

Diaphragm seals with flange connection series MA.99

Diaphragm seal with flange connection
Accessories for pressure instrument

General features

- Accessories for pressure instrument
- Aggressive, highly viscous, crystallising or hot media

Application area

Diaphragm seals are used for the protection of pressure measuring instruments in applications with difficult media. In diaphragm seal systems, the diaphragm of the diaphragm seal effects the separation of the instrument and the medium. The pressure is transmitted to the measuring instrument via the system fill fluid which is inside the diaphragm seal system.

General specification

Pressure range

From 400 mbar to 40 bar

Origin of wetted parts

Korea

Connection to the measuring inst.

Axial adapter

Type of mounting

Direct mounting (Standard)
Capillary (Option)
Cooling device (Option)



Mechanical accessories, series MA.96

Vacuum service

Basic service

Process connection, flange

DIN EN 1092-1
ASME B16.5
JIS B2220

Material

St. steel 1.4404 (316L)



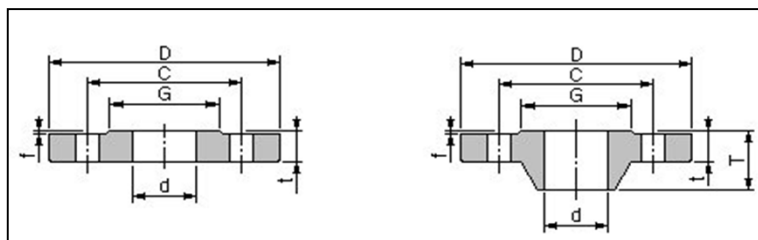
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ANSI standard



ANSI 150 lbs

ANSI B16.5 FORGED FLANGED

Unit : mm

Size (inch)	Size (mm)	D	t	G	T1	T2	B2	C	Number of holes	Bolting Dia. of holes	Stud Bolt Size
1/2	15	88.9	11.2	35.1	47.8	15.7	22.4	60.4	4	16	1/2-13UNCx65L
3/4	20	98.6	12.7	42.9	52.3	15.7	27.7	69.9	4	16	1/2-13UNCx65L
1	25	108	14.2	50.8	55.6	17.5	34.5	79.2	4	16	1/2-13UNCx70L
1 1/4	32	117.3	15.7	63.5	57.2	20.6	43.2	88.9	4	16	1/2-13UNCx70L
1 1/2	40	127	17.5	73.2	62	22.4	49.5	98.5	4	16	1/2-13UNCx75L
2	50	152.4	19.1	92	63.5	25.4	62	120.6	4	19	5/8-11UNCx85L
2 1/2	65	177.8	22.4	104.6	69.9	28.4	74.7	139.7	4	19	5/8-11UNCx90L
3	80	190.5	23.9	127	69.9	30.2	90.7	152.4	4	19	5/8-11UNCx95L
3 1/2	90	215.9	23.9	139.7	71.4	31.8	103.4	177.8	8	19	5/8-11UNCx95L
4	100	228.6	23.9	157.2	76.2	33.3	116.1	190.5	8	19	5/8-11UNCx95L
5	125	254	23.9	185.7	88.9	36.6	143.8	215.9	8	22	3/4-10UNCx105L
6	150	279.4	25.4	215.9	88.9	39.6	170.7	241.3	8	22	3/4-10UNCx105L
8	200	342.9	28.5	269.7	101.6	44.5	221.5	298.4	8	22	3/4-10UNCx110L
10	250	406.4	30.2	323.8	101.6	49.3	276.4	361.9	12	25	7/8-9UNCx120L
12	300	482.6	31.8	381	114.3	55.6	327.2	431.8	12	25	7/8-9UNCx120L
14	350	533.4	35.1	412.8	127	57.2	359.2	476.2	12	28	1-8UNCx135L
16	400	596.9	36.6	469.9	127	63.5	410.5	539.7	16	28	1-8UNCx140L
18	450	635	39.6	533.4	139.7	68.3	461.8	577.8	16	32	1 1/8-8UNx155L
20	500	698.5	42.9	584.2	144.5	73.2	513.1	635	20	32	1 1/8-8UNx160L
22	550	749.3	46	641.3	149.2	79.4	564.4	692.1	20	35	1 1/4-8UNx165L
24	600	812.8	47.8	692.1	152.4	82.6	616	749.3	20	35	1 1/4-8UNx180L
26	650	870	50.8	723.9	127	85.7	666.8	806.5	24	35	1 1/4-8UNx180L
28	700	927.1	52.4	793.7	128.6	87.3	717.5	863.6	28	35	1 1/4-8UNx180L
30	750	984.3	54	857.3	130.2	88.9	768.4	914.4	28	35	1 1/4-8UNx185L

