

INDUSTRIAL PNEUMATICS

HOSES

Many different hoses, described in chapters "INDUSTRIAL HOSES - air and water" and "INDUSTRIAL HOSES - general purpose" are designed for compressed air. This part of the catalogue focuses only on hoses typical for pneumatics and industrial automatics, designed to be connected with push-in fittings and spiral hoses used to connect pneumatic tools.

VALVES

Valves are intended for controlling and regulating functions in pneumatic systems. Use examples:

- control of the flow direction of compressed air e.g. distribution valve, check valve,
- control of the flow rate of compressed air (throttle valve),
- control of the pressure of compressed air (pressure reducing valve),
- special purpose valves (pneumatic logic elements, rapid drain valve).

AIR PREPARATION

The quality of performance of a pneumatic application, service life of its elements and working safety mostly depend on the quality of air preparation.

Air preparation usually involves:

- removal of liquid and solid impurities (performed by filters),
- reduction of compressed air pressure to the required value (pressure reducing valve),
- lubrication of compressed air (lubricators).

Due to the diversification of requirements for FRL (Filter, Regulator, Lubricator) units, TUBES INTERNATIONAL® supplies devices from four series:

- **Syntesi** - extensive application due to modular construction, with connection size from 1/8" to 1",
- **Skillair** - general purpose with connection size from 1/4" to 2",
- **New Deal** - designed for high pressure with connection size from 1/4" to 1",
- **Bit** - designed for assembly just at the final receiver with connection size from 1/8" to 1/4".

FITTINGS

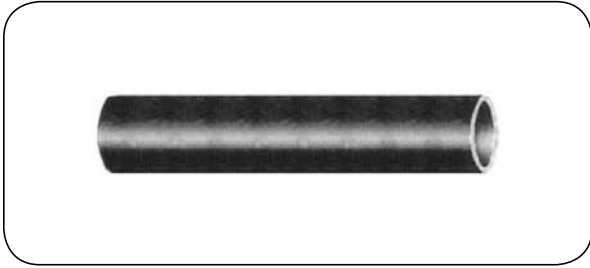
TUBES INTERNATIONAL® provides:

- Push-in fittings - quick and easy assembly, user friendly. Despite a wide range of available types of push-in fittings, a complete system can be built using just four different types. As a result storage costs are significantly reduced. It is recommended to use hoses made of polyamide or polyurethane with a calibrated outside diameter. Fitting material: nickel-plated brass (up to 16 bar), technopolymer (up to 12 bar). Push-in fittings can be divided into:
 - R series - general purpose, for hoses with outside diameter from 3 to 14 mm,
 - RL FOX series - reduced outside dimensions (e.g. used with small distribution valves, in places where R series is too big to be used), for hoses with outside diameter from 3 to 10 mm,
 - F series- fittings for food industry.
- Fittings with a cutting ring - B series, designed for copper or plastic hose assemblies:
 - max. working pressure: 60 bar,
 - material: nickel-plated brass.
- Screw fittings - C that are screwed onto the plastic hoses and Banjo fittings - D series. Fitting design eliminates the risk of cutting the hose.
- Threaded fittings - A series: (straight, reducing, tee, equal cross, etc.) that extend the range of options when joining installation parts:
 - max. working pressure: 60 bar,
 - material: nickel-plated brass.

ACTUATORS

Pneumatic actuator is a device that changes compressed air energy into mechanical energy, used to drive mechanisms and machine elements. This group consists of standard actuators according to ISO and VDMA standards, compact, mini and rotary actuators, grippers, guides and slide units.

INDUSTRIAL PNEUMATICS - hoses

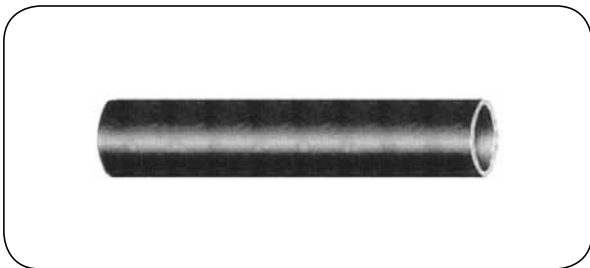


PE

Hose material: LDPE polyethylene
Working temp.: From -30°C up to +70°C

Lightweight, flexible hose designed for air, water and other media. Resistant to chemicals, tasteless, for application with food products. Complies with BGA and FDA standards.

code	O.D. [mm]	tolerance [mm]	I.D. [mm]	working pressure [bar]	bending radius [mm]	standard length [m]
NP-PE-04X02	4	± 0.1	2	17	20	50
NP-PE-05X03	5	± 0.1	3	12.5	20	50
NP-PE-06X04	6	± 0.1	4	10	30	50
NP-PE-08X05	8	± 0.1	5	13	40	50
NP-PE-08X06	8	± 0.1	6	7	30	50
NP-PE-10X08	10	± 0.1	8	5.6	40	50
NP-PE-12X09	12	± 0.1	9	8	60	50
NP-PE-12X10	12	± 0.1	10	4.5	60	50
NP-PE-14X10	14	± 0.15	10	8	80	50
NP-PE-16X12	16	± 0.15	12	7	90	50
NP-PE-18X14	18	± 0.15	14	6.2	120	50



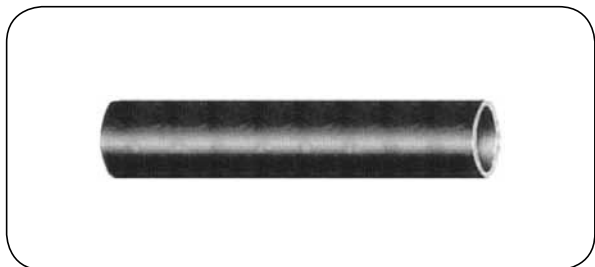
PA 6

Hose material: PA 6 polyamide (Nylon)
Working temp.: From -10°C up to +80°C

Lightweight, flexible hose with calibrated outside diameter, designed for pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Available in natural colour.
 Standards - DIN 73378.

code	O.D. [mm]	I.D. [mm]	working pressure 20°C [bar]	bending radius [mm]	standard length [m]
SH-PA6-04X02	4	2	40	22	100
SH-PA6-06X04	6	4	25	44	100
SH-PA6-08X06	8	6	18	66	100
SH-PA6-10X08	10	8	14	88	100
SH-PA6-12X08	12	8	25	88	100
SH-PA6-12X10	12	10	11	80	100

INDUSTRIAL PNEUMATICS - hoses

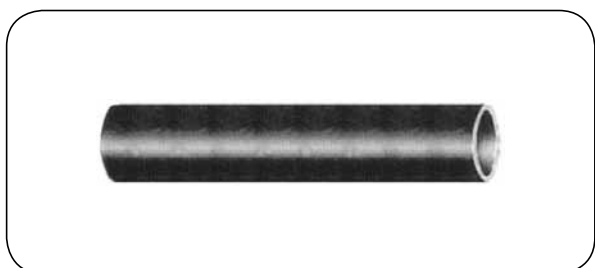


PA 12 X-HIPHL

Hose material: PA 12 polyamide (Nylon)
Working temp.: From -55°C up to +100°C
 (for water-based media +70°C)

Lightweight, flexible hose with calibrated outside diameter designed for pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Available in a wide range of colours: natural, black, blue, green, red, yellow and orange. Standards - DIN 73378.

