





















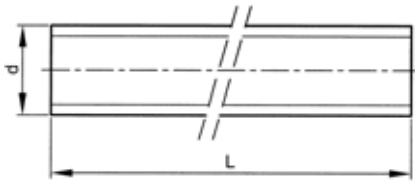


Threaded rods/stud bolts 4

 <p>Page 4-2 DIN 976-1A NEN 2369</p> <p>Metric</p>	 <p>Page 4-13 DIN 976-1A NEN 2369</p> <p>Metric fine</p>	 <p>Page 4-15</p> <p>UNC</p>	 <p>Page 4-16</p> <p>UNF</p>	 <p>Page 4-17</p> <p>BSW</p>
 <p>Page 4-18</p> <p>PERMAGLAS Metric</p>	 <p>Page 4-19</p> <p>PERMAGLAS Metric</p>	 <p>Page 4-20</p> <p>PERMAGLAS</p>	 <p>Page 4-21</p> <p>Tr</p>	 <p>Page 4-23</p> <p>Tr</p>
 <p>Page 4-24</p> <p>Tr Bronze</p>	 <p>Page 4-25 DIN 939 NEN 2332</p> <p>≈ 1,25xd Metric</p>	 <p>Page 4-29 DIN ≈939 (1955) NEN ≈2346 (1962)</p> <p>≈ 1,25xd BSW</p>	 <p>Page 4-30 DIN 938 NEN 2331</p> <p>≈ 1xd Metric</p>	 <p>Page 4-33</p> <p>ASTM metric</p>
 <p>Page 4-34</p> <p>ASTM UNC</p>	 <p>Page 4-35 BS ≈4882</p> <p>Metric</p>	 <p>Page 4-36 ANSI B16.5 BS 4882</p> <p>UNC</p>	 <p>Page 4-41</p> <p>ASTM Metric</p>	 <p>Page 4-42 ANSI B18.2.2 BS 1769</p> <p>ASTM UNC</p>
 <p>Page 4-46 DIN 2510 L/NF</p> <p>Metric</p>	 <p>Page 4-48 DIN 2510 NF</p> <p>For double ended studs Metric</p>			

Threaded rod



DIN 976-1A
NEN 2369
NF E25-136



Technical data

d	P	d	P	d	P
M2	0,4	M16	2	M45	4,5
M2,5	0,45	M18	2,5	M48	5
M3	0,5	M20	2,5	M52	5
M4	0,7	M22	2,5	M56 (#DIN)	5,5
M5	0,8	M24	3	M60 (#DIN)	5,5
M6	1	M27	3	M64 (#DIN)	6
M7 (#DIN)	1	M30	3,5	M68 (#DIN)	6
M8	1,25	M33	3,5	M72 (#DIN)	6
M10	1,5	M36	4	M76 (#DIN)	6
M12	1,75	M39	4	M80 (#DIN)	6
M14	2	M42	4,5		

The end of the threaded rod is painted to improve the recognisability of the quality.

Colour code threaded rods		
Property class	Material	Colour
4.8	Plain steel and zinc plated	selfcolour
4.8	ISO metric hot dip galvanised	light blue
4.8	Oversized metric hot dip galvanised	orange
5.6	Plain steel	brown
5.8	Plain steel	gentian blue
8.8	Plain steel, zinc plated and yellow passivated	yellow
8.8	ISO metric hot dip galvanised	steel grey
8.8	Oversized metric hot dip galvanised	purple
10.9	Plain steel	white
12.9	Plain steel	black
ASTM-B7	Plain steel (UNC & 8UN)	selfcolour
ASTM-B7	Plain steel (metric)	selfcolour
RVS-A2	Stainless steel A2 metric	green
RVS-A4	Stainless steel A4 metric	red

Article groups

Thread	Material	Class	Surface treatment	Colour	Packaging	Code	Page
M	St	≥4.8	Zipl yell.p.		Standard	20108	4-3
M	St.St. A2	70			Standard	51068	4-3
M	St.St. A4	70			Standard	55068	4-4
M	St	≥4.8		1 meter	Standard	20200	4-4
M	St	≥4.8		1 meter	Large	20210	4-4
M	St	≥4.8	Zipl	1 meter	Standard	20300	4-5
M	St	≥4.8	Zipl	1 meter	Large	20310	4-5
M	St	≥4.8	Zipl	1 meter unpacked	Bundled	20312	4-5
M	St	≥4.8	Zipl	1 meter left hand	Standard	20380	4-5
M	St	≥4.8	Zipl yell.p.	1 meter	Standard	20302	4-5
M	St	≥4.8	Hot d.g.	1 meter oversized	Standard	20140	4-6
M	St	≥4.8	Hot d.g.	1 meter iso	Standard	20160	4-6
M	St	8.8		1 meter	Standard	20220	4-6
M	St	8.8		1 meter	Large	20180	4-6
M	St	8.8	Zipl	1 meter	Standard	20230	4-7
M	St	8.8	Zipl	1 meter	Large	20190	4-7
M	St	8.8	Zipl	1 meter unpacked	Bundled	20191	4-7
M	St	8.8	Zipl	1 meter left hand	Standard	20376	4-7
M	St	8.8	Zipl yell.p.	1 meter	Standard	20232	4-7
M	St	8.8	Hot d.g.	1 meter iso	Standard	20170	4-8
M	St	8.8	Hot d.g.	1 meter oversized	Standard	20150	4-8

Thread	Material	Class	Surface treatment	Colour	Packaging	Code	Page
M	St	10.9			1 meter	Standard	20130 4-8
M	St	12.9			1 meter	Standard	20132 4-8
M	St.St. A2	70			1 meter	Standard	51070 4-9
M	St.St. A2	70			1 meter	Large	51064 4-9
M	St.St. A2	70			1 meter left hand	Standard	51074 4-9
M	St.St. A4	70			1 meter	Standard	55070 4-9
M	Al Sopral P40				1 meter	Standard	45070 4-10
M	Al Sopral P60				1 meter	Standard	45270 4-10
M	Ti ASTM	Gr.2			1 meter	Standard	45940 4-10
M	Br Cu2/Cu3				1 meter	Standard	46090 4-10
M	Plastic PA	PA 6.6		White	1 meter	Standard	56170 4-10
M	St	≥4.8	Zipl		2 meter	Standard	20330 4-10
M	St	≥4.8	Zipl		2 meter	Large	20320 4-11
M	St	8.8	Zipl		2 meter	Standard	20372 4-11
M	St.St. A2	70			2 meter	Standard	51071 4-11
M	St.St. A4	70			2 meter	Standard	55071 4-11
M	St	≥4.8	Zipl		3 meter	Standard	20410 4-11
M	St	≥4.8	Zipl		3 meter	Large	20400 4-12
M	St	8.8	Zipl		3 meter	Standard	20395 4-12
M	St.St. A2	70			3 meter	Standard	51072 4-12
M	St.St. A4	70			3 meter	Standard	55072 4-12

20108 Stud bolt		G05A	
Thread	Metric thread		
Material	Steel		
Class	≥4.8		
Surface treatment	Zinc plated yellow passivated		
Packaging	Standard		



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M3X20	200	20108.030.020	M6X20	200	20108.060.020	M10X30	100	20108.100.030
M3X30	200	20108.030.030	M6X30	200	20108.060.030	M10X40	100	20108.100.040
M3X40	200	20108.030.040	M6X40	200	20108.060.040	M10X50	100	20108.100.050
M3X50	200	20108.030.050	M6X50	200	20108.060.050	M10X60	100	20108.100.060
M3X60	200	20108.030.060	M6X60	200	20108.060.060	M10X70	100	20108.100.070
M3X70	200	20108.030.070	M6X70	200	20108.060.070	M10X80	100	20108.100.080
M3X80	200	20108.030.080	M6X80	100	20108.060.080	M10X90	100	20108.100.090
M3X90	200	20108.030.090	M6X90	100	20108.060.090	M10X100	100	20108.100.100
M3X100	200	20108.030.100	M6X100	100	20108.060.100	M10X120	50	20108.100.120
			M6X120	100	20108.060.120	M10X130	50	20108.100.130
M4X20	200	20108.040.020	M6X130	100	20108.060.130	M10X140	50	20108.100.140
M4X30	200	20108.040.030	M6X140	100	20108.060.140	M10X150	50	20108.100.150
M4X40	200	20108.040.040	M6X150	100	20108.060.150	M10X160	50	20108.100.160
M4X50	200	20108.040.050	M6X160	100	20108.060.160			
M4X60	200	20108.040.060				M12X40	100	20108.120.040
M4X70	200	20108.040.070	M8X30	200	20108.080.030	M12X50	100	20108.120.050
M4X80	200	20108.040.080	M8X40	200	20108.080.040	M12X60	100	20108.120.060
M4X90	100	20108.040.090	M8X50	200	20108.080.050	M12X70	50	20108.120.070
M4X100	100	20108.040.100	M8X60	100	20108.080.060	M12X80	50	20108.120.080
			M8X70	100	20108.080.070	M12X90	50	20108.120.090
M5X20	200	20108.050.020	M8X75	100	20108.080.075	M12X100	50	20108.120.100
M5X30	200	20108.050.030	M8X80	100	20108.080.080	M12X120	50	20108.120.120
M5X40	200	20108.050.040	M8X90	100	20108.080.090	M12X130	50	20108.120.130
M5X50	200	20108.050.050	M8X100	100	20108.080.100	M12X140	50	20108.120.140
M5X60	200	20108.050.060	M8X120	100	20108.080.120	M12X150	50	20108.120.150
M5X70	200	20108.050.070	M8X130	100	20108.080.130	M12X160	25	20108.120.160
M5X80	100	20108.050.080	M8X140	50	20108.080.140			
M5X90	100	20108.050.090	M8X150	50	20108.080.150			
M5X100	100	20108.050.100	M8X160	50	20108.080.160			
M5X120	100	20108.050.120						

51068 Stud bolt		R09A	
Thread	Metric thread		
Material	Stainless steel A2		
Class	70		
Packaging	Standard		



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M4X20	100	51068.040.020	M5X30	100	51068.050.030	M5X70	100	51068.050.070
M4X30	100	51068.040.030	M5X40	100	51068.050.040	M5X80	50	51068.050.080
M4X40	100	51068.040.040	M5X50	100	51068.050.050	M5X90	50	51068.050.090
M4X50	100	51068.040.050	M5X60	100	51068.050.060	M5X100	50	51068.050.100
M4X60	100	51068.040.060				M5X120	50	51068.050.120

51068 Stud bolt ←

d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M6X30	100	51068.060.030	M8X70	50	51068.080.070	M10X140	25	51068.100.140
M6X40	100	51068.060.040	M8X80	50	51068.080.080	M10X150	25	51068.100.150
M6X50	100	51068.060.050	M8X90	50	51068.080.090	M10X160	25	51068.100.160
M6X60	100	51068.060.060	M8X100	50	51068.080.100			
M6X70	100	51068.060.070	M8X120	50	51068.080.120	M12X40	50	51068.120.040
M6X80	50	51068.060.080	M8X130	50	51068.080.130	M12X50	50	51068.120.050
M6X90	50	51068.060.090	M8X140	25	51068.080.140	M12X60	50	51068.120.060
M6X100	50	51068.060.100	M8X150	25	51068.080.150	M12X70	25	51068.120.070
M6X120	50	51068.060.120	M8X160	25	51068.080.160	M12X80	25	51068.120.080
M6X130	50	51068.060.130				M12X90	25	51068.120.090
M6X140	50	51068.060.140	M10X40	50	51068.100.040	M12X100	25	51068.120.100
M6X150	50	51068.060.150	M10X50	50	51068.100.050	M12X120	25	51068.120.120
M6X160	50	51068.060.160	M10X60	50	51068.100.060	M12X130	25	51068.120.130
			M10X70	50	51068.100.070	M12X140	25	51068.120.140
M8X30	100	51068.080.030	M10X80	50	51068.100.080	M12X150	25	51068.120.150
M8X40	100	51068.080.040	M10X90	50	51068.100.090	M12X160	10	51068.120.160
M8X50	100	51068.080.050	M10X100	50	51068.100.100			
M8X60	50	51068.080.060	M10X120	25	51068.100.120			
			M10X130	25	51068.100.130			

4 • Sizes with a diameter > M24 are minimal property class 50.

55068 Stud bolt R49A

Thread	Metric thread	
Material	Stainless steel A4	
Class	70	
Packaging	Standard	

d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M4X20	100	55068.040.020	M8X50	100	55068.080.050	M10X120	25	55068.100.120
M5X30	100	55068.050.030	M8X60	50	55068.080.060	M10X130	25	55068.100.130
M5X40	100	55068.050.040	M8X70	50	55068.080.070	M10X140	25	55068.100.140
M5X50	100	55068.050.050	M8X80	50	55068.080.080	M10X150	25	55068.100.150
M5X60	100	55068.050.060	M8X100	50	55068.080.100			
M5X80	50	55068.050.080	M8X120	50	55068.080.120	M12X40	50	55068.120.040
			M8X130	50	55068.080.130	M12X50	50	55068.120.050
M6X30	100	55068.060.030	M8X160	25	55068.080.160	M12X60	50	55068.120.060
M6X40	100	55068.060.040				M12X70	25	55068.120.070
M6X50	100	55068.060.050	M10X40	50	55068.100.040	M12X80	25	55068.120.080
M6X70	100	55068.060.070	M10X50	50	55068.100.050	M12X100	25	55068.120.100
M6X80	50	55068.060.080	M10X60	50	55068.100.060	M12X120	25	55068.120.120
M6X100	50	55068.060.100	M10X70	50	55068.100.070	M12X130	25	55068.120.130
			M10X80	50	55068.100.080	M12X150	25	55068.120.150
M8X30	100	55068.080.030	M10X90	50	55068.100.090	M12X160	10	55068.120.160
M8X40	100	55068.080.040	M10X100	50	55068.100.100			

• Sizes with a diameter > M24 are minimal property class 50.

20200 Threaded rod length 1 meter G01A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M2	20	20200.020.001	M18	5	20200.180.001	M48	2	20200.480.001
M3	20	20200.030.001	M20	2	20200.200.001	M52	1	20200.520.001
M4	20	20200.040.001	M22	2	20200.220.001	M56	1	20200.560.001
M5	10	20200.050.001	M24	2	20200.240.001	M60	1	20200.600.001
M6	10	20200.060.001	M27	2	20200.270.001	M64	1	20200.640.001
M7	10	20200.070.001	M30	2	20200.300.001	M68	1	20200.680.001
M8	10	20200.080.001	M33	2	20200.330.001	M72X6,00	1	20200.720.001
M10	10	20200.100.001	M36	2	20200.360.001	M76X6,00	1	20200.760.001
M12	10	20200.120.001	M39	2	20200.390.001	M80X6,00	1	20200.800.001
M14	5	20200.140.001	M42	2	20200.420.001			
M16	5	20200.160.001	M45	2	20200.450.001			

20210 Threaded rod length 1 meter G01A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Packaging	Large	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	100	20210.030.001	M4	100	20210.040.001	M5	100	20210.050.001

20210 Threaded rod length 1 meter ←

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	100	20210.060.001	M12	25	20210.120.001	M22	5	20210.220.001
M8	50	20210.080.001	M16	10	20210.160.001	M24	5	20210.240.001
M10	25	20210.100.001	M20	10	20210.200.001	M27	5	20210.270.001

20300 Threaded rod length 1 meter G03A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Zinc plated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	20	20300.030.001	M12	10	20300.120.001	M27	2	20300.270.001
M4	20	20300.040.001	M14	5	20300.140.001	M30	2	20300.300.001
M5	10	20300.050.001	M16	5	20300.160.001	M33	2	20300.330.001
M6	10	20300.060.001	M18	5	20300.180.001	M36	2	20300.360.001
M7	10	20300.070.001	M20	2	20300.200.001	M39	2	20300.390.001
M8	10	20300.080.001	M22	2	20300.220.001			
M10	10	20300.100.001	M24	2	20300.240.001			

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20310 Threaded rod length 1 meter G03A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Zinc plated	
Packaging	Large	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	100	20310.030.001	M7	100	20310.070.001	M16	10	20310.160.001
M4	100	20310.040.001	M8	50	20310.080.001	M20	10	20310.200.001
M5	100	20310.050.001	M10	25	20310.100.001	M24	5	20310.240.001
M6	100	20310.060.001	M12	25	20310.120.001	M27	5	20310.270.001

20312 Threaded rod length 1 meter unpacked G03A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Zinc plated	
Packaging	Bundled	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	100	20312.060.001	M10	25	20312.100.001	M16	10	20312.160.001
M8	50	20312.080.001	M12	25	20312.120.001			

20380 Threaded rod length 1 meter left-hand thread G05A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Zinc plated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	10	20380.030.001	M10	2	20380.100.001	M20	1	20380.200.001
M4	10	20380.040.001	M12	2	20380.120.001	M22	1	20380.220.001
M5	5	20380.050.001	M14	1	20380.140.001	M24	1	20380.240.001
M6	2	20380.060.001	M16	1	20380.160.001	M27	1	20380.270.001
M8	2	20380.080.001	M18	1	20380.180.001	M30	1	20380.300.001

20302 Threaded rod length 1 meter G03A

Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Zinc plated yellow passivated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	10	20302.050.001	M10	10	20302.100.001	M20	2	20302.200.001
M6	10	20302.060.001	M12	10	20302.120.001	M24	2	20302.240.001
M8	10	20302.080.001	M16	5	20302.160.001			

20140 Threaded rod length 1 meter oversized thread		G06C
Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Hot dip galvanized	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M10	5	20140.100.001	M20	3	20140.200.001	M30	2	20140.300.001
M12	5	20140.120.001	M24	3	20140.240.001	M33	2	20140.330.001
M16	5	20140.160.001	M27	2	20140.270.001	M36	2	20140.360.001

- For hot dip galvanized threaded rods with OVERSIZED thread the zinc layer is applied ON the normal thread, so AFTER galvanizing these threaded rods are no longer ISO-metric mating, but thicker: so called OVERSIZED.
- They do not mate the usual fit of screwthread and cannot be used in e.g. normal threaded holes.
- The corresponding OVERSIZED nuts have been tapped about 0,3 mm larger AFTER galvanizing running perfectly onto these threaded rods.

4

20160 Threaded rod length 1 meter iso-metric fitting thread		G06C
Thread	Metric thread	
Material	Steel	
Class	≥4.8	
Surface treatment	Hot dip galvanized	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M10	5	20160.100.001	M20	3	20160.200.001	M30	2	20160.300.001
M12	5	20160.120.001	M24	3	20160.240.001	M36	2	20160.360.001
M16	5	20160.160.001	M27	2	20160.270.001			

- For hot dip galvanized threaded rods with ISO-METRIC FITTING thread, the thread is rolled undersize so that it will meet the go-gauge with tolerance class h AFTER galvanizing.
- The advantage of this way of manufacturing is that the threaded rods can be used in any threaded hole without any problem.
- The corresponding ISO-METRIC FITTING nuts have been threaded according to the tolerance class 6H AFTER galvanizing so that they perfectly fit onto the threaded rods.

