

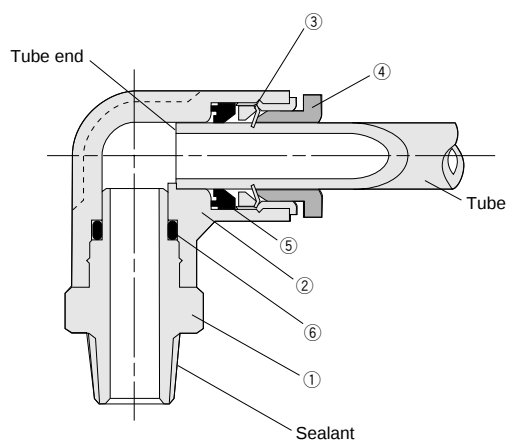
QUICK FITTINGS STANDARD TYPE

Specifications

Media	Air
Maximum operating pressure	0.9MPa [131psi.]
Operating vacuum pressure	-100kPa [-29.5in.Hg]
Operating temperature range	0~60°C [32~140°F]
Recommended tube	Nylon tube, urethane tube
Sales unit	1 pack (10 pcs.) [For ϕ 16 [0.63in.], 1 pack (5 pcs.)]

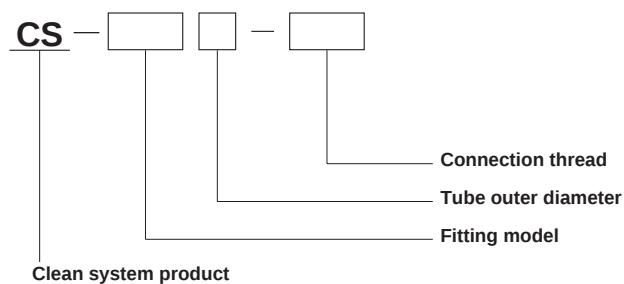
Caution: The tube outer diameter accuracy should be, for nylon tubes, within $\pm 0.1\text{mm}$ [$\pm 0.004\text{in.}$] of the nominal dimensions, and for urethane tubes, within $\pm 0.15\text{mm}$ [$\pm 0.006\text{in.}$] of the nominal dimensions, while the ovalness (difference between long diameter and short diameter) should be within 0.2mm [0.008in.].

Inner Construction, Major Parts and Materials



No.	Parts	Materials
①	Metal body	Brass (Stainless specification: SUS304)
②	Plastic body	Polybutylene terephthalate
③	Lock claw	Stainless steel
④	Release ring	Polyacetal (Stainless specification: glass reinforced PBT)
⑤	Elastic sleeve	Synthetic rubber (NBR) (Stainless specification: fluoro rubber)
⑥	O-ring	

Order Codes



●CS-TS: Straight



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M50	M5	M6	01	02	—
6	—	M5	M6	01	02	03
8	—	—	—	01	02	03
10	—	—	—	01	02	03
12	—	—	—	—	02	03
16	—	—	—	—	—	03

●CS-TSH: Hexagon socket head straight



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	—	—	—
6	M5	M6	01	02	—	—
8	—	—	01	02	03	—
10	—	—	—	02	03	04
12	—	—	—	—	03	04

●CS-TSM: Female straight



Tube size mm	Thread size		
	Rc1/8	Rc1/4	Rc3/8
4	01	02	—
6	01	02	—
8	01	02	03
10	—	02	03
12	—	02	03

●CS-US: Union straight



Tube size mm
4
6
8
10
12
16

●CS-USD: Different diameter union



Tube size mm
6-4
8-6
10-8
12-10
16-12

●CS-UK: Union for bulkhead



Tube size mm
4
6
8
10
12

●CS-UKM: Female union for bulkhead



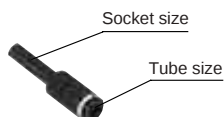
Tube size mm	Thread size			
	Rc1/8	Rc1/4	Rc3/8	Rc1/2
4	01	—	—	—
6	01	02	—	—
8	01	02	03	—
10	—	02	03	—
12	—	—	03	04

●CS-UKB: Union for bulkhead B



Tube size mm
4
6
8
10
12

●CS-UR: Reducer



Tube size mm	Socket size mm
4	6, 8
6	8, 10, 12
8	10, 12
10	12

●CS-TL: Elbow



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	02	—	—
6	M5	M6	01	02	03	—
8	—	—	01	02	03	—
10	—	—	01	02	03	04
12	—	—	—	02	03	04
16	—	—	—	—	03	04

●CS-TLL: Long elbow



Tube size mm	Thread size				
	M5×0.8	R1/8	R1/4	R3/8	R1/2
4	M5	01	—	—	—
6	—	01	02	03	—
8	—	01	02	03	—
10	—	—	02	03	04
12	—	—	02	03	04

●CS-SL: Swing elbow



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	—	—	—
6	M5	M6	01	02	—	—
8	—	—	01	02	03	—
10	—	—	—	02	03	—
12	—	—	—	—	03	04
16	—	—	—	—	03	04

●CS-SLH: Hexagon socket head swing elbow



Tube size mm	Thread size				
	M5×0.8	R1/8	R1/4	R3/8	R1/2
4	M5	—	—	—	—
6	—	01	02	—	—
8	—	01	02	03	—
10	—	—	02	03	—
12	—	—	—	03	04

●CS-SLM: Female swing elbow



Tube size mm	Thread size				
	M5×0.8	R·Rc1/8	R·Rc1/4	R·Rc3/8	R·Rc1/2
4	M5	01	—	—	—
6	M5	01	02	—	—
8	—	01	02	03	—
10	—	—	02	03	—
12	—	—	—	03	04

●CS-UL: Union elbow



Tube size mm
4
6
8
10
12
16

●CS-UKBL: Union elbow for bulkhead



Tube size mm
4
6
8
10
12

●CS-ULA: Socket elbow



Tube size mm	Socket size mm
4	4
6	6
8	8
10	10
12	12

●CS-ULAL: Long socket elbow



Tube size mm	Socket size mm
4	4
6	6
8	8
10	10
12	12

●CS-ULAD: Different diameter socket elbow



Tube size mm	Socket size mm
4	6
6	8
8	10
10	12

●CS-TT: Tee



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	02	—	—
6	M5	M6	01	02	03	—
8	—	—	01	02	03	—
10	—	—	—	02	03	04
12	—	—	—	02	03	04
16	—	—	—	—	03	04

●CS-TB: Branch tee



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	02	—	—
6	M5	M6	01	02	03	—
8	—	—	01	02	03	—
10	—	—	—	02	03	04
12	—	—	—	02	03	04
16	—	—	—	—	03	04

●CS-UT: Union tee



Tube size mm
4
6
8
10
12
16

●CS-UTD: Different diameter union tee



Tube size mm
6-4
8-6
10-8
12-10

●CS-TBY: Branch Y



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	—	01	02	—	—
6	M5	M6	01	02	03	—
8	—	—	01	02	03	—
10	—	—	—	02	03	04
12	—	—	—	02	03	04

●CS-TBLY: Branch elbow Y



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	02	—	—
6	M5	M6	01	02	03	—
8	—	—	01	02	03	—
10	—	—	—	02	03	04
12	—	—	—	02	03	04

●CS-SLY: Swing elbow Y



Tube size mm	Thread size
4	M5(M5×0.8)
6	01(R1/8)
8	02(R1/4)
10	03(R3/8)
12	04(R1/2)

●CS-SLYM: Female swing elbow Y



Tube size mm	Thread size
4	M5(M5×0.8)
6	01(R·Rc1/8)
8	02(R·Rc1/4)
10	03(R·Rc3/8)
12	04(R·Rc1/2)

●CS-UY: Union Y



Tube size mm
4
6
8
10
12

●CS-UYD: Different diameter union Y



Tube size mm
6—4
8—6
10—8
12—10

●CS-ULY: Union elbow Y



Tube size mm
4
6
8
10
12

●CS-UB: Branch union Y



Tube size mm	Socket size mm
4	4
6	6
8	8
10	10
12	12

●CS-UBD: Different diameter branch union Y



Tube size mm	Socket size mm
4	6
6	8
8	10
10	12

●CS-UZ: Tetra union



Tube size mm
4
6
8
10
12

●CS-TBZ: Branch tetra



Tube size mm	Thread size					
	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	02	—	—
6	M5	M6	01	02	03	—
8	—	—	01	02	03	—
10	—	—	—	02	03	04
12	—	—	—	02	03	04

●CS-UWD: Different diameter double Y



Tube size mm
6—4
8—6

●CS-TBW: Branch double Y



Tube size mm	Thread size	
	R1/8	R1/4
4	01	02
6	01	—

●CS-UBW: Branch union double Y



Tube size mm	Socket size mm
4	6
6	8

●CS-UED: Different diameter triple



Tube size mm
6—4
8—4
8—6
10—6
10—8

●CS-TBE: Branch triple



Tube size mm	Thread size		
	R1/8	R1/4	R3/8
6—4	01	—	—
8—4	—	02	—
8—6	—	02	—
10—8	—	—	03

●CS-UBE: Branch union triple



Tube size mm
6—4
8—4
8—6
10—8

●CS-TBEW: Branch triple double



Tube size mm	Thread size		
	R1/4	R3/8	R1/2
8—4	02	03	—
8—6	02	03	—
10—6	—	03	04
10—8	—	03	04

●CS-UEDW: Different diameter triple double



Tube size mm
8—4
8—6
10—6
10—8

●CS-TJ: Jack (Note: Cannot be used with mini type.)



