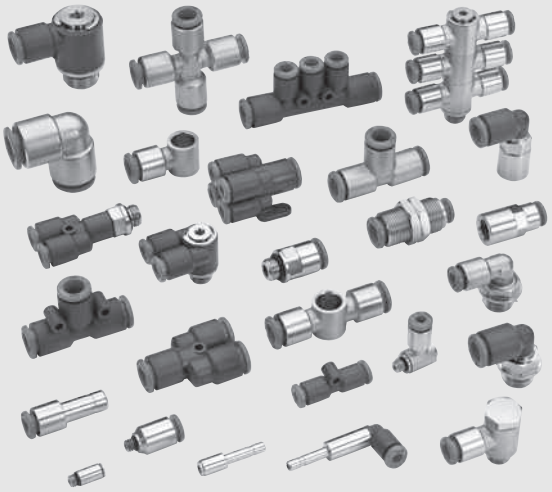
PUSH-IN FITTINGS

Push-in fittings by Metal Work are the best elements for connecting pipes and actuators.
Quick and easy to use, the Metal Work push-in fitting can be re-used thousands of times without affecting the pneumatic and mechanical seal in any way. It comes in various configurations and guarantees a virtually unlimited, highly flexible use. The clamping spring with its special shape grips the pipe without scratching or deforming it, which facilitates release.
In the fittings, the release bushing has patented screwdriver slots to facilitate release in applications not accessible to the fingers.
Configurations RL19, RL21, RL22, RL23, RL23M, RL24, RL44, and RL49 (except for Ø5), have a ring for fixing to the wall asymmetrically in order to contain the head of a screw within the overall dimensions of the fitting.

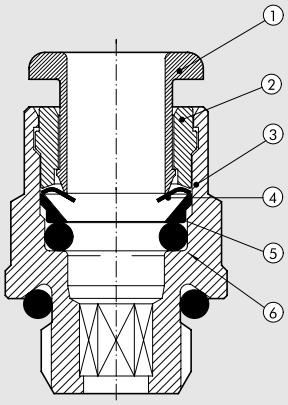


TECHNICAL DATA

Threaded coupling		M3 - M5 - M7 - 1/8" - 1/4" - 3/8" - 1/2"
Diameter	mm	Ø 3 - Ø 3.17 - Ø 4 - Ø 5 - Ø 6 - Ø 8 - Ø 10 - Ø 12 - Ø 14
Temperature range for brass fittings	°C	– 20 to + 80
	°F	– 4 to 176
Temperature range for technopolymer fittings	°C	– 20 to + 60
	°F	–4 to 140
Pressure range for brass fittings		– 0.99 bar ... 16 bar / – 0.099 MPa ... 1.6 MPa
Pressure range for technopolymer fittings		– 0.99 bar ... 12 bar / – 0.099 MPa ... 1.2 MPa
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene
Fluid		Vacuum - Compressed air

COMPONENTS

① Ring or release bushing: technopolymer
② Locking bushing: brass or technopolymer
③ Body: brass or technopolymer
④ Clamping spring: stainless steel (for pipes Ø 3 and Ø 3.17 and R31 Ø 5 and R32 Ø 5: brass gripper)
⑤ Spring supporting ring: technopolymer
⑥ Seal: NBR

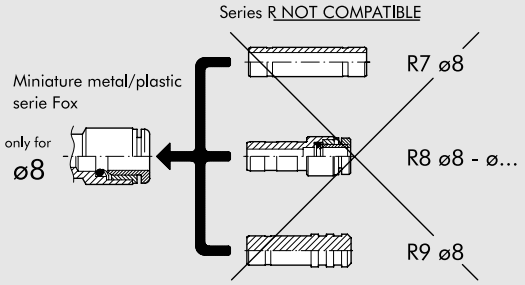


O-RING BELOW R FITTINGS

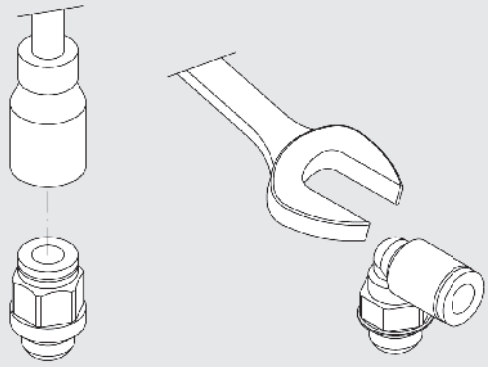
Thread	Initials	Dimensions of O-ring
M3	.....	2.6 x 1
M5 (for Ø 3 - Ø 3.17)	.....	3 x 1.2
M5	.....	3.5 x 1.2
M7	.....	5 x 1.5
M12x1.5	.....	9.75 x 1.78
1/8	2031	7.66 x 1.78
1/4	2043	10.82 x 1.78
3/8	2056	14 x 1.78
1/2	3068	17.13 x 2.62

