

MAX METAL™



**PRODUCT
CATALOGUE**



About Us

Max Metal Ltd. is focused on the trading and distribution of special steel products in the mechanical and hydraulic industries. Over the years the company has proven to be a reliable and long-term partner.

Max Metal Ltd. was founded in 2007 by Dipl. Eng. Nikolay Alexandrov Tsachev. The focus of the company is the trade and distribution of precision steel tubes and hard chrome-plated bars, which are necessary for the production of hydraulic cylinders. The company is also involved in the supply of seamless hot-rolled steel tubes required for the energy industry in Bulgaria.

Max Metal Ltd. is a loyal and reliable partner and thanks to this is the market leader in Bulgaria for special steel products.

The company has its own warehouse located in the town of Plovdiv and maintains a stock of about 5.000 tons of steel products.





Our advantages

Max Metal Ltd's focus is to supply the highest quality steel products required for the manufacture of hydraulic cylinders. Thanks to our team of professionals and our long-term partners, we guarantee the execution of orders according to the required technical specifications and agreed delivery time.

Our warehouse in Plovdiv provides us with the necessary space and capacity to stock products for quick responses and deliveries to the customer within a few days. In this way, we are able to optimize the stock and cash flow of our customers. Max Metal Ltd also offers cutting of tubes and bars to customer specification. Our equipment is of the highest class - Japanese metal cutting machines AMADA.

The company offers the full range of precision tubes, chrome plated bars, hot-rolled tubes, hot-rolled steel bars and cast iron bars, necessary for the production of hydraulic cylinders.

In addition, Max Metal is also supplying the full range of seamless hot-rolled boiler tubes and seamless hot rolled tubes for mechanical processing.

Max Metal Distribution Center - Plovdiv

In 2017, Max Metal Ltd. made a strategic decision to build its own, all-new Distribution Center located in Plovdiv.

The Distribution Center has been fully operational since 2018 and has 2 warehouses with a total build in area of 5.000 sq.m. and a 3-story office building.

All products offered by Max Metal Ltd. are stored properly, in a covered area, without risk of corrosion.

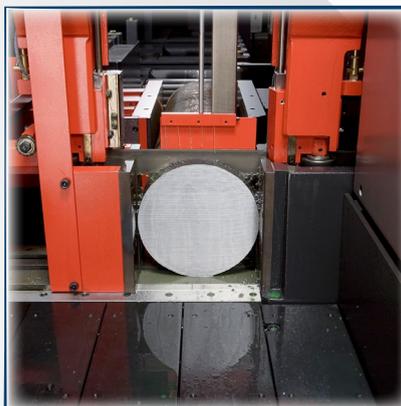
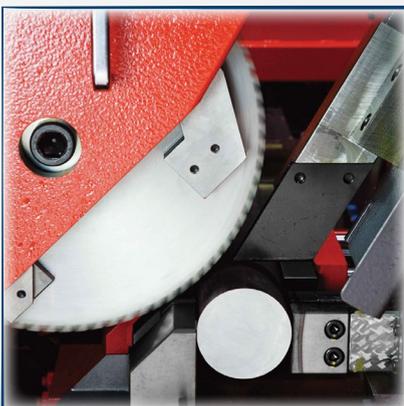
Max Metal is offering to the customers cut to length bars and tubes, acc. to customers' specification. We are equipped with Japanese AMADA cutting machines:

AMADA Circular Saw CMB 150 - cutting up to 150mm

AMADA DYNASAW 530 - cutting up to 530mm

AMADA PCSAW 330 - cutting up to 330mm

AMADA HFA 400 - cutting up to 400mm



Precision, Cold Drawn Seamless H8 Tubes

OD	ID	WT	KG/M	OD	ID	WT	KG/M
60	50	5	6,78	105	80	12,5	28,51
65	50	7,5	10,64	110	80	15	35,14
70	50	10	14,8	95,25	82,55	6,35	13,92
80	50	15	24,04	95	85	5	11,1
63,5	50,8	6,35	8,95	97	85	6	13,47
70	60	5	8,01	100	85	7,5	17,11
72	60	6	9,77	105	85	10	23,43
75	60	7,5	12,48	110	85	12,5	30,06
80	60	10	17,26	101,6	88,9	6,35	14,92
85	60	12,5	22,35	100	90	5	11,71
73	63	5	8,38	102	90	6	14,21
75	63	6	10,21	110	90	10	24,66
78	63	7,5	13,04	120	90	15	38,84
83	63	10	18	105	90	7,5	18,03
76,2	63,5	6,35	10,94	110	100	5	12,95
80	63	8,5	14,99	115	100	7,5	19,88
75	65	5	8,63	120	100	10	27,13
80	65	7,5	13,41	125	100	12,5	34,68
95	65	15	29,59	130	100	15	42,54
80	70	5	9,25	140,00	100,00	20,00	59,19
82	70	6	11,25	114,30	101,60	6,35	16,91
85	70	7,5	14,33	120	105	7,5	20,81
90	70	10	19,73	125	105	10	28,36
100	70	15	31,44	130	105	12,5	36,22
85	75	5	9,86	135	105	15	44,39
87	75	6	11,99	125	110	7,5	21,73
90	75	7,5	15,26	130	110	10	29,59
95	75	10	20,96	135	110	12,5	37,76
105	75	15	33,29	140	110	15	46,24
88,9	76,2	6,35	12,93	127	114,3	6,35	18,89
90	80	5	10,48	130	115	7,5	22,66
92	80	6	12,73	135	115	10	30,83
95	80	7,5	16,18	140	115	12,5	39,30
100	80	10	22,2	145	115	15	48,09