20220 Threaded rod length 1 meter		G04A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	10	20220.050.001	M20	3	20220.200.001	M42	1	20220.420.001
M6	10	20220.060.001	M22	3	20220.220.001	M45	1	20220.450.001
M8	10	20220.080.001	M24	3	20220.240.001	M48	1	20220.480.001
M10	10	20220.100.001	M27	2	20220.270.001	M52	1	20220.520.001
M12	5	20220.120.001	M30	2	20220.300.001	M56	1	20220.560.001
M14	5	20220.140.001	M33	2	20220.330.001	M60	1	20220.600.001
M16	5	20220.160.001	M36	2	20220.360.001	M64	1	20220.640.001
M18	3	20220.180.001	M39	1	20220.390.001			

20180 Threaded rod length 1 meter		G04A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Packaging	Large	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	50	20180.060.001	M12	25	20180.120.001	M24	5	20180.240.001
M8	50	20180.080.001	M16	10	20180.160.001			
M10	25	20180.100.001	M20	10	20180.200.001			

20230 Threaded rod length 1 meter		G04A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Zinc plated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	10	20230.050.001	M20	3	20230.200.001	M42	1	20230.420.001
M6	10	20230.060.001	M22	3	20230.220.001	M45	1	20230.450.001
M8	10	20230.080.001	M24	3	20230.240.001	M48	1	20230.480.001
M10	10	20230.100.001	M27	2	20230.270.001	M52	1	20230.520.001
M12	5	20230.120.001	M30	2	20230.300.001	M56	1	20230.560.001
M14	5	20230.140.001	M33	2	20230.330.001	M60	1	20230.600.001
M16	5	20230.160.001	M36	2	20230.360.001	M64	1	20230.640.001
M18	3	20230.180.001	M39	1	20230.390.001			

20190 Threaded rod length 1 meter		G04A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Zinc plated	
Packaging	Large	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	50	20190.060.001	M12	25	20190.120.001	M24	5	20190.240.001
M8	50	20190.080.001	M16	10	20190.160.001			
M10	25	20190.100.001	M20	10	20190.200.001			

20191 Threaded rod length 1 meter unpacked		G04A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Zinc plated	
Packaging	Bundled	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	100	20191.060.001	M10	25	20191.100.001	M16	10	20191.160.001
M8	50	20191.080.001	M12	25	20191.120.001			

20376 Threaded rod length 1 meter left-hand thread		G05A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Zinc plated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	2	20376.060.001	M12	2	20376.120.001	M24	1	20376.240.001
M8	2	20376.080.001	M16	1	20376.160.001	M30	1	20376.300.001
M10	2	20376.100.001	M20	1	20376.200.001			

20232 Threaded rod length 1 meter		G06A
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Zinc plated yellow passivated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	10	20232.060.001	M14	5	20232.140.001	M22	3	20232.220.001
M8	10	20232.080.001	M16	5	20232.160.001	M24	3	20232.240.001
M10	10	20232.100.001	M18	3	20232.180.001			
M12	5	20232.120.001	M20	3	20232.200.001			

4

20170 Threaded rod length 1 meter iso-metric fitting thread		G06C
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Hot dip galvanized	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M10	5	20170.100.001	M24	3	20170.240.001	M39	1	20170.390.001
M12	5	20170.120.001	M27	2	20170.270.001	M42	1	20170.420.001
M16	5	20170.160.001	M30	2	20170.300.001			
M20	3	20170.200.001	M36	2	20170.360.001			

- For hot dip galvanized threaded rods with ISO-METRIC FITTING thread, the thread is rolled undersize so that it will meet the go-gauge with tolerance class h AFTER galvanizing.
- The advantage of this way of manufacturing is that the threaded rods can be used in any threaded hole without any problem.
- The corresponding ISO-METRIC FITTING nuts have been threaded according to the tolerance class 6H AFTER galvanizing so that they perfectly fit onto the threaded rods.

20150 Threaded rod length 1 meter oversized thread		G06C
Thread	Metric thread	
Material	Steel	
Class	8.8	
Surface treatment	Hot dip galvanized	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M10	5	20150.100.001	M20	3	20150.200.001	M30	2	20150.300.001
M12	5	20150.120.001	M24	3	20150.240.001	M33	2	20150.330.001
M16	5	20150.160.001	M27	2	20150.270.001	M36	2	20150.360.001

- For hot dip galvanized threaded rods with OVERSIZED thread the zinc layer is applied ON the normal thread, so AFTER galvanizing these threaded rods are no longer ISO-metric mating, but thicker: so called OVERSIZED.
- They do not mate the usual fit of screwthread and cannot be used in e.g. normal threaded holes.
- The corresponding OVERSIZED nuts have been tapped about 0,3 mm larger AFTER galvanizing running perfectly onto these threaded rods.

20130 Threaded rod length 1 meter		G04A
Thread	Metric thread	
Material	Steel	
Class	10.9	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	5	20130.050.001	M16	3	20130.160.001	M30	2	20130.300.001
M6	5	20130.060.001	M18	3	20130.180.001	M33	2	20130.330.001
M8	5	20130.080.001	M20	3	20130.200.001	M36	2	20130.360.001
M10	5	20130.100.001	M22	3	20130.220.001	M39	2	20130.390.001
M12	5	20130.120.001	M24	3	20130.240.001	M42	1	20130.420.001
M14	5	20130.140.001	M27	2	20130.270.001	M45	1	20130.450.001

- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

20132 Threaded rod length 1 meter		G04A
Thread	Metric thread	
Material	Steel	
Class	12.9	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M8	5	20132.080.001	M16	3	20132.160.001	M27	2	20132.270.001
M10	5	20132.100.001	M20	3	20132.200.001	M30	2	20132.300.001
M12	5	20132.120.001	M24	3	20132.240.001			

- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

51070 Threaded rod length 1 meter		Q03A
Thread	Metric thread	
Material	Stainless steel A2	
Class	70	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	10	51070.030.001	M14	5	51070.140.001	M30	1	51070.300.001
M4	10	51070.040.001	M16	5	51070.160.001	M33	1	51070.330.001
M5	10	51070.050.001	M18	3	51070.180.001	M36	1	51070.360.001
M6	10	51070.060.001	M20	3	51070.200.001	M42 *	5	51070.420.001
M8	10	51070.080.001	M22	2	51070.220.001	M45 *	5	51070.450.001
M10	10	51070.100.001	M24	2	51070.240.001	M48 *	5	51070.480.001
M12	5	51070.120.001	M27	1	51070.270.001	M52 *	1	51070.520.001

- Sizes with a diameter > M24 are minimal property class 50.

51064 Threaded rod length 1 meter		Q03A
Thread	Metric thread	
Material	Stainless steel A2	
Class	70	
Packaging	Large	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	50	51064.060.001	M10	25	51064.100.001	M16	15	51064.160.001
M8	25	51064.080.001	M12	25	51064.120.001			

- Sizes with a diameter > M24 are minimal property class 50.

51074 Threaded rod length 1 meter left-hand thread		R09A
Thread	Metric thread	
Material	Stainless steel A2	
Class	70	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5 *	100	51074.050.001	M12	2	51074.120.001	M20	1	51074.200.001
M6	2	51074.060.001	M14 *	10	51074.140.001	M24	1	51074.240.001
M8	2	51074.080.001	M16	1	51074.160.001			
M10	2	51074.100.001	M18 *	10	51074.180.001			

- Sizes with a diameter > M24 are minimal property class 50.

55070 Threaded rod length 1 meter		Q43A
Thread	Metric thread	
Material	Stainless steel A4	
Class	70	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M2	10	55070.020.001	M12	5	55070.120.001	M30	1	55070.300.001
M2,5	10	55070.025.001	M14	5	55070.140.001	M33	1	55070.330.001
M3	10	55070.030.001	M16	5	55070.160.001	M36	1	55070.360.001
M4	10	55070.040.001	M18	3	55070.180.001	M42 *	5	55070.420.001
M5	10	55070.050.001	M20	3	55070.200.001	M45 *	5	55070.450.001
M6	10	55070.060.001	M22	2	55070.220.001	M52 *	1	55070.520.001
M8	10	55070.080.001	M24	2	55070.240.001			
M10	10	55070.100.001	M27	1	55070.270.001			

- Sizes with a diameter > M24 are minimal property class 50.


4

45070 Threaded rod length 1 meter		W01A	
Thread	Metric thread		
Material	Aluminium Sopral P40		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M4	1	45070.040.001	M6	10	45070.060.001	M10	5	45070.100.001
M5	10	45070.050.001	M8	5	45070.080.001			

45270 Threaded rod length 1 meter		W01A	
Thread	Metric thread		
Material	Aluminium Sopral P60		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M8	5	45270.080.001	M10	5	45270.100.001	M12	5	45270.120.001

45940 Threaded rod length 1 meter		W01A	
Thread	Metric thread		
Material	Titanium ASTM		
Class	Gr.2		
Packaging	Standard		




d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	1	45940.060.001	M8	1	45940.080.001	M10	1	45940.100.001

46090 Threaded rod length 1 meter		M01A	
Thread	Metric thread		
Material	Brass Cu2/Cu3		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	10	46090.030.001	M8	10	46090.080.001	M16	2	46090.160.001
M4	10	46090.040.001	M10	5	46090.100.001	M18	2	46090.180.001
M5	10	46090.050.001	M12	5	46090.120.001	M20	2	46090.200.001
M6	10	46090.060.001	M14	2	46090.140.001	M22	2	46090.220.001

56170 Threaded rod length 1 meter plastic		W02A	
Thread	Metric thread		
Material	Plastic Polyamide (nylon)		
Class	PA 6.6		
Colour	White		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M3	10	56170.030.001	M8	5	56170.080.001	M16	2	56170.160.001
M4	10	56170.040.001	M10	5	56170.100.001	M20	1	56170.200.001
M5	5	56170.050.001	M12	2	56170.120.001			
M6	5	56170.060.001	M14	2	56170.140.001			

20330 Threaded rod length 2 meter		G06A	
Thread	Metric thread		
Material	Steel		
Class	≥4.8		
Surface treatment	Zinc plated		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	10	20330.050.001	M6	10	20330.060.001	M8	10	20330.080.001

20330 Threaded rod length 2 meter								
d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M10	10	20330.100.001	M16	5	20330.160.001	M24	2	20330.240.001
M12	10	20330.120.001	M20	2	20330.200.001			

20320 Threaded rod length 2 meter								G06A
Thread	Metric thread							
Material	Steel							
Class	≥4.8							
Surface treatment	Zinc plated							
Packaging	Large							

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	100	20320.050.001	M10	25	20320.100.001	M16	10	20320.160.001
M6	50	20320.060.001	M12	20	20320.120.001	M20	5	20320.200.001
M8	25	20320.080.001	M14	10	20320.140.001	M24	5	20320.240.001

20372 Threaded rod length 2 meter								G05A
Thread	Metric thread							
Material	Steel							
Class	8.8							
Surface treatment	Zinc plated							
Packaging	Standard							

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M5	10	20372.050.001	M12	10	20372.120.001	M24	2	20372.240.001
M6	10	20372.060.001	M16	5	20372.160.001	M30	1	20372.300.001
M8	10	20372.080.001	M20	2	20372.200.001			
M10	10	20372.100.001	M22	2	20372.220.001			

51071 Threaded rod length 2 meter								R09A
Thread	Metric thread							
Material	Stainless steel A2							
Class	70							
Packaging	Standard							

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	5	51071.060.001	M12	2	51071.120.001	M24	1	51071.240.001
M8	5	51071.080.001	M16	2	51071.160.001			
M10	2	51071.100.001	M20	1	51071.200.001			

- Sizes with a diameter > M24 are minimal property class 50.

55071 Threaded rod length 2 meter								R49A
Thread	Metric thread							
Material	Stainless steel A4							
Class	70							
Packaging	Standard							

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	5	55071.060.001	M10	2	55071.100.001	M16	2	55071.160.001
M8	5	55071.080.001	M12	2	55071.120.001	M20	1	55071.200.001

- Sizes with a diameter > M24 are minimal property class 50.

20410 Threaded rod length 3 meter								G05A
Thread	Metric thread							
Material	Steel							
Class	≥4.8							
Surface treatment	Zinc plated							
Packaging	Standard							

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	10	20410.060.001	M12	5	20410.120.001	M24	2	20410.240.001
M8	10	20410.080.001	M16	2	20410.160.001			
M10	5	20410.100.001	M20	2	20410.200.001			

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20400 Threaded rod length 3 meter		G05A	
Thread	Metric thread		
Material	Steel		
Class	≥4.8		
Surface treatment	Zinc plated		
Packaging	Large		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	25	20400.060.001	M10	10	20400.100.001	M16	5	20400.160.001
M8	25	20400.080.001	M12	10	20400.120.001			

20395 Threaded rod length 3 meter		G05A	
Thread	Metric thread		
Material	Steel		
Class	8.8		
Surface treatment	Zinc plated		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	10	20395.060.001	M10	5	20395.100.001	M16	2	20395.160.001
M8	10	20395.080.001	M12	5	20395.120.001			


51072 Threaded rod length 3 meter		R09A	
Thread	Metric thread		
Material	Stainless steel A2		
Class	70		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	5	51072.060.001	M10	2	51072.100.001	M16	2	51072.160.001
M8	5	51072.080.001	M12	2	51072.120.001			

- Sizes with a diameter > M24 are minimal property class 50.

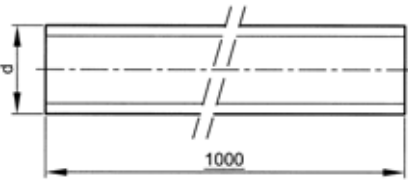
55072 Threaded rod length 3 meter		R49A	
Thread	Metric thread		
Material	Stainless steel A4		
Class	70		
Packaging	Standard		



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M6	5	55072.060.001	M10	2	55072.100.001	M16	2	55072.160.001
M8	5	55072.080.001	M12	2	55072.120.001			

- Sizes with a diameter > M24 are minimal property class 50.

Threaded rod MF



DIN 976-1A
NEN 2369
NF E25-136



The end of the threaded rod is painted to improve the recognisability of the quality.

Colour code threaded rods		
Property class	Material	Colour
4.8	Plain steel and zinc plated	selfcolour
4.8	ISO metric hot dip galvanised	light blue
4.8	Oversized metric hot dip galvanised	orange
5.6	Plain steel	brown
5.8	Plain steel	gentian blue
8.8	Plain steel, zinc plated and yellow passivated	yellow
8.8	ISO metric hot dip galvanised	steel grey
8.8	Oversized metric hot dip galvanised	purple
10.9	Plain steel	white
12.9	Plain steel	black
ASTM-B7	Plain steel (UNC & 8UN)	selfcolour
ASTM-B7	Plain steel (metric)	selfcolour
RVS-A2	Stainless steel A2 metric	green
RVS-A4	Stainless steel A4 metric	red

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Article groups

Thread	Material	Class	Surface treatment		Packaging	Code	Page
MF	St	≥4.8	Zipl	1 meter	Standard	20360	4-13
MF	St	8.8	Zipl	1 meter	Standard	20235	4-13
MF	St.St. A4	70		1 meter	Standard	55067	4-14

20360 Threaded rod length 1 meter

G05A

Thread Metric fine thread
Material Steel
Class ≥4.8
Surface treatment Zinc plated
Packaging Standard



d x P	☒	Art.number	d x P	☒	Art.number	d x P	☒	Art.number
M8X1,00	2	20360.080.100	M14X1,50	1	20360.140.150	M27X1,50 (#DIN)	1	20360.270.150
M10X1,00	2	20360.100.100	M16X1,50	1	20360.160.150	M27X2,00	1	20360.270.200
M10X1,25	2	20360.100.125	M18X1,50	1	20360.180.150			
			M20X1,50	1	20360.200.150			
M12X1,25	2	20360.120.125	M22X1,50	1	20360.220.150	M30X1,50 (#DIN)	1	20360.300.150
M12X1,50	2	20360.120.150	M24X1,50 (#DIN)	1	20360.240.150	M30X2,00	1	20360.300.200
			M24X2,00	1	20360.240.200			

20235 Threaded rod length 1 meter

G05A

Thread Metric fine thread
Material Steel
Class 8.8
Surface treatment Zinc plated
Packaging Standard



d x P	☒	Art.number	d x P	☒	Art.number	d x P	☒	Art.number
M8X1,00	2	20235.080.100	M14X1,50	1	20235.140.150	M27X1,50	1	20235.270.150
M10X1,00	2	20235.100.100	M16X1,50	1	20235.160.150	M27X2,00	1	20235.270.200
M10X1,25	2	20235.100.125	M18X1,50	1	20235.180.150			
			M20X1,50	1	20235.200.150			
M12X1,25	2	20235.120.125	M22X1,50	1	20235.220.150	M30X1,50	1	20235.300.150
M12X1,50	2	20235.120.150	M24X1,50	1	20235.240.150			
			M24X2,00	1	20235.240.200			

20235 Threaded rod length 1 meter			
d x P	☒	Art.number	d x P
M30X2,00	1	20235.300.200	

55067 Threaded rod length 1 meter		R49A
Thread	Metric fine thread	
Material	Stainless steel A4	
Class	70	
Packaging	Standard	

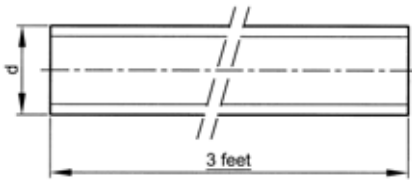


d x P	☒	Art.number	d x P	☒	Art.number	d x P	☒	Art.number
M8X1,00	2	55067.080.100	M12X1,50	2	55067.120.150	M22X1,50	1	55067.220.150
M10X1,00	2	55067.100.100				M24X1,50 (#DIN)	1	55067.240.150
M10X1,25	2	55067.100.125	M14X1,50	1	55067.140.150	M24X2,00	1	55067.240.200
			M16X1,50	1	55067.160.150			
M12X1,25	2	55067.120.125	M20X1,50	1	55067.200.150			

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- Sizes with a diameter > M24 are minimal property class 50.

Threaded rod UNC



Technical data

d	Threads per inch
1/4	20
5/16	18
3/8	16
1/2	13
5/8	11
3/4	10
7/8	9
1.IN.	8

Article groups

Thread	Material	Class	Packaging	Code	Page
UNC	St	≥4.8	3 feet	20280	4-15
UNC	St.St. A4		3 feet	55073	4-15

20280 Threaded rod length 3 feet

X09A

Thread	Unified National Coarse
Material	Steel
Class	≥4.8
Packaging	Standard



d	⊗	Art.number	d	⊗	Art.number	d	⊗	Art.number
5/16	10	20280.079.001	5/8	5	20280.158.001	1.IN.	2	20280.254.001
3/8	10	20280.096.001	3/4	2	20280.191.001			
1/2	10	20280.127.001	7/8	2	20280.222.001			

55073 Threaded rod length 3 feet

X15A

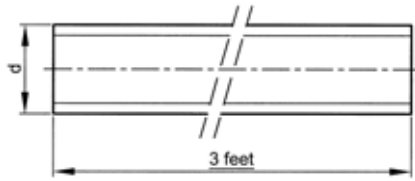
Thread	Unified National Coarse
Material	Stainless steel A4
Packaging	Standard



d	⊗	Art.number	d	⊗	Art.number	d	⊗	Art.number
1/4	5	55073.063.001	1/2	3	55073.127.001	7/8	1	55073.222.001
5/16	5	55073.079.001	5/8	3	55073.158.001	1.IN.	1	55073.254.001
3/8	3	55073.096.001	3/4	1	55073.191.001			

- Depending on availability the austenitic steel type is comparable to AISI 316 with mechanical properties acc. to ASTM F593.