code	O.D. [mm]	I.D. [mm]	working press. 23°C [bar]	bursting press. 23°C [bar]	bending radius [mm]	standard length [m]
ZC-PA12H-04X02	4	2	49	147	16	100
ZC-PA12H-05X03	5	3	37	111	20	100
ZC-PA12H-06X04	6	4	29	87	30	100
ZC-PA12H-08X05	8	5	34	102	35	100
ZC-PA12H-08X5,5	8	5.5	27	81	40	100
ZC-PA12H-08X06	8	6	21	63	40	100
ZC-PA12H-10X06	10	6	37	111	55	50
ZC-PA12H-10X7,5	10	7.5	21	63	60	50
ZC-PA12H-10X08	10	8	16	48	60	50
ZC-PA12H-12X08	12	8	29	87	60	50
ZC-PA12H-12X09	12	9	21	63	60	50
ZC-PA12H-14X10	14	10	24	72	75	50
ZC-PA12H-15X12	15	12	16	48	65	50
ZC-PA12H-16X12	16	12	21	63	95	50
ZC-PA12H-18X14	18	14	18	54	100	50
ZC-PA12H-20X16	20	16	16	48	200	50



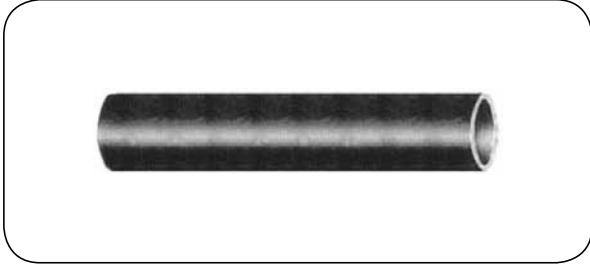
PA 11 S40 - imperial size

Hose material: PA 12 polyamide (Nylon)
Working temp.: From -40°C up to +80°C
 (for water-based media +70°C)

Lightweight, flexible hose with calibrated outside diameter designed for pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Available in a wide range of colours: natural, black, blue, green, red, yellow and orange. Standards - SAE J 844 (from 1/8" up to 5/16").

code	O.D. [mm]	I.D. [mm]	working press. 23°C [bar]	bursting press. 23°C [bar]	bending radius [mm]	standard length [m]
ZC-PA11-S40-02	3.17	2	23	70	9.4	100
ZC-PA11-S40-02,5	3.96	2.3	28	84	12.7	100
ZC-PA11-S40-03	4.76	3.	28	84	19.1	100
ZC-PA11-S40-04	6.35	4.3	28	84	25.4	100
ZC-PA11-S40-05	7.93	5.9	23	70	31.8	100
ZC-PA11-S40-06	9.52	6.98	21	64	75	100
ZC-PA11-S40-08	12.7	9.53	19	56	110	50

INDUSTRIAL PNEUMATICS - hoses



PA 12 S40-PHL

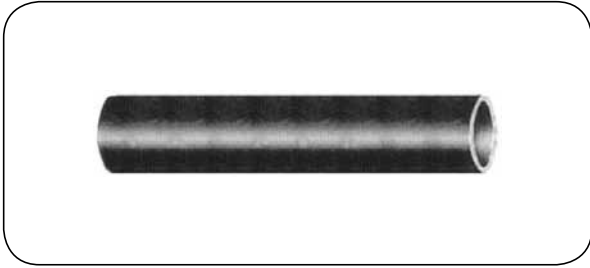
Hose material: PA 12 polyamide (Nylon)

Working temp.: From -40°C up to +80°C
(for water-based media +70°C)

Lightweight, flexible hose with calibrated outside diameter designed for pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Available in a wide range of colours: natural, black, blue, green, red, yellow and orange. Standards - DIN 73378.

code	O.D. [mm]	I.D. [mm]	working press. 23°C [bar]	bursting press. 23°C [bar]	bending radius [mm]	standard length [m]
ZC-PA12-S40PHL-04X02	4	2	44	132	16	100
ZC-PA12-S40PHL-04X03	4	3	19	56	28	100
ZC-PA12-S40PHL-05X03	5	3	33	100	20	100
ZC-PA12-S40PHL-05X035	5	3.5	23	70	25	100
ZC-PA12-S40PHL-06X04	6	4	28	84	30	100
ZC-PA12-S40PHL-08X05	8	5	32	96	35	100
ZC-PA12-S40PHL-08X06	8	6	20	60	40	100
ZC-PA12-S40PHL-10X06	10	6	33	100	55	50
ZC-PA12-S40PHL-10X07	10	7	23	70	58	50
ZC-PA12-S40PHL-10X075	10	7.5	20	60	60	50
ZC-PA12-S40PHL-10X08	10	8	16	48	60	50
ZC-PA12-S40PHL-12X08	12	8	28	84	60	50
ZC-PA12-S40PHL-12X09	12	9	20	60	60	50
ZC-PA12-S40PHL-12X10	12	10	12	36	85	50
ZC-PA12-S40PHL-14X10	14	10	23	68	75	50
ZC-PA12-S40PHL-14X11	14	11	16	48	85	50
ZC-PA12-S40PHL-15X12	15	12	16	48	90	50
ZC-PA12-S40PHL-16X13	16	13	13	40	110	50
ZC-PA12-S40PHL-18X14	18	14	17	52	100	50
ZC-PA12-S40PHL-20X16	20	16	16	48	200	50
ZC-PA12-S40PHL-22X18	22	18	13	40	200	50

INDUSTRIAL PNEUMATICS - hoses



PA 12 E

Hose material: PA 12 polyamide (Nylon)

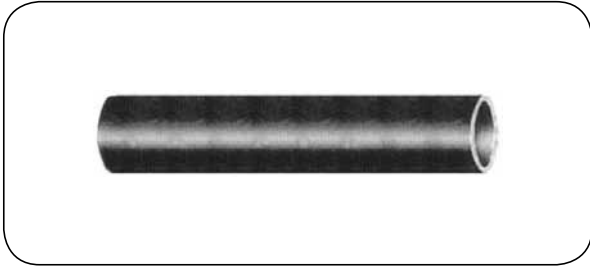
Working temp.: From -10°C up to +80°C

Lightweight, flexible hose with calibrated outside diameter designed for pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Available in natural colour.

Standards - DIN 73378.

code	O.D. [mm]	I.D. [mm]	working pressure 20°C [bar]	bending radius [mm]	standard length [m]
SH-PA12-04X02	4	2	40	15	100
SH-PA12-04X03	4	3	18	30	100
SH-PA12-05X03	5	3	30	30	100
SH-PA12-06X04	6	4	25	38	100
SH-PA12-08X05	8	5	26	35	100
SH-PA12-08X06	8	6	18	57	100
SH-PA12-08X5.5	8	5.5	24	48	100
SH-PA12-10X06	10	6	28	35	100
SH-PA12-10X07	10	7	24	45	100
SH-PA12-10X08	10	8	14	76	100
SH-PA12-10X7.5	10	7.5	18	66	100
SH-PA12-12X08	12	8	27	80	100
SH-PA12-12X09	12	9	18	83	100
SH-PA12-12X10	12	10	11	70	100
SH-PA12-14X10	14	10	22	90	100
SH-PA12-14X11	14	11	14	83	100
SH-PA12-15X12	15	12	15	100	100
SH-PA12-16X13	16	13	14	90	100
SH-PA12-18X14	18	14	17	190	100
SH-PA12-20X16	20	16	15	180	100
SH-PA12-22X18	22	18	13	200	100