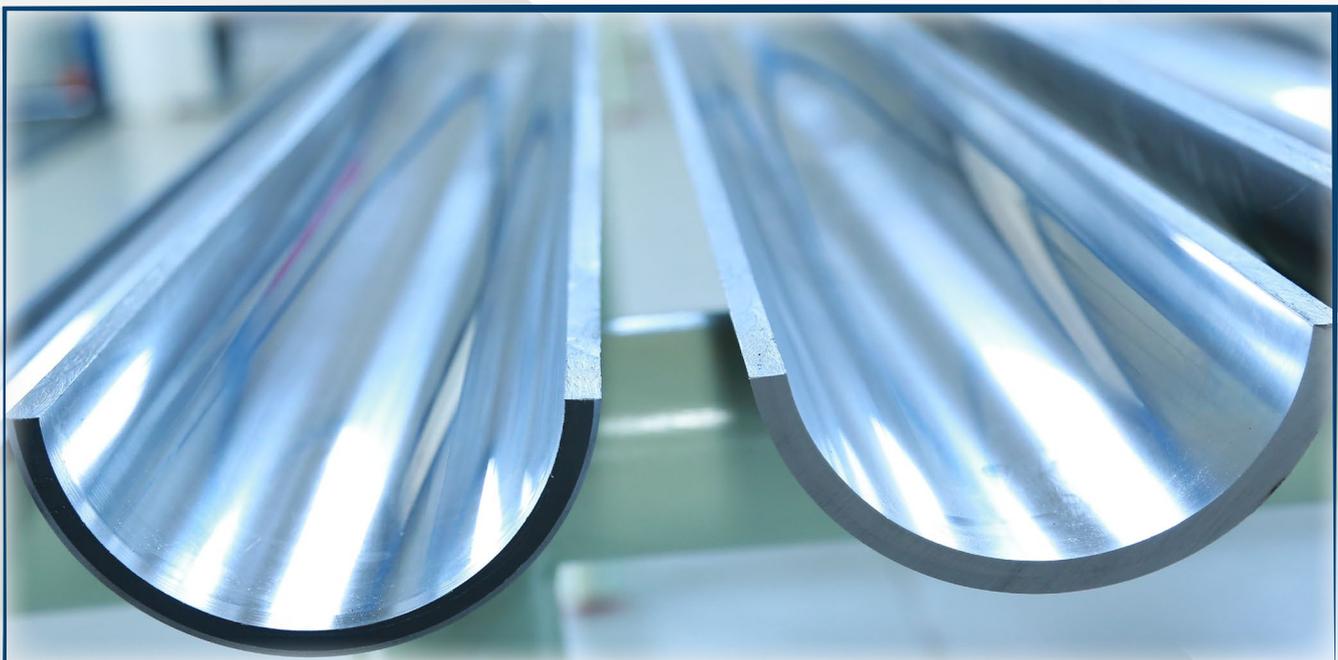
Precision, Cold Drawn Seamless H8 Tubes

OD	ID	WT	KG/M
135	120	7,5	23,58
140	120	10	32,06
145	120	12,5	40,85
150	120	15	49,94
140	125	7,5	24,51
145	125	10	33,29
150	125	12,5	42,39
160	125	17,5	61,50
139,7	127	6,35	20,88
150	130	10	34,53
155	130	12,5	43,93
160	130	15	53,64
150	135	7,5	26,36
160	135	12,5	45,47
160	140	10	36,99
165	140	12,5	47,01
170	140	15	57,34
175	140	17,5	67,97
180	140	20	78,92
175	147	14,09	55,91
180	147	16,59	66,86
165	150	7,5	29,13
170	150	10	39,46
175	150	12,5	50,09
180	150	15	61,04
181	150	15,5	63,26
180	160	10	41,92
185	160	12,5	53,18
190	160	15	64,74
195	160	17,5	76,60
200	160	20	88,78
185	165	10	43,16
190	165	12,5	54,72
193,7	165	14,35	63,47

OD	ID	WT	KG/M
195	165	15	66,59
200	165	17,5	78,76
205	165	20	91,25
190	170	10	44,39
195	170	12,5	56,26
200	170	15	68,44
200	180	10	46,86
205	180	12,5	59,34
210	180	15	72,13

Steel Grade	E355+SR
Product Standard	EN 10305-1
ID Tolerance	H8
Eccentricity	max. 5%
Straightness	max. 0,5mm / 1.000mm
Roughness	Ra = max. 0,3 µm
Length of tubes	L = 5.000mm – 7.000mm
Protection of tubes	Tubes are oiled on the ID and OD against corrosion

C% max	Mn% max	Si% max	P% max	S% max	N% max
0,22	1,6	0,55	0,025	0,02	0,009



Precision, Welded Cold Drawn H9 Tubes

OD	ID	WT	KG/M
30	20	5	3,08
35	25	5	3,70
40	30	5	4,32
42	32	5	4,56
45	35	5	4,93
50	40	5	5,55
55	45	5	6,17
60	50	5	6,78
65	50	7,5	10,64
65	55	5	7,40
70	60	5	8,02
73	63	5	8,39
75	63	6	10,21
75	65	5	8,63
80	65	7,5	13,41
80	70	5	9,25

OD	ID	WT	KG/M
82	70	6	11,25
85	70	7,5	14,34
85	75	5	9,87
90	75	7,5	15,26
90	80	5	10,48
92	80	6	12,73
95	80	7,5	16,19
100	85	7,5	17,11
100	90	5	11,72
102	88	7	16,41
102	90	6	14,21
105	90	7,5	18,04
110	95	7,5	18,97
110	100	5	12,95
115	100	7,5	19,89
125	110	7,5	21,74

Steel Grade	E355+C
Product Standard	EN 10305-2
ID Tolerance	H9
Eccentricity	max. 3%
Straightness	max. 1mm / 1.000mm
Length of tubes	L = 5.000mm – 7.000mm
Protection of tubes	Tubes are oiled on the ID and OD against corrosion
Quality Control	100% SEP 1925 EDDY CURRENT 100% SEP 1915 U.S., acc. EN 10893-10