Tube size mm	Thread size			
	M5×0.8	R1/8	R1/4	R3/8
4	M5	01	—	—
6	M5	01	02	—
8	—	01	02	03
10	—	—	—	03

●CS-AN: Socket nipple



Socket size mm
4
6
8
10
12
16

●CS-AND: Different diameter socket nipple



Socket size mm
6—4
8—6
10—8
12—10
16—12

●CS-BB: Extension bushing



Thread size	Thread size				
	M5×0.8	Rc1/8	Rc1/4	Rc3/8	Rc1/2
M5×0.8 (M5)	M5, M5L	01	—	—	—
R1/8 (01)	M5	01	02	03	—
R1/4 (02)	M5	01	02	03	04
R3/8 (03)	—	01	02	03	04
R1/2 (04)	—	—	—	—	04

●CS-BBD: Different diameter extension socket



Thread size	Thread size			
	M5×0.8	Rc1/8	Rc1/4	Rc3/8
Rc1/8 (01)	M5	—	—	—
Rc1/4 (02)	—	01	—	—
Rc3/8 (03)	—	01	02	—
Rc1/2 (04)	—	—	02	03

●CS-UP: Plug



Tube size mm
4
6
8
10
12
16

●CS-UC: Cap



Tube size mm
4
6
8
10
12

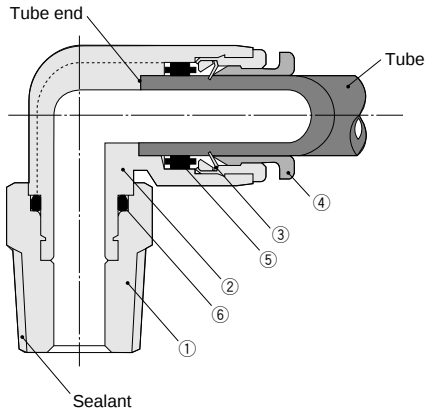
Note: For details of the dimensions, see the General Catalog of Air Treatment, Auxiliary, Vacuum.

Specifications

Item \ Applicable tube size	φ 3	φ 4	φ 6
Media	Air		
Maximum operating pressure	0.9MPa [131psi.]		
Operating vacuum pressure	-100kPa [-29.5in.Hg]		
Operating temperature range	0 ~ 60°C [32 ~ 140°F]		
Recommended tube ^{Note}	Nylon tube, urethane tube		
Sales unit	1 pack (10 pcs.)		

Remark: Supplied with gasket or sealant.
 Note: Use tubes with outer dimensions within ±0.1mm [±0.004in.] of the nominal dimensions.

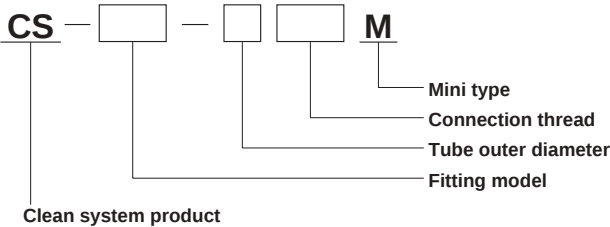
Inner Construction, Major Parts and Materials



No.	Parts	Materials
①	Metal body	Brass (nickel plated) ^{Note}
②	Plastic body	Polybutylene terephthalate
③	Lock claw	Stainless steel
④	Release ring	Polyacetal
⑤	Elastic sleeve	Synthetic rubber (NBR)
⑥	O-ring	

Note: Stainless steel for M3 size.

Order Codes



●CS-TS: Straight



Tube — Thread size			
M3×0.5	M5×0.8	M6×1	R1/8
3—M3	3—M5	3—M6	—
4—M3	4—M5	4—M6	4—01
—	6—M5	6—M6	6—01

●CS-TSH: Straight with hexagon socket



Tube — Thread size			
M3×0.5	M5×0.8	M6×1	R1/8
3—M3	3—M5	—	—
4—M3	4—M5	4—M6	4—01
—	6—M5	6—M6	6—01

●CS-TSK: Cartridge



Tube — Thread size	
M6×0.75	M8×0.75
3—M6	—
4—M6	4—M8
—	6—M8

●CS-TSM: Female straight



Tube — Thread size	
M3×0.5	M5×0.8
3—M3	3—M5
4—M3	4—M5

●CS-US: Union straight



Tube size mm
3
4
6

●CS-USD: Different diameter union



Tube size mm
4—3
6—4

●CS-UK: Union for bulkhead



Tube size mm
3
4
6

●CS-UR: Reducer



Socket — Tube size mm
4—3
6—3
6—4

●CS-TL: Elbow



Tube — Thread size			
M3×0.5	M5×0.8	M6×1	R1/8
3—M3	3—M5	3—M6	—
4—M3	4—M5	4—M6	4—01
—	6—M5	6—M6	6—01

●CS-TLL: Long elbow



Tube — Thread size			
M3×0.5	M5×0.8	M6×1	R1/8
3—M3	—	—	—
4—M3	4—M5	4—M6	4—01
—	6—M5	6—M6	6—01

●CS-UL: Union elbow



Tube size mm
3
4
6

●CS-ULA: Socket elbow



Tube, socket size mm
3
4
6

●CS-ULAD: Different diameter socket elbow



Socket — Tube size mm
4—3
6—3
6—4

●CS-TLV: 45° elbow



Tube — Thread size		
M5×0.8	M6×1	R1/8
4—M5	4—M6	4—01
6—M5	6—M6	6—01

●CS-ULAV: 45° socket elbow



Tube, socket size mm
4
6

●CS-TT: Tee



Tube — Thread size			
M3×0.5	M5×0.8	M6×1	R1/8
3—M3	3—M5	3—M6	—
4—M3	4—M5	4—M6	4—01
—	6—M5	6—M6	6—01

●CS-TB: Branch tee



Tube — Thread size			
M3×0.5	M5×0.8	M6×1	R1/8
3—M3	3—M5	3—M6	—
4—M3	4—M5	4—M6	4—01
—	6—M5	6—M6	6—01

●CS-UT: Union tee



Tube size mm
3
4
6

●CS-UTD: Different diameter union tee



Tube size mm
4—3
6—4

●CS-UY: Union Y



Tube size mm
3
4
6

●CS-UYD: Different diameter union Y



Tube size mm
4—3
6—3
6—4

●CS-UB: Branch union Y



Tube size mm
3
4
6

●CS-UBD: Different diameter branch union Y



Socket — Tube size mm
4—3
6—3
6—4

●CS-UXA: Cross A



Tube size mm
3
4
6

●CS-UXB: Cross B (different diameter)



Tube size mm
4—3
6—4

●CS-UXC: Cross C (different diameter)



Tube size mm
4—3
6—4

●CS-UP3M: Plug



For the 4mm and 6mm sizes, plugs for the standard type quick fittings can be used.

Socket size mm
3

●CS-UC3M: Cap



For the 4mm and 6mm sizes, plugs for the standard type quick fittings can be used.

Tube size mm
3

Note: For details of the dimensions, see the General Catalog of Air Treatment, Auxiliary, Vacuum.

QUICK FITTINGS(Smart type)

Straight

●ATS



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472
0.630

Straight with hexagon socket

●ATSH



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Female straight

●ATSM



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Union for bulkhead

●AUK



Main unit: Aluminum alloy (black almite)
Nut: Mild steel (zinc plated)
(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Female union for bulkhead

●AUKM



Nut: Mild steel (zinc plated)
(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Elbow

●ATL



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Long elbow

●ATLL



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Tee

●ATT



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Branch tee

●ATB



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Branch Y

●ATBY



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Branch elbow Y

●ATBLY



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236
0.315
0.394
0.472

Branch double Y

●ATBW



(1 bag, 10 pcs.)

in
Tube size
0.157
0.236

QUICK FITTINGS(Smart type)

Branch triple

●ATBE



in

Tube size
0.236-0.157
0.315-0.157
0.315-0.236
0.394-0.315

Branch triple double

●ATBEW



in

Tube size
0.315-0.157
0.315-0.236
0.394-0.236
0.394-0.315

Branch tetra

●ATBZ



in

Tube size
0.157
0.236
0.315
0.394
0.472

(1 bag, 10 pcs.)

(1 bag, 10 pcs.)

(1 bag, 10 pcs.)

Reducer for bulkhead

●ASKR



in

Main side thread size	Sub-main side tube size				
	0.157	0.236	0.315	0.394	0.472
M8×1 (8)	0.315-0.157	0.315-0.236	—	—	—
M12×1 (12)	—	0.472-0.236	0.472-0.315	0.472-0.394	—
M14×1 (14)	—	—	0.551-0.315	0.551-0.394	0.551-0.472
M18×1 (18)	—	—	—	—	0.709-0.472

●ATS



(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472
0.630

Order codes

ATS



D

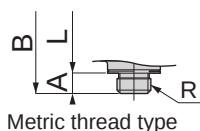
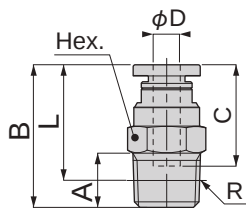
D ⇒ Non-lubricant specification only.

□ ⇒ Select either blank (standard) or D (non-lubricant specification)

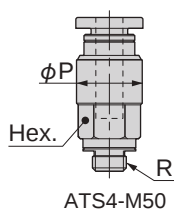
Connecting thread

Tube outer diameter

Dimensions in

Straight
ATS

Metric thread type



ATS4-M50

Model	Tube outer diameter φ D	R	A	B	L	C	Width across flats Hex.	φ P	Orifice diameter (φ in)	Mass oz
ATS4-M5-D	0.157	M5×0.8	0.110	0.780	0.669	0.587	0.394	-	0.094	0.198
ATS4-M50-□	0.157	M5×0.8	0.110	0.894	0.783	0.587	0.315	0.382	0.094	0.215
ATS4-M6-D	0.157	M6×1	0.150	0.819	0.669	0.587	0.394	-	0.118	0.212
ATS4-01-D	0.157	R1/8	0.315	0.827	0.669	0.587	0.394	-	0.118	0.261
ATS4-02-□	0.157	R1/4	0.433	0.886	0.650	0.587	0.551	-	0.118	0.564
ATS6-M5-D	0.236	M5×0.8	0.110	0.862	0.752	0.669	0.472	-	0.094	0.286
ATS6-M6-D	0.236	M6×1	0.150	0.902	0.752	0.669	0.472	-	0.118	0.300
ATS6-01-D	0.236	R1/8	0.315	0.878	0.720	0.669	0.472	-	0.197	0.289
ATS6-02-□	0.236	R1/4	0.433	0.933	0.693	0.669	0.551	-	0.197	0.529
ATS6-03-□	0.236	R3/8	0.472	0.965	0.713	0.669	0.669	-	0.197	0.988
ATS8-01-□	0.315	R1/8	0.315	1.098	0.941	0.717	0.551	-	0.236	0.494
ATS8-02-□	0.315	R1/4	0.433	1.047	0.811	0.717	0.551	-	0.276	0.494
ATS8-03-□	0.315	R3/8	0.472	1.004	0.756	0.717	0.669	-	0.276	0.882
ATS10-01-□	0.394	R1/8	0.315	1.193	1.035	0.815	0.669	-	0.236	0.741
ATS10-02-□	0.394	R1/4	0.433	1.173	0.937	0.815	0.669	-	0.335	0.670
ATS10-03-□	0.394	R3/8	0.472	1.154	0.906	0.815	0.669	-	0.354	0.847
ATS10-04-□	0.394	R1/2	0.591	1.197	0.874	0.815	0.827	-	0.354	1.623
ATS12-02-□	0.472	R1/4	0.433	1.413	1.177	0.917	0.827	-	0.335	1.305
ATS12-03-□	0.472	R3/8	0.472	1.256	1.008	0.917	0.827	-	0.433	1.058
ATS12-04-□	0.472	R1/2	0.591	1.335	1.012	0.917	0.827	-	0.433	1.552
ATS16-03-□	0.630	R3/8	0.472	1.547	1.299	0.976	0.945	-	0.433	1.905
ATS16-04-□	0.630	R1/2	0.591	1.626	1.303	0.976	0.945	-	0.512	2.222

* -D ⇒ Non-lubricant specification only. - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

● ATSH

Straight with hexagon socket



(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472

Order codes

ATSH



D ⇒ Non-lubricant specification only.

