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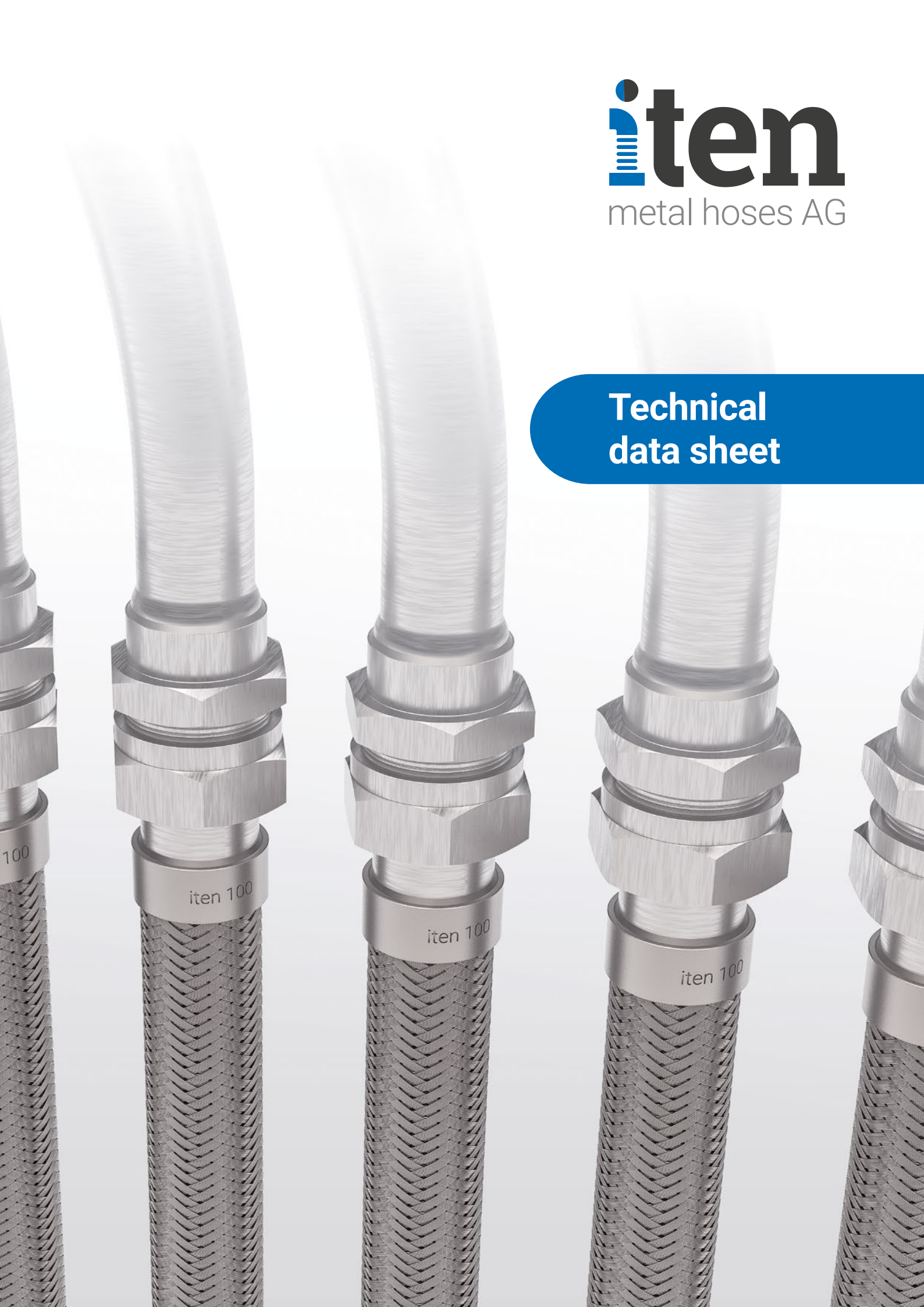
Technical data sheet



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The technical data sheets are also available as a PDF download at: www.metal-hoses.ch

Issue 1 of the technical data sheets for metal hoses

Subject to change
As of: 5 November 2018

Metal hose types

For any specific application, the right hose type is available in a wide range of sizes and properties.

Type	Material Corrugated hose/braid	Execution	Typical applications
iten 066	1.4404/1.4301	– single-walled – mechanically deformed, middle pitch distance – medium stiffness	– predominantly static
iten 088	1.4541/1.4301	– single-walled – hydraulically deformed, middle pitch distance – medium stiffness	– occasional movement
iten 100	1.4541/1.4301	– single-walled – hydraulically deformed, middle pitch distance – low stiffness	– frequent movement
iten 101	1.4404/1.4301	– single-walled – hydraulically deformed, middle pitch distance – low stiffness	– frequent movement
iten 133	1.4571/1.4301	– single-walled – hydraulically deformed, middle pitch distance – high stiffness	– high pressures – occasional movement
iten 150	1.4404/1.4301	– single-walled – hydraulically deformed, low pitch distance – very low stiffness, highly flexible	– continuous movement
iten 200	1.4404/1.4301	– double-walled – hydraulically deformed, middle pitch distance – low stiffness	– high pressures – continuous movement

U0 = corrugated hose without braiding
U1 = corrugated hose with one braiding
U2 = corrugated hose with two braidings

Note
Other materials and designs on request.

The data for the operating pressure apply at +20 °C. At higher temperatures, the corrective factors are according to EN ISO 10380 (see page 18).

