



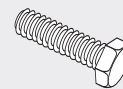
Wkręt-met[®]
FASTENER TECHNOLOGIES

5

Bolts and screws

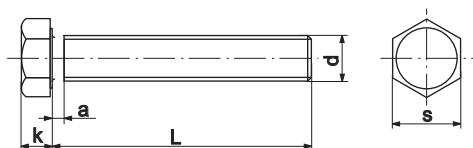
KLIMAS

GENERAL CATALOGUE 2011



SMGP HEX HEAD FULL THREAD BOLT CLASS 5.8

DIN 933
ISO 4017
PN 82105



APPLICATION

For sheet metal, steel and timber lap joints.

Class 5.8

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

Hex head bolt. Head marks indicating property class and manufacturer. Metric full thread.

TOLERANCES

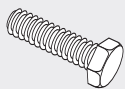
- product grade: A
- thread tolerance class: 6g.

TECHNICAL DATA

Thread size	Thread pitch	Non-threaded length max a (mm)	Nominal head length k (mm)	Width across flats s (mm)
M5	0.80	2.4	3.5	8
M6	1.00	3.0	4.0	10
M8	1.25	4.0	5.3	13
M10	1.50	4.0	6.4	17
M12	1.75	5.3	7.5	19
M16	2.00	6.0	10.0	24
M20	2.50	7.5	12.5	30

TECHNICAL DATA

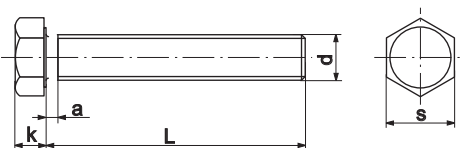
Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
SMGP05016	5 x 16	5	308	3
SMGP05020	5 x 20	5	263	3
SMGP05025	5 x 25	5	227	3
SMGP05030	5 x 30	5	200	3
SMGP05035	5 x 35	5	178	3
SMGP05040	5 x 40	5	161	3
SMGP05050	5 x 50	5	135	3
SMGP06016	6 x 16	6	195	3
SMGP06020	6 x 20	6	168	3
SMGP06025	6 x 25	6	147	3
SMGP06030	6 x 30	6	131	3
SMGP06035	6 x 35	6	119	3
SMGP06040	6 x 40	6	107	3
SMGP06050	6 x 50	6	91	3
SMGP06060	6 x 60	6	79	3
SMGP06070	6 x 70	6	70	3
SMGP06080	6 x 80	6	62	3
SMGP08016	8 x 16	8	95	3
SMGP08020	8 x 20	8	85	3
SMGP08025	8 x 25	8	76	3
SMGP08030	8 x 30	8	68	3
SMGP08035	8 x 35	8	61	3
SMGP08040	8 x 40	8	56	3
SMGP08050	8 x 50	8	47	3
SMGP08060	8 x 60	8	41	3
SMGP08070	8 x 70	8	37	3
SMGP08080	8 x 80	8	33	3
SMGP10020	10 x 20	10	48	3
SMGP10025	10 x 25	10	42	3
SMGP10030	10 x 30	10	39	3
SMGP10035	10 x 35	10	35	3
SMGP10040	10 x 40	10	32	3
SMGP10050	10 x 50	10	28	3
SMGP10060	10 x 60	10	25	3
SMGP10070	10 x 70	10	21	3
SMGP10080	10 x 80	10	20	3
SMGP10100	10 x 100	10	17	3
SMGP12020	12 x 20	12	32	3
SMGP12025	12 x 25	12	30	3
SMGP12030	12 x 30	12	26	3
SMGP12035	12 x 35	12	24	3
SMGP12040	12 x 40	12	22	3
SMGP12050	12 x 50	12	20	3
SMGP12060	12 x 60	12	17	3
SMGP12070	12 x 70	12	15	3
SMGP12080	12 x 80	12	14	3
SMGP12100	12 x 100	16	11	3
SMGP16025	16 x 25	16	15	3
SMGP16030	16 x 30	16	14	3
SMGP16040	16 x 40	16	11	3
SMGP16050	16 x 50	16	10	3
SMGP16060	16 x 60	16	9	3
SMGP16070	16 x 70	16	8	3
SMGP16080	16 x 80	16	7	3
SMGP16100	16 x 100	20	6	3
SMGP20040	20 x 40	20	7	3
SMGP20050	20 x 50	20	6	3
SMGP20060	20 x 60	20	5	3
SMGP20070	20 x 70	20	5	3
SMGP20080	20 x 80	20	4	3
SMGP20100	20 x 100	20	4	3



Bolts and screws

SM8GP HEX HEAD FULL THREAD BOLT CLASS 8.8

DIN 933
ISO 4017
PN 82105



APPLICATION

For sheet metal, steel and timber lap joints.

Class 8.8

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

Hex head bolt. Head marks indicating property class and manufacturer. Metric full thread.

TOLERANCES

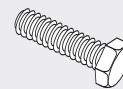
- product grade: A
- thread tolerance class: 6g.