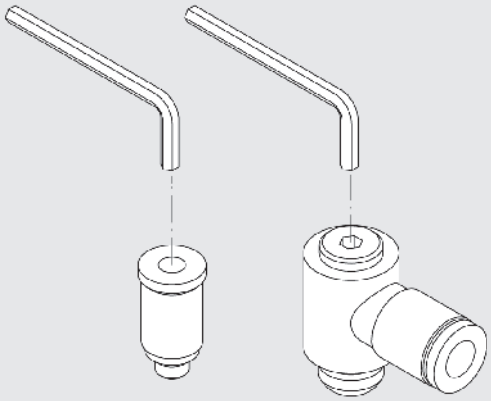
FOR Ø 8 PUSH-IN FITTINGS ONLY

The new series of Ø 8 miniature push-in fittings, identified in the code by a letter L and visually by the screwdriver slot on the release ring, are not compatible with fittings R7, R8 and R9 Ø 8 in the old series.



SCREWING METHOD





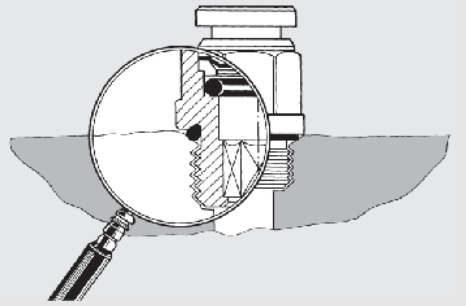
Thread	Max. Torque [Nm]
M3	0.4
M5	1.8
M7	2.5
M12x1.5	8
G 1/8"	6
G 1/4"	8
G 3/8"	10
G 1/2"	15

CH [mm]	Max. Torque [Nm]
1.5	0.4
2	0.7
2.5	1.2
3	2.5
4	5
5	8
Over 5	See the values concerning threads

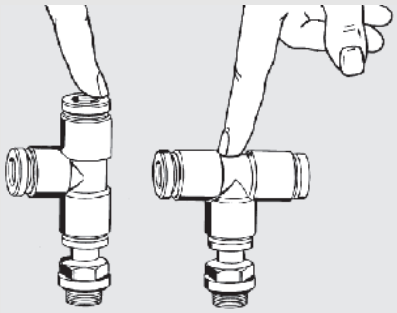
NB: When using a socket spanner, the torque must not exceed that of the thread (e.g. fitting RL1 6 M7, with a 4 mm thread, has a maximum torque of 2.5 Nm, highest value of the thread)

GENERAL FEATURES

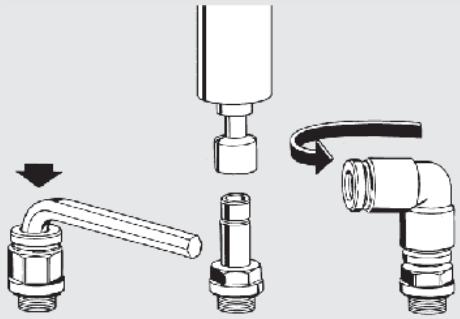
All fittings have cylindrical threading and incorporate a O-ring (Metal Work patent). The use of an O-ring considerably improves the seal of angled, rough, and slightly convex surfaces.
Teflon® (PTFE) is no longer used.



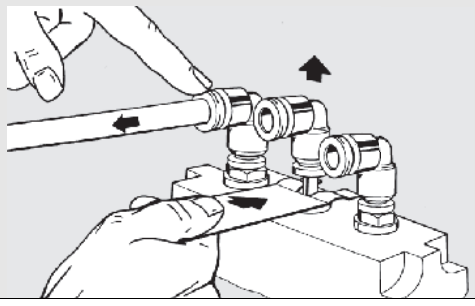
A single tee can give central tees and lateral tees.



