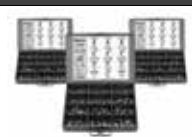
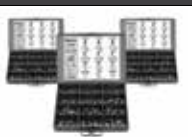
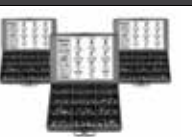
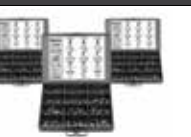



87 - 88 Series

 87000 Pg. 3.5	 88000 Pg. 3.5	 87010 Pg. 3.5	 87010 Pg. 3.5	 87110 Pg. 3.6	 88110 Pg. 3.6	 87210 Pg. 3.6	 88210 Pg. 3.6	 87222 Pg. 3.7
 88222 Pg. 3.7	 88007 Pg. 3.7	 88117 Pg. 3.7	 88000 Pg. 3.8	 88030 Pg. 3.8	 88055 Pg. 3.8	 88100 Pg. 3.8	 88105 Pg. 3.9	 88110 Pg. 3.9
 88210 Pg. 3.9	 88222 Pg. 3.9	 88040 Pg. 3.10	 88050 Pg. 3.10	 88130 Pg. 3.10	 88230 Pg. 3.10	 88310 Pg. 3.10	 88500 Pg. 3.11	 88510 Pg. 3.11
 88610 Pg. 3.11	 88700 Pg. 3.11	 50980 Pg. 3.11	 87800 Pg. 3.12	 55801 Pg. 3.12	 55802 Pg. 3.12			

Fitting Kits

 87861-02 Pg. 3.13	 87861-04 Pg. 3.13	 87861-06 Pg. 3.13	 87861-08 Pg. 3.14
 87861-90 Pg. 3.14			

PUSH-TO-CONNECT FITTINGS
FOR INCH TUBE



87 - 88 Series

87000
88000



TECHNICAL CHARACTERISTICS



Reference Standard

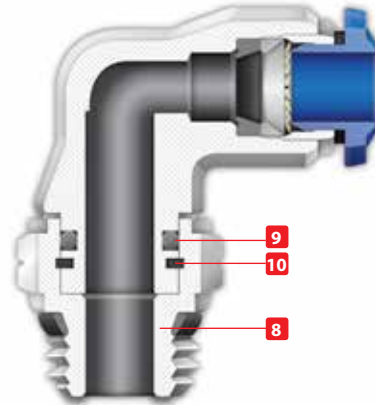
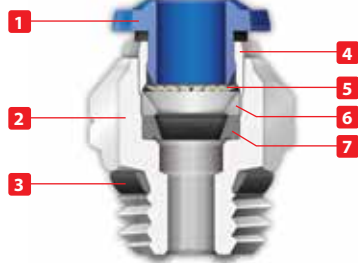
1907/2006
REACH ✓

2011/65/CE
RoHS ✓

PED
2014/68/UE

ISO
14743:2004

SILICON
FREE



Pressure Rating

Vacuum ~ 290 PSI
-0.99 bar ~ 20 bar
-0.099 MPa ~ 2.0 MPa



Temperatures Rating

NBR
-4° F ~ 176° F
-20° C ~ 80° C



Media

- Compressed air
- Vacuum
- Water
- Steam (FKM required)




Applications

- Pneumatic Automation
- Automotive
- Textile, Packaging
- Compressed Air Circuit
- Vacuum



Advantages

- 1 The 303 Stainless Steel gripper ensures a tight clamp for tubes of any material without damaging the tube's surface. The secure connection between the tube and the fitting will hold up to severe conditions such as impact and vibrations.
- 2 The shape of the safety ring and the molded seal perfectly seal off the tube, creating a vacuum.
- 3 Series with several types of threads:
 **SWIFTFIT**
UNF
PTF
NPTF
- 4 All straight fittings can be tightened with an Allen wrench because of our internal hex design. This enables the end user to tighten the fitting in spaces too small for an openend wrench.
- 5 Our rotating Swivel Elbow fittings are equipped with a safety ring that enables the fitting to rotate without losing a tight seal.



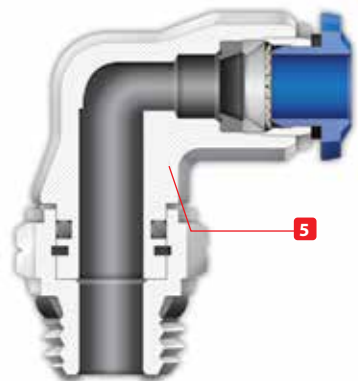
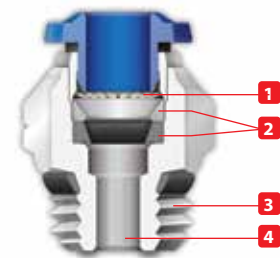
Component Parts and Materials

- 1 Composite Release Collet
- 2 Nickel Plated Brass Body
- 3 NBR Thread Seal
- 4 Nickel Plated Brass Sleeve
- 5 303 Stainless Steel Gripper
- 6 Technopolymer Safety Ring
- 7 NBR Molded Seal
- 8 Nickel Plated Thread Brass Body
- 9 NBR Seal
- 10 Safety Ring



Tubing Compatibility

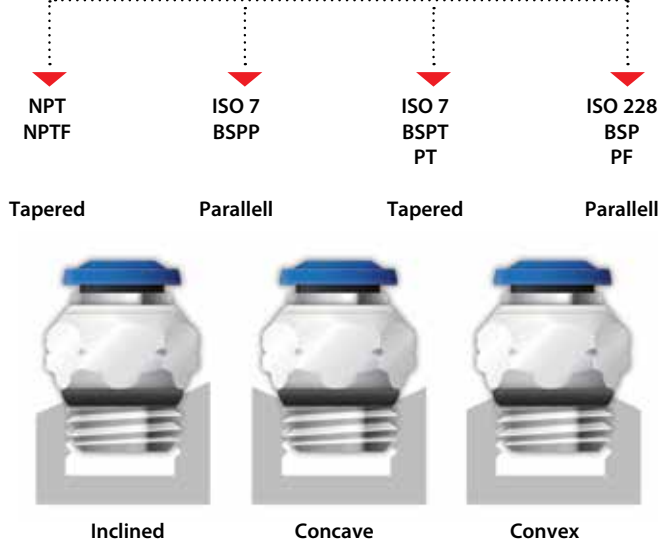
- Nylon 6 - 11 - 12
- Polyethylene
- Polyurethane ("98 Shore A for best result)
- PTFE
- FEP



THREADS & ADVANTAGES



One fitting... Endless possibilities



Our SWIFFFIT universal fittings also work on non-flat surfaces without compromising an air-tight seal.