Threaded rod UNF



Technical data

d	Threads per inch	d	Threads per inch	d	Threads per inch
1/4	28	1/2	20	7/8	14
5/16	24	9/16	18	1.IN.-12G	12
3/8	24	5/8	18	1.IN.-14G	14
7/16	20	3/4	16	1.1/8	12

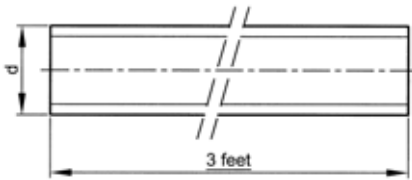
4

- If when ordering, UNF 1 inch-12 is not stated, then we supply the type with 14 threads per inch (UNS).

20290 Threaded rod length 3 feet		X09A
Thread	Unified National Fine	
Material	Steel	
Class	≥4.8	
Surface treatment	Zinc plated	
Packaging	Standard	

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1/4	3	20290.063.001	1/2	2	20290.127.001	7/8	1	20290.222.001
5/16	2	20290.079.001	9/16	1	20290.142.001	1.IN.-12G	1	20290.255.001
3/8	2	20290.096.001	5/8	1	20290.158.001	1.IN.-14G	1	20290.256.001
7/16	2	20290.111.001	3/4	1	20290.191.001	1.1/8	1	20290.285.001

Threaded rod BSW



Technical data

d	Threads per inch	d	Threads per inch	d	Threads per inch
1/8	40	3/8	16	7/8	9
5/32	32	7/16	14	1.IN.	8
3/16	24	1/2	12	1.1/8	7
1/4	20	5/8	11	1.1/4	7
5/16	18	3/4	10	1.1/2	6

- Whitworth thread (BSW/BSF) is not internationally recommended.
- It is advised to use metric (M/MF) or unified threads (UNC/UNF).

Article groups

Thread	Material	Class	Surface treatment	Packaging	Code	Page
BSW	St	≥4.8		1 meter	Standard	20240 4-17
BSW	St	≥4.8	Zipl	1 meter	Standard	20252 4-17
BSW	Br Cu2/Cu3			1 meter	Standard	46290 4-17

20240 Threaded rod BSW

X08A

Thread	British Standard Whitworth
Material	Steel
Class	≥4.8
Packaging	Standard



d	✉	Art.number	d	✉	Art.number	d	✉	Art.number
1/8	20	20240.031.001	3/8	10	20240.096.001	7/8	2	20240.222.001
5/32	20	20240.039.001	7/16	10	20240.111.001	1.IN.	2	20240.254.001
3/16	10	20240.047.001	1/2	10	20240.127.001	1.1/8	2	20240.285.001
1/4	10	20240.063.001	5/8	5	20240.158.001	1.1/4	2	20240.317.001
5/16	10	20240.079.001	3/4	2	20240.191.001	1.1/2	1	20240.381.001

20252 Threaded rod BSW

X08A

Thread	British Standard Whitworth
Material	Steel
Class	≥4.8
Surface treatment	Zinc plated
Packaging	Standard



d	✉	Art.number	d	✉	Art.number	d	✉	Art.number
1/4	10	20252.063.001	1/2	10	20252.127.001	7/8	2	20252.222.001
5/16	10	20252.079.001	5/8	5	20252.158.001	1.IN.	2	20252.254.001
3/8	10	20252.096.001	3/4	2	20252.191.001			

46290 Threaded rod BSW

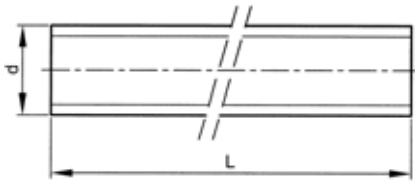
X08A

Thread	British Standard Whitworth
Material	Brass Cu2/Cu3
Packaging	Standard



d	✉	Art.number	d	✉	Art.number	d	✉	Art.number
5/32	10	46290.039.001	5/16	10	46290.079.001	5/8	2	46290.158.001
3/16	10	46290.047.001	3/8	5	46290.096.001	3/4	1	46290.191.001
1/4	10	46290.063.001	1/2	2	46290.127.001	7/8	1	46290.222.001

Threaded rod Permaglas



Technical data

d	P
M8	1,25
M10	1,5
M12	1,75
M16	2
M20	2,5
M24	3

4

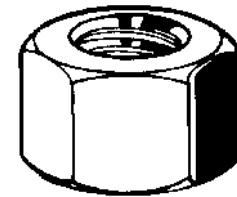
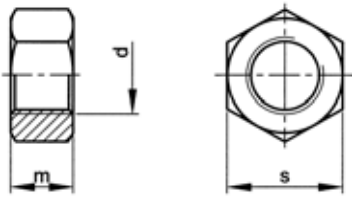
- Special features PERMAGLAS:
- Glass-fiber reinforced epoxy
- Temperature resistant -270°C up to +155°C
- Light weight (gravity 1,8)
- Corrosion resistant
- Resistant to aggressive chemicals and gases
- Electrical- and thermal insulated
- Non-magnetic
- Higher mechanical properties as f.i. Polyamid

56050 Threaded rod Permaglas		W05G
Thread	Metric thread	
Material	Glass-fibre reinforced plastic Permaglas ME 771	
Colour	Red	
Packaging	Standard	



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M8X950	1	56050.080.950	M12X1900	1	56050.121.900	M20X1900	1	56050.201.900
M10X950	1	56050.100.950	M16X1900	1	56050.161.900	M24X1900	1	56050.241.900

Hexagon nut Permaglas



Technical data

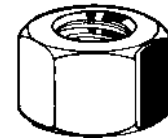
d	P	m	s
M8	1,25	8	13
M10	1,5	10	17
M12	1,75	12	19
M16	2	16	24
M20	2,5	20	30
M24	3	24	36

- Special features PERMAGLAS:
- Glass-fiber reinforced epoxy
- Temperature resistant -270°C up to +155°C
- Light weight (gravity 1,8)
- Corrosion resistant
- Resistant to aggressive chemicals and gases
- Electrical- and thermal insulated
- Non-magnetic
- Higher mechanical properties as f.i. Polyamid

56052 Hexagon nut Permaglas

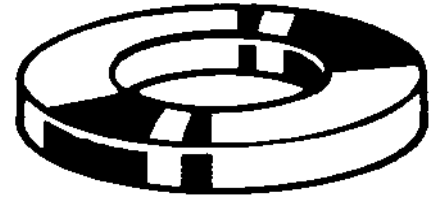
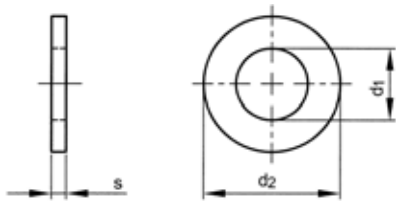
W05G

Thread	Metric thread
Material	Glass-fibre reinforced plastic Permaglas ME 730
Colour	Beige
Packaging	Standard



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M8	8	56052.080.001	M12	8	56052.120.001	M20	4	56052.200.001
M10	8	56052.100.001	M16	4	56052.160.001	M24	4	56052.240.001

Plain washer without chamfer Permaglas



Technical data

d	d ₁	d ₂	s
M8	9	18	1,5
M10	11	22	2
M12	14	27	2,5
M16	18	32	3
M20	22	40	3
M24	27	50	4

- Special features PERMAGLAS:
- Glass-fiber reinforced epoxy.
- Temperature resistant -270°C up to +155°C.
- Light weight (gravity 1,8).
- Corrosion resistant.
- Resistant to aggressive chemicals and gases.
- Electrical- and thermal insulated.
- Non-magnetic.
- Higher mechanical properties as f.i. Polyamid.

56054 Plain washer without chamfer Permaglas

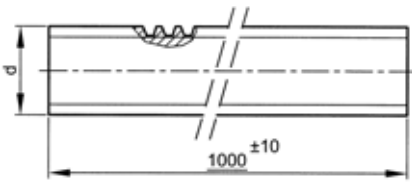
W05G

Material Glass-fibre reinforced plastic Permaglas ME 730
Colour Beige
Packaging Standard



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M8	8	56054.080.001	M12	8	56054.120.001	M20	4	56054.200.001
M10	8	56054.100.001	M16	4	56054.160.001	M24	4	56054.240.001

Threaded rod Tr



- Trapezoidal thread according to DIN 103, straightness of threaded rods according to DIN 7168-2, tolerance class U.

Article groups

Thread	Material	Class		Packaging	Code	Page
Tr	St	5.8	1 meter	Standard	20460	4-21
Tr	St	5.8	3 meter	Standard	20464	4-21
Tr	St	5.8	1 meter left hand	Standard	20466	4-21
Tr	St.St. A2		1 meter	Standard	51076	4-22
Tr	St.St. A2		3 meter	Standard	51077	4-22

4

20460 Threaded rod length 1 meter		G05A
Thread	Trapezoidal thread	
Material	Steel	
Class	5.8	
Packaging	Standard	

d x P	☒	Art.number	d x P	☒	Art.number	d x P	☒	Art.number
Tr10X3	5	20460.100.003	Tr22X5	2	20460.220.005	Tr36X6	1	20460.360.006
Tr12X3	5	20460.120.003	Tr24X5	2	20460.240.005	Tr40X7	1	20460.400.007
Tr14X4	3	20460.140.004	Tr26X5	1	20460.260.005	Tr44X7	1	20460.440.007
Tr16X4	3	20460.160.004	Tr28X5	1	20460.280.005	Tr50X8	1	20460.500.008
Tr18X4	2	20460.180.004	Tr30X6	1	20460.300.006	Tr60X9	1	20460.600.009
Tr20X4	2	20460.200.004	Tr32X6	1	20460.320.006			

20464 Threaded rod length 3 meter		G05A
Thread	Trapezoidal thread	
Material	Steel	
Class	5.8	
Packaging	Standard	

d x P	☒	Art.number	d x P	☒	Art.number	d x P	☒	Art.number
Tr10X3	1	20464.100.003	Tr20X4	1	20464.200.004	Tr36X6	1	20464.360.006
Tr12X3	1	20464.120.003	Tr24X5	1	20464.240.005	Tr40X7	1	20464.400.007
Tr16X4	1	20464.160.004	Tr30X6	1	20464.300.006			

20466 Threaded rod length 1 meter left hand thread		G05A
Thread	Trapezoidal thread	
Material	Steel	
Class	5.8	
Packaging	Standard	

d x P	☒	Art.number	d x P	☒	Art.number	d x P	☒	Art.number
Tr12X3	3	20466.120.003	Tr24X5	1	20466.240.005	Tr40X7	1	20466.400.007
Tr16X4	2	20466.160.004	Tr30X6	1	20466.300.006			
Tr20X4	1	20466.200.004	Tr36X6	1	20466.360.006			

51076 Threaded rod length 1 meter		R09A
Thread	Trapezoidal thread	
Material	Stainless steel A2	
Packaging	Standard	

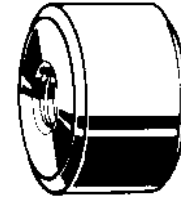
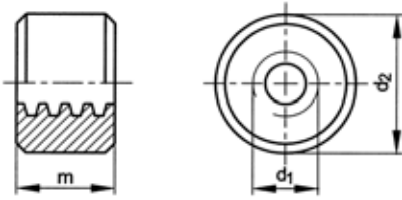
d x P	✉	Art.number	d x P	✉	Art.number	d x P	✉	Art.number
Tr12X3	1	51076.120.003	Tr20X4	1	51076.200.004	Tr30X6	1	51076.300.006
Tr16X4	1	51076.160.004	Tr24X5	1	51076.240.005			

51077 Threaded rod length 3 meter		R09A
Thread	Trapezoidal thread	
Material	Stainless steel A2	
Packaging	Standard	

d x P	✉	Art.number	d x P	✉	Art.number	d x P	✉	Art.number
Tr12X3	1	51077.120.003	Tr20X4	1	51077.200.004	Tr30X6	1	51077.300.006
Tr16X4	1	51077.160.004	Tr24X5	1	51077.240.005			

4

Round nut Tr



Technical data

d1	d2	m	d1	d2	m	d1	d2	m
Tr10 (#DIN)	22	15	Tr22	45	33	Tr36	75	54
Tr12	26	18	Tr24	50	36	Tr40	80	60
Tr14 (#DIN)	30	21	Tr26	50	39	Tr44	80	66
Tr16	36	24	Tr28	60	42	Tr50	90	75
Tr18	40	27	Tr30	60	45	Tr60	100	90
Tr20	45	30	Tr32	60	48			

- Trapezoidal thread acc. to DIN 103.

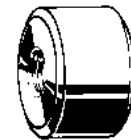
Article groups

Thread	Material	Packaging	Code	Page
Tr	Free-cutting steel	Standard	20470	4-23
Tr	Free-cutting steel	left hand	20476	4-23
Tr	St.St. A1	Standard	51170	4-23

20470 Round nut Tr

G05A

Thread Trapezoidal thread
Material Free-cutting steel
Packaging Standard

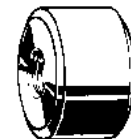


d1 x P	☒	Art.number	d1 x P	☒	Art.number	d1 x P	☒	Art.number
Tr10X3	10	20470.100.003	Tr22X5	4	20470.220.005	Tr36X6	2	20470.360.006
Tr12X3	10	20470.120.003	Tr24X5	4	20470.240.005	Tr40X7	2	20470.400.007
Tr14X4	6	20470.140.004	Tr26X5	2	20470.260.005	Tr44X7	2	20470.440.007
Tr16X4	6	20470.160.004	Tr28X5	2	20470.280.005	Tr50X8	2	20470.500.008
Tr18X4	4	20470.180.004	Tr30X6	2	20470.300.006	Tr60X9	2	20470.600.009
Tr20X4	4	20470.200.004	Tr32X6	2	20470.320.006			

20476 Round nut left hand thread

G05A

Thread Trapezoidal thread
Material Free-cutting steel
Packaging Standard

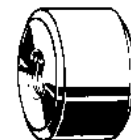


d1 x P	☒	Art.number	d1 x P	☒	Art.number	d1 x P	☒	Art.number
Tr12X3	6	20476.120.003	Tr24X5	2	20476.240.005	Tr36X6	2	20476.360.006
Tr16X4	4	20476.160.004	Tr30X6	2	20476.300.006	Tr40X7	2	20476.400.007
Tr20X4	2	20476.200.004	Tr32X6	2	20476.320.006			

51170 Round nut Tr

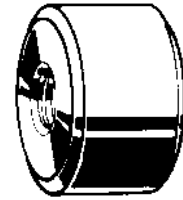
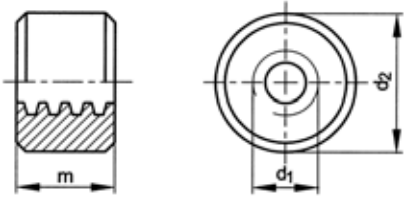
R09A

Thread Trapezoidal thread
Material Stainless steel A1
Packaging Standard



d1 x P	☒	Art.number	d1 x P	☒	Art.number	d1 x P	☒	Art.number
Tr12X3	1	51170.120.003	Tr20X4	1	51170.200.004	Tr30X6	1	51170.300.006
Tr16X4	1	51170.160.004	Tr24X5	1	51170.240.005			

Round nut



Technical data

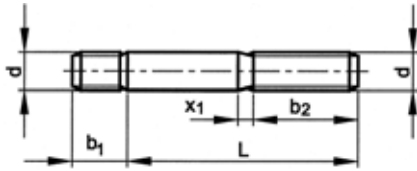
d1	d2	m
Tr12	27	18
Tr16	36	32
Tr20	47	40
Tr24	52	48
Tr30	62	45
Tr36	75	54
Tr40	80	80

- Trapezoidal thread acc. to DIN 103.

20474 Round nut		G05A
Thread	Trapezoidal thread	
Material	Bronze Cu4	
Packaging	Standard	

d1 x P	☒	Art.number	d1 x P	☒	Art.number	d1 x P	☒	Art.number
Tr12X3	6	20474.120.003	Tr24X5	2	20474.240.005	Tr40X7	1	20474.400.007
Tr16X4	4	20474.160.004	Tr30X6	1	20474.300.006			
Tr20X4	2	20474.200.004	Tr36X6	1	20474.360.006			

Stud metal end $\approx 1,25d$



DIN 939
NEN 2332
NF E25-135



Technical data

d	P	$b_1 \approx 1,25d$	$b_2: L \leq 125\text{mm}$	$b_2: 125\text{mm} < L \leq 200\text{mm}$	x_1	$b_2 = L - (x_1 + 3) \text{ t/m } L \leq$
M6	1	7,5	18	24	2,5	20
M8	1,25	10	22	28	3,2	25
M10	1,5	12	26	32	3,8	30
M12	1,75	15	30	36	4,3	35
M14	2	18	34	40	5	40
M16	2	20	38	44	5	45
M18	2,5	22	42	48	6,3	50
M20	2,5	25	46	52	6,3	55
M22	2,5	28	50	56	6,3	60
M24	3	30	54	60	7,5	65
M27	3	35	60	66	7,5	70

- ATTENTION: when ordering studs acc. to DIN the diameter d x the effective length L has to be stated e.g. stud M10 x 65 - DIN 939, where $L = 65$ mm is the working length and $b_1 = 12$ mm the metal end. The total length is $65 + 12 = 77$ mm. The threadlength on the outside $b_2 = 26$ mm.
- The screw-in threaded end has been made with tolerance Sk6, acc. to DIN 13-51, meaning "heavy fit", and prevents loosening of studs during disassembly.
- Studs acc. to DIN 939 (5.6/5.8/8.8) with a metal end $\approx 1,25d$ have many applications, among others in cast-iron.