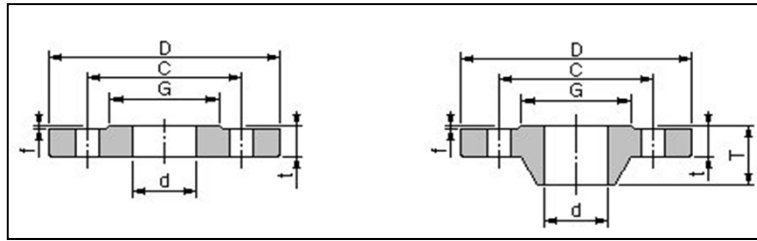
ANSI 300 lbs

ANSI B16.5 FORGED FLANGED

Unit : mm

Size (inch)	Size (mm)	D	t	G	T1	T2	B2	C	Number of holes	Bolting Dia. of holes	Stud Bolt Size
1/2	15	95.2	14.2	35	52.3	22.4	22.4	66.5	4	16	1/2-13UNCx70L
3/4	20	117.3	15.7	42.9	57.2	25.4	27.7	82.5	4	19	5/8-11UNCx80L
1	25	123.9	17.5	50.8	62	26.9	34.5	88.9	4	19	5/8-11UNCx85L
1 1/4	32	133.3	19.1	63.5	65	26.9	43.2	98.5	4	19	5/8-11UNCx85L
1 1/2	40	155.4	20.6	73.1	68.3	30.2	49.5	114.3	4	22	3/4-10UNCx95L
2	50	165.1	22.3	91.9	69.9	33.3	62	127	8	19	5/8-11UNCx95L
2 1/2	65	190.5	25.4	104.6	76.2	38.1	74.7	149.3	8	22	3/4-10UNCx105L
3	80	209.5	28.4	127	79.2	42.9	90.7	168.1	8	22	3/4-10UNCx110L
3 1/2	90	228.6	30.2	139.7	81	44.5	103.4	184.1	8	22	3/4-10UNCx115L
4	100	254	31.7	157.2	85.9	47.8	116.1	200.1	8	22	5/8-11UNCx115L
5	125	279.4	35.1	185.7	98.6	50.8	143.8	234.9	8	22	3/4-10UNCx120L
6	150	317.5	36.6	215.9	98.6	52.3	170.7	269.7	12	22	3/4-10UNCx130L
8	200	381	41.1	269.7	111.3	62	221.5	330.2	12	25	7/8-9UNCx140L
10	250	444.5	47.7	323.8	117.3	66.5	276.4	387.3	16	28	1-8UNCx160L
12	300	520.7	50.8	381	130	73.2	327.2	450.8	16	32	1 1/8-8UNx175L
14	350	584.2	53.8	412.7	142.7	76.2	359.2	514.3	20	32	1 1/8-8UNx180L
16	400	647.7	57.1	469.9	146.1	82.6	410.5	571.5	20	35	1 1/4-8UNx190L
18	450	711.2	60.4	533.4	158.8	88.9	461.8	628.6	24	35	1 1/4-8UNx200L
20	500	774.7	63.5	584.2	162.1	95.3	513.1	685.8	24	35	1 1/4-8UNx210L
22	550	838.2	66.7	641.3	165.1	101.6	564.4	742.9	24	42	1 1/2-8UNx225L
24	600	914.4	69.8	692.1	168.1	106.4	616	812.8	24	42	1 1/2-8UNx235L
26	650	971.6	79.4	749.3	184.2	114.3	666.8	876.3	28	45	1 5/8-8UNx255L
28	700	1035	85.7	800.1	196.8	119.8	717.5	939.8	28	45	1 5/8-8UNx270L

