

Material	Type thread	Beginning of bending [N]	fracture load [N]	permissible load [N]								
				68°F 20°C	212°F 100°C	392°F 200°C	482°F 250°C	572°F 300°C	662°F 350°C	752°F 400°C	842°F 450°C	932°F 500°C
ASME SA 193 Gr. B8M Cl. 1 acc. ASME Code Sec. II, Part A	M10-K	14620	31040	6799	6328	5188	4853	4607	4414	4288	4189	4121
	M10-L	14840	32920									
	M12-L	37440	57640									
	M12-L2	19920	40944	9912	9226	7564	7076	6717	6435	6252	6107	6008
	M16-K	53700	98000									
	M16-L	54600	100960									
	M16-L2	61100	94020	18735	17438	14296	13374	12697	12163	11818	11544	11356
	M16-LS	62760	102660									
	M20-K	85100	153260									
	M20-L	68060	149220	29275	27249	22339	20898	19840	19006	18466	18038	17745
	M20-L2	72440	131000									
	M24-K	94480	186460									
	M24-L	92880	189720	42154	39236	32167	30091	28567	27368	26589	25973	25552
	M24-L2	97800	196660									
	M24-LS	119300	186600									
	M24-LX	120980	196360	55520	51677	42366	39633	37626	36046	35021	34209	33654
	M27-K	165740	265860									
	M27-L	158220	265600									
	M27-L2	186340	265340									
	M27-L3	134400	241200									
	3/8"-16 UNC	14400	33300	5897	5489	4500	4210	3997	3829	3720	3634	3575
	1/2"-13 UNC	33500	57300	10853	10102	8282	7747	7355	7046	6846	6687	6579
	5/8"-11 UNC	35400	76400	17388	16184	13269	12412	11784	11289	10968	10714	10540
	3/4"-10 UNC	60000	120000	25975	24177	19821	18542	17603	16864	16384	16005	15745
	1"-8 UNC	85400	208000	47197	43929	36015	33691	31985	30641	29770	29080	28608
	1 1/8"-7 UNC	126000	254000	59548	55425	45440	42508	40355	38660	37561	36691	36095

Material	Type thread	Beginning of bending [N]	fracture load [N]	permissible load [N]			
				-22°F bis 662°F -30°C bis 350°C	752°F 400°C	842°F 450°C	932°F 500°C
ASME SA 193 Gr. B7 acc. ASME Code Sec. II, Part A	M12-L	64680	84000	13115	12352	8997	5246
	M12-L2	61800	73800				
	M16-K	97060	148980				
	M16-L	109500	153900	24788	23347	17006	9915
	M16-L2	114900	138900				
	M16-LS	101300	144800				
	M20-K	180600	239100	38733	36482	26573	15493
	M20-L	136860	230980				
	M20-L2	179100	231300				
	M24-K	223200	352800	55773	52530	38263	22309
	M24-L	220010	347780				
	M24-L2	226800	313200				
	M24-LS	228000	326760				
	M24-LT	228600	349080				
	M24-LX	219740	308420	73458	69187	50395	29383
	M27-K	238200	436200				
	M27-L	330000	447600				
	M27-L2	291600	428180				
	M27-L3	307200	470400				
	M27-LS	317400	462000	111318	104846	76369	44527
	M33-K	399340	473260				
	M33-L	427640	498540				
	M33-L2	389740	617160				
	M33-L3	474120	593180				
	M33-L4	371000	667200				
	M33-LX	462380	699800				
	M33-LY	425320	676480				
	1/2"-13 UNC	70800	83400	14359	13525	9851	5744
	5/8"-11 UNC	115500	138500	23006	21668	15783	9202
	3/4"-10 UNC	171000	238000	34367	32369	23577	13747
	1"-8 UNC	261000	356600	62445	58814	42840	24978
	1 1/8"-7 UNC	318000	454000	78787	74206	54051	31515
	1 1/4"-8 UNC	430800	655468	101419	95523	69578	40568
	2 1/4"-4,5 UNC	-	-	341107	321275	234015	136443

Note: Values of beginning of bending and fracture load are average values.