Article groups

Thread	Material	Class	Surface treatment	Packaging	Code	Page
M	St	5.6/5.8		Standard	21500	4-25
M	St	5.6/5.8	Zipl	Standard	21510	4-26
M	St	5.6/5.8	Zipl yell.p.	Standard	21515	4-26
M	St	8.8		Standard	21520	4-26
M	St.St. A2			Standard	51270	4-27
M	St.St. A4			Standard	55270	4-27

21500 Stud metal end $\approx 1,25d$

G07A

Thread Metric thread
Material Steel
Class 5.6/5.8
Packaging Standard



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M6X20	200	21500.060.020	M10X55	100	21500.100.055	M16X50	50	21500.160.050
M6X25	200	21500.060.025	M10X60	100	21500.100.060	M16X55	50	21500.160.055
M6X30	200	21500.060.030	M10X65	100	21500.100.065	M16X60	50	21500.160.060
M6X35	200	21500.060.035	M10X70	100	21500.100.070	M16X65	25	21500.160.065
M6X40	200	21500.060.040				M16X70	25	21500.160.070
M6X45	200	21500.060.045	M12X25	100	21500.120.025	M16X75	25	21500.160.075
M6X50	200	21500.060.050	M12X30	100	21500.120.030	M16X80	25	21500.160.080
M6X55	200	21500.060.055	M12X35	100	21500.120.035	M16X90	25	21500.160.090
			M12X40	100	21500.120.040	M16X100	25	21500.160.100
M8X20	100	21500.080.020	M12X45	100	21500.120.045			
M8X25	100	21500.080.025	M12X50	50	21500.120.050	M20X40	25	21500.200.040
M8X30	100	21500.080.030	M12X55	50	21500.120.055	M20X45	25	21500.200.045
M8X35	100	21500.080.035	M12X60	50	21500.120.060	M20X50	25	21500.200.050
M8X40	100	21500.080.040	M12X65	50	21500.120.065	M20X55	25	21500.200.055
M8X45	100	21500.080.045	M12X70	50	21500.120.070	M20X60	25	21500.200.060
M8X50	100	21500.080.050	M12X75	50	21500.120.075	M20X65	25	21500.200.065
M8X60	100	21500.080.060	M12X80	50	21500.120.080	M20X70	25	21500.200.070
M8X65	100	21500.080.065	M12X90	50	21500.120.090	M20X75	25	21500.200.075
M8X70	100	21500.080.070	M12X100	50	21500.120.100	M20X80	25	21500.200.080
						M20X90	10	21500.200.090
M10X20	100	21500.100.020	M14X40	50	21500.140.040	M20X100	10	21500.200.100
M10X25	100	21500.100.025	M14X50	50	21500.140.050	M20X110	10	21500.200.110
M10X30	100	21500.100.030	M14X60	50	21500.140.060	M20X120	10	21500.200.120
M10X35	100	21500.100.035				M20X140	10	21500.200.140
M10X40	100	21500.100.040	M16X35	50	21500.160.035			
M10X45	100	21500.100.045	M16X40	50	21500.160.040	M22X50	10	21500.220.050
M10X50	100	21500.100.050	M16X45	50	21500.160.045	M22X60	10	21500.220.060

21500 Stud metal end \approx 1,25d ←

d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M22X70	10	21500.220.070	M22X140	10	21500.220.140	M24X90	10	21500.240.090
M22X80	10	21500.220.080				M24X100	10	21500.240.100
M22X90	10	21500.220.090	M24X50	10	21500.240.050	M24X110	10	21500.240.110
M22X100	10	21500.220.100	M24X60	10	21500.240.060	M24X120	10	21500.240.120
M22X110	10	21500.220.110	M24X70	10	21500.240.070	M24X140	10	21500.240.140
M22X120	10	21500.220.120	M24X80	10	21500.240.080			

21510 Stud metal end \approx 1,25d G07A

Thread	Metric thread
Material	Steel
Class	5.6/5.8
Surface treatment	Zinc plated
Packaging	Standard



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M6X20	200	21510.060.020	M8X50	100	21510.080.050	M12X35	100	21510.120.035
M6X25	200	21510.060.025	M8X60	100	21510.080.060	M12X40	100	21510.120.040
M6X30	200	21510.060.030				M12X50	50	21510.120.050
M6X35	200	21510.060.035	M10X20	100	21510.100.020	M12X60	50	21510.120.060
M6X40	200	21510.060.040	M10X25	100	21510.100.025			
M6X45	200	21510.060.045	M10X30	100	21510.100.030	M16X35	50	21510.160.035
M6X50	200	21510.060.050	M10X35	100	21510.100.035	M16X40	50	21510.160.040
			M10X40	100	21510.100.040	M16X45	50	21510.160.045
M8X20	100	21510.080.020	M10X50	100	21510.100.050	M16X50	50	21510.160.050
M8X25	100	21510.080.025	M10X60	100	21510.100.060	M16X55	50	21510.160.055
M8X30	100	21510.080.030				M16X60	50	21510.160.060
M8X35	100	21510.080.035	M12X25	100	21510.120.025			
M8X40	100	21510.080.040	M12X30	100	21510.120.030			

21515 Stud metal end \approx 1,25d G07A

Thread	Metric thread
Material	Steel
Class	5.6/5.8
Surface treatment	Zinc plated yellow passivated
Packaging	Standard



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M6X20	200	21515.060.020	M8X50	100	21515.080.050	M12X35	100	21515.120.035
M6X25	200	21515.060.025	M8X60	100	21515.080.060	M12X40	100	21515.120.040
M6X30	200	21515.060.030				M12X50	50	21515.120.050
M6X35	200	21515.060.035	M10X20	100	21515.100.020	M12X60	50	21515.120.060
M6X40	200	21515.060.040	M10X25	100	21515.100.025			
M6X45	200	21515.060.045	M10X30	100	21515.100.030	M16X35	50	21515.160.035
M6X50	200	21515.060.050	M10X35	100	21515.100.035	M16X40	50	21515.160.040
			M10X40	100	21515.100.040	M16X45	50	21515.160.045
M8X20	100	21515.080.020	M10X50	100	21515.100.050	M16X50	50	21515.160.050
M8X25	100	21515.080.025	M10X60	100	21515.100.060	M16X55	50	21515.160.055
M8X30	100	21515.080.030				M16X60	50	21515.160.060
M8X35	100	21515.080.035	M12X25	100	21515.120.025			
M8X40	100	21515.080.040	M12X30	100	21515.120.030			

21520 Stud metal end \approx 1,25d G07A

Thread	Metric thread
Material	Steel
Class	8.8
Packaging	Standard



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M6X20	200	21520.060.020				M12X55	50	21520.120.055
M6X25	200	21520.060.025	M10X20	100	21520.100.020	M12X60	50	21520.120.060
M6X30	200	21520.060.030	M10X25	100	21520.100.025	M12X65	50	21520.120.065
M6X35	200	21520.060.035	M10X30	100	21520.100.030	M12X70	50	21520.120.070
M6X40	200	21520.060.040	M10X35	100	21520.100.035	M12X75	50	21520.120.075
M6X45	200	21520.060.045	M10X40	100	21520.100.040	M12X80	50	21520.120.080
M6X50	200	21520.060.050	M10X45	100	21520.100.045	M12X90	50	21520.120.090
M6X55	200	21520.060.055	M10X50	100	21520.100.050	M12X100	50	21520.120.100
			M10X55	100	21520.100.055			
M8X20	100	21520.080.020	M10X60	100	21520.100.060	M14X30	50	21520.140.030
M8X25	100	21520.080.025	M10X65	100	21520.100.065	M14X35	50	21520.140.035
M8X30	100	21520.080.030	M10X70	100	21520.100.070	M14X40	50	21520.140.040
M8X35	100	21520.080.035				M14X50	50	21520.140.050
M8X40	100	21520.080.040	M12X25	100	21520.120.025	M14X60	50	21520.140.060
M8X45	100	21520.080.045	M12X30	100	21520.120.030			
M8X50	100	21520.080.050	M12X35	100	21520.120.035	M16X35	50	21520.160.035
M8X60	100	21520.080.060	M12X40	100	21520.120.040	M16X40	50	21520.160.040
M8X65	100	21520.080.065	M12X45	100	21520.120.045	M16X45	50	21520.160.045
M8X70	100	21520.080.070	M12X50	50	21520.120.050	M16X50	50	21520.160.050

21520 Stud metal end ≈ 1,25d ←

d x L	✉	Art.number	d x L	✉	Art.number	d x L	✉	Art.number
M16X55	50	21520.160.055	M20X60	25	21520.200.060	M22X80	10	21520.220.080
M16X60	50	21520.160.060	M20X65	25	21520.200.065	M24X50	10	21520.240.050
M16X65	25	21520.160.065	M20X70	25	21520.200.070	M24X60	10	21520.240.060
M16X70	25	21520.160.070	M20X75	25	21520.200.075	M24X70	10	21520.240.070
M16X75	25	21520.160.075	M20X80	25	21520.200.080	M24X75	10	21520.240.075
M16X80	25	21520.160.080	M20X90	10	21520.200.090	M24X80	10	21520.240.080
M16X90	25	21520.160.090	M20X100	10	21520.200.100	M24X90	10	21520.240.090
M16X100	25	21520.160.100	M20X110	10	21520.200.110	M24X100	10	21520.240.100
M20X40	25	21520.200.040	M20X120	10	21520.200.120	M24X110	10	21520.240.110
M20X45	25	21520.200.045	M20X140	10	21520.200.140	M24X120	10	21520.240.120
M20X50	25	21520.200.050	M22X60	10	21520.220.060			
M20X55	25	21520.200.055	M22X70	10	21520.220.070			

51270 Stud metal end ≈ 1,25d R09A


Thread Metric thread
Material Stainless steel A2
Packaging Standard


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d x L	✉	Art.number	d x L	✉	Art.number	d x L	✉	Art.number
M6X16 *	200	51270.060.016	M10X40	25	51270.100.040	M16X30	10	51270.160.030
M6X20	100	51270.060.020	M10X45	25	51270.100.045	M16X35	10	51270.160.035
M6X25	100	51270.060.025	M10X50	25	51270.100.050	M16X40	10	51270.160.040
M6X30	100	51270.060.030	M10X55	25	51270.100.055	M16X45	10	51270.160.045
M6X35	100	51270.060.035	M10X60	25	51270.100.060	M16X50	10	51270.160.050
M6X40	100	51270.060.040	M10X65	25	51270.100.065	M16X55	10	51270.160.055
M6X45	100	51270.060.045	M10X70	25	51270.100.070	M16X60	10	51270.160.060
M6X50	100	51270.060.050	M10X75	25	51270.100.075	M16X65	10	51270.160.065
M6X55 *	200	51270.060.055	M10X80	25	51270.100.080	M16X70	10	51270.160.070
M6X60	100	51270.060.060	M10X90	10	51270.100.090	M16X75	10	51270.160.075
M6X70	100	51270.060.070	M10X100	10	51270.100.100	M16X80	10	51270.160.080
M6X80	100	51270.060.080	M10X120 *	100	51270.100.120	M16X90	10	51270.160.090
M6X90	100	51270.060.090	M12X20	10	51270.120.020	M16X100	10	51270.160.100
M6X100	100	51270.060.100	M12X25	10	51270.120.025	M16X110 *	50	51270.160.110
M8X16 *	200	51270.080.016	M12X30	10	51270.120.030	M20X40	5	51270.200.040
M8X20	50	51270.080.020	M12X35	10	51270.120.035	M20X45	5	51270.200.045
M8X25	50	51270.080.025	M12X40	10	51270.120.040	M20X50	5	51270.200.050
M8X30	50	51270.080.030	M12X45	10	51270.120.045	M20X55	5	51270.200.055
M8X35	50	51270.080.035	M12X50	10	51270.120.050	M20X60	5	51270.200.060
M8X40	50	51270.080.040	M12X55	10	51270.120.055	M20X65	5	51270.200.065
M8X45	50	51270.080.045	M12X60	10	51270.120.060	M20X70	5	51270.200.070
M8X50	50	51270.080.050	M12X65	10	51270.120.065	M20X75	5	51270.200.075
M8X55 *	200	51270.080.055	M12X70	10	51270.120.070	M20X80	5	51270.200.080
M8X60	50	51270.080.060	M12X75	10	51270.120.075	M20X90	5	51270.200.090
M8X70	50	51270.080.070	M12X80	10	51270.120.080	M20X100	5	51270.200.100
M8X80	50	51270.080.080	M12X90	10	51270.120.090	M20X120	5	51270.200.120
M8X90	25	51270.080.090	M12X100	10	51270.120.100	M24X65 *	50	51270.240.065
M8X100	25	51270.080.100	M12X110 *	100	51270.120.110	M24X70 *	50	51270.240.070
M10X20	25	51270.100.020	M12X120 *	100	51270.120.120	M27X75 *	25	51270.270.075
M10X22 *	100	51270.100.022	M14X40 *	50	51270.140.040			
M10X25	25	51270.100.025	M14X70 *	50	51270.140.070			
M10X30	25	51270.100.030	M16X25 *	50	51270.160.025			
M10X35	25	51270.100.035						

55270 Stud metal end ≈ 1,25d R49A

Thread Metric thread
Material Stainless steel A4
Packaging Standard



d x L	✉	Art.number	d x L	✉	Art.number	d x L	✉	Art.number
M6X16 *	200	55270.060.016	M8X25	50	55270.080.025	M10X35	25	55270.100.035
M6X20	100	55270.060.020	M8X30	50	55270.080.030	M10X40	25	55270.100.040
M6X25	100	55270.060.025	M8X35	50	55270.080.035	M10X45	25	55270.100.045
M6X30	100	55270.060.030	M8X40	50	55270.080.040	M10X50	25	55270.100.050
M6X35	100	55270.060.035	M8X45	50	55270.080.045	M10X55	25	55270.100.055
M6X40	100	55270.060.040	M8X50	50	55270.080.050	M10X60	25	55270.100.060
M6X45	100	55270.060.045	M8X55 *	200	55270.080.055	M10X65	25	55270.100.065
M6X50	100	55270.060.050	M8X60	50	55270.080.060	M10X70	25	55270.100.070
M6X60	100	55270.060.060	M8X65 *	200	55270.080.065	M10X75 *	100	55270.100.075
M6X65	200	55270.060.065	M8X70	50	55270.080.070	M10X80	25	55270.100.080
M6X70	100	55270.060.070	M8X80	50	55270.080.080	M10X90	10	55270.100.090
M6X80	100	55270.060.080	M8X100	25	55270.080.100	M10X100	10	55270.100.100
M6X100	100	55270.060.100	M10X20	25	55270.100.020	M12X20	10	55270.120.020
M8X16 *	200	55270.080.016	M10X25	25	55270.100.025	M12X25	10	55270.120.025
M8X20	50	55270.080.020	M10X30	25	55270.100.030	M12X30	10	55270.120.030

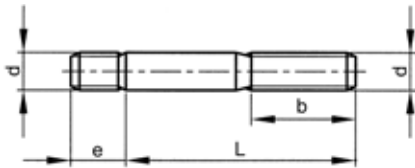
55270 Stud metal end ≈ 1,25d


d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M12X35	10	55270.120.035	M16X45	10	55270.160.045	M20X65	5	55270.200.065
M12X40	10	55270.120.040	M16X50	10	55270.160.050	M20X70	5	55270.200.070
M12X45	10	55270.120.045	M16X55	10	55270.160.055	M20X75	5	55270.200.075
M12X50	10	55270.120.050	M16X60	10	55270.160.060	M20X80	5	55270.200.080
M12X55	10	55270.120.055	M16X65	10	55270.160.065	M20X85	50	55270.200.085
M12X65	10	55270.120.065	M16X70	10	55270.160.070	M20X90	5	55270.200.090
M12X70	10	55270.120.070	M16X75	10	55270.160.075	M20X100	5	55270.200.100
M12X75	10	55270.120.075	M16X80	10	55270.160.080	M20X110 *	50	55270.200.110
M12X90	10	55270.120.090	M16X100	10	55270.160.100	M20X120	5	55270.200.120
M12X100	10	55270.120.100	M16X120 *	50	55270.160.120			
M12X110 *	100	55270.120.110				M24X60	5	55270.240.060
M12X120 *	100	55270.120.120	M18X45 *	50	55270.180.045	M24X70	5	55270.240.070
			M20X40	5	55270.200.040	M24X80	5	55270.240.080
M14X35 *	50	55270.140.035	M20X45	5	55270.200.045	M24X90	5	55270.240.090
M16X30	10	55270.160.030	M20X50	5	55270.200.050	M24X100	5	55270.240.100
M16X35	10	55270.160.035	M20X55	5	55270.200.055			
M16X40	10	55270.160.040	M20X60	5	55270.200.060			

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Stud metal end $\approx 1,25d$ BSW

DIN ≈ 939 (1955)
NEN ≈ 2346 (1962)



Technical data

d	Threads per inch	b	e $\approx 1,25d$
5/16	18	18	10
3/8	16	20	12
1/2	12	25/30	16
5/8	11	28	20
3/4	10	32	25
1.IN.	8	40/55	35

- Whitworth thread (BSW) is not internationally recommended.
- It is advised to use metric (M).
- ATTENTION: when ordering studs according to DIN the diameter d x the effective length L has to be stated e.g. stud 5/16 x 25, where L = 25 mm is the working length and e 10 mm the metal end.
- The total length is 25 + 10 = 35 mm.
- The threadlength on the outside b = 18 mm.
- Studs acc. to \approx DIN 939 (1955) with a metal end $e \approx 1,25 d$ have many applications, among others in cast-iron.
- The screw-in threaded end has been made with tolerance Sk6, acc. to DIN 13 and 14, Beiblatt 14 (1944), meaning "heavy fit", and prevents loosening of studs during disassembly.

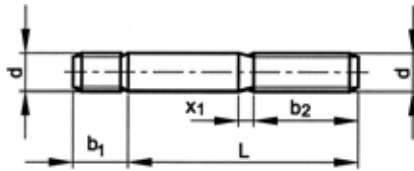
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21540 Stud metal end $\approx 1,25d$ BSW		X08A
Thread	British Standard Whitworth	
Material	Steel	
Class	5.6/5.8	
Packaging	Standard	

d x L	✉	Art.number	d x L	✉	Art.number	d x L	✉	Art.number
5/16X25MM	100	21540.079.025	1/2X40MM	50	21540.127.040	3/4X50MM 3/4X60MM 3/4X70MM 3/4X80MM 1INX50MM 1INX60MM 1INX100MM	25	21540.191.050
5/16X30MM	100	21540.079.030	1/2X45MM	50	21540.127.045		25	21540.191.060
5/16X35MM	100	21540.079.035	1/2X50MM	50	21540.127.050		25	21540.191.070
3/8X25MM	100	21540.096.025	1/2X60MM	50	21540.127.060		10	21540.191.080
3/8X30MM	100	21540.096.030	1/2X70MM	50	21540.127.070			
3/8X35MM	100	21540.096.035	1/2X80MM	50	21540.127.080			
3/8X40MM	100	21540.096.040	5/8X45MM	25	21540.158.045			21540.254.050
3/8X50MM	100	21540.096.050	5/8X50MM	25	21540.158.050			21540.254.060
1/2X30MM	50	21540.127.030	5/8X60MM	25	21540.158.060			21540.254.100
1/2X35MM	50	21540.127.035	5/8X70MM	25	21540.158.070			
			5/8X80MM	25	21540.158.080			

- Depending on availability class 5.8 can be supplied.

