

## Flanges

Standard: EN 1092-1

### Application

- For general use in water, steam and other non-aggressive fluid

### Materials

- Forged or cast steel, which are listed in the standards productions

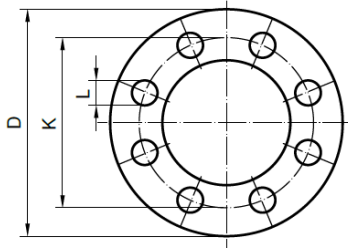
### Production and delivery

- In the basic form according to appropriate standard or customer request, with raised sealing surface and the quality of treatment sealing surfaces as recommended by the standards

### Optional features

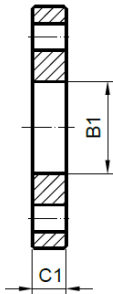
- The flanges made of materials for a high temperature or chemical resistant steel
- Flanges according to other national standards such as DIN, GOST, BS, UNI etc.
- With other type of sealing surfaces in accordance with EN 1092-1 and ASME B16.5

### Flanges according to EN 1092-1

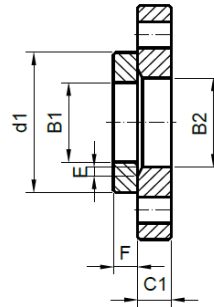


Drawing H.1.1

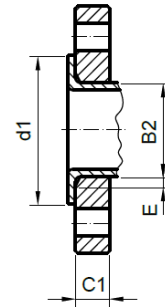
This diagram illustrates the arrangement but not necessarily the correct number of bolt holes. Refer to the column "Bolting number" in table for actual number.



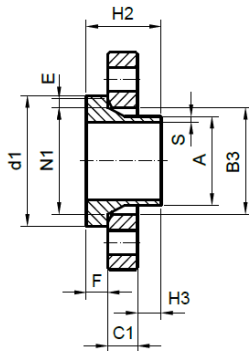
Drawing H.1.2  
Type 01



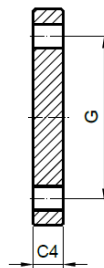
Drawing H.1.3  
Type 02 i Type 32



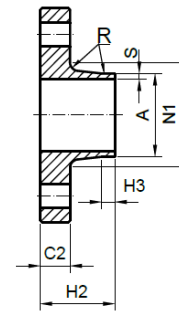
Drawing H.1.4  
Type 02 i Type 33



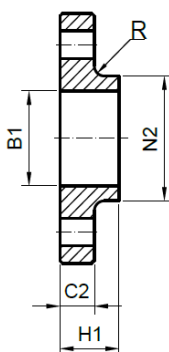
Drawing H.1.5  
Type 04 i Type 34



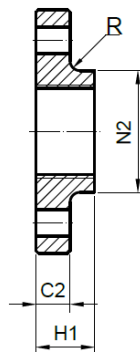
Drawing H.1.6  
Type 05



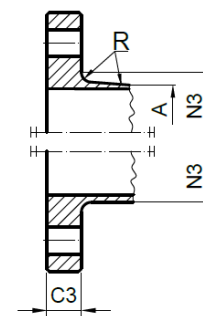
Drawing H.1.7  
Type 11



Drawing H.1.8  
Type 12



Drawing H.1.9  
Type 13



Drawing H.1.10  
Type 21

NOTE 1: Dimensions N1, N2 and N3 are measured at the intersection of the hub draft angle and the back face of the flange  
NOTE 2: For d1 dimensions see document "Flange facing according to EN 1092-1".