Mounting fittings with an Allen wrench or pneumatic tool. All the elbows and tees are rotary. Drastic reduction in assembly times.

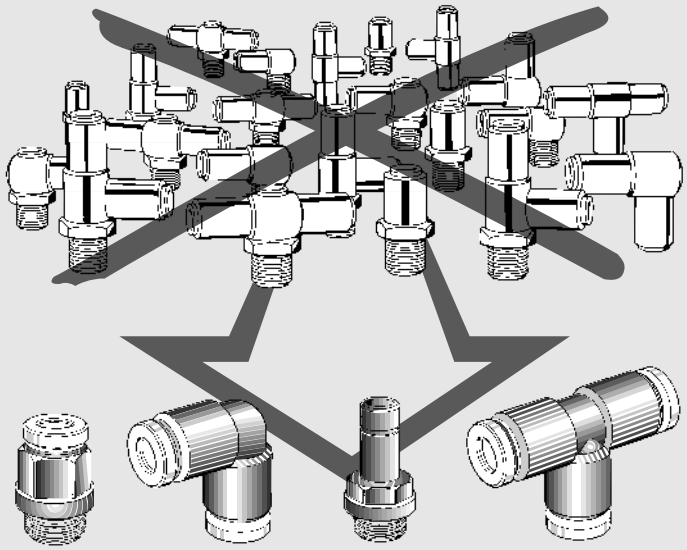


The pipe is easy to assemble by pressing lightly on the pusher ring.
To remove the fitting, merely push radially on the key.



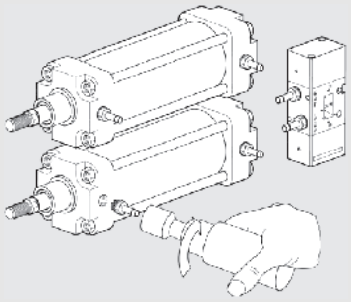
FROM AN IDEA, A SYSTEM

- Four basic fittings can be used to make all possible connections in a pneumatic circuit.
- Sharp drop in the number of fittings to be stocked and hence reduced operating costs.

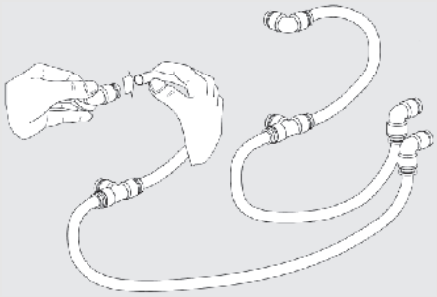


ASSEMBLY DIAGRAM

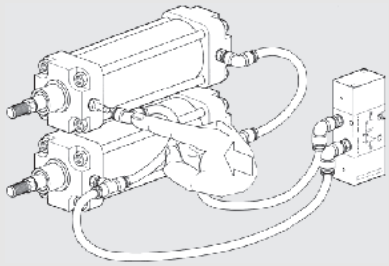
Pre-assembling fittings on the workbench with pneumatic tool even with very close centre distances.



Pre-assembling fittings and pipe sections on the workbench. Pre-assembled configurations can be stocked for assembly in series.

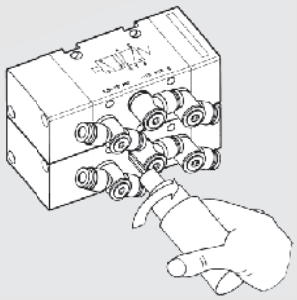


Quick connection and completion of the pneumatic circuit.

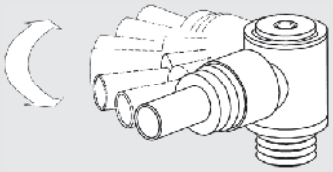


FROM A SYSTEM, INNOVATION

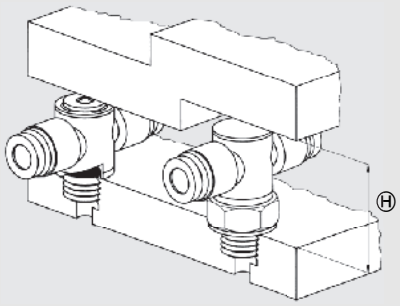
An Allen wrench is used to assemble rotary fittings even with very close centre distances.