INDUSTRIAL PNEUMATICS - hoses

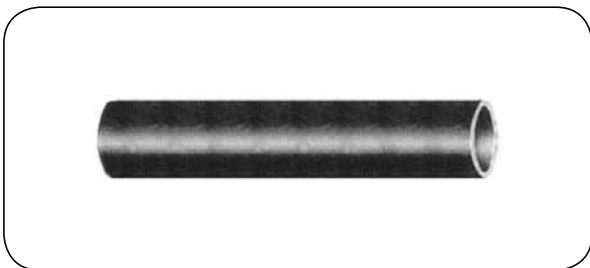


RILSAN HT

Hose material: Modified polyamide PPA
Working temp.: From -40°C up to +150°C
 (for water-based media +70°C)

Lightweight, flexible hose with calibrated outside diameter designed for pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Particularly recommended for industrial and car installations of hot fluids (fuels, oils, refrigerants) or air without water content. Available in black colour only.
 Standards - DIN 73378, ISO 7628.

code	O.D. [mm]	I.D. [mm]	working press. 23°C [bar]	bursting press. 23°C [bar]	bending radius [mm]	standard length [m]
ZC-RILSAN-HT-04X02	4	2	44	132	16	100
ZC-RILSAN-HT-05X03	5	3	33	100	20	100
ZC-RILSAN-HT-06X04	6	4	28	84	30	100
ZC-RILSAN-HT-08X06	8	6	20	60	40	100
ZC-RILSAN-HT-10X08	10	8	16	48	60	50
ZC-RILSAN-HT-12X09	12	9	20	60	60	50
ZC-RILSAN-HT-12X10	12	10	12	36	85	50
ZC-RILSAN-HT-14X10	14	10	23	68	75	50
ZC-RILSAN-HT-14X12	14	12	10	30	90	50
ZC-RILSAN-HT-15X12	15	12	16	48	90	50



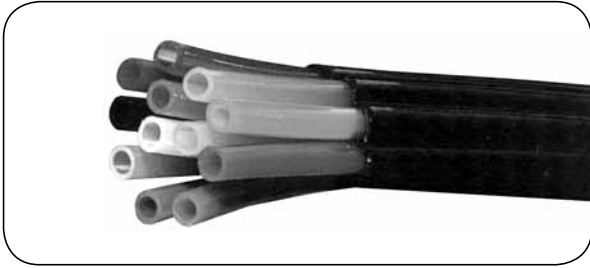
HTR AB (AIR BRAKE)

Hose material: Thermoplastic elastomer (TPE)
 polyester-based
Working temp.: From -40°C up to +100°C
 (for water-based media +70°C)

Lightweight, flexible hose with calibrated outside diameter designed for car air brake systems in particular. It is free of plasticizers and so does not get stiff prematurely. Resistant to UV radiation. Available in black colour only.
 Standards - ISO 7628 : 2010 (category 1).

code	O.D. [mm]	I.D. [mm]	working press. 23°C [bar]	bursting press. 23°C [bar]	bending radius [mm]	standard length [m]
ZC-HTRAB-04X02	4	2	10	40	20	100
ZC-HTRAB-06X04	6	4	10	40	30	100
ZC-HTRAB-08X06	8	6	10	40	40	100
ZC-HTRAB-10X08	10	8	10	40	50	50
ZC-HTRAB-12X09	12	9	10	40	60	50
ZC-HTRAB-14X10	14	10	10	40	70	50
ZC-HTRAB-15X12	15	12	10	40	75	50
ZC-HTRAB-16X12	16	12	10	40	80	50







INDUSTRIAL PNEUMATICS - hoses



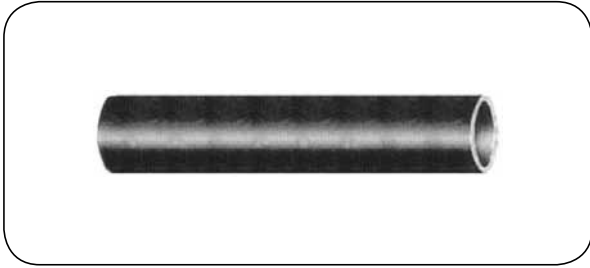
PA 12 MULTI

Hose material: PA 12 polyamide (Nylon)
Working temp.: From -20°C up to +80°C
 (for fluids containing water to +65°C)

Multihose with a black polyurethane outside cover widely used in pneumatic, hydraulic, fuel and oil installations, lubrication and chemicals. Different colours of hoses in the bundle enable easy recognition of each circuit or medium being transferred.

code	number of hoses	O.D. [mm]	I.D. [mm]	wall thickness [mm]	working pressure [bar]	bursting pressure [bar]	weight [g/m]
ZC-M422A		4	2	1	33	132	40
ZC-M4252A		4	2.5	0.75	22	88	36
ZC-M4272A		4	2.7	0.65	17	68	35
ZC-M642A		6	4	1	20	80	60
ZC-M862A		8	6	1	14	56	78
ZC-M1082A		10	8	1	11	44	128
ZC-M12102A		12	10	1	9	36	187
ZC-M14122A		14	12	1	7.5	30	211
ZC-M15122A		15	12	1.5	11	44	267
ZC-M151252A		15	12.5	1.25	9	36	247
ZC-M423A		4	2	1	33	132	57
ZC-M4253A		4	2.5	0.75	22	88	51
ZC-M4273A		4	2.7	0.65	17	68	48
ZC-M643A		6	4	1	20	80	76
ZC-M863A		8	6	1	14	56	118
ZC-M1083A		10	8	1	11	44	148
ZC-M12103A		12	10	1	9	36	215
ZC-M14123A		14	12	1	7.5	30	243
ZC-M15123A		15	12	1.5	11	44	303
ZC-M151253A		15	12.5	1.25	9	36	273
ZC-M424A		4	2	1	33	132	70
ZC-M4254A		4	2.5	0.75	22	88	62
ZC-M4274A		4	2.7	0.65	17	68	60
ZC-M644A		6	4	1	20	80	107
ZC-M864A		8	6	1	14	56	140
ZC-M1084A		10	8	1	11	44	222
ZC-M12104A		12	10	1	9	36	317
ZC-M14124A		14	12	1	7.5	30	359
ZC-M15124A		15	12	1.5	11	44	467
ZC-M151254A		15	12.5	1.25	9	36	427
ZC-M425A		4	2	1	33	132	90
ZC-M4255A		4	2.5	0.75	22	88	81
ZC-M4275A		4	2.7	0.65	17	68	73
ZC-M645A		6	4	1	20	80	132
ZC-M865A		8	6	1	14	56	175
ZC-M1085A		10	8	1	11	44	268
ZC-M12105A	12	10	1	9	36	364	
ZC-M427A		4	2	1	33	132	116
ZC-M4257A		4	2.5	0.75	22	88	102
ZC-M4277A		4	2.7	0.65	17	68	97
ZC-M647A		6	4	1	20	80	185
ZC-M867A		8	6	1	14	56	243
ZC-M1087A		10	8	1	11	44	308
ZC-M4212A		4	2	1	33	132	199
ZC-M42512A		4	2.5	0.75	22	88	176
ZC-M42712A		4	2.7	0.65	17	68	167
ZC-M6412A		6	4	1	20	80	267
ZC-M8612A		8	6	1	14	56	426

