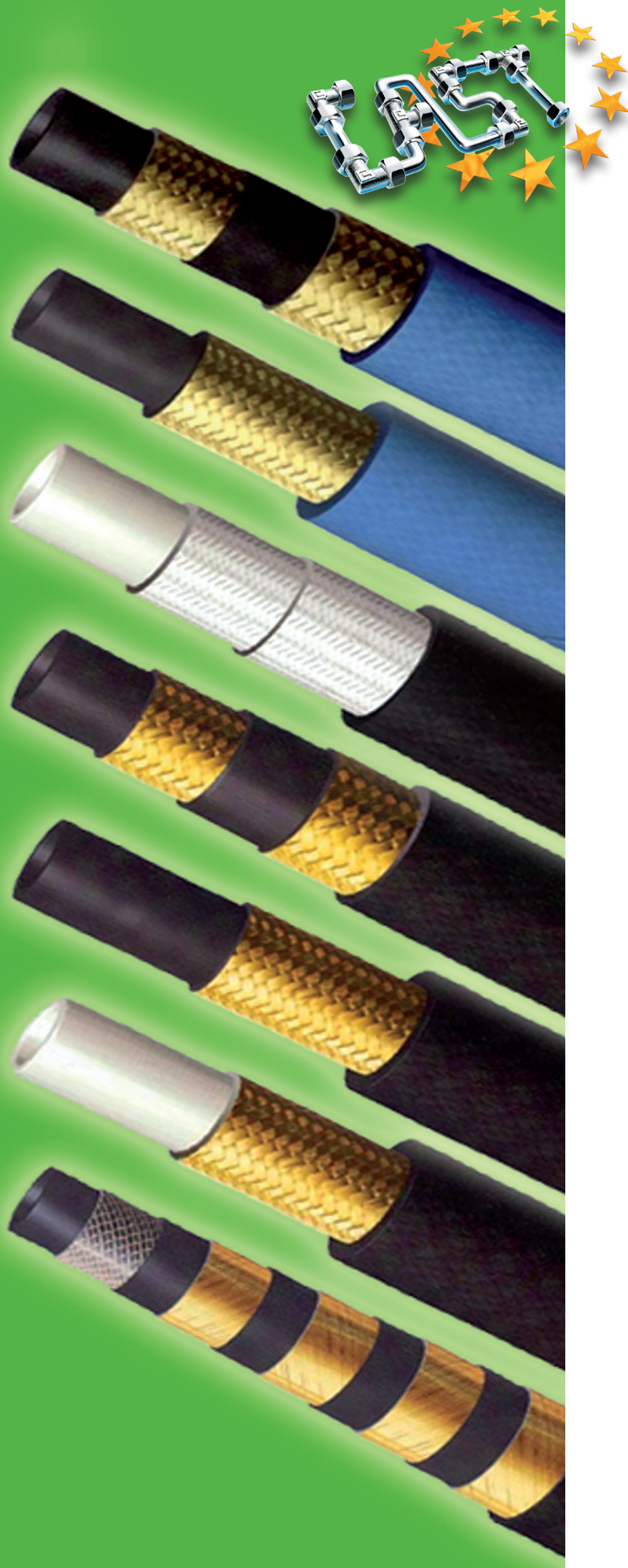


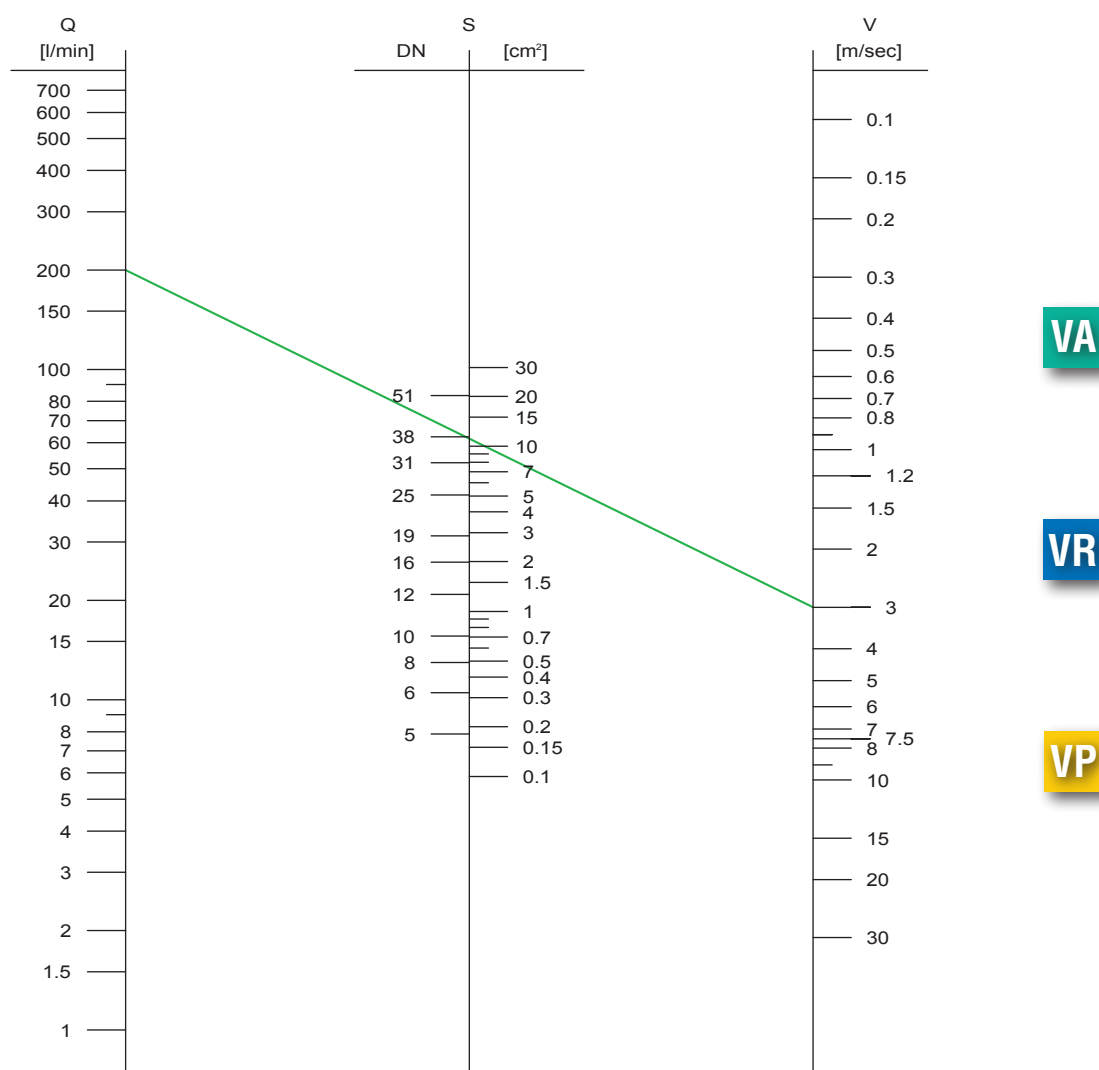
HOSE



CHOICE OF FLEXIBLE HOSE SIZE

The graph below can be used for the correct choice of the flexible hose. It lets you calculate the tube dimension according to the flow value and speed of the fluid.