TECHNICAL DATA

Thread size	Thread pitch	Non-threaded length max a (mm)	Nominal head length k (mm)	Width across flats s (mm)
M6	1.00	3.0	4.0	10
M8	1.25	4.0	5.3	13
M10	1.50	4.0	6.4	17
M12	1.75	5.3	7.5	19
M16	2.00	6.0	10.0	24
M20	2.50	7.5	12.5	30

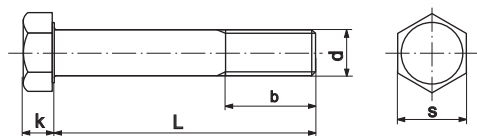
TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
SM8GP06016	6 x 16	6	195	3
SM8GP06020	6 x 20	6	168	3
SM8GP06025	6 x 25	6	147	3
SM8GP06030	6 x 30	6	131	3
SM8GP06035	6 x 35	6	119	3
SM8GP06040	6 x 40	6	107	3
SM8GP06050	6 x 50	6	91	3
SM8GP06060	6 x 60	6	79	3
SM8GP06070	6 x 70	6	70	3
SM8GP06080	6 x 80	6	62	3
SM8GP08016	8 x 16	8	95	3
SM8GP08020	8 x 20	8	85	3
SM8GP08025	8 x 25	8	76	3
SM8GP08030	8 x 30	8	68	3
SM8GP08035	8 x 35	8	61	3
SM8GP08040	8 x 40	8	56	3
SM8GP08050	8 x 50	8	47	3
SM8GP08060	8 x 60	8	41	3
SM8GP08070	8 x 70	8	37	3
SM8GP08080	8 x 80	8	33	3
SM8GP10020	10 x 20	10	48	3
SM8GP10025	10 x 25	10	43	3
SM8GP10030	10 x 30	10	39	3
SM8GP10035	10 x 35	10	35	3
SM8GP10040	10 x 40	10	32	3
SM8GP10050	10 x 50	10	28	3
SM8GP10060	10 x 60	10	25	3
SM8GP10070	10 x 70	10	21	3
SM8GP10080	10 x 80	10	20	3
SM8GP10100	10 x 100	10	17	3
SM8GP12020	12 x 20	12	32	3
SM8GP12025	12 x 25	12	30	3
SM8GP12030	12 x 30	12	26	3
SM8GP12035	12 x 35	12	24	3
SM8GP12040	12 x 40	12	22	3
SM8GP12050	12 x 50	12	20	3
SM8GP12060	12 x 60	12	17	3
SM8GP12070	12 x 70	12	15	3
SM8GP12080	12 x 80	12	14	3
SM8GP12100	12 x 100	12	11	3
SM8GP16025	16 x 25	16	15	3
SM8GP16030	16 x 30	16	14	3
SM8GP16040	16 x 40	16	11	3
SM8GP16050	16 x 50	16	10	3
SM8GP16060	16 x 60	16	9	3
SM8GP16070	16 x 70	16	8	3
SM8GP16080	16 x 80	16	7	3
SM8GP16100	16 x 100	16	6	3
SM8GP20040	20 x 40	20	7	3
SM8GP20050	20 x 50	20	6	3
SM8GP20060	20 x 60	20	5	3
SM8GP20070	20 x 70	20	5	3
SM8GP20080	20 x 80	20	4	3
SM8GP20100	20 x 100	20	4	3



SMGN HEX HEAD PARTIALLY THREADED BOLT CLASS 5.8

**DIN 931
ISO 4014
PN 82101**



TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
SMGN05040	5 x 40	5	152	3
SMGN05050	5 x 50	5	123	3
SMGN06040	6 x 40	6	100	3
SMGN06050	6 x 50	6	83	3
SMGN06060	6 x 60	6	69	3
SMGN06070	6 x 70	6	62	3
SMGN06080	6 x 80	6	54	3
SMGN08050	8 x 50	8	44	3
SMGN08060	8 x 60	8	38	3
SMGN08070	8 x 70	8	33	3
SMGN08080	8 x 80	8	30	3
SMGN08090	8 x 90	8	27	3
SMGN08100	8 x 100	8	24	3
SMGN08110	8 x 110	8	22	3
SMGN08120	8 x 120	8	20	3
SMGN10050	10 x 50	10	27	3
SMGN10060	10 x 60	10	23	3
SMGN10070	10 x 70	10	20	3
SMGN10080	10 x 80	10	18	3
SMGN10090	10 x 90	10	17	3
SMGN10100	10 x 100	10	14	3
SMGN10120	10 x 120	10	13	3
SMGN10150	10 x 150	10	11	3
SMGN12050	12 x 50	12	18	3
SMGN12060	12 x 60	12	16	3
SMGN12070	12 x 70	12	14	3
SMGN12080	12 x 80	12	13	3
SMGN12090	12 x 90	12	11	3
SMGN12100	12 x 100	12	10	3
SMGN12120	12 x 120	12	9	3
SMGN12150	12 x 150	12	7	3
SMGN12180	12 x 180	12	6	3
SMGN16050	16 x 50	16	10	3
SMGN16060	16 x 60	16	9	3
SMGN16070	16 x 70	16	8	3
SMGN16080	16 x 80	16	7	3
SMGN16090	16 x 90	16	6	3
SMGN16100	16 x 100	16	6	3
SMGN16120	16 x 120	16	5	3
SMGN16150	16 x 150	16	4	3
SMGN16180	16 x 180	16	4	3
SMGN20060	20 x 60	20	5	3
SMGN20070	20 x 70	20	5	3
SMGN20080	20 x 80	20	4	3
SMGN20090	20 x 90	20	4	3
SMGN20100	20 x 100	20	4	3
SMGN20120	20 x 120	20	3	3
SMGN20150	20 x 150	20	3	3
SMGN20180	20 x 180	20	2	3

APPLICATION

For sheet metal, steel and timber lap joints.

Class 5.8

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

Hex head bolt. Head marks indicating property class and manufacturer. Metric partial thread.

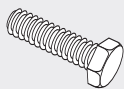
TOLERANCES

- product grade: A
- thread tolerance class: 6g.