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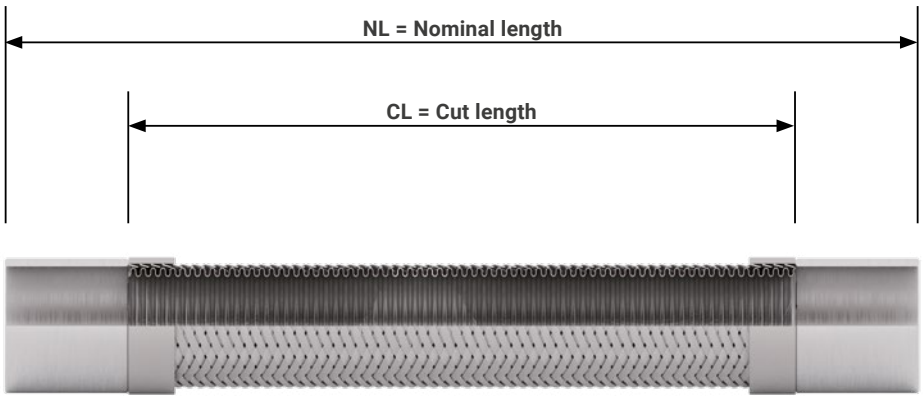
Length tolerances

Metal hose assemblies

The metal hose assemblies has the following tolerances due to the pitch:

DN	NL mm	<250	<500	<1000	<2000	≥2000
<25	+	7	10	15	20	1.5%
	–	2.5	5	10	10	1%
25–40	+	10	15	20	25	1.5%
	–	2.5	5	10	10	1%
50–100	+	15	20	30	35	1.5%
	–	2.5	5	10	10	1%
>100	+	20	25	30	40	1.5%
	–	2.5	5	10	10	1%

Tighter tolerances are possible, but must be clarified in advance with the production.
The metal hose is measured without pressure in a straight position.



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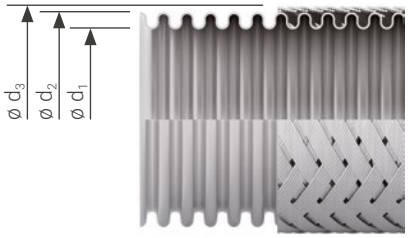
Data sheet iten 066

Manufacture: according to ISO EN 10380
Material hose: stainless steel 1.4404/AISI 316L
Material braid: stainless steel 1.4301/AISI 304
Operating temperature: −196 to +550°C



Product description:
Single-wall, mechanically deformed, middle pitch distance medium stiffness.

DN	Type	Dimensions					Bend radius		Working pressure	Weight
		internal diameter		external diameter			static application	dynamic application	at +20°C SF 4	
		d_1	Tol. ±	d_2	d_3	Tol. ±	R_{st}	R_d	p_{max}	±10%
		mm	mm	mm	mm	mm	mm	mm	bar	kg/m
6	**iten 066 U0** **iten 066 U1**	6.1	0.2	9.6 –	– 10.7	0.2	15 25	60 60	18.0 150.0	0.08 0.16
8	**iten 066 U0** **iten 066 U1**	8.2	0.2	12.1 –	– 13.6	0.2	16 32	124 124	13.0 132.0	0.09 0.22
10	**iten 066 U0** **iten 066 U1**	10.1	0.2	14.3 –	– 15.5	0.2	18 38	130 130	9.0 100.0	0.12 0.23
12	**iten 066 U0** **iten 066 U1**	12.3	0.2	16.8 –	– 18.3	0.2	20 45	140 140	7.0 70.0	0.12 0.24
16	**iten 066 U0** **iten 066 U1**	16.2	0.2	21.5 –	– 23.8	0.2	28 58	160 160	5.0 64.0	0.19 0.41
20	**iten 066 U0** **iten 066 U1**	20.3	0.3	26.8 –	– 28.6	0.3	32 70	170 170	3.0 43.0	0.26 0.48
25	**iten 066 U0** **iten 066 U1**	25.4	0.3	32.3 –	– 34.3	0.3	40 85	190 190	2.5 49.0	0.35 0.74
32	**iten 066 U0** **iten 066 U1**	34.3	0.3	41.1 –	– 43.0	0.3	50 105	260 260	2.0 35.0	0.47 0.97
40	**iten 066 U0** **iten 066 U1**	40	0.3	49.5 –	– 52.0	0.3	60 130	300 300	2.0 38.0	0.64 1.24
50	**iten 066 U0** **iten 066 U1**	50.2	0.4	60.5 –	– 62.4	0.4	70 160	320 320	1.0 26.0	0.89 1.65
65	**iten 066 U0** **iten 066 U1**	65.3	0.4	78.0 –	– 81.2	0.4	115 200	460 460	0.5 25.0	1.13 2.23
80	**iten 066 U0** **iten 066 U1**	80.2	0.5	94.8 –	– 98.0	0.5	130 240	660 660	0.5 16.0	1.67 2.89
100	**iten 066 U0** **iten 066 U1**	100.0	0.5	116.2	119.4	0.5	160 290	750 750	0.5 10.0	2.24 3.93

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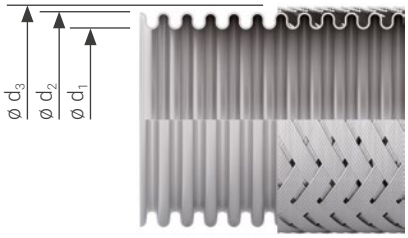
Data sheet iten 088

Manufacture: according to ISO EN 10380
Material hose: stainless steel 1.4541/AISI 321
Material braid: stainless steel 1.4301/AISI 304
Operating temperature: −196 to +550°C



Product description:
Single-wall, hydraulically deformed, middle pitch distance, medium stiffness.