To find out the dimension of the right hose, draw a straight line connecting the known values of flow and speed. The intersection of this line on the middle of the picture determines the value of the diameter of the hose to be chosen. In case the value found does not correspond with one of the diameters DN indicated, the highest value must be chosen. Use the speeds suggested for intake and return pressure systems, to always have optimal working conditions.



E.g.:

For a fluid flow $Q=200$ l/min and fluid speed $V=3$ m/s, a size of $DN38$ is obtained.

Legenda

Q = flexible hose flow in l/min

S = scross section of the flexible tube in cm²
(DN is the corresponding diameter)

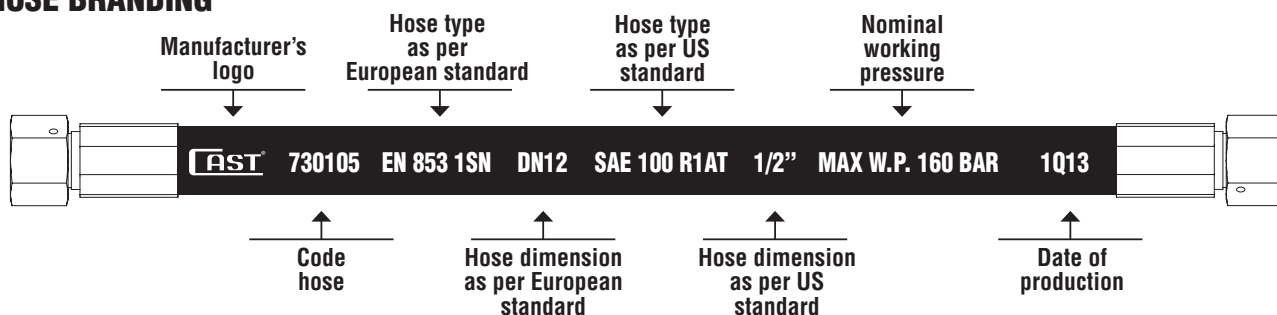
V = fluid speed

VP = maximum speed suggested for pressured systems

VA = maximum speed suggested for intake systems

VR = maximum speed suggested for return systems

HOSE BRANDING



WORKING PRESSURES FOR FLEXIBLE TUBES

HOSE TYPE		HOSE DIMENSION											
		5	6	8	10	12	16	19	25	31	38	51	DN
		-3	-4	-5	-6	-8	-10	-12	-16	-20	-24	-32	SIZE
		3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	INCH
BRAIDED	7301.. EN 853 1SN SAE 100 R1AT	250	225	215	180	160	130	105	88	63	50	40	bar
		3625	3263	3118	2610	2320	1885	1523	1276	914	725	580	psi
	7302.. EN 853 2SN SAE 100 R2AT	415	400	350	330	275	250	215	165	125	90	80	bar
		6018	5800	5075	4785	3988	3625	3118	2393	1813	1305	1131	psi
	7305.. EN 857 1SC	-	225	215	180	160	-	-	-	-	-	-	bar
		-	3263	3118	2610	2320	-	-	-	-	-	-	psi
	7306.. EN 857 2SC SAE 100 R16	-	400	350	330	275	250	215	165	-	-	-	bar
SPIRAL WIRED		-	5800	5075	4785	3988	3625	3118	2393	-	-	-	ps
	7314..-7315.. 1SC HYDRO-WASH	-	250	250	250	-	-	-	-	-	-	-	bar
		-	3625	3625	3625	-	-	-	-	-	-	-	psi
	7316..-7317.. 2SC HYDRO-WASH	-	400	400	400	-	-	-	-	-	-	-	bar
		-	5800	5800	5800	-	-	-	-	-	-	-	psi
	7308.. EN 856 4SP	-	450	-	445	415	350	350	280	-	-	-	bar
		-	6525	-	6453	6018	5075	5075	4060	-	-	-	psi
TERMOPLASTIC	7309.. EN 856 4SH	-	-	-	-	-	-	420	380	325	290	250	bar
		-	-	-	-	-	-	6090	5510	4713	4205	3625	psi
	7310.. EN 856 R13	-	-	-	-	-	-	345	345	345	345	345	bar
		-	-	-	-	-	-	5000	5000	5000	5000	5000	psi
	7311.. EN 855 R7 SAE 100 R7	210	200	190	175	-	-	-	-	-	-	-	bar
		3045	2900	2755	2537	-	-	-	-	-	-	-	psi
	7312.. R7TM	325	300	240	225	190	150	130	105	-	-	-	bar
		4710	4350	3480	3260	2755	2175	1885	1522	-	-	-	psi

Notes: The outer diameters of the hoses stated are approximate. These diameters may vary based on the construction tolerances in accordance with the limits set by regulations.

For applications with compressed air is the maximum pressure of 50 bar and the maximum temperature is 80°

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Inner diameter of the flexible hose DN= identification of the inner diameter of the hose according to the construction rules of the flexible tubes (EN) mm= nominal inner diameter of the hose in mm according to the construction rules of the flexible tubes (EN/SAE) SIZE= identification of the inner diameter of the hose according to SAE J517 (value expressed in 1/16 of an inch) INCH= nominal inner diameter of the hose in inches		Minimum bending radius
			Maximum working pressure
			Burst pressure
			Hose unitary linear weight
			Outer diameter of the flexible hose

HOSE EN 853 1SN - SAE 100 R1AT

Application Medium pressure hydraulic systems with mineral and vegetable oils, water, aqueous solutions, air*, inert gases*.

Manufacture:
- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 1 braid of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working temperature from -40°C to +100°C, differences up to +120°C are tolerated.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
730101	5	4,8	-3	3/16	11,6	90	250	3625	1000	14500	180
730102	6	6,6	-4	1/4	13	100	225	3263	900	13050	190
730103	8	8,3	-5	5/16	14,7	115	215	3118	850	12325	220
730104	10	9,9	-6	3/8	16,8	125	180	2610	720	10440	280
730105	12	13	-8	1/2	20	180	160	2320	640	9280	360
730106	16	16,4	-10	5/8	23,2	200	130	1885	520	7540	440
730107	19	19,5	-12	3/4	27,1	240	105	1523	420	6090	560
730108	25	26	-16	1	35,1	300	88	1276	350	5075	830
730109	31	32,5	-20	1 1/4	42,5	420	63	914	250	3625	1070
730110	38	38,7	-24	1 1/2	50,1	500	50	725	200	2900	1420
730111	51	51,1	-32	2	64,1	630	40	580	160	2320	2010

HOSE EN 853 2SN - SAE 100 R2AT

Application Medium pressure hydraulic systems with mineral and vegetable oils, water, aqueous solutions, air*, inert gases*.