Steel Grade	E355
No. Material	1.0580
C% max.	0,22
Si% max.	0,55
Mn% max	1,6
S% max.	0,025
P% max.	0,025
Al% max.	0,02

Hard Chrome Plasted Bars

Hard Chrome Plated Bars	Steel Grades: C45E, 20MnV6, 42CrMo4
Induction hardened and hard chrome plated bars	Steel Grade: C45E, 20MnV6, 42CrMo4
Dimension Range	∅6mm – ∅160mm
Diameter Tolerance	ISO f7
Roughness	Ra = max. 0,20 µm
Standard chrome layer	< ∅20mm – min.15 µm > ∅20mm – min.20 µm
Chrome layer hardness	Min.900HV0,1
Straightness	< ∅16mm – max. 0,3mm / 1.000mm > ∅16mm – max. 0,2mm / 1.000mm
Corrosion Resistance	Rating: 9-10 / 200h NSS, acc. ISO 10289

Chemical Composition										
Steel Grade	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	V %	N %
C45E	0,42-0,5	max. 0,4	0,5-0,8	max. 0,03	max. 0,035	max. 0,4	max. 0,1	max. 0,4	-	-
20MnV6	0,16-0,22	0,1-0,5	1,3-1,7	max. 0,035	max. 0,035	-	-	-	0,1-0,2	-
42CrMo4	0,38-0,45	max. 0,4	0,6-0,9	max. 0,025	max. 0,035	0,9-1,2	0,15-0,3	-	-	-



Chrome Plated Products

- Chrome plated bars, steel grade C45
- Induction hardened chrome plated bars, steel grade C45
- Chrome plated bars, steel grade 20MnV6
- Induction hardened chrome plated bars, steel grade 20MnV6
- Chrome plated bars, steel grade 42CrMo4
- Induction hardened chrome plated bars, steel grade 42Cr-Mo4
- Chrome plated tubes, steel grade E355+SR, acc. EN10305-1