ANSI standard



ANSI 600 lbs

ANSI B16.5 FORGED FLANGE

Unit : mm

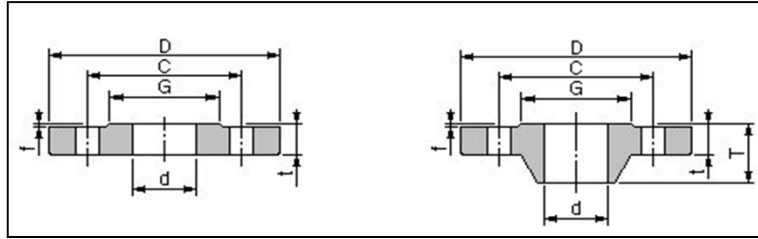
Size (inch)	Size (mm)	D.	t	G	T1	T2	B2	C	Number of holes	Bolting Dia. of holes	Stud Bolt Size
1/2	15	95.2	14.2	35	52.3	22.4	22.4	66.5	4	16	1/2-13UNCx85L
3/4	20	117.3	15.7	42.9	57.2	25.4	27.7	82.5	4	19	5/8-11UNCx90L
1	25	123.9	17.5	50.8	62	26.9	34.5	88.9	4	19	5/8-11UNCx95L
1 1/4	32	133.3	20.6	63.5	66.5	28.4	43.2	98.5	4	19	5/8-11UNCx105L
1 1/2	40	155.4	22.3	73.1	69.9	31.8	49.5	114.3	4	22	3/4-10UNCx110L
2	50	165.1	25.4	91.9	73.2	36.6	62	127	8	19	5/8-11UNCx110L
2 1/2	65	190.5	28.4	104.6	79.2	41.1	74.7	149.3	8	22	3/4-10UNCx120L
3	80	209.5	31.7	127	82.6	46	90.7	168.1	8	22	3/4-10UNCx130L
3 1/2	90	228.6	35	139.7	85.9	49.3	103.4	184.1	8	25	7/8-9UNCx140L
4	100	273	38.1	157.2	101.6	53.8	116.1	215.9	8	25	7/8-9UNCx150L
5	125	330.2	44.4	185.7	114.3	60.5	143.8	266.7	8	28	1-8UNCx165L
6	150	355.6	47.7	215.9	117.3	66.5	170.7	292.1	12	28	1-8UNCx175L
8	200	419.1	55.6	269.7	133.4	76.2	221.5	349.2	12	32	1 1/8-8UNx200L
10	250	508	63.5	323.8	152.4	85.9	276.4	431.8	16	35	1 1/4-8UNx220L
12	300	558.8	66.5	381	155.4	91.9	327.2	488.9	20	35	1 1/4-8UNx225L
14	350	603.2	69.8	412.7	165.1	93.7	359.2	527	20	39	1 3/8-8UNx235L
16	400	685.8	76.2	469.9	177.8	106.4	410.5	603.2	20	42	1 1/2-8UNx255L
18	450	742.9	82.5	533.4	184.2	117.3	461.8	654	20	45	1 5/8-8UNx275L
20	500	812.8	88.9	584.2	190.5	127	513.1	723.9	24	45	1 5/8-8UNx295L
22	550	869.9	95.3	641.3	196.8	133.3	564.3	777.9	24	48	1 3/4-8UNx305L
24	600	939.8	101.6	692.1	203.2	139.7	616	838.2	24	51	1 7/8-8UNx330L
26	650	1016	108	749.3	222.3	222.3	666.8	914.4	28	51	1 7/8-8UNx340L
28	700	1073.1	111.1	800.1	234.9	234.9	717.5	965.2	28	54	2-8UNx350L

ANSI 900 lbs

ANSI B16.5 FORGED FLANGE

Unit : mm

Size (inch)	Size (mm)	D	t	G	T1	T2	B2	C	Number of holes	Bolting Dia. of holes	Stud Bolt Size
1/2	15	120.7	22.4	35.1	60.5	31.8	22.4	82.6	4	22	3/4-10UNCx115L
3/4	20	130	25.4	42.9	69.9	35.1	27.7	88.9	4	22	3/4-10UNCx120L
1	25	149.4	28.4	50.8	73.2	41.1	34.5	101.6	4	25	7/8-9UNCx135L
1 1/4	32	158.8	28.4	63.5	73.2	41.1	43.2	111.3	4	25	7/8-9UNCx135L
1 1/2	40	177.8	31.8	73.2	82.6	44.5	49.5	124	4	28	1-8UNCx145L
2	50	215.9	38.1	91.9	101.6	57.2	62	165.1	8	25	7/8-9UNCx155L
2 1/2	65	244.3	41.1	104.6	104.6	63.5	74.7	190.5	8	28	1-8UNCx165L
3	80	241.3	38.1	127	101.6	53.8	90.7	190.5	8	25	7/8-9UNCx155L
4	90	292.1	44.5	157.2	114.3	69.9	116.1	235	8	32	1 1/8-8UNx180L
5	100	349.3	50.8	185.7	127	79.2	143.8	279.4	8	35	1 1/4-8UNx200L
6	125	381	55.6	215.9	139.7	85.9	170.7	317.5	12	32	1 1/8-8UNx200L
8	150	469.9	63.5	269.7	162.1	101.6	221.5	393.7	12	38	1 3/8-8UNx230L
10	200	546.1	69.9	323.9	184.2	108	276.4	469.9	16	38	1 3/8-8UNx240L
12	250	609.6	79.2	381	200.2	117.3	327.2	533.4	20	38	1 3/8-8UNx260L
14	300	641.4	85.9	412.8	212.9	130	359.2	558.8	20	41	1 1/2-8UNx280L
16	350	704.9	88.9	469.9	215.9	133.4	410.5	616	20	45	1 5/8-8UNx295L
18	400	787.4	101.6	533.4	228.6	152.4	461.8	685.8	20	51	1 7/8-8UNx330L