DN	Type	Dimensions					Bend radius		Working pressure	Weight
		internal diameter		external diameter			static application	dynamic application	at +20°C SF 4	
		d_1	Tol. ±	d_2	d_3	Tol. ±	R_{st}	R_d	p_{max}	±10%
		mm	mm	mm	mm	mm	mm	mm	bar	kg/m
8	**iten 088 U0** **iten 088 U1**	8.0	0.4	12.3 –	– 14.4	0.5 0.6	16 32	130 130	13.5 116.0	0.05 0.20
10	**iten 088 U0** **iten 088 U1**	10.2	0.4	15.7 –	– 17.8	0.5 0.6	19 38	150 150	11.2 115.0	0.11 0.28
12	**iten 088 U0** **iten 088 U1**	12.9	0.4	19.0 –	– 21.1	0.5 0.6	23 45	165 165	11.2 82.0	0.13 0.35
16	**iten 088 U0** **iten 088 U1**	15.9	0.4	22.6 –	– 24.7	0.5 0.6	29 58	195 195	6.0 63.0	0.16 0.40
20	**iten 088 U0** **iten 088 U1**	19.8	0.4	26.8 –	– 28.9	0.5 0.6	35 70	225 225	4.5 60.0	0.20 0.49
25	**iten 088 U0** **iten 088 U1**	25.1	0.5	32.8 –	– 34.9	0.6 0.7	43 85	260 260	3.7 37.0	0.24 0.59
32	**iten 088 U0** **iten 088 U1**	31.7	0.5	41.8 –	– 43.9	0.6 0.7	53 105	300 300	1.5 30.0	0.33 0.95
40	**iten 088 U0** **iten 088 U1**	40.7	0.5	51.8 –	– 54.5	0.6 0.7	65 130	340 340	0.7 30.0	0.50 1.26
50	**iten 088 U0** **iten 088 U1**	49.9	0.6	62.8 –	– 65.5	0.7 0.8	80 160	390 390	0.3 30.0	0.64 1.51
65	**iten 088 U0** **iten 088 U1**	65.0	0.6	79.8 –	– 82.5	0.7 0.8	100 200	460 460	0.6 22.0	0.81 1.80
80	**iten 088 U0** **iten 088 U1**	80.0	0.7	96.8 –	– 100.4	0.8 0.9	120 240	600 600	0.6 21.0	1.22 3.41
100	**iten 088 U0** **iten 088 U1**	100.1	0.7	118.8 –	– 122.4	0.8 0.9	145 290	750 750	0.2 14.0	1.51 3.59

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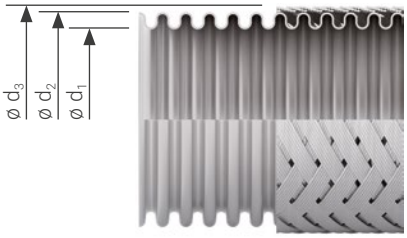
Data sheet iten 100/101

Manufacture: according to ISO EN 10380
Material hose iten 100: stainless steel 1.4541/AISI 321
Material hose iten 101: stainless steel 1.4404/AISI 316L
Material braid: stainless steel 1.4301/AISI 304
Operating temperature: −196 to +550°C



Product description:
Single-wall, hydraulically deformed, middle pitch distance, low stiffness.

DN	Type	Dimensions					Bend radius		Working pressure	Weight
		internal diameter		external diameter			static application	dynamic application	at +20°C SF 4	
		d_1	Tol. ±	d_2	d_3	Tol. ±	R_{st}	R_d	p_{max}	±10%
		mm	mm	mm	mm	mm	mm	mm	bar	kg/m
8	**iten 101 U0** **iten 101 U1**	8.0	0.2	12.5 –	– 14.6	0.3 0.4	14 24	90 90	10.0 80.0	0.06 0.21
10	**iten 101 U0** **iten 101 U1**	10.2	0.2	15.9 –	– 18.0	0.3 0.4	17 29	100 100	6.0 65.0	0.13 0.30
12	**iten 100/101 U0** **iten 100/101 U1**	12.9	0.2	19.2 –	– 21.3	0.3 0.4	20 34	120 120	5.0 65.0	0.16 0.38
16	**iten 100/101 U0** **iten 100/101 U1**	15.9	0.2	22.8 –	– 24.9	0.3 0.4	26 44	140 140	3.0 55.0	0.19 0.43
20	**iten 100/101 U0** **iten 100/101 U1**	19.8	0.2	27.0 –	– 29.1	0.3 0.4	32 53	160 160	2.5 50.0	0.23 0.52
25	**iten 100/101 U0** **iten 100/101 U1**	25.1	0.3	33.0 –	– 35.1	0.4 0.5	38 64	180 180	2.0 40.0	0.29 0.64
32	**iten 100/101 U0** **iten 100/101 U1**	31.7	0.3	42.0 –	– 44.7	0.4 0.5	47 79	210 210	1.0 30.0	0.39 1.02
40	**iten 100/101 U0** **iten 100/101 U1**	40.7	0.3	52.0 –	– 54.7	0.4 0.5	59 98	240 240	1.0 30.0	0.60 1.36
50	**iten 100/101 U0** **iten 100/101 U1**	49.9	0.4	63.0 –	– 65.7	0.5 0.6	72 120	280 280	0.6 32.0	0.76 1.63
65	**iten 100/101 U0** **iten 100/101 U1**	65.0	0.4	80.0 –	– 82.7	0.5 0.6	90 150	330 330	0.6 23.0	0.97 2.04
80	**iten 100/101 U0** **iten 100/101 U1**	80.0	0.5	97.0 –	– 100.6	0.6 0.7	108 180	460 460	0.5 25.0	1.47 3.45
100	**iten 100/101 U0** **iten 100/101 U1**	100.1	0.5	119.0 –	– 122.6	0.6 0.7	131 218	530 530	0.3 16.0	1.81 3.89
125	**iten 100 U0** **iten 100 U1**	124.9	0.6	145.6 –	– 150.4	0.7 0.8	189 315	800 800	0.5 10.0	2.58 6.00
150	**iten 100 U0** **iten 100 U1**	150.4	0.7	173.2 –	– 178.0	0.8 0.9	216 360	1050 1050	0.4 10.0	3.55 8.28
200	**iten 100 U0** **iten 100 U1**	200.7	0.8	227.0 –	– 231.8	0.9 1.0	281 468	1300 1300	0.2 5.0	4.75 10.46
250	**iten 100 U0** **iten 100 U1**	250.6	0.8	280.3 –	– 285.1	0.9 1.0	335 558	1700 1700	0.2 5.0	7.37 13.62
300	**iten 100 U0** **iten 100 U1**	300.6	1.0	333.1 –	– 337.9	1.1 1.2	389 648	2000 2000	<0.1 4.0	8.82 14.95

