

SEAMLESS TUBES H8 INSIDE COLD-DRAWN TUBES

Cold-drawn seamless tubes for internally finished Hydraulic Cylinders according to EN 10305-1 standard

I.D. mm	Allowed tolerance I.D. H8 mm	E.D. mm	Thickness mm	Weight mm
20	-0/+0,033	25	2,50	1,387
20	-0/+0,033	30	5,00	3,083
20	-0/+0,033	32	6,00	3,847
20	-0/+0,033	35	7,50	6,33
20	-0/+0,033	40	10,00	7,30
25	-0/+0,033	35	5,00	3,69
25	-0/+0,033	40	7,50	6,01
25	-0/+0,033	45	10,00	8,60
25,4	-0/+0,033	31,5	3,00	2,10
30	-0/+0,039	38	4,00	3,35
30	-0/+0,039	40	5,00	4,316
30	-0/+0,039	45	7,50	6,93
30	-0/+0,039	50	10,00	9,86
32	-0/+0,039	45	6,50	6,17
32	-0/+0,039	45	5,00	4,562
35	-0/+0,039	45	5,00	4,930
35	-0/+0,039	50	7,50	7,86
38,1	-0/+0,039	47,6	4,75	5,02
40	-0/+0,039	50	5,00	5,67
40	-0/+0,039	52	6,00	6,93
40	-0/+0,039	55	7,50	8,79
40	-0/+0,039	60	10,00	12,33
45	-0/+0,039	55	5,00	6,30
45	-0/+0,039	60	7,50	9,85
45	-0/+0,039	65	10,00	13,70
50	-0/+0,046	60	5,00	6,94
50	-0/+0,046	62	6,00	8,46
50	-0/+0,046	65	7,50	10,80
50	-0/+0,046	70	10,00	15,00
50	-0/+0,046	75	12,40	19,26
50,8	-0/+0,046	60,3	4,75	6,50
50,8	-0/+0,046	63,5	6,00	8,50
55	-0/+0,046	65	5,00	7,58
55	-0/+0,046	70	7,50	11,80
55	-0/+0,046	75	10,00	16,20
60	-0/+0,046	70	5,00	8,22
60	-0/+0,046	72	6,00	9,97
60	-0/+0,046	75	7,50	12,70
60	-0/+0,046	80	10,00	17,50
60	-0/+0,046	90	15,00	27,74
63	-0/+0,046	75	5,00	10,30
63	-0/+0,046	77	7,50	12,08
63	-0/+0,046	78	7,50	13,10
63,5	-0/+0,046	76,2	12,70	19,88
65	-0/+0,046	75	5,00	8,85
65	-0/+0,046	80	7,50	13,60
65	-0/+0,046	85	10,00	18,80
70	-0/+0,046	80	5,00	9,48
70	-0/+0,046	82	6,00	11,50
70	-0/+0,046	85	7,50	14,60
70	-0/+0,046	90	10,00	20,00
75	-0/+0,046	85	5,00	10,10
75	-0/+0,046	90	7,50	15,60
75	-0/+0,046	95	10,00	21,30
76,2	-0/+0,046	88,9	6,35	12,90
80	-0/+0,054	90	5,00	10,80
80	-0/+0,054	92	6,00	13,00
80	-0/+0,054	95	7,50	16,50
80	-0/+0,054	100	10,00	22,50
80	-0/+0,054	105	12,50	28,90