Dimensions (mm)

Table H.1.1

DN	PN	Mating dimensions										Flange type										Weight (kg)							
		Outside diameter			Diameter of bolt		Bolts	Outside diameter of neck	Bore diameters			Flange thickness				Chamfer	Collar thickness		Diameter of shoulders	Lenght			Neck diameters			Corner radius	Neck Thickness (preferred value)		
		D	K	L	Broj	Vel.			A	B1	B2	B3	C1	C2	C3		C4	E		F	G <sub>max</sub>		H1	H2	H3			N1	N2
		01,02,04,05,11,12,13,21										11 21 <sup>(1)</sup> 35	01 12 32	02	04	01 02 04	11 12 13	21	05	02 04	32 34		05	12 13	11 34	11 34	11 34	11 13	21
10	6	75	50	11	1	M10	17,2	18,0	21	---	12	12	12	12	3	10	---	20	28	6	26	25	20	4	2	0,35			
	10	90	60	14	4	M12	17,2	18,0	21	31	14	16	16	16	3	12	---	22	35	6	28	30	28	4	2	0,68			
	16	90	60	14	4	M12	17,2	18,0	21	31	14	16	16	16	3	12	---	22	35	6	28	30	28	4	2	0,68			
	25	90	60	14	4	M12	17,2	18,0	21	31	14	16	16	16	3	12	---	22	35	6	28	30	28	4	2	0,68			
	40	90	60	14	4	M12	17,2	18,0	21	31	14	16	16	16	3	12	---	22	35	6	28	30	28	4	2	0,68			
	63	100	70	14	4	M12	17,2	18,0	---	---	20	20	20	20	---	---	---	28	45	6	32	40	40	4	2	1,09			
	100	100	70	14	4	M12	17,2	18,0	---	---	20	20	20	20	---	---	---	28	45	6	32	40	40	4	2	1,09			
	160	100	70	14	4	M12	17,2	---	---	---	---	20	20	---	---	---	---	---	45	6	32	40	---	4	2	1,1			
	250	125	85	18	4	M16	---	---	---	---	---	---	24	---	---	---	---	---	---	---	---	---	46	4	---	2,14			
	320	125	85	18	4	M16	17,2	---	---	---	---	24	24	---	---	---	---	---	58	6	44	---	46	4	2,6	2,14			
400	125	85	18	4	M16	17,2	---	---	---	---	28	28	---	---	---	---	---	65	8	48	---	48	4	3,6	2,55				
15	6	80	55	11	4	M10	21,3	22,0	25	---	12	12	12	12	3	10	---	20	30	6	30	30	26	4	2	0,41			
	10	95	65	14	4	M12	21,3	22,0	25	35	14	16	16	16	3	12	---	22	38	6	32	35	32	4	2	0,77			
	16	95	65	14	4	M12	21,3	22,0	25	35	14	16	16	16	3	12	---	22	38	6	32	35	32	4	2	0,77			
	25	95	65	14	4	M12	21,3	22,0	25	35	14	16	16	16	3	12	---	22	38	6	32	35	32	4	2	0,77			
	40	95	65	14	4	M12	21,3	22,0	25	35	14	16	16	16	3	12	---	22	38	6	32	35	32	4	2	0,77			
	63	105	75	14	4	M12	21,3	22,0	---	---	20	20	20	20	---	---	---	28	45	6	34	43	45	4	2	1,2			
	100	105	75	14	4	M12	21,3	22,0	---	---	20	20	20	20	---	---	---	28	45	6	34	43	45	4	3,2	1,2			
	160	105	75	14	4	M12	21,3	---	---	---	---	20	20	---	---	---	---	---	45	6	34	---	45	4	2	1,2			
	250	130	90	18	4	M16	21,3	---	---	---	---	26	26	---	---	---	---	---	60	6	48	---	52	4	2,6	2,51			
	320	130	90	18	4	M16	21,3	---	---	---	---	26	26	---	---	---	---	---	60	6	48	---	52	4	3,2	2,53			
400	145	100	22	4	M20	26,9	---	---	---	---	30	30	---	---	---	---	---	68	8	56	---	57	4	5,0	3,62				
20	6	90	65	11	4	M10	26,9	27,5	31	---	14	14	14	14	4	10	---	24	32	6	38	40	34	4	2,3	0,62			
	10	105	75	14	4	M12	26,9	27,5	31	42	16	18	18	18	4	14	---	26	40	6	40	45	40	4	2,3	1,09			