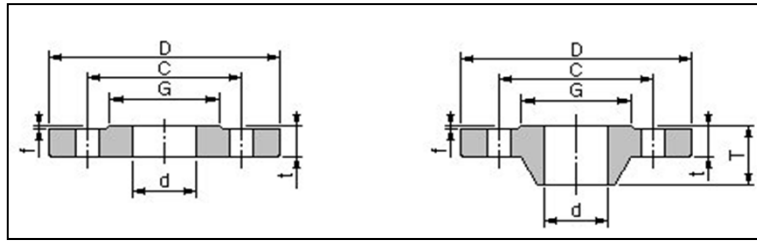


JIS B 2220 ~ 1984

Unit : mm

Class	Size	D	t	f	G	T	T1	d	Bolting			
									C	Number of Holes	Dia. Of Holes	Bolt Size
JIS 10K	10	90	12	1	48	-	-	17.8	65	4	15	M12
	15	95	12	1	52	-	-	22.2	70	4	15	M12
	20	100	14	1	58	-	-	27.7	75	4	15	M12
	25	125	14	1	70	-	-	34.5	90	4	19	M16
	32	135	16	2	80	-	-	43.2	100	4	19	M16
	40	140	16	2	85	-	-	49.1	105	4	19	M16
	50	155	16	2	100	-	-	61.1	120	4	19	M16
	65	175	18	2	120	-	-	77.1	140	4	19	M16
	80	185	18	2	130	-	-	90	150	8	19	M16
	100	210	18	2	155	-	-	115.4	175	8	19	M16
	125	250	20	2	185	-	-	141.2	210	8	23	M20
	150	280	22	2	215	-	-	166.6	240	8	23	M20
	200	330	22	2	265	-	-	218	290	12	23	M20
	250	400	24	2	325	36	-	269.5	355	12	25	M22
	300	445	24	3	370	38	-	321	400	16	25	M22
	350	490	26	3	415	42	-	358.1	445	16	25	M22
	400	560	28	3	475	44	-	409	510	16	27	M24
JIS 20K	450	620	30	3	530	48	-	460	565	20	27	M24
	500	675	30	3	585	48	-	511	620	20	27	M24
	600	795	32	3	-	52	-	613	730	24	33	
	10	90	14	1	48	20	-	17.8	65	4	15	M12
	15	95	14	1	52	20	-	22.2	70	4	15	M12
	20	100	16	1	58	22	-	27.7	75	4	15	M12
	25	125	16	1	70	24	-	34.5	90	4	19	M16
	32	135	18	2	80	26	-	43.2	100	4	19	M16
	40	140	18	2	85	26	-	49.1	105	4	19	M16
	50	155	18	2	100	26	-	61.1	120	8	19	M16
	65	175	20	2	120	30	-	77.1	140	8	19	M16
	80	200	22	2	135	34	-	90	160	8	23	M20
	100	225	24	2	160	36	-	115.4	185	8	23	M20
	125	270	26	2	195	40	-	141.2	225	8	25	M22
	150	305	28	2	230	42	-	166.6	260	12	25	M22
	200	350	30	2	275	46	-	218	305	12	25	M22
	250	430	34	2	345	52	-	269.5	380	12	27	M24
JIS 30K	300	480	36	3	395	56	-	321	430	16	27	M24
	350	540	40	3	440	62	-	358.1	480	16	33	M30
	400	605	46	3	495	70	-	409	540	16	33	M30
	450	675	48	3	560	78	-	460	605	20	33	M30
	500	730	52	3	615	84	-	511	660	20	33	M30
	10	110	16	1	52	24	-	17.8	75	4	19	M16
	15	115	18	1	55	26	45	22.2	80	4	19	M16
	20	120	18	1	60	28	45	27.7	85	4	19	M16
	25	130	20	1	70	30	48	34.5	95	4	19	M16
	32	140	22	2	80	32	52	43.2	105	4	19	M16
	40	160	22	2	90	34	54	49.1	120	4	23	M20
	50	165	22	2	105	36	57	61.1	130	8	19	M16
	65	200	26	2	130	40	69	77.1	160	8	23	M20
	80	210	28	2	140	44	73	90	170	8	23	M20
	100	240	32	2	160	48	76	115.4	195	8	25	M22
	125	275	36	2	195	54	86	141.2	230	8	25	M22
	150	325	38	2	235	58	95	166.6	275	12	27	M24
	200	370	42	2	280	64	102	218	320	12	27	M24
	250	450	48	2	345	72	118	269.5	390	12	33	M30
	300	515	52	3	405	78	127	321	450	16	33	M30
	350	560	54	3	450	84	134	358.1	495	16	33	M30