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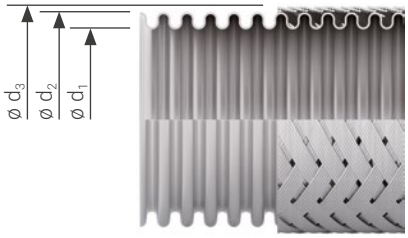
Data sheet iten 133

Manufacture: according to ISO EN 10380
Material hose: stainless steel 1.4571/AISI 316Ti
Material braid: stainless steel 1.4301/AISI 304
Operating temperature: −196 to +550°C



Product description:
Single-wall, hydraulically deformed, middle pitch distance, high stiffness.

DN	Type	Dimensions					Bend radius		Working pressure	Weight
		internal diameter		external diameter			static application	dynamic application	at +20°C SF 4	
		d_1	Tol. ±	d_2	d_3	Tol. ±	R_{st}	R_d	p_{max}	±10%
		mm	mm	mm	mm	mm	mm	mm	bar	kg/m
12	**iten 133 U1**	12.9	0.2	–	21.3	0.4	45	190	90.0	0.47
	iten 133 U2			–	23.4	0.5	45	190	105.0	0.74
16	**iten 133 U1**	15.9	0.2	–	24.5	0.4	58	225	85.0	0.49
	iten 133 U2			–	26.6	0.5	58	250	95.0	0.75
20	**iten 133 U1**	19.5	0.2	–	29.7	0.4	70	257	80.0	0.76
	iten 133 U2			–	32.4	0.5	70	285	90.0	1.22
25	**iten 133 U1**	25.0	0.3	–	35.7	0.5	85	293	70.0	0.94
	iten 133 U2			–	38.4	0.6	85	325	85.0	1.45
32	**iten 133 U1**	31.7	0.3	–	44.7	0.5	105	342	65.0	1.28
	iten 133 U2			–	47.4	0.6	105	380	75.0	1.98
40	**iten 133 U1**	40.5	0.3	–	54.7	0.5	130	387	55.0	1.81
	iten 133 U2			–	57.4	0.6	130	430	65.0	2.67
50	**iten 133 U1**	49.7	0.4	–	65.7	0.6	160	441	45.0	2.25
	iten 133 U2			–	68.4	0.7	160	490	65.0	3.29
65	**iten 133 U1**	64.7	0.4	–	83.6	0.6	200	522	45.0	3.39
	iten 133 U2			–	87.2	0.7	200	580	50.0	5.22
80	**iten 133 U1**	79.6	0.5	–	100.6	0.7	240	648	28.0	4.37
	iten 133 U2			–	104.2	0.8	240	720	39.0	6.36
100	**iten 133 U1**	99.7	0.5	–	127.8	0.7	290	810	16.0	6.79
	iten 133 U2			–	132.6	0.8	290	900	20.0	10.07
125	**iten 133 U1**	124.4	0.6	–	155.3	0.8	350	1013	12.0	8.71
	iten 133 U2			–	160.1	0.9	350	1125	16.0	12.17
150	**iten 133 U1**	150.0	0.7	–	183.3	0.9	400	1395	10.0	11.14
	iten 133 U2			–	188.1	1.0	400	1550	16.0	15.98
200	**iten 133 U1**	200.3	0.8	–	237.3	1.0	520	1800	8.0	14.08
	iten 133 U2			–	242.1	1.1	520	2000	16.0	19.87
250	**iten 133 U1**	250.0	0.8	–	289.8	1.0	620	2250	6.0	19.54
	iten 133 U2			–	294.6	1.1	620	2500	16.0	25.84
300	**iten 133 U1**	300.0	1.0	–	342.2	1.2	720	2700	4.0	21.74
	iten 133 U2			–	347.0	1.3	720	3000	10.0	27.92

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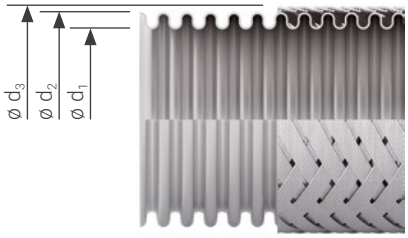
Data sheet iten 150

Manufacture: according to ISO EN 10380
Material hose: stainless steel 1.4404/AISI 316L
Material braid: stainless steel 1.4301/AISI 304
Operating temperature: −196 to +550°C



Product description:
Single-wall, hydraulically deformed, low pitch distance, very low stiffness.