Stud metal end $\approx 1d$



DIN 938
 NEN 2331
 NF E25-135



Technical data

d	P	$b_1 \approx 1d$	b_2	x_1	$b_2 = L - (x_1 + 3) \text{ t/m L} \leq$
M5	0,8	5	16	2,0	20
M6	1	6	18	2,5	22
M8	1,25	8	22	3,2	28
M10	1,5	10	26	3,8	30
M12	1,75	12	30	4,3	35
M14	2	14	34	5,0	40
M16	2	16	38	5	45
M20	2,5	20	46	6,3	55
M24	3	24	54	7,5	65
M30	3,5	30	66	9,0	80

- ATTENTION: when ordering studs acc. to DIN the diameter d x the effective length L has to be stated e.g. stud M10 x 70 - DIN 938, where $L = 70$ mm is the working length and $b_1 = 10$ mm the metal end. The total length is $70 + 10 = 80$ mm. The thread length on the outside $b_2 = 26$ mm.
- The screw-in threaded end has been made with tolerance Sk6, acc. to DIN 13-51, meaning "heavy fit", and prevents loosening of studs during disassembly.
- Studs acc. to DIN 938 with a metal end $\approx 1d$ have many applications, among others in steel.

Article groups

Thread	Material	Class	Packaging	Code	Page
M	St	8.8	Standard	21560	4-30
M	St.St. A2		Standard	51280	4-31

21560 Stud metal end $\approx 1d$

G07A

Thread Metric thread
Material Steel
Class 8.8
Packaging Standard



d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M6X20	200	21560.060.020	M10X50	100	21560.100.050	M16X60	50	21560.160.060
M6X25	200	21560.060.025	M10X55	100	21560.100.055	M16X70	25	21560.160.070
M6X30	200	21560.060.030	M10X60	100	21560.100.060	M16X80	25	21560.160.080
M6X40	200	21560.060.040	M10X70	100	21560.100.070	M16X90	25	21560.160.090
M6X50	200	21560.060.050				M16X100	25	21560.160.100
M8X20	100	21560.080.020	M12X25	100	21560.120.025	M20X40	25	21560.200.040
M8X25	100	21560.080.025	M12X30	100	21560.120.030	M20X45	25	21560.200.045
M8X30	100	21560.080.030	M12X35	100	21560.120.035	M20X50	25	21560.200.050
M8X35	100	21560.080.035	M12X40	100	21560.120.040	M20X55	25	21560.200.055
M8X40	100	21560.080.040	M12X45	100	21560.120.045	M20X60	25	21560.200.060
M8X50	100	21560.080.050	M12X50	50	21560.120.050	M20X70	25	21560.200.070
M8X60	100	21560.080.060	M12X60	50	21560.120.060	M20X80	25	21560.200.080
M8X70	100	21560.080.070	M12X70	50	21560.120.070	M20X100	10	21560.200.100
M10X20	100	21560.100.020	M12X80	50	21560.120.080	M20X120	10	21560.200.120
M10X25	100	21560.100.025	M12X90	50	21560.120.090			
M10X30	100	21560.100.030	M12X100	50	21560.120.100	M24X60	10	21560.240.060
M10X35	100	21560.100.035	M16X35	50	21560.160.035	M24X70	10	21560.240.070
M10X40	100	21560.100.040	M16X40	50	21560.160.040	M24X80	10	21560.240.080
M10X45	100	21560.100.045	M16X45	50	21560.160.045			
			M16X50	50	21560.160.050			

51280 Stud metal end ≈ 1d R09A
Thread Metric thread
Material Stainless steel A2
Packaging Standard


d x L	☒	Art.number	d x L	☒	Art.number	d x L	☒	Art.number
M5X16 *	200	51280.050.016	M10X60	25	51280.100.060	M16X75 *	50	51280.160.075
M5X20 *	200	51280.050.020	M10X65 *	100	51280.100.065	M16X80	10	51280.160.080
M6X16 *	200	51280.060.016	M10X70	25	51280.100.070	M16X85 *	50	51280.160.085
M6X20	100	51280.060.020	M10X80 *	100	51280.100.080	M16X90 *	50	51280.160.090
M6X25	100	51280.060.025	M10X90 *	100	51280.100.090	M16X100 *	50	51280.160.100
M6X30	100	51280.060.030	M10X100 *	100	51280.100.100	M16X110 *	50	51280.160.110
M6X35	100	51280.060.035	M10X110 *	100	51280.100.110	M20X40	5	51280.200.040
M6X40	100	51280.060.040	M12X30	10	51280.120.030	M20X45	5	51280.200.045
M6X45 *	200	51280.060.045	M12X35	10	51280.120.035	M20X50	5	51280.200.050
M6X50 *	200	51280.060.050	M12X40	10	51280.120.040	M20X55	5	51280.200.055
M8X16 *	200	51280.080.016	M12X45	10	51280.120.045	M20X60	5	51280.200.060
M8X20	50	51280.080.020	M12X50	10	51280.120.050	M20X70	5	51280.200.070
M8X25	50	51280.080.025	M12X55	10	51280.120.055	M20X75	5	51280.200.075
M8X30	50	51280.080.030	M12X60	10	51280.120.060	M20X80	5	51280.200.080
M8X35	50	51280.080.035	M12X70	10	51280.120.070	M20X85 *	50	51280.200.085
M8X40	50	51280.080.040	M12X75 *	100	51280.120.075	M20X90 *	50	51280.200.090
M8X50	50	51280.080.050	M12X80	10	51280.120.080	M20X100 *	50	51280.200.100
M8X55 *	200	51280.080.055	M12X90 *	100	51280.120.090	M24X50 *	50	51280.240.050
M8X60	50	51280.080.060	M12X100 *	100	51280.120.100	M24X60 *	50	51280.240.060
M8X70	50	51280.080.070	M12X110 *	100	51280.120.110	M24X65 *	50	51280.240.065
M10X16 *	100	51280.100.016	M14X30 *	50	51280.140.030	M24X70 *	50	51280.240.070
M10X20	25	51280.100.020	M16X30 *	50	51280.160.030	M24X75 *	50	51280.240.075
M10X25	25	51280.100.025	M16X35	10	51280.160.035	M24X80 *	50	51280.240.080
M10X30	25	51280.100.030	M16X40	10	51280.160.040	M30X80 *	25	51280.300.080
M10X35	25	51280.100.035	M16X45	10	51280.160.045	M30X90 *	25	51280.300.090
M10X40	25	51280.100.040	M16X50	10	51280.160.050			
M10X50	25	51280.100.050	M16X55	10	51280.160.055			
M10X55	25	51280.100.055	M16X60	10	51280.160.060			
			M16X65	10	51280.160.065			

Studbolts - threaded rods - heavy hexagon nuts for the petrochemical- and off shore industry

Grades

For studbolts and threaded rods Grade B7 acc. to ASTM A193 is the most popular Grade. Also ferritic steel Grade B16 acc. to ASTM A193 (for higher temperatures), Grade L7 acc. to ASTM A320 (for lower temperatures) and austenetic stainless steel Grade B8, B8M and B8T acc. to ASTM A193 (applicable for a very wide temperature range), can be supplied. For the matching heavy hex. nuts is Grade 2H acc. to ASTM A194 the most popular Grade. Also ferritic steel Grade 4 and Grade 7 acc. to ASTM A194 and austenetic stainless steel Grade B8, B8M and B8T acc. to ASTM A194 can be supplied ex-stock.

Mechanical properties

ASTM A193 Grade B8, B8M en B8T comply with Class 1. Class 2 can be supplied on request. The mechanical properties mentioned below of ASTM A193 Grade B7 and B16 as well as ASTM A320 Grade L7, apply to diameters of 2 1/2 inch or 65 mm.

Temperature range

Recommended max. operating temperature acc. to BS 4882: Grade B7 and L7 = 400°C / Grade B16 = 525°C / Grade B8, B8M and B8T = 575°C.

The cold-resistant steel A320 Grade L7 complies with a min. impact value of 20J at -101°C (average min. 27J).

Certificates

Occasionally with the delivery of studbolts and heavy hex nuts a 3.1 certificate acc. to EN 10204 (DIN 50049) is required.

Specials

Studbolts and heavy hex nuts with a corrosion resistant surface treatment such as zinc plated, hot dip galvanised, Xylan 1070 (PTFE coating), zinc flake (f.i. Dacromet 500) etc. can be supplied on request. Even less usual materials such as Duplex ASTM A453 Grade 660, Monel etc. can be supplied on request.

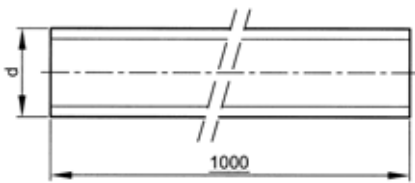
Studbolts and threaded bolts

Most important chemical elements									Corresponding materials			
Standard	Grade	C	Mn	Cr	Ni	Mo	V	Ti	AISI	AFNOR	DIN	BS
Ferittic steel												
ASTM A193	B7	0,37-0,49	0,65-1,10	0,75-1,20	-	0,15-0,25	-	-	4140/4142/4145	42CD4	42CrMo4	1506-621 Gr A
ASTM A193	B16	0,36-0,47	0,45-0,70	0,80-1,15	-	0,50-0,65	0,25-0,35	-	-	40CDV4-06	24CrMoV55	1506-661
ASTM A320	L7	0,38-0,48	0,75-1,00	0,80-1,10	-	0,15-0,25	-	-	4142/4145	42CD4	42CrMo4	1506-621 Gr A
Austenetic stainless steel												
ASTM A193	B8	max. 0,08	max. 2,00	18,0-20,0	8,0-10,5	-	-	-	304	Z6CN18-09	X5CrNi18-09	1506-801 Gr B
ASTM A193	B8M	max. 0,08	max. 2,00	16,0-18,0	10,0-14,0	2,0-3,0	-	-	316	Z6CND17-11	X5CrNiMo18-10	1506-845
ASTM A193	B8T	max. 0,08	max. 2,00	17,0-19,0	9,0-12,0	-	-	min. 5 x C%	321	Z6CNT18-11	X10CrNiTi18-09	1506-821 Gr Ti
Mechanical properties												
Norm	Grade	Tensile strength N/mm ²		0,2% yieldstrength N/mm ²		Elongation min. %		Reduction of area min. %		Hardness HB		
Ferittic steel												
ASTM A193	B7	860		720		16		50		max. 321		
ASTM A193	B16	860		725		18		50		max. 321		
ASTM A320	L7	860		725		16		50		-		
Austenetic stainless steel												
ASTM A193	B8	515		205		30		50		max. 223		
ASTM A193	B8M	515		205		30		50		max. 223		
ASTM A193	B8T	515		205		30		50		max. 223		

Hexagon nuts

Most important elements									Corresponding materials			
Standard	Grade	C	Mn	Cr	Ni	Mo	Ti	Hardness HB	AISI	AFNOR	DIN	BS
Ferittic steel												
ASTM A194	2H	min. 0,40	max. 1,00	-	-	-	-	248-352	-	C45d	C45	1506-162
ASTM A194	4	0,40-0,50	0,70-0,90	-	-	0,20-0,30	-	248-352	-	-	24CrMo5	1506-240
ASTM A194	7	0,37-0,49	0,65-1,10	0,75-1,20	-	0,15-0,25	-	248-352	4140/4142/4145	42CD4	42CrMo4	1506-621 Gr A
Austenetic stainless steel												
ASTM A194	8	max. 0,08	max. 2,00	18,0-20,0	8,0-10,5	-	-	126-300	304	Z6CN18-09	X5CrNi18-09	1506-801 Gr B
ASTM A194	8M	max. 0,08	max. 2,00	16,0-18,0	10,0-14,0	2,0-3,0	-	max. 223	316	Z6CND17-11	X5CrNiMo18-10	1506-845
ASTM A194	8T	max. 0,08	max. 2,00	17,0-19,0	9,0-12,0	-	min. 5x C%	126-300	321	Z6CNT18-11	X10CrNiTi18-09	1506-821 Gr Ti

Threaded rod ASTM



Technical data

d	P	d	P	d	P
M8	1,25	M20	2,5	M36	4
M10	1,5	M22	2,5	M39	4
M12	1,75	M24	3	M42	4,5
M14	2	M27	3	M45	4,5
M16	2	M30	3,5	M48	5
M18	2,5	M33	3,5	M52	5

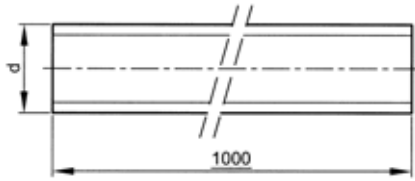
4

22100 Threaded rod ASTM		G09A
Thread	Metric thread	
Material	Steel ASTM A193	
Class	Gr.B7	
Packaging	Standard	



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M10	1	22100.100.001	M22	1	22100.220.001	M39	1	22100.390.001
M12	1	22100.120.001	M24	1	22100.240.001	M42	1	22100.420.001
M14	1	22100.140.001	M27	1	22100.270.001	M45	1	22100.450.001
M16	1	22100.160.001	M30	1	22100.300.001	M48	1	22100.480.001
M18	1	22100.180.001	M33	1	22100.330.001	M52	1	22100.520.001
M20	1	22100.200.001	M36	1	22100.360.001			

Threaded rod ASTM A193 Grade B7



Technical data

d	Threads per inch	d	Threads per inch	d	Threads per inch
1/4	20	7/8	9	1.5/8	8
5/16	18	1.IN.	8	1.3/4	8
3/8	16	1.1/8	8	1.7/8	8
1/2	13	1.1/4	8	2.IN.	8
5/8	11	1.3/8	8		
3/4	10	1.1/2	8		

4

Article groups

Thread	Material	Class		Packaging	Code	Page
UNC	St ASTM A193	Gr.B7	1 meter	Standard	22180	4-34
8 UN	St ASTM A193	Gr.B7	1 meter	Standard	22190	4-34

22180 Threaded rod ASTM A193 Grade B7

G09A

Thread	Unified National Coarse
Material	Steel ASTM A193
Class	Gr.B7
Packaging	Standard



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1/4	1	22180.063.001	1/2	1	22180.127.001	7/8	1	22180.222.001
5/16	1	22180.079.001	5/8	1	22180.158.001	1.IN.	1	22180.254.001
3/8	1	22180.096.001	3/4	1	22180.191.001			

22190 Threaded rod ASTM A193 Grade B7

G09A

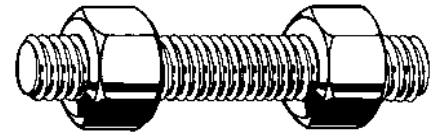
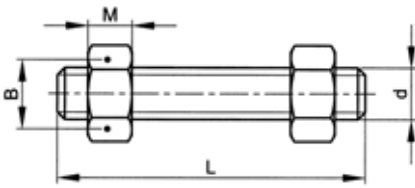
Thread	8 Unified National
Material	Steel ASTM A193
Class	Gr.B7
Packaging	Standard



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1.1/8	1	22190.285.001	1.1/2	1	22190.381.001	1.7/8	1	22190.476.001
1.1/4	1	22190.317.001	1.5/8	1	22190.412.001	2.IN.	1	22190.508.001
1.3/8	1	22190.349.001	1.3/4	1	22190.444.001			

Studbolt with 2 hexagon nuts

BS 4882



Technical data

d	P	M	B
M12	1,75	12	19
M14	2	14	22
M16	2	16	24
M18	2,5	18	27

d	P	M	B
M20	2,5	20	30
M22	2,5	22	32
M24	3	24	36
M27	3	27	41

d	P	M	B
M30	3,5	30	46
M33	3,5	33	50

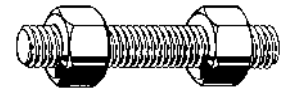
- Nut height 'M' is not acc. to BS 4882.
- L is the nominal length of the studbolt including the chamfered ends.

4

22060 Studbolt with 2 hexagon nuts

G09A

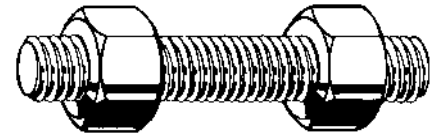
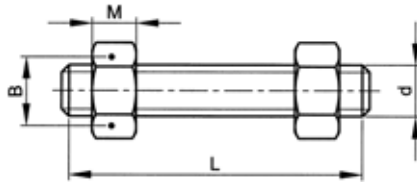
Thread Metric thread
Material Steel ASTM A193 - ASTM A194
Class Gr.B7 - Gr.2H
Packaging Standard



d x L	✉	Art.number	d x L	✉	Art.number	d x L	✉	Art.number
M12X55	1	22060.120.055	M16X95	1	22060.160.095	M20X160	1	22060.200.160
M12X60	1	22060.120.060	M16X100	1	22060.160.100	M20X165	1	22060.200.165
M12X65	1	22060.120.065	M16X110	1	22060.160.110	M20X170	1	22060.200.170
M12X70	1	22060.120.070	M16X120	1	22060.160.120	M20X180	1	22060.200.180
M12X75	1	22060.120.075	M16X130	1	22060.160.130	M20X190	1	22060.200.190
M12X80	1	22060.120.080	M16X140	1	22060.160.140	M20X200	1	22060.200.200
M12X85	1	22060.120.085	M16X150	1	22060.160.150	M20X210	1	22060.200.210
M12X90	1	22060.120.090						
M12X95	1	22060.120.095	M20X75	1	22060.200.075	M24X115	1	22060.240.115
M12X100	1	22060.120.100	M20X80	1	22060.200.080	M24X120	1	22060.240.120
			M20X85	1	22060.200.085	M24X125	1	22060.240.125
M14X65	1	22060.140.065	M20X90	1	22060.200.090	M24X130	1	22060.240.130
M14X70	1	22060.140.070	M20X95	1	22060.200.095	M24X140	1	22060.240.140
M14X75	1	22060.140.075	M20X100	1	22060.200.100	M24X150	1	22060.240.150
M14X80	1	22060.140.080	M20X105	1	22060.200.105	M24X160	1	22060.240.160
M14X90	1	22060.140.090	M20X110	1	22060.200.110	M24X170	1	22060.240.170
M14X100	1	22060.140.100	M20X115	1	22060.200.115	M24X180	1	22060.240.180
			M20X120	1	22060.200.120	M24X190	1	22060.240.190
M16X65	1	22060.160.065	M20X125	1	22060.200.125	M24X200	1	22060.240.200
M16X70	1	22060.160.070	M20X130	1	22060.200.130	M24X220	1	22060.240.220
M16X75	1	22060.160.075	M20X135	1	22060.200.135	M24X230	1	22060.240.230
M16X80	1	22060.160.080	M20X140	1	22060.200.140	M24X240	1	22060.240.240
M16X85	1	22060.160.085	M20X145	1	22060.200.145	M24X250	1	22060.240.250
M16X90	1	22060.160.090	M20X150	1	22060.200.150			

Studbolt with 2 hexagon nuts

ANSI B16.5
BS 4882



Technical data

d	Threads per inch	M	B
1/2	13	12,8	7/8
5/8	11	16,02	1.1/16
3/4	10	19,25	1.1/4
7/8	9	22,47	1.7/16
1.IN.	8	25,7	1.5/8
1.1/8	8	28,93	1.13/16
1.1/4	8	31,77	2.IN.
1.3/8	8	35	2.3/16
1.1/2	8	38,22	2.3/8
1.5/8	8	41,25	2.9/16
1.3/4	8	44,47	2.3/4
1.7/8	8	47,9	2.15/16
2.IN.	8	51,13	3.1/8

- Tolerances of the total length of the studbolts acc. to ASTM A 193 Par. 11.
- L is the nominal length of the studbolt of the first to the last full thread excluding the chamfered at each end.