Material	Type thread	Beginning of bending [N]	fracture load [N]	Test and mounting conditions [N]	permissible load [N] in working order, according to AD-A5 appendix. 2									
					68°F 20°C	212°F 100°C	302°F 150°C	392°F 200°C	482°F 250°C	572°F 300°C	662°F 350°C	752°F 400°C	842°F 450°C	932°F 500°C
42CrMo4 / 1.7225 DIN EN 10269 acc. AD 2000-Merkblatt W 7/1	M12-L	64680	84000	19496	14081	13541	13058	12345	11612	10840	9992	9162	8101	7233
	M12-L2	61800	73800	16917	12218	11749	11331	10712	10076	9406	8670	7950	7030	6276
	M16-K	97060	148980	36478	26346	25335	24433	23098	21726	20283	18695	17143	15158	13534
	M16-L	109500	153900	40520	29260	28530	27430	26010	24390	22760	21060	19310	17070	15240
	M16-L2	114900	138900	47060	34600	33270	32090	30330	28530	26640	24550	22510	19900	17770
	M16-LS	101300	144800	38594	27874	26804	25850	24437	22986	21459	19779	18137	16037	14319
	M20-K	180600	239100	75480	53870	51804	49959	47229	44425	41473	38226	35053	30994	27673
	M20-L	136860	230980	60809	43919	42234	40730	38504	36218	33811	31164	28577	25268	22561
	M20-L2	179100	231300	77980	56320	54160	52230	49380	46450	43360	39970	36650	32400	29930
	M24-K	223200	352800	100081	72281	69508	67033	63369	59607	55646	51290	47032	41586	37130
	M24-L	220010	347780	93599	67602	65009	62693	59267	55748	52044	47969	43987	38894	34727
	M24-L2	226800	313200	107440	77492	74520	71866	67939	63905	59659	54988	50423	44585	39808
	M24-LS	228000	326760	102847	74281	71432	68888	65123	61256	57186	52709	48333	42737	38158
	M24-LT	228600	349080	100166	72345	69570	67092	63425	59659	55695	51335	47073	41623	37163
	M24-LX	219740	308420	92024	66464	63915	61639	58270	54810	51168	47162	43247	38240	34142
	M27-K	238200	436200	126798	91579	88067	84930	80289	75522	70503	64984	59589	52689	47044
	M27-L	330000	447600	154870	111850	107560	103720	98060	92230	86100	79360	72770	64350	57450
	M27-L2	291600	428180	134793	97353	93619	90285	85351	80283	74949	69081	63346	56012	50010
	M27-L3	307200	470400	149880	108330	104180	100470	94980	89340	83400	76870	70490	62350	55670
	M27-LS	317400	462000	143077	103333	99370	95831	90593	85214	79552	73324	67237	59452	53082
	M33-K	399340	473260	220065	158940	152844	147401	139345	131071	122362	112782	103420	91445	81647
	M33-L	427640	498540	232472	167901	161461	155711	147201	138461	129261	119141	109251	96601	86251
	M33-L2	389740	617160	208020	147900	142230	137160	129670	121970	113860	104950	96230	85090	75970
	M33-L3	474120	593180	246948	178370	171528	165419	156379	147094	137320	126569	116062	102624	91628
	M33-L4	371000	667200	208595	150600	144820	139665	132030	124190	115940	106860	97990	86660	77380
	M33-LX	462380	699800	238590	169760	165510	159620	150895	141935	132500	122130	111990	99130	88520
	M33-LY	425320	676480	212144	153219	147342	142095	134329	126353	117958	108723	99698	88154	78709
	1 1/2" BUN-L4	430800	655500	232190	167780	161340	155600	147090	138360	129170	119050	109170	96470	86140
X6CrNiMoTi17-12-2 / 1.4571 DIN EN 10222-5 acc. AD 2000-Merkblatt W 7/2	M10-K	14620	31040	2413	1743	1535	1469	1386	1303	1203	1162	1120	1096	1071
	M10-L	14840	32920	2437	1760	1550	1483	1400	1316	1215	1173	1131	1106	1081
	M12-L	37440	57640	5958	4303	3791	3627	3422	3217	2971	2869	2766	2705	2643
	M12-L2	19920	40944	4422	3194	2813	2692	2540	2388	2205	2129	2053	2007	1962
	M16-K	53700	98000	15474	11181	9949	9401	8945	8489	7987	7713	7485	7348	7211
	M16-L	54600	100960	16067	11611	10332	9763	9289	8815	8294	8009	7772	7630	7488
	M16-L2	61100	94020	14110	10191	8978	8589	8104	7619	7037	6794	6551	6406	6260
	M16-LS	62760	102660											
	M20-K	85100	153260	24629	17788	15670	14993	14146	13299	12282	11859	11435	11181	10927
	M20-L	68060	149220	24711	17848	15881	15007	14278	13550	12748	12311	11947	11728	11510
	M20-L2	72440	131000	24072	17386	15316	14654	13826	12998	12004	11590	11176	10928	10680
	M24-K	94480	186460	38055	27484	24212	23165	21856	20548	18977	18323	17668	17276	16883
	M24-L	92880	189720											
	M24-L2	97800	196660											
	M24-LS	119300	186600											
	M24-LX	120980	196360	52381	37830	33327	31886	30084	28283	26121	25220	24320	23779	23239
	M27-K	165740	265860											
	M27-L	158220	265600											
	M27-L2	186340	265340											
	M27-L3	134400	241200	59810	43200	38430	36320	34550	32790	30850	29790	28910	28200	27850
CSBE / 1.1181 DIN EN 10289 acc. AD 2000- Merkblatt W 7/1	M10-K	24800	33800	4230	3000	2700	2500	2300	2200	2100	-	-	-	-
	M10-L	17600	35700	4230	3000	2800	2600	2400	2200	2000	-	-	-	-