I.D. mm	Allowed tolerance I.D. H8 mm	E.D. mm	Thickness mm	Weight mm
80	-0/+0,054	110	15,0	35,20
85	-0/+0,054	95	5,00	11,40
85	-0/+0,054	100	7,50	17,50
85	-0/+0,054	105	10,00	23,80
85	-0/+0,054	110	12,50	30,50
90	-0/+0,054	100	5,00	12,10
90	-0/+0,054	102	6,00	14,60
90	-0/+0,054	105	7,50	18,40
90	-0/+0,054	110	10,00	25,00
100	-0/+0,054	110	5,00	13,40
100	-0/+0,054	112	6,00	15,68
100	-0/+0,054	115	7,50	20,30
100	-0/+0,054	120	10,00	27,60
100	-0/+0,054	125	12,50	35,20
101,6	-0/+0,054	114,3	6,00	16,02
101,6	-0/+0,054	121	10,00	27,37
105	-0/+0,054	115	5,00	13,56
105	-0/+0,054	120	7,50	20,81
105	-0/+0,054	125	10,00	28,36
110	-0/+0,054	120*	5,00	14,70
110	-0/+0,054	125	7,50	22,30
110	-0/+0,054	130	10,00	30,20
110	-0/+0,054	140	15,00	46,30
114,3	-0/+0,054	133	9,35	28,51
114,3	-0/+0,054	127	6,00	17,90
115	-0/+0,054	125*	5,00	14,80
115	-0/+0,054	130	7,50	22,66
115	-0/+0,063	140	12,50	39,30
120	-0/+0,063	130*	5,00	16,00
120	-0/+0,063	135	7,50	24,20
120	-0/+0,063	140	10,00	32,70
120	-0/+0,063	145	12,50	44,50
125	-0/+0,063	155	15,00	51,80
130	-0/+0,063	140*	5,00	17,30
130	-0/+0,063	145	7,50	26,20
130	-0/+0,063	150	10,00	35,30
130	-0/+0,063	160	15,00	53,70
140	-0/+0,063	150*	5,00	18,80
140	-0/+0,063	155	7,50	28,10
140	-0/+0,063	160	10,00	37,50
140	-0/+0,063	165	12,50	48,00
140	-0/+0,063	170	15,00	57,40
150	-0/+0,063	160**	5,00	20,20
150	-0/+0,063	165	7,50	30,10
150	-0/+0,063	170	10,00	40,50
150	-0/+0,063	180	15,00	61,10
160	-0/+0,063	170**	5,00	20,35
160	-0/+0,063	180	10,00	43,10
160	-0/+0,063	185	12,50	54,30
160	-0/+0,063	190	15,00	64,80
180	-0/+0,072	200	10,00	48,30
180	-0/+0,072	205	12,50	59,40
180	-0/+0,072	210	15,00	72,20
200	-0/+0,072	210**	5,00	25,28
200	-0/+0,072	215	6,00	30,92
200	-0/+0,072	220	7,50	51,80
200	-0/+0,072	225	10,00	65,60
200	-0/+0,072	235	17,50	93,90

* Alloyed tolerance H 9 (0 + 0,100)
** Alloyed tolerance H 10 (0 + 0,185)

STEEL QUALITY

STEEL E 355

CHEMICAL COMPOSITION AS A PERCENTAGE (cast analysis)

STEEL QUALITY EN 355

C %	max 0,22
SI %	max 0,55
MN %	max 1,60
P %	max 0,035
S %	max 0,035
N %	-
AL%	min 0,020
Ni %	-
Nb %	-
Ti %	-
V %	-
Nb+Ti+V	-

MECHANICAL FEATURES

Steel types	Traction resistance R N/mm ² min	Yield limit R N/mm ² min	Elongation at break A ₅ %	As-delivered condition
E355	590	540	10	BK
E355	570	470	15	BK + S

The resistance in the two as-delivered conditions is of 21 Jmin. as a mean value on 3 V longitudinal ISO samples at room temperature.

Normal stock: when nitrogen is additionally linked to niobium, titanium and vanadium, the prescription of the minimum content of aluminium decays.

AS-DELIVERED CONDITION

BRIGHT HARD COLD-DRAWN WITH STRESS RELIEVING ANNEALING (B K+S).

After the last stage of cold deformation the tubes undergo stress relieving annealing with the aim of containing the tension, consequent to cold deformation.

BRIGHT HARD COLD-DRAWN (BK).

The tubes do not undergo heat treatment after cold moulding.

NORMALIZED (NBK).

After cold moulding, the tubes undergo heat treatment under protective gas at a temperature above the higher critical point.

SURFACE PROTECTION

All tubes are temporarily protected against corrosion with mineral oil containing inhibitors.

CONTROLS

On all tubes, after processing, the following rigorous controls are carried out:

- superficial features
- dimensional precision
- tolerance on internal diameter.

LENGTHS

COMMERCIAL LENGTHS: from 4 to 10 affixed: by machine cutting with length tolerance "standard" of - 0 + 5 mm; more restricted tolerances to agree on request.

CERTIFICATES

It is possible to equip the supply with relative certificates of origin showing the chemical analysis and mechanical tests foreseen by standards.

TOLERANCES

External diameter: according to 10305-1 standard
Straightness: 1 mm/1000 mm

Internal diameter: H8

Roughness Internal diameter Ra Max 0,4 micron