General purpose self-crimping hoses PUSH-ON

Push-on hoses are designed to be assembled with special PUSH-ON fittings, without the use of clamps or safety clamps. The fittings are simply pushed into the hose and thanks to the special structure of the braid an increase in pressure causes the hose to grip the fitting even more tightly. PUSH-ON hoses have a wide range of applications, including water, air, coolant fluids, hydraulic oil, and are primarily used in automation and the construction of low-pressure systems in industrial plants. Construction of such a system takes less time as the hoses can be cut into sections and joined with fittings directly at the installation site.

Note: PUSH-ON hoses can also be assembled using clamps or ferrules, provided that the clamp and tail of the fitting do not damage the relatively thin wall of the hose, so never use PUSH-ON fittings with large and sharp serrations.

INSTA-GRIP™ 300

General purpose self-crimping PUSH-ON hose

Internal layer: black synthetic rubber Chemivic™ (NBR + PVC)
Reinforcement: synthetic braid
External layer: blue synthetic rubber (red, green, gray, yellow and black also available)
Working temp.: from -40ºC to +90ºC

Classical, high-quality, self-crimping rubber hose (PUSH-ON). Designed for low-pressure hydraulic and pneumatic installations, as a universal industrial hose for air, water, oils, greases, light chemicals, and cleaning fluids. Common in the automotive industry (no use of silicone in the hose production). The outer layer is resistant to weather conditions, abrasion, and oil. External flame resistance compliant with MSHA 2G-14C/14 standard. Non-conductive (R > 1 MΩ/inch at 1000 V DC voltage). Safety factor 4:1. The hose is designed to operate with self-crimping PUSH-ON type fittings. When ordering a color other than blue, the BL index of the fitting must be replaced with R (red), G (green), GY (gray), Y (yellow), BK (black).

index (blue)	I.D.		O.D. [mm]	wall thickness [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	standard length [m]
	[inch]	[mm]							
GY-INSTAGRIP300-06BL	1/4"	6.4	13.7	3.65	20	80	64	0.15	152.4
GY-INSTAGRIP300-08BK*	5/16"	7.9	15.7	3.9	20	80	76	0.18	152.4
GY-INSTAGRIP300-10BL	3/8"	9.5	17.5	4	20	80	90	0.21	152.4
GY-INSTAGRIP300-13BL	1/2"	12.7	20.6	3.95	20	80	127	0.25	152.4
GY-INSTAGRIP300-16BL	5/8"	15.9	23.6	3.85	20	80	152	0.30	152.4
GY-INSTAGRIP300-19BL	3/4"	19.1	27.2	4.05	20	80	190	0.39	152.4

* - black

Available per special request - FLEXAGRIPTM hose with similar characteristics and working pressure of 20 bar (size 1") and 28 bar (sizes from 3/16" to 3/4"). Contact Tubes International.

index (blue)	I.D.		O.D. [mm]	wall thickness [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	standard length [m]
	[inch]	[mm]							
GY-FLEXAGRIP300-25BL	1”	25.4	34.0	4.3	20	80	203	0.51	152.4

INSTA-GRIP 300 1/4" (DN6) hose with brass PUSH-ON fitting with 1/4" BSP female thread (TI-YBW110-04-04-MO)

General purpose self-crimping PUSH-ON hoses

MULTI PUSH

PUSH-ON rubber self-crimping general purpose hose, for injection mold cooling

Internal layer: black synthetic rubber
Reinforcement: synthetic braid
External layer: blue or red synthetic rubber
Working temperature: up to +135ºC (mineral oil), +80ºC (water), +70ºC (air)

Universal rubber hose designed for low-pressure applications: hydraulic oil, pneumatic and water systems. **Commonly used for injection mold cooling.** Inner layer of the synthetic rubber resistant to high temperature (mineral oil), external layer resistant to weather conditions, abrasion and oil. Not recommended for flame-retardant hydraulic fluids based on phosphate esters. Safety factor 3:1. The hose is designed to work with self-crimping PUSH-ON type fittings.

