0.25	15.47	20.00	13.86	20.91	-	29.53	7.28	23.86	13.43	2450	-

Dimensions in "mm"

SIZE	DN	ØE	L			ØF	ØC	ØN	M	ØR	T	T1	H1	H1*	H2	O	G	ØB	X	Y	Z	Approx Weights (Kg)	
			RF	BWE	RTJ																	Bare Stem	Operator Lever
50 x 40	51	38	368	368	371	215.9	165.1	25.4	8	91.9	38.1	6.4	111.0	152.0	85.0	143.0	400	-	-	-	-	34	2
50	51	51	368	368	371	215.9	165.1	25.4	8	91.9	38.1	6.4	148.5	203.0	120.0	192.0	700	-	-	-	-	53	2
80 x 50	74	51	381	381	384	241.3	190.5	25.4	8	127.0	38.1	6.4	148.5	203.0	120.0	192.0	700	-	-	-	-	59	2
# 80	74	74	381	381	384	241.3	190.5	25.4	8	127.0	38.1	6.4	165.0	255.5	150.0	224.0	1000	350	95	330.0	78	85	5
# 100 x 80	102	74	457	457	460	292.1	235.0	31.8	8	157.2	44.5	6.4	165.0	255.5	150.0	224.0	1000	350	95	330.0	78	115	5
# 100	102	102	457	457	460	292.1	235.0	31.8	8	157.2	44.5	6.4	197.0	297.0	180.0	258.0	1000	450	108	365.0	84	127	7
# 150 x 100	152	102	610	610	613	381.0	317.5	31.8	12	215.9	55.6	6.4	197.0	297.0	180.0	258.0	1000	450	108	365.0	84	170	7
150	152	152	610	610	613	381.0	317.5	31.8	12	215.9	55.6	6.4	256.0	355.6	214.0	332.0	-	600	170	604.0	226	284	*
200 x 150	203	152	737	737	740	469.9	393.7	38.1	12	269.7	63.5	6.4	256.0	355.6	214.0	332.0	-	700	170	604.0	226	348	*
200	203	203	737	737	740	469.9	393.7	38.1	12	269.7	63.5	6.4	300.0	396.2	252.0	396.0	-	500	170	604	226	399	*
250 x 200	254	203	838	838	841	546.1	469.9	38.1	16	323.9	69.9	6.4	300.0	396.2	252.0	396.0	-	500	170	604	226	783	*
250	254	254	838	838	841	546.1	469.9	38.1	16	323.9	69.9	6.4	348.0	459.7	293.0	484.4	-	600	216	606	281	846	*
300 x 250	305	254	965	965	968	609.6	533.4	38.1	20	381.0	79.2	6.4	348.0	459.7	293.0	484.4	-	600	216	606	281	984	*
300	305	305	965	965	968	609.6	533.4	38.1	20	381.0	79.2	6.4	393.0	508.0	352.0	531.0	-	750	185	606	341	1111	*

Legend : RF = Raised Face, BWE = Butt Weld End, RTJ = Ringtype Joint For # marked sizes gear operation also available. For * marked dimensions consult UNIMAC .

PRESSURE TEMPERATURE RATINGS & TORQUE VALUES



Pressure - temperature seat ratings of valves are as given in the graph for body material A 216 - WCB.

All pressure containing parts comply to the pressure temperature ratings as specified in ANSI B 16.34

Temperature Limits: Typical values for few materials

Body Matl.	WCB	Lower limit	Upper limit *
		Deg.F/Deg.C	Deg.F/Deg.C
Seat	WCB	(-20) (-29)	800 425
	LCB	(-50) (-46)	650 345
	CF8	(-425) (-254)	1000 538
Seat	NYLON	(-50) (-46)	As per Graph
	DEVLON	(-50) (-46)	As per Graph
	PEEK	(-50) (-46)	As per Graph

* Useful application limit.

For applications above 400°F (204°C) consult

UNIMAC Other ratings on request.

Metal to metal seats are also supplied on request

Note : These ratings are a guide for general service.

Please consult UNIMAC for specific recommendations.

Torque Values in Nm / in - lbs.