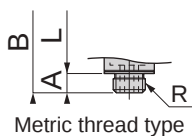
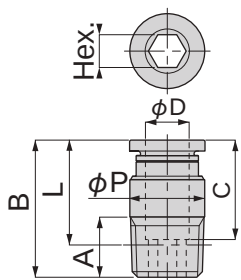
□ ⇒ Select either blank (standard) or D (non-lubricant specification)

Connecting thread

Tube outer diameter

Dimensions in

Straight with hexagon socket ATSH



Metric thread type

Model	Tube outer diameter φ D	R	A	B	L	C	Width across flats Hex.	φ P	Orifice diameter (φ in)	Mass oz
ATSH4-M5-D	0.157	M5×0.8	0.110	0.776	0.665	0.587	0.098	0.382	0.102	0.162
ATSH4-M6-D	0.157	M6×1	0.150	0.815	0.665	0.587	0.098*	0.382	0.102*	0.190
ATSH4-01-D	0.157	R1/8	0.315	0.787	0.630	0.587	0.098	0.382	0.102	0.233
ATSH6-M5-D	0.236	M5×0.8	0.110	0.839	0.728	0.669	0.098	0.465	0.102	0.198
ATSH6-M6-D	0.236	M6×1	0.150	0.878	0.728	0.669	0.118	0.465	0.126	0.222
ATSH6-01-D	0.236	R1/8	0.315	0.870	0.713	0.669	0.157	0.465	0.165	0.268
ATSH6-02-□	0.236	R1/4	0.433	0.839	0.598	0.669	0.157	0.539	0.165	0.459
ATSH8-01-□	0.315	R1/8	0.315	1.020	0.862	0.717	0.197	0.539	0.209	0.310
ATSH8-02-□	0.315	R1/4	0.433	0.988	0.752	0.717	0.236	0.539	0.248	0.459
ATSH8-03-□	0.315	R3/8	0.472	0.874	0.626	0.717	0.236	0.661	0.248	0.670
ATSH10-02-□	0.394	R1/4	0.433	1.173	0.937	0.815	0.236	0.689	0.248	0.705
ATSH10-03-□	0.394	R3/8	0.472	1.154	0.906	0.815	0.236	0.689	0.248	0.917
ATSH10-04-□	0.394	R1/2	0.591	1.193	0.870	0.815	0.236	0.819	0.248	1.587
ATSH12-03-□	0.472	R3/8	0.472	1.256	1.008	0.917	0.315	0.819	0.331	1.093
ATSH12-04-□	0.472	R1/2	0.591	1.335	1.012	0.917	0.315	0.819	0.331	1.587

* Changed width across flats of inner diameter of hex nut and diameter of orifice to correct the problem of lock hook interference with hex wrench.

* -D ⇒ Non-lubricant specification only. - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

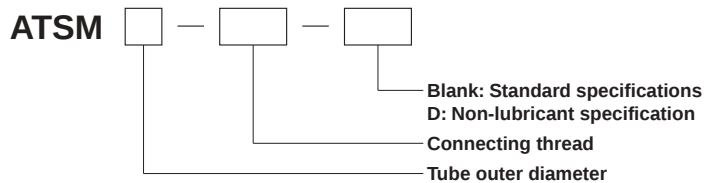
● ATSM



(1 bag, 10 pcs.)

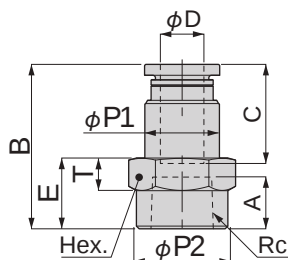
Tube size
0.157
0.236
0.315
0.394
0.472

Order codes



Dimensions in

Female straight ATSM



Model	Tube outer diameter φ D	Rc	A	B	E	φ P1	φ P2	C	Width across flats Hex.	T	Orifice diameter (φ in)	Mass oz
ATSM4-01-	0.157	Rc1/8	0.276	0.941	0.394	0.382	0.543	0.587	0.551	0.197	0.118	0.459
ATSM4-02-	0.157	Rc1/4	0.374	1.059	0.512	0.382	0.661	0.587	0.669	0.236	0.118	0.670
ATSM6-01-	0.236	Rc1/8	0.276	1.024	0.394	0.465	0.543	0.669	0.551	0.197	0.197	0.529
ATSM6-02-	0.236	Rc1/4	0.374	1.142	0.512	0.465	0.661	0.669	0.669	0.236	0.197	0.741
ATSM8-01-	0.315	Rc1/8	0.276	1.071	0.394	0.539	0.543	0.717	0.551	0.197	0.276	0.564
ATSM8-02-	0.315	Rc1/4	0.374	1.189	0.512	0.539	0.661	0.717	0.669	0.236	0.276	0.776
ATSM8-03-	0.315	Rc3/8	0.413	1.228	0.551	0.539	0.819	0.717	0.827	0.256	0.276	1.058
ATSM10-02-	0.394	Rc1/4	0.374	1.287	0.512	0.689	0.661	0.815	0.669	0.236	0.354	0.988
ATSM10-03-	0.394	Rc3/8	0.413	1.327	0.551	0.689	0.819	0.815	0.827	0.256	0.354	1.305
ATSM12-02-	0.472	Rc1/4	0.374	1.370	0.531	0.819	0.661	0.917	0.827	0.256	0.433	1.482
ATSM12-03-	0.472	Rc3/8	0.413	1.429	0.551	0.819	0.819	0.917	0.827	0.256	0.433	1.552

* - ⇒ Select either blank (standard) or D (non-lubricant specification)

● AUK



Main unit: Aluminum alloy
(black almite)

Nut: Mild steel (zinc plated)

(1 bag, 10 pcs.)

Tube size

0.157

0.236

0.315

0.394

0.472

Order codes

AUK

□ — D

D ⇒ Non-lubricant specification only.

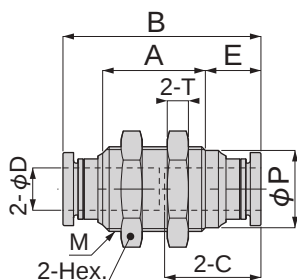
□ ⇒ Select either blank (standard) or D (non-lubricant specification)

Tube outer diameter

Dimensions in

Union for bulkhead

AUK



Model	Tube outer diameter ϕD	M	B	E	A	ϕP	C	Width across flats Hex.	T	Orifice diameter (ϕ in)	Mass oz
AUK4-D	0.157	M12×1	1.213	0.374	0.583	0.425	0.587	0.551	0.157	0.118	0.388
AUK6-D	0.236	M14×1	1.374	0.374	0.748	0.492	0.669	0.669	0.157	0.197	0.564
AUK8-□	0.315	M16×1	1.472	0.413	0.764	0.575	0.717	0.748	0.157	0.276	0.670
AUK10-□	0.394	M20×1	1.669	0.469	0.850	0.728	0.815	0.945	0.197	0.354	1.235
AUK12-□	0.472	M22×1	1.874	0.520	0.953	0.803	0.917	1.063	0.236	0.433	1.834

* -D ⇒ Non-lubricant specification only. - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

● AUKM



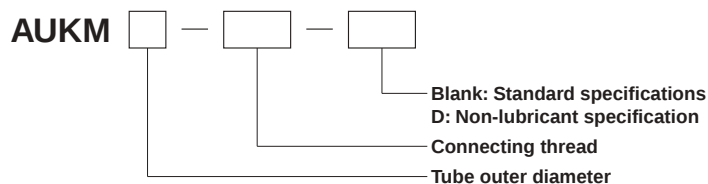
Nut: Mild steel (zinc plated)

(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472

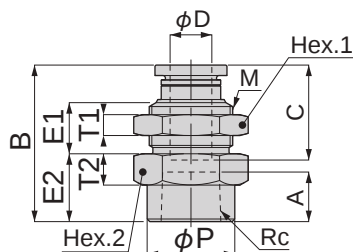
Order codes



Dimensions in

Female union for bulkhead

AUKM



Model	Tube outer diameter ϕD	Rc	M	B	E1	E2	A	C	ϕP	Width across flats Hex.1	Width across flats Hex.2	T1	T2	Orifice diameter (ϕ in)	Mass oz
AUKM4-01-	0.157	Rc1/8	M12×1	0.953	0.354	0.354	0.276	0.587	0.543	0.551	0.551	0.157	0.197	0.118	0.600
AUKM6-01-	0.236	Rc1/8	M14×1	1.039	0.402	0.394	0.276	0.669	0.543	0.669	0.669	0.157	0.236	0.197	0.882
AUKM6-02-	0.236	Rc1/4	M14×1	1.130	0.402	0.484	0.374	0.669	0.661	0.669	0.669	0.157	0.236	0.197	0.917
AUKM8-01-	0.315	Rc1/8	M16×1	1.063	0.386	0.394	0.276	0.717	0.543	0.748	0.748	0.157	0.236	0.276	1.058
AUKM8-02-	0.315	Rc1/4	M16×1	1.181	0.386	0.512	0.374	0.717	0.661	0.748	0.748	0.157	0.236	0.276	1.129
AUKM8-03-	0.315	Rc3/8	M16×1	1.220	0.386	0.551	0.413	0.717	0.768	0.748	0.748	0.157	0.236	0.276	1.058
AUKM10-02-	0.394	Rc1/4	M20×1	1.287	0.437	0.512	0.374	0.815	0.661	0.945	0.945	0.197	0.276	0.354	1.940
AUKM10-03-	0.394	Rc3/8	M20×1	1.327	0.437	0.551	0.413	0.815	0.819	0.945	0.945	0.197	0.276	0.354	1.975
AUKM12-03-	0.472	Rc3/8	M22×1	1.429	0.488	0.551	0.413	0.917	0.819	1.063	0.945	0.236	0.276	0.433	2.293
AUKM12-04-	0.472	Rc1/2	M22×1	1.547	0.488	0.669	0.512	0.917	0.984	1.063	0.945	0.236	0.276	0.433	2.363

* - ⇒ Select either blank (standard) or D (non-lubricant specification)

● ATL



Tube size

0.157
0.236
0.315
0.394
0.472

(1 bag, 10 pcs.)

