Precision Tubing for Hydraulics and Fuel Injection Engines

Size Range and Tolarance for Hydraulic and Fuel Injection Tubing

O.D	O.D LIMIT DEVIATION	I.D	I.D LIMIT DEVIATION	W.T	WEIGHT
MM	MM	MM	MM	MM	KG/MTR
4	±0.08	2.5	±0.15	0.75	0.060
-	±0.08	2	±0.15	1	0.073
5	±0.08	3.5	±0.15	0.75	0.078
5.5	±0.08	1.50	±0.15	2.00	0.173
6	±0.08	4	±0.15	1	0.123
-	±0.08	3	±0.15	1.5	0.166
-	±0.08	2.4	±0.15	1.8	0.186
-	±0.08	2.5	±0.15	1.75	0.183
-	±0.08	2	±0.15	2	0.197
6.35	±0.08	1.70	±0.15	2.33	0.231
-	±0.08	1.83	±0.15	2.26	0.228
-	±0.08	2.36	±0.15	2.00	0.214
7	±0.08	2.00	±0.15	2.50	0.227
8	±0.08	6	±0.15	1	0.172
-	±0.08	5	±0.15	1.5	0.240
-	±0.08	4	±0.15	2	0.295
-	±0.08	2.5	±0.25	2.75	0.346
-	±0.08	3	±0.25	2.5	0.339
9.52	±0.08	7.52	±0.15	1	0.210
-	±0.08	6.52	±0.15	1.5	0.297
-	±0.08	5.52	±0.15	2	0.371
-	±0.08	4.52	±0.15	2.5	0.433
10	±0.08	8	±0.15	1	0.221
-	±0.08	7	±0.15	0.5	0.314
-	±0.08	6	±0.15	2	0.394
-	±0.08	5	±0.15	2.5	0.462
-	±0.08	3	±0.25	3.5	0.561
12	±0.08	10	±0.15	1	0.271
-	±0.08	9	±0.15	1.5	0.388
-	±0.08	8	±0.15	2	0.493
-	±0.08	7.5	±0.15	2.25	0.585
14	±0.08	12	±0.08	1	0.320
-	±0.08	11	±0.15	1.5	0.462
-	±0.08	10	±0.15	2	0.591
-	±0.08	9	±0.15	2.5	0.708
15	±0.08	13	±0.08	1	0.345
-	±0.08	12	±0.15	1.5	0.499
-	±0.08	11	±0.15	2	0.641
-	±0.08	10	±0.15	2.5	0.770
-	±0.08	9	±0.15	3	0.887
16	±0.08	14	±0.08	1	0.369
-	±0.08	13	±0.08	1.5	0.536
-	±0.08	12	±0.15	2	0.690
-	±0.08	11	±0.15	2.5	0.832
-	±0.08	10	±0.15	3	0.961
18	±0.08	16	±0.08	1	0.419
-	±0.08	15	±0.08	1.5	0.610
-	±0.08	14	±0.08	2	0.789
-	±0.08	12	±0.15	3	1.109
20	±0.08	18	±0.08	1	0.468
-	±0.08	17	±0.08	1.5	0.684
-	±0.08	16	±0.08	2	0.887

O.D	O.D LIMIT DEVIATION	I.D	I.D LIMIT DEVIATION	W.T	WEIGHT
MM	MM	MM	MM	MM	KG/MTR
20	±0.08	15	±0.15	2.5	1.078
-	±0.08	14	±0.15	3	1.257
22	±0.08	20	±0.08	1	0.517
-	±0.08	19	±0.08	1.5	0.758
-	±0.08	18	±0.08	2	0.986
-	±0.08	17	±0.15	2.5	1.202
-	±0.08	16	±0.15	3	1.405
-	±0.08	15	±0.15	3.5	1.596
-	±0.08	14	±0.15	4	1.775
25	±0.08	22	±0.08	1.5	0.869
-	±0.08	21	±0.08	2	1.134
-	±0.08	20	±0.08	2.5	1.387
-	±0.08	18	±0.15	3.5	1.855
-	±0.08	17	±0.15	4	2.071
26	±0.08	23	±0.08	1.5	0.906
-	±0.08	22	±0.08	2	1.183
-	±0.08	19	±0.15	3.5	1.941
28	±0.08	26	±0.08	1	0.665
-	±0.08	25	±0.08	1.5	0.980
-	±0.08	24	±0.08	2	1.282
-	±0.08	23	±0.08	2.5	1.572
-	±0.08	22	±0.15	3	1.849
-	±0.08	20	±0.15	4	2.367
30	±0.08	27	±0.08	1.5	1.054
-	±0.08	26	±0.08	2	1.380
-	±0.08	25	±0.08	2.5	1.695
-	±0.08	24	±0.15	3	1.997
-	±0.08	22	±0.15	4	2.564
-	±0.08	20	±0.15	5	3.082
32	±0.15	26	±0.15	3	2.145
35	±0.15	31	±0.15	2	1.627
-	±0.15	30	±0.15	2.5	2.003
-	±0.15	29	±0.15	3	2.367
-	±0.15	28	±0.15	3.5	2.718
-	±0.15	27	±0.15	4	3.057
38	±0.15	34	±0.15	2	1.775
-	±0.15	33	±0.15	2.5	2.188
-	±0.15	32	±0.15	3	2.589
-	±0.15	30	±0.15	4	3.353
-	±0.15	28	±0.15	5	4.068
40	±0.15	36	±0.15	2	1.874
-	±0.15	35	±0.15	2.5	2.311
-	±0.15	30	±0.15	5	4.315
42	±0.20	38	±0.20	2	1.972
-	±0.20	36	±0.20	3	2.885
-	±0.20	34	±0.20	4	3.748
45	±0.20	40	±0.20	2.5	2.620
50	±0.20	45	±0.20	2.5	2.928
-	±0.20	40	±0.20	5	5.548
60	±0.25	50	±0.25	5	6.781
70	±0.30	60	±0.30	5	8.014
80	±0.35	70	±0.35	5	9.247