TECHNICAL DATA

Thread size	Thread pitch	Thread length b* (mm)	Nominal head length k (mm)	Width across flats s (mm)
M5	0.80	16 / 22 / 35	3.5	8
M6	1.00	18 / 24 / 37	4.0	10
M8	1.25	22 / 28 / 41	5.3	13
M10	1.50	26 / 32 / 45	6.4	17
M12	1.75	30 / 36 / 49	7.5	19
M16	2.00	38 / 44 / 57	10.0	24
M20	2.50	46 / 52 / 65	12.5	30

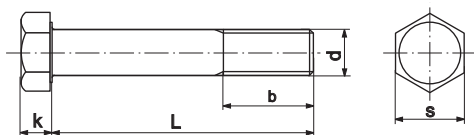
*Thread length depending on screw length is calculated according to the following formula:
L < 125mm / 125mm < L < 200mm / L > 200mm



Bolts and screws

SM8GN HEX HEAD PARTIALLY THREADED BOLT CLASS 8.8

DIN 931
ISO 4014
PN 82101



APPLICATION

For sheet metal, steel and timber lap joints.

Class 8.8

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

Hex head bolt. Head marks indicating property class and manufacturer. Metric partial thread.

TOLERANCES

- product grade: A
- thread tolerance class: 6g.

TECHNICAL DATA

Thread size	Thread pitch	Thread length b* (mm)	Nominal head length k (mm)	Width across flats s (mm)
M5	0.80	16 / 22 / 35	3.5	8
M6	1.00	18 / 24 / 37	4.0	10
M8	1.25	22 / 28 / 41	5.3	13
M10	1.50	26 / 32 / 45	6.4	17
M12	1.75	30 / 36 / 49	7.5	19
M16	2.00	38 / 44 / 57	10.0	24
M20	2.50	46 / 52 / 65	12.5	30

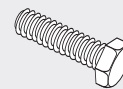
*Thread length depending on screw length is calculated according to the following formula:
L < 125mm / 125mm < L < 200mm / L > 200mm

TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
SM8GN06040	6 x 40	6	100	3
SM8GN06050	6 x 50	6	83	3
SM8GN06060	6 x 60	6	69	3
SM8GN06070	6 x 70	6	62	3
SM8GN06080	6 x 80	6	56	3
SM8GN08050	8 x 50	8	44	3
SM8GN08060	8 x 60	8	38	3
SM8GN08070	8 x 70	8	33	3
SM8GN08080	8 x 80	8	30	3
SM8GN08090	8 x 90	8	28	3
SM8GN08100	8 x 100	8	26	3
SM8GN08120	8 x 120	8	20	3
SM8GN10050	10 x 50	10	27	3
SM8GN10060	10 x 60	10	23	3
SM8GN10070	10 x 70	10	20	3
SM8GN10080	10 x 80	10	18	3
SM8GN10090	10 x 90	10	17	3
SM8GN10100	10 x 100	10	14	3
SM8GN10120	10 x 120	10	13	3
SM8GN12050	12 x 50	12	18	3
SM8GN12060	12 x 60	12	16	3
SM8GN12070	12 x 70	12	14	3
SM8GN12080	12 x 80	12	13	3
SM8GN12090	12 x 90	12	11	3
SM8GN12100	12 x 100	12	10	3
SM8GN12120	12 x 120	12	9	3
SM8GN12150	12 x 150	12	7	3
SM8GN12180	12 x 180	12	6	3
SM8GN16050	16 x 50	16	10	3
SM8GN16060	16 x 60	16	9	3
SM8GN16080	16 x 80	16	7	3
SM8GN16100	16 x 100	16	6	3
SM8GN16120	16 x 120	16	5	3
SM8GN16150	16 x 150	16	4	3
SM8GN16180	16 x 180	16	4	3
SM8GN20060	20 x 60	20	5	3
SM8GN20080	20 x 80	20	4	3
SM8GN20100	20 x 100	20	4	3
SM8GN20120	20 x 120	20	3	3
SM8GN20150	20 x 150	20	3	3
SM8GN20180	20 x 180	20	2	3

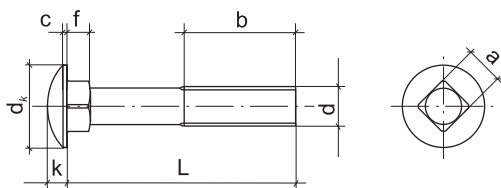
Screw classes 10.9 and 12.9

available on request



SZM CARRIAGE BOLT

**DIN 603
ISO 8677
PN 82406**



APPLICATION

For sheet metal, steel and timber lap joints.

Class 4.6

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

Round head bolt with square neck.

TOLERANCES

- product grade: C
- thread tolerance class: 8g.