INDUSTRIAL PNEUMATICS - hoses

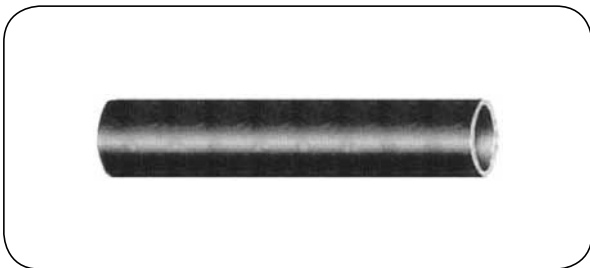


PUR

Hose material: PUR polyurethane
Working temp.: From -40°C up to +85°C

Lightweight, flexible hose widely used in pneumatic and hydraulic applications, tool lines, industrial robots, etc. Resistant to abrasion, solvents, fuels, hydrocarbons. Remains flexible at low temperatures. Shore (A) hardness 90°. Available in natural, black and blue colour.

code	O.D. [mm]	I.D. [mm]	working pressure [bar]	bending radius [mm]	standard length [m]
PP-PUR-04X2,3	4	2.3	14.3	12	50
PP-PUR-04X2,5	4	2.5	12.7	12	50
PP-PUR-05X3,1	5	3.1	13.3	13	50
PP-PUR-06X4	6	4	11.3	15	50
PP-PUR-08X5,7	8	5.7	10.7	30	50
PP-PUR-10X7,5	10	7.5	8.7	45	50
PP-PUR-12X9	12	9	9	55	50
PP-PUR-14X11	14	11	9	60	50



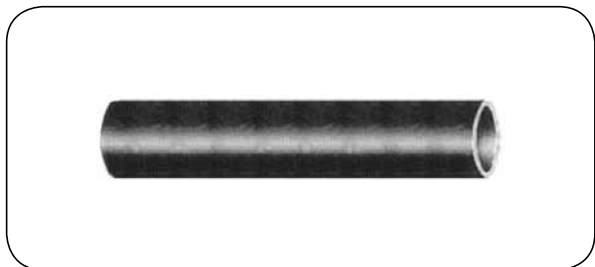
PUR E

Hose material: PUR polyurethane
Working temp.: From -40°C up to +70°C

Lightweight, flexible hose widely used in pneumatic and hydraulic applications, tool lines, industrial robots, etc. Resistant to abrasion, solvents, fuels, hydrocarbons. Remains flexible at low temperatures. Shore (A) hardness is 95°. Available in natural and blue colour.

code	O.D. [mm]	I.D. [mm]	working pressure 20°C [bar]	bending radius [mm]	standard length [m]
SH-PURE-04X2,5	4	2.5	12	20	50
SH-PURE-06X4	6	4	11	25	50
SH-PURE-08X5,7	8	5.7	8	35	50
SH-PURE-10X7,5	10	7.5	8	40	50
SH-PURE-12X9	12	9	8	45	50

INDUSTRIAL PNEUMATICS - hoses

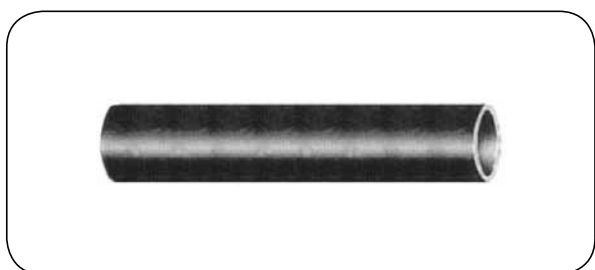


PUR F

Hose material: Polyether-polyurethane
Working temp.: From -40°C up to +85°C

Lightweight, highly flexible hose used in applications that are in frequent contact with water (very high resistance to microbes and hydrolysis), detergents and solvents. Remains flexible at low temperatures. High resistance to abrasion and kinking. Calibrated outside diameter allows to use push-in fittings. Shore (A) hardness 98°. Meets FDA standards. Available in transparent, semi-transparent black, blue, green and red colour versions.

code	O.D. [mm]	I.D. [mm]	working press. 20°C [bar]	working press. 60°C [bar]	bending radius [mm]	standard length [m]
PP-PUR-F-04X2.5	4	2.5	24	12	12	50
PP-PUR-F-06X3.9	6	3.9	22	10	15	50
PP-PUR-F-08X5.5	8	5.5	16	10	25	50
PP-PUR-F-10X7	10	7	16	10	40	50
PP-PUR-F-12X8	12	8	16	10	60	50



PUR ASS

Hose material: Antistatic polyurethane
Working temp.: From -30°C up to +80°C
Vacuum: Up to 0.95 bar

Lightweight, very flexible hose intended for air, gases, water and other media. Widely used in installations specially prone to static charge build-up or in potentially explosive zones. Compliant with ATEX directive (94/9/EC). Electrical resistance $R < 10^6 \Omega$. Resistant to hydrolysis, microbes, abrasion and UV radiation. Calibrated outside diameter allows to use push-in fittings. Recommended for application in electronic industry, powder coating, potentially explosive atmospheres, mining, sorting machines and conveyors for industrial components. The working pressure is given at 2:1 safety factor against the maximum working pressure not causing hose damage.

code	O.D. [mm]	I.D. [mm]	working press. 20°C [bar]	working press. 60°C [bar]	bending radius [mm]	standard length [m]
PP-PUR-ASS-04X2,5	4	2.5	16	9	9	100
PP-PUR-ASS-05X3,1	5	3.1	15	10	12	100
PP-PUR-ASS-06X3,9	6	3.9	15	10	15	100
PP-PUR-ASS-08X5,7	8	5.7	11	7	28	100
PP-PUR-ASS-10X7,5	10	7.5	9	6	35	100
PP-PUR-ASS-12X9	12	9	9	5	50	50

* Bending radius must be increased by 20% at vacuum.

INDUSTRIAL PNEUMATICS - hoses

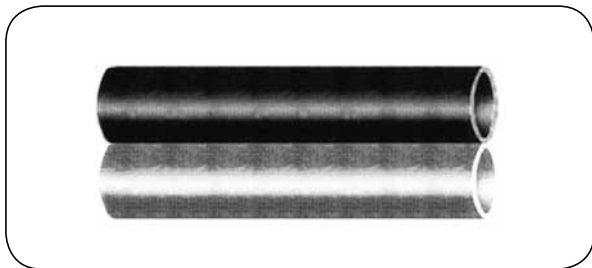


FLAMEX

Hose material: Flame resistant PUR polyurethane
Working temp.: From -35°C up to +100°C

Lightweight, flexible hose designed for air, water and other media. Resistant to flame, weld spatter and hot metal turnings. Resistant to hydrolysis, biological corrosion, UV radiation, solvents and detergents. Withstands 0.9 bar vacuum. Calibrated outside diameter allows to use push-in fittings.

code	O.D. [mm]	I.D. [mm]	working pressure [bar]	bending radius [mm]	standard length [m]
PP-FLAMEX-04X02	4	2	20	7	50
PP-FLAMEX-08X04	8	4	20	15	50
PP-FLAMEX-10X06	10	6	20	20	50
PP-FLAMEX-12X08	12	8	20	28	50
PP-FLAMEX-14X10	14	10	20	45	50