SIZE DN (NPS)	TORQUE TYPE	PRESSURE CLASS											
		150#		300#		600#		900#		1500#		2500#	
		Nm	In-lbs	Nm	In-lbs	Nm	In-lbs	Nm	In-lbs	Nm	In-lbs	Nm	In-lbs
1 1/2" (40)	BTO	48	425	71	628	87	770	99	876	146	1292	280	2478
	ETC	38	340	57	503	70	616	79	701	117	1034	224	1983
	RUN	21	190	32	281	39	344	44	391	65	577	125	1107
2" (50)	BTO	69	611	85	752	110	974	135	1195	257	2275	365	3231
	ETC	55	489	68	602	88	779	108	956	206	1820	292	2584
	RUN	31	273	38	336	49	435	60	534	115	1016	163	1443
3" (80)	BTO	160	1416	220	1947	323	2859	436	3859	605	5355	1153	10205
	ETC	128	1133	176	1558	258	2287	349	3087	484	4284	922	8164
	RUN	71	633	98	870	144	1277	195	1724	270	2392	515	4558
4" (100)	BTO	242	2142	340	3009	465	4116	605	5355	931	8240	1598	14143
	ETC	194	1714	272	2407	372	3292	484	4284	745	6592	1278	11315
	RUN	108	957	152	1344	208	1838	270	2392	416	3681	714	6317
6" (150)	BTO	418	3700	665	5886	1078	9541	1498	13258	2580	22835	3086	27313
	ETC	334	2960	532	4709	862	7633	1198	10607	2064	18268	2469	21851
	RUN	187	1652	297	2629	482	4262	669	5922	1152	10200	1378	12200
8" (200)	BTO	818	7240	1328	11754	2126	18817	3188	28216	4941	43732	7775	68815
	ETC	654	5792	1062	9403	1701	15053	2550	22573	3953	34985	6220	55052
	RUN	365	3234	593	5250	950	8405	1424	12603	2207	19533	3473	30737
10" (250)	BTO	1094	9683	1713	15161	2825	25003	3955	35005	6130	54255		
	ETC	875	7746	1370	12129	2260	20003	3164	28004	4904	43404		
	RUN	489	4325	765	6772	1262	11168	1767	15635	2738	24234		
12" (300)	BTO	1412	12497	2047	18117	3275	28986	4913	43484	8843	78267		
	ETC	1130	9998	1638	14494	2620	23189	3930	34787	7074	62614		
	RUN	631	5582	914	8092	1463	12947	2194	19423	3950	34959		
14" (350)	BTO	2484	21985	3479	30792	5565	49254	8348	73886	16579	146737		
	ETC	1987	17588	2783	24633	4452	39404	6678	59109	13263	117389		
	RUN	1110	9820	1554	13754	2486	22000	3729	33002	7405	65542		
16" (400)	BTO	3380	29916	4780	42307	7063	62513	10373	91809	22231	196761		
	ETC	2704	23932	3824	33845	5650	50010	8298	73447	17785	157409		
	RUN	1510	13362	2135	18897	3155	27922	4633	41008	9930	87887		
18" (450)	BTO	4522	40023	7118	63000	11387	100783	17081	151180				
	ETC	3618	32018	5694	50400	9110	80627	13665	120944				
	RUN	2020	17877	3179	28140	5086	45017	7630	67527				
20" (500)	BTO	5731	50724	9863	87295	15780	139665	23670	209497				
	ETC	4585	40579	7890	69836	12624	111732	18936	167598				
	RUN	2560	22657	4405	38992	7048	62384	10573	93575				
24" (600)	BTO	10449	92481	16468	145754	25233	223331	39525	349826				
	ETC	8359	73985	13174	116603	20186	178665	31620	279861				
	RUN	4667	41308	7356	65104	11271	99755	17655	156256				

B.T.O. = Break to open torque (Under Rated Pressure)

E.T.C. = End to close torque (Reseating Torque)

- NOTES :-
- 1) Torques Values are in Nm/In-lbs and are for Primary Soft Seated TMBVs with Seat Insert Material as Nylon PA - 12/ Devlon V (API).
 - 2) Torque Values with PEEK seat insert are 100% higher than the corresponding above mentioned values.
 - 3) Torque Values are at Ambient Temperature, media being clear water. (Without any safety factor)
 - 4) For Reduced Bore Valves, take torque values corresponding to the lower size (Ball Bore size) e.g. : for 14" x 10" Reduced Bore Valve, take torque values corresponding to 10".
 - 5) Torque details for balance sizes can be provided on request.
 - 6) Above Torque Values are indicative and for reference only. Exact Torque Values for Actuator sizing will depend on service conditions.