	16	105	75	14	4	M12	26,9	27,5	31	42	16	18	18	18	4	14	---	26	40	6	40	45	40	4	2,3	1,09			
	25	105	75	14	4	M12	26,9	27,5	31	42	16	18	18	18	4	14	---	26	40	6	40	45	40	4	2,3	1,09			
	40	105	75	14	4	M12	26,9	27,5	31	42	16	18	18	18	4	14	---	26	40	6	40	45	40	4	2,3	1,09			
	63	130	90	18	4	M16	26,9	27,5	---	---	22	22	22	22	---	---	---	30	48	8	42	52	50	4	2,6	2,02			
	100	130	90	18	4	M16	26,9	27,5	---	---	22	22	22	22	---	---	---	30	48	8	42	52	50	4	3,2	2,02			
	25	6	100	75	11	4	M10	33,7	34,5	38	---	14	14	14	14	4	10	---	24	35	6	42	50	44	4	2,6	0,76		
		10	115	85	14	4	M12	33,7	34,5	38	49	16	18	18	18	4	14	---	28	40	6	46	52	50	4	2,6	1,3		
		16	115	85	14	4	M12	33,7	34,5	38	49	16	18	18	18	4	14	---	28	40	6	46	52	50	4	2,6	1,3		
25		115	85	14	4	M12	33,7	34,5	38	49	16	18	18	18	4	14	---	28	40	6	46	52	50	4	2,6	1,3			
40		115	85	14	4	M12	33,7	34,5	38	49	16	18	18	18	4	14	---	28	40	6	46	52	50	4	2,6	1,3			
63		140	100	18	4	M16	33,7	34,5	---	---	24	24	24	24	---	---	---	32	58	8	52	60	61	4	2,6	2,63			
100		140	100	18	4	M16	33,7	34,5	---	---	24	24	24	24	---	---	---	32	58	8	52	60	61	4	3,6	2,63			
160		140	100	18	4	M16	33,7	---	---	---	---	24	24	---	---	---	---	---	58	8	52	---	61	4	2,9	2,64			
250		150	105	22	4	M20	33,7	---	---	---	---	28	28	---	---	---	---	---	65	8	60	---	63	4	3,6	3,58			
320		160	115	22	4	M20	33,7	---	---	---	---	34	34	---	---	---	---	---	78	8	68	---	72	4	5,0	5,18			
400	180	130	26	4	M24	42,4	---	---	---	---	38	38	---	---	---	---	---	90	10	82	---	81	4	7,1	7,45				
32	6	120	90	14	4	M12	42,4	43,5	46	---	16	14	14	14	5	10	---	26	35	6	55	60	56	6	2,6	1,11			
	10	140	100	18	4	M16	42,4	43,5	47	59	18	18	18	18	5	14	---	30	42	6	56	60	60	6	2,6	1,91			
	16	140	100	18	4	M16	42,4	43,5	47	59	18	18	18	18	5	14	---	30	42	6	56	60	60	6	2,6	1,91			
	25	140	100	18	4	M16	42,4	43,5	47	59	18	18	18	18	5	14	---	30	42	6	56	60	60	6	2,6	1,91			
	40	140	100	18	4	M16	42,4	43,5	47	59	18	18	18	18	5	14	---	30	42	6	56	60	60	6	2,6	1,91			
	63	155	110	22	4	M20	42,4	43,5	---	---	24	24	26	24	---	---	---	32	60	8	62	68	68	6	2,6	3,2			
	100	155	110	22	4	M20	42,4	43,5	---	---	24	24	26	24	---	---	---	32	60	8	62	68	68	6	3,6	3,25			
	40	6	130	100	14	4	M12	48,3	49,5	53	---	16	14	14	14	5	10	---	26	38	7	62	70	64	6	2,6	1,26		
		10	150	110	18	4	M16	48,3	49,5	53	67	18	18	18	18	5	14	---	32	45	7	64	70	70	6	2,6	2,15		
		16	150	110	18	4	M16	48,3	49,5	53	67	18	18	18	18	5	14	---	32	45	7	64	70	70	6	2,6	2,15		
25		150	110	18	4	M16	48,3	49,5	53	67	18	18	18	18	5	14	---	32	45	7	64	70	70	6	2,6	2,15			
40		150	110	18	4	M16	48,3	49,5	53	67	18	18	18	18	5	14	---	32	45	7	64	70	70	6	2,6	2,15			
63		170	125	22	4	M20	48,3	49,5	---	---	26	26	28	26	---	---	---	34	62	10	70	80	82	6	2,9	4,07			
100		170	125	22	4	M20	48,3	49,5	---	---	26	26	28	26	---	---	---	34	62	10	70	80	82	6	3,6	4,07			
160		170	125																										