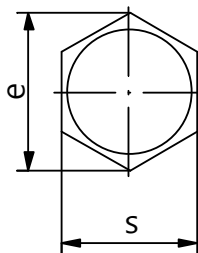
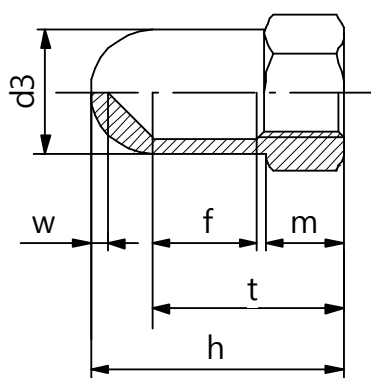
Note: Values of beginning of bending and fracture load are average values.

Material	Tightening torque MA [Nm]								Preload force FV [N]
	M10	M12	M16	M20	M24	M27	1 1/4-8UN	M33	
C35E - 1.1181	20								3.200
X6CrNiMoTi17-22-2 - 1.4571; ASME SA-193 Gr. B8M, cl. 1	10								2.400
		18							6.000
			100						14.100
				200					24.000
					270				38.000
						380			52.300
42CrMo4 - 1.7225; ASME SA-193 Gr. B7 + B16		52							12.780
			100						35.400
				320					57.900
					400				70.600
						650			114.000
							850		101.000
								1.300	156.000
25CrMo4 - 1.7218			100						26.400
				160					42.000
					320				63.000
						400			81.000

* Lubricants Molykote/OKS280

The tightening torques, specified in the table for the prestressing forces, are mean values for oiled thread surfaces which are determined by experiments. It should be noted that by repeated tightening and other lubricants or surface treated threads, the tightening torques can be change. (Deviations of + / - 10% are possible).