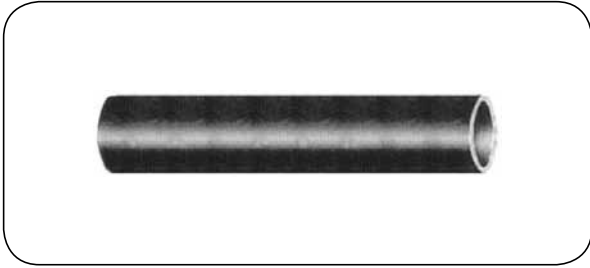
DUO PU

Hose material: PUR polyurethane (blue + black)
Working temp.: From -40°C up to +85°C

Lightweight, very flexible twin hose widely used in pneumatic and hydraulic applications, tool lines, industrial robots, etc. Resistant to abrasion, solvents, fuels, hydrocarbons. Remains flexible at low temperature. Shore (A) hardness 90°.

code	O.D. [mm]	I.D. [mm]	working pressure [bar]	bending radius [mm]	standard length [m]
NP-DUO-PU-04X02	4	2	23	20	50
NP-DUO-PU-06X04	6	4	14	30	50
NP-DUO-PU-08X06	8	6	10	35	50
NP-DUO-PU-10X07	10	7	12	40	50

INDUSTRIAL PNEUMATICS - hoses

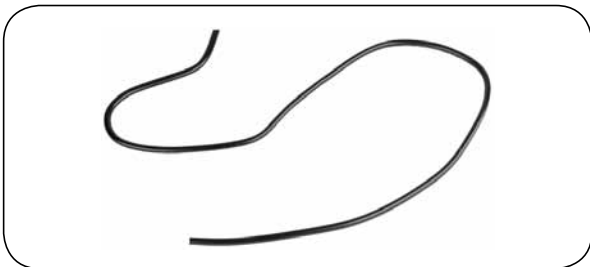


PVDF

Hose material: Polyvinylidene fluoride PVDF
Working temp.: From -40°C up to +150°C

Hose with outstanding mechanical parameters. Excellent resistance to high temperature, high pressure, UV radiation and many chemicals. Sterile, non-flammable and with low gas permeability.

code	O.D. [mm]	I.D. [mm]	tolerance [mm]	working press. 23°C [bar]	bending radius [mm]	weight [g/m]
NP-PVDF-04X02	4	2	± 0.1	166	60	17
NP-PVDF-06X04	6	4	± 0.1	100	75	28
NP-PVDF-08X06	8	6	± 0.1	71	85	39
NP-PVDF-10X08	10	8	± 0.1	55	100	50
NP-PVDF-12X10	12	10	± 0.1	45	125	62



1300

Internal layer: Polyethylene
Reinforcement: Aluminium
External layer: Black polyethylene
Working temp.: From -40°C up to +80°C

Composite hose designed for pneumatic control systems. Because of the excellent chemical resistance of hose external layer it can reliably operate in chemically aggressive environments. Reinforced with the layer of aluminium, the hose features extra strength to fit continuous long lengths without the use of mounting brackets or any additional support.. Moreover, the hose has so called shape memory so it can be mounted even in hardly accessible spaces. Suitable to work underground without any special protection. The unique construction of the hose makes it even 5 times lighter than standard pneumatic hoses.

code	O.D. [mm]	I.D. [mm]	working press. 23°C [bar]	working press. 65°C [bar]	working press. 80°C [bar]	bursting press. 23°C [bar]	bending radius [mm]	weight [g/m]
SY-1300-M060B	6	4	28.8	17.5	12	115	19	2.00
SY-1300-M080B	8	5.3	28.8	17.5	12	115	25	3.20
SY-1300-M100B	10	6.2	28.8	17.5	12	115	32	5.70
SY-1300-M120B	12	8.13	24.5	11	9.5	98	40	7.50
SY-1300-M140B	14	9.75	24.5	11	9.5	98	50	9.60
SY-1300-M150B	15	10.75	20	10	8.5	65	50	10.60

INDUSTRIAL PNEUMATICS - hoses



AC E

Hose material: Blue PA 11/12 polyamide (Nylon)

Working temp.: From -40°C up to +80°C

Spiral hose designed for pneumatic control systems, pneumatic tools, industrial robots, etc. Supplied as a hose assembly with 100 mm straight ends with fittings (BSPTmale thread).

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
SH-ACE-06-020	6	4	2	71	120	27	1/4
SH-ACE-06-050	6	4	5	71	312	27	1/4
SH-ACE-06-075	6	4	7.5	71	472	27	1/4
SH-ACE-06-100	6	4	10	71	633	27	1/4
SH-ACE-08-020	8	6	2	90.5	125	19	1/4
SH-ACE-08-050	8	6	5	90.5	327	19	1/4
SH-ACE-08-075	8	6	7.5	90.5	495	19	1/4
SH-ACE-08-100	8	6	10	90.5	664	19	1/4
SH-ACE-10-020	10	8	2	94	152	15	3/8
SH-ACE-10-050	10	8	5	94	400	15	3/8
SH-ACE-10-075	10	8	7.5	94	606	15	3/8
SH-ACE-10-100	10	8	10	94	812	15	3/8
SH-ACE-12-020	12	9	2	98	179	19	3/8
SH-ACE-12-050	12	9	5	98	470	19	3/8
SH-ACE-12-075	12	9	7.5	98	712	19	3/8
SH-ACE-12-100	12	9	10	98	954	19	3/8
SH-ACE-15-020	15	12	2	187	112	15	3/8
SH-ACE-15-050	15	12	5	187	294	15	3/8
SH-ACE-15-075	15	12	7.5	187	445	15	3/8
SH-ACE-15-100	15	12	10	187	597	15	3/8
SH-ACE-16-020	16	11	2	189	119	15	1/2
SH-ACE-16-050	16	11	5	189	312	15	1/2
SH-ACE-16-075	16	11	7.5	189	472	15	1/2
SH-ACE-16-100	16	11	10	189	633	15	1/2

INDUSTRIAL PNEUMATICS - hoses



SCAR

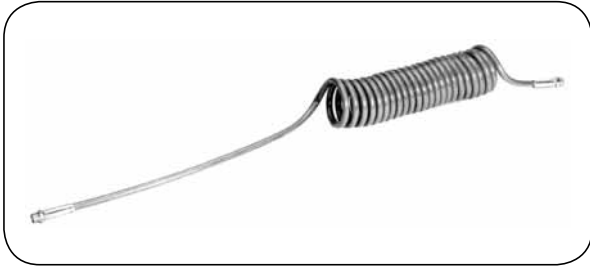
Hose material: Blue PA 11/12 polyamide (Nylon)

Working temp.: From -40°C up to +80°C

Spiral hose designed for pneumatic control systems, pneumatic tools, industrial robots, etc. Supplied as a hose assembly with 100 mm straight ends with fittings (BSPTmale thread).