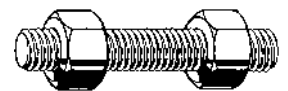
Article groups

Thread	Driving features	Material	Class	Surface treatment	Packaging	Code	Page
UNC	hexagon	St ASTM A193 - ASTM A194	Gr.B7 - Gr.2H		Standard	22080	4-36
UNC	hexagon	St ASTM A193 - ASTM A194	Gr.B7 - Gr.2H	Zipl	Standard	22082	4-37
8 UN	hexagon	St ASTM A193 - ASTM A194	Gr.B7 - Gr.2H		Standard	22090	4-37
UNC	hexagon	St ASTM A320 - ASTM A194	Gr.L7 - Gr.4		Standard	22320	4-38
8 UN	hexagon	St ASTM A320 - ASTM A194	Gr.L7 - Gr.4		Standard	22330	4-39
UNC	hexagon	St.St. ASTM A193 - ASTM A194	Gr.B8CL1 - Gr.8		Standard	22534	4-39
UNC	hexagon	St.St. ASTM A193 - ASTM A194	Gr.B8MCL2 - Gr.8M		Standard	22538	4-39
UNC	hexagon	St ASTM A193 - ASTM A194	Gr.B16 - Gr.2H		Standard	22551	4-40
UNC	hexagon	St ASTM A193 - ASTM A194	Gr.B16 - Gr.4		Standard	22554	4-40

22080 Studbolt with 2 hexagon nuts

G09A

Thread Unified National Coarse
Material Steel ASTM A193 - ASTM A194
Class Gr.B7 - Gr.2H
Packaging Standard



d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1/2X50 (2)	1	22080.127.050	5/8X50 (2)	1	22080.158.050	5/8X175 (6.7/8)	1	22080.158.175
1/2X55 (2.1/4)	1	22080.127.057	5/8X55 (2.1/4)	1	22080.158.057	5/8X180 (7)	1	22080.158.177
1/2X60 (2.3/8)	1	22080.127.060	5/8X60 (2.3/8)	1	22080.158.060	5/8X185 (7.1/4)	1	22080.158.184
1/2X65 (2.1/2)	1	22080.127.063	5/8X65 (2.1/2)	1	22080.158.063	5/8X190 (7.1/2)	1	22080.158.190
1/2X70 (2.3/4)	1	22080.127.069	5/8X70 (2.3/4)	1	22080.158.069	5/8X195 (7.3/4)	1	22080.158.196
1/2X75 (3)	1	22080.127.076	5/8X75 (3)	1	22080.158.076	5/8X200 (8)	1	22080.158.203
1/2X80 (3.1/4)	1	22080.127.082	5/8X80 (3.1/4)	1	22080.158.082	5/8X205 (8.1/8)	1	22080.158.205
1/2X85 (3.3/8)	1	22080.127.085	5/8X85 (3.3/8)	1	22080.158.085	5/8X210 (8.1/4)	1	22080.158.209
1/2X90 (3.1/2)	1	22080.127.088	5/8X90 (3.1/2)	1	22080.158.088	5/8X215 (8.1/2)	1	22080.158.215
1/2X95 (3.3/4)	1	22080.127.095	5/8X95 (3.3/4)	1	22080.158.095	5/8X220 (8.3/4)	1	22080.158.222
1/2X100 (4)	1	22080.127.101	5/8X100 (4)	1	22080.158.101	5/8X230 (9)	1	22080.158.228
1/2X105 (4.1/8)	1	22080.127.105	5/8X105 (4.1/8)	1	22080.158.105	5/8X240 (9.1/2)	1	22080.158.241
1/2X110 (4.1/4)	1	22080.127.107	5/8X110 (4.1/4)	1	22080.158.107	5/8X250 (9.3/4)	1	22080.158.247
1/2X115 (4.1/2)	1	22080.127.114	5/8X115 (4.1/2)	1	22080.158.114	5/8X260 (10.1/4)	1	22080.158.260
1/2X120 (4.3/4)	1	22080.127.120	5/8X120 (4.3/4)	1	22080.158.120			
1/2X125 (5)	1	22080.127.127	5/8X125 (5)	1	22080.158.127			
1/2X130 (5.1/8)	1	22080.127.130	5/8X130 (5.1/8)	1	22080.158.130	3/4X55 (2.1/4)	1	22080.191.057
1/2X135 (5.1/4)	1	22080.127.133	5/8X135 (5.1/4)	1	22080.158.133	3/4X60 (2.3/8)	1	22080.191.060
1/2X140 (5.1/2)	1	22080.127.139	5/8X140 (5.1/2)	1	22080.158.139	3/4X65 (2.1/2)	1	22080.191.063
1/2X145 (5.3/4)	1	22080.127.146	5/8X145 (5.3/4)	1	22080.158.146	3/4X70 (2.3/4)	1	22080.191.069
1/2X150 (6)	1	22080.127.152	5/8X150 (6)	1	22080.158.152	3/4X75 (3)	1	22080.191.076
1/2X155 (6.1/8)	1	22080.127.155	5/8X155 (6.1/8)	1	22080.158.155	3/4X80 (3.1/4)	1	22080.191.082
1/2X160 (6.1/4)	1	22080.127.158	5/8X160 (6.1/4)	1	22080.158.158	3/4X85 (3.3/8)	1	22080.191.085
1/2X165 (6.1/2)	1	22080.127.166	5/8X165 (6.1/2)	1	22080.158.165	3/4X90 (3.1/2)	1	22080.191.088
5/8X170 (6.3/4)	1	22080.158.171	5/8X170 (6.3/4)	1	22080.158.171	3/4X95 (3.3/4)	1	22080.191.095
						3/4X100 (4)	1	22080.191.101

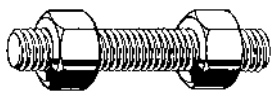
22080 Studbolt with 2 hexagon nuts ←

d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
3/4X105 (4.1/8)	1	22080.191.105	7/8X120 (4.3/4)	1	22080.222.120	1X140 (5.1/2)	1	22080.254.139
3/4X110 (4.1/4)	1	22080.191.107	7/8X125 (5)	1	22080.222.127	1X145 (5.3/4)	1	22080.254.146
3/4X115 (4.1/2)	1	22080.191.114	7/8X130 (5.1/8)	1	22080.222.130	1X150 (6)	1	22080.254.152
3/4X120 (4.3/4)	1	22080.191.120	7/8X135 (5.1/4)	1	22080.222.133	1X160 (6.1/4)	1	22080.254.158
3/4X125 (5)	1	22080.191.127	7/8X140 (5.1/2)	1	22080.222.139	1X165 (6.1/2)	1	22080.254.165
3/4X130 (5.1/8)	1	22080.191.130	7/8X145 (5.3/4)	1	22080.222.146	1X170 (6.3/4)	1	22080.254.171
3/4X135 (5.1/4)	1	22080.191.133	7/8X150 (6)	1	22080.222.152	1X180 (7)	1	22080.254.177
3/4X140 (5.1/2)	1	22080.191.139	7/8X155 (6.1/8)	1	22080.222.155	1X185 (7.1/4)	1	22080.254.184
3/4X145 (5.3/4)	1	22080.191.146	7/8X160 (6.1/4)	1	22080.222.158	1X190 (7.1/2)	1	22080.254.190
3/4X150 (6)	1	22080.191.152	7/8X165 (6.1/2)	1	22080.222.165	1X195 (7.3/4)	1	22080.254.196
3/4X160 (6.1/4)	1	22080.191.158	7/8X170 (6.3/4)	1	22080.222.171	1X200 (8)	1	22080.254.203
3/4X165 (6.1/2)	1	22080.191.165	7/8X180 (7)	1	22080.222.177	1X205 (8.1/8)	1	22080.254.205
3/4X170 (6.3/4)	1	22080.191.171	7/8X185 (7.1/4)	1	22080.222.184	1X210 (8.1/4)	1	22080.254.209
3/4X175 (6.7/8)	1	22080.191.175	7/8X190 (7.1/2)	1	22080.222.190	1X215 (8.1/2)	1	22080.254.215
3/4X180 (7)	1	22080.191.177	7/8X195 (7.3/4)	1	22080.222.196	1X220 (8.3/4)	1	22080.254.222
3/4X185 (7.1/4)	1	22080.191.184	7/8X200 (8)	1	22080.222.203	1X230 (9)	1	22080.254.228
3/4X190 (7.1/2)	1	22080.191.190	7/8X205 (8.1/8)	1	22080.222.205	1X235 (9.1/4)	1	22080.254.234
3/4X195 (7.3/4)	1	22080.191.196	7/8X210 (8.1/4)	1	22080.222.209	1X240 (9.1/2)	1	22080.254.241
3/4X200 (8)	1	22080.191.203	7/8X215 (8.1/2)	1	22080.222.215	1X250 (9.3/4)	1	22080.254.247
3/4X205 (8.1/8)	1	22080.191.205	7/8X220 (8.3/4)	1	22080.222.222	1X250 (10)	1	22080.254.254
3/4X210 (8.1/4)	1	22080.191.209	7/8X230 (9)	1	22080.222.228	1X260 (10.1/4)	1	22080.254.260
3/4X215 (8.1/2)	1	22080.191.215	7/8X235 (9.1/4)	1	22080.222.234	1X265 (10.1/2)	1	22080.254.266
3/4X220 (8.3/4)	1	22080.191.222	7/8X240 (9.1/2)	1	22080.222.241	1X275 (10.3/4)	1	22080.254.273
3/4X230 (9)	1	22080.191.228	7/8X250 (9.3/4)	1	22080.222.247	1X280 (11)	1	22080.254.279
3/4X235 (9.1/4)	1	22080.191.234	7/8X250 (10)	1	22080.222.254	1X285 (11.1/4)	1	22080.254.285
3/4X235 (9.1/2)	1	22080.191.241	7/8X260 (10.1/4)	1	22080.222.260	1X290 (11.3/8)	1	22080.254.290
3/4X245 (9.5/8)	1	22080.191.245	7/8X265 (10.1/2)	1	22080.222.266	1X295 (11.1/2)	1	22080.254.292
3/4X250 (9.3/4)	1	22080.191.247	7/8X270	1	22080.222.270	1X300 (11.3/4)	1	22080.254.298
3/4X255 (10)	1	22080.191.254	7/8X275 (10.3/4)	1	22080.222.273	1X305 (12)	1	22080.254.304
3/4X265 (10.1/2)	1	22080.191.266	7/8X280 (11)	1	22080.222.279	1X310 (12.1/4)	1	22080.254.311
3/4X275 (10.3/4)	1	22080.191.273	7/8X285 (11.1/4)	1	22080.222.285	1X315 (12.1/2)	1	22080.254.317
3/4X280 (11)	1	22080.191.279	7/8X295 (11.1/2)	1	22080.222.292	1X325 (12.3/4)	1	22080.254.323
3/4X285 (11.1/4)	1	22080.191.285	7/8X300 (11.3/4)	1	22080.222.298	1X330 (13)	1	22080.254.330
3/4X295 (11.1/2)	1	22080.191.292	7/8X305 (12)	1	22080.222.304	1X345 (13.1/2)	1	22080.254.342
3/4X300 (11.3/4)	1	22080.191.298				1X350 (13.3/4)	1	22080.254.349
3/4X305 (12)	1	22080.191.304	1X100 (4)	1	22080.254.101	1X355 (14)	1	22080.254.355
			1X110 (4.1/4)	1	22080.254.107	1X360 (14.1/4)	1	22080.254.361
			1X115 (4.1/2)	1	22080.254.114	1X370 (14.1/2)	1	22080.254.368
7/8X90 (3.1/2)	1	22080.222.088	1X120 (4.3/4)	1	22080.254.120	1X375 (14.3/4)	1	22080.254.374
7/8X95 (3.3/4)	1	22080.222.095	1X125 (5)	1	22080.254.127	1X380 (15)	1	22080.254.381
7/8X100 (4)	1	22080.222.101	1X130 (5.1/8)	1	22080.254.130			
7/8X105 (4.1/4)	1	22080.222.107	1X135 (5.1/4)	1	22080.254.133			
7/8X115 (4.1/2)	1	22080.222.114						

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22082 Studbolt with 2 hexagon nuts G09A

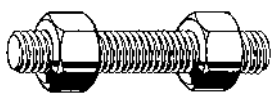
Thread	Unified National Coarse
Material	Steel ASTM A193 - ASTM A194
Class	Gr.B7 - Gr.2H
Surface treatment	Zinc plated
Packaging	Standard



d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1/2X65 (2.1/2)	1	22082.127.063	5/8X110 (4.1/4)	1	22082.158.107	3/4X145 (5.3/4)	1	22082.191.146
1/2X70 (2.3/4)	1	22082.127.069	5/8X135 (5.1/4)	1	22082.158.133			
1/2X75 (3)	1	22082.127.076	5/8X145 (5.3/4)	1	22082.158.146	7/8X120 (4.3/4)	1	22082.222.120
1/2X80 (3.1/4)	1	22082.127.082	5/8X165 (6.1/2)	1	22082.158.165	7/8X125 (5)	1	22082.222.127
1/2X90 (3.1/2)	1	22082.127.088				7/8X140 (5.1/2)	1	22082.222.139
			3/4X100 (4)	1	22082.191.101	7/8X145 (5.3/4)	1	22082.222.146
5/8X75 (3)	1	22082.158.076	3/4X110 (4.1/4)	1	22082.191.107	7/8X150 (6)	1	22082.222.152
5/8X80 (3.1/4)	1	22082.158.082	3/4X115 (4.1/2)	1	22082.191.114	7/8X220 (8.3/4)	1	22082.222.222
5/8X90 (3.1/2)	1	22082.158.088	3/4X120 (4.3/4)	1	22082.191.120			
5/8X95 (3.3/4)	1	22082.158.095	3/4X125 (5)	1	22082.191.127			
5/8X100 (4)	1	22082.158.101	3/4X135 (5.1/4)	1	22082.191.133			

22090 Studbolt with 2 hexagon nuts G09A

Thread	8 Unified National
Material	Steel ASTM A193 - ASTM A194
Class	Gr.B7 - Gr.2H
Packaging	Standard



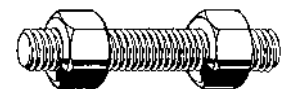
d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1.1/8X115 (4.1/2)	1	22090.285.114	1.1/8X175 (6.7/8)	1	22090.285.175	1.1/8X235 (9.1/4)	1	22090.285.234
1.1/8X120 (4.3/4)	1	22090.285.120	1.1/8X180 (7)	1	22090.285.177	1.1/8X240 (9.1/2)	1	22090.285.241
1.1/8X125 (5)	1	22090.285.127	1.1/8X185 (7.1/4)	1	22090.285.184	1.1/8X250 (9.3/4)	1	22090.285.247
1.1/8X130 (5.1/8)	1	22090.285.130	1.1/8X190 (7.1/2)	1	22090.285.190	1.1/8X255 (10)	1	22090.285.254
1.1/8X135 (5.1/4)	1	22090.285.133	1.1/8X195 (7.3/4)	1	22090.285.196	1.1/8X260 (10.1/4)	1	22090.285.260
1.1/8X140 (5.1/2)	1	22090.285.139	1.1/8X200 (8)	1	22090.285.203	1.1/8X265 (10.1/2)	1	22090.285.266
1.1/8X145 (5.3/4)	1	22090.285.146	1.1/8X205 (8.1/8)	1	22090.285.205	1.1/8X275 (10.3/4)	1	22090.285.273
1.1/8X150 (6)	1	22090.285.152	1.1/8X210 (8.1/4)	1	22090.285.209	1.1/8X280 (11)	1	22090.285.279
1.1/8X160 (6.1/4)	1	22090.285.158	1.1/8X215 (8.1/2)	1	22090.285.215	1.1/8X285 (11.1/4)	1	22090.285.285
1.1/8X165 (6.1/2)	1	22090.285.165	1.1/8X220 (8.3/4)	1	22090.285.222	1.1/8X290 (11.3/8)	1	22090.285.290
1.1/8X170 (6.3/4)	1	22090.285.171	1.1/8X230 (9)	1	22090.285.228	1.1/8X295 (11.1/2)	1	22090.285.292