On request, the torques are determined by experiments in our laboratory as a function of the biasing force (resulting from the kind and size of the seal) and the lubricant used by the pressure equipment manufacturer.



Execution:

similar DIN 1587

produced by machining or forging

Material:

1.1181 acc. DIN EN 10269 and AD2000: W7/1
 1.4301 acc. DIN EN 10088-3 and AD2000: W7/2
 1.7218 acc. DIN EN 10269 and AD2000: W7/1
 Gr. 2H nach ASME Sec. II, Part A; SA-194
 Gr. 8 nach ASME Sec. II, Part A; SA-194
 with inspection certificate acc. to
 DIN EN 10204 - 3.1

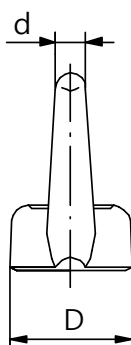
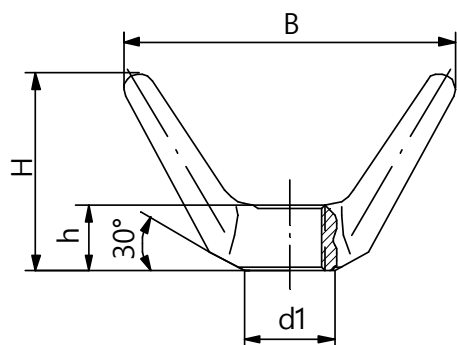
Note:

The clamping length of our screwclamps decreases.

Thread:

ISO - DIN 13, tolerance 6 H

Unspecified dimensions acc. DIN 1587



Execution:

Drop forged, without cracks and wrinkles
 surface sandblasted

Material:

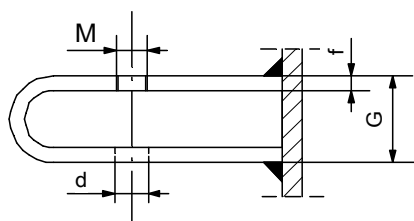
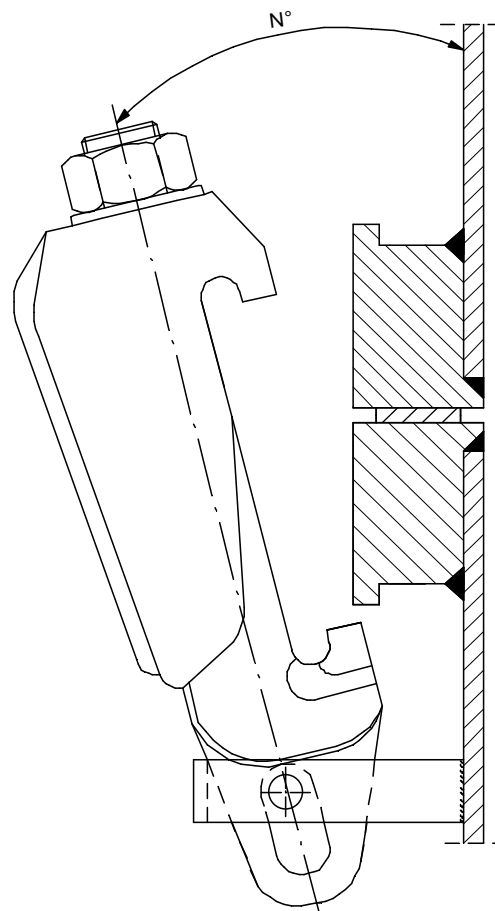
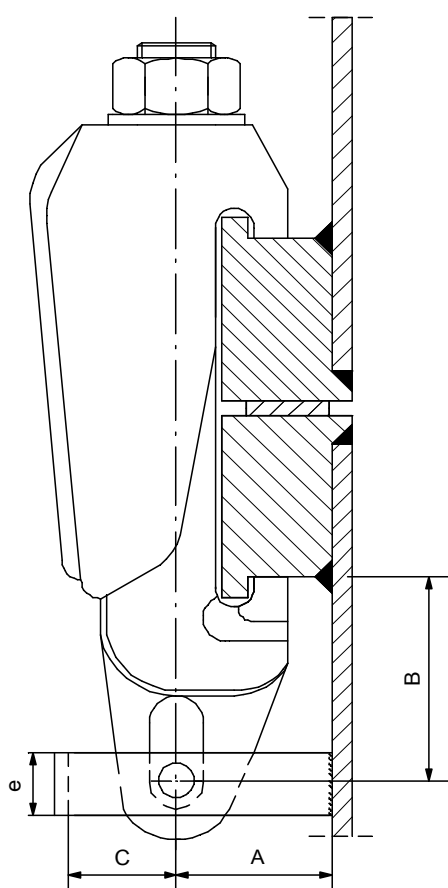
1.4541 acc. DIN EN 10222-5 and AD2000: W7/2
 Gr. 8T acc. ASME SA-194, Sec. II, Part A
 with inspection certificate acc. to
 DIN EN 10204 - 3.1