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
ZC-SCAR-06-025	6	4	2.5	64	168	28	1/4
ZC-SCAR-06-050	6	4	5	64	330	28	1/4
ZC-SCAR-06-075	6	4	7.5	64	498	28	1/4
ZC-SCAR-06-100	6	4	10	64	660	28	1/4
ZC-SCAR-08-025	8	6	2.5	86	168	20	1/4
ZC-SCAR-08-050	8	6	5	86	328	20	1/4
ZC-SCAR-08-075	8	6	7.5	86	496	20	1/4
ZC-SCAR-08-100	8	6	10	86	656	20	1/4
ZC-SCAR-10-025	10	8	2.5	102	180	16	3/8
ZC-SCAR-10-050	10	8	5	102	350	16	3/8
ZC-SCAR-10-075	10	8	7.5	102	530	16	3/8
ZC-SCAR-10-100	10	8	10	102	700	16	3/8
ZC-SCAR-12-025	12	10	2.5	110	216	12	3/8
ZC-SCAR-12-050	12	10	5	110	420	12	3/8
ZC-SCAR-12-075	12	10	7.5	110	624	12	3/8
ZC-SCAR-12-100	12	10	10	110	828	12	3/8
ZC-SCAR-15-025	15	12	2.5	184	165	16	1/2
ZC-SCAR-15-050	15	12	5	184	300	16	1/2
ZC-SCAR-15-075	15	12	7.5	184	450	16	1/2
ZC-SCAR-15-100	15	12	10	184	685	16	1/2

INDUSTRIAL PNEUMATICS - hoses



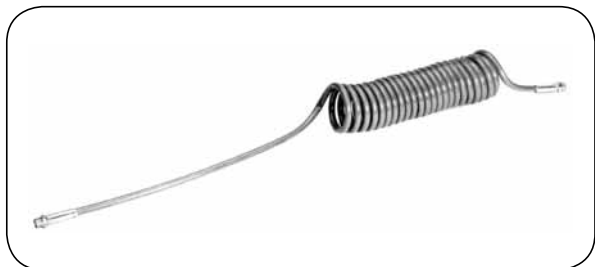
SPP E

Hose material: Blue PUR polyurethane
Working temp.: From -40°C up to +75°C

Highly flexible spiral hose resistant to abrasion, breaking and kinking. Designed for pneumatic control systems, pneumatic tools, industrial robots, etc. Available as a hose assembly with 100 mm and 500 mm straight ends with fittings (BSPT male thread).

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
SH-SPPE-06-020	6	4	2	33	210	11	1/4
SH-SPPE-06-050	6	4	5	33	515	11	1/4
SH-SPPE-06-075	6	4	7.5	33	780	11	1/4
SH-SPPE-06-100	6	4	10	33	1050	11	1/4
SH-SPPE-08-020	8	5	2	50	180	13	1/4
SH-SPPE-08-050	8	5	5	50	445	13	1/4
SH-SPPE-08-075	8	5	7.5	50	680	13	1/4
SH-SPPE-08-100	8	5	10	50	910	13	1/4
SH-SPPE-10-020	10	6.5	2	70	160	11	1/4
SH-SPPE-10-050	10	6.5	5	70	400	11	1/4
SH-SPPE-10-075	10	6.5	7.5	70	610	11	1/4
SH-SPPE-10-100	10	6.5	10	70	815	11	1/4
SH-SPPE-12-020	12	8	2	82	160	10	3/8
SH-SPPE-12-050	12	8	5	82	400	10	3/8
SH-SPPE-12-075	12	8	7.5	82	610	10	3/8
SH-SPPE-12-100	12	8	10	82	815	10	3/8
SH-SPPE-12-150	12	8	15	82	1215	10	3/8
SH-SPPE-15-020	15	10	2	103	160	14	3/8
SH-SPPE-15-050	15	10	5	103	390	14	3/8
SH-SPPE-15-075	15	10	7.5	103	600	14	3/8
SH-SPPE-15-100	15	10	10	103	804	14	3/8
SH-SPPE-15-150	15	10	15	103	1194	14	3/8
SH-SPPE-16-020	16	11	2	105	167	10	1/2
SH-SPPE-16-050	16	11	5	105	415	10	1/2
SH-SPPE-16-075	16	11	7.5	105	632	10	1/2
SH-SPPE-16-100	16	11	10	105	850	10	1/2

INDUSTRIAL PNEUMATICS - hoses

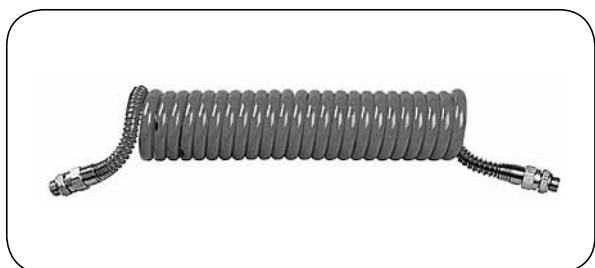


SPCRB

Hose material: Blue PUR polyurethane
Working temp.: From -40°C up to +60°C

Highly flexible spiral hose resistant to abrasion, breaking and kinking. Designed for pneumatic control systems, pneumatic tools, industrial robots, etc. Available as a hose assembly with 100 mm and 500 mm straight ends with fittings (BSPT male thread).

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
ZC-SPCRB-06-025	6	4	2.5	42	250	13	1/4
ZC-SPCRB-06-050	6	4	5	42	515	13	1/4
ZC-SPCRB-06-075	6	4	7.5	42	780	13	1/4
ZC-SPCRB-08-025	8	5	2.5	46	315	17	1/4
ZC-SPCRB-08-050	8	5	5	46	650	17	1/4
ZC-SPCRB-08-075	8	5	7.5	46	980	17	1/4
ZC-SPCRB-10-025	10	6.5	2.5	60	300	13	1/4
ZC-SPCRB-10-050	10	6.5	5	60	620	13	1/4
ZC-SPCRB-10-075	10	6.5	7.5	60	940	13	1/4
ZC-SPCRB-12-025	12	8	2.5	84	250	9	3/8
ZC-SPCRB-12-050	12	8	5	84	515	9	3/8
ZC-SPCRB-12-075	12	8	7.5	84	780	9	3/8
ZC-SPCRB-16-025	16	10	2.5	92	315	16	3/8
ZC-SPCRB-16-050	16	10	5	92	655	16	3/8
ZC-SPCRB-16-075	16	10	7.5	92	990	16	3/8



BLX

Hose material: Yellow polyurethane PUR S
Working temp.: From -40°C up to +70°C
Hardness: 98° Shore (A)

Spiral hose intended for air brake systems, connects the air lines from the tractor to the trailer. Highly flexible at low temperatures, resistant to bending, abrasion, weather conditions including UV radiation and ozone. Straight 150 mm sections at both ends are secured with steel protective coil spring. The hose comes with M16x1.5 male thread fittings as a standard (optionally with BSP or BSPT - contact Sales Department).

Available either red or black and as a twin yellow-red hose.

Standards - ISO 7375/2 1998, ISO 7628/2 1998, DIN 73378/02 96, DIN 74310-2/12 93, DIN 74323/04 91, DIN 74324/02 96.

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
MB-BLX-12-040Y	12	8	4	75	290	10	M16x1.5

INDUSTRIAL PNEUMATICS - hoses



UBCS

Hose material: Blue PUR polyurethane
Working temp.: From -40°C up to +70°C

Highly flexible, spiral, reinforced hose resistant to abrasion, tearing and kinking. Designed for application in car workshops in particular, for pneumatic control systems, hand tools, industrial robots, etc. The hose has straight segments of 100 mm and 500 mm at the ends with BSPT male thread fittings. Shore (A) hardness 98°.