DIN standard



DIN - PN10

DIN 2543, 2527, 2544, 2545, 2527, 2634 FORGED

Unit : mm

Size	D	t			G	#	T	d (O.D. of Pipe)	Bolting		
		W.N.	Slip-On	Blind					C	Dia. Of Holes	Numbers - Size
10	90	14	14	14	40	2	35	14	60	14	4 - M12
15	95	14	14	14	45	2	35	20	65	14	4 - M12
20	105	16	16	16	58	2	38	25	75	14	4 - M12
25	115	16	16	16	68	2	38	30	85	14	4 - M12
32	140	16	16	16	78	2	40	38	100	18	4 - M16
40	150	16	16	16	88	3	42	44.5	110	18	4 - M16
50	165	18	18	18	102	3	45	57	125	18	4 - M16
65	185	18	18	18	122	3	45	76.1	145	18	4 - M16
80	200	20	20	20	138	3	50	88.9	160	18	4 - M16
100	220	20	20	20	158	3	52	108	180	18	8 - M16
125	250	22	22	22	188	3	55	133	210	18	8 - M16
150	285	22	22	22	212	3	55	159	240	23	8 - M20
200	340	24	24	24	268	3	62	216	295	23	8 - M20
250	395	26	26	26	320	3	68	267	350	23	12 - M20
300	445	26	26	28	370	4	68	318	400	23	12 - M20
350	505	26	28	30	430	4	68	368	460	23	16 - M20
400	565	26	32	32	482	4	72	419	515	27	16 - M24
500	670	28	38	34	585	4	75	521	620	27	20 - M24
600	780	28	-	-	685	5	80	622	725	30	20 - M27
700	895	30	-	-	800	5	80	720	840	30	24 - M27
800	1015	32	-	-	905	5	90	820	950	33	24 - M30
900	1115	34	-	-	1005	5	95	920	1050	33	28 - M30