22090 Studbolt with 2 hexagon nuts

d x L mm (L IN.)	Art.number	d x L mm (L IN.)	Art.number	d x L mm (L IN.)	Art.number
1.1/8X300 (11.3/4)	22090.285.298	1.1/4X280 (11)	22090.317.279	1.3/8X370 (14.1/2)	22090.349.368
1.1/8X305 (12)	22090.285.304	1.1/4X285 (11.1/4)	22090.317.285	1.3/8X375 (14.3/4)	22090.349.374
1.1/8X310 (12.1/4)	22090.285.311	1.1/4X295 (11.1/2)	22090.317.292	1.3/8X380 (15)	22090.349.381
1.1/8X315 (12.1/2)	22090.285.317	1.1/4X300 (11.3/4)	22090.317.298	1.3/8X385 (15.1/4)	22090.349.387
1.1/8X325 (12.3/4)	22090.285.323	1.1/4X305 (12)	22090.317.304	1.3/8X395 (15.1/2)	22090.349.393
1.1/8X330 (13)	22090.285.330	1.1/4X310 (12.1/4)	22090.317.311	1.3/8X400 (15.3/4)	22090.349.400
1.1/8X345 (13.1/2)	22090.285.342	1.1/4X315 (12.1/2)	22090.317.317	1.3/8X405 (16)	22090.349.406
1.1/8X350 (13.3/4)	22090.285.349	1.1/4X325 (12.3/4)	22090.317.323		
1.1/8X355 (14)	22090.285.355	1.1/4X330 (13)	22090.317.330	1.1/2X200 (8)	22090.381.203
1.1/8X360 (14.1/4)	22090.285.361	1.1/4X345 (13.1/2)	22090.317.342	1.1/2X210 (8.1/4)	22090.381.209
1.1/8X370 (14.1/2)	22090.285.368	1.1/4X350 (13.3/4)	22090.317.349	1.1/2X215 (8.1/2)	22090.381.215
1.1/8X375 (14.3/4)	22090.285.374	1.1/4X355 (14)	22090.317.355	1.1/2X220 (8.3/4)	22090.381.222
1.1/8X380 (15)	22090.285.381	1.1/4X360 (14.1/4)	22090.317.361	1.1/2X225 (8.7/8)	22090.381.225
1.1/8X385 (15.1/4)	22090.285.387	1.1/4X370 (14.1/2)	22090.317.368	1.1/2X230 (9)	22090.381.228
1.1/8X395 (15.1/2)	22090.285.393	1.1/4X375 (14.3/4)	22090.317.374	1.1/2X235 (9.1/4)	22090.381.234
1.1/8X400 (15.3/4)	22090.285.400	1.1/4X380 (15)	22090.317.381	1.1/2X240 (9.1/2)	22090.381.241
1.1/8X405 (16)	22090.285.406			1.1/2X250 (9.3/4)	22090.381.247
1.1/8X410 (16.1/8)	22090.285.410	1.3/8X160 (6.1/4)	22090.349.158	1.1/2X255 (10)	22090.381.254
1.1/4X115 (4.1/2)	22090.317.114	1.3/8X165 (6.1/2)	22090.349.165	1.1/2X260 (10.1/4)	22090.381.260
1.1/4X120 (4.3/4)	22090.317.120	1.3/8X170 (6.3/4)	22090.349.171	1.1/2X265 (10.1/2)	22090.381.266
1.1/4X125 (5)	22090.317.127	1.3/8X180 (7)	22090.349.177	1.1/2X275 (10.3/4)	22090.381.273
1.1/4X130 (5.1/8)	22090.317.130	1.3/8X185 (7.1/4)	22090.349.184	1.1/2X280 (11)	22090.381.279
1.1/4X135 (5.1/4)	22090.317.133	1.3/8X190 (7.1/2)	22090.349.190	1.1/2X285 (11.1/4)	22090.381.285
1.1/4X140 (5.1/2)	22090.317.139	1.3/8X195 (7.3/4)	22090.349.196	1.1/2X290 (11.3/8)	22090.381.290
1.1/4X145 (5.3/4)	22090.317.146	1.3/8X200 (8)	22090.349.203	1.1/2X295 (11.1/2)	22090.381.292
1.1/4X150 (6)	22090.317.152	1.3/8X210 (8.1/4)	22090.349.209	1.1/2X300 (11.3/4)	22090.381.298
1.1/4X160 (6.1/4)	22090.317.158	1.3/8X215 (8.1/2)	22090.349.215	1.1/2X305 (12)	22090.381.304
1.1/4X165 (6.1/2)	22090.317.165	1.3/8X220 (8.3/4)	22090.349.222	1.1/2X310 (12.1/4)	22090.381.311
1.1/4X170 (6.3/4)	22090.317.171	1.3/8X230 (9)	22090.349.228	1.1/2X320 (12.5/8)	22090.381.320
1.1/4X175 (6.7/8)	22090.317.175	1.3/8X235 (9.1/4)	22090.349.234		
1.1/4X180 (7)	22090.317.177	1.3/8X240 (9.1/2)	22090.349.241	1.5/8X255 (10)	22090.412.254
1.1/4X185 (7.1/4)	22090.317.184	1.3/8X250 (9.3/4)	22090.349.247	1.5/8X260 (10.1/4)	22090.412.260
1.1/4X190 (7.1/2)	22090.317.190	1.3/8X255 (10)	22090.349.254	1.5/8X265 (10.1/2)	22090.412.266
1.1/4X195 (7.3/4)	22090.317.196	1.3/8X260 (10.1/4)	22090.349.260	1.5/8X275 (10.3/4)	22090.412.273
1.1/4X200 (8)	22090.317.203	1.3/8X265 (10.1/2)	22090.349.266	1.5/8X280 (11)	22090.412.279
1.1/4X205 (8.1/8)	22090.317.205	1.3/8X275 (10.3/4)	22090.349.273	1.5/8X285 (11.1/4)	22090.412.285
1.1/4X210 (8.1/4)	22090.317.209	1.3/8X280 (11)	22090.349.279	1.5/8X295 (11.1/2)	22090.412.292
1.1/4X215 (8.1/2)	22090.317.215	1.3/8X285 (11.1/4)	22090.349.285	1.5/8X300 (11.3/4)	22090.412.298
1.1/4X220 (8.3/4)	22090.317.222	1.3/8X295 (11.1/2)	22090.349.292	1.5/8X305 (12)	22090.412.304
1.1/4X230 (9)	22090.317.228	1.3/8X300 (11.3/4)	22090.349.298	1.5/8X310 (12.1/4)	22090.412.311
1.1/4X235 (9.1/4)	22090.317.234	1.3/8X305 (12)	22090.349.304	1.5/8X315 (12.1/2)	22090.412.317
1.1/4X240 (9.1/2)	22090.317.241	1.3/8X310 (12.1/4)	22090.349.311	1.5/8X325 (12.3/4)	22090.412.323
1.1/4X245 (9.5/8)	22090.317.245	1.3/8X315 (12.1/2)	22090.349.317	1.5/8X330 (13)	22090.412.330
1.1/4X250 (9.3/4)	22090.317.247	1.3/8X325 (12.3/4)	22090.349.323	1.5/8X335 (13.1/4)	22090.412.337
1.1/4X255 (10)	22090.317.254	1.3/8X330 (13)	22090.349.330	1.5/8X345 (13.1/2)	22090.412.342
1.1/4X260 (10.1/4)	22090.317.260	1.3/8X345 (13.1/2)	22090.349.342	1.5/8X350 (13.3/4)	22090.412.349
1.1/4X265 (10.1/2)	22090.317.266	1.3/8X350 (13.3/4)	22090.349.349	1.5/8X355 (14)	22090.412.355
1.1/4X275 (10.3/4)	22090.317.273	1.3/8X355 (14)	22090.349.355		
		1.3/8X360 (14.1/4)	22090.349.361		

22320 Studbolt with 2 hexagon nuts
G10A

Thread Unified National Coarse
Material Steel ASTM A320 - ASTM A194
Class Gr.L7 - Gr.4
Packaging Standard



d x L mm (L IN.)	Art.number	d x L mm (L IN.)	Art.number	d x L mm (L IN.)	Art.number
1/2X50 (2)	22320.127.050	5/8X140 (5.1/2)	22320.158.139	7/8X115 (4.1/2)	22320.222.114
1/2X55 (2.1/4)	22320.127.057	5/8X145 (5.3/4)	22320.158.146	7/8X120 (4.3/4)	22320.222.120
1/2X60 (2.3/8)	22320.127.060	5/8X150 (6)	22320.158.152	7/8X125 (5)	22320.222.127
1/2X65 (2.1/2)	22320.127.063	5/8X160 (6.1/4)	22320.158.158	7/8X130 (5.1/8)	22320.222.130
1/2X70 (2.3/4)	22320.127.069	5/8X165 (6.1/2)	22320.158.165	7/8X135 (5.1/4)	22320.222.133
1/2X75 (3)	22320.127.076	5/8X170 (6.3/4)	22320.158.171	7/8X140 (5.1/2)	22320.222.139
1/2X80 (3.1/4)	22320.127.082	5/8X180 (7)	22320.158.177	7/8X145 (5.3/4)	22320.222.146
1/2X90 (3.1/2)	22320.127.088	5/8X185 (7.1/4)	22320.158.184	7/8X150 (6)	22320.222.152
1/2X95 (3.3/4)	22320.127.095			7/8X160 (6.1/4)	22320.222.158
1/2X100 (4)	22320.127.101	3/4X75 (3)	22320.191.076	7/8X165 (6.1/2)	22320.222.165
1/2X110 (4.1/4)	22320.127.107	3/4X80 (3.1/4)	22320.191.082	7/8X170 (6.3/4)	22320.222.171
1/2X115 (4.1/2)	22320.127.114	3/4X90 (3.1/2)	22320.191.088	7/8X180 (7)	22320.222.177
1/2X120 (4.3/4)	22320.127.120	3/4X95 (3.3/4)	22320.191.095	7/8X185 (7.1/4)	22320.222.184
		3/4X100 (4)	22320.191.101	7/8X190 (7.1/2)	22320.222.190
5/8X65 (2.1/2)	22320.158.063	3/4X110 (4.1/4)	22320.191.107	7/8X195 (7.3/4)	22320.222.196
5/8X70 (2.3/4)	22320.158.069	3/4X115 (4.1/2)	22320.191.114	7/8X200 (8)	22320.222.203
5/8X75 (3)	22320.158.076	3/4X120 (4.3/4)	22320.191.120	7/8X210 (8.1/4)	22320.222.209
5/8X80 (3.1/4)	22320.158.082	3/4X125 (5)	22320.191.127	7/8X215 (8.1/2)	22320.222.215
5/8X85 (3.3/8)	22320.158.085	3/4X130 (5.1/8)	22320.191.130	7/8X220 (8.3/4)	22320.222.222
5/8X90 (3.1/2)	22320.158.088	3/4X135 (5.1/4)	22320.191.133	7/8X230 (9)	22320.222.228
5/8X95 (3.3/4)	22320.158.095	3/4X140 (5.1/2)	22320.191.139		
5/8X100 (4)	22320.158.101	3/4X145 (5.3/4)	22320.191.146		
5/8X110 (4.1/4)	22320.158.107	3/4X150 (6)	22320.191.152	1X125 (5)	22320.254.127
5/8X115 (4.1/2)	22320.158.114	3/4X160 (6.1/4)	22320.191.158	1X135 (5.1/4)	22320.254.133
5/8X120 (4.3/4)	22320.158.120	3/4X165 (6.1/2)	22320.191.165	1X140 (5.1/2)	22320.254.139
5/8X125 (5)	22320.158.127	3/4X170 (6.3/4)	22320.191.171	1X145 (5.3/4)	22320.254.146
5/8X130 (5.1/8)	22320.158.130	3/4X180 (7)	22320.191.177	1X150 (6)	22320.254.152
5/8X135 (5.1/4)	22320.158.133	3/4X185 (7.1/4)	22320.191.184	1X160 (6.1/4)	22320.254.158

22320 Studbolt with 2 hexagon nuts ←

d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1X165 (6.1/2)	1	22320.254.165	1X180 (7)	1	22320.254.177	1X195 (7.3/4)	1	22320.254.196
1X170 (6.3/4)	1	22320.254.171	1X185 (7.1/4)	1	22320.254.184	1X200 (8)	1	22320.254.203
1X175 (6.7/8)	1	22320.254.175	1X190 (7)	1	22320.254.190			

22330 Studbolt with 2 hexagon nuts G10A

Thread 8 Unified National
Material Steel ASTM A320 - ASTM A194
Class Gr.L7 - Gr.4
Packaging Standard

d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1.1/8X145 (5.3/4)	1	22330.285.146	1.1/8X210 (8.1/4)	1	22330.285.209	1.1/4X185 (7.1/4)	1	22330.317.184
1.1/8X150 (6)	1	22330.285.152	1.1/8X215 (8.1/2)	1	22330.285.215	1.1/4X190 (7.1/2)	1	22330.317.190
1.1/8X160 (6.1/4)	1	22330.285.158	1.1/8X220 (8.3/4)	1	22330.285.222	1.1/4X195 (7.3/4)	1	22330.317.196
1.1/8X165 (6.1/2)	1	22330.285.165	1.1/8X230 (9)	1	22330.285.228	1.1/4X200 (8)	1	22330.317.203
1.1/8X170 (6.3/4)	1	22330.285.171	1.1/8X235 (9.1/4)	1	22330.285.234	1.1/4X210 (8.1/4)	1	22330.317.209
1.1/8X180 (7)	1	22330.285.177	1.1/8X240 (9.1/2)	1	22330.285.241	1.1/4X215 (8.1/2)	1	22330.317.215
1.1/8X185 (7.1/4)	1	22330.285.184	1.1/8X245 (9.5/8)	1	22330.285.245	1.1/4X220 (8.3/4)	1	22330.317.222
1.1/8X190 (7.1/2)	1	22330.285.190	1.1/8X310 (12.1/4)	1	22330.285.311	1.1/4X230 (9)	1	22330.317.228
1.1/8X195 (7.3/4)	1	22330.285.196						
1.1/8X200 (8)	1	22330.285.203	1.1/4X180 (7)	1	22330.317.177			

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22534 Studbolt with 2 hexagon nuts G12A

Thread Unified National Coarse
Material Stainless steel ASTM A193 - ASTM A194
Class Gr.B8CL1 - Gr.8
Packaging Standard

d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1/2X50 (2)	1	22534.127.050	5/8X115 (4.1/2)	1	22534.158.114	7/8X115 (4.1/2)	1	22534.222.114
1/2X55 (2.1/4)	1	22534.127.057	5/8X120 (4.3/4)	1	22534.158.120	7/8X120 (4.3/4)	1	22534.222.120
1/2X65 (2.1/2)	1	22534.127.063	5/8X125 (5)	1	22534.158.127	7/8X125 (5)	1	22534.222.127
1/2X70 (2.3/4)	1	22534.127.069	5/8X135 (5.1/4)	1	22534.158.133	7/8X135 (5.1/4)	1	22534.222.133
1/2X75 (3)	1	22534.127.076	5/8X140 (5.1/2)	1	22534.158.139	7/8X140 (5.1/2)	1	22534.222.139
1/2X80 (3.1/4)	1	22534.127.082	5/8X145 (5.3/4)	1	22534.158.146	7/8X145 (5.3/4)	1	22534.222.146
1/2X90 (3.1/2)	1	22534.127.088				7/8X150 (6)	1	22534.222.152
1/2X95 (3.3/4)	1	22534.127.095	3/4X95 (3.3/4)	1	22534.191.095			
1/2X100 (4)	1	22534.127.101	3/4X100 (4)	1	22534.191.101	1X135 (5.1/4)	1	22534.254.133
			3/4X110 (4.1/4)	1	22534.191.107	1X140 (5.1/2)	1	22534.254.139
5/8X65 (2.1/2)	1	22534.158.063	3/4X115 (4.1/2)	1	22534.191.114	1X145 (5.3/4)	1	22534.254.146
5/8X70 (2.3/4)	1	22534.158.069	3/4X120 (4.3/4)	1	22534.191.120	1X150 (6)	1	22534.254.152
5/8X75 (3)	1	22534.158.076	3/4X125 (5)	1	22534.191.127	1X160 (6.1/4)	1	22534.254.158
5/8X80 (3.1/4)	1	22534.158.082	3/4X135 (5.1/4)	1	22534.191.133	1X165 (6.1/2)	1	22534.254.165
5/8X90 (3.1/2)	1	22534.158.088	3/4X140 (5.1/2)	1	22534.191.139	1X170 (6.3/4)	1	22534.254.171
5/8X95 (3.3/4)	1	22534.158.095	3/4X145 (5.3/4)	1	22534.191.146	1X180 (7)	1	22534.254.177
5/8X100 (4)	1	22534.158.101	3/4X150 (6.IN.)	1	22534.191.152			
5/8X110 (4.1/4)	1	22534.158.107						

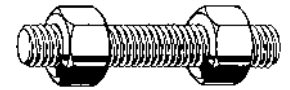
22538 Studbolt with 2 hexagon nuts G12A

Thread Unified National Coarse
Material Malleable iron ASTM A193 - ASTM A194
Class Gr.B8MCL2 - Gr.8M
Packaging Standard

d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1/2X50 (2)	1	22538.127.050	5/8X100 (4)	1	22538.158.101	3/4X115 (4.1/2)	1	22538.191.114
1/2X55 (2.1/4)	1	22538.127.057	5/8X110 (4.1/4)	1	22538.158.107	3/4X120 (4.3/4)	1	22538.191.120
1/2X65 (2.1/2)	1	22538.127.063	5/8X115 (4.1/2)	1	22538.158.114	3/4X125 (5)	1	22538.191.127
1/2X70 (2.3/4)	1	22538.127.069	5/8X120 (4.3/4)	1	22538.158.120	3/4X135 (5.1/4)	1	22538.191.133
1/2X75 (3)	1	22538.127.076	5/8X125 (5)	1	22538.158.127	3/4X140 (5.1/2)	1	22538.191.139
1/2X80 (3.1/4)	1	22538.127.082	5/8X135 (5.1/4)	1	22538.158.133	3/4X145 (5.3/4)	1	22538.191.146
1/2X90 (3.1/2)	1	22538.127.088	5/8X140 (5.1/2)	1	22538.158.139	3/4X160 (6.1/4)	1	22538.191.158
1/2X95 (3.3/4)	1	22538.127.095	5/8X145 (5.3/4)	1	22538.158.146	3/4X165 (6.1/2)	1	22538.191.165
1/2X100 (4)	1	22538.127.101	5/8X150 (6)	1	22538.158.152			
1/2X110 (4.1/4)	1	22538.127.107	5/8X165 (6.1/2)	1	22538.158.165	7/8X90 (3.1/2)	1	22538.222.088
1/2X115 (4.1/2)	1	22538.127.114	5/8X170 (6.3/4)	1	22538.158.171	7/8X115 (4.1/2)	1	22538.222.114
						7/8X125 (5)	1	22538.222.127
5/8X65 (2.1/2)	1	22538.158.063	3/4X75 (3)	1	22538.191.076	7/8X140 (5.1/2)	1	22538.222.139
5/8X70 (2.3/4)	1	22538.158.069	3/4X80 (3.1/4)	1	22538.191.082	7/8X145 (5.3/4)	1	22538.222.146
5/8X75 (3)	1	22538.158.076	3/4X90 (3.1/2)	1	22538.191.088	7/8X150 (6)	1	22538.222.152
5/8X80 (3.1/4)	1	22538.158.082	3/4X95 (3.3/4)	1	22538.191.095	7/8X165 (6.1/2)	1	22538.222.165
5/8X90 (3.1/2)	1	22538.158.088	3/4X100 (4)	1	22538.191.101			
5/8X95 (3.3/4)	1	22538.158.095	3/4X110 (4.1/4)	1	22538.191.107	1X140 (5.1/2)	1	22538.254.139

22551 Studbolt with 2 hexagon nuts
G11A

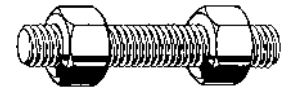
Thread Unified National Coarse
Material Steel ASTM A193 - ASTM A194
Class Gr.B16 - Gr.2H
Packaging Standard



d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1/2X65 (2.1/2)	1	22551.127.063	5/8X90 (3.1/2)	1	22551.158.088	3/4X120 (4.3/4)	1	22551.191.120
1/2X70 (2.3/4)	1	22551.127.069	5/8X95 (3.3/4)	1	22551.158.095	3/4X125 (5)	1	22551.191.127
1/2X75 (3)	1	22551.127.076	5/8X100 (4)	1	22551.158.101			
1/2X80 (3.1/4)	1	22551.127.082	5/8X110 (4.1/4)	1	22551.158.107	7/8X115 (4.1/2)	1	22551.222.114
1/2X90 (3.1/2)	1	22551.127.088	5/8X115 (4.1/2)	1	22551.158.114	7/8X120 (4.3/4)	1	22551.222.120
1/2X95 (3.3/4)	1	22551.127.095	5/8X120 (4.3/4)	1	22551.158.120	7/8X125 (5)	1	22551.222.127
1/2X100 (4)	1	22551.127.101	5/8X125 (5)	1	22551.158.127	7/8X135 (5.1/4)	1	22551.222.133
						7/8X140 (5.1/2)	1	22551.222.139
5/8X65 (2.1/2)	1	22551.158.063	3/4X95 (3.3/4)	1	22551.191.095	7/8X145 (5.3/4)	1	22551.222.146
5/8X70 (2.3/4)	1	22551.158.069	3/4X100 (4)	1	22551.191.101	7/8X150 (6)	1	22551.222.152
5/8X75 (3)	1	22551.158.076	3/4X110 (4.1/4)	1	22551.191.107			
5/8X80 (3.1/4)	1	22551.158.082	3/4X115 (4.1/2)	1	22551.191.114			