Dimensions (mm)

Extension table H.1.1

DN	PN	Mating dimensions					Outside diameter of neck	Bore diameters				Flange thickness				Chamber	Collar thickness	Diameter of shoulders	Lenght			Neck diameters			Corner radius	Neck Thickness (preferred value)	Weight (kg)				
		Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts			B1	B2	B3	C1	C2	C3	C4	E				F	G <sub>max</sub>	H1	H2	H3	N1				N2	N3	R	S
					Broj	Vel.																									
		Flange type																													
01,02,04,05,11,12,13,21					11	01			01	11	21	05	02	32	05	12	11	11	11	12	13	21	11	11							
65	6	160	130	14	4	M12	76,1	77,5	81	---	16	14	14	14	6	12	55	32	38	9	88	100	94	6	2,9	1,77					
	10	185	145	18	(2)	M16	76,1	77,5	81	96	20	18	18	18	6	16	55	32	45	10	92	104	104	6	2,9	3,0					
	16	185	145	18	(2)	M16	76,1	77,5	81	96	20	18	18	18	6	16	55	32	45	10	92	104	104	6	2,9	3,0					
	25	185	145	18	8	M16	76,1	77,5	81	96	22	22	22	22	6	16	55	38	52	10	90	104	104	6	2,9	3,0					
	40	185	145	18	8	M16	76,1	77,5	81	96	22	22	22	22	6	16	55	38	52	10	90	104	104	6	2,9	3,68					
	63	205	160	22	8	M20	76,1	77,5	---	---	26	26	26	26	---	---	45	40	68	12	98	112	105	6	4,0	5,58					
	100	220	170	26	8	M24	76,1	77,5	---	---	30	30	34	30	---	---	45	40	76	12	108	118	118	6	4,0	7,57					
	160	220	170	26	8	M24	76,1	---	---	---	---	---	34	34	---	---	---	---	82	12	108	---	118	6	5,0	8,75					
	250	230	180	26	8	M24	76,1	---	---	---	---	---	42	42	---	---	---	---	95	12	124	---	125	6	8,0	12,8					
	320	255	200	30	8	M27	88,9	---	---	---	---	---	51	51	---	---	---	---	120	12	138	---	137	6	11,0	19,5					
400	290	225	33	8	M30	101,6	---	---	---	---	---	64	64	---	---	---	---	135	18	158	---	158	6	16,0	31,6						
80	6	190	150	18	4	M16	88,9	90,5	94	---	18	16	16	6	12	70	34	42	10	102	110	110	8	3,2	2,88						
	10	200	160	18	8	M16	88,9	90,5	94	108	20	20	20	6	16	70	34	50	10	105	118	120	6	3,2	3,92						
	16	200	160	18	8	M16	88,9	90,5	94	108	20	20	20	6	16	70	34	50	10	105	118	120	6	3,2	3,92						
	25	200	160	18	8	M16	88,9	90,5	94	114	24	24	24	6	18	70	40	58	12	105	118	120	8	3,2	3,92						
	40	200	160	18	8	M16	88,9	90,5	94	114	24	24	24	6	18	70	40	58	12	105	118	120	8	3,2	4,78						
	63	215	170	22	8	M20	88,9	90,5	---	---	30	28	28	28	---	---	60	44	72	12	112	125	122	8	4,5	6,68					
	100	230	180	26	8	M24	88,9	90,5	---	---	34	32	36	32	---	---	60	44	78	12	120	130	128	8	5,0	8,82					
	160	230	180	26	8	M24	88,9	---	---	---	---	---	36	36	---	---	---	---	86	12	120	---	128	8	6,3	10,3					
	250	255	200	30	8	M27	101,6	---	---	---	---	---	46	46	---	---	---	---	102	12	136	---	142	8	11,0	16,5					
	320	275	220	30	8	M27	101,6	---	---	---	---	---	55	55	---	---	---	---	130	14	156	---	160	8	12,5	25,2					
400	305	240	33	8	M30	114,3	---	---	---	---	---	68	68	---	---	---	---	150	20	174	---	174	8	17,5	38,4						
100	6	210	170	18	4	M16	114,3	116,0	120	---	18	16	16	6	14	90	40	45	10	130	130	130	8	3,6	3,41						
	10	220	180	18	8	M16	114,3	116,0	120	134	22	20	20	6	18	90	40	52	12	131	140	140	8	3,6	4,62						