The SWIFFFIT Universal Thread has been designed to offer the following advantages to the end users:

- Reduced overall length
- Smaller hex dimensions compared to parallel threads
- Fits with various parallel and tapered threads
- All SWIFFFIT fittings have been equipped with threads and an NBR thread seal that will universally connect to all thread types.

Torque Specifications

Recommended Torque		
Thread Size	Min.	Max.
1/8	5 Nm	7 Nm
1/4	5 Nm	7 Nm
3/8	5 Nm	7 Nm
1/2	5 Nm	7 Nm

UNF Thread



The UNF Thread has been designed to offer the following advantages to the end users:

- Standard USA design
- Designed for use in UNF connections with an integrated NBR o-ring that provides a perfect seal
- Completely reusable

Torque Specifications

Recommended Torque		
Thread Size	Min.	Breaking torque
10/32	0.8 Nm	3.2 Nm

PTF Thread



The PTF Thread has been designed to offer the following advantages to the end users:

- Standard USA design. PTF/SAE short thread
- Designed for connections with an NPTF thread
- Dryseal pipe threads are designed for applications where clearance is not sufficient for the full thread length of NPTF threads.

Torque Specifications

Recommended Torque		
Thread Size	Min.	Breaking torque
1/8	5 Nm	8 Nm
1/4	9 Nm	30 Nm



NPTF Thread with seal



The **NPTF** Thread has been designed to offer the following advantages to the end users:

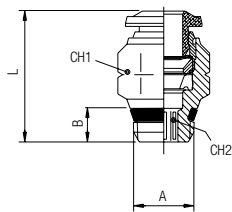
- **Standard USA design**
- **Designed for use in NPT connections with an integrated NBR thread seal that provides an additional seal**

Torque Specifications

Recommended Torque		
Thread Size	Min.	Max.
1/8	5 Nm	7 Nm
1/4	5 Nm	7 Nm
3/8	5 Nm	7 Nm
1/2	5 Nm	7 Nm

87000

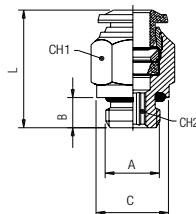
STRAIGHT MALE



Part No.	Tube	A	B	C	L	CH1	CH2
*87000-02-32	1/8	10/32	.157 (4)	.310 (8)	.787 (18)	.315 (8)	.079 (2)
87000-02-02	1/8	1/8	.217 (5,5)	-	.650 (16,5)	.433 (11)	.079 (2)
87000-02-04	1/8	1/4	.276 (7)	-	.728 (18,5)	.551 (14)	.079 (2)
*87000-53-32	5/32 (4)	10/32	.157 (4)	.310 (8)	.827 (21)	.394 (10)	.079 (2)
87000-53-02	5/32 (4)	1/8	.217 (5)	-	.708 (18)	.433 (11)	.118 (3)
87000-53-04	5/32 (4)	1/4	.276 (7)	-	.767 (19,5)	.551 (14)	.118 (3)
*87000-04-32	1/4	10/32	.157 (4)	.390 (10)	.925 (23,5)	.512 (13)	.079 (2)
87000-04-02	1/4	1/8	.217 (5)	-	.866 (22)	.512 (13)	.157 (4)
87000-04-04	1/4	1/4	.276 (7)	-	.826 (21)	.551 (14)	.157 (4)
87000-04-06	1/4	3/8	.295 (7,5)	-	.826 (21)	.669 (17)	.157 (4)
87000-05-02	5/16 (8)	1/8	.217 (5)	-	.964 (24,5)	.551 (14)	.197 (5)
87000-05-04	5/16 (8)	1/4	.276 (7)	-	.866 (22)	.551 (14)	.236 (6)
87000-05-06	5/16 (8)	3/8	.295 (7,5)	-	.905 (23)	.669 (17)	.236 (6)
87000-06-02	3/8	1/8	.217 (5)	-	1.122 (28,5)	.669 (17)	.197 (5)
87000-06-04	3/8	1/4	.276 (7)	-	1.122 (28,5)	.669 (17)	.276 (6)
87000-06-06	3/8	3/8	.295 (7,5)	-	1.043 (26,5)	.669 (17)	.276 (6)
87000-06-08	3/8	1/2	.354 (9)	-	1.043 (26,5)	.827 (21)	.276 (6)
87000-08-02	1/2	1/8	.217 (5)	-	1.299 (33)	.787 (20)	.197 (5)
87000-08-04	1/2	1/4	.276 (7)	-	1.299 (33)	.787 (20)	.197 (5)
87000-08-06	1/2	3/8	.295 (7,5)	-	1.259 (32)	.787 (20)	.354 (9)
87000-08-08	1/2	1/2	.354 (9)	-	1.259 (32)	.827 (21)	.394 (10)

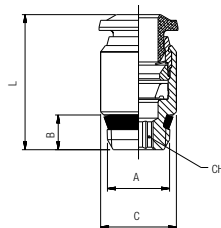
* For part numbers with 10-32 threads

UNF



87010

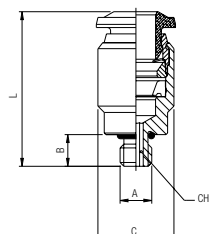
STRAIGHT MALE WITH INTERNAL HEX



Part No	Tube	A	B	C	L	CH
*87010-02-32	1/8	10/32	.157 (4)	.315 (8)	.709 (18)	.098 (2,5)
*87010-53-32	5/32 (4)	10/32	.157 (4)	.394 (10)	.787 (20)	.098 (2,5)
87010-53-02	5/32 (4)	1/8	.217 (5)	.374 (9,5)	.709 (18)	.118 (3)
*87010-04-32	1/4	10/32	.157 (4)	.473 (12)	.925 (23,5)	.098 (2,5)
87010-04-02	1/4	1/8	.217 (5)	.473 (12)	.846 (21,5)	.157 (4)
87010-04-04	1/4	1/4	.2767 (7)	.551 (14)	.846 (21,5)	.157 (4)