Thread:

ISO - DIN 13, tolerance 6 H

Dimensional variation of the external shape
 permitted acc. DIN EN 10243

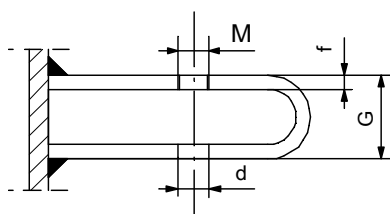
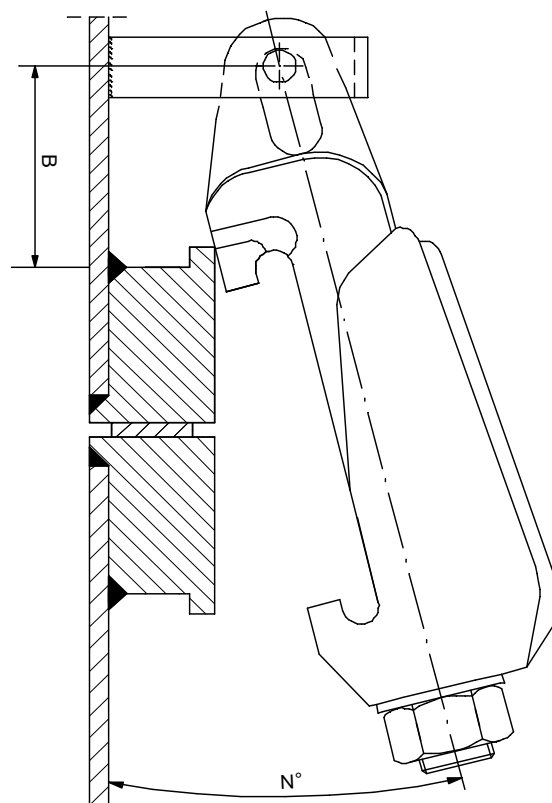
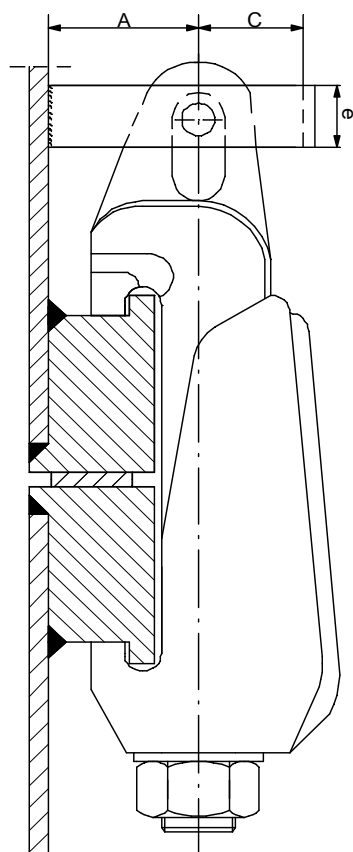
	Thread	d3	e	f	t	m	s	w	h	B	H	D	d1	d	Weight kg/%
Cap-nut	M10	16	18	12	26	10	17	2	31						3,7
	M12	18	22	15	32	12	19	3	38						5,0
	M16	22	28	20	38	14	24	3	45						7,5
	M20	28	34	22	44	18	30	3	52						14,8
	M24	34	42	25	53	23	36	3	60						25,4
	M27	38	47	29	59	25	41	4	68						35,0
	M30	45	53	36	70	28	46	5	80						54,0
	M33	48	57	41	79	30	50	5	89						70,0
	M56x2	70	96	54	114	56	85	5	140						267,5
Wing nuts															
	M10								13	62	39	24	17	6	7,1
	M12								15	81	53	26	19	8	12,0
	M16								20	112	77	35	24	10	27,8
	M20								25	150	95	40	30	10	48,3
	M24								30	170	113	45	36	12	65,2