	16	220	180	18	8	M16	114,3	116,0	120	134	22	20	20	6	18	90	40	52	12	131	140	140	8	3,6	4,62						
	25	235	190	22	8	M20	114,3	116,0	120	138	26	24	24	6	20	90	44	65	12	134	145	142	8	3,6	4,62						
	40	235	190	22	8	M20	114,3	116,0	120	138	26	24	24	6	20	90	44	65	12	134	145	142	8	3,6	6,46						
	63	250	200	26	8	M24	114,3	116,0	---	---	32	30	30	30	---	---	80	52	78	12	138	152	146	8	4,5	9,27					
	100	265	210	30	8	M27	114,3	116,0	---	---	36	36	40	36	---	---	80	52	90	12	150	158	150	8	5,6	13,1					
	160	265	210	30	8	M27	114,3	---	---	---	---	---	40	40	---	---	---	---	100	12	150	---	150	8	8,0	15,3					
	250	300	235	33	8	M30	127,0	---	---	---	---	---	54	54	---	---	---	---	120	14	164	---	168	8	14,2	27,2					
	320	335	265	36	8	M33	133,0	---	---	---	---	---	65	65	---	---	---	---	145	16	186	---	190	8	16,0	42,5					
400	370	295	39	8	M36	139,7	---	---	---	---	---	80	80	---	---	---	---	175	25	216	---	216	8	22,2	67,3						
125	6	240	200	18	8	M16	139,7	141,5	145	---	20	18	18	6	14	115	44	48	10	155	160	160	8	4,0	4,65						
	10	250	210	18	8	M16	139,7	141,5	145	162	22	22	22	6	18	115	44	55	12	156	168	170	8	4,0	6,3						
	16	250	210	18	8	M16	139,7	141,5	145	162	22	22	22	6	18	115	44	55	12	156	168	170	8	4,0	6,3						
	25	270	220	26	8	M24	139,7	141,5	145	166	28	26	26	6	22	115	48	68	12	162	170	162	8	4,0	6,3						
	40	270	220	26	8	M24	139,7	141,5	145	166	28	26	26	6	22	115	48	68	12	162	170	162	8	4,0	8,86						
	63	295	240	30	8	M27	139,7	141,5	---	---	34	34	34	34	---	---	105	56	88	12	168	185	177	8	5,6	14,5					
	100	315	250	33	8	M30	139,7	141,5	---	---	42	40	40	40	---	---	105	56	105	12	180	188	185	8	6,3	21,0					
	160	315	250	33	8	M30	139,7	---	---	---	---	---	44	44	---	---	---	---	115	14	180	---	184	8	10,0	24,4					
	250	340	275	33	12	M30	152,4	---	---	---	---	---	60	60	---	---	---	---	140	16	200	---	207	8	16,0	39,0					
	320	380	310	36	12	M33	168,3	---	---	---	---	---	75	75	---	---	---	---	175	20	230	---	235	8	20,0	63,6					
400	415	340	39	12	M36	193,7	---	---	---	---	---	92	92	---	---	---	---	200	30	258	---	259	8	30,0	94,5						
150	6	265	225	18	8	M16	168,3	170,5	174	---	20	18	18	6	14	140	44	48	12	184	185	182	10	4,5	5,50						
	10	285	240	22	8	M20	168,3	170,5	174	188	24	22	22	6	20	140	44	55	12	184	195	190	10	4,5	7,81						
	16	285	240	22	8	M20	168,3	170,5	174	188	24	22	22	6	20	140	44	55	12	184	195	190	10	4,5	7,81						
	25	300	250	26	8	M24	168,3	170,5	174	194	30	28	28	6	24	140	52	75	12	192	200	192	10	4,5	7,81						
	40	300	250	26	8	M24	168,3	170,5	174	194	30	28	28	6	24	140	52	75	12	192	200	192	10	4,5	11,7						
	63	345	280	33	8	M30	168,3	170,5	---	---	36	36	36	36	---	---	130	60	95	12	202	215	204	10	6,3	21,4					
	100	355	290	33	12	M30	168,3	170,5	---	---	48	44	44	44	---	---	130	60	115	12	210	225	216	10	8,0	28,3					
	160	355	290	33	12	M30	168,3	---	---	---	---	---	50	50	---	---	---	---	128	14	210	---	224	10	12,5	34,4					
	250	390	320	36	12	M33	177,8	---	---	---	---	---	68	68	---	---	---	---	160	18	240	---	246	10	17,5	59,6					
	320																														