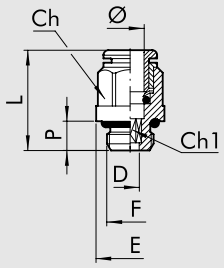
The special configuration with two O-rings allows maximum orientation so as to follow pipe movement in the specific application.



Fittings with a built-in gasket and reduced height (H) with the same threaded coupling and pipe diameter.

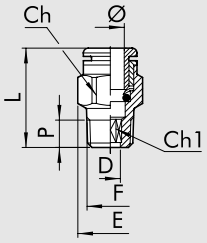


STRAIGHT, CYLINDRICAL, MALE (R1)



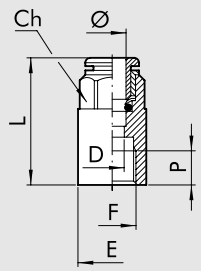
Code	Ref.	Ø	F	Ch	Ch1	P	L	D	E
2001B01	R1	3	M3	Ø 5.8	1.5	3	12.6	1.5	5.8
2001B02	R1	3	M5	Ø 5.8	2	3.5	13	2	5.8
2001A01	R1	3.17	M3	Ø 5.8	1.5	3	12.6	1.5	5.8
2001A02	R1	3.17	M5	Ø 5.8	2	3.5	13	2	5.8
2L01001	RL1	4	M5	Ø 9	2.5	4	20.3	2.6	9
2L01020	RL1	4	M7	Ø 9	3	5	18.9	3.1	9.8
2L01002	RL1	4	1/8	10	3	6	18	3.1	14
2L01003	RL1	4	1/4	10	3	8	19.8	3.1	18
2001004	R1	5	M5	Ø 12	2.5	4	22.5	2.6	12
2001005	R1	5	1/8	13	3	6	22	3.1	15
2001006	R1	5	1/4	12	3	8	24	3.1	18
2L01000	RL1	6	M5	Ø 11	2.5	4	21.9	2.6	11
2L01021	RL1	6	M7	Ø 11	4	5	23	4.1	11
2L01101	RL1	6	M12x1.5	12	4	8	23.2	4.1	17
2L01007	RL1	6	1/8	12	4	6	21.6	4.1	14
2L01008	RL1	6	1/4	12	4	8	20.3	4.1	18
2L01102	RL1	8	M12x1.5	14	6	8	24.5	6.2	17
2L01009	RL1	8	1/8	13	5	6	25.4	5.2	14
2L01010	RL1	8	1/4	14	6	8	24.4	6.2	18
2L01011	RL1	8	3/8	14	6	9	22.8	6.2	22
2L01012	RL1	10	1/4	16	7	8	29.2	7.2	18
2L01013	RL1	10	3/8	16	8	9	26.5	8.2	22
2L01018	RL1	10	1/2	16	8	11	29.8	8.2	26
2001019	RL1	12	1/4	19	7	8	30.5	7.2	21
2001014	RL1	12	3/8	19	10	9	28.1	10.2	22
2001015	RL1	12	1/2	19	10	11	29.3	10.2	26
2001016	RL1	14	3/8	22	10	9	33.8	10.2	24.6
2001017	RL1	14	1/2	22	12	11	31.5	12.2	26

STRAIGHT, CONICAL, MALE (R1C)



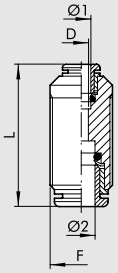
Code	Ref.	Ø	F	Ch	Ch1	D	E	L	P
2L01C02	RL1C	4	1/8	10	3	3.1	11.3	18.5	6.2
2L01C07	RL1C	6	1/8	12	4	4.1	13.5	22.5	6.2
2L01C08	RL1C	6	1/4	12	4	4.1	13.2	22.3	8.5
2001Z07	RL1Z	6	12x1 conical	12	4	4.1	13.2	23.5	9
2001Z08	RL1Z	6	12x1.25 conical	12	4	4.1	13.2	23.5	9
2L01C09	RL1C	8	1/8	13	6	6.2	14.3	26	6.2
2L01C10	RL1C	8	1/4	14	6	6.2	15.8	25.5	8.5
2L01C11	RL1C	8	3/8	14	6	6.2	16.6	24.9	9
2L01C13	RL1C	10	1/4	16	7	7.2	17.7	28.9	8.5
2L01C14	RL1C	10	3/8	16	8	8.2	17.7	26	9
2001C15	RL1C	12	3/8	19	10	10.2	21	28.5	9
2001C16	RL1C	12	1/2	19	10	10.2	21.3	26.6	11