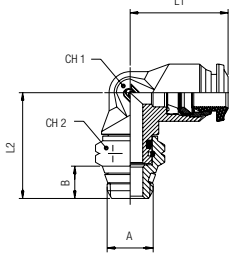
* For part numbers with 10-32 threads

UNF



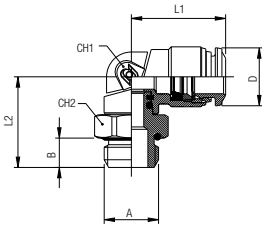
87110

SWIVEL ELBOW



* For part numbers with 10-32 threads

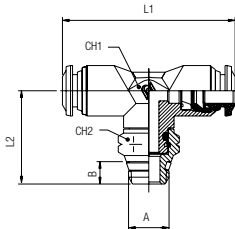
UNF



Part No.	Tube	A	B	L1	L2	CH1	CH2	D
*87110-02-32	1/8	10/32	.157 (4)	.650 (16,5)	.689 (17,5)	.354 (9)	.315 (8)	.393 (10)
87110-02-02	1/8	1/8	.217 (5,5)	.650 (16,5)	.846 (21,5)	.354 (9)	.512 (13)	-
87110-02-04	1/8	1/4	.276 (7)	.669 (17)	1.003 (25,5)	.354 (9)	.591 (15)	-
*87110-53-32	5/32 (4)	10/32	.157 (4)	.709 (18)	.689 (17,5)	.354 (9)	.315 (8)	.393 (10)
87110-53-02	5/32 (4)	1/8	.217 (5,5)	.709 (18)	.846 (21,5)	.354 (9)	.512 (13)	-
87110-53-04	5/32 (4)	1/4	.276 (7)	.709 (18)	1.003 (25,5)	.354 (9)	.591 (15)	-
*87110-04-32	1/4	10/32	.157 (4)	.846 (21,5)	.768 (19,5)	.433 (11)	.433 (11)	.492 (12,5)
87110-04-02	1/4	1/8	.217 (5,5)	.846 (21,5)	.925 (23,5)	.433 (11)	.512 (13)	-
87110-04-04	1/4	1/4	.276 (7)	.846 (21,5)	.925 (23,5)	.433 (11)	.591 (15)	-
87110-04-06	1/4	3/8	.295 (7,5)	.846 (21,5)	1.082 (27,5)	.433 (11)	.669 (17)	-
87110-05-02	5/16 (8)	1/8	.217 (5,5)	.905 (23)	.984 (25)	.512 (13)	.512 (13)	-
87110-05-04	5/16 (8)	1/4	.276 (7)	.905 (23)	1.082 (27,5)	.512 (13)	.591 (15)	-
87110-05-06	5/16 (8)	3/8	.295 (7,5)	.886 (22,5)	1.102 (28)	.512 (13)	.669 (17)	-
87110-06-02	3/8	1/8	.217 (5,5)	1.062 (27)	1.082 (27,5)	.630 (16)	.512 (13)	-
87110-06-04	3/8	1/4	.276 (7)	1.062 (27)	1.161 (29,5)	.630 (16)	.591 (15)	-
87110-06-06	3/8	3/8	.295 (7,5)	1.062 (27)	1.181 (30)	.630 (16)	.669 (17)	-
87110-06-08	3/8	1/2	.354 (9)	1.062 (27)	1.299 (33)	.630 (16)	.827 (21)	-
87110-08-04	1/2	1/4	.276 (7)	1.240 (31,5)	1.299 (33)	.748 (19)	.591 (15)	-
87110-08-06	1/2	3/8	.295 (7,5)	1.240 (31,5)	1.299 (33)	.748 (19)	.669 (17)	-
87110-08-08	1/2	1/2	.354 (9)	1.240 (31,5)	1.417 (36)	.748 (19)	.827 (21)	-

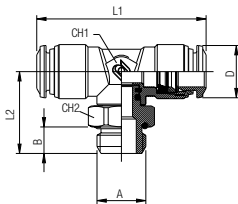
87210

SWIVEL BRANCH TEE



* For part numbers with 10-32 threads

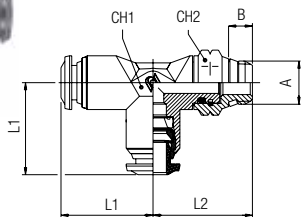
UNF



Part No.	Tube	A	B	L1	L2	CH1	CH2	D
*87210-02-32	1/8	10/32	.157 (4)	1.299 (33)	.689 (17,5)	.354 (9)	.315 (8)	.393 (10)
87210-02-02	1/8	1/8	.217 (5,5)	1.299 (33)	.787 (20)	.354 (9)	.512 (13)	-
87210-02-04	1/8	1/4	.276 (7)	1.299 (33)	1.003 (25,5)	.354 (9)	.591 (15)	-
*87210-53-32	5/32 (4)	10/32	.157 (4)	1.299 (33)	.708 (18)	.354 (9)	.315 (8)	.393 (10)
87210-53-02	5/32 (4)	1/8	.217 (5,5)	1.339 (34)	.787 (20)	.354 (9)	.512 (13)	-
87210-53-04	5/32 (4)	1/4	.276 (7)	1.299 (33)	1.003 (25,5)	.354 (9)	.591 (15)	-
*87210-04-32	1/4	10/32	.157 (4)	1.692 (43)	.768 (19,5)	.433 (11)	.433 (11)	.492 (12,5)
87210-04-02	1/4	1/8	.217 (5,5)	1.692 (43)	.925 (23,5)	.433 (11)	.512 (13)	-
87210-04-04	1/4	1/4	.276 (7)	1.692 (43)	1.062 (27)	.433 (11)	.591 (15)	-
87210-04-06	1/4	3/8	.295 (7,5)	2.087 (53)	1.102 (28)	.630 (16)	.669 (17)	-
87210-06-02	3/8	1/8	.217 (5,5)	2.047 (52)	1.082 (27,5)	.630 (16)	.590 (15)	-
87210-06-04	3/8	1/4	.275 (7)	2.087 (53)	1.181 (30)	.630 (16)	.511 (13)	-
87210-06-06	3/8	3/8	.295 (7,5)	2.087 (53)	1.181 (30)	.630 (16)	.669 (17)	-
87210-06-08	3/8	1/2	.354 (9)	2.087 (53)	1.299 (33)	.630 (16)	.827 (21)	-
87210-08-04	1/2	1/4	.276 (7)	2.402 (61)	1.240 (31,5)	.748 (19)	.591 (15)	-
87210-08-06	1/2	3/8	.295 (7,5)	2.402 (61)	1.299 (33)	.748 (19)	.669 (17)	-
87210-08-08	1/2	1/2	.354 (9)	2.402 (61)	1.417 (36)	.748 (19)	.827 (21)	-