DN	Type	Dimensions					Bend radius		Working pressure	Weight
		internal diameter		external diameter			static application	dynamic application	at +20°C SF 4	
		d_1	Tol. ±	d_2	d_3	Tol. ±	R_{st}	R_d	p_{max}	±10%
		mm	mm	mm	mm	mm	mm	mm	bar	kg/m
16	**iten 150 U0**	15.9	0.2	26.0	–	0.3	26	105	1.8	0.26
	iten 150 U1			–	28.1	0.4	44	105	37.0	0.52
20	**iten 150 U0**	19.8	0.2	31.0	–	0.3	32	120	1.1	0.34
	iten 150 U1			–	33.1	0.4	53	120	22.0	0.69
25	**iten 150 U0**	25.0	0.3	37.0	–	0.4	38	135	1.1	0.40
	iten 150 U1			–	39.1	0.5	64	135	22.0	0.77
32	**iten 150 U0**	31.7	0.3	45.5	–	0.4	47	166	0.7	0.50
	iten 150 U1			–	48.2	0.5	79	166	15.0	1.20
40	**iten 150 U0**	40.5	0.3	55.5	–	0.4	59	180	0.3	0.76
	iten 150 U1			–	58.2	0.5	98	180	15.0	1.44
50	**iten 150 U0**	49.7	0.4	66.5	–	0.5	72	210	0.3	0.93
	iten 150 U1			–	69.2	0.6	120	210	15.0	1.96
65	**iten 150 U0**	64.7	0.4	83.5	–	0.5	90	245	0.3	1.16
	iten 150 U1			–	86.2	0.6	150	245	12.0	2.19
80	**iten 150 U0**	79.6	0.5	100.5	–	0.6	108	350	0.2	1.73
	iten 150 U1			–	103.2	0.7	180	350	12.0	2.92

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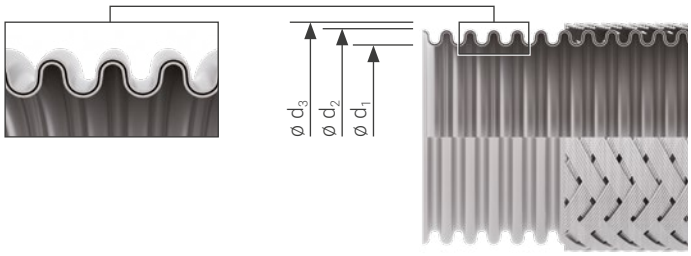
Data sheet iten 200

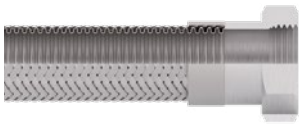
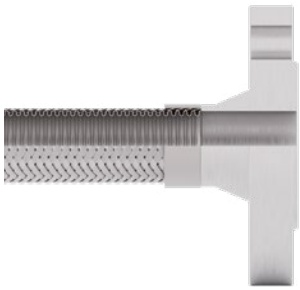
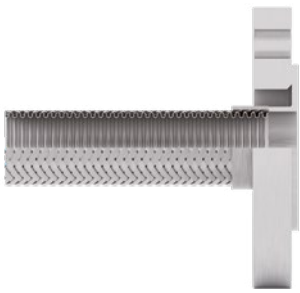
Manufacture: according to ISO EN 10380
Material hose: stainless steel 1.4404/AISI 316L
Material braid: stainless steel 1.4301/AISI 304
Operating temperature: −196 to +550°C



Product description:
Double-wall, hydraulically deformed, low pitch distance, low stiffness.

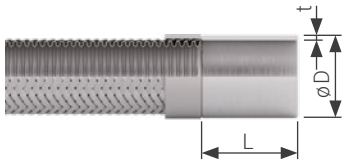
DN	Type	Dimensions					Bend radius		Working pressure	Weight
		internal diameter		external diameter			static application	dynamic application	at +20°C SF 4	
		d_1	Tol. ±	d_2	d_3	Tol. ±	R_{st}	R_d	p_{max}	±10%
		mm	mm	mm	mm	mm	mm	mm	bar	kg/m
16	**iten 200 U0**	16.1	0.2	24.0	–	0.3	40	85	3.3	0.41
	iten 200 U1			–	26.1	0.4	58	85	94.0	0.74
	iten 200 U2			–	28.2	0.5	58	85	116.0	1.07
20	**iten 200 U0**	20.0	0.2	28.0	–	0.3	45	110	2.8	0.48
	iten 200 U1			–	30.7	0.4	70	110	120.0	0.96
	iten 200 U2			–	33.4	0.5	70	110	157.0	1.44
25	**iten 200 U0**	25.4	0.3	34.5	–	0.4	55	150	2.3	0.62
	iten 200 U1			–	37.2	0.5	85	150	86.0	1.21
	iten 200 U2			–	39.9	0.6	85	150	112.0	1.80
32	**iten 200 U0**	32.5	0.3	43.0	–	0.4	70	210	1.8	0.81
	iten 200 U1			–	45.7	0.5	105	210	56.0	1.45
	iten 200 U2			–	48.4	0.6	105	210	74.0	2.09
40	**iten 200 U0**	41.7	0.3	54.0	–	0.4	80	270	1.6	1.31
	iten 200 U1			–	56.7	0.5	130	270	48.0	2.22
	iten 200 U2			–	59.4	0.6	130	270	71.0	3.12
50	**iten 200 U0**	51.1	0.4	65.0	–	0.5	100	350	1.3	1.69
	iten 200 U1			–	67.7	0.6	160	350	39.0	2.77
	iten 200 U2			–	70.4	0.7	160	350	54.0	3.86
65	**iten 200 U0**	66.2	0.4	82.5	–	0.5	125	480	1.0	2.32
	iten 200 U1			–	85.2	0.6	200	480	22.0	3.53
	iten 200 U2			–	87.9	0.7	200	480	36.0	4.74
80	**iten 200 U0**	80.7	0.4	99.0	–	0.6	150	600	0.8	2.76
	iten 200 U1			–	102.6	0.7	240	600	30.0	4.89
	iten 200 U2			–	106.2	0.8	240	600	42.0	7.01
100	**iten 200 U0**	99.5	0.4	121.0	–	0.6	180	750	0.6	3.63
	iten 200 U1			–	125.8	0.7	290	750	30.0	7.00
	iten 200 U2			–	130.6	0.8	290	750	37.0	10.37