Manufacture:
- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 2 braids of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working temperature from -40°C to +100°C, differences up to +120°C are tolerated.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
730201	5	4,8	-3	3/16	13,3	90	415	6018	1650	23925	300
730202	6	6,6	-4	1/4	14,4	100	400	5800	1600	23200	310
730203	8	8,3	-5	5/16	16	115	350	5075	1400	20300	370
730204	10	9,9	-6	3/8	18,4	125	330	4785	1320	19140	440
730205	12	13	-8	1/2	21,4	180	275	3988	1100	15950	530
730206	16	16,4	-10	5/8	24,6	200	250	3625	1000	14500	660
730207	19	19,5	-12	3/4	28,6	240	215	3118	850	12325	840
730208	25	26	-16	1	37,1	300	165	2393	650	9425	1230
730209	31	32,5	-20	1 1/4	46,7	420	125	1813	500	7250	1770
730210	38	38,7	-24	1 1/2	54,5	500	90	1305	360	5220	2170
730211	51	51,1	-32	2	66,7	630	80	1131	310	4500	2790

HOSE EN 857 1SC

Application Medium pressure hydraulic systems with mineral and vegetable oils, water, aqueous solutions, air*, inert gases*.

Manufacture:

- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 1 braid of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working

temperature from -40°C to +100°C, differences up to +120°C are tolerated.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
730502	6	6,6	-4	1/4	11,9	75	225	3263	900	13050	160
730503	8	8,3	-5	5/16	13,7	85	215	3118	850	12325	210
730504	10	9,9	-6	3/8	15,7	90	180	2610	720	10440	260
730505	12	13	-8	1/2	19,5	130	160	2320	640	9280	340

HOSE EN 857 2SC

Application Medium pressure hydraulic systems with mineral and vegetable oils, water, aqueous solutions, air*, inert gases*.

Manufacture:

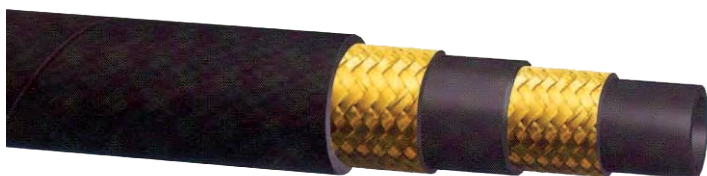
- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 2 braids of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working

temperature from -40°C to +100°C, differences up to +120°C are tolerated.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
730602	6	6,6	-4	1/4	13	75	400	5800	1600	23200	250
730603	8	8,3	-5	5/16	14,6	85	350	5075	1400	20300	300
730604	10	9,9	-6	3/8	16,6	90	330	4785	1320	19140	370
730605	12	13	-8	1/2	20	130	275	3988	1100	15950	450
730606	16	16,4	-10	5/8	23,9	170	250	3625	1000	14500	610
730607	19	19,5	-12	3/4	27,6	200	215	3118	850	12350	760
730608	25	26	-16	1	35.6	250	165	2393	650	9425	1150

HOSE 1SC HIGH PRESSURE WATER JET WASHER

Application For cleaning with high pressure hot water.

Manufacture:
 - **Internal tube** Special synthetic rubber resistant to 150°C, hot water, detergents.
 - **Reinforcement** 1 braid of high resistance steel.
 - **Covering** Special black synthetic rubber with cloth impression, microperforated, resistant to oils, abrasion and atmospheric agents.

Working temperature from -40°C to +150°C



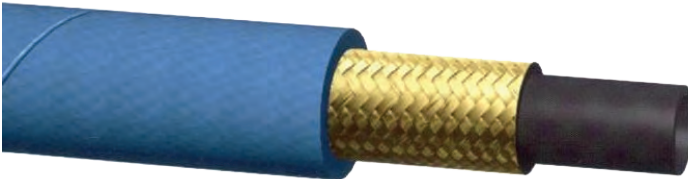
CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731402	6	6,6	-4	1/4	11,8	75	250	3625	1000	14500	160
731403	8	8,3	-5	5/16	13,7	85	250	3625	1000	14500	210
731404	10	9,9	-6	3/8	15,5	90	250	3625	1000	14500	290

HOSE 1SC HIGH PRESSURE WATER JET WASHER

Application For cleaning with high pressure hot water.

Manufacture:
 - **Internal tube** Special synthetic rubber resistant to 150°C, hot water, detergents.
 - **Reinforcement** 1 braid of high resistance steel.
 - **Covering** Special black synthetic rubber with cloth impression, microperforated, resistant to oils, abrasion and atmospheric agents.

Working temperature from -40°C to +150°C



CODE											
	Ø internal				Ø esterno	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731502	6	6,6	-4	1/4	11,8	75	250	3625	1000	14500	160
731503	8	8,3	-5	5/16	13,7	85	250	3625	1000	14500	210
731504	10	9,9	-6	3/8	15,5	90	250	3625	1000	14500	290

HOSE 2SC HIGH PRESSURE WATER JET WASHER

Application For cleaning with high pressure hot water.

Manufacture:
 - **Internal tube** Special synthetic rubber resistant to 150°C, hot water, detergents.
 - **Reinforcement** 2 braids of high resistance steel.
 - **Covering** Special black synthetic rubber with cloth impression, microperforated, resistant to oils, abrasion and atmospheric agents.

Working temperature from -40°C to +150°C



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731602	6	6.6	-4	1/4	13	75	400	5800	1600	23200	250
731603	8	8.3	-5	5/16	14.6	85	400	5800	1600	23200	300
731604	10	9.9	-6	3/8	16.6	90	400	5800	1600	23200	370

HOSE 2SC HIGH PRESSURE WATER JET WASHER

Application For cleaning with high pressure hot water.

Manufacture:

- **Internal tube** Special synthetic rubber resistant to 150°C, hot water, detergents.

- **Reinforcement** 2 braids of high resistance steel.

- **Covering** Special black synthetic rubber with cloth impression, microperforated, resistant to oils, abrasion and atmospheric agents.

Working

temperature from -40°C to +150°C



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731702	6	6,6	-4	1/4	13	75	400	5800	1600	23200	250
731703	8	8,3	-5	5/16	14,6	85	400	5800	1600	23200	300
731704	10	9,9	-6	3/8	16,6	90	400	5800	1600	23200	370

HOSE EN 856 4SP

Application Very high pressure hydraulic systems, also pulsating, with oils, water, aqueous solutions, air*, inert gases*.

Manufacture:

- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 4 spirals of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working

temperature from -40°C to +100°C, with discontinuous operation +120°C max.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
730802	6	6,6	-4	1/4	17,6	150	450	6525	1800	26100	585
730804	10	9,9	-6	3/8	21,1	180	445	6453	1780	25810	700
730805	12	13	-8	1/2	24,2	230	415	6018	1660	24070	850
730806	16	16,4	-10	5/8	27,9	250	350	5075	1400	20300	1040
730807	19	19,5	-12	3/4	32	300	350	5075	1400	20300	1320
730808	25	26	-16	1	38,9	340	280	4060	1120	16240	2060

HOSE EN 856 4SH

Application Very high pressure hydraulic systems, also pulsating, with oils, water, aqueous solutions, air*, inert gases*.