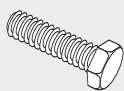
TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
SZM06020	6 x 20	6	166	3
SZM06025	6 x 25	6	148	3
SZM06030	6 x 30	6	124	3
SZM06035	6 x 35	6	112	3
SZM06040	6 x 40	6	107	3
SZM06045	6 x 45	6	99	3
SZM06050	6 x 50	6	91	3
SZM06060	6 x 60	6	78	3
SZM06070	6 x 70	6	69	3
SZM06080	6 x 80	6	61	3
SZM06090	6 x 90	6	56	3
SZM06100	6 x 100	6	50	3
SZM06110	6 x 110	6	48	3
SZM06120	6 x 120	6	44	3
SZM08025	8 x 25	8	72	3
SZM08030	8 x 30	8	66	3
SZM08035	8 x 35	8	59	3
SZM08040	8 x 40	8	54	3
SZM08045	8 x 45	8	50	3
SZM08050	8 x 50	8	46	3
SZM08060	8 x 60	8	40	3
SZM08070	8 x 70	8	36	3
SZM08080	8 x 80	8	33	3
SZM08090	8 x 90	8	30	3
SZM08100	8 x 100	8	28	3
SZM08110	8 x 110	8	26	3
SZM08120	8 x 120	8	24	3
SZM08130	8 x 130	8	22	3
SZM08140	8 x 140	8	21	3
SZM08150	8 x 150	8	20	3
SZM10060	10 x 60	10	24	3
SZM10080	10 x 80	10	20	3
SZM10100	10 x 100	10	18	3
SZM10120	10 x 120	10	16	3
SZM10140	10 x 140	10	14	3
SZM10160	10 x 160	10	12	3
SZM10180	10 x 180	10	10	3
SZM10200	10 x 200	10	8	3
SZM12060	12 x 60	12	16	3
SZM12080	12 x 80	12	14	3
SZM12100	12 x 100	12	12	3
SZM12120	12 x 120	12	10	3
SZM12140	12 x 140	12	9	3
SZM12160	12 x 160	12	8	3
SZM12180	12 x 180	12	7	3
SMZ12200	12 x 200	12	7	3

TECHNICAL DATA

Thread size	Thread pitch	Thread length b (mm)	Nominal head diameter / length d _k (mm)	Head thickness c (mm)	Neck length / width t/a (mm)
M5	0.75	16 / 22 / 35	11/2.5	0.5	3/5
M6	1.00	18 / 24 / 37	14/3	0.6	4/6
M8	1.25	22 / 28 / 41	18/4	0.8	5/8
M10	1.50	26 / 32 / 45	23/5	1.0	6/10
M12	1.75	30 / 36 / 49	28/6	1.2	8/12

*Thread length depending on screw length is calculated according to the following formula:
L<125mm / 125mm < L < 200mm / L>200mm



Bolts and screws

SIM SOCKET BOLT

DIN 912
ISO 4762
PN 82302



APPLICATION

For joining of metal machine parts, and lap joints in sheet metal and steel.

MATERIAL

Structural non-alloyed low carbon heat treated steel.

CHARACTERISTICS

Pan head bolt with hex socket and metric thread.

TOLERANCES

- product grade: A
- thread tolerance class: 6g.

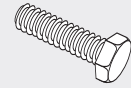
TECHNICAL DATA

Gwint	Podziałka	Thread length b (mm)	Head diameter d _k (mm)	Nominal head length k (mm)	Socket size s
M4	0.7	20	7	4	3
M5	0.8	22	8,5	5	4
M6	1.00	24	10	6	5
M8	1.25	28	13	8	6
M10	1.50	32	16	10	8
M12	1.75	38	18	12	10
M16	2.00	44	24	16	14
M20	2.50	52	30	20	17

TECHNICAL DATA

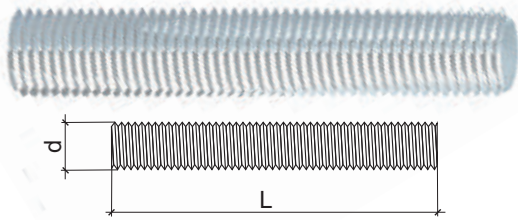
• AVAILABLE ON REQUEST

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
SIM04016	4 x 16	4	440	3
SIM04020	4 x 20	4	370	3
SIM04025	4 x 25	4	315	3
SIM04030	4 x 30	4	270	3
SIM04035	4 x 35	4	240	3
SIM04040	4 x 40	4	210	3
SIM05016	5 x 16	5	280	3
SIM05020	5 x 20	5	240	3
SIM05025	5 x 25	5	200	3
SIM05030	5 x 30	5	180	3
SIM05040	5 x 40	5	140	3
SIM05050	5 x 50	5	110	3
SIM06016	6 x 16	6	170	3
SIM06020	6 x 20	6	150	3
SIM06025	6 x 25	6	130	3
SIM06030	6 x 30	6	120	3
SIM06040	6 x 40	6	90	3
SIM06050	6 x 50	6	75	3
SIM06060	6 x 60	6	60	3
SIM08020	8 x 20	8	75	3
SIM08030	8 x 30	8	55	3
SIM08040	8 x 40	8	45	3
SIM08050	8 x 50	8	40	3
SIM08060	8 x 60	8	35	3
SIM08070	8 x 70	8	30	3
SIM08080	8 x 80	8	26	3
SIM10030	10 x 30	10	35	3
SIM10040	10 x 40	10	30	3
SIM10050	10 x 50	10	25	3
SIM10060	10 x 60	10	20	3
SIM10070	10 x 70	10	18	3
SIM10080	10 x 80	10	17	3
SIM10100	10 x 100	10	14	3
SIM12030	12 x 30	12	25	3
SIM12040	12 x 40	12	21	3
SIM12050	12 x 50	12	18	3
SIM12060	12 x 60	12	15	3
SIM12070	12 x 70	12	14	3
SIM12080	12 x 80	12	12	3
SIM12100	12 x 100	12	10	3



PGO **THREADED ROD CLASS 4.6/4.8 AND 8.8**

DIN 975



Class 4.6/4.8

Class 8.8

APPLICATION

For joining of structural metal components, fixing and supporting of system components and electrical conduits.

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042

TOLERANCES

- product grade: B
- thread tolerance class: 6g.