index (blue*)	I.D.		O.D. [mm]	wall thickness [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	standard length [m]
	[inch]	[mm]							
BAL-MULTIPUSH-06BL	1/4"	6.3	12.5	3.1	24	72	64	0.14	100
BAL-MULTIPUSH-08BL	5/16"	8.0	14.3	3.15	24	72	76	0.16	100
BAL-MULTIPUSH-10BL	3/8"	9.5	15.7	3.1	24	72	76	0.20	100
BAL-MULTIPUSH-13BL	1/2"	12.7	19.6	3.45	21	63	102	0.24	100
BAL-MULTIPUSH-16BL	5/8"	16.0	22.8	3.4	21	63	127	0.32	100
BAL-MULTIPUSH-19BL	3/4"	19.0	26.0	3.5	21	63	152	0.38	100
BAL-MULTIPUSH-25BL	1"	25.4	32.6	3.6	14	42	203	0.52	100

* - red - BL index fitting should be replaced with R, e.g. BAL-MULTIPUSH-06R.

PUSH-ON hoses: on the left - MULTIPUSH 1/2" and 3/8" rubber hoses with fittings, on the right TO 106 PUSH-ON 3/4" plastic (polyurethane) hose with a brass fitting. Installation of PUSH-ON fittings to the plastic hose requires a mounting tool.

TO 106 PUSH-ON / TO 107 PUSH-ON

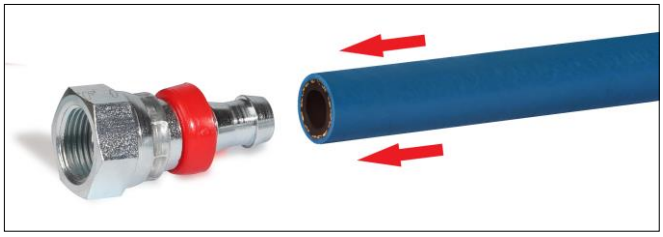
General purpose self-crimping PUSH-ON hose

Internal layer: polyurethane
Reinforcement: synthetic braid
External layer: polyurethane (black - STANDARD) (orange - NON CONDUCTIVE)
Working temp.: from -40ºC to +80ºC

Very lightweight and flexible thermoplastic polyurethane hose designed for low-pressure hydraulic, pneumatic and water systems. Used in industrial automation and automotive applications. Free of LABS (linear alkylbenzene sulfonates), so it does not react with paints. Safety factor 4:1. It offers some resistance to the vacuum. The hose is designed to work with self-crimping PUSH-ON type fittings.
NON CONDUCTIVE version (TO-107...) not electrically conductive (leakage under test conditions according to the standard less than 50 µA for 246 kV/m for 5 min), used with electrical equipment, such as cooling systems.

index (STANDARD)	index (NON CONDUCTIVE)	I.D.		O.D. [mm]	wall thickness [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]
		[inch]	[mm]						
TO-1062-06	TO-1072-06	1/4"	6.3	11.2	2.45	20	80	30	0.070
TO-1064-10	TO-1074-10	3/8"	9.5	15.0	2.75	20	80	50	0.110
TO-1065-13	TO-1075-13	1/2"	12.7	19.1	3.2	20	80	70	0.167
TO-1066-16	TO-1076-16	5/8"	16.2	23.1	3.45	20	80	90	0.221
TO-1067-19	TO-1077-19	3/4"	19.0	26.0	3.5	20	80	110	0.259

PUSH-ON fittings and their assembly (1)



PUSH-ON fittings can only be used with a special hose designed for these fittings (PUSH-ON hose). They are mounted to the hose without clamps or safety clamps. They have a special profile with high and sharp serrations adapted to the material and dimensions of the PUSH-ON hose, and to the design of its braid, causing the hose to clamp onto the serrations of the fitting.
Installation procedure (IT-121 instructions):

- cut the hose **carefully** & equally,
- fix the fitting **stably** in the vise,
- push the hose onto the stub pipe of the fitting, up to the bottom of the plastic stopper.