Manufacture:
- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 4 spirals of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working temperature from -40°C to +100°C, with discontinuous operation +120°C max.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
730907	19	19,5	-12	3/4	31,9	280	420	6090	1680	24360	1430
730908	25	26	-16	1	38,7	340	380	5510	1520	22040	2200
730909	31	32,5	-20	1 1/4	45,2	460	325	4713	1300	18850	2580
730910	38	38,7	-24	1 1/2	53,4	560	290	4205	1160	16820	3300
730911	51	51,1	-32	2	67,3	700	250	3625	1000	14500	4940

HOSE EN 856 R13

Application Very high pressure hydraulic systems, also pulsating, with oils, water, aqueous solutions, air*, inert gases*.

Manufacture:
- **Internal tube** Substrate of synthetic oil resistant rubber.

- **Reinforcement** 4 - 6 spirals of high resistance steel.

- **Covering** Black synthetic rubber resistant to abrasion, oils, fuels, ozone, atmospheric agents.
* With gas pressures higher than 15 bars, the covering needs perforation.

Working temperature from -40°C to +120°C.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731007	19	19,5	-12	3/4	32,3	240	345	5000	1380	20000	1570
731008	25	26	-16	1	38,7	300	345	5000	1380	20000	1920
731009	31	32,5	-20	1 1/4	49,8	420	345	5000	1380	20000	3600
731010	38	38,7	-24	1 1/2	57,3	500	345	5000	1380	20000	4800
731011	51	51,1	-32	2	71,1	630	345	5000	1380	20000	6600

HOSE ISO 3949 R7 EN 855 - SAE 100 R7

Application Medium pressure hydraulic systems with mineral and vegetable oils, water, aqueous solutions, air*, inert gases*.

Manufacture:
- **Internal tube** Oil resistant thermoplastic polymer.

- **Reinforcement** 2 braids of high resistance polyester.

- **Covering** abrasion resistant thermoplastic polyurethane.

Working temperature from -40°C to +100°C.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731101	5	4,8	-3	3/16	10	30	210	3045	840	12180	73
731102	6	6,4	-4	1/4	11,8	35	200	2900	800	11600	90
731103	8	8	-5	5/16	14,3	45	190	2755	760	11020	128
731104	10	9,7	-6	3/8	16	55	175	2537	700	10150	155

HOSE R7TM

Application Medium pressure hydraulic systems with mineral and vegetable oils, water, aqueous solutions, air*, inert gases*.

Manufacture:
- **Internal tube** Oil resistant thermoplastic polymer.

- **Reinforcement** 1 braid of high resistance steel.

- **Covering** abrasion resistant thermoplastic polyurethane.

Working temperature from -40°C to +100°C.



CODE											
	Ø internal				Ø external	R min.	PN		P burst		Weight g/m
	DN	mm	size	inch			bar	psi	bar	psi	
731201	5	4,7	-3	3/16	10	30	325	4710	1300	18850	120
731202	6	6,3	-4	1/4	11,9	40	300	4350	1200	17400	170
731203	8	8,2	-5	5/16	14	50	240	3480	960	13920	221
731204	10	9,7	-6	3/8	16	60	225	3260	900	13050	260
731205	12	12,8	-8	1/2	19,2	75	190	2755	760	11020	326
731206	16	16	-10	5/8	23,3	110	150	2175	600	8700	412
731207	19	19,4	-12	3/4	25,5	150	130	1885	520	7540	454
731208	25	25	-16	1	32,5	185	105	1522	420	6090	590

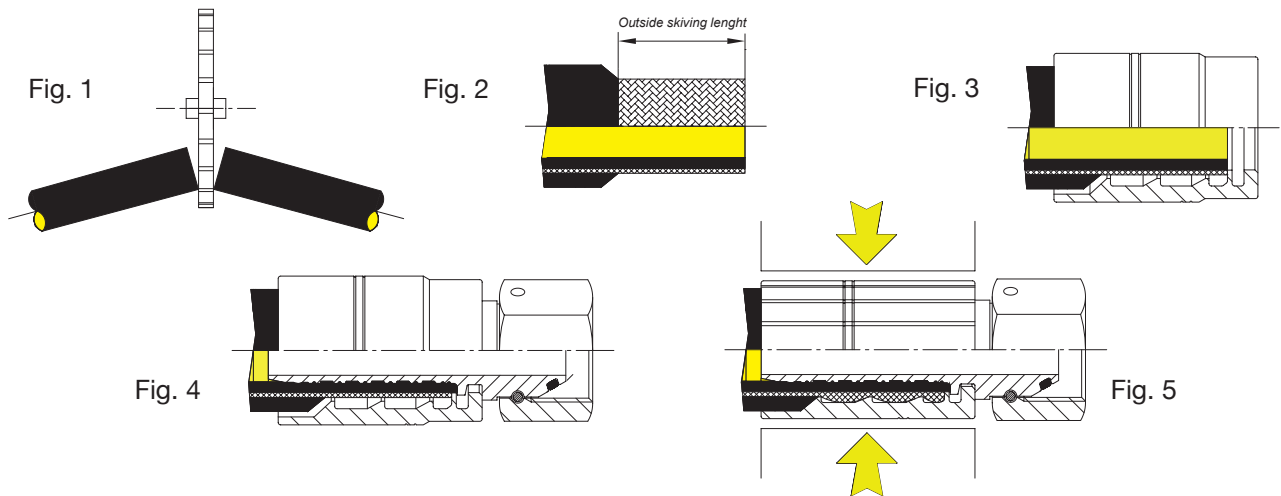
ASSEMBLY INSTRUCTIONS FOR FLEXIBLE HOSE FITTINGS

FITTINGS FOR FLEXIBLE HOSES WITHOUT EXTERNAL PEELING - STANDARD SERIES

1. Cut the hose at the desired length at a right angle with the specific disc cutter. Remove any cutting residues from the hose edge (Fig.1).
2. Insert the sleeve on the hose until it stops (Fig.3).
3. Insert the stud of the fitting into the hose until the same fitting comes into contact with the sleeve (Fig.4).
4. Press the sleeve on the hose with the suitable clamps following the directions in the pressing tables (Fig.5).
5. It is imperative to check the collapse of the fitting hole with the appropriate tools. The assembled hoses that are not within the set tolerance can not be used.