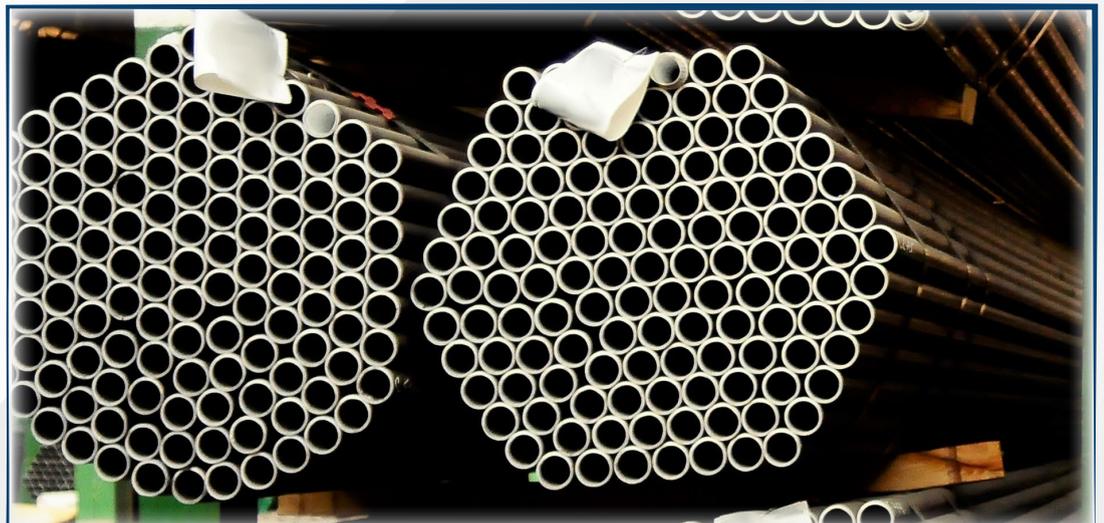
Seamless Hot-rolled Steel Tubes																								
WT mm	2,3	2,6	2,77	2,87	2,9	3,2	3,6	3,91	4	4,5	5	5,5	6,02	6,3	7,1	7,62	8	8,56	8,8	9,5	10	11	11,13	
OD mm	Specific weight, kg/m																							
21,3	1,08	1,20	1,27	1,30	1,32	1,43	1,57																	
26,7	1,38	1,55	1,64	1,69	1,70	1,86	2,05	2,20																
26,9	1,40	1,56	1,65	1,70	1,72	1,87	2,07	2,22																
30		1,76	1,86	1,92	1,94	2,12	2,34	2,52	2,57															
31,8		1,87	1,98	2,05	2,07	2,26	2,50	2,69	2,74	3,03														
33,4		1,98	2,09	2,16	2,18	2,38	2,65	2,84	2,90	3,21														
33,7		1,99	2,11	2,18	2,20	2,41	2,67	2,87	2,93	3,24														
38		2,27	2,41	2,49	2,51	2,75	3,06	3,29	3,36	3,72	4,07													
42,2		2,54	2,69	2,78	2,81	3,08	3,43	3,69	3,77	4,19	4,59	4,98												
42,4		2,55	2,71	2,80	2,83	3,09	3,45	3,71	3,79	4,21	4,61	5,01												
48,3		2,93	3,11	3,22	3,25	3,56	3,97	4,28	4,37	4,86	5,34	5,81	6,28	6,53										
51		3,10	3,30	3,41	3,44	3,77	4,21	4,54	4,64	5,16	5,67	6,17	6,68	6,95	7,69									
54					3,66	4,01	4,48	4,83	4,93	5,50	6,04	6,58	7,13	7,41	8,21									
57					3,87	4,25	4,74	5,12	5,23	5,83	6,41	6,99	7,57	7,88	8,74									
60,3					4,11	4,51	5,04	5,44	5,56	6,19	6,82	7,44	8,06	8,39	9,32	9,90	10,32	10,93	11,18					
63,5					4,34	4,76	5,32	5,75	5,87	6,55	7,22	7,87	8,54	8,89	9,88	10,50	10,95	11,60	11,88	12,66				
70					4,80	5,27	5,90	6,38	6,51	7,27	8,02	8,75	9,50	9,90	11,02	11,73	12,24	12,97	13,29	14,18	14,80			
73					5,02	5,51	6,16	6,66	6,81	7,60	8,39	9,16	9,95	10,37	11,54	12,29	12,83	13,61	13,94	14,88	15,54			
76,1					5,24	5,76	6,44	6,96	7,11	7,95	8,77	9,58	10,41	10,85	12,09	12,87	13,44	14,26	14,61	15,61	16,31			
82,5						6,26	7,01	7,58	7,75	8,66	9,56	10,45	11,36	11,84	13,21	14,08	14,70	15,61	16,00	17,11	17,89	19,40		
88,9						6,77	7,58	8,20	8,38	9,37	10,35	11,32	12,31	12,84	14,33	15,28	15,97	16,97	17,39	18,61	19,46	21,14	21,35	
95						7,25	8,12	8,79	8,98	10,05	11,10	12,14	13,21	13,79	15,40	16,43	17,17	18,25	18,71	20,04	20,97	22,80	23,03	
101,6						7,77	8,70	9,42	9,63	10,78	11,92	13,04	14,19	14,81	16,55	17,67	18,47	19,65	20,15	21,59	22,60	24,59	24,84	
108						8,27	9,27	10,04	10,26	11,49	12,71	13,91	15,15	15,81	17,67	18,87	19,74	21,00	21,54	23,08	24,18	26,32	26,60	
114,3						8,77	9,83	10,65	10,88	12,19	13,48	14,76	16,08	16,79	18,78	20,05	20,98	22,33	22,90	24,56	25,73	28,03	28,33	
121															17,83	19,95	21,31	22,30	23,74	24,36	26,13	27,38	29,85	30,17