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
SH-UBCS-08-020	8	5	2	42	187	15	1/4
SH-UBCS-08-050	8	5	5	42	585	15	1/4
SH-UBCS-08-075	8	5	7.5	42	904	15	1/4
SH-UBCS-08-100	8	5	10	52	952	15	1/4
SH-UBCS-10-020	10	6.5	2	69	137	15	1/4
SH-UBCS-10-050	10	6.5	5	69	429	15	1/4
SH-UBCS-10-075	10	6.5	7.5	69	663	15	1/4
SH-UBCS-10-100	10	6.5	10	69	896	15	1/4
SH-UBCS-12-020	12	8	2	82	140	15	3/8
SH-UBCS-12-050	12	8	5	82	436	15	3/8
SH-UBCS-12-075	12	8	7.5	82	674	15	3/8
SH-UBCS-12-100	12	8	10	97	752	15	3/8
SH-UBCS-15-020	15	10	2	102	140	15	3/8
SH-UBCS-15-050	15	10	5	102	436	15	3/8
SH-UBCS-15-075	15	10	7.5	102	674	15	3/8
SH-UBCS-15-100	15	10	10	102	911	15	3/8
SH-UBCS-16-020	16	11	2	104	147	15	1/2
SH-UBCS-16-050	16	11	5	104	461	15	1/2
SH-UBCS-16-075	16	11	7.5	104	712	15	1/2
SH-UBCS-16-100	16	11	10	104	962	15	1/2

INDUSTRIAL PNEUMATICS - hoses



UWSB



Hose material: Flame retardant PUR polyurethane
Working temp.: From -40°C up to +70°C

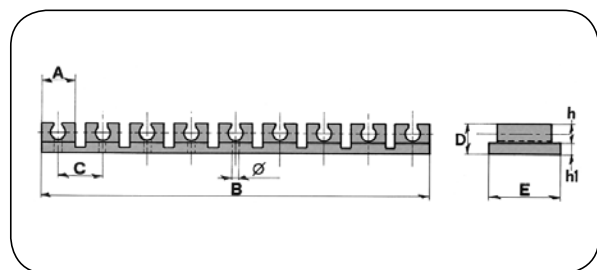
Highly flexible hose resistant to abrasion, hot welding spatter and sparks. Designed for pneumatic control systems, hand tools, industrial robots, etc. Resistant to UV radiation and ageing. The hose has straight segments of 100 mm and 500 mm at the ends with BSPT male thread fittings. Shore (A) hardness 98°. Standards - UL 94 VO (external layer).

code	O.D. [mm]	I.D. [mm]	working length [m]	outside coil diameter [mm]	coil block length [mm]	working press. 20°C [bar]	fitting male thread [inch]
SH-UWSB-06-020BK	6	4	2	49	156	11	1/4
SH-UWSB-06-050BK	6	4	5	49	488	11	1/4
SH-UWSB-06-075BK	6	4	7.5	49	754	11	1/4
SH-UWSB-06-100BK	6	4	10	49	1019	11	1/4
SH-UWSB-08-020BK	8	5	2	56	175	13	1/4
SH-UWSB-08-050BK	8	5	5	56	548	13	1/4
SH-UWSB-08-075BK	8	5	7.5	56	846	13	1/4
SH-UWSB-08-100BK	8	5	10	69	896	13	1/4
SH-UWSB-10-020BK	10	6.5	2	72	160	11	1/4
SH-UWSB-10-050BK	10	6.5	5	72	500	11	1/4
SH-UWSB-10-075BK	10	6.5	7.5	72	772	11	1/4
SH-UWSB-10-100BK	10	6.5	10	82	911	11	1/4
SH-UWSB-12-020BK	12	8	2	85	159	10	3/8
SH-UWSB-12-050BK	12	8	5	85	497	10	3/8
SH-UWSB-12-075BK	12	8	7.5	85	767	10	3/8
SH-UWSB-12-100BK	12	8	10	100	859	10	3/8

INDUSTRIAL PNEUMATICS - hoses

Hose accessories

picture	code	pipe or hose O.D. [mm]	description
	SH-TC15	3 ÷ 15	Cutting tool.
	SH-TC15EK	-	Spare blade.
	ZC-PZP12	3 ÷ 12	Cutting tool.
	ZC-PZP12EK	-	Spare blade.
	ZC-PZG28	3 ÷ 28	Cutting tool.
	ZC-PZG28EK	-	Spare blade.
	JG-TS28	4 ÷ 28	Cutting tool.
	JG-TS28EK	-	Spare blade.



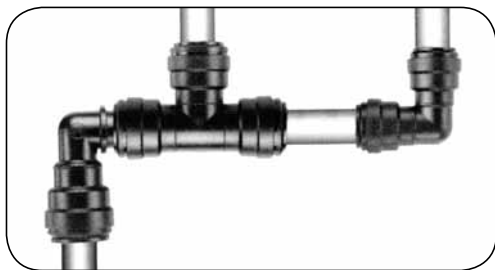
SFT

Working temp.: From 0°C up to +40°C

Holder for pneumatic hoses. Facilitates building of a pneumatic system, saves space and increases resistance to vibrations.

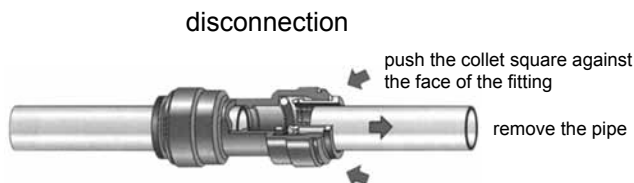
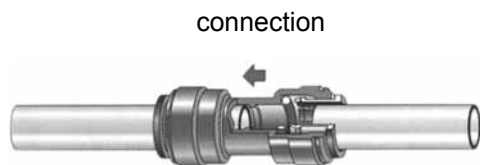
code	hose O.D. [mm]	number of hoses	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	h [mm]	h1 [mm]	Ø [mm]
ZC-SFT-04	4	10	9	114	11.7	8	19.5	5	3	2.5
ZC-SFT-06	6	10	9	114	11.7	10	19.5	7	3	2.5
ZC-SFT-08	8	10	12	143	14.6	12	19.5	9	3	3.1
ZC-SFT-10	10	10	15	172	17.4	13.8	19.5	10.8	3	4.1
ZC-SFT-12	12	4	19	78	20.5	16.8	19.5	14	3	4.1
ZC-SFT-14	14	4	21	87	22.5	18.8	19.5	16	3	4.1

INDUSTRIAL PNEUMATICS - SPEEDFIT system

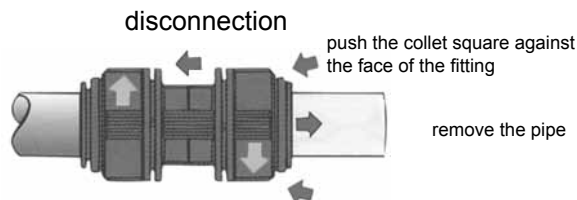
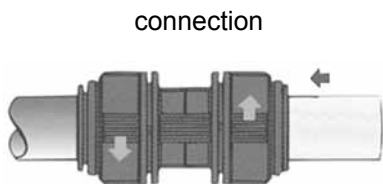



SPEEDFIT is a push-in system that enables very fast assembly of compressed air pipe systems. The system can be assembled using plastic or metal pipes (copper, brass, aluminium) in an outside diameter range from 12 mm to 28 mm (+0.05 / -0.1 mm). Flexible hoses made of polyamide, polyethylene or polyurethane can be used as well. Working temperature from -20°C up to +70°C. Working pressure 10 bar (+23°C), 7 bar (+70°C). System includes polyamide and aluminium pipes, hoses, straight fittings, adapters, elbows, tees, etc. Widely used for assembly of compressed air systems.