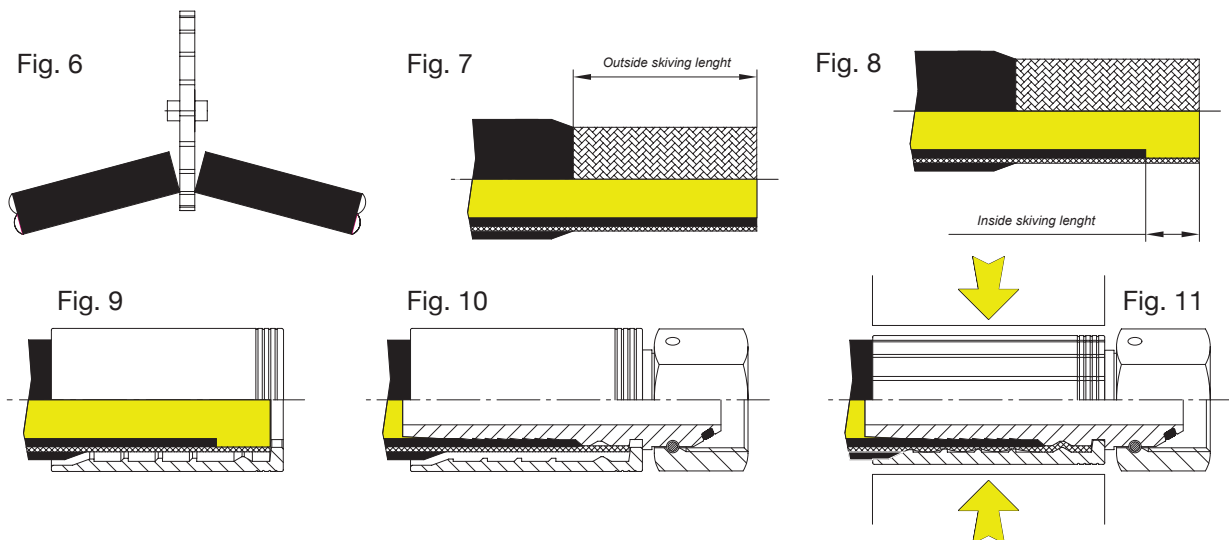
FITTINGS FOR FLEXIBLE HOSES WITH EXTERNAL PEELING - STANDARD SERIES

1. Cut the tube at the desired length at a right angle with the specific disc cutter. Remove any cutting residues from the hose edge (Fig.1).
2. Remove the external cover of the hose for the length indicated in the tables for the assembly to the outer diameter of the metal reinforcement, avoiding damaging it (Fig.2).
3. Insert the sleeve on the hose until it stops so to entirely cover the portion of the hose that has no external cover (Fig.3).
4. Insert the hose holder stem of the fitting into the tube until the same fitting comes into contact with the sleeve (Fig.4).
5. Press the sleeve on the hose with the suitable clamps following the directions in the pressing tables (Fig.5).
6. It is imperative to check the collapse of the fitting hole with the appropriate tools. The assembled hoses that are not within the set tolerance can not be used.



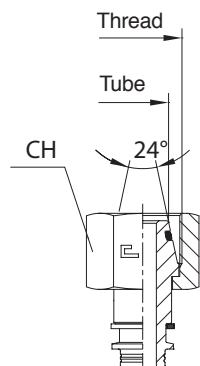
FITTINGS FOR FLEXIBLE HOSES WITH EXTERNAL AND INTERNAL PEELING - SERIES INTERLOCK

1. Cut the hose at the desired length at a right angle with the specific disc cutter. Remove any cutting residues from the hose edge (Fig.6).
2. Remove the external cover of the hose for the length indicated in the tables for the assembly to the outer diameter of the metal reinforcement, avoiding damaging it (Fig.7).
3. Remove the internal substrate of the hose for the length indicated in the tables for the assembly to the inner diameter of the metal reinforcement, avoiding damaging it and eliminating any machining residue (Fig.8).
4. Insert the sleeve on the hose until it stops so to entirely cover the portion of the hose that has no external cover (Fig.9).
5. Insert the hose holder stem of the fitting into the tube until the same fitting comes into contact with the sleeve (Fig.10).
6. Press the sleeve on the hose with the suitable clamps following the directions in the pressing tables (Fig.11).
7. It is imperative to check the collapse of the fitting hole with the appropriate tools. The assembled hoses that are not within the set tolerance can not be used and must remade.



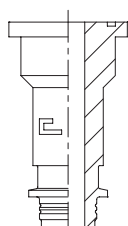
TIGHTENING TORQUES

24° CONE FITTINGS ISO 8434-1 (DIN 2353)



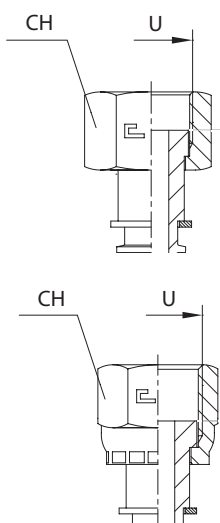
Light series "L"				Heavy series "S"			
METRIC PARAL. THREAD	Ø TUBE	KEY (CH)	TORQUE ^{+10%₀} [Nm]	METRIC PARAL. THREAD	Ø TUBE	KEY (CH)	TORQUE ^{+10%₀} [Nm]
M12x1.5	6	14	20	M14x1.5	6	17	38
M14x1.5	8	17	38	M16x1.5	8	19	45
M16x1.5	10	19	45	M18x1.5	10	22	51
M18x1.5	12	22	51	M20x1.5	12	24	58
M22x1.5	15	27	74	M22x1.5	14	27	74
M26x1.5	18	32	105	M24x1.5	16	30	74
M30x2	22	36	135	M30x2	20	36	135
M36x2	28	41	166	M36x2	25	41	166
M45x2	35	50	290	M42x2	30	50	240
M52x2	42	60	330	M52x2	38	60	330

INNER FLANGE - ISO 6162-1/-2, SAE J518



Series 3000					Series 6000				
Ø FLANGE	Metric thread screw		UNC thread screw		Ø FLANGIA	Metric thread screw		UNC thread screw	
	THREAD	TORQUE [Nm]	THREAD	TORQUE ^{+10%₀} [Nm]		THREAD	TORQUE [Nm]	THREAD	TORQUE ^{+10%₀} [Nm]
1/2	M8	24	5/16-18	24	1/2	M8	20	5/16-18	24
3/4	M10	50	3/8-16	43	3/4	M10	50	3/8-16	43
1"	M10	50	3/8-16	43	1"	M12	92	7/16-14	70
1.1/4	M10	50	7/16-14	70	1.1/4	M12	92	1/2-13	105
1.1/2	M12	92	1/2-13	105	1.1/2	M16	210	5/8-11	210
2"	M12	92	1/2-13	105	2"	M20	400	3/4-10	360

ORFS FITTINGS - ISO 8434-3 (SAE J1453)

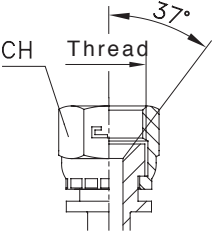
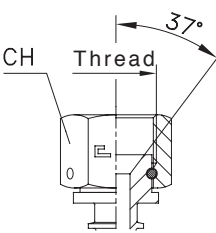
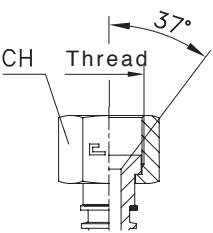