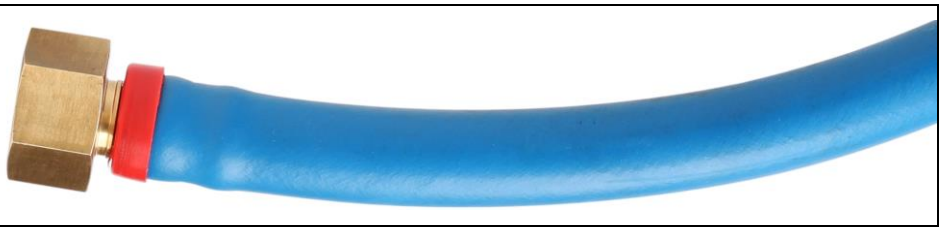
Note:

1. *Manual pushing the hose onto the stub pipe of a fitting can require quite a bit of force and skilled holding of the hose in the line of the fitting. It is advisable (especially for plastic hoses) to use a special tool to push on the pipe stubs.*
2. ***Never use** oil, grease or other agents and do not heat the hose.*

Working temperature of PUSH-ON fittings: from -40°C to +80°C. Working pressure according to PUSH-ON hose specifications. PUSH-ON fittings should not be used with other hoses or clamped with clamps or safety clamps, as this poses a risk of damaging the hose.

picture	index (galvanized steel)	index (brass)	index (AISI 316)	thread size [inch]	hose I.D. [inch]
straight, BSP female thread, 60° cone seal 	TI-YBW110-04-04	TI-YBW110-04-04-MO	TI-YBW110-04-04-SS	1/4"	1/4"
	TI-YBW110-06-06	TI-YBW110-06-06-MO	TI-YBW110-06-06-SS	3/8"	3/8"
	TI-YBW110-08-08	TI-YBW110-08-08-MO	TI-YBW110-08-08-SS	1/2"	1/2"
	TI-YBW110-10-10	TI-YBW110-10-10-MO	TI-YBW110-10-10-SS	5/8"	5/8"
	TI-YBW110-12-10	TI-YBW110-12-10-MO	-	3/4"	5/8"
	TI-YBW110-12-12	TI-YBW110-12-12-MO	TI-YBW110-12-12-SS	3/4"	3/4"
	TI-YBW110-16-16	-	TI-YBW110-16-16-SS	1”	1”
90° angle, BSP female thread, 60° cone seal 	TI-YBW210-04-04	-	TI-YBW210-04-04-SS	1/4"	1/4"
	TI-YBW210-06-06	-	TI-YBW210-06-06-SS	3/8"	3/8"
	TI-YBW210-08-08	-	TI-YBW210-08-08-SS	1/2"	1/2"
	TI-YBW210-12-10	-	TI-YBW210-12-10-SS	3/4"	5/8"
	TI-YBW210-12-12	-	TI-YBW210-12-12-SS	3/4"	3/4"
	TI-YBW210-16-16	-	-	1”	1”
45° angle, BSP female thread, 60° cone seal 	TI-YBW310-04-04	-	TI-YBW310-04-04-SS	1/4"	1/4"
	TI-YBW310-06-06	-	TI-YBW310-06-06-SS	3/8"	3/8"
	TI-YBW310-08-08	-	TI-YBW310-08-08-SS	1/2"	1/2"
	TI-YBW310-12-12	-	TI-YBW310-12-12-SS	3/4"	3/4
	TI-YBW310-16-16	-	-	1”	1”
straight, BSP male thread, 60° cone seal 	TI-YBZ110-04-04	TI-YBZ110-04-04-MO	TI-YBZ110-04-04-SS	1/4"	1/4"
	TI-YBZ110-06-06	TI-YBZ110-06-06-MO	TI-YBZ110-06-06-SS	3/8"	3/8"
	TI-YBZ110-08-08	TI-YBZ110-08-08-MO	TI-YBZ110-08-08-SS	1/2"	1/2"
	-	TI-YBZ110-10-10-MO	TI-YBZ110-10-10-SS	5/8"	5/8"
	TI-YBZ110-12-12	TI-YBZ110-12-12-MO	TI-YBZ110-12-12-SS	3/4"	3/4"
	TI-YBZ110-16-16	-	TI-YBZ110-16-16-SS	1”	1”

PUSH-ON hose DN12 (1/2") with brass PUSH-ON fitting, with 1/2" BSP female thread, 60° cone seal (TI-YBW110-08-08-MO).