Pipes with outside diameter 12 ÷ 22 mm




Pipes with outside diameter 28 mm





	code	pipe O.D. [mm]	thread size [inch]	description
	JG-PM011213E	12	3/8	Straight connector with male thread (push-in end/male thread). Material: plastic. Working pressure: 10 bar. Thread seal by ring gasket.
	JG-PM011214E	12	1/2	
	JG-PM011514E	15	1/2	
	JG-PM011516E	15	3/4	
	JG-PM011814E	18	1/2	
	JG-PM012216E	22	3/4	


	code	pipe O.D. [mm]	description
	JG-PM0312E	12	90° elbow. Material: plastic. Working pressure: 10 bar.
	JG-PM0315E	15	
	JG-PM0318E	18	
	JG-PM0322E	22	
	JG-PM0328E	28	


	code	pipe O.D. [mm]	description
	JG-PM0412E	12	Straight connector. Material: plastic. Working pressure: 10 bar.
	JG-PM0415E	15	
	JG-PM0418E	18	
	JG-PM0422E	22	
	JG-PM0428E	28	


INDUSTRIAL PNEUMATICS - SPEEDFIT system


	code	pipe O.D. [mm]	description
	JG-PM0212E	12	Tee. Material: plastic. Working pressure: 10 bar.
	JG-PM0215E	15	
	JG-PM0218E	18	
	JG-PM0222E	22	
JG-PM0228E	28		

	code	pipe O.D. [mm]	thread size [inch]	description
	JG-PM051213E	12	3/8	Stem connector with male thread. Material: plastic. Working pressure: 10 bar. Thread seal by ring gasket.
	JG-PM051214E	12	1/2	
	JG-PM051513E	15	3/8	
	JG-PM051514E	15	1/2	
	JG-PM051814E	18	1/2	
JG-PM052214E	22	1/2		
JG-PM052216E	22	3/4		

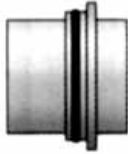
	code	pipe O.D. [mm]	stem O.D. [mm]	description
	JG-PM221212E	12	12	Push-in 90° elbow. Material: plastic. Working pressure: 10 bar.
	JG-PM221515E	15	15	
	JG-PM221818E	18	18	
JG-PM222222E	22	22		


	code	stem O.D. [mm]	pipe O.D. [mm]	description
	JG-PM061512E	15	12	Reducing connector. Material: plastic. Working pressure: 10 bar.
	JG-PM061815E	18	15	
	JG-PM062215E	22	15	
	JG-PM062218E	22	18	
	JG-PM062815E	28	15	
JG-PM062822E	28	22		


	code	pipe O.D. [mm]	pipe O.D. [mm]	description
	JG-PM3018AE	18	15	Reducing tee. Material: plastic. Working pressure: 10 bar.
JG-PM3022AE	22	15		


	code	pipe O.D. [mm]	description
JG-PMTT22E	22	Water trap tee. Material: plastic. Working pressure: 10 bar.	


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	code	pipe O.D. [mm]	description
	JG-WTC28	28	Water trap tee for 28 mm tee Material: brass.

	code	pipe O.D. [mm]	thread size [inch]	description
	JG-PM15WB	15	1/2	Wingback elbow. Material: brass.
	JG-PM22WB	22	3/4	


	code	pipe O.D. [mm]	thread size [inch]	description
	JG-MM011504N	15	1/2	Straight connector with BSPT thread. * - BSP thread Material: brass.
	JG-MM012206N	22	3/4	
	JG-MM012808N	28	1	
	JG-MM012818N	28	1*	


	code	pipe O.D. [mm]	thread size [inch]	description
	JG-MM051504N	15	1/2	Stem connector with BSPT thread. * - BSP thread Material: brass.
	JG-MM052206N	22	3/4	
	JG-MM052816N	28	3/4*	
	JG-MM052818N	28	1*	


	code	pipe O.D. [mm]	thread size [inch]	description
	JG-MM501514N	15	1/2	Stem connector with female thread. Material: brass.
	JG-MM502216N	22	3/4	


	code	pipe O.D. [mm]	description
	JG-15RA	15	Disconnection tool.
	JG-22RA	22	


INDUSTRIAL PNEUMATICS - SPEEDFIT system


	code	pipe O.D. [mm]	description
	JG-PM0812R	12	Blank plug.
	JG-PM0815E	15	
	JG-PM0818E	18	
	JG-PM0822E	22	
JG-PM0828E	28		

	code	thread size [inch]	description
	JG-LWSK-08	5x1/2	Plastic porting block (three 1/2" blank plugs).


	code	inlet thread [inch]	outlet thread [inch]	description
	JG-WALLBOX-08	1/2	3x1/2	Aluminium porting block (two 1/2" blank plugs).
JG-WALLBOX-12	3/4	3x1/2		


	code	pipe O.D. [mm]	description
	JG-PM4615E	15	Pipe blank cap.
JG-PM4622E	22		


	code	pipe O.D. [mm]	description
	JG-PM1912E	12	Collet cover preventing acci- dental disconnection.
	JG-PM1915E	15	
	JG-PM1918E	18	
JG-PM1922E	22		


	code	pipe O.D. [mm]	description
	JG-PM1812R	12	Collet safety locking ring pre- venting accidental disconnec- tion.
	JG-CM1815S	15	
	JG-CM1818S	18	
JG-CM1822S	22		


INDUSTRIAL PNEUMATICS - SPEEDFIT system


	code	pipe O.D. [mm]	description
	JG-RK12	12	Pipe clip.
	JG-RK15	15	
	JG-RK18	18	
	JG-RK22	22	
JG-RK28	28		

	code	pipe or hose O.D. [mm]	description
	JG-TS28	4 ÷ 28	Pipe and hose cutter.
	JG-TS28EK	-	Spare blade.

	code	pipe or hose O.D. [mm]	description
	JG-AL30	4 ÷ 30	Aluminium pipe cutter.

	code	pipe O.D. [mm]	pipe I.D. [mm]	description
	JG-PA-RM1209-3M-B	12	9	Rigid Nylon pipe. Colour: blue. Length: 3 m.
	JG-PA-RM1512-3M-B	15	12	
	JG-PA-RM1814-3M-B	18	14	
	JG-PA-RM2218-3M-B	22	18	
JG-PA-RM2823-3M-B	28	23		

	code	pipe O.D. [mm]	pipe I.D. [mm]	description
	JG-PA-RM1209-3M-E	12	9	Rigid Nylon pipe. Colour: black. Length: 3 m.
	JG-PA-RM1512-3M-E	15	12	
	JG-PA-RM1814-3M-E	18	14	
	JG-PA-RM2218-3M-E	22	18	
JG-PA-RM2823-3M-E	28	23		

	code	pipe O.D. [mm]	pipe I.D. [mm]	description
	JG-AL-M1512-3M-10B	15	12	Aluminium pipe. Colour: blue. Length: 3 m.
	JG-AL-M1816-3M-10B	18	16	
	JG-AL-M2220-3M-10B	22	20	
JG-AL-M2826-3M-10B	28	26		