Hydraulic Line Pipes

Seamless Tubes for Hydraulic and Pneumatic Pressure Lines

ISO 14001:2004
VEXIL BPS MS
E9100811

OHSAS 18001:2007
VEXIL BPS MS
H9100825

ISO/TS 16949 : 2002

ISMT LIMITED

Solutions You Can Trust

Hydraulic Line Pipes

Seamless Tubes for Hydraulic and Pneumatic Pressure Lines

ISMT manufactures cold-drawn precision seamless tubes for use in hydraulic pressure lines. These tubes are specially designed to withstand high static as well as dynamic loads and offer a long lasting, reliable solution.

All ISMT tubes embody over 20 years of experience in the manufacture of Seamless tubes. The quality of tubes that we manufacture for hydraulic pressure lines fully reflects this experience.

PRODUCT FEATURES

- Bright annealed scale-free surfaces
- Fully annealed for easy bending and flaring
- Consistent quality to ensure total reliability
- Manufactured from fully aluminum killed & vacuum degassed steel
- Ultra smooth inner surface for enhanced fluid flow

RELIABILITY GUARANTEED

Hydraulic pressure lines are subject to high static as well as dynamic pressures and often to pressure shocks. The only way to guarantee that our tubes will perform without a single field failure is to control the entire production process. For this reason we start with producing all our steel in-house. We bring to bear over 20 years of experience in manufacturing high-grade Bearing steel to all our manufacturing processes and to all our steel products (we are among a few select manufacturers globally to be approved by SKF and FAG for the supply of Bearing steels).

We produce our steel through the Electric Arc Furnace route. The raw material mix is chosen and prepared carefully to ensure the highest standards of cleanliness. All heats are ladle refined and vacuum degassed before continuous casting and rolling. Right through the production process, we maintain full traceability of the material and a record of the tightly controlled process parameters. This ultra-clean steel forms the starting point for the manufacture of our tubes.

STATE-OF-THE -ART EQUIPMENT

The manufacture of precision seamless tubes is as much a matter of equipment as it is of experience and process technology. At ISMT we believe in investing in the finest of equipment. For making seamless tubes we operate three Assel Mills, one PQF Mill, Pilger Mills, and Cold Draw Benches.

Our tube-mills are imported from Shloemann Mannesman in Germany and incorporate the best in technology. With regards to experience, our team is amongst the most technically qualified anywhere in the world - the tubes that we produce for use in Hydraulic and Pneumatic pressure lines reflect this experience.

SPECIFICATIONS

Chemical Composition									Mechanical Properties at Room Temperature												
Specification	Steel Name	Steel Number	% by Mass						Minimum Values for the given Delivery Condition												
			C max.	Si max.	Mn max.	P max.	S max.	Al min.	+C (BK)		+LC (BKW)		+SR (BKS)			+A (GBK)		+N (NBK)			
									R_m MPa	A %	R_m MPa	A %	R_m MPa	R_{eH} MPa	A %	R_m MPa	A %	R_m MPa	R_{eH} MPa	A %
EN10305-1	E215	1.0212	0.10	0.05	0.70	0.025	0.010	0.025	430	8	380	12	380	280	16	280	30	290 – 430	215	30
EN10305-4			0.10	0.05	0.70	0.025	0.010	0.025	Not Applicable									290 – 430	215	30
DIN 2391	St 30 Al		0.10	0.05	0.55	0.025	0.010	0.020	430	8	380	12	380	280	16	280	30	290 – 420	215	30
EN10305-1	E235	1.0308	0.17	0.35	1.20	0.025	0.010	0.020	480	6	420	10	420	350	16	315	25	340 – 480	235	25
EN10305-4			0.17	0.35	1.20	0.025	0.010	0.020	Not Applicable									340 – 480	235	25
DIN 2391	St 35		0.17	0.35	≥0.40	0.025	0.010	0.020	480	6	420	10	420	315	14	315	25	340 – 470	235	25
EN10305-1	E255	1.0408	0.21	0.35	0.40 –1.1	0.025	0.010	0.020	580	5	520	8	520	375	12	390	21	440 –570	255	21
DIN 2391	St 45		0.21	0.35	≥0.40	0.025	0.010	0.020	580	5	520	8	520	375	12	390	21	440 –570	255	21
EN10305-1	E355	1.0580	0.22	0.55	1.60	0.025	0.025	0.020	640	4	580	7	580	450	10	450	22	490 - 630	355	22
EN10305-4			0.22	0.55	1.60	0.025	0.025	0.020	Not Applicable									490 - 630	355	22
DIN 2391	St 52		0.22	0.55	1.60	0.025	0.025	0.020	640	4	580	7	580	420	10	490	22	490 - 630	355	22
ASTMA106GRB	Grade B		0.30	0.10 min.	0.29 – 1.06	0.025	0.010	0.020	Not Applicable				415	240	30	Not Applicable				
DIN 1629	St 37.0	1.0254	0.17	0.35	-	0.025	0.010	0.020	Not Applicable									350 – 480	235	25
	St 44.0	1.0256	0.21	0.35	-	0.025	0.010	0.020										420 – 550	275	21
	St 52.0	1.0421	0.22	0.35		0.025	0.010	0.020										500 - 650	355	21
DIN 1630*	St 37.4	1.0255	0.17	0.35	≥0.35	0.025	0.010	0.020	Not Applicable									350 – 480	235	25
	St 44.4	1.0257	0.20	0.35	≥0.40	0.025	0.010	0.020										420 – 550	275	21
	St 52.4	1.0581	0.22	0.55	≤1.6	0.025	0.010	0.020										500 - 650	355	21