Selection of our standard fittings

Weld-end socket Tube socket for cutting ring union	Nipple with male thread	Sleeve with female
		
Flat sealing nipple with union nut	**60° conical nippel with union nut**	**24° conical nippel with O-Ring and union nut**
		
Union with 24° taper seal with male thread	**Union with 24° taper seal with female thread**	**Welding neck flange**
		
Welding rim with floating flange	**Welding neck collar with floating flange**	**Tapered socket with grooved union**
		

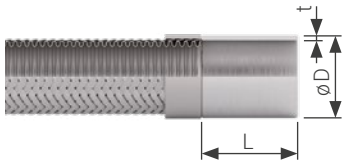
Weld-end socket

Other dimensions and materials on request.



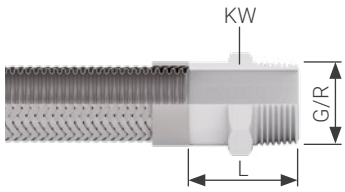
DN	ø D	t	L	Material
	mm	mm	mm	
10	13.5	1.6	40	1.4571/1.4404
12	17.2	1.6	40	1.4571/1.4404
16	21.3	1.6	40	1.4571/1.4404
20	26.9	2	40	1.4571/1.4404
25	33.7	2	40	1.4571/1.4404
32	42.4	2	40	1.4571/1.4404
40	48.3	2	40	1.4571/1.4404
50	60.3	2	50	1.4571/1.4404
65	76.1	2	50	1.4571/1.4404
80	88.9	2	50	1.4571/1.4404
100	114.3	2	50	1.4571/1.4404

Tube socket for cutting ring union according to DIN EN ISO 8434-1



DN	ø D	t	L	Material
	mm	mm	mm	
6	8	1	30	1.4571/1.4404
8	10	1.5	30	1.4571/1.4404
10	12	1.5	30	1.4571/1.4404
12	15	1.5	35	1.4571/1.4404
16	18	1.5	35	1.4571/1.4404
20	22	2	40	1.4571/1.4404
25	28	2	40	1.4571/1.4404
32	35	2	40	1.4571/1.4404
40	42	2	40	1.4571/1.4404

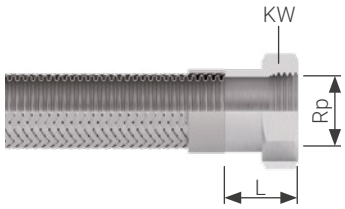
Nipple with male thread



G: cylindrical thread according to DIN EN ISO 228
R: conical thread according to DIN EN 10226-1 (on request also available in NPT)
Other dimensions and materials on request.

DN	G/R	KW	L	Material
	inch	mm	mm	
6/8	1/4	17	27	1.4571 or carbon steel
10	3/8	19	27	1.4571 or carbon steel
12	1/2	22	30	1.4571 or carbon steel
16	1/2	22	30	1.4571 or carbon steel
20	3/4	27	31	1.4571 or carbon steel
25	1	36	37	1.4571 or carbon steel
32	1 1/4	46	46	1.4571 or carbon steel
40	1 1/2	50	46	1.4571 or carbon steel
50	2	60	41	1.4571 or carbon steel

Sleeve with female

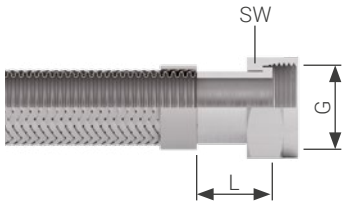


Rp: cylindrical thread according to DIN EN 10226-1
Other dimensions and materials on request.

DN	Rp	KW	L	Material
	inch	mm	mm	
6/8	1/4	19	21	1.4571 or carbon steel
10	3/8	22	21	1.4571 or carbon steel
12	1/2	27	24	1.4571 or carbon steel
16	1/2	27	24	1.4571 or carbon steel
20	3/4	32	28	1.4571 or carbon steel
25	1	41	30	1.4571 or carbon steel
32	1 1/4	50	32	1.4571 or carbon steel
40	1 1/2	55	35	1.4571 or carbon steel
50	2	65	39	1.4571 or carbon steel

Flat sealing nipple with union nut

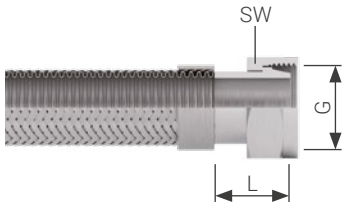
G: cylindrical thread according to DIN EN ISO 228
Other dimensions and materials on request.