Seamless Hot-rolled Steel Tubes for work under high pressure and temperatures

Standard	Steel Grades
EN 10216-1	P235TR1 P235TR2
EN 10216-2	P235GH1C1 P265GH1C1
EN 10210-1	S235JRH S355J2H
Mill Test Certificate	EN 10204 / 3.1
Length of tubes	6.000mm – 12.000mm

Seamless Hot-rolled Tubes

- Seamless tubes, steel grade S355J2H, acc. EN10210-1,2
- Seamless tubes, steel grade E470, acc. EN10294-1
- Seamless Boiler tubes, steel grade P265GH1C/P235GH1C, acc. EN10216-1
- Seamless tubes, steel grade P265TR/P235TR, acc. EN10216-2



Seamless Hot-rolled Steel Tubes																								
WT	6,3	7,1	8	8,8	10	11	12,5	14,2	16	17,5	20	22,2	25	28	30	32	35	36	40	45	50	55	60	
OD mm	Specific weight, kg/m																							
60,3					12,41	13,38	14,74	16,15	17,49															
63,5					13,20	14,25	15,73	17,27	18,75	19,86														
70					14,80	16,01	17,73	19,55	21,31	22,67	24,67													
73					15,54	16,82	18,66	20,60	22,50	23,96	26,15													
76,1					16,31	17,67	19,61	21,68	23,72	25,30	27,68													
82,5					17,89	19,40	21,59	23,93	26,25	28,06	30,84	33,02	35,46											
88,9					19,46	21,14	23,56	26,17	28,78	30,83	34,00	36,53	39,41											
95					20,97	22,80	25,44	28,31	31,18	33,46	37,01	39,87	43,17											
101,6					22,60	24,59	27,48	30,62	33,79	36,31	40,26	43,49	47,24											
108					24,18	26,32	29,45	32,86	36,31	39,07	43,42	46,99	51,19	55,26	57,73									
114,3					25,73	28,03	31,39	35,07	38,80	41,79	46,53	50,44	55,08	59,61	62,39	64,97								
121	17,83	19,95	22,30	24,36	27,38	29,85	33,46	37,41	41,45	44,68	49,83	54,11	59,21	64,24	67,35	70,26	74,26	75,49						
127	18,76	21,00	23,49	25,66	28,86	31,48	35,31	39,52	43,81	47,27	52,79	57,40	62,91	68,39	71,79	75,00	79,44	80,82						
133	19,69	22,05	24,67	26,96	30,34	33,11	37,16	41,62	46,18	49,86	55,75	60,68	66,61	72,53	76,23	79,73	84,62	86,15						
139,7	20,73	23,23	25,99	28,42	32,00	34,93	39,23	43,96	48,83	52,76	59,06	64,35	70,74	77,16	81,19	85,02	90,40	92,10	98,38					
146	21,71	24,33	27,24	29,79	33,55	36,63	41,17	46,17	51,31	55,48	62,17	67,80	74,63	81,51	85,85	90,00	95,84	97,69	104,60					
152,4	22,71	25,45	28,50	31,17	35,13	38,37	43,14	48,41	53,84	58,24	65,33	71,31	78,57	85,93	90,59	95,05	101,37	103,38	110,92					
159	23,73	26,61	29,80	32,61	36,76	40,16	45,18	50,73	56,44	61,09	68,58	74,92	82,64	90,49	95,47	100,26	107,07	109,24	117,43	126,56				
165,1	24,68	27,67	31,01	33,93	38,26	41,82	47,06	52,86	58,85	63,72	71,59	78,26	86,41	94,70	99,99	105,07	112,33	114,66	123,45	133,33				
168,3		28,24	31,64	34,63	39,05	42,69	48,04	53,98	60,12	65,10	73,17	80,02	88,38	96,91	102,36	107,60	115,10	117,50	126,61	136,88				
177,8		29,90	33,51	36,69	41,40	45,26	50,97	57,31	63,87	69,21	77,86	85,22	94,24	103,48	109,39	115,10	123,30	125,94	135,98	147,43	157,64			
193,7			36,65	40,14	45,32	49,58	55,88	62,88	70,14	76,07	85,70	93,93	104,05	114,46	121,15	127,65	137,03	140,06	151,67	165,08	177,25	188,20		
203			38,49	42,16	47,61	52,10	58,75	66,14	73,81	80,08	90,29	99,02	109,78	120,88	128,04	134,99	145,06	148,32	160,85	175,40	188,73	200,81		
216			41,05	44,98	50,82	55,63	62,75	70,69	78,94	85,70	96,71	106,14	117,80	129,86	137,66	145,26	156,28	159,86	173,68	189,84	204,76	218,45	230,91	
219,1			41,66	45,66	51,58	56,47	63,71	71,78	80,17	87,04	98,24	107,84	119,71	132,00	139,95	147,70	158,96	162,61	176,74	193,28	208,58	222,66	235,50	
224											100,65	110,52	122,73	135,39	143,58	151,57	163,19	166,97	181,57	198,72	214,63	229,31	242,75	
229											103,12	113,26	125,82	138,84	147,28	155,52	167,51	171,41	186,51	204,27	220,80	236,09	250,15	
244,5											110,77	121,75	135,38	149,55	158,75	167,76	180,89	185,17	201,80	221,47	239,92	257,12	273,10	