MATERIAL OF CONSTRUCTION

PART	MATERIAL OPTIONS
BODY	ASTM - A 216 WCB / WCC / LF2 / A 105 / A 351 CF8M / A 351 CF3M / A 352 LCB / LCC / A 217 CA15 / DUPLEX SS / INCONEL / 254 SMO.
BODY ADAPTER	ASTM - A 216 WCB / WCC / LF2 / A 105 / A 351 CF8M / A 351 CF3M / A 352 LCB / LCC / A 217 CA15 / DUPLEX SS / INCONEL / 254 SMO.
BALL	ASTM - A 216 WCB/WCC + ENP / A 351 CF8M / A 351 CF3M / A 217 CA 15 / DUPLEX SS / INCONEL / MONEL
STEM HOUSING	ASTM - A 216 WCB / A351 CF8M / A 351 CF3M / A 352 LCB / A 217 CA 15
STEM	A 479 SS 316 / A 479 SS 316L / A 182 F 6A / A 564 TYPE 630 / A 479 SS 410 / AISI 4140 + ENP / ASTM A 182 F51, F53, F44 / INCONEL (625, 825, 718)
SEAT	ASTM - A 105 + ENP / A 182 F316 / ASTM A 182 F6A / DUPLEX SS / INCONEL / F44 / LF2
SEAT INSERT	RPTFE / NYLON / PEEK / DEVLON / PCTFE
STEM GASKET	GRAPHITE / LIP SEAL
BODY GASKET	GRAPHITE / REINFORCED SPIRAL-WOUND SS 316 GRAPHITE / LIP SEAL
STEM H. GASKET	GRAPHITE / LIP SEAL
TRUNNION GASKET	GRAPHITE / LIP SEAL
O RING	VITON (SPECIAL O-RING ON REQUEST)
TRUNNION	A 479 SS 316 / A 479 SS 316L / A 182 F 304 / A 182 F 316 / A 182 F 410 / A 564n TYPE 630 / A 105 / LF2 / DUPLEX SS / INCONEL
ISO MTG FLANGE	STEEL
SPRINGS	ASTM - A 313 SS 302 / ASTM B 637 (INCONEL 750) / INCONEL 718
THRUST WASHER	PHOSPHOR BRONZE / A 479 SS 316 + BRONZE + PTFE COATED / A 479 SS 316 + PTFE COATED
STUDS / BOLTS / CAP SCREW `	ASTM - A 320 L7, L7M / A 193 B8M / A 193 B7 / A 193 GR. B7M
NUT	ASTM - A 194 GR 7M / A 194 GR 8M / A 194 2H / A 194 GR 2HM
BEARING	A 479 SS 316 + PTFE COATED
COUPLING	STEEL + PLATING
SUPPORT STAND	STEEL
LIFTING HOOK	STEEL
BRACKET	STEEL
DRAIN PLUG/ NEEDLE VALVE	STANDARD

Note : Materials not listed above can be offered on request.

Fire Test

UNIMAC Ball Valves have been designed to meet the requirements of API 607 / API 6 FA / BS 6755 - Part II./ BS EN ISO 10497. Fire safe tests have been witnessed and certified by Gulf Lloyds

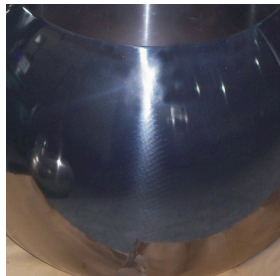


AUTOMATION & SPECIALIZATION

Pneumatic actuators and accessories are available from our facilities in India as well as our full service facilities in Houston, Texas (USA), Jebel Ali (Dubai) and Milano (Italy). Factory mounted automation packaging means single point responsibility, standardization of control components, accessories and expert sizing for smooth operation.