* Impact at +20 °C for all grades of DIN1630 = 43 J minimum in Longitudinal direction

DELIVERY CONDITION

Designation	Symbol	Delivery Condition Description
Cold drawn / hard	+C (BK)	No heat treatment after the final cold drawing process
Cold drawn / soft	+LC (BKW)	After the final heat treatment there is a suitable drawing pass
Cold drawn and stress relieved	+SR (BKS)	After the final cold drawing process there is a stress relief heat t treatment in a controlled atmosphere
Annealed	+A (GBK)	After the final cold drawing process the tubes are annealed in a controlled atmosphere
Normalized	+N (NBK)	After the final cold drawing process the tubes are normalized in a controlled atmosphere

STANDARD PACKING

Each tube is oiled, internally as well as externally, and then packed into hexagonal bundles. This ensures that the tubes are corrosion protected and that they retain their straightness during transport. Upon request we can provide end caps and also wrap the bundles in LDPE sheets.

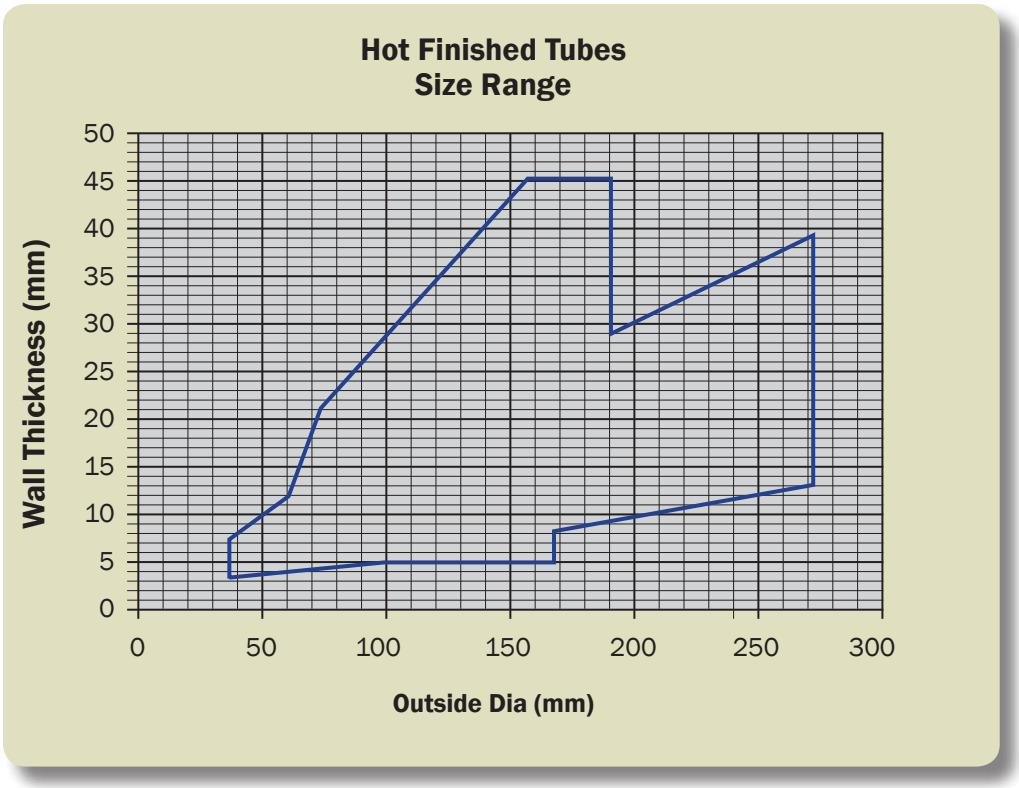