DN	G	SW	L	Material	Material
	inch	mm	mm	Nipple	Nut
6/8	1/4	17	19	1.4571	1.4571 or carbon steel
10	3/8	22	20	1.4571	1.4571 or carbon steel
12	1/2	27	25	1.4571	1.4571 or carbon steel
20	3/4	32	25	1.4571	1.4571 or carbon steel
25	1	41	27	1.4571	1.4571 or carbon steel
32	1 1/4	50	31	1.4571	1.4571 or carbon steel
40	1 1/2	60	33	1.4571	1.4571 or carbon steel
50	2	70	36	1.4571	1.4571 or carbon steel

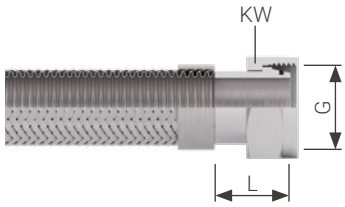
60° conical nippel with union nut

G: cylindrical thread according to DIN EN ISO 228
Other dimensions and materials on request.



DN	G	SW	L	Material	Material
	inch	mm	mm	Nipple	Nut
6/8	1/4	17	24	1.4571	1.4571 or carbon steel
10	3/8	22	24	1.4571	1.4571 or carbon steel
12	1/2	27	29	1.4571	1.4571 or carbon steel
20	3/4	32	29	1.4571	1.4571 or carbon steel
25	1	41	31	1.4571	1.4571 or carbon steel
32	1 1/4	50	36	1.4571	1.4571 or carbon steel
40	1 1/2	60	38	1.4571	1.4571 or carbon steel
50	2	70	40	1.4571	1.4571 or carbon steel

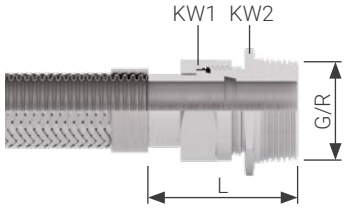
24° conical nippel with O-Ring and union nut according to DIN EN ISO 8434-1



DN	tube	G	KW	L	Material	Material
		metric	mm	mm	Nipple	Nut
6	8	M14 × 1.5	17	31	1.4404	1.4571 or galvanized steel
8	10	M16 × 1.5	19	32	1.4404	1.4571 or galvanized steel
10	12	M18 × 1.5	22	25	1.4306	1.4571 or galvanized steel
12	15	M22 × 1.5	27	36	1.4404	1.4571 or galvanized steel
16	18	M26 × 1.5	32	40	1.4404	1.4571 or galvanized steel
20	22	M30 × 2	36	35	1.4404	1.4571 or galvanized steel
25	28	M36 × 2	41	40	1.4404	1.4571 or galvanized steel
32	35	M45 × 2	50	40	1.4301	1.4571 or galvanized steel
40	42	M52 × 2	60	41	1.4301	1.4571 or galvanized steel

Union with 24° taper sea with male thread

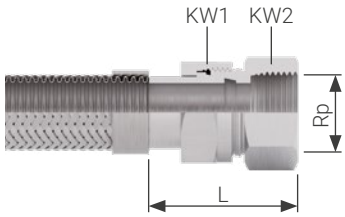
G: cylindrical thread according to DIN EN ISO 228
R: conical thread according to DIN EN 10226-1 (on request also available in NPT)
Other dimensions and materials on request.



DN	G/R	KW1	KW2	L	Material	Material
	inch	mm	mm	mm	Nipple	Nut + screw-in part
6/8	1/4	19	17	47	1.4571	1.4571 or carbon steel
10	3/8	22	19	49	1.4571	1.4571 or carbon steel
12	1/2	27	22	54	1.4571	1.4571 or carbon steel
16	1/2	32	27	56	1.4571	1.4571 or carbon steel
20	3/4	36	32	61	1.4571	1.4571 or carbon steel
25	1	41	36	66	1.4571	1.4571 or carbon steel
32	1 1/4	50	46	73	1.4571	1.4571 or carbon steel
40	1 1/2	60	55	78	1.4571	1.4571 or carbon steel
50	2	70	65	86	1.4571	1.4571 or carbon steel

Union with 24° taper seal with female thread

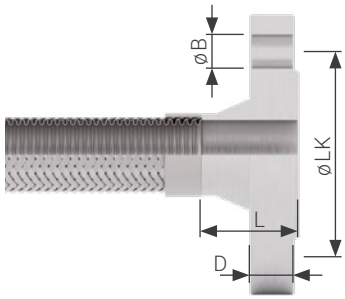
Rp: cylindrical thread according to DIN EN 10226-1
Other dimensions and materials on request.



DN	Rp	KW1	KW2	L	Material	Material
	inch	mm	mm	mm	Nipple	Nut + screw-in part
6/8	1/4	19	19	45	1.4571	1.4571 or carbon steel
10	3/8	22	22	46	1.4571	1.4571 or carbon steel
12	1/2	27	27	51	1.4571	1.4571 or carbon steel
16	1/2	32	27	52	1.4571	1.4571 or carbon steel
20	3/4	36	32	58	1.4571	1.4571 or carbon steel
25	1	41	41	62	1.4571	1.4571 or carbon steel
32	1 1/4	50	50	68	1.4571	1.4571 or carbon steel
40	1 1/2	60	55	71	1.4571	1.4571 or carbon steel
50	2	70	65	80	1.4571	1.4571 or carbon steel

Welding neck flange according to DIN EN 1092-1

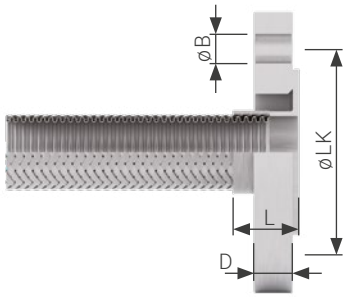
ANSI flanges, other pressure ratings and other materials on request.