Order codes

ATL



D ⇒ Non-lubricant specification only.

□ ⇒ Select either blank (standard) or D (non-lubricant specification)

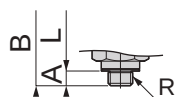
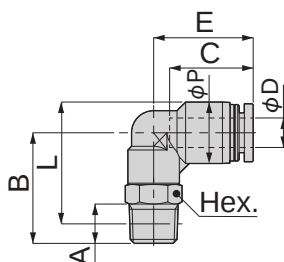
Connecting thread

Tube outer diameter

Dimensions in

Elbow

ATL



Metric thread type

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	E	Width across flats Hex.	Orifice diameter (ϕin)	Mass oz
ATL4-M5-D	0.157	M5×0.8	0.110	0.630	0.717	0.394	0.587	0.697	0.315	0.094	0.201
ATL4-M6-D	0.157	M6×1	0.150	0.787	0.835	0.394	0.587	0.736	0.394	0.094	0.282
ATL4-01-D	0.157	R1/8	0.315	0.866	0.906	0.394	0.587	0.736	0.394	0.110	0.353
ATL4-02-□	0.157	R1/4	0.433	1.142	1.102	0.394	0.587	0.815	0.551	0.110	0.635
ATL6-M5-D	0.236	M5×0.8	0.110	0.768	0.906	0.492	0.669	0.799	0.394	0.094	0.314
ATL6-M6-D	0.236	M6×1	0.150	0.807	0.906	0.492	0.669	0.799	0.394	0.118	0.282
ATL6-01-D	0.236	R1/8	0.315	0.886	0.976	0.492	0.669	0.799	0.394	0.169	0.388
ATL6-02-□	0.236	R1/4	0.433	1.102	1.110	0.492	0.669	0.858	0.551	0.169	0.670
ATL6-03-□	0.236	R3/8	0.472	1.240	1.236	0.492	0.669	0.937	0.669	0.169	1.058
ATL8-01-□	0.315	R1/8	0.315	0.945	1.075	0.571	0.713	0.894	0.472	0.236	0.494
ATL8-02-□	0.315	R1/4	0.433	1.102	1.150	0.571	0.713	0.933	0.551	0.264	0.705
ATL8-03-□	0.315	R3/8	0.472	1.220	1.256	0.571	0.713	0.972	0.669	0.264	1.093
ATL10-01-□	0.394	R1/8	0.315	0.984	1.173	0.689	0.795	1.004	0.472	0.236	0.635
ATL10-02-□	0.394	R1/4	0.433	1.122	1.228	0.689	0.795	1.024	0.551	0.315	0.811
ATL10-03-□	0.394	R3/8	0.472	1.260	1.354	0.689	0.795	1.063	0.669	0.327	1.199
ATL10-04-□	0.394	R1/2	0.591	1.417	1.441	0.689	0.795	1.083	0.827	0.327	2.011
ATL12-02-□	0.472	R1/4	0.433	1.173	1.346	0.827	0.921	1.142	0.551	0.315	0.952
ATL12-03-□	0.472	R3/8	0.472	1.280	1.445	0.827	0.921	1.169	0.669	0.394	1.340
ATL12-04-□	0.472	R1/2	0.591	1.437	1.528	0.827	0.921	1.209	0.827	0.406	2.152

* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

● ATLL



Tube size
0.157
0.236
0.315
0.394
0.472

(1 bag, 10 pcs.)

Order codes

ATLL

— — D

D ⇒ Non-lubricant specification only.

□ ⇒ Select either blank (standard) or D (non-lubricant specification)

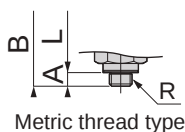
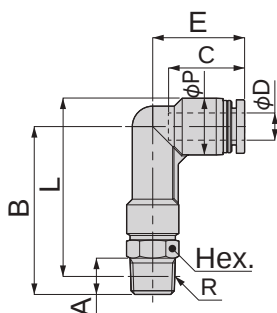
Connecting thread

Tube outer diameter

Dimensions in

Long elbow

ATLL



Metric thread type

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	E	Width across flats Hex.	Orifice diameter (ϕin)	Mass oz
ATLL4-M5-D	0.157	M5×0.8	0.110	1.102	1.189	0.394	0.587	0.736	0.315	0.094	0.226
ATLL4-01-D	0.157	R1/8	0.315	1.339	1.378	0.394	0.587	0.736	0.394	0.110	0.388
ATLL6-01-D	0.236	R1/8	0.315	1.457	1.547	0.492	0.669	0.799	0.394	0.169	0.459
ATLL6-02-□	0.236	R1/4	0.433	1.673	1.681	0.492	0.669	0.858	0.551	0.169	0.705
ATLL6-03-□	0.236	R3/8	0.472	1.811	1.807	0.492	0.669	0.937	0.669	0.169	1.164
ATLL8-01-□	0.315	R1/8	0.315	1.594	1.724	0.571	0.713	0.894	0.472	0.236	0.564
ATLL8-02-□	0.315	R1/4	0.433	1.752	1.799	0.571	0.713	0.933	0.551	0.264	0.776
ATLL8-03-□	0.315	R3/8	0.472	1.870	1.906	0.571	0.713	0.972	0.669	0.264	1.235
ATLL10-02-□	0.394	R1/4	0.433	1.890	1.996	0.689	0.795	1.024	0.551	0.315	0.917
ATLL10-03-□	0.394	R3/8	0.472	2.028	2.122	0.689	0.795	1.063	0.669	0.327	1.340
ATLL10-04-□	0.394	R1/2	0.591	2.185	2.209	0.689	0.795	1.063	0.827	0.327	2.222
ATLL12-02-□	0.472	R1/4	0.433	2.079	2.252	0.827	0.921	1.142	0.551	0.315	1.058
ATLL12-03-□	0.472	R3/8	0.472	2.185	2.350	0.827	0.921	1.169	0.669	0.394	1.482
ATLL12-04-□	0.472	R1/2	0.591	2.343	2.433	0.827	0.921	1.169	0.827	0.406	2.399

* -D ⇒ Non-lubricant specification only. - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

● ATT



(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472

Order codes

ATT



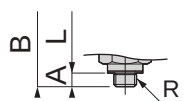
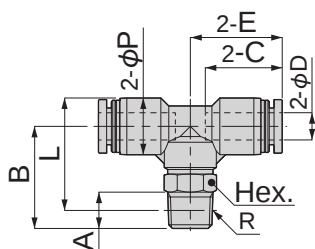
D ⇒ Non-lubricant specification only.

□ ⇒ Select either blank (standard) or D (non-lubricant specification)

Connecting thread

Tube outer diameter

Dimensions in

Tee
ATT

Metric thread type

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	E	Width across flats Hex.	Orifice diameter (ϕin)	Mass oz
ATT4-M5-D	0.157	M5×0.8	0.110	0.630	0.717	0.394	0.587	0.697	0.315	0.094	0.282
ATT4-M6-D	0.157	M6×1	0.150	0.787	0.835	0.394	0.587	0.736	0.394	0.094	0.388
ATT4-01-D	0.157	R1/8	0.315	0.866	0.906	0.394	0.587	0.736	0.394	0.110	0.459
ATT4-02-□	0.157	R1/4	0.433	1.142	1.102	0.394	0.587	0.815	0.551	0.110	0.705
ATT6-M5-D	0.236	M5×0.8	0.110	0.768	0.906	0.492	0.669	0.797	0.394	0.094	0.423
ATT6-M6-D	0.236	M6×1	0.150	0.807	0.906	0.492	0.669	0.797	0.394	0.118	0.459
ATT6-01-D	0.236	R1/8	0.315	0.886	0.976	0.492	0.669	0.797	0.394	0.169	0.494
ATT6-02-□	0.236	R1/4	0.433	1.102	1.110	0.492	0.669	0.856	0.551	0.169	0.776
ATT6-03-□	0.236	R3/8	0.472	1.240	1.236	0.492	0.669	0.935	0.669	0.169	1.164
ATT8-01-□	0.315	R1/8	0.315	0.945	1.075	0.571	0.713	0.894	0.472	0.236	0.670
ATT8-02-□	0.315	R1/4	0.433	1.102	1.150	0.571	0.713	0.933	0.551	0.264	0.882
ATT8-03-□	0.315	R3/8	0.472	1.220	1.256	0.571	0.713	0.972	0.669	0.264	1.235
ATT10-02-□	0.394	R1/4	0.433	1.122	1.228	0.689	0.795	1.024	0.551	0.315	1.093
ATT10-03-□	0.394	R3/8	0.472	1.260	1.354	0.689	0.795	1.063	0.669	0.327	1.482
ATT10-04-□	0.394	R1/2	0.591	1.417	1.441	0.689	0.795	1.083	0.827	0.327	2.293
ATT12-02-□	0.472	R1/4	0.433	1.173	1.346	0.827	0.921	1.140	0.551	0.315	1.340
ATT12-03-□	0.472	R3/8	0.472	1.280	1.445	0.827	0.921	1.169	0.669	0.394	1.693
ATT12-04-□	0.472	R1/2	0.591	1.437	1.528	0.827	0.921	1.209	0.827	0.406	2.540

* -D ⇒ Non-lubricant specification only. - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

● ATB



(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472

Order codes

ATB



D ⇒ Non-lubricant specification only.