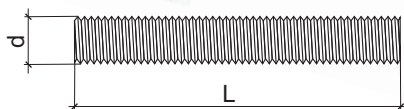
TECHNICAL DATA

Code and size Class 4.6/4.8	Class 8.8	Weight per piece [kg]
PGO / M5 x 1000	-	0.124
PGO / M6 x 1000	-	0.172
PGO / M6 x 2000	-	0.344
PGO / M8 x 1000	PGO8 / M8 x 1000	0.312
PGO / M8 x 2000	-	0.624
PGO / M10 x 1000	PGO8 / M10 x 1000	0.492
PGO / M10 x 2000	-	0.984
PGO / M12 x 1000	PGO8 / M12 x 1000	0.714
PGO / M12 x 2000	-	1.428
PGO / M14 x 1000	-	0.994
PGO / M14 x 2000	-	1.988
PGO / M16 x 1000	PGO8 / M16 x 1000	1.650
PGO / M16 x 2000	-	3.300
PGO / M18 x 1000	-	1.312
PGO / M18 x 2000	-	2.624
PGO / M20 x 1000	PGO8 / M20 x 1000	2.050
PGO / M20 x 2000	-	4.106
PGO / M24 x 1000	PGO8 / M24 x 1000	2.954
PGO / M24 x 2000	-	5.908

PGOA2 / PGOA4 **A2 AND A4 STAINLESS STEEL THREADED RODS**

DIN 975

AISI 304 (PGOA2)
AISI 316 (PGOA4)



Steel A2 **Steel A4**

APPLICATION

For joining of structural metal components, fixing and supporting of system components and electrical conduits.

MATERIAL

PGOA2 - A2 stainless steel (corrosive atmosphere)
PGOA4 - A4 acid resistant stainless steel (highly corrosive atmosphere)

MECHANICAL PROPERTIES

Property class: 50 according to PN-EN ISO 3506.

TOLERANCES

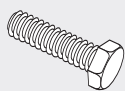
- product grade: B;
- thread tolerance class: 6g.

TECHNICAL DATA

Code and size Steel A2	Steel A4	Weight per piece [kg]	Pcs per pack
PGOA2 / M8 x 1000	PGOA4 / M8 x 1000	0.312	1
PGOA2 / M10 x 1000	PGOA4 / M10 x 1000	0.492	1
PGOA2 / M12 x 1000	PGOA4 / M12 x 1000	0.714	1
PGOA2 / M16 x 1000	PGOA4 / M16 x 1000	1.312	1
PGOA2 / M20 x 1000	PGOA4 / M20 x 1000	2.053	1
PGOA2 / M24 x 1000	PGOA4 / M24 x 1000	2.954	1

THREADED ROD RACK



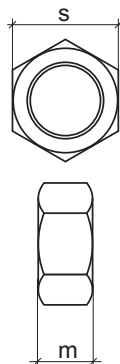


Bolts and screws

NM / NM8

HEX NUT CLASS 5 / CLASS 8

DIN 934
ISO 4032



APPLICATION

Fastener used with metric bolts.

MATERIAL

Non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.

TOLERANCES

- product grades:
 - 1) M5 to M16: A
 - 2) M20 and above: B
- thread tolerance class: 6H.

Class 5

Class 8

TECHNICAL DATA

Code and size Klasa 5	m	s	Pcs per kg (approx.)	Kg per box
NM5	4	8	936	4
NM6	5	10	470	4
NM8	6.5	13	222	4
NM10	8	17	98	4
NM12	10	19	68	3
NM14	11	22	48	3
NM16	13	24	36	3
NM20	16	30	17	3
NM24	19	36	9	3

TECHNICAL DATA

Code and size Klasa 8	m	s	Pcs per kg (approx.)	Kg per box
NM8-6	5	10	448	5
NM8-8	6.5	13	209	5
NM8-10	8	17	96	5
NM8-12	10	19	65	5
NM8-16	13	24	33	5
NM8-20	16	30	17	5

NMA2 / NMA4

A2 AND A4 STEEL HEX NUT

DIN 934
ISO 4032

AISI 304 (NMA2)
AISI 316 (NMA4)



APPLICATION

- Fastener used with metric bolts and
- NMA2: A2 stainless steel threaded rods (corrosive atmosphere)
 - NMA4: A4 acid resistant stainless steel threaded rods (highly corrosive atmosphere)

MATERIAL

A2 stainless steel / A4 acid resistant stainless steel.

Steel A2

Steel A4

TOLERANCES

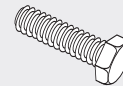
- product grades:
 - 1) M5 to M16: A
 - 2) M20 and above: B
- thread tolerance class: 6H.

MECHANICAL PROPERTIES:

Property class: 50 according to PN-EN ISO 3506-2.

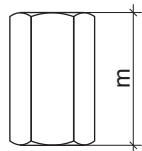
TECHNICAL DATA

Code and size STEEL A2	STEEL A4	m	s	Pcs per box
NMA2-8	NMA4-8	6.5	13	500
NMA2-10	NMA4-10	8	17	200
NMA2-12	NMA4-12	10	19	200
NMA2-16	NMA4-16	13	24	100
NMA2-20	NMA4-20	16	30	100
NMA2-24	NMA4-24	19	36	50



ZN LONG HEX NUT

DIN 6334



TECHNICAL DATA

Code and size	Thread diameter M (mm)	Thread diameter (mm)	Pcs per pack
ZN 06025	6	18	100
ZN 08025	8	25	50
ZN 10030	10	30	50
ZN 12040	12	36	50
ZN 16050	16	50	25

APPLICATION

Class 5

For joining of threaded metal elements.

MATERIAL

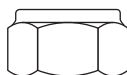
Non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.