STANDARD SIZES

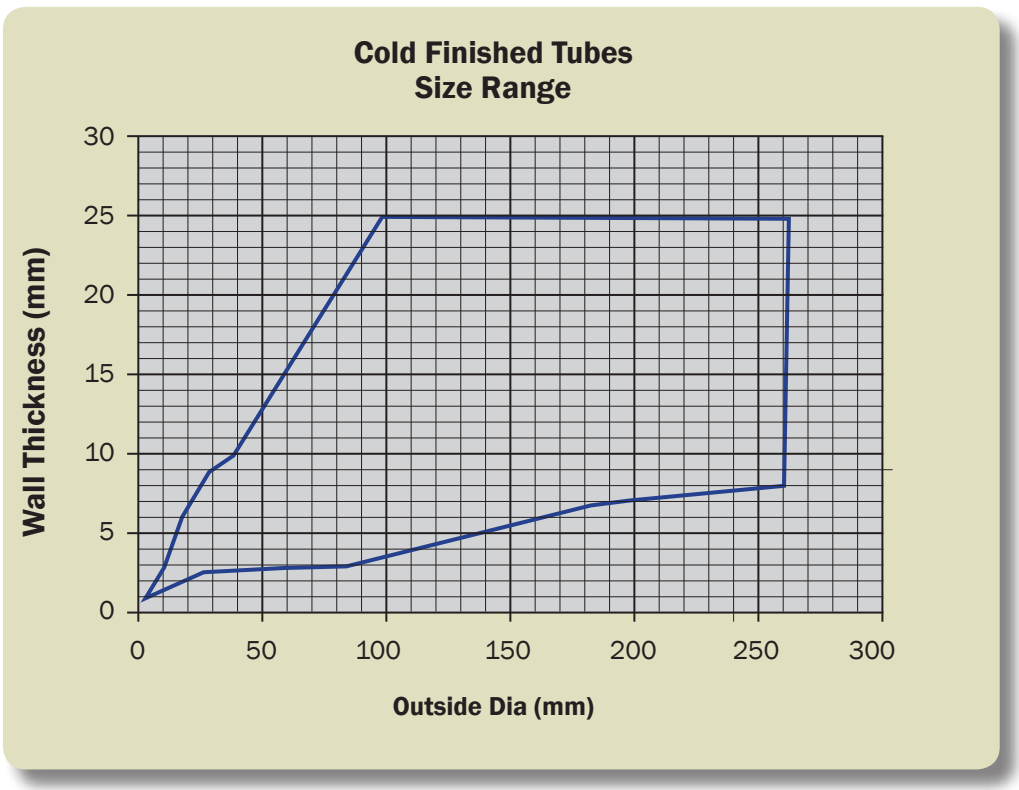
Tube OD (mm)	OD Tol. (mm)	Tube Wall Thickness (mm)	Tube ID (mm)	Tube Weight (Kg/mtr)
6	± 0.08	0.75	4.5	0.10
6	± 0.08	1	4	0·12
6	± 0.08	1·5	3	0·17
6	± 0.08	2	2	0·20
6	± 0.08	2.25	1.5	0.21
8	± 0.08	1	6	0.17
8	± 0.08	1.5	5	0.24
8	± 0.08	2	4	0.30
8	± 0.08	2.5	3	0.34
10	± 0.08	1	8	0.22
10	± 0.08	1.5	7	0.31
10	± 0.08	2	6	0.39
10	± 0.08	2.5	5	0.46
10	± 0.08	3	4	0.52
12	± 0.08	1	10	0.27
12	± 0.08	1.5	9	0.39
12	± 0.08	2	8	0.49
12	± 0.08	2.5	7	0.59
12	± 0.08	3	6	0.67
12	± 0.08	3.5	5	0.73
14	± 0.08	1	12	0.32
14	± 0.08	1.5	11	0.46
14	± 0.08	2	10	0.59
14	± 0.08	2.5	9	0.71
14	± 0.08	3	8	0.81
14	± 0.08	3.5	7	0.91
14	± 0.08	4	6	0.99
15	± 0.08	1	13	0.35
15	± 0.08	1.5	12	0.50
15	± 0.08	2	11	0.64
15	± 0.08	2.5	10	0.77
15	± 0.08	3	9	0.89
16	± 0.08	1	14	0.37
16	± 0.08	1.5	13	0.54
16	± 0.08	2	12	0.69
16	± 0.08	2.5	11	0.83
16	± 0.08	3	10	0.96
18	± 0.08	1	16	0.42
18	± 0.08	1.5	15	0.61
18	± 0.08	2	14	0.79
18	± 0.08	2.5	13	0.96
18	± 0.08	3	12	1.11
20	± 0.08	1.5	17	0.68
20	± 0.08	2	16	0.89