□ ⇒ Select either blank (standard) or D (non-lubricant specification)

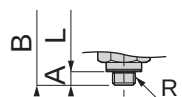
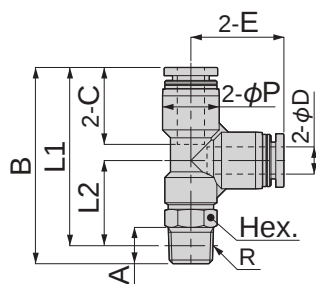
Connecting thread

Tube outer diameter

Dimensions in

Branch tee

ATB



Metric thread type

Model	Tube outer diameter φD	R	A	B	L1	L2	φP	C	E	Width across flats Hex.	Orifice diameter (φin)	Mass oz
ATB4-M5-D	0.157	M5×0.8	0.110	1.327	1.217	0.539	0.394	0.587	0.677	0.315	0.094	0.275
ATB4-M6-D	0.157	M6×1	0.150	1.504	1.354	0.677	0.394	0.587	0.677	0.394	0.094	0.388
ATB4-01-D	0.157	R1/8	0.315	1.583	1.425	0.748	0.394	0.587	0.677	0.394	0.110	0.459
ATB4-02-□	0.157	R1/4	0.433	1.819	1.583	0.906	0.394	0.587	0.756	0.551	0.110	0.705
ATB6-M5-D	0.236	M5×0.8	0.110	1.587	1.476	0.669	0.492	0.669	0.807	0.394	0.094	0.423
ATB6-M6-D	0.236	M6×1	0.150	1.626	1.476	0.669	0.492	0.669	0.807	0.394	0.118	0.423
ATB6-01-D	0.236	R1/8	0.315	1.705	1.547	0.740	0.492	0.669	0.807	0.394	0.169	0.494
ATB6-02-□	0.236	R1/4	0.433	1.921	1.681	0.874	0.492	0.669	0.807	0.551	0.169	0.776
ATB6-03-□	0.236	R3/8	0.472	2.047	1.799	0.992	0.492	0.669	0.846	0.669	0.169	1.129
ATB8-01-□	0.315	R1/8	0.315	1.846	1.689	0.787	0.571	0.713	0.902	0.472	0.236	0.670
ATB8-02-□	0.315	R1/4	0.433	2.035	1.799	0.898	0.571	0.713	0.902	0.551	0.264	0.882
ATB8-03-□	0.315	R3/8	0.472	2.181	1.933	1.031	0.571	0.713	0.902	0.669	0.264	1.235
ATB10-02-□	0.394	R1/4	0.433	2.154	1.917	0.886	0.689	0.795	1.031	0.551	0.315	1.093
ATB10-03-□	0.394	R3/8	0.472	2.291	2.043	1.012	0.689	0.795	1.031	0.669	0.327	1.482
ATB10-04-□	0.394	R1/2	0.591	2.449	2.126	1.094	0.689	0.795	1.075	0.827	0.327	2.293
ATB12-02-□	0.472	R1/4	0.433	2.374	2.134	0.933	0.827	0.921	1.181	0.551	0.315	1.340
ATB12-03-□	0.472	R3/8	0.472	2.500	2.252	1.051	0.827	0.921	1.201	0.669	0.394	1.693
ATB12-04-□	0.472	R1/2	0.591	2.657	2.335	1.134	0.827	0.921	1.209	0.827	0.406	2.540

* -D ⇒ Non-lubricant specification only. - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

● ATBY



(1 bag, 10 pcs.)

Tube size

0.157

0.236

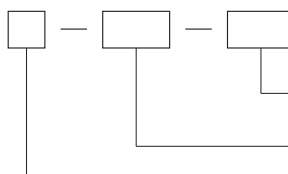
0.315

0.394

0.472

Order codes

ATBY



Blank: Standard specifications

D: Non-lubricant specification

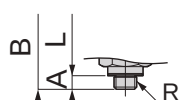
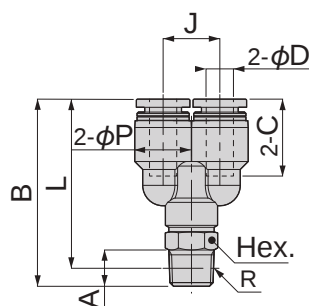
Connecting thread

Tube outer diameter

Dimensions in

Branch Y

ATBY



Metric thread type

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	J	Width across flats Hex.	Orifice diameter (ϕ in)	Mass oz
ATBY4-M5-□	0.157	M5×0.8	0.110	1.295	1.185	0.394	0.587	0.406	0.315	0.094	0.282
ATBY4-01-□	0.157	R1/8	0.315	1.512	1.354	0.394	0.587	0.406	0.394	0.110	0.459
ATBY4-02-□	0.157	R1/4	0.433	1.709	1.472	0.394	0.587	0.406	0.551	0.110	0.705
ATBY6-M5-□	0.236	M5×0.8	0.110	1.508	1.398	0.492	0.669	0.492	0.394	0.094	0.459
ATBY6-M6-□	0.236	M6×1	0.150	1.547	1.398	0.492	0.669	0.492	0.394	0.118	0.459
ATBY6-01-□	0.236	R1/8	0.315	1.626	1.469	0.492	0.669	0.492	0.394	0.169	0.529
ATBY6-02-□	0.236	R1/4	0.433	1.902	1.661	0.492	0.669	0.492	0.551	0.169	0.776
ATBY6-03-□	0.236	R3/8	0.472	2.020	1.768	0.492	0.669	0.492	0.669	0.169	1.164
ATBY8-01-□	0.315	R1/8	0.315	1.815	1.657	0.571	0.713	0.571	0.472	0.236	0.705
ATBY8-02-□	0.315	R1/4	0.433	1.941	1.705	0.571	0.713	0.571	0.551	0.264	0.882
ATBY8-03-□	0.315	R3/8	0.472	2.067	1.819	0.571	0.713	0.571	0.669	0.264	1.270
ATBY10-02-□	0.394	R1/4	0.433	2.110	1.874	0.689	0.795	0.689	0.551	0.315	1.129
ATBY10-03-□	0.394	R3/8	0.472	2.232	1.984	0.689	0.795	0.689	0.669	0.327	1.517
ATBY10-04-□	0.394	R1/2	0.591	2.370	2.047	0.689	0.795	0.689	0.827	0.327	2.328
ATBY12-02-□	0.472	R1/4	0.433	2.307	2.071	0.827	0.921	0.827	0.551	0.315	1.411
ATBY12-03-□	0.472	R3/8	0.472	2.386	2.138	0.827	0.921	0.827	0.669	0.394	1.799
ATBY12-04-□	0.472	R1/2	0.591	2.547	2.224	0.827	0.921	0.827	0.827	0.406	2.610

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

● ATBLY



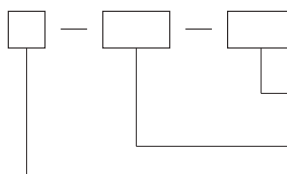
(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472

Order codes

ATBLY



Blank: Standard specifications

D: Non-lubricant specification

Connecting thread

Tube outer diameter

Dimensions in

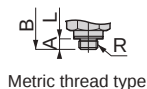
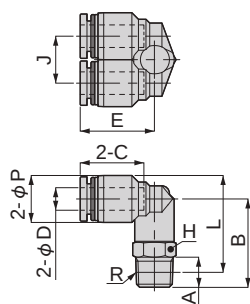
Branch elbow Y
ATBLY

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	J	E	Width across flats Hex.	Orifice diameter (ϕ in)	Mass oz
ATBLY4-M5-□	0.157	M5×0.8	0.110	0.787	0.874	0.394	0.587	0.406	0.716	0.394	0.094	0.388
ATBLY4-M6-□	0.157	M6×1	0.150	0.827	0.874	0.394	0.587	0.406	0.716	0.394	0.118	0.38
ATBLY4-01-□	0.157	R1/8	0.315	0.906	0.945	0.394	0.587	0.406	0.716	0.394	0.154	0.459
ATBLY4-02-□	0.157	R1/4	0.433	1.063	1.024	0.394	0.587	0.406	0.756	0.551	0.154	0.705
ATBLY6-M5-□	0.236	M5×0.8	0.110	0.807	0.945	0.492	0.669	0.492	0.756	0.394	0.094	0.423
ATBLY6-M6-□	0.236	M6×1	0.150	0.846	0.945	0.492	0.669	0.492	0.756	0.394	0.118	0.459
ATBLY6-01-□	0.236	R1/8	0.315	0.925	1.016	0.492	0.669	0.492	0.756	0.394	0.165	0.529
ATBLY6-02-□	0.236	R1/4	0.433	1.142	1.150	0.492	0.669	0.492	0.858	0.551	0.209	0.776
ATBLY6-03-□	0.236	R3/8	0.472	1.240	1.236	0.492	0.669	0.492	0.937	0.669	0.209	1.199
ATBLY8-01-□	0.315	R1/8	0.315	0.984	1.114	0.571	0.713	0.571	0.894	0.472	0.224	0.705
ATBLY8-02-□	0.315	R1/4	0.433	1.142	1.189	0.571	0.713	0.571	0.933	0.551	0.287	0.882
ATBLY8-03-□	0.315	R3/8	0.472	1.260	1.295	0.571	0.713	0.571	0.972	0.670	0.287	1.305
ATBLY10-02-□	0.394	R1/4	0.433	1.161	1.268	0.689	0.795	0.689	1.024	0.551	0.315	1.129
ATBLY10-03-□	0.394	R3/8	0.472	1.280	1.374	0.689	0.795	0.689	1.063	0.670	0.362	1.517
ATBLY10-04-□	0.394	R1/2	0.590	1.457	1.480	0.689	0.795	0.689	1.102	0.827	0.362	2.328
ATBLY12-02-□	0.472	R1/4	0.433	1.161	1.339	0.827	0.921	0.827	1.110	0.551	0.315	1.376
ATBLY12-03-□	0.472	R3/8	0.472	1.319	1.484	0.827	0.921	0.827	1.150	0.670	0.382	1.799
ATBLY12-04-□	0.472	R1/2	0.591	1.496	1.587	0.827	0.921	0.827	1.189	0.827	0.417	2.610

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

* Prices are the same.