STRAIGHT, FEMALE (R2)



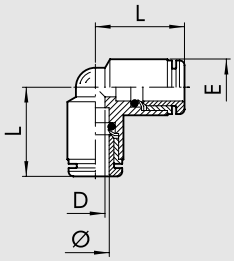
Code	Ref.	Ø	F	Ch	P	L	D	E
2002B02	R2	3	M5	7	4.5	15.7	2.5	7.8
2002A02	R2	3.17	M5	7	4.5	15.7	2.5	7.8
2L02001	RL2	4	1/8	10	7	26.2	3	14
2L02002	RL2	4	1/4	10	8	28.6	3	17
2002003	R2	5	1/8	12	7	27	4	14
2002004	R2	5	1/4	12	8	29.5	4	17
2L02005	RL2	6	1/8	12	7	27.1	5	14
2L02006	RL2	6	1/4	12	8	29.3	5	17
2L02007	RL2	8	1/8	13	7	28.1	7	14
2L02008	RL2	8	1/4	14	8	30	7	17
2L02009	RL2	10	1/4	16	8	31.8	8	17.7
2L02010	RL2	10	3/8	16	10	36.8	8	20.8
2L02011	RL2	12	3/8	19	10	37	10	20.8
2L02012	RL2	12	1/2	19	11	40.5	10	23.8

STRAIGHT, INTERMEDIATE (R3)



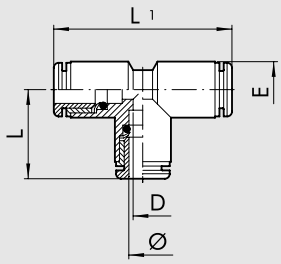
Code	Ref.	Ø 1	Ø 2	F	L	D
2003A02	R3	3	3	M8x0.75	18.4	2
2003A01	R3	3.17	3.17	M8x0.75	18.4	2
2L03001	RL3	4	4	M11x1	30.6	2.5
2003002	R3	5	5	M14x1	33.5	4
2L03003	RL3	6	6	M13x1	33	4.5
2L03004	RL3	8	8	M15x1	35.7	6.5
2L03005	RL3	10	10	M17x1	39.2	8
2003006	RL3	12	12	M20x1	40.7	10
2003007	RL3	14	14	M24x1	45.9	12
2L03301	RL3	4	6	M13x1	32.7	2.5
2L03302	RL3	4	8	M15x1	34.4	2.5
2L03303	RL3	6	8	M15x1	35	4.5
2L03304	RL3	6	10	M17x1	37.5	4.5
2L03306	RL3	6	12	M20x1	39	4.5
2L03305	RL3	8	10	M17x1	37.8	6.5
2L03307	RL3	8	12	M20x1	40.1	6
2L03308	RL3	10	12	M20x1	40.8	8

ELBOW, INTERMEDIATE (R4)



Code	Ref.	Ø	L	D	E
2004A02	4	3	10.4	2	6.3
2004A01	R4	3.17	10.4	2	6.3
2L04001	RL4	4	16.7	2.5	9.5
2004002	R4	5	19.2	3	13.5
2L04003	RL4	6	19	4.5	11.5
2L04004	RL4	8	21.3	6.5	13.5
2L04005	RL4	10	23.3	8	16
2004006	RL4	12	26	10	20.5
2004007	RL4	14	29.3	12	22

TEE, INTERMEDIATE (R5)



Code	Ref.	Ø	L	L1	D	E
2005A02	R5	3	10.4	20.8	2	6.3
2005A01	R5	3.17	10.4	20.8	2	6.3
2L05001	RL5	4	16.7	33.4	2.5	9.5
2005002	R5	5	19.2	38.4	3	13.5
2L05003	RL5	6	19	38	4.5	11.5
2L05004	RL5	8	21.3	42.6	6.5	13.5
2L05005	RL5	10	23.3	46.6	8	16
2005006	RL5	12	26	52	10	20.5
2005007	RL5	14	29.3	58.6	12	22