### Dimensions (mm)

### Extension table H.1.1

DN	PN	Mating dimensions					Outside diameter of neck	Bore diameters				Flange thickness				Chamfer	Collar thickness	Diameter of shoulders	Lenght			Neck diameters			Corner radius	Neck Thickness (preferred value)	Weight (kg)					
		Outside diameter	Diameter of bolt circle	Diameter of bolt hole	Bolts			B1	B2	B3	C1	C2	C3	C4	E				F	G max	H1	H2	H3	N1				N2	N3	R	S	
		D	K	L	Broj	Vel.		A																								
		01,02,04,05,11,12,13,21						11 21 <sup>(1)</sup> 35	01 12 32	02	04	01 02 04	11 12 13	21	05				02 04	32 34	05	12 13	11 34	11 34				11 34	11 13	21	11 12 13 21	11
1000	6	1175	1120	30	28	M27	1016,0	<sup>(3)</sup>	1028	---	52	38	38	52	4	---	960	---	82	16	1045	---	1050	16	8,0	98,6						
	10	1230	1160	36	28	M33	1016,0	<sup>(3)</sup>	1028	---	70	44	<sup>(3)</sup>	54	8	---	960	---	105	20	1052	---	1080	16	12,5	161,0						
	16	1255	1170	42	28	M39	1016,0	<sup>(3)</sup>	1030	---	90	59	<sup>(3)</sup>	68	8	---	960	100	137	22	1058	1072	1076	16	12,5	233,0						
	25	1320	1210	56	28	M52	1016,0	---	---	---	<sup>(3)</sup>	63	<sup>(3)</sup>	<sup>(3)</sup>	---	---	---	---	160	24	1070	---	1086	16	20,0	338						
	40	1360	1250	56	28	M52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---					
	63	1415	1290	70	28	M64	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---					
1200	6	1405	1340	33	32	M30	1219,0	<sup>(3)</sup>	1234	---	60	42	42	60	5	---	1160	---	104	20	1248	---	1264	16	8,8	152,0						
	10	1455	1380	39	32	M36	1219,0	<sup>(3)</sup>	1234	---	83	55	<sup>(3)</sup>	66	8	---	1160	---	132	25	1256	---	1292	16	12,5	258,0						
	16	1485	1390	48	32	M45	1219,0	<sup>(3)</sup>	1219	---	<sup>(3)</sup>	78	<sup>(3)</sup>	---	---	---	1160	---	160	30	1262	---	1282	16	14,2	390,0						
	25	1530	1420	56	32	M52	1219,0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---					
	40	1575	1460	62	32	M56	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---					
	63	1665	1530	78	32	M72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---					

<sup>(1)</sup> For flanges type 21 the outside hub diameter approximately corresponds to the outside pipe diameter.

<sup>(2)</sup> 8 holes is preferred however 4 holes may be supplied upon special request by the purchaser.

<sup>(3)</sup> Other dimensions upon request by the purchaser.

**NOTE:** The p/t rating from EN 1092-1 apply only for flange types 05, 11, 12, 13 i 21 having nominal sizes up to and including DN 600. The p/t rating of all other flanges shall be agreed between the manufacturer and purchaser.