Metric thread type

● ATBW

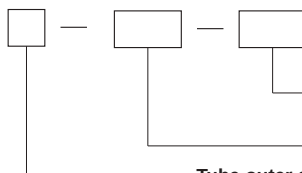


(1 bag, 10 pcs.)

Tube size
0.157
0.236

Order codes

ATBW



Blank: Standard specifications
D: Non-lubricant specification
Connecting thread
Tube outer diameter

Dimensions in

Branch double Y ATBW

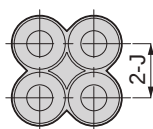
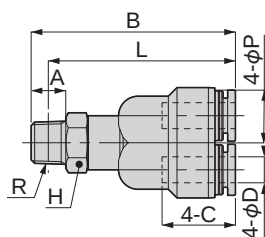


Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	J	Width across flats Hex.	Orifice diameter (ϕ in)	Mass oz
ATBW4-01-□	0.157	R1/8	0.315	1.531	1.374	0.413	0.587	0.406	0.472	0.102	0.564
ATBW4-02-□	0.157	R1/4	0.433	1.670	1.433	0.413	0.587	0.406	0.472	0.102	0.741
ATBW6-01-□	0.236	R1/8	0.315	1.858	1.701	0.512	0.670	0.492	0.472	0.205	0.882

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

* Prices are the same.



● ATBE

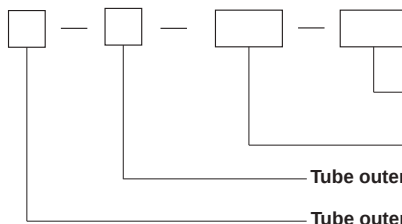


Tube size
0.236—0.157
0.315—0.157
0.315—0.236
0.394—0.315

(1 bag, 10 pcs.)

Order codes

ATBE



Blank: Standard specifications

D: Non-lubricant specification

Connecting thread

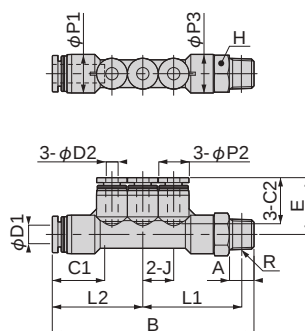
Tube outer diameter

Tube outer diameter

Dimensions in

Branch triple

ATBE



Model	Tube outer diameter $\phi D1$	Tube outer diameter $\phi D2$	R	A	B	E	L1	L2	J	$\phi P1$	$\phi P2$	$\phi P3$	C1	C2	Width across flats Hex.	Orifice diameter (ϕ in)	Mass oz
ATBE6-4-01-□	0.236	0.157	R1/8	0.315	2.575	0.724	1.264	1.534	0.394	0.492	0.394	0.492	0.669	0.587	0.472	0.118	0.741
ATBE8-4-02-□	0.315	0.157	R1/4	0.433	2.724	0.756	1.260	1.228	0.394	0.571	0.394	0.571	0.713	0.587	0.551	0.118	0.988
ATBE8-6-02-□	0.315	0.236	R1/4	0.433	3.028	0.839	1.437	1.354	0.492	0.571	0.492	0.571	0.713	0.670	0.551	0.181	1.235
ATBE10-8-03-□	0.394	0.315	R3/8	0.472	3.457	0.933	1.634	1.575	0.571	0.689	0.571	0.709	0.795	0.713	0.670	0.264	1.764

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L1 dimension for the tapered thread types is a reference dimension when mated and tightened.

* Prices are the same.

ATBEW

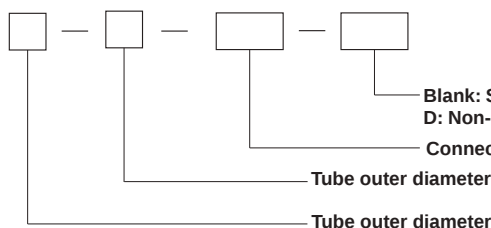


(1 bag, 10 pcs.)

Tube size
0.315-0.157
0.315-0.236
0.394-0.236
0.394-0.315

Order codes

ATBEW



Blank: Standard specifications
D: Non-lubricant specification

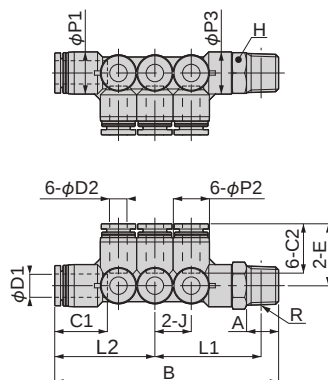
Connecting thread

Tube outer diameter

Tube outer diameter

Dimensions in

Branch triple double ATBEW



Model	Tube outer diameter $\phi D1$	Tube outer diameter $\phi D2$	R	A	B	E	L1	L2	J	$\phi P1$	$\phi P2$	$\phi P3$	C1	C2	Width across flats Hex.	Orifice diameter (ϕ in)	Mass oz
ATBEW8-4-02-□	0.315	0.157	R1/4	0.433	2.724	0.756	1.260	1.228	0.394	0.571	0.394	0.571	0.713	14.9	0.551	0.118	1.129
ATBEW8-4-03-□	0.315	0.157	R3/8	0.472	2.843	0.756	1.366	1.228	0.394	0.571	0.394	0.709	0.713	14.9	0.669	0.118	1.623
ATBEW8-6-02-□	0.315	0.236	R1/4	0.433	3.028	0.839	1.437	1.354	0.492	0.571	0.492	0.571	0.713	0.669	0.551	0.181	1.446
ATBEW8-6-03-□	0.315	0.236	R3/8	0.472	3.177	0.839	1.571	1.354	0.492	0.571	0.492	0.709	0.713	0.669	0.669	0.181	1.834
ATBEW10-6-03-□	0.394	0.236	R3/8	0.472	3.209	0.878	1.504	1.457	0.492	0.689	0.492	0.709	0.795	0.669	0.669	0.181	1.975
ATBEW10-6-04-□	0.394	0.236	R1/2	0.591	3.366	0.878	1.587	1.457	0.492	0.689	0.492	0.787	0.795	0.669	0.827	0.181	2.751
ATBEW10-8-03-□	0.394	0.315	R3/8	0.472	3.457	0.933	1.634	1.575	0.492	0.689	0.571	0.709	0.795	0.713	0.669	0.264	2.293
ATBEW10-8-04-□	0.394	0.315	R1/2	0.591	3.617	0.933	1.717	1.575	0.492	0.689	0.571	0.787	0.795	0.713	0.827	0.264	3.069

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

● ATBZ



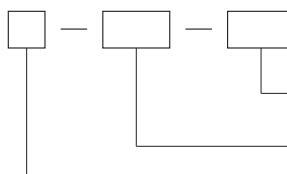
(1 bag, 10 pcs.)

Tube size

0.157
0.236
0.315
0.394
0.472

Order codes

ATBZ



Blank: Standard specifications

D: Non-lubricant specification

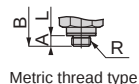
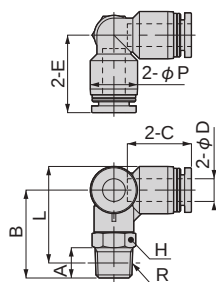
Connecting thread

Tube outer diameter

Dimensions in

Branch tetra

ATBZ



Metric thread type

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	E	Width across flats Hex.	Orifice diameter (ϕ in)	Mass oz
ATBZ4-M5-□	0.157	M5×0.8	0.110	0.799	0.886	0.394	0.587	0.717	0.394	0.094	0.353
ATBZ4-M6-□	0.157	M6×1	0.150	0.839	0.886	0.394	0.587	0.717	0.394	0.118	0.388
ATBZ4-01-□	0.157	R1/8	0.315	0.917	0.957	0.394	0.587	0.717	0.394	0.118	0.459
ATBZ4-02-□	0.157	R1/4	0.433	1.142	1.102	0.394	0.587	0.815	0.551	0.118	0.705
ATBZ6-M5-□	0.236	M5×0.8	0.110	0.799	0.933	0.492	0.669	0.807	0.394	0.094	0.423
ATBZ6-M6-□	0.236	M6×1	0.150	0.839	0.933	0.492	0.669	0.807	0.394	0.118	0.423
ATBZ6-01-□	0.236	R1/8	0.315	0.917	1.004	0.492	0.669	0.807	0.394	0.181	0.529
ATBZ6-02-□	0.236	R1/4	0.433	1.102	1.110	0.492	0.669	0.858	0.551	0.181	0.776
ATBZ6-03-□	0.236	R3/8	0.472	1.240	1.236	0.492	0.669	0.937	0.669	0.181	1.164
ATBZ8-01-□	0.315	R1/8	0.315	0.984	1.114	0.571	0.713	0.894	0.472	0.236	0.705
ATBZ8-02-□	0.315	R1/4	0.433	1.142	1.189	0.571	0.713	0.933	0.551	0.264	0.882
ATBZ8-03-□	0.315	R3/8	0.472	1.260	1.295	0.571	0.713	0.972	0.669	0.264	1.270
ATBZ10-02-□	0.394	R1/4	0.433	1.157	1.264	0.689	0.795	1.024	0.551	0.315	1.093
ATBZ10-03-□	0.394	R3/8	0.472	1.299	1.394	0.689	0.795	1.063	0.669	0.327	1.482
ATBZ10-04-□	0.394	R1/2	0.591	1.457	1.480	0.689	0.795	1.083	0.827	0.327	2.328
ATBZ12-02-□	0.472	R1/4	0.433	1.213	1.386	0.827	0.921	1.189	0.551	0.315	1.305
ATBZ12-03-□	0.472	R3/8	0.472	1.319	1.484	0.827	0.921	1.189	0.669	0.394	1.728
ATBZ12-04-□	0.472	R1/2	0.591	1.496	1.587	0.827	0.921	1.228	0.827	0.406	2.610