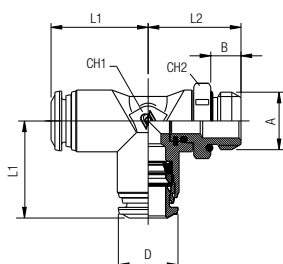
87222

SWIVEL RUN TEE



* For part numbers with 10-32 threads

UNF

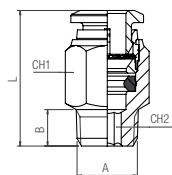


Part No.	Tube	A	B	L1	L2	CH1	CH2	D
*87222-02-32	1/8	10/32	.157 (4)	.649 (16,5)	.689 (17,5)	.354 (9)	.315 (8)	.393 (10)
87222-02-02	1/8	1/8	.269 (6,5)	.669 (17)	.807 (20,5)	.354 (9)	.512 (13)	-
87222-02-04	1/8	1/4	.511 (13)	.669 (17)	.945 (24)	.354 (9)	.591 (15)	-
*87222-53-32	5/32 (4)	10/32	.157 (4)	.699 (17)	.708 (18)	.354 (9)	.315 (8)	.393 (10)
87222-53-02	5/32 (4)	1/8	.269 (6,5)	.669 (17)	.787 (20)	.354 (9)	.512 (13)	-
87222-53-04	5/32 (4)	1/4	.511 (13)	.669 (17)	.945 (24)	.354 (9)	.591 (15)	-
*87222-04-32	1/4	10/32	.157 (4)	.827 (21)	.787 (20)	.433 (11)	.433 (11)	.492 (12,5)
87222-04-02	1/4	1/8	.269 (6,5)	.827 (21)	.866 (22)	.433 (11)	.512 (13)	-
87222-04-04	1/4	1/4	.511 (13)	.827 (21)	.984 (25)	.433 (11)	.591 (15)	-
87222-04-06	1/4	3/8	.511 (13)	.827 (21)	1.102 (28)	.433 (11)	.591 (15)	-
87222-06-02	3/8	1/8	.269 (6,5)	1.043 (26,5)	1.102 (28)	.433 (11)	.512 (13)	-
87222-06-04	3/8	1/4	.511 (13)	1.043 (26,5)	1.102 (28)	.630 (16)	.591 (15)	-
87222-06-06	3/8	3/8	.511 (13)	1.043 (26,5)	1.181 (30)	.630 (16)	.669 (17)	-
87222-06-08	3/8	1/2	.669 (17)	1.043 (26,5)	1.299 (33)	.630 (16)	.827 (21)	-
87222-08-04	1/2	1/4	.511 (13)	1.201 (30,5)	1.240 (31,5)	.748 (19)	.591 (15)	-
87222-08-06	1/2	3/8	.511 (13)	1.201 (30,5)	1.299 (33)	.748 (19)	.669 (17)	-
87222-08-08	1/2	1/2	.669 (17)	1.201 (30,5)	1.417 (36)	.748 (19)	.827 (21)	-

88007

STRAIGHT MALE

PTF

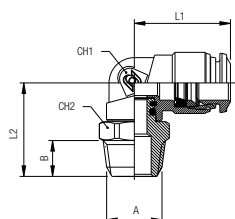


Part No.	Tube	A	B	L	CH1	CH2
88007-53-02	5/32(4)	1/8	.276(7)	.768(19,5)	.433(11)	.118(3)
88007-53-04	5/32(4)	1/4	.413(10,5)	.886(22,5)	.551(14)	.118(3)
88007-04-02	1/4	1/8	.276(7)	.886(22,5)	.512(13)	.157(4)
88007-04-04	1/4	1/4	.413(10,5)	.965(24,5)	.551(14)	.157(4)

88117

SWIVEL ELBOW

PTF

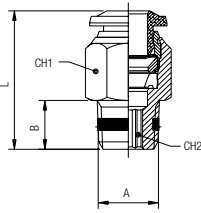


Part No.	Tube	A	B	L1	L2	CH1	CH2
88117-53-02	5/32(4)	1/8	.276(7)	.708(18)	.768(19,5)	.354(9)	.512(13)
88117-53-04	5/32(4)	1/4	.413(10,5)	.708(18)	.905(23)	.354(9)	.591(15)
88117-04-02	1/4	1/8	.276(7)	.827(21)	.846(21,5)	.433(11)	.512(13)
88117-04-04	1/4	1/4	.413(10,5)	.827(21)	.984(25)	.433(11)	.591(15)

88000

STRAIGHT MALE

NPTF

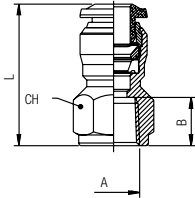


Part No.	Tube	A	B	L	CH1	CH2
88000-02-02	1/8	1/8	.355 (9)	.768 (19,5)	.433 (11)	.079 (2)
88000-02-04	1/8	1/4	.512 (13)	.965 (24,5)	.551 (14)	.079 (2)
88000-53-02	5/32 (4)	1/8	.355 (9)	.826 (21)	.433 (11)	.118 (3)
88000-53-04	5/32 (4)	1/4	.512 (13)	.984 (25)	.551 (14)	.118 (3)
88000-04-02	1/4	1/8	.355 (9)	1.023 (25,5)	.512 (13)	.157 (4)
88000-04-04	1/4	1/4	.512 (13)	1.062 (27)	.551 (14)	.157 (4)
88000-04-06	1/4	3/8	.512 (13)	1.141 (29)	.709 (18)	.157 (4)
88000-05-02	5/16 (8)	1/8	.355 (9)	1.062 (27)	.551 (14)	.197 (5)
88000-05-04	5/16 (8)	1/4	.512 (13)	1.082 (27,5)	.551 (14)	.236 (6)
88000-05-06	5/16 (8)	3/8	.512 (13)	1.082 (27,5)	.709 (18)	.236 (6)
88000-06-02	3/8	1/8	.355 (9)	1.259 (32)	.669 (17)	.197 (5)
88000-06-04	3/8	1/4	.512 (13)	1.319 (33,5)	.669 (17)	.276 (7)
88000-06-06	3/8	3/8	.512 (13)	1.319 (33,5)	.709 (18)	.276 (7)
88000-06-08	3/8	1/2	.669 (17)	1.319 (33,5)	.866 (22)	.276 (7)
88000-08-04	1/2	1/4	.512 (13)	1.535 (39)	.787 (20)	.197 (5)
88000-08-06	1/2	3/8	.512 (13)	1.417 (36)	.787 (20)	.354 (9)
88000-08-08	1/2	1/2	.669 (17)	1.575 (40)	.866 (22)	.394 (10)

88030

STRAIGHT FEMALE

NPTF

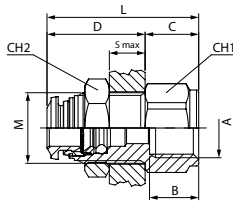


Part No.	Tube	A	B	L	CH
88030-02-02	1/8	1/8	.374 (9,5)	.945 (21)	.512 (13)
88030-02-04	1/8	1/4	.531 (13,5)	1.142 (29)	.630 (16)
88030-53-02	5/32 (4)	1/8	.374 (9,5)	.984 (25)	.512 (13)
88030-53-04	5/32 (4)	1/4	.531 (13,5)	1.181 (30)	.630 (16)
88030-04-02	1/4	1/8	.374 (9,5)	1.024 (26)	.512 (13)
88030-04-04	1/4	1/4	.512 (13)	1.161 (29,5)	.630 (16)
88030-06-04	3/8	1/4	.531 (13,5)	1.279 (32,5)	.709 (18)
88030-06-06	3/8	3/8	.531 (13,5)	1.279 (32,5)	.787 (20)