Supply Conditions

Hydraulic Tubes can be supplied under conditions according to DIN 2391 Part 2 in various grades mentioned overleaf.
Fuel Injection Tubes can be supplied in lower tolerance than mentioned above. It can be supplied according to conditions mentioned in ISO-8335.

Considering the importance of outside and inside surface of tubes for fluid power industry, Mahalaxmi is providing tubes that are free from scale, rust, seams, laps. Tube can be pickled, passivated, phosphated, zincplated, oiled or varnished for rust prevention and long storage. They are stenciled at the ends and end capped.

READY STOCKS AVAILABLE for Various Sizes mentioned above

Grade for Hydraulic Fuel Injection Tubing

Chemical Composition

Chemical Composition											Chemical Composition		
											Tensile Strength	Yield Strength	Elong. Longi.
GRADE	C% Max	Si% Max	Mn%	P% Max	S% Max	Cr%	Cu%	Mo%	Ni%	Va%	N/SQMM	N/SQMM	
DIN 1630													
ST 37.4	0.17	0.35	>0.35	0.04	0.04	-	-	-	-	-	350-480	215-235	25%
ST 44.4	0.2	0.35	>0.40	0.04	0.04	-	-	-	-	-	420-550	255-275	21%
ST 52.4	0.22	0.55	<1.6	0.04	0.035	-	-	-	-	-	500-650	335-345	21%
SAE-ASTM 519													
1008	0.10 MAX	-	0.3-0.5	0.04	0.05	-	-				310 MIN	205 MIN	30%
1010	0.08-0.13	-	0.30-0.60	0.04	0.05	-	-						
ASTM SA 106 Gr B													
106 Gr.B	0.30 MAX	0.10 MAX	0.29-1.06	0.035MAX	0.035MAX	0.40 MAX	0.4 MAX	0.15 MAX	0.4 MAX	0.08 MAX	415 MIN	240 MIN	30%
DIN 2391													
ST 30	0.1	0.3	<0.55	0.025	0.025	-	-	-	-	-			
ST 35	0.17	0.35	>0.40	0.025	0.025	-	-	-	-	-			
ST 45	0.21	0.35	>0.40	0.025	0.025	-	-	-	-	-			
ST 52	0.22	0.55	<1.6	0.025	0.025	-	-	-	-	-			

MECHANICAL PROPERTIES FOR DIN 2391

	COLD FINISH (HARD) (BK)		COLD FINISH (SOFT) (BKW)		COLD FINISH & STRESS RELIEVED (BKS)		ANNEALED (GBK)		NOMLIZED (NBK)	
	Tensile Strength	Elongation	Tensile Strength	Elongation	Tensile Strength	Elongation	Tensile Strength	Elongation	Tensile Strength	Elongation
	N/mm2	%	N/mm2	%	N/mm2	%	N/mm2	%	N/mm2	%
GRADE	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN
ST 30	430	8	380	12	380	16	280	30	290-420	30
ST 35	480	6	420	10	420	14	315	25	340-470	25
ST 45	580	5	520	8	520	12	390	21	440-570	21
ST 52	640	4	580	7	580	10	490	22	490-630	22

Application:

- Fuel Injection and Oil Pipes Break,
- Clutch and Fuel Tubes
- Fabricated Steel Pipe Oil Pipe Assemblies and Allied Products
- Pipe Lines for Hydraulic Powerpack
- Pipe Lines for Hydraulic/Pneumatic