Overlay Ball :
before machining

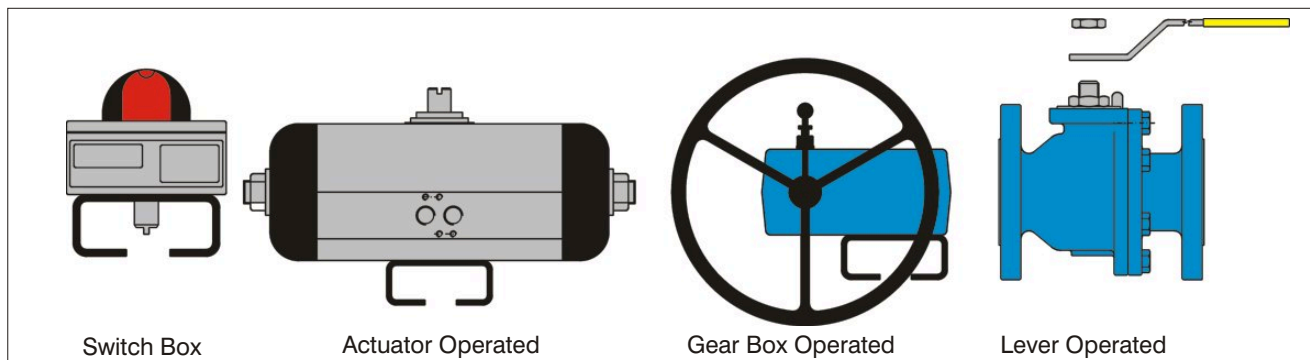


Overlay Ball :
after machining

COATINGS AND OVERLAY

A wide variety of coatings are available for increased life span and corrosion protection you can count on. Enduro-Bond Plus coatings are a cross-linked barrier fused by a strong mechanical bond to provide superior protection over traditional plastic coatings. A complete line of spray on and weld overlay metals are also available.

VALVE OPERATION



Switch Box

Actuator Operated

Gear Box Operated

Lever Operated

Valve Operation :

UNIMAC offers an option of operating the valve by hand lever, gear operator or actuator. Length of lever and diameter of handwheel (maximum 31-1/2") of gear operator are designed to keep operating force less than 80 lb. All valves have a stopper for fully opened and closed position along with indicator to show position of ball port.

PRODUCT SELECTION CODE

Design	Construction	End Connection	Ratings	Bore	Body	Ball+Coating	Seat+Coating	Fire Safety	Operation	Special Req.
N S M P W X C D T L E U B	1 2 3	RF RS FF FS RT SW SN BS NP BW DN BT SG LG TG BN O	1 2 3 4 5 6 8 9 O	F R	C 1 7 L 8 2 4 6 3 5 A U W I M O	C 1 7 L 8 2 4 6 3 5 A U W I M O	1 2 4 6 3 5 U I M T G N L D P E V O	F N	B G L A C O	SI PP SE BE DP SP LP JK LT XX