88055

FEMALE BULKHEAD CONNECTOR

NPTF

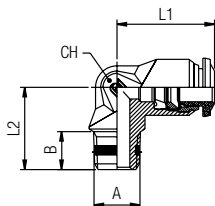


Part No.	Tube	A	B	M	S max	CH1	CH2	C	D	L
88055-53-02	5/32 (4)	1/8	.374 (9,5)	M12X1	.275 (7)	.591 (15)	.669 (17)	.394 (10)	.748 (19)	1.141 (29)
88055-53-04	5/32 (4)	1/4	.531 (13,5)	M12X1	.275 (7)	.630 (16)	.669 (17)	.591 (15)	.748 (19)	1.339 (34)
88055-04-02	1/4	1/8	.374 (9,5)	M14X1	.315 (8)	.630 (16)	.669 (17)	.394 (10)	.826 (21)	1.221 (31)
88055-04-04	1/4	1/4	.531 (13,5)	M14X1	.315 (8)	.630 (16)	.669 (17)	.591 (15)	.826 (21)	1.417 (36)
88055-04-06	1/4	3/8	.531 (13,5)	M14X1	.315 (8)	.787 (20)	.669 (17)	.591 (15)	.826 (21)	1.417 (36)
88055-05-02	5/16 (8)	1/8	.374 (9,5)	M16X1	.315 (8)	.709 (18)	.748 (19)	.394 (10)	.866 (22)	1.260 (32)
88055-05-04	5/16 (8)	1/4	.531 (13,5)	M16X1	.315 (8)	.709 (18)	.748 (19)	.472 (12)	.866 (22)	1.339 (34)
88055-05-06	5/16 (8)	3/8	.531 (13,5)	M16X1	.315 (8)	.787 (20)	.748 (19)	.591 (15)	.866 (22)	1.457 (37)
88055-06-06	3/8	3/8	.531 (13,5)	M20X1	.374 (9,5)	.945 (24)	.945 (24)	.551 (14)	1.003 (25,5)	1.557 (39,5)
88055-08-06	1/2	3/8	.531 (13,5)	M22X1	.413 (10,5)	.945 (24)	1.024 (26)	.591 (15)	1.083 (27,5)	1.673 (42,5)
88055-08-08	1/2	1/2	.690 (17,5)	M22X1	.413 (10,5)	.945 (24)	1.024 (26)	.787 (20)	1.083 (27,5)	1.870 (47,5)

88100

FIXED ELBOW

NPTF

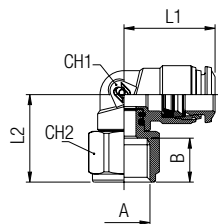


Part No.	Tube	A	B	L1	L2	CH1
88100-04-02	1/4	1/8	.335 (8,5)	.846 (21,5)	.728 (18,5)	.433 (11)
88100-04-04	1/4	1/4	.512 (13)	.846 (21,5)	.905 (23)	.433 (11)
88100-06-04	3/8	1/4	.512 (13)	1.062 (27)	1.043 (26,5)	.630 (16)
88100-06-06	3/8	3/8	.512 (13)	1.062 (27)	1.004 (25,5)	.688 (17)

88105

FEMALE ELBOW

NPTF

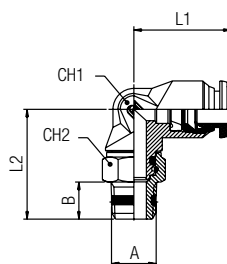


Part No.	Tube	A	B	L1	L2	CH1	CH2
88105-53-02	5/32 (4)	1/8	.374 (9,5)	.669 (17)	.984 (25)	.354 (9)	.511 (13)
88105-53-04	5/32 (4)	1/4	.531 (13,5)	.669 (17)	1.240 (31,5)	.354 (9)	.629 (16)
88105-04-02	1/4	1/8	.374 (9,5)	.846 (21,5)	1.062 (27)	.433 (11)	.511 (13)
88105-04-04	1/4	1/4	.531 (13,5)	.826 (21)	1.279 (32,5)	.433 (11)	.629 (16)
88105-06-02	3/8	1/8	.374 (9,5)	1.062 (27)	1.220 (31)	.511 (13)	.511 (13)
88105-06-02	3/8	1/4	.531 (13,5)	1.062 (27)	1.397 (35,5)	.629 (16)	.629 (16)

88110

SWIVEL ELBOW

NPTF

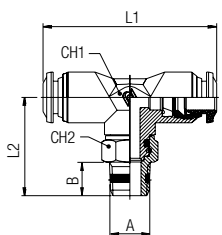


Part No.	Tube	A	B	L1	L2	CH1	CH2
88110-02-02	1/8	1/8	.335 (8,5)	.669 (17)	.906 (23)	.354 (9)	.512 (13)
88110-02-04	1/8	1/4	.512 (13)	.669 (17)	1.122 (28,5)	.354 (9)	.591 (15)
88110-53-02	5/32 (4)	1/8	.335 (8,5)	.669 (17)	.906 (23)	.354 (9)	.512 (13)
88110-53-04	5/32 (4)	1/4	.512 (13)	.669 (17)	1.181 (30)	.354 (9)	.591 (15)
88110-04-02	1/4	1/8	.335 (8,5)	.827 (21)	1.023 (26)	.433 (11)	.512 (13)
88110-04-04	1/4	1/4	.512 (13)	.827 (21)	1.220 (31)	.433 (11)	.591 (15)
88110-04-06	1/4	3/8	.512 (13)	.827 (21)	1.280 (32,5)	.433 (11)	.709 (18)
88110-05-02	5/16 (8)	1/8	.335 (8,5)	.886 (22,5)	1.043 (26,5)	.512 (13)	.512 (13)
88110-05-04	5/16 (8)	1/4	.512 (13)	.886 (22,5)	1.260 (32)	.512 (13)	.591 (15)
88110-05-06	5/16 (8)	3/8	.512 (13)	.886 (22,5)	1.280 (32,5)	.512 (13)	.709 (18)
88110-06-02	3/8	1/8	.335 (8,5)	1.043 (26,5)	1.181 (30)	.630 (16)	.512 (13)
88110-06-04	3/8	1/4	.512 (13)	1.102 (28)	1.337 (35)	.630 (16)	.591 (15)
88110-06-06	3/8	3/8	.512 (13)	1.023 (26)	1.358 (34,5)	.630 (16)	.709 (18)
88110-06-08	3/8	1/2	.669 (17)	1.043 (26,5)	1.614 (41)	.630 (16)	.866 (22)
88110-08-04	1/2	1/4	.512 (13)	1.201 (30,5)	1.555 (39,5)	.748 (19)	.591 (15)
88110-08-06	1/2	3/8	.512 (13)	1.201 (30,5)	1.476 (37,5)	.748 (19)	.709 (18)
88110-08-08	1/2	1/2	.669 (17)	1.201 (30,5)	1.732 (44)	.748 (19)	.866 (22)