22554 Studbolt with 2 hexagon nuts
G11A

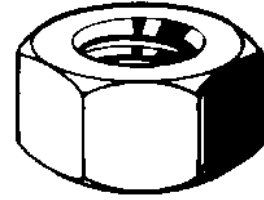
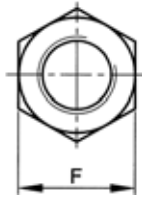
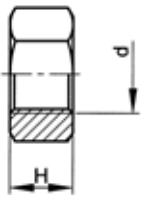
Thread Unified National Coarse
Material Steel ASTM A193 - ASTM A194
Class Gr.B16 - Gr.4
Packaging Standard



d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number	d x L mm (L IN.)	☒	Art.number
1/2X50 (2)	1	22554.127.050	5/8X150 (6)	1	22554.158.152	7/8X130 (5.1/8)	1	22554.222.130
1/2X55 (2.1/4)	1	22554.127.057				7/8X135 (5.1/4)	1	22554.222.133
1/2X60 (2.3/8)	1	22554.127.060	3/4X90 (3.1/2)	1	22554.191.088	7/8X140 (5.1/2)	1	22554.222.139
1/2X65 (2.1/2)	1	22554.127.063	3/4X95 (3.3/4)	1	22554.191.095	7/8X145 (5.3/4)	1	22554.222.146
1/2X70 (2.3/4)	1	22554.127.069	3/4X100 (4)	1	22554.191.101	7/8X150 (6)	1	22554.222.152
1/2X75 (3)	1	22554.127.076	3/4X110 (4.1/4)	1	22554.191.107	7/8X160 (6.1/4)	1	22554.222.158
1/2X80 (3.1/4)	1	22554.127.082	3/4X115 (4.1/2)	1	22554.191.114	7/8X165 (6.1/2)	1	22554.222.165
1/2X90 (3.1/2)	1	22554.127.088	3/4X120 (4.3/4)	1	22554.191.120	7/8X170 (6.3/4)	1	22554.222.171
1/2X95 (3.3/4)	1	22554.127.095	3/4X125 (5)	1	22554.191.127			
1/2X100 (4)	1	22554.127.101	3/4X130 (5.1/8)	1	22554.191.130	3/4X180 (7)	1	22554.222.177
			3/4X135 (5.1/4)	1	22554.191.133	1X130 (5.1/8)	1	22554.254.130
5/8X70 (2.3/4)	1	22554.158.069	3/4X140 (5.1/2)	1	22554.191.139	1X140 (5.1/2)	1	22554.254.139
5/8X75 (3)	1	22554.158.076	3/4X145 (5.3/4)	1	22554.191.146	1X145 (5.3/4)	1	22554.254.146
5/8X80 (3.1/4)	1	22554.158.082	3/4X150 (6)	1	22554.191.152	1X150 (6)	1	22554.254.152
5/8X90 (3.1/2)	1	22554.158.088	3/4X160 (6.1/4)	1	22554.191.158	1X160 (6.1/4)	1	22554.254.158
5/8X95 (3.3/4)	1	22554.158.095	3/4X165 (6.1/2)	1	22554.191.165	1X165 (6.1/2)	1	22554.254.165
5/8X100 (4)	1	22554.158.101	3/4X170 (6.3/4)	1	22554.191.171	1X170 (6.3/4)	1	22554.254.171
5/8X110 (4.1/4)	1	22554.158.107	3/4X180 (7)	1	22554.191.177	1X180 (7)	1	22554.254.177
5/8X115 (4.1/2)	1	22554.158.114	3/4X185 (7.1/4)	1	22554.191.184	1X185 (7.1/4)	1	22554.254.184
5/8X120 (4.3/4)	1	22554.158.120	3/4X190 (7.1/2)	1	22554.191.190	1X190 (7.1/2)	1	22554.254.190
5/8X125 (5)	1	22554.158.127				1X195 (7.3/4)	1	22554.254.196
5/8X135 (5.1/4)	1	22554.158.133	7/8X115 (4.1/2)	1	22554.222.114	1X200 (8)	1	22554.254.203
5/8X140 (5.1/2)	1	22554.158.139	7/8X120 (4.3/4)	1	22554.222.120			
5/8X145 (5.3/4)	1	22554.158.146	7/8X125 (5)	1	22554.222.127			

4

Hexagon nut ASTM A194 Grade 2H



Technical data

d	P	H	F
M10	1,5	10	17
M12	1,75	12	19
M14	2	14	22
M16	2	16	24
M18	2,5	18	27
M20	2,5	20	30

d	P	H	F
M22	2,5	22	32
M24	3	24	36
M27	3	27	41
M30	3,5	30	46
M33	3,5	33	50
M36	4	36	55

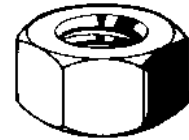
d	P	H	F
M39	4	39	60
M42	4,5	42	65
M45	4,5	45	70
M48	5	48	75
M52	5	52	80

4

22200 Hexagon nut ASTM A194 Grade 2H

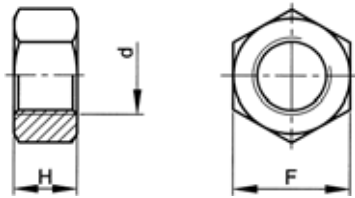
G09A

Thread Metric thread
Material Steel ASTM A194
Class Gr.2H
Packaging Standard

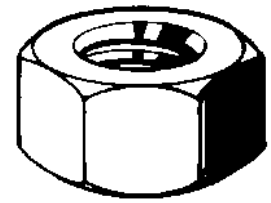


d	✉	Art.number	d	✉	Art.number	d	✉	Art.number
M10	1	22200.100.001	M22	1	22200.220.001	M39	1	22200.390.001
M12	1	22200.120.001	M24	1	22200.240.001	M42	1	22200.420.001
M14	1	22200.140.001	M27	1	22200.270.001	M45	1	22200.450.001
M16	1	22200.160.001	M30	1	22200.300.001	M48	1	22200.480.001
M18	1	22200.180.001	M33	1	22200.330.001	M52	1	22200.520.001
M20	1	22200.200.001	M36	1	22200.360.001			

Hexagon nut ASTM A194



ANSI B18.2.2
BS 1769



Technical data

d	Threads per inch	H	F
3/8	16	9	11/16
1/2	13	12,3	7/8
5/8	11	15,5	1.1/16
3/4	10	18,65	1.1/4
7/8	9	21,85	1.7/16
1.IN.	8	25	1.5/8
1.1/8	8	28,2	1.13/16
1.1/4	8	30,95	2.IN.
1.3/8	8	34,15	2.3/16
1.1/2	8	37,3	2.3/8
1.5/8	8	40,5	2.9/16
1.3/4	8	43,65	2.3/4
1.7/8	8	46,85	2.15/16
2.IN.	8	50	3.1/8
2.1/4	8	55,95	3.1/2
2.1/2	8	62,3	3.7/8
2.3/4	8	68,25	4.1/4
3.IN.	8	75	4.5/8

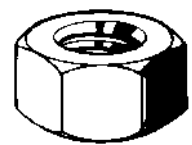
Article groups

Thread	Driving features	Material	Class	Packaging	Code	Page
UNC	hexagon	St ASTM A194	Gr.2H	Standard	22280	4-42
8 UN	hexagon	St ASTM A194	Gr.2H	Standard	22290	4-42
UNC	hexagon	St ASTM A194	Gr.4	Standard	22380	4-43
8 UN	hexagon	St ASTM A194	Gr.4	Standard	22390	4-43
UNC	hexagon	St ASTM A194	Gr.7	Standard	22382	4-43
UNC	hexagon	St.St. ASTM A194	Gr.8	Standard	22383	4-43
8 UN	hexagon	St.St. ASTM A194	Gr.8	Standard	22393	4-43
UNC	hexagon	St.St. ASTM A194	Gr.8M	Standard	22384	4-43
UNC	hexagon	St.St. ASTM A194	Gr.8T	Standard	22386	4-44

22280 Hexagon nut ASTM A194

G09A

Thread Unified National Coarse
Material Steel ASTM A194
Class Gr.2H
Packaging Standard

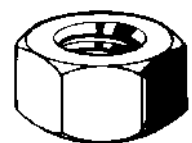


d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1/2	1	22280.127.001	3/4	1	22280.191.001	1.IN.	1	22280.254.001
5/8	1	22280.158.001	7/8	1	22280.222.001			

22290 Hexagon nut ASTM A194

G09A

Thread 8 Unified National
Material Steel ASTM A194
Class Gr.2H
Packaging Standard



d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1.1/8	1	22290.285.001	1.5/8	1	22290.412.001	2.1/4	1	22290.571.001
1.1/4	1	22290.317.001	1.3/4	1	22290.444.001	2.1/2	1	22290.635.001
1.3/8	1	22290.349.001	1.7/8	1	22290.476.001	2.3/4	1	22290.698.001
1.1/2	1	22290.381.001	2.IN.	1	22290.508.001	3.IN.	1	22290.762.001

22380	Hexagon nut ASTM A194		G10A	
Thread	Unified National Coarse			
Material	Steel ASTM A194			
Class	Gr.4			
Packaging	Standard			

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
3/8	1	22380.096.001	5/8	1	22380.158.001	7/8	1	22380.222.001
1/2	1	22380.127.001	3/4	1	22380.191.001	1.IN.	1	22380.254.001

22390	Hexagon nut ASTM A194		G10A	
Thread	8 Unified National			
Material	Steel ASTM A194			
Class	Gr.4			
Packaging	Standard			

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1.1/8	1	22390.285.001	1.1/2	1	22390.381.001	1.7/8	1	22390.476.001
1.1/4	1	22390.317.001	1.5/8	1	22390.412.001	2.IN.	1	22390.508.001
1.3/8	1	22390.349.001	1.3/4	1	22390.444.001			

22382	Hexagon nut ASTM A194		G10A	
Thread	Unified National Coarse			
Material	Steel ASTM A194			
Class	Gr.7			
Packaging	Standard			

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1/2	1	22382.127.001	3/4	1	22382.191.001	1.IN.	1	22382.254.001
5/8	1	22382.158.001	7/8	1	22382.222.001			

22383	Hexagon nut ASTM A194		G12A	
Thread	Unified National Coarse			
Material	Stainless steel ASTM A194			
Class	Gr.8			
Packaging	Standard			

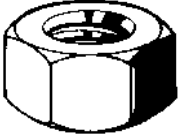
d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1/2	1	22383.127.001	3/4	1	22383.191.001	1.IN.	1	22383.254.001
5/8	1	22383.158.001	7/8	1	22383.222.001			

22393	Hexagon nut ASTM A194		G12A	
Thread	8 Unified National			
Material	Stainless steel ASTM A194			
Class	Gr.8			
Packaging	Standard			

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1.1/8	1	22393.285.001	1.3/8	1	22393.349.001			
1.1/4	1	22393.317.001	1.1/2	1	22393.381.001			

22384	Hexagon nut ASTM A194		G12A	
Thread	Unified National Coarse			
Material	Stainless steel ASTM A194			
Class	Gr.8M			
Packaging	Standard			

d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
1/2	1	22384.127.001	3/4	1	22384.191.001	1.IN.	1	22384.254.001
5/8	1	22384.158.001	7/8	1	22384.222.001			

22386	Hexagon nut ASTM A194						G12A
Thread	Unified National Coarse						
Material	Stainless steel ASTM A194						
Class	Gr.8T						
Packaging	Standard						

d	✉	Art.number	d	✉	Art.number	d	✉	Art.number
3/8	1	22386.096.001	5/8	1	22386.158.001	7/8	1	22386.222.001
1/2	1	22386.127.001	3/4	1	22386.191.001	1.IN.	1	22386.254.001

4

Double end studs

with reduced shank with 2 hexagon nuts

Material quality

Low temperature resistant, high temperature resistant, high-pressure hydrogenation, corrosion resistant and non magnetizable (permeability 1,05G/Oe).

High requirements

By means of annealed, normalized, carbide-solution, quenched and tempered, warm-cold formed and precipitation hardened.

Quality

Double end studs are manufactured by approval of TÜV and also acc. to AD regulation WO and TRD sheet 100. When ordering double end studs please mention always the material code (see markingsigns tabel below), the associated hexagon nuts are supplied seperately. The packaging and packinglist are only mentioned by the materialnumber of the bolts. For applications and calculations of double end studs at pressure vessels see AD-Merkblatt B7 from "Arbeitsgemeinschaft Druckbehälter".

Application

Double end studs are generally applied in the stringent construction sectors like nuclear reactors and -technology, turbines, boilers, high-pressure tanks, high-capacity chemical vessels, chemical apparatus, shipbuilding, oil industry, petrochemistry, refrigeration plants, pipelines, instruments, motor construction and offshore technics.

Certificates

Upon special request the inspection certificates 3.1 and 3.2 can be delivered acc. to EN 10204 (DIN 50049).

Operating temperature ranges and bolt/nut combinations

SPECIFICATIONS	STANDARD VALUES	MATERIALNUMBERS AND MARKINGSIGNS			
		BOLTS		NUTS	
DIN 267-13/AD MERKBLATT W7/DIN 17240	+ 700°C	2.4952	SB	2.4952	SB
	+ 650°C	1.4986	S	1.4986	S
		1.4980	SD	1.4980	SD
	+ 580°C	1.4923	V	1.4923	V
	+ 540°C	1.4913	VW	1.4923	V
		1.7709	GA	1.7709	GA
	+ 500°C	1.7709	GA	1.7258	G
		1.7711	GB	1.7709	GA
	+ 400°C	1.7258	G	1.7258	G
		1.7258	G	1.1181	YK
	+ 350°C	1.1181	YK	1.1181	YK
		1.1181	YK	1.0501	Y
DIN 267-13/ISO 898-1	+ 300°C	8.8			
		5.6			
	- 10°C	4.6-2			
DIN 267-13/AD MERKBLATT W 10/DIN 17280	- 60°C	1.7219	KA	1.7219	KA
	- 120°C	1.5680	KB	1.5680	KB
	- 196°C	1.6906	-	1.6906	-

Material properties ¹

Marking designs	Designation	Important elements				Max. continu temperature	Tensile N/mm ²	Yield min. N/mm ²	Elongation % min.	Notched bar process joule
		C	Cr	Mo	V					
YK	CK 35	0,32 - 0,39	-	-	-	+350°C ²	500-650	280	22	55
G	24 CrMo 5	0,20 - 0,28	0,90 - 1,20	0,20 - 0,35	-	+400°C ³	660-750	440	18	103
GA	21 CrMo V 57	0,17 - 0,25	1,20 - 1,50	0,65 - 0,80	0,25 - 0,35	+540°C	700-850	550	16	69

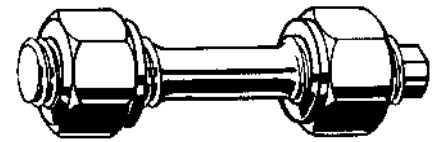
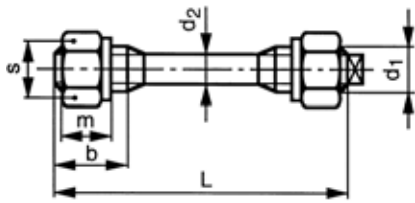
① Material properties of double end studs with reduced shank and nuts acc. to DIN 267-13 and DIN 17240.

② For hexagon nuts the usual limit of the temperature used in continous operation can be 50C higher.

③ Deviating from DIN 17240, higher temperatures are admissible for piping acc. to DIN 2507.

Double end stud with reduced shank with 2 hexagon nuts

DIN 2510 L/NF



Technical data

d1	P	d ₂	b	m	s
M12	1,75	8,5	20	12	22
M16	2	12	23	16	27
M20	2,5	15	28	20	32
M24	3	18	32	24	36
M27	3	20,5	35	27	41
M30	3,5	23	39	30	46

- For technical data, material properties and an explanation of the markingsigns, see INFO page.
- External thread acc. to DIN 2510-2.

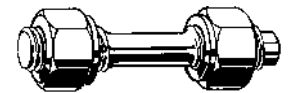
Article groups

Thread	Material	Class	Packaging	Code	Page
M	St	G/YK	Standard	23510	4-46
M	St	GA/G	Standard	23530	4-46
M	St	YK/YK	Standard	23550	4-47

23510 Double end stud with reduced shank with 2 hexagon nuts

G90A

Thread	Metric thread
Material	Steel
Class	G/YK
Packaging	Standard

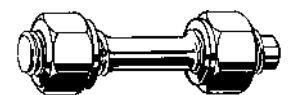


d1 x L	☒	Art.number	d1 x L	☒	Art.number	d1 x L	☒	Art.number
M12X65	10	23510.120.065	M16X95	10	23510.160.095	M24X115	5	23510.240.115
M12X75	10	23510.120.075	M16X110	10	23510.160.110	M24X120	5	23510.240.120
M12X80	10	23510.120.080				M24X130	5	23510.240.130
			M20X100	5	23510.200.100	M24X150	5	23510.240.150
M16X75	10	23510.160.075	M20X105	5	23510.200.105			
M16X80	10	23510.160.080	M20X110	5	23510.200.110	M27X140	2	23510.270.140
M16X85	10	23510.160.085						
M16X90	10	23510.160.090	M24X110	5	23510.240.110			

23530 Double end stud with reduced shank with 2 hexagon nuts

G90A

Thread	Metric thread
Material	Steel
Class	GA/G
Packaging	Standard

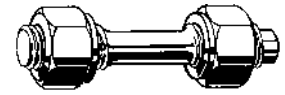


d1 x L	☒	Art.number	d1 x L	☒	Art.number	d1 x L	☒	Art.number
M12X65	10	23530.120.065	M20X110	5	23530.200.110	M24X150	5	23530.240.150
M12X75	10	23530.120.075	M20X120	5	23530.200.120			
			M20X140	5	23530.200.140	M27X130	2	23530.270.130
M16X75	10	23530.160.075				M27X140	2	23530.270.140
M16X85	10	23530.160.085	M24X110	5	23530.240.110			
M16X90	10	23530.160.090	M24X120	5	23530.240.120	M30X160	2	23530.300.160
M16X100	10	23530.160.100	M24X125	5	23530.240.125	M30X180	2	23530.300.180
			M24X130	5	23530.240.130			
M20X100	5	23530.200.100	M24X140	5	23530.240.140			

23550 Double end stud with reduced shank with 2 hexagon nuts

G90A

Thread Metric thread
Material Steel
Class YK/YK
Packaging Standard



d1 x L	☒	Art.number	d1 x L	☒	Art.number	d1 x L	☒	Art.number
M12X65	10	23550.120.065	M16X100	10	23550.160.100	M24X110	5	23550.240.110
M12X70	10	23550.120.070	M16X105	10	23550.160.105	M24X115	5	23550.240.115
M12X75	10	23550.120.075				M24X125	5	23550.240.125
M12X80	10	23550.120.080	M20X95	5	23550.200.095	M24X130	5	23550.240.130
			M20X100	5	23550.200.100	M24X140	5	23550.240.140
M16X75	10	23550.160.075	M20X105	5	23550.200.105	M24X150	5	23550.240.150
M16X80	10	23550.160.080	M20X110	5	23550.200.110			
M16X85	10	23550.160.085	M20X120	5	23550.200.120	M30X140	2	23550.300.140
M16X90	10	23550.160.090						