Remark:

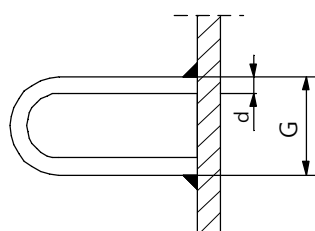
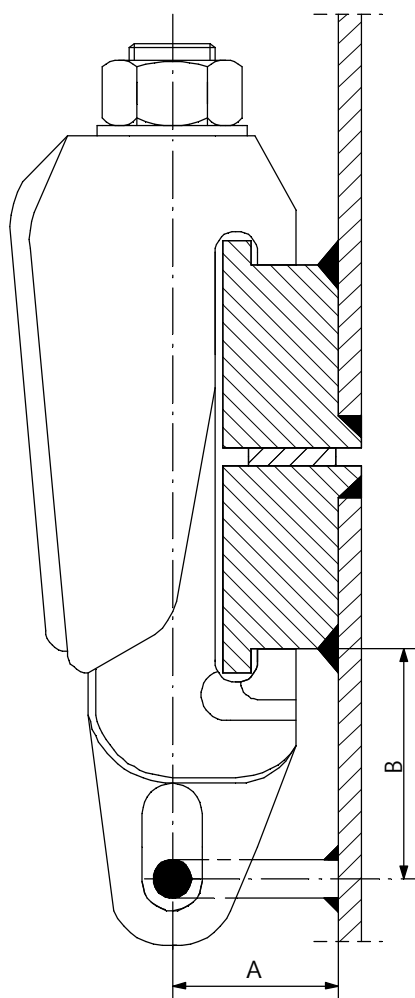
Type, dimension A and C, material acc. specification.
Dimension B check by mounting.

Type M	10	12	16	20	24	27	33
B	24,5	30	45	52	56	82	101
d	4,5	5,5	6,5	8,5	8,5	11	13
exf	10 x 3	12 x 3	15 x 4	20 x 4	20 x 5	25 x 5	25 x 5
G	15	16	20	22	24	26	28
M	4	5	6	8	8	10	12
DIN 912	4 x 20	5 x 20	6 x 25	8 x 30	8 x 30	10 x 35	12 x 40
DIN 934	4	5	6	8	8	10	12


Remark:

Type, dimension A and C, material acc. specification.
Dimension B check by mounting.

Type M	10	12	16	20	24	27	33
B	24,5	30	45	52	56	82	101
d	4,5	5,5	6,5	8,5	8,5	11	13
exf	10 x 3	12 x 3	15 x 4	20 x 4	20 x 5	25 x 5	25 x 5
G	15	16	20	22	24	26	28
M	4	5	6	8	8	10	12
DIN 912	4 x 20	5 x 20	6 x 25	8 x 30	8 x 30	10 x 35	12 x 40
DIN 934	4	5	6	8	8	10	12


Remark:

Type, dimension C and material acc. specification.
Dimension B check by mounting.