88210

SWIVEL BRANCH TEE

NPTF

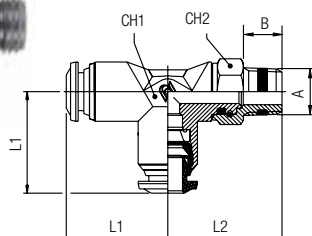


Part No.	Tube	A	B	L1	L2	CH1	CH2
88210-02-02	1/8	1/8	.295 (7,5)	1.299 (33)	.906 (23)	.354 (9)	.512 (13)
88210-02-04	1/8	1/4	.512 (13)	1.299 (33)	1.122 (27)	.354 (9)	.591 (15)
88210-53-02	5/32 (4)	1/8	.295 (7,5)	1.299 (33)	.906 (23)	.354 (9)	.512 (13)
88210-53-04	5/32 (4)	1/4	.512 (13)	1.299 (33)	1.181 (30)	.354 (9)	.591 (15)
88210-04-02	1/4	1/8	.295 (7,5)	1.654 (42)	1.023 (26)	.433 (11)	.512 (13)
88210-04-04	1/4	1/4	.512 (13)	1.654 (42)	1.220 (31)	.433 (11)	.591 (15)
88210-06-04	3/8	1/4	.512 (13)	2.087 (53)	1.337 (35)	.630 (16)	.591 (15)
88210-06-06	3/8	3/8	.512 (13)	2.087 (53)	1.358 (34,5)	.630 (16)	.709 (18)
88210-06-08	3/8	1/2	.669 (17)	2.087 (53)	1.614 (41)	.630 (16)	.866 (22)
88210-08-04	1/2	1/4	.512 (13)	2.402 (61)	1.555 (39,5)	.748 (19)	.591 (15)
88210-08-06	1/2	3/8	.512 (13)	2.402 (61)	1.476 (37,5)	.748 (19)	.709 (18)
88210-08-08	1/2	1/2	.669 (17)	2.402 (61)	1.732 (44)	.748 (19)	.866 (22)

88222

SWIVEL RUN TEE

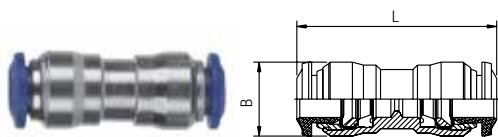
NPTF



Part No.	Tube	A	B	L1	L2	CH1	CH2
88222-02-02	1/8	1/8	.295 (7,5)	.669 (17)	.906 (23)	.354 (9)	.512 (13)
88222-02-04	1/8	1/4	.511 (13)	.669 (17)	1.181 (30)	.354 (9)	.591 (15)
88222-53-02	5/32 (4)	1/8	.295 (7,5)	.669 (17)	.906 (23)	.354 (9)	.512 (13)
88222-04-02	1/4	1/8	.295 (7,5)	.827 (21)	.984 (25)	.433 (11)	.512 (13)
88222-04-04	1/4	1/4	.511 (13)	.827 (21)	1.220 (31)	.433 (11)	.591 (15)
88222-06-04	3/8	1/4	.511 (13)	1.043 (26,5)	1.339 (34)	.630 (16)	.591 (15)
88222-06-06	3/8	3/8	.511 (13)	1.043 (26,5)	1.358 (34,5)	.630 (16)	.709 (18)
88222-06-08	3/8	1/2	.669 (17)	1.043 (26,5)	1.614 (41)	.630 (16)	.866 (22)
88222-08-04	1/2	1/4	.512 (13)	1.201 (30,5)	1.476 (37,5)	.748 (19)	.591 (15)
88222-08-06	1/2	3/8	.511 (13)	1.201 (30,5)	1.476 (37,5)	.748 (19)	.709 (18)
88222-08-08	1/2	1/2	.669 (17)	1.201 (30,5)	1.732 (44)	.748 (19)	.866 (22)

88040

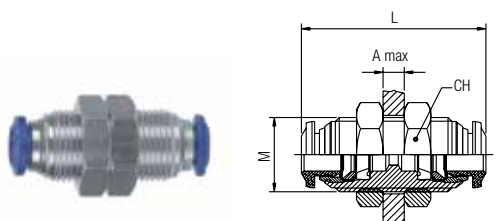
UNION



Part No.	Tube	Tube	B	L
88040-02	1/8		.335 (8,5)	1.024 (26)
88040-53	5/32 (4)		.413 (10,5)	1.181 (30)
88040-04-53	1/4	5/32 (4)	.492 (12,5)	1.279 (32,5)
88040-04	1/4		.492 (12,5)	1.378 (35)
88040-05	5/16 (8)		.571 (14,5)	1.465 (37)
88040-06-04	3/8	1/4	.688 (17,5)	1.555 (39,5)
88040-06	3/8		.688 (17,5)	1.693 (43)
88040-06-08	3/8	1/2	.807 (20,5)	1.850 (47)
88040-08	1/2		.807 (20,5)	1.909 (48,5)

88050

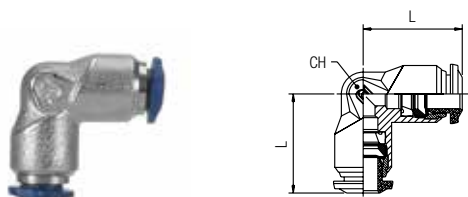
BULKHEAD UNION



Part No.	Tube	M	L	CH	A max
88050-02	1/8	M10X1	1.024 (26)	.551 (14)	.197 (5)
88050-53	5/32 (4)	M12X1	1.220 (32)	.669 (17)	.276 (7)
88050-04	1/4	M14X1	1.378 (35)	.669 (17)	.374 (9,5)
88050-05	5/16 (8)	M16X1	1.476 (37,5)	.748 (19)	.413 (10,5)
88050-06	3/8	M20X1	1.732 (44)	.945 (24)	.492 (12,5)
88050-08	1/2	M22X1	1.929 (49)	1.024 (26)	.650 (16,5)