TOLERANCES

- product grade: A
- thread tolerance class: 6H.

NMS HEX SELF-LOCKING NUT

**DIN 985
ISO 10511
PN 82175**



PACKAGING

Code and size	Pcs per kg (approx.)	Kg per box
NMS 5	909	3
NMS 6	476	3
NMS 8	213	3
NMS 10	91	3
NMS 12	64	3
NMS 14	43	3
NMS 16	32	3

APPLICATION

Class 8

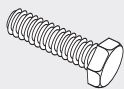
Fastener used with metric bolts

MATERIAL

Non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.

TOLERANCES

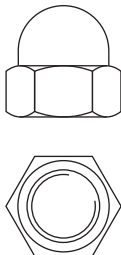
- product grade: B
- thread tolerance class: 6H.



Bolts and screws

NMK ACORN NUT

DIN 1587
PN 82181



TOLERANCES

- product grade: B
- thread tolerance class: 6H.

PACKAGING

Code and size	Pcs per kg (approx.)	Kg per box
NMK 6	216	3
NMK 8	87	3
NMK 10	50	3
NMK 12	35	3
NMK 16	18	3

APPLICATION

Fastener used with metric bolts.

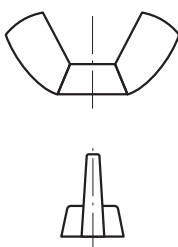
Class 6

MATERIAL

Non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.

NMM WING NUT

DIN 315
PN 82439



TOLERANCES

- product grade: B
- thread tolerance class: 6H.

PACKAGING

Code and size	Pcs per kg (approx.)	Kg per box
NMM 5	216	3
NMM 6	87	3
NMM 8	50	3
NMM 10	35	3
NMM 12	18	3

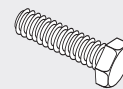
APPLICATION

Fastener used with metric bolts.

Class 5

MATERIAL

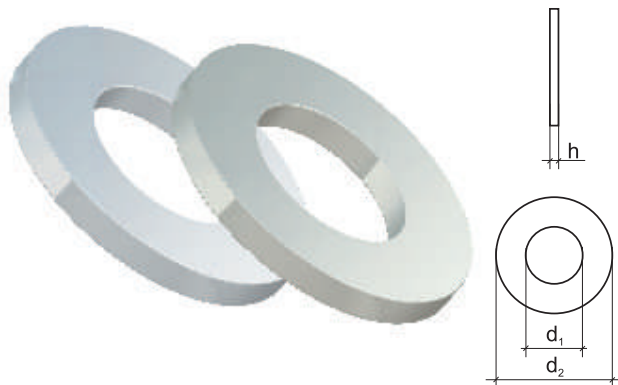
Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.



PON / PONA2 / PONA4 STANDARD FLAT WASHERS, A2 AND A4 STEEL FLAT WASHERS

**DIN 125A
ISO 7089**

**AISI 304 (PONA2)
AISI 316 (PONA4)**



APPLICATION

200HV washers for use with:

- A and B grade bolts, strength class up to 8.8 inclusive,
- A and B grade hex nuts, strength class up to 8,
- hardened bolts.

MATERIAL

PON - Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.

PONA2 - A2 stainless steel (corrosive atmosphere).

PONA4 - A4 acid resistant stainless steel (highly corrosive atmosphere).

Steel A2 Steel A4

MECHANICAL PROPERTIES

Washer hardness class: 200HV.

TOLERANCES

Product grade: A according to EN ISO 4759-3.

TECHNICAL DATA

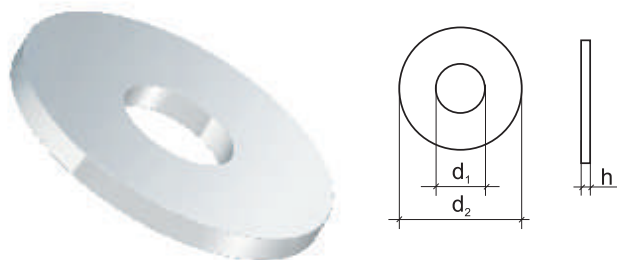
Code and size	Inner / Outer diameter d ₁ /d ₂ (mm)	Thickness h (mm)	Pcs per kg (approx.)	Kg per box
PON5	5.3/10	1.0	2430	4
PON6	6.4/12	1.6	1240	4
PON8	8.4/16	1.6	628	4
PON10	10.5/20	2.0	326	4
PON12	13.0/24	2.5	176	4
PON14	15.0/28	2.5	126	4
PON16	17.0/30	3.0	100	4
PON20	21.0/37	3.0	50	4

TECHNICAL DATA

Code and size	Inner / Outer diameter d ₁ /d ₂ (mm)	Thickness h (mm)	Pcs per kg (approx.)
PON8A2 / PON8A4	8.4/16	1.6	500
PON10A2 / PON10A4	10.5/20	2.0	500
PON12A2 / PON12A4	13.0/24	2.5	200
PON16A2 / PON16A4	17.0/30	3.0	100
PON20A2 / PON20A4	21.0/37	3.0	100
PON24A2 / PON24A4	25.0/44	4.0	100

POD WIDE FLAT WASHERS

**DIN 9021A
ISO 7093-1**



APPLICATION

200HV washers for use with A and B grade bolts, strength class up to 8.8 inclusive, A and B grade hex nuts, strength class up to 8, and hardened bolts.

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment.

MECHANICAL PROPERTIES

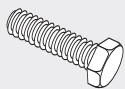
Washer hardness class: 200HV.

TOLERANCES

Product grade: A according to EN ISO 4759-1.