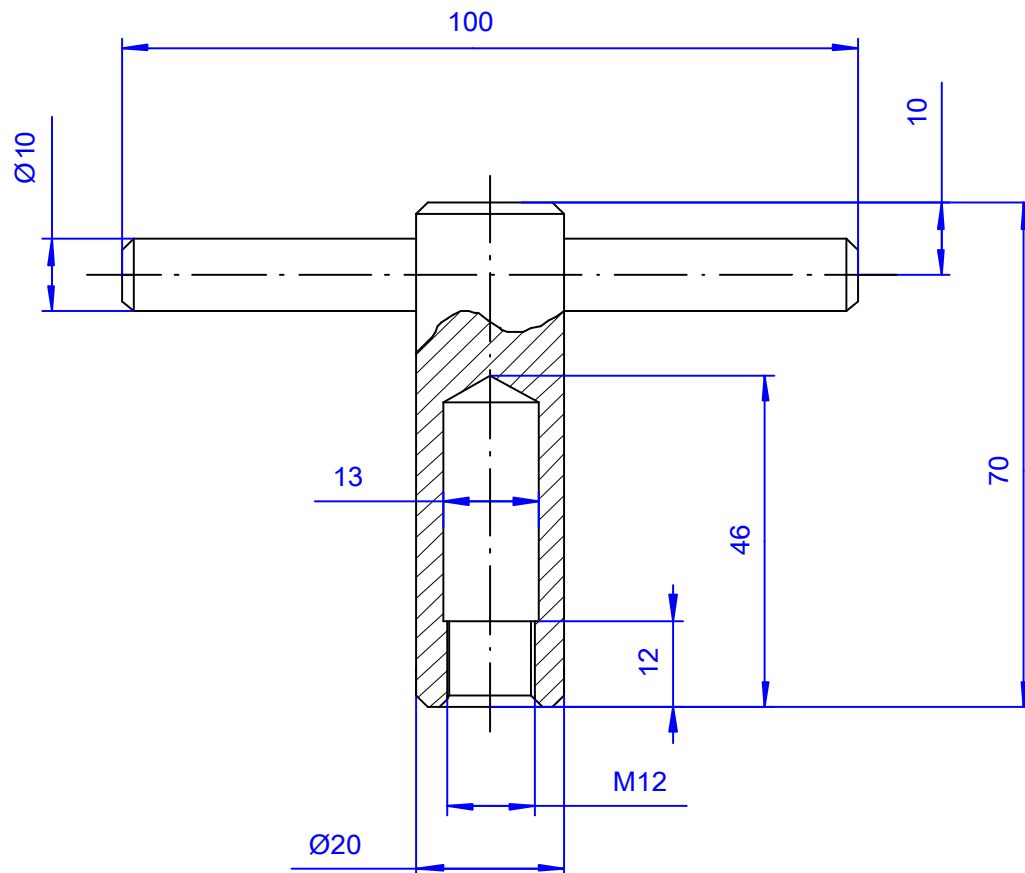
Type M	10	12	16	20	24	27	33
B	24	27	40	47	50	74	92
d	4	5	6	8	8	10	12
G	18	20	24	28	30	34	40

Edition 09.2020

Sheet 125b

Welding-Bracket

Zolltarif-Nr. / customs tariff number: 73182900


Execution:

Without cracks and wrinkles, surface sandblasted

Material:

C45E | 1.1191 nach DIN EN 10269

Grade 2H acc. ASME SA-194, Sec. II, Part A

with inspection certificate acc. to DIN EN 10204 - 3.1

Thread:

ISO - DIN 13, Toleranz 6 H