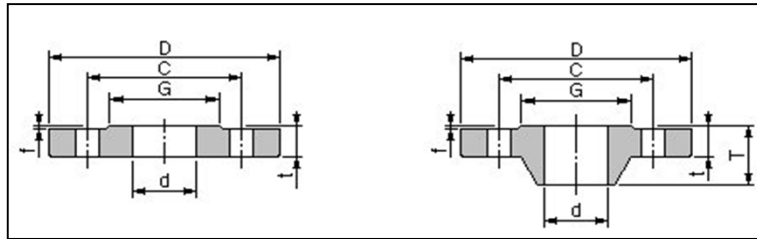
DIN - PN16

DIN 2543, 2527, 2544, 2545, 2527, 2634 FORGED

Unit : mm

Size	D	t			G	#	T	d (O.D. of Pipe)	Bolting		
		W.N.	Slip-On	Blind					C	Dia. Of Holes	Numbers - Size
10	90	14	14	14	40	2	35	14	60	14	4 - M12
15	95	14	14	14	45	2	35	20	65	14	4 - M12
20	105	16	16	16	58	2	38	25	75	14	4 - M12
25	115	16	16	16	68	2	38	30	85	14	4 - M12
32	140	16	16	16	78	2	40	38	100	18	4 - M16
40	150	16	16	16	88	3	42	44.5	110	18	4 - M16
50	165	18	18	18	102	3	45	57	125	18	4 - M16
65	185	18	18	18	122	3	45	76.1	145	18	4 - M16
80	200	20	20	20	138	3	50	88.9	160	18	8 - M16
100	220	20	20	20	158	3	52	108	180	18	8 - M16
125	250	22	22	22	188	3	55	133	210	18	8 - M16
150	285	22	22	22	212	3	55	159	240	23	8 - M20
200	340	24	24	24	268	3	62	216	295	23	12 - M20
250	405	26	26	26	320	3	70	267	355	27	12 - M24
300	460	28	28	28	378	4	78	318	410	27	12 - M24
350	520	30	30	30	438	4	82	368	470	27	16 - M24
400	580	32	32	32	490	4	85	419	525	30	16 - M27
500	715	34	36	34	610	4	90	521	650	33	20 - M30
600	840	36	40	-	725	5	95	622	770	36	20 - M33
700	910	36	-	-	795	5	100	720	840	36	24 - M33
800	1025	38	-	-	900	5	105	820	950	39	24 - M36
900	1125	40	-	-	1000	5	110	920	1050	39	28 - M36

DIN standard



DIN - PN25

DIN 2543, 2527, 2544, 2545, 2527, 2634 FORGED

Unit : mm

Size	D	t			G	#f	T	d (O.D. of Pipe)	Bolting		
		W.N.	Slip-On	Blind					C	Dia. Of Holes	Numbers - Size
10	90	16	-	16	40	2	35	14	60	14	4 - M12
15	95	16	16	16	45	2	38	20	65	14	4 - M12
20	105	18	18	18	58	2	40	25	75	14	4 - M12
25	115	18	18	18	68	2	40	30	85	14	4 - M12
32	140	18	18	18	78	2	42	38	100	18	4 - M16
40	150	18	18	18	88	3	45	44.5	110	18	4 - M16
50	165	20	20	20	102	3	48	57	125	18	4 - M16
65	185	22	22	22	122	3	52	76.1	145	18	8 - M16
80	200	24	24	24	138	3	58	88.9	160	18	8 - M16
100	235	24	24	24	162	3	65	108	190	23	8 - M20
125	270	26	26	26	188	3	68	133	220	27	8 - M24
150	300	28	28	28	218	3	75	159	250	27	8 - M24
200	360	30	30	30	278	3	80	216	310	27	12 - M24
250	425	32	32	32	335	3	88	267	370	30	12 - M27
300	485	34	34	34	395	4	92	318	430	30	16 - M27
350	555	38	38	38	450	4	100	368	490	33	16 - M30
400	620	40	40	40	505	4	110	419	550	36	16 - M33
500	730	44	44	44	615	4	125	521	660	36	20 - M33
600	845	46	-	-	720	5	125	622	770	39	20 - M36
700	960	46	-	-	820	5	125	720	875	42	24 - M39
800	1085	50	-	-	930	5	135	820	990	48	24 - M45
900	1185	54	-	-	1030	5	145	920	1090	48	28 - M45
1000	1320	58	-	-	1140	5	155	1020	1210	56	28 - M52

DIN - PN40

DIN 2543, 2527, 2544, 2545, 2527, 2634 FORGED

Unit : mm

Size	D	t			G	#f	T	d (O.D. of Pipe)	Bolting		
		W.N.	Slip-On	Blind					C	Dia. Of Holes	Numbers - Size
10	90	16	-	16	40	2	35	14	60	14	4 - M12
15	95	16	16	16	45	2	38	20	65	14	4 - M12
20	105	18	18	18	58	2	40	25	75	14	4 - M12
25	115	18	18	18	68	2	40	30	85	14	4 - M12
32	140	18	18	18	78	2	42	38	100	18	4 - M16
40	150	18	18	18	88	3	45	44.5	110	18	4 - M16
50	165	20	20	20	102	3	48	57	125	18	4 - M16
65	185	22	22	22	122	3	52	76.1	145	18	8 - M16
80	200	24	24	24	138	3	58	88.9	160	18	8 - M16
100	235	24	24	24	162	3	65	108	190	23	8 - M20
125	270	26	26	26	188	3	68	133	220	27	8 - M24
150	300	28	28	28	218	3	75	159	250	27	8 - M24
200	375	34	34	34	285	3	88	216	320	30	12 - M27
250	450	38	38	38	345	3	105	267	385	33	12 - M30
300	515	42	42	42	410	4	115	318	450	33	16 - M30
350	580	46	46	46	465	4	125	368	510	36	16 - M33
400	660	50	50	50	535	4	135	419	585	39	16 - M36
500	755	52	52	52	615	4	140	521	670	42	20 - M39



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