Seamless Hot-rolled Steel Tubes for work under high pressure and temperatures & tubes for mechanical processing

Standard	Steel Grades
EN 10216-1	P235TR1 P235TR2
EN 10216-2	P235GHTC1 P265GHTC1
EN 10210-1	S235JRH S355J2H
Mill Test Certificate	EN 10204 / 3.1
Length of tubes	4.000mm - 11.000mm

Seamless Hot-rolled Tubes

- Seamless tubes, steel grade S355J2H, acc. EN10210-1,2
- Seamless tubes, steel grade E470, acc. EN10294-1
- Seamless Boiler tubes, steel grade P265GHTC/P235GHTC, acc. EN10216-1
- Seamless tubes, steel grade P265TR/P235TR, acc. EN10216-2



HPZ Tubes

The tubes for mechanical machining – also known as HPZ Tubes are precision cold drawn seamless or welded tubes suitable for skiving and roller burnishing.

The tubes are used for the production of hydraulic cylinders.

We at Max Metal can offer in both variants HPZ Tubes;

Welded or Seamless tubes:

Steel Grades	E355+SR 20MnV6 (+QT) E460+SR
Product Standard	EN 10305-1 EN 10305-2
Straightness	Max 0,5mm/1.000mm
Tolerances	According to customer specification
Protection of tubes	Tubes are oiled on the ID and OD against corrosion
Length of tubes	Commercial or fix lenght
Mill test report/ Certificate	Mill test report comply with EN10204/ Inspection certificate 3.1

*We can deliver other steel grades, according to customer specification.

Dimension Range for Welded HPZ Tubes:

OUTER DIAMETER (OD)	from 30 mm up to 160 mm
WALL THICKNESS (WT)	from 1 mm up to 12 mm
PRODUCT STANDARD	EN 10305-2

Dimension Range for Seamless HPZ Tubes:

OUTER DIAMETER (OD)	from 30 mm up to 250 mm
WALL THICKNESS (WT)	from 5 mm up to 30 mm
PRODUCT STANDARD	EN 10305-1



Tubes for hydraulic and pneumatic lines – HPL

The HPL Tubes are seamless cold-drawn precision steel tubes mainly used as pressure lines in hydraulically or pneumatically operated systems.

The dimensions and requirements of the tubes on this catalogue are aligned with EN 10305-4 "Seamless cold-drawn tubes for hydraulic and pneumatic power systems".

Our HPL Tubes are normalized (+N), not phosphated and oiled on the ID and OD. The tubes come with plastic caps on both ends.