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

● ASKR



Order codes

ASKR



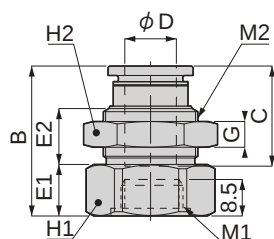
Sub-main side tube size

Connecting thread size

Main side thread size	Sub-main side tube size				
	0.157	0.236	0.315	0.394	0.472
M8×1 (8)	0.315-0.157	0.315-0.236	—	—	—
M12×1 (12)	—	0.472-0.236	0.472-0.315	0.472-0.394	—
M14×1 (14)	—	—	0.551-0.315	0.551-0.394	0.551-0.472
M18×1 (18)	—	—	—	—	0.709-0.472

Dimensions in

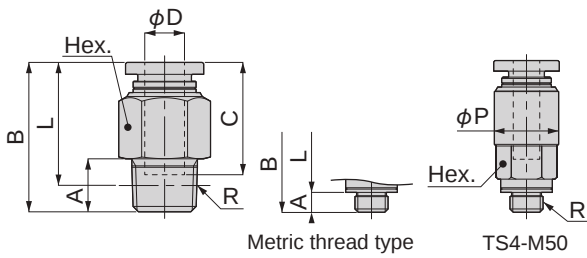
Reducer for bulkhead
ASKR



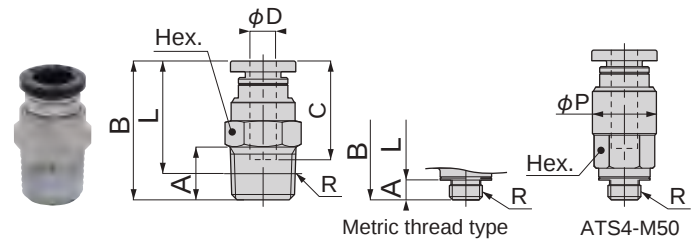
Model	Tube outer diameter φ D	M1	M2	B	E1	E2	C	G	H1	H2	Effective area Cv	Mass oz
ASKR8-4	0.157	M8×1	M12×1	1.024	0.315	0.465	0.587	0.157	0.551	0.551	103.320	0.635
ASKR8-6	0.236	M8×1	M14×1	1.106	0.315	0.547	0.669	0.157	0.669	0.669	212.175	1.023
ASKR12-6	0.236	M12×1	M14×1	1.106	0.472	0.390	0.669	0.157	0.669	0.669	243.540	0.988
ASKR12-8	0.315	M12×1	M16×1	1.138	0.394	0.461	0.717	0.157	0.748	0.748	505.530	1.164
ASKR12-10	0.394	M12×1	M20×1	1.272	0.394	0.539	0.815	0.197	0.866	0.945	642.060	2.011
ASKR14-8	0.315	M14×1	M16×1	1.138	0.472	0.382	0.717	0.157	0.748	0.748	511.065	1.129
ASKR14-10	0.394	M14×1	M20×1	1.272	0.394	0.539	0.815	0.197	0.945	0.945	769.365	2.116
ASKR14-12	0.472	M14×1	M22×1	1.374	0.472	0.512	0.917	0.236	0.945	1.063	1009.215	2.610
ASKR18-12	0.472	M18×1	M22×1	1.374	0.472	0.512	0.917	0.236	1.063	1.063	1230.615	2.787

TS/ATS Straight

● Existing model TS



● New model ATS



■ indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter ϕ D	R	A	B	L	C	Width across flats Hex.	ϕ P	Orifice diameter (ϕ mm)	Mass g [oz]
TS4-M5-D	4	M5×0.8	3	20	17	14.9	10	-	1.8	6.3 [0.22]
ATS4-M5-D			2.8	19.8					2.4	5.6 [0.2]
TS4-M50-□	4	M5×0.8	3	22.9	19.9	14.9	8	9.7	1.8	6.6 [0.23]
ATS4-M50-□			2.8	22.7					2.4	6.1 [0.22]
TS4-M6-D	4	M6×1	4	21	17	14.9	10	-	3	6.4 [0.23]
ATS4-M6-D			3.8	20.8					6	6 [0.21]
TS4-01-D	4	R1/8	8	21	17	14.9	10	-	3	8.3 [0.29]
ATS4-01-D			8	21					7.4	7.4 [0.26]
TS4-02-□	4	R1/4	11	21	15	14.9	14	-	3	16 [0.56]
ATS4-02-□			11	22.5					3	16 [0.56]
TS6-M5-D	6	M5×0.8	3	22.1	19.1	17	12	-	1.8	9.2 [0.32]
ATS6-M5-D			2.8	21.9					2.4	8.1 [0.29]
TS6-M6-D	6	M6×1	4	23.1	19.1	17	12	-	3	9.4 [0.33]
ATS6-M6-D			3.8	22.9					8.5	8.5 [0.3]
TS6-01-D	6	R1/8	8	22.6	18.6	17	12	-	4.6	9.3 [0.33]
ATS6-01-D			8	22.3					5	8.2 [0.29]
TS6-02-□	6	R1/4	11	24.6	18.5	17	14	-	4.6	18 [0.63]
ATS6-02-□			11	23.7					5	15 [0.53]
TS6-03-□	6	R3/8	12	23.6	17.2	17	17	-	4.6	28 [0.99]
ATS6-03-□			12	24.5					5	28 [0.99]
TS8-01-□	8	R1/8	8	27.9	23.9	18.2	14	-	6	16 [0.56]
ATS8-01-□			8	27.9					14	14 [0.49]
TS8-02-□	8	R1/4	11	26.6	20.6	18.2	14	-	7	16 [0.56]
ATS8-02-□			11	26.6					14	14 [0.49]
TS8-03-□	8	R3/8	12	23.9	17.6	18.2	17	-	7	24 [0.85]
ATS8-03-□			12	25.5					25	25 [0.88]
TS10-01-□	10	R1/8	8	30.3	26.3	20.7	17	-	6	24 [0.85]
ATS10-01-□			8	30.3					21	21 [0.74]
TS10-02-□	10	R1/4	11	29.8	23.8	20.7	17	-	8.5	21 [0.74]
ATS10-02-□			11	29.8					19	19 [0.67]
TS10-03-□	10	R3/8	12	29.3	23	20.7	17	-	8.5	27 [0.95]
ATS10-03-□			12	29.3					9	24 [0.85]
TS10-04-□	10	R1/2	15	30.3	22.1	20.7	21	-	8.5	50 [1.76]
ATS10-04-□			15	30.4					9	46 [1.62]
TS12-02-□	12	R1/4	11	35.9	29.9	23.3	21	-	8.5	44 [1.55]
ATS12-02-□			11	35.9					37	37 [1.31]
TS12-03-□	12	R3/8	12	31.9	25.6	23.3	21	-	11	36 [1.27]
ATS12-03-□			12	31.9					30	30 [1.06]
TS12-04-□	12	R1/2	15	33.9	25.7	23.3	21	-	11	50 [1.76]
ATS12-04-□			15	33.9					44	44 [1.55]
TS16-03-□	16	R3/8	12	39.3	33	24.8	24	-	11	58 [2.05]
ATS16-03-□			12	39.3					54	54 [1.9]
TS16-04-□	16	R1/2	15	41.3	33.1	24.8	24	-	13	66 [2.33]
ATS16-04-□			15	41.3					63	63 [2.22]

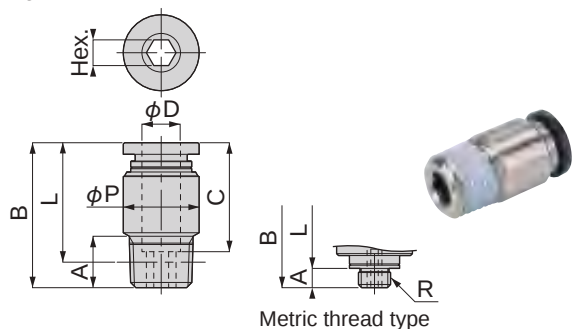
* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

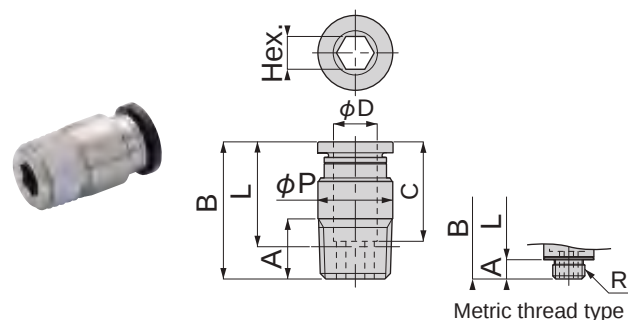
* Prices are the same.

TSH/ATSH Straight with hexagon socket

● Existing model TSH



● New model ATSH



Metric thread type

Unit: mm

Model	Tube outer diameter ϕD	R	A	B	L	C	Width across flats Hex.	ϕP	Orifice diameter (ϕ mm)	Mass g [oz]
TSH4-M5-D	4	M5 $\times$ 0.8	3	19.9	16.9	14.9	2	9.7	2	5.6 [0.2]
ATSH4-M5-D			2.8	19.7			2.5		2.6	4.6 [0.16]
TSH4-M6-D	4	M6 $\times$ 1	4	20.9	16.9	14.9	3	9.7	3.1	5.9 [0.21]
ATSH4-M6-D			3.8	20.7			2.5		2.6	5.4 [0.19]
TSH4-01-D	4	R1/8	8	21	17	14.9	2.5	9.7	2.6	7.6 [0.27]
ATSH4-01-D				20	16					6.6 [0.23]
TSH6-M5-D	6	M5 $\times$ 0.8	3	23	20	17	2	11.8	2	8.5 [0.3]
ATSH6-M5-D			2.8	21.3	18.5		2.5		2.6	5.6 [0.2]
TSH6-M6-D	6	M6 $\times$ 1	4	22.5	18.5	17	3	11.8	3.2	6.9 [0.24]
ATSH6-M6-D			3.8	22.3						6.3 [0.22]
TSH6-01-D	6	R1/8	8	22.6	18.6	17	4	11.8	4.2	8.1 [0.29]
ATSH6-01-D				22.1	18.1					7.6 [0.27]
TSH6-02-	6	R1/4	11	22.6	16.5	17	4	14	4.2	15 [0.53]
ATSH6-02-				21.3	15.2			13.7		13 [0.46]
TSH8-01-	8	R1/8	8	27.9	23.9	18.2	5	13.7	5.3	14 [0.49]
ATSH8-01-				25.9	21.9					8.8 [0.31]
TSH8-02-	8	R1/4	11	26.6	20.6	18.2	6	13.7	6.3	15 [0.53]
ATSH8-02-				25.1	19.1					13 [0.46]
TSH8-03-	8	R3/8	12	23.9	17.6	18.2	6	16.8	6.3	23 [0.81]
ATSH8-03-				22.2	15.9					19 [0.67]
TSH10-02-	10	R1/4	11	29.8	23.8	20.7	6	17.7	6.3	23 [0.81]
ATSH10-02-								17.5		20 [0.71]
TSH10-03-	10	R3/8	12	29.3	23	20.7	6	17.7	6.3	28 [0.99]
ATSH10-03-								17.5		26 [0.92]
TSH10-04-	10	R1/2	15	30.3	22.1	20.7	6	20.8	6.3	49 [1.73]
ATSH10-04-										45 [1.59]
TSH12-03-	12	R3/8	12	31.9	25.6	23.3	8	20.8	8.4	34 [1.2]
ATSH12-03-										31 [1.09]
TSH12-04-	12	R1/2	15	33.9	25.7	23.3	8	20.8	8.4	49 [1.73]
ATSH12-04-										45 [1.59]

Changed width across flats of inner diameter of hex nut and diameter of orifice to correct the problem of lock hook interference with hex wrench.