<p>Design</p> <p>N - Side Entry Soft Seated Trunnion S - Side Entry Soft Seated Floater M - Side Entry Metal Seated Trunnion P - Side Entry Metal Seated Floater W - Side Entry Welded Body Trunnion X - Side Entry Welded Body Floater C - Side Entry Cryogenic Trunnion D - Side Entry Cryogenic Floater T - Side Entry Multi Port (T Port) L - Side Entry Multi Port (L Port) E - Top Entry Soft Seated Trunnion U - Top Entry Metal Seated Trunnion B - Top Entry Cryogenic Trunnion</p> <p>Construction</p> <p>1 - One Piece 2 - Two Piece 3 - Three Piece</p> <p>End Connection</p> <p>RF - Flanged Raised Face Serrated RS - Flanged Raised Face Smooth FF - Flanged Flat Face Serrated FS - Flanged Flat Face Smooth RT - Flanged RTJ SW - Socket Weld SN - Socket Weld With Nipple Extension BS - Screwed BSP NP - Screwed NPT BW - Butt Weld DN - DIN BT - Screwed BSPT SG - Small Groove LG - Large Groove TG - Tongue & Groove BN - Butt Weld + Nipple Ext. O - Other than above</p>	<p>Ratings</p> <p>1 - 150# / PN16 2 - 1500# 3 - 300# / PN40 4 - 400# / PN64 5 - 2500# 6 - 600# 8 - 800# 9 - 900# O - Other than above</p> <p>Bore</p> <p>F - Full R - Reduced / Regular</p> <p>Body & Ball</p> <p>C - WCB 1 - A105 7 - WCC L - LCB 8 - LF2 2 - LCC 4 - CF8 / SS304 / F304 6 - CF8M / SS316 / F316 3 - CF3 / SS304L / F304 5 - CF3M / SS316L / F316L A - CA 15 / SS 410 / F6A U - Duplex SS W - Super Duplex I - Inconel M - Monel O - Other than above</p> <p>Ball/Seat Coating (If applicable)</p> <p>e - ENP w - Overlay h - Hard Chrome s - Stellite c - Chrome Carbide t - Tungsten Carbide n - Chromium Nitride O - Other than above</p>	<p>Seat</p> <p>1 - A105 2 - LF2 4 - F304 6 - F316 3 - F304L 5 - F316L U - Duplex SS I - Inconel M - Monel T - PTFE G - RPTFE N - Nylon-PA 12 L - Nylon-Devlon D - Delrin P - PEEK E - PCTFE V - VITON O - Other than above</p> <p>Fire Safety</p> <p>F - Fire Safe N - Non-Fire Safe</p> <p>Operator</p> <p>B - Bare Stem G - Gear L - Hand Lever A - Actuated C - Chain Wheel O - Other than above</p> <p>Special Requirement</p> <p>SI - Sealant Injection PP - Pup Piece SE - Stem Extension BE - Bonnet Extension DP - Double Piston Effect (Non Relieving) SP - Short Pattern LP - Long Pattern JK - Jacketed LT - Low Temp. (-46°C/-50°F) XX - Special Requirement To Be Specified</p>
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Examples

S	2	RF	1	R	C	6	G	F	L	LP
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Above stands for side entry soft Seated floater, Two piece body, RF ends ,150#, Reduced Bore, WCB Body, SS316 Ball, RPTFE Seat, Fire Safe, Lever Operated, long pattern.

N	3	RT	9	F	1	1e	L	F	G	BE,SI
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Above stands for side entry soft seated Trunnion, Three piece body, RTJ ends, 900#, Full Bore, A105 Body, A105 Ball with ENP coating Nylon seat, Fire Safe, Gear Operated, Bonnet extension with sealant injection facility.

SPECIAL OPTIONS

Sealant Injection System

For stem sealing, additional gland security is available using stem sealant injection system. Similarly in the event of seat face damage due to contamination, an emergency seal can be formed using a seat sealant injection facility.

Stem Extension / Extended Gear Operator

Valve can be offered with stem, bleed & sealant injection line extensions when used for underground installations. Also available for butt weld valves are transition pieces (PUPS) to avoid any risk of seal damage during installation.

Notice :

1. The descriptions of all the products contained in this catalogue are general in nature and the products are subject to UNIMAC Standard Warranty and other terms and conditions as contained in the applicable contract for such products.
2. We reserve the right to change or modify Product Design or construct without prior notice and without any obligation to make such modification / change on products previously or subsequently sold.
3. UNIMAC is a trade mark of UNIMAC CONTROL SYSTEMS.
4. All UNIMAC Valves are designed and manufactured using good workmanship and materials and they meet all applicable industry standards. UNIMAC is very anxious to avoid injuries and property damage that might result from wrong application of the product. Proper Valve selection for a given application is imperative . Examples of misapplication or misuse of a Valve include but are not limited to any service or application in which the pressure - temperature rating is exceeded or in a chemical service that is incompatible with valve materials, use of undersized valve and actuator, use of extremely fast valve application and /or continuous valve cycling on standard valves, making modification to the product in any kind, failure to use caution in operating at high temperature, high pressure or highly hazardous services and failure to maintain valves as recommended.



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