Dimension Range for HPL Tubes

OUTER DIAMETER (OD)	from 6 mm up to 42 mm
WALL THICKNESS (WT)	from 1 mm up to 5 mm
PRODUCT STANDARDS	EN 10305-4

Steel Grade					
	C %	Si %	Mn %	P %	S %
E235	≤ 0.17	≤ 0.35	≤ 1.20	≤ 0.025	≤ 0.015

Mechanical properties at room temperature*

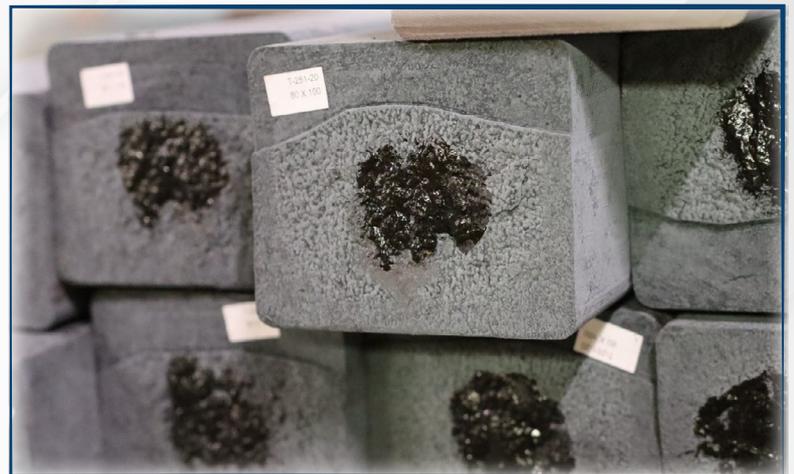
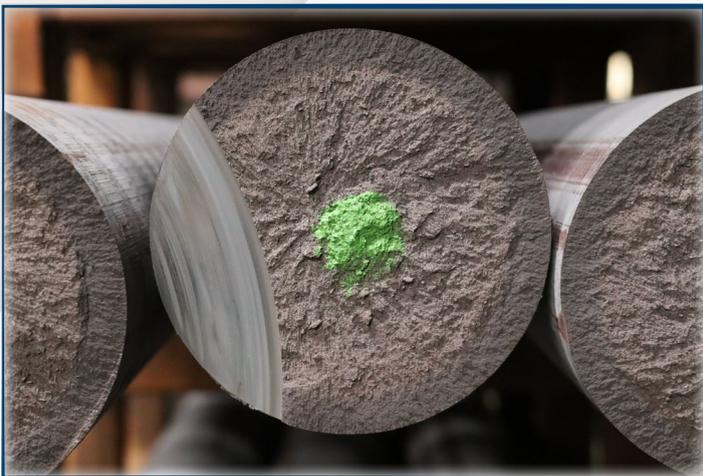
Steel grade	Tensile strength	Yield strength	Elongation
	RmMPa	ReH MPa min	A% min
E235	340 - 480	235	25



Continuous Cast Iron Bars

Cast Iron Grades	Shape	Size Range
EN-GJL-250C EN-GJS-500-7C	Round	Ø40мм – Ø440мм
EN-GJL-250C EN-GJS-500-7C	Square	Ø40мм x Ø40мм – Ø300мм x Ø300мм
EN-GJL-250C EN-GJS-500-7C	Rectangular	Send inquiry
Other Grades	EN-GJL-150C EN-GJL-200C EN-GJL-300C EN-GJS-400-15C EN-GJS-600-3C	

Mechanical Properties			
	Size Range	Tensile Strength N/mm2 мин.	Hardness Brinell
EN-GJL-250C	Ø20мм – Ø50мм	195	170-240 HB
	> Ø50мм – Ø100мм	180	
	> Ø100мм – Ø200мм	165	
	> Ø200мм – Ø300мм	155	
EN-GJS-500-7C	Ø20мм – Ø60мм	500	150-230 HB
	> Ø60мм – Ø120мм	450	
	> Ø120мм – Ø400мм	420	







export-import

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