PUSH-ON fittings (2)

picture	index (galvanized steel)	index (brass)	index (AISI 316)	thread size [inch]	hose I.D. [inch]
straight, BSPT male thread, thread seal 	TI-YBZ130-04-04	TI-YBZ130-04-04-MO	TI-YBZ130-04-04-SS	1/4"	1/4"
	TI-YBZ130-06-06	TI-YBZ130-06-06-MO	TI-YBZ130-06-06-SS	3/8"	3/8"
	TI-YBZ130-08-08	TI-YBZ130-08-08-MO	TI-YBZ130-08-08-SS	1/2"	1/2"
	TI-YBZ130-10-10	TI-YBZ130-10-10-MO	TI-YBZ130-10-10-SS	5/8"	5/8"
	TI-YBZ130-12-12	TI-YBZ130-12-12-MO	TI-YBZ130-12-12-SS	3/4"	3/4"
straight, metric female thread, 24°/60° cone seal (metal-to-metal) 	TI-YMW111-14-04	TI-YMW111-14-04-MO	TI-YMW111-14-04-SS	M14x1,5	1/4"
	TI-YMW111-16-06	TI-YMW111-16-06-MO	TI-YMW111-16-06-SS	M16x1,5	3/8"
	TI-YMW111-18-06	TI-YMW111-18-06-MO	TI-YMW111-18-06-SS	M18x1,5	3/8"
	TI-YMW111-22-08	TI-YMW111-22-08-MO	TI-YMW111-22-08-SS	M22x1,5	1/2"
	TI-YMW111-26-10	TI-YMW111-26-10-MO	TI-YMW111-26-10-SS	M26x1,5	5/8"
	TI-YMW111-30-12	TI-YMW111-30-12-MO	TI-YMW111-30-12-SS	M30x2	3/4"
	TI-YMW111-36-16	-	-	M36x2	1”
90° angle, metric female thread, 24°/60° cone seal (metal-to-metal) 	TI-YMW211-14-04	-	TI-YMW211-14-04-SS	M14x1,5	1/4"
	TI-YMW211-16-06	-	TI-YMW211-16-06-SS	M16x1,5	3/8"
	TI-YMW211-18-06	-	TI-YMW211-18-06-SS	M18x1,5	3/8"
	TI-YMW211-22-08	-	TI-YMW211-22-08-SS	M22x1,5	1/2"
	TI-YMW211-26-10	-	TI-YMW211-26-10-SS	M26x1,5	5/8"
	TI-YMW211-30-12	-	TI-YMW211-30-12-SS	M30x2	3/4"
straight, NPT male thread, thread seal 	TI-YNZ110-04-04	TI-YNZ110-04-04-MO	TI-YNZ110-04-04-SS	1/4"	1/4"
	TI-YNZ110-06-06	TI-YNZ110-06-06-MO	TI-YNZ110-06-06-SS	3/8"	3/8"
	TI-YNZ110-08-08	TI-YNZ110-08-08-MO	TI-YNZ110-08-08-SS	1/2"	1/2"
	TI-YNZ110-12-12	TI-YNZ110-12-12-MO	TI-YNZ110-12-12-SS	3/4"	3/4"
	-	-	TI-YNZ110-16-16-SS	1”	1”
straight, UNF female thread, 74° cone seal (JIC) 	TI-YJW110-07-04	TI-YJW110-07-04-MO	TI-YJW110-07-04-SS	7/16”-20	1/4"
	TI-YJW110-09-06	TI-YJW110-09-06-MO	TI-YJW110-09-06-SS	9/16”-18	3/8"
	TI-YJW110-12-08	TI-YJW110-12-08-MO	TI-YJW110-12-08-SS	3/4”-16	1/2"
	TI-YJW110-14-08	TI-YJW110-14-08-MO	TI-YJW110-14-08-SS	7/8”-14	1/2"
	-	TI-YJW110-14-10-MO	TI-YJW110-14-10-SS	7/8”-14	5/8"
	TI-YJW110-17-12	TI-YJW110-17-12-MO	TI-YJW110-17-12-SS	1.1/16”-12	3/4"
	-	-	TI-YJW110-21-16-SS	1.5/16”-12	1”

Other types of PUSH-ON fittings are available per special request, including PUSH-ON fittings with connection based on customer specifications.

3/8" BSP galvanized steel banjo fitting (TI-YBB600-06-06) mounted to 3/8" PUSH-ON hose.

Angled mold-cooling quick-connect socket with PUSH-ON hose fitting, mounted to PUSH-ON DN10 (3/8") hose.

Quick couplings for injection molds, see the INDUSTRIAL FITTINGS section.