TECHNICAL DATA

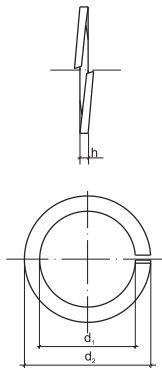
Code and size	Inner diameter d ₁ (mm)	Outer diameter d ₂ (mm)	Thickness h (mm)	Pcs per kg (approx.)	Kg per box
POD 5	5.3	15.0	1.0	684	4
POD 6	6.4	18.0	1.6	358	4
POD 8	8.4	24.0	2.0	160	4
POD 10	10.5	30.0	2.5	82	4
POD 12	13.0	37.0	3.0	45	4
POD 14	15.0	44.0	3.0	32	4
POD 16	17.0	50.0	3.0	24	4
POD 20	21.0	60.0	4.0	13	4
POD 24	25.0	70.0	4.0	7	4



Bolts and screws

POS SPRING WASHERS

DIN 127
PN 82008



MECHANICAL PROPERTIES

Washer hardness class: 200HV.

TOLERANCES

A, according to EN ISO 4759-3.

TECHNICAL DATA

Code and size	Inner diameter d_1 (mm)	Outer diameter d_2 (mm)	Thickness h (mm)	Pcs per kg (approx.)	Kg per box
POS 5	5.3	10.0	1.0	2777	3
POS 6	6.4	12.0	1.6	1205	3
POS 8	8.4	16.0	1.6	625	3
POS 10	10.5	20.0	2.0	395	3
POS 12	13.0	24.0	2.5	262	3
POS 14	15.0	28.0	2.5	166	3
POS 16	17.0	30.0	3.0	112	3
POS 20	21.0	37.0	3.0	66	3

APPLICATION

200HV washers for use with:

- A and B grade bolts, strength class up to 8.8 inclusive,
- A and B grade hex nuts, strength class up to 8,
- hardened bolts.

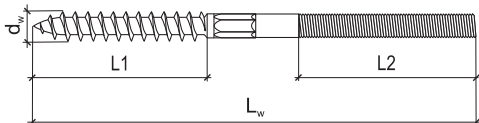
MATERIAL

Structural low carbon steel.

WD HANGER BOLT



Technical Approval
AT-06-0835/2005 + ANNEX



TECHNICAL DATA

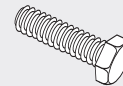
Code and size	Bolt diameter and length $d_w \times L_w$ (mm)	Wood thread length $L1$ (mm)	Metric thread length $L2$ (mm)	Pcs per pack
WD-08080	8.0 x 80	37	30	100
WD-08100	8.0 x 100	50	30	100
WD-08120	8.0 x 120	60	35	100
WD-08140	8.0 x 140	47	50	50
WD-08160	8.0 x 160	47	50	50
WD-08180	8.0 x 180	60	50	50
WD-08220	8.0 x 220	60	50	100
WD-08250	8.0 x 250	60	50	100
WD-10100	10.0 x 100	45	40	50
WD-10120	10.0 x 120	55	40	50
WD-10140	10.0 x 140	80	35	50
WD-10160	10.0 x 160	55	50	25
WD-10180	10.0 x 180	55	50	25

APPLICATION

For use with plugs as expansion pin and for joining of two components.

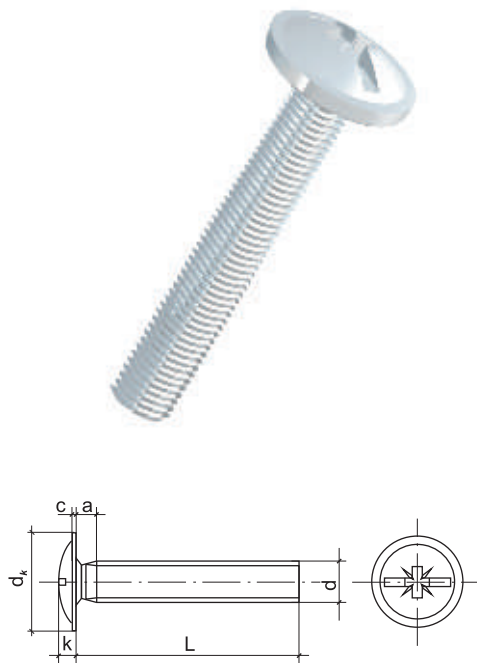
MATERIAL

Non-alloyed low carbon steel, silver zinc-plated.



WPM CROSS RECESS BOLT WITH COLLAR

DIN 967



CHARACTERISTICS

Round head bolt with collar and combination slot-cross recess (PZ-2 drive or flat head screwdriver).

TECHNICAL DATA

Thread size	Thread pitch	Non-threaded length a (mm)	Head diameter d _k (mm)	Nominal head length k (mm)	Collar thickness c (mm)
M4	0.7	1.4	10	3.05	1.1

TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Pcs per pack
WPM 4.0 x 16	4 x 16	4	522	1000
WPM 4.0 x 20	4 x 20	4	454	1000
WPM 4.0 x 25	4 x 25	4	388	500
WPM 4.0 x 30	4 x 30	4	333	500
WPM 4.0 x 35	4 x 35	4	295	500
WPM 4.0 x 40	4 x 40	4	267	300
WPM 4.0 x 45	4 x 45	4	242	300

APPLICATION

Class 4.8

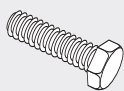
For joining of lightweight metal structures and metal to wood fixings.