88130

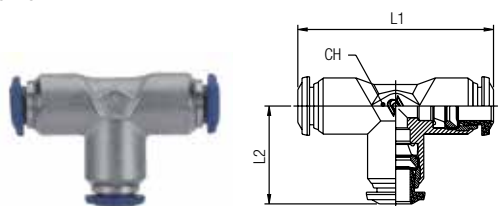
UNION ELBOW



Part No.	Tube	L	CH
88130-02	1/8	.669 (17)	.354 (9)
88130-53	5/32 (4)	.669 (17)	.354 (9)
88130-04	1/4	.827 (21)	.433 (11)
88130-05	5/16 (8)	.905 (23)	.512 (13)
88130-06	3/8	1.043 (26,5)	.630 (16)
88130-08	1/2	1.201 (30,5)	.748 (19)

88230

UNION TEE



Part No.	Tube	L1	L2	CH
88230-02	1/8	1.299 (33)	.669 (17)	.354 (9)
88230-53	5/32 (4)	1.339 (34)	.669 (17)	.354 (9)
88230-04	1/4	1.654 (42)	.827 (21)	.433 (11)
88230-05	5/16 (8)	1.772 (45)	.886 (22,5)	.512 (13)
88230-06	3/8	2.087 (53)	1.043 (26,5)	.630 (16)
88230-08	1/2	2.402 (61)	1.201 (30,5)	.748 (19)

88310

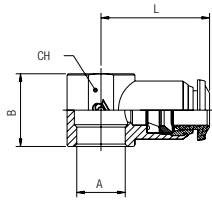
UNION Y



Part No.	Tube	A	L	CH
88310-02	1/8	.394 (10)	1.142 (29)	.433 (11)
88310-53	5/32 (4)	.433 (11)	1.260 (32)	.433 (11)
88310-04	1/4	.531 (13,5)	1.437 (36,5)	.511 (13)
88310-05	5/16 (8)	.610 (15,5)	1.514 (41)	.511 (13)
88310-06	3/8	.728 (18,5)	1.890 (48)	.708 (18)

88500

SINGLE BANJO BODY

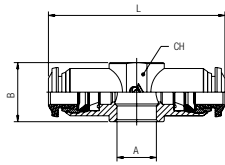


Part No.	Tube	A	B	L	CH
88500-02-02	1/8	1/8	.591 (15)	.767 (19,5)	.551 (14)
88500-53-32	5/32 (4)	10/32	.492 (12,5)	.748 (19)	-
88500-53-02	5/32 (4)	1/8	.591 (15)	.827 (21)	.551 (14)
88500-04-02	1/4	1/8	.669 (17)	.885 (22,5)	.551 (14)
88500-04-04	1/4	1/4	.669 (17)	.984 (25)	.709 (18)
88500-06-04	3/8	1/4	.787 (20)	1.142 (29)	.709 (18)
88500-06-06	3/8	3/8	.787 (20)	1.201 (30,5)	.827 (21)
88500-08-06	1/2	3/8	.787 (20)	1.259 (32)	.827 (21)
88500-08-08	1/2	1/2	.944 (24)	1.377 (35)	.984 (25)

For BANJO STEM assemblies see 10.7/10.8/10.9

88510

DOUBLE BANJO BODY

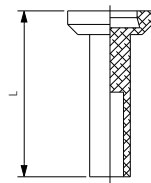


Part No.	Tube	A	B	L	CH
88510-53-32	5/32 (4)	10/32	.492 (12,5)	1.496 (38)	-
88510-04-02	1/4	1/8	.591 (15)	1.732 (44)	.551 (14)
88510-04-04	1/4	1/4	.669 (17)	1.968 (50)	.709 (18)

For BANJO STEM assemblies see 10.7/10.8/10.9

88610B

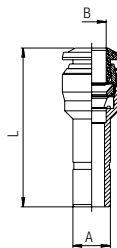
NYLON PLUG



Part No.	Tube	L
88610B-02	1/8	.708 (18)
88610B-53	5/32 (4)	.925 (23,5)
88610B-04	1/4	.964 (24,5)
88610B-05	5/16 (8)	1.023 (26)
88610B-06	3/8	1.122 (28,5)
88610B-08	1/2	1.122 (28,5)

88700

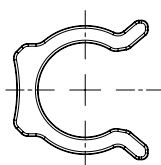
TUBE REDUCER



Part No.	A	B	L
88700-04-02	1/4	1/8	1.181 (30)
88700-04-53	1/4	5/32 (4)	1.181 (30)
88700-06-04	3/8	1/4	1.377 (35)
88700-08-04	1/2	1/4	1.693 (43)
88700-08-06	1/2	3/8	1.693 (43)

50980

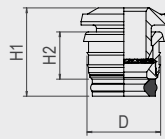
SECURITY CLIP



Part No.	Tube
50980-53	5/32 (4)
50980-04	1/4 (6)
50980-05	5/16 (8)
50980-06	3/8 (10)
50980-08	1/2 (12)

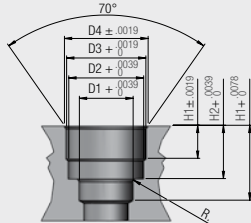
87800

PUSH-FIT CARTRIDGES



Part No.	Tube	H1	H2	D
87800-02	1/8	.370 (9,4)	.197 (5)	.264 (6,7)
87800-53	5/32 (4)	.429 (10,9)	.220 (5,6)	.343 (8,7)
87800-04	1/4	.508 (12,9)	.272 (6,9)	.423 (10,75)
87800-05	5/16 (8)	.512 (13)	.270 (6,85)	.500 (12,7)
87800-06	3/8	.618 (15,7)	.335 (8,5)	.618 (15,7)
87800-08	1/2	.697 (17,7)	.374 (9,5)	.720 (18,3)

SEAT



Seats dimensions push-fit cartridges.