THREAD UNF/UNS/UN-2A	KEY (CH)	SLIP-ON NUT	STAPLED NUT
		TORQUE ^{+10%₀} [Nm]	TORQUE ^{+10%₀} [Nm]
9/16-18	17	25	25
11/16-16	22	40	40
13/16-16	24	55	55
1-14	30	60	60
1.3/16-12	36	90	90
1.7/16-12	41	125	125
1.11/16-12	50	170	170
2-12	60	200	200

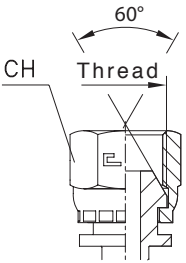
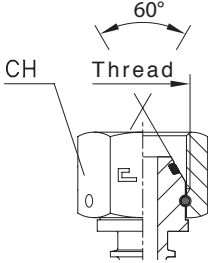
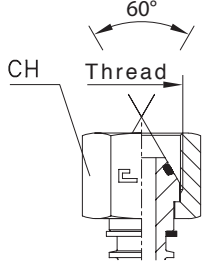
Notes: All the values reported in the above tightening tables are mere indication, and come from a series of practical tests carried out in the technical laboratory of CASALGRASSO (CN). These may vary according to the materials and to the tolerances of the employed components.

TIGHTENING TORQUES

JIC 74° FITTINGS - ISO 8434-2 (SAE J514)

		STAPLED NUT	SWIVEL NUT	SLIP-ON NUT
				
THREAD UNF/UN	KEY (CH)	TORQUE ^{+10% 0} [Nm]	TORQUE ^{+10% 0} [Nm]	TORQUE ^{+10% 0} [Nm]
7/16-20	14	15	20	20
1/2-20	17	20	25	25
9/16-18	19	30	35	35
3/4-16	24	50	60	60
7/8-14	27	69	85	85
1.1/16-12	32	98	140	140
1.3/16-12	36	118	-	-
1.5/16-12	41	140	230	230
1.5/8-12	50	-	380	380
1.7/8-12	60	-	460	460

60° CONE FITTINGS ISO 8434-6 (BS 5200)

		STAPLED NUT	SWIVEL NUT	SLIP-ON NUT
				
BSPP THREAD	KEY (CH)	TORQUE ^{+10% 0} [Nm]	TORQUE ^{+10% 0} [Nm]	COPPIA ^{+10% 0} [Nm]
G 1/8	14	15	25	20
G 1/4	19	20	65	30
G 3/8	22	34	85	75
G 1/2	27	60	150	130
G 5/8	30	69	200	170
G 3/4	32	115	260	220
G 1"	41	140	320	270
G 1.1/4	50	-	500	420
G 1.1/2	55	-	600	510
G 2"	70	-	700	600
M 12x1,5	17	15	35	30
M 14x1,5	19	20	45	38
M 16x1,5	22	35	55	48
M 18x1,5	24	48	70	60
M 20x1,5	27	60	80	70
M 22x1,5	27	60	100	85
M 26x1,5	32	115	170	150
M 30x1,5	36	130	250	210
M 38x1,5	46	200	310	280
M 45x1,5	55	290	380	320

Notes: All the values reported in the above tightening tables are mere indication, and come from a series of practical tests carried out in the technical laboratory of CASALGRASSO (CN). These may vary according to the materials and to the tolerances of the employed components.

PRESCRIPTIONS FOR THE INSTALLATION OF FLEXIBLE HOSES ACCORDING TO DIN 20066

To ensure the efficiency, safety and duration of the flexible hoses and related fittings it is necessary not to exceed the admitted working pressures and maximum temperatures, assemble the hoses correctly, use the most suitable fittings based on the assembly conditions, determine the length of the hoses in consideration of their movement, if any.

Therefore, the correct installation of the assembled flexible hoses requires the compliance with the prescriptions described below.

1. Do not apply torques to the flexible hoses along its axis as this could cause a drop in pressure (Fig.1).

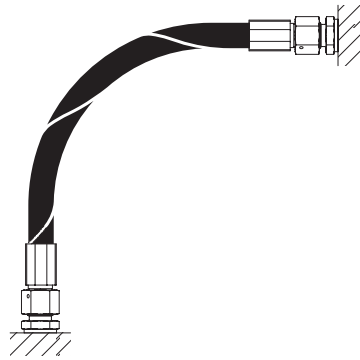
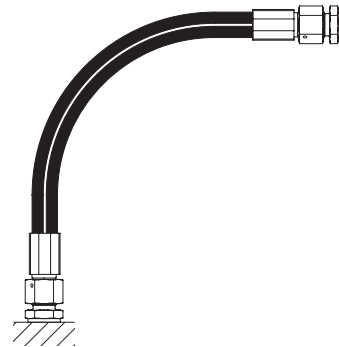


Fig. 1

Incorrect assembly



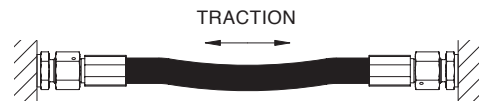
Correct assembly

2. The flexible hose must be assembled so that in normal working conditions it does not undergo any tensile stress other than that due to its own weight, and any compression stress to avoid breaking (Fig.2).



Fig. 2

Incorrect assembly



Correct assembly

3. The flexible hose must be assembled by following the natural curvature as much as possible and maintaining the minimum bending radius allowed to prevent any constriction and collapse and not to shorten the life of the assembly. If this prescription can not be followed please use elbow fittings (Fig.3).

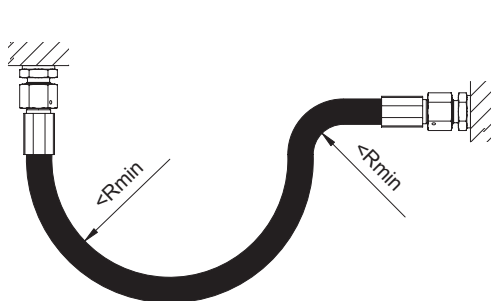
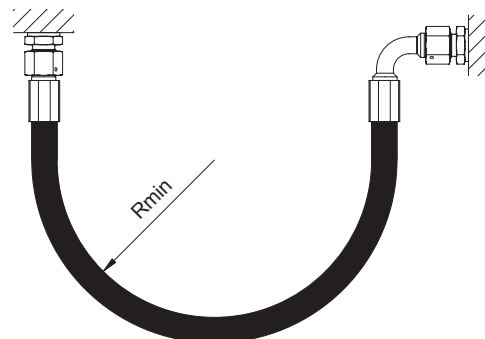


Fig. 3

Incorrect assembly



Correct assembly

PRESCRIPTIONS FOR THE INSTALLATION OF FLEXIBLE HOSES ACCORDING TO DIN 20066

4. If the flexible hose must be bent, its length must be such to maintain the minimum bending radius allowed and start the curve only after a length equal to $1.5d$. If this prescription can not be complied with, arrange for a protection in the folding area (Fig.4).