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

TOLERANCES

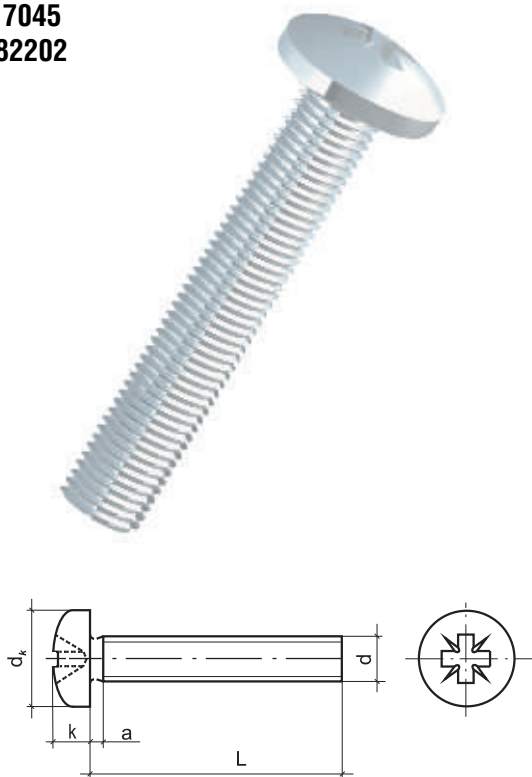
- product grade: A
- thread tolerance class: 6g.



Bolts and screws

WWM PAN HEAD PHILLIPS METRIC BOLT

DIN 7985
ISO 7045
PN 82202



TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
WWM 4 x 16	4 x 16	4	465	3
WWM 4 x 20	4 x 20	4	407	3
WWM 4 x 25	4 x 25	4	351	3
WWM 4 x 30	4 x 30	4	310	3
WWM 4 x 35	4 x 35	4	276	3
WWM 4 x 40	4 x 40	4	249	3
WWM 5 x 16	5 x 16	5	281	3
WWM 5 x 20	5 x 20	5	247	3
WWM 5 x 25	5 x 25	5	214	3
WWM 5 x 30	5 x 30	5	189	3
WWM 5 x 35	5 x 35	5	169	3
WWM 5 x 40	5 x 40	5	153	3
WWM 5 x 45	5 x 45	5	140	3
WWM 6 x 16	6 x 16	6	172	3
WWM 6 x 20	6 x 20	6	154	3
WWM 6 x 25	6 x 25	6	136	3
WWM 6 x 30	6 x 30	6	121	3
WWM 6 x 35	6 x 35	6	100	3
WWM 6 x 40	6 x 40	6	110	3
WWM 6 x 45	6 x 45	6	92	3
WWM 6 x 50	6 x 50	6	85	3
WWM 6 x 60	6 x 60	6	74	3

APPLICATION

For joining of lightweight metal structures and metal to wood fixings.

Class 4.8

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

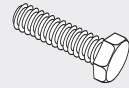
Pan head bolt with cross recess and metric full thread.

TOLERANCES

- product grade: A
- thread tolerance class: 6g.

TECHNICAL DATA

Thread size	Thread pitch	Non-threaded length a (mm)	Head diameter d _k (mm)	Nominal head length k (mm)	Cross recess type
M4	0.7	1.4	8.0	3.1	PZ-2
M5	0.8	1.6	9.5	3.7	PZ-2
M6	1.00	2.0	12.0	4.6	PZ-3



WSM COUNTERSUNK HEAD PHILLIPS BOLT

**DIN 965
ISO 7046-1
PN 82208**



TECHNICAL DATA

Code and size	Bolt diameter and length d x L (mm)	Thread size M	Pcs per kg (approx.)	Kg per box
WSM 4 x 16	4 x 16	4	595	3
WSM 4 x 20	4 x 20	4	500	3
WSM 4 x 25	4 x 25	4	418	3
WSM 4 x 30	4 x 30	4	360	3
WSM 4 x 35	4 x 35	4	315	3
WSM 4 x 40	4 x 40	4	281	3
WSM 5 x 16	5 x 16	5	410	3
WSM 5 x 20	5 x 20	5	342	3
WSM 5 x 25	5 x 25	5	284	3
WSM 5 x 30	5 x 30	5	243	3
WSM 5 x 35	5 x 35	5	212	3
WSM 5 x 40	5 x 40	5	188	3
WSM 5 x 45	5 x 45	5	169	3
WSM 5 x 50	5 x 50	5	150	3
WSM 6 x 20	6 x 20	6	223	3
WSM 6 x 25	6 x 25	6	187	3
WSM 6 x 30	6 x 30	6	161	3
WSM 6 x 35	6 x 35	6	141	3
WSM 6 x 40	6 x 40	6	125	3
WSM 6 x 45	6 x 45	6	113	3
WSM 6 x 50	6 x 50	6	103	3
WSM 6 x 60	6 x 60	6	87	3

TRAY DISPLAY UNIT FOR SCREWS

APPLICATION

Class 4.8

For joining of lightweight metal structures and metal to wood fixings.

MATERIAL

Structural non-alloyed low carbon steel, zinc electroplated according to PN-EN ISO 4042, gloss finish, white passivation by chromate treatment Cr III.

CHARACTERISTICS

Countersunk head bolt with Pozidriv recess and metric full thread.

TOLERANCES

- product grade: A
- thread tolerance class: 6g.

TECHNICAL DATA

Thread size	Thread pitch	Non-threaded length a (mm)	Head diameter d _k (mm)	Nominal head length k (mm)	Cross recess type
M4	0.7	1.4	8.4	2.7	PZ-2
M5	0.8	1.6	9.3	2.7	PZ-2
M6	1.00	2.0	11.3	3.3	PZ-3