Tube OD (mm)	OD Tol. (mm)	Tube Wall Thickness (mm)	Tube ID (mm)	Tube Weight (Kg/mtr)
20	± 0.08	2.5	15	1.08
20	± 0.08	3	14	1.26
20	± 0.08	3.5	13	1.42
20	± 0.08	4	12	1.58
22	± 0.08	1	20	0.52
22	± 0.08	1.5	19	0.76
22	± 0.08	2	18	0.99
22	± 0.08	2.5	17	1.20
22	± 0.08	3	16	1.41
25	± 0.08	2	21	1.13
25	± 0.08	2.5	20	1.39
25	± 0.08	3	19	1.63
25	± 0.08	4	17	2.07
25	± 0.08	4.5	16	2.28
25	± 0.08	5	15	2.47
28	± 0.08	1.5	25	0.98
28	± 0.08	2	24	1.28
28	± 0.08	2.5	23	1.57
28	± 0.08	3	22	1.85
28	± 0.08	4	20	2.37
28	± 0.08	5	18	2.84
30	± 0.08	2	26	1.38
30	± 0.08	2.5	25	1.70
30	± 0.08	3	24	2.00
30	± 0.08	4	22	2.57
30	± 0.08	5	20	3.08
35	± 0.15	2	31	1.63
35	± 0.15	2.5	30	2.00
35	± 0.15	3	29	2.37
35	± 0.15	4	27	3.06
35	± 0.15	5	25	3.70
35	± 0.15	6	23	4.29
38	± 0.15	2.5	33	2.19
38	± 0.15	3	32	2.59
38	± 0.15	4	30	3.36
38	± 0.15	5	28	4.07
38	± 0.15	6	26	4.74
38	± 0.15	7	24	5.35
42	± 0.20	2.5	37	2.44
42	± 0.20	3	36	2.89
42	± 0.20	4	34	3.75
50	± 0.20	6	38	6.51
70	± 0.30	7	56	10.88

CUSTOMISED SIZES

We produce seamless tubes with up to an outer diameter of sizes 273 mm (10 3/4 inches). In addition to the standard sizes, we can produce any customized size as per the graphs below.

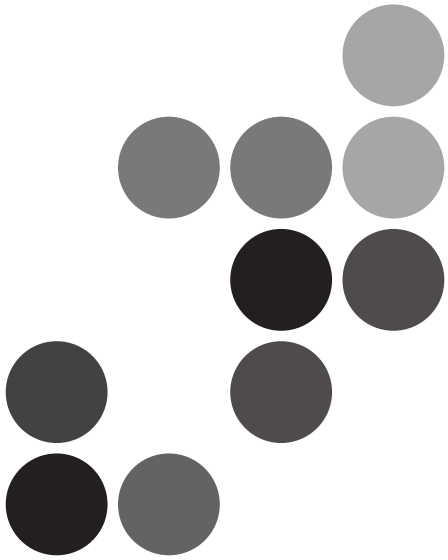




ISMT manufactures carbon/alloy steel and seamless tubes for:

- Energy and Power Generation
- Automotive Components
- Hydraulic and Pneumatic Pressure Lines
- Hydraulic Cylinders
- Gas Cylinders
- Mining and Construction
- Bearings
- General Engineering Applications
- Oil and Petroleum Applications

Product details are available on request



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