Tube	D1	D2	D3	D4	H1	H2	H3	R
1/8 (3)	.134 (3,4)	.238 (6,05)	.252 (6,4)	.274 (6,95)	.146 (3,7)	.240 (6,1)	.339 (8,6)	.020 (0,5)
5/32 (4)	.165 (4,2)	.293 (7,45)	.331 (8,4)	.354 (9)	.148 (3,75)	.256 (6,5)	.374 (9,5)	.020 (0,5)
1/4 (6.6)	.259 (6,6)	.368 (9,35)	.411 (10,45)	.447 (11,35)	.197 (5)	.335 (8,5)	.453 (11,5)	.020 (0,5)
5/16 (8)	.323 (8,2)	.449 (11,4)	.488 (12,4)	.508 (12,9)	.205 (5,2)	.335 (8,5)	.492 (12,5)	.030 (0,75)
3/8 (9.7)	.381 (9,7)	.571 (14,5)	.606 (15,4)	.630 (16)	.264 (6,7)	.413 (10,5)	.591 (15)	.030 (0,75)
1/2 (13)	.511 (13)	.669 (17)	.709 (18)	.748 (19)	.295 (7,5)	.476 (12,1)	.669 (17)	.039 (1)

55801

TOOL FOR PUSH-FIT CARTRIDGES SEAT



Part No.	Tube	ø Body
55801-3	1/8 (3)	.394 (10)
55801-4	5/32 (4)	.394 (10)
87801-04	1/4	.472 (12)
55801-8	5/16 (8)	.472 (12)
87801-06	3/8	.630 (16)
87801-08	1/2	.630 (16)

55802

TOOL FOR PUSH-FIT CARTRIDGES SEAT



Part No.	Tube
55802-02	1/8
55802-4	5/32 (4)
55802-6	1/4 (6)
55802-8	5/16 (8)
55802-10	3/8 (10)
55802-12	1/2 (12)

PUSH-FIT CARTRIDGE ASSEMBLING INSTRUCTIONS ART. 87800

1 Use tool to drill into material to create the seat for the Push-Fit Cartridge.

2 Insert lip seal.

3 Insert cartridge into the assembling tool.

4 Press cartridge into the seat until it stops.

FITTING KITS

87861-02

FITTING KIT - 4MM TUBE



Part No.	Description	Qty
87000-02-02	Straight Male - 1/8 Tube x 1/8 Male	5
87000-02-04	Straight Male - 1/8 Tube x 1/4 Male	5
87000-04-02	Straight Male - 1/4 Tube x 1/8 Male	5
87110-02-02	Swivel Elbow - 1/8 Tube x 1/8 Male	5
87110-02-04	Swivel Elbow - 1/8 Tube x 1/4 Male	5
87110-04-02	Swivel Elbow - 1/4 Tube x 1/8 Male	5
87210-02-02	Swivel Branch Tee - 1/8 Tube x 1/8 Male	5
87210-02-04	Swivel Branch Tee - 1/8 Tube x 1/4 Male	5
87210-04-02	Swivel Branch Tee - 1/4 Tube x 1/8 Male	5
88040-02	Union - 1/8 Tube	5
88130-02	Union Elbow - 1/8 Tube	5
88230-02	Union Tee - 1/8 Tube	5

87861-04

FITTING KIT - 4MM TUBE



Part No.	Description	Qty
87000-04-02	Straight Male - 1/4 Tube x 1/8 Male	5
87000-04-04	Straight Male - 1/4 Tube x 1/4 Male	5
87000-04-06	Straight Male - 1/4 Tube x 3/8 Male	5
87110-04-02	Swivel Elbow - 1/4 Tube x 1/8 Male	5
87110-04-04	Swivel Elbow - 1/4 Tube x 1/4 Male	5
87110-04-06	Swivel Elbow - 1/4 Tube x 3/8 Male	5
87210-04-02	Swivel Branch Tee - 1/4 Tube x 1/8 Male	5
87210-04-04	Swivel Branch Tee - 1/4 Tube x 1/4 Male	5
87210-04-06	Swivel Branch Tee - 1/4 Tube x 3/8 Male	5
88040-04	Union - 1/4 Tube	5
88130-04	Union Elbow - 1/4 Tube	5
88230-04	Union Tee - 1/4 Tube	5

87861-06

FITTING KIT - 4MM TUBE



Part No.	Description	Qty
87000-06-04	Straight Male - 3/8 Tube x 1/4 Male	5
87000-06-06	Straight Male - 3/8 Tube x 3/8 Male	5
87000-06-08	Straight Male - 3/8 Tube x 1/2 Male	5
87110-06-04	Swivel Elbow - 3/8 Tube x 1/4 Male	5
87110-06-06	Swivel Elbow - 3/8 Tube x 3/8 Male	5
87110-06-08	Swivel Elbow - 3/8 Tube x 1/2 Male	5
87210-06-04	Swivel Branch Tee - 3/8 Tube x 1/4 Male	5
87210-06-06	Swivel Branch Tee - 3/8 Tube x 3/8 Male	5
87210-06-08	Swivel Branch Tee - 3/8 Tube x 1/2 Male	5
88040-06	Union - 3/8 Tube	5
88130-06	Union Elbow - 3/8 Tube	5
88230-06	Union Tee - 3/8 Tube	5

87861-08

FITTING KIT - 4MM TUBE



Part No.	Description	Qty
87000-08-04	Straight Male - 1/2 Tube x 1/4 Male	5
87000-08-06	Straight Male - 1/2 Tube x 3/8 Male	5
87000-08-08	Straight Male - 1/2 Tube x 1/2 Male	5
87110-08-04	Swivel Elbow - 1/2 Tube x 1/4 Male	5
87110-08-06	Swivel Elbow - 1/2 Tube x 3/8 Male	5
87110-08-08	Swivel Elbow - 1/2 Tube x 1/2 Male	5
87210-08-04	Swivel Branch Tee - 1/2 Tube x 1/4 Male	5
87210-08-06	Swivel Branch Tee - 1/2 Tube x 3/8 Male	5
87210-08-08	Swivel Branch Tee - 1/2 Tube x 1/2 Male	5
88040-08	Union - 1/2 Tube	5
88130-08	Union Elbow - 1/2 Tube	5
88230-08	Union Tee - 1/2 Tube	5

87861-90

FITTING KIT - 4MM TUBE



Part No.	Description	Qty
87000-04-04	Straight Male - 1/4 Tube x 1/4 Male	5
87000-06-06	Straight Male - 3/8 Tube x 3/8 Male	5
87000-08-08	Straight Male - 1/2 Tube x 1/2 Male	5
87110-04-04	Swivel Elbow - 1/4 Tube x 1/4 Male	5
87110-06-06	Swivel Elbow - 3/8 Tube x 3/8 Male	5
87110-08-08	Swivel Elbow - 1/2 Tube x 1/2 Male	5
87210-04-04	Swivel Branch Tee - 1/4 Tube x 1/4 Male	5
87210-06-06	Swivel Branch Tee - 3/8 Tube x 3/8 Male	5
87210-08-08	Swivel Branch Tee - 1/2 Tube x 1/2 Male	5
88040-04	Union - 1/4 Tube	5
88040-06	Union - 3/8 Tube	5
88040-08	Union - 1/2 Tube	5
88130-04	Union Elbow - 1/4 Tube	5
88130-06	Union Elbow - 3/8 Tube	5
88130-08	Union Elbow - 1/2 Tube	5
88230-04	Union Tee - 1/4 Tube	5
88230-06	Union Tee - 3/8 Tube	5
88230-08	Union Tee - 1/2 Tube	5