DN	Pressure stage	ø LK	D	L	ø B	Material
		mm	mm	mm	mm	
15	40	65	16	38	4 × 14	1.4307 or carbon steel
20	40	75	18	40	4 × 14	1.4307 or carbon steel
25	40	85	18	40	4 × 14	1.4307 or carbon steel
32	40	100	18	42	4 × 18	1.4307 or carbon steel
40	40	110	18	45	4 × 18	1.4307 or carbon steel
50	16	125	18	45	4 × 18	1.4307 or carbon steel
65	16	145	18	45	8 × 18	1.4307 or carbon steel
80	16	160	20	50	8 × 18	1.4307 or carbon steel
100	16	190	20	52	8 × 18	1.4307 or carbon steel
125	16	220	22	55	8 × 18	1.4307 or carbon steel
150	16	250	22	55	8 × 22	1.4307 or carbon steel

Welding rim with floating flange according to DIN EN 1092-1

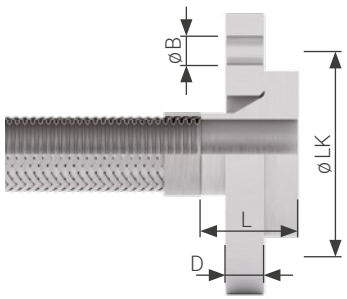
ANSI flanges, other pressure ratings and other materials on request.



DN	PN	ø LK	D	L	ø B	Material	Material
		mm	mm	mm	mm	Flange	Lap joint flange
15	40	65	14	9	4 × 14	1.4404	1.4571 or galvanized steel
20	40	75	16	12	4 × 14	1.4404	1.4571 or galvanized steel
25	40	85	16	15	4 × 14	1.4404	1.4571 or galvanized steel
32	40	100	18	15	4 × 18	1.4404	1.4571 or galvanized steel
40	40	110	18	17	4 × 18	1.4404	1.4571 or galvanized steel
50	16	125	20	23	4 × 18	1.4404	1.4571 or galvanized steel
65	16	145	20	23	8 × 18	1.4404	1.4571 or galvanized steel
80	16	160	20	23	8 × 18	1.4404	1.4571 or galvanized steel
100	16	190	22	28	8 × 18	1.4404	1.4571 or galvanized steel

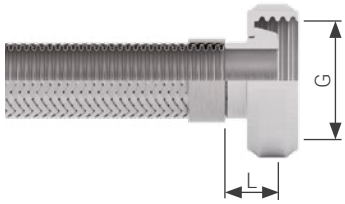
Welding neck collar with floating flange according to DIN EN 1092-1

ANSI flanges, other pressure ratings and other materials on request.



DN	PN	ø LK	D	L	ø B	Material	Material
		mm	mm	mm	mm	Collar	Lap joint flange
15	40	65	14	38	4 × 14	1.4404	1.4571 or galvanized steel
20	40	75	16	40	4 × 14	1.4404	1.4571 or galvanized steel
25	40	85	16	40	4 × 14	1.4404	1.4571 or galvanized steel
32	40	100	18	42	4 × 18	1.4404	1.4571 or galvanized steel
40	40	110	18	45	4 × 18	1.4404	1.4571 or galvanized steel
50	16	125	20	45	4 × 18	1.4404	1.4571 or galvanized steel
65	16	145	20	45	8 × 18	1.4404	1.4571 or galvanized steel
80	16	160	20	50	8 × 18	1.4404	1.4571 or galvanized steel
100	16	190	22	52	8 × 18	1.4404	1.4571 or galvanized steel

Tapered socket with grooved union according to DIN 11851



DN	L	G	Material
	mm	inch	fitting
16	38	Rd34 × 1/8	1.4404
20	40	Rd44 × 1/6	1.4404
25	40	Rd52 × 1/6	1.4404
32	42	Rd58 × 1/6	1.4404
40	45	Rd65 × 1/6	1.4404
50	45	Rd78 × 1/6	1.4404
65	45	Rd95 × 1/6	1.4404
80	50	Rd110 × 1/4	1.4404

Design of flexible metal hoses

Pressure/temperature correction factor according to ISO EN 10380

$p_{zul} = p_{max} \times K_p \times K_d$ [bar]

p_{zul}	max. permissible operating pressure under operating conditions
p_{max}	max. operating pressure at +20 °C
K_p	pressure correction factor dependent on temperature
K_d	pressure correction factor for dynamic applications

Pressure correction factor K_p

For metal hoses, the connection fittings and their mounting locations, the following material-specific requirements generally apply at elevated temperatures correction factors for the compressive strength must be taken into account. For the design, the materials of the braiding is authoritative.

	Material			
operating temperature in °C	**1.4301**	**1.4404**	**1.4541**	**1.4571**
20	1	1	1	1
50	0.88	0.88	0.92	0.90
100	0.73	0.74	0.83	0.81
150	0.66	0.67	0.78	0.76
200	0.60	0.62	0.74	0.73
250	0.56	0.58	0.71	0.69
300	0.52	0.54	0.67	0.65
350	0.50	0.52	0.64	0.63
400	0.48	0.50	0.62	0.61
450	0.47	0.48	0.61	0.59
500	0.46	0.47	0.60	0.59
550	0.42	0.47	0.59	0.58
>600		On request		

Pressure correction factor K_d for dynamic applications

In the case of dynamic loading, a correction factor based on the operating conditions must also be taken into account.

Current	**Movement**		
	static	**dynamic**	**dynamic**
	low vibration	**low vibration**	**strong vibration**
uniform flow	1	0.80	0.40
pulsating flow	0.80	0.60	0.30
pulsating flow	0.40	0.30	0.15

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