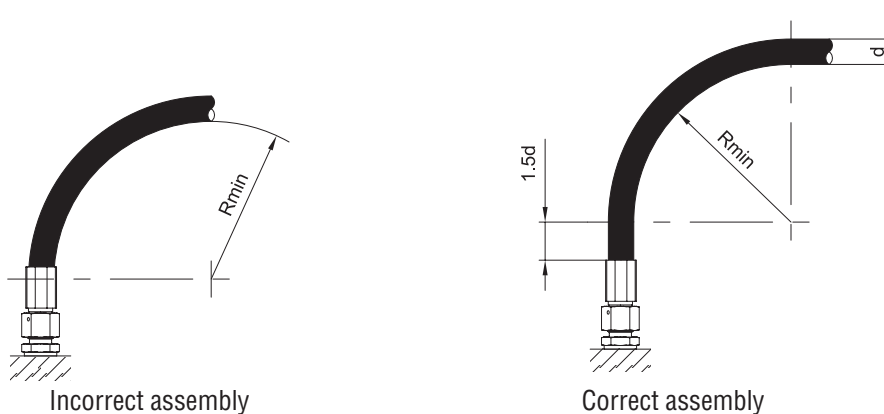


Fig. 4

5. Use suitable fittings to avoid any undesired additional stress to the flexible hose (Fig.5).

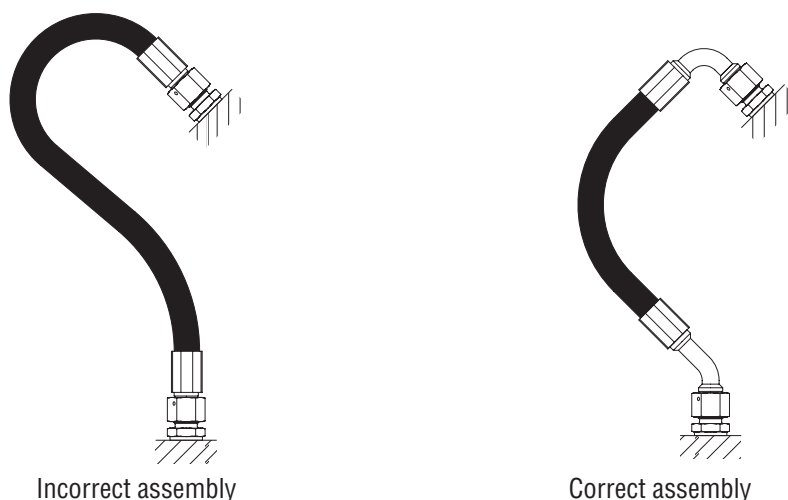


Fig. 5

6. To prevent any damage to the flexible hose caused by external factors, it is necessary to eliminate any undesired mechanical action and prevent the flexible hose from rubbing against the components of the bearing structure or the other hoses. Select a suitable assembly position for the flexible hoses and adequate fixing. Protect the flexible hose with sheaths or similar protections, if necessary. The parts with sharp edges must be covered or eliminated (Fig.6).

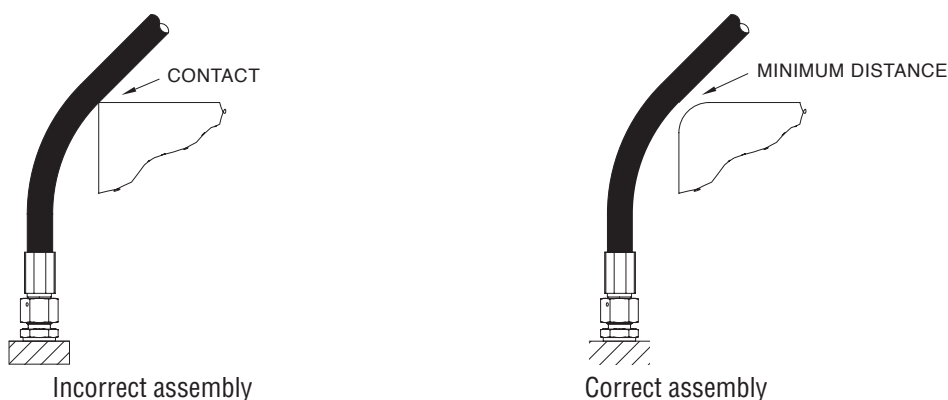
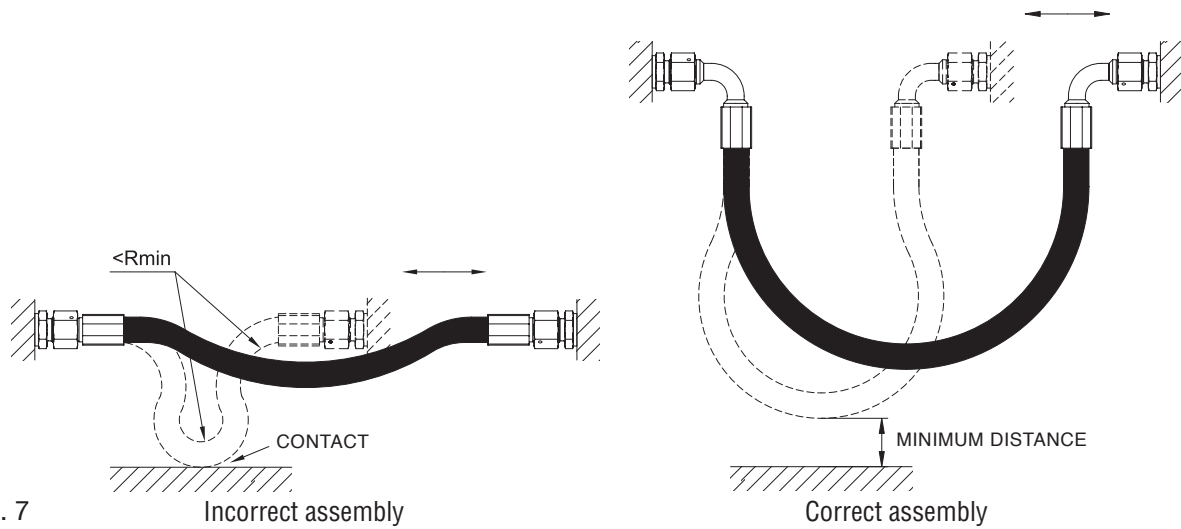


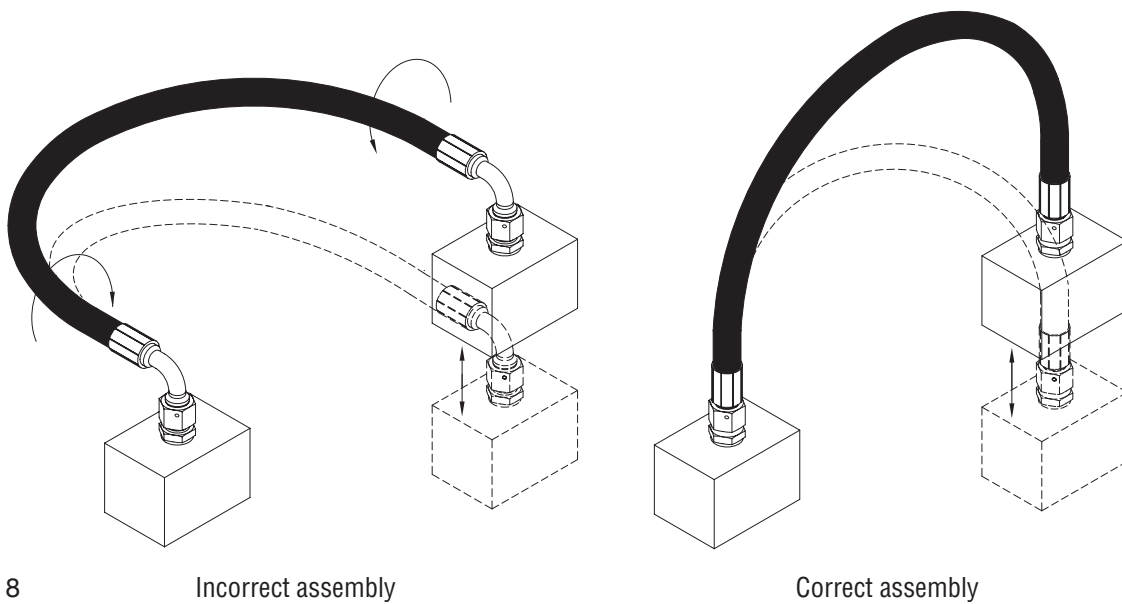
Fig. 6

PRESCRIPTIONS FOR THE INSTALLATION OF FLEXIBLE HOSES ACCORDING TO DIN 20066

7. For applications with moving parts, the length of the flexible hose must be calculated in a way that, within the range of motion, the minimum bending radius allowed is maintained and the hose does not undergo any tensile stress (Fig.7).



8. For applications with moving parts it is necessary to avoid the torque of the flexible hose when the longitudinal movement and the curvature take place in the same plain. This condition can be obtained through correct assembly, with suitable constructive measurements and by using adequate fittings (Fig. 8).



LENGTH AND ORIENTATION OF THE ASSEMBLED FLEXIBLE HOSES

The length of a flexible hose assembled with straight male fittings must be measured at the ends of the two connections. For female fittings the length is measured at the end of the conical seals or on the flat seal surfaces. In case of elbow fittings and eyelet fittings the length is measured on the interaxes while also considering the criteria described for straight fittings (Fig.1). To determine the right length of an assembled hose it is advisable to consider the possible lengthening or shortening under pressure according to the construction rules for the individual hoses (from -2% to +4% for hoses type 1SN, 2SN, 2SC, 4SP, 4SH; $\pm 3\%$ for hose type R7).

When a flexible tube is assembled with one or both the elbow or eyelet fittings, their orientation needs to be indemnified for correct assembly. Keeping the tube in horizontal position, the angle related to the fittings is determined starting from the fitting that is the closest to the eye of the observer in vertical position, downwards, and by rotating the furthest fitting anti clockwise (Fig.2).

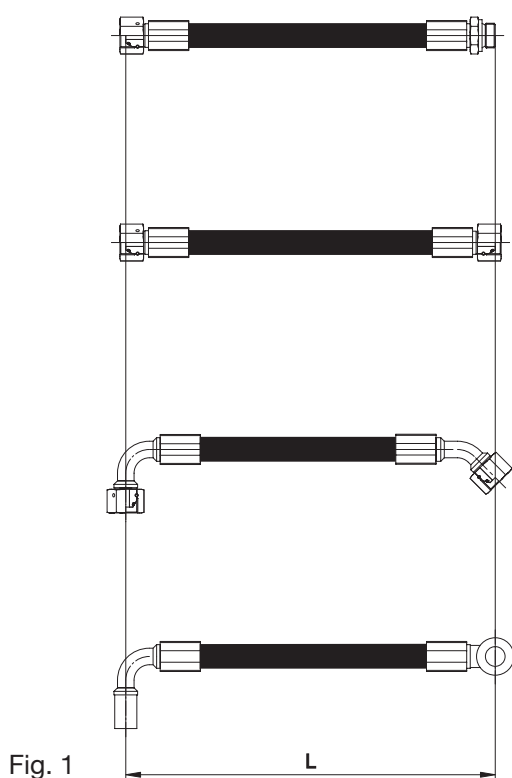


Fig. 1

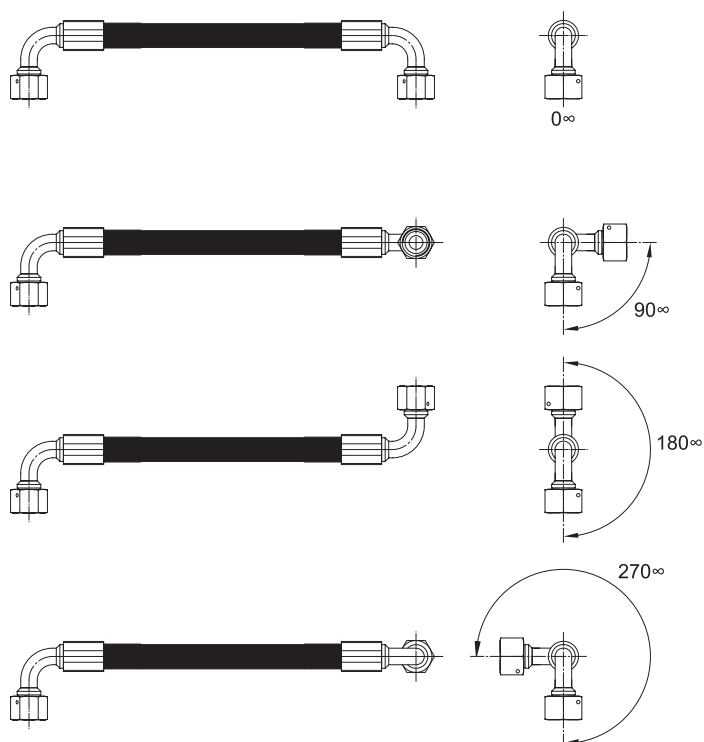


Fig. 2

Tolerances on the lengths and orientation of the flexible hoses assembled according to DIN 20066

HOSE LENGTH L	Ø INTERNAL HOSE		TORQUE B
	FROM DN 5 TO DN 25	FROM DN 5 TO DN 25	
Up to 630mm	da -3 a +7mm	da -4 a +12mm	±5°
Beyond 630 mm up to 1250 mm	da -4 a +12mm	da -6 a +20mm	
Beyond 1250 mm up to 2500 mm	da -6 a +20mm	da -6 a +25mm	
Beyond 2500 mm up to 8000 mm	da -0,5% a +1,5%		
Beyond 8000 mm	da -1% a +3%		