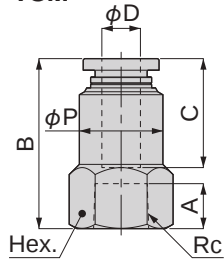
* -D $\Rightarrow$ Non-lubricant specification only. - $\square$ $\Rightarrow$ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

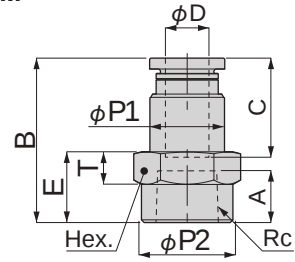
* Prices are the same.

TSM/ATSM Female straight

● Existing model TSM



● New model ATSM



Unit: mm

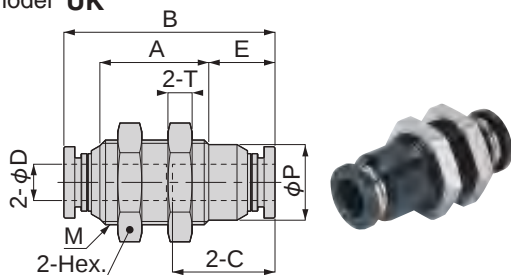
Model	Tube outer diameter ϕD	Rc	A	B	E	$\phi P1$	$\phi P2$	C	Width across flats Hex.	T	Orifice diameter (ϕ mm)	Mass g [oz]
TSM4-01-□	4	Rc1/8	7	24.4	-	11	-	14.9	14	-	3	16 [0.56]
ATSM4-01-□				23.9	10	9.7	13.8			5		13 [0.46]
TSM4-02-□	4	Rc1/4	9.5	27.4	-	12	-	14.9	17	-	3	24 [0.85]
ATSM4-02-□				26.9	13	9.7	16.8			6		19 [0.67]
TSM6-01-□	6	Rc1/8	7	26.5	-	13	-	17	14	-	4.6	18 [0.63]
ATSM6-01-□				26	10	11.8	13.8			5	5	15 [0.53]
TSM6-02-□	6	Rc1/4	9.5	29.5	-	13	-	17	17	-	4.6	25 [0.88]
ATSM6-02-□				29	13	11.8	16.8			6	5	21 [0.74]
TSM8-01-□	8	Rc1/8	7	28	-	14.5	-	18.2	14	-	6	20 [0.71]
ATSM8-01-□				27.2	10	13.7	13.8			5	7	16 [0.56]
TSM8-02-□	8	Rc1/4	9.5	31	-	15	-	18.2	17	-	6	27 [0.95]
ATSM8-02-□				30.2	13	13.7	16.8			6	7	22 [0.78]
TSM8-03-□	8	Rc3/8	10.5	32	-	15.5	-	18.2	21	-	6	37 [1.31]
ATSM8-03-□				31.2	14	13.7	20.8			6.5	7	30 [1.06]
TSM10-02-□	10	Rc1/4	9.5	33.7	-	17.5	-	20.7	17	-	8.5	33 [1.16]
ATSM10-02-□				32.7	13		16.8			6	9	28 [0.99]
TSM10-03-□	10	Rc3/8	10.5	34.7	-	17.5	-	20.7	21	-	8.5	42 [1.48]
ATSM10-03-□				33.7	14		20.8			6.5	9	37 [1.31]
TSM12-02-□	12	Rc1/4	9.5	35.8	-	20.8	-	23.3	21	-	11	57 [2.01]
ATSM12-02-□				34.8	13.5		16.8			6.5	11	42 [1.48]
TSM12-03-□	12	Rc3/8	10.5	36.8	-	20.8	-	23.3	21	-	11	51 [1.8]
ATSM12-03-□				36.3	14		20.8			6.5	11	44 [1.55]

* -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

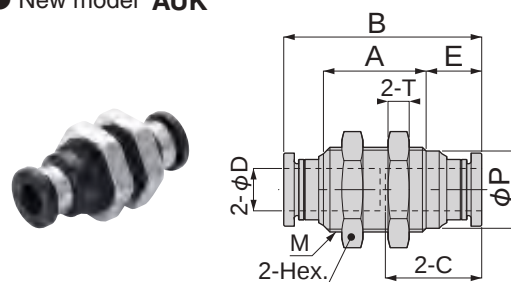
* Prices are the same.

UK/AUK Union for bulkhead

● Existing model **UK**



● New model **AUK**



Unit: mm

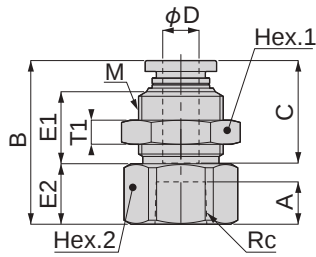
Model	Tube outer diameter ϕD	M	B	E	A	ϕP	C	Width across flats Hex.	T	Orifice diameter (ϕ mm)	Mass g [oz]
UK4-D	4	M12×1	30.8	10.4	15	10.8	14.9	14	4	3	11 [0.39]
AUK4-D				9.5	14.8						
UK6-D	6	M14×1	34.9	11	18	12.5	17	17	4	4.6	16 [0.56]
AUK6-D				9.5	19					5	
UK8-□	8	M16×1	37.4	14.3	16.8	14.6	18.2	19	4	6	20 [0.71]
AUK8-□				10.5	19.4					7	19 [0.67]
UK10-□	10	M20×1	42.4	12.7	23	18.5	20.7	24	5	8	39 [1.38]
AUK10-□				11.9	21.6					9	35 [1.23]
UK12-□	12	M22×1	47.6	12.3	29	20.4	23.3	27	6	11	57 [2.01]
AUK12-□				13.2	24.2						52 [1.83]

* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

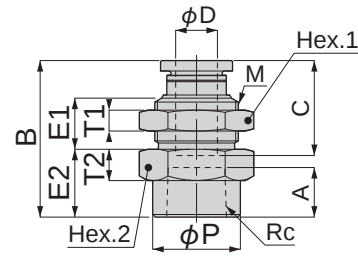
* Prices are the same.

UKM/AUKM Female union for bulkhead

● Existing model **UKM**



● New model **AUKM**



Unit: mm

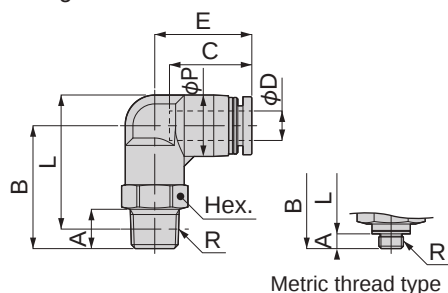
Model	Tube outer diameter ϕ D	Rc	M	B	E1	E2	A	C	ϕ P	Width across flats Hex.1	Width across flats Hex.2	T1	T2	Orifice diameter (ϕ mm)	Mass g [oz]
UKM4-01-□	4	Rc1/8	M12×1	24.5	9.9	10	7	14.9	-	14	14	4	-	3	19 [0.67]
AUKM4-01-□				24.2	9	9			13.8				5		17 [0.6]
UKM6-01-□	6	Rc1/8	M14×1	27.1	11.9	10	7	17	-	17	17	4	-	4.6	29 [1.02]
AUKM6-01-□				26.4	10.2	10			13.8				6		25 [0.88]
UKM6-02-□	6	Rc1/4	M14×1	30.1	11.9	13	9.5	17	-	17	17	4	-	4.6	29 [1.02]
AUKM6-02-□				28.7	10.2	12.3			16.8				6		26 [0.92]
UKM8-01-□	8	Rc1/8	M16×1	29	13.5	10	7	18.2	-	19	19	4	-	6	39 [1.38]
AUKM8-01-□				27	9.8	10			13.8				6		30 [1.06]
UKM8-02-□	8	Rc1/4	M16×1	32	13.5	13	9.5	18.2	-	19	19	4	-	6	41 [1.45]
AUKM8-02-□				30	9.8	13			16.8				6		32 [1.13]
UKM8-03-□	8	Rc3/8	M16×1	33	13.5	14	10.5	18.2	-	19	19	4	-	6	35 [1.23]
AUKM8-03-□				31	9.8	14			19.5				6		30 [1.06]
UKM10-02-□	10	Rc1/4	M20×1	34.8	14.9	14	9.5	20.7	-	24	24	5	-	8.5	78 [2.75]
AUKM10-02-□				32.7	11.1	13			16.8				7		55 [1.94]
UKM10-03-□	10	Rc3/8	M20×1	35.8	14.9	15	10.5	20.7	-	24	24	5	-	8.5	73 [2.57]
AUKM10-03-□				33.7	11.1	14			20.8				7		56 [1.98]
UKM12-03-□	12	Rc3/8	M22×1	38.9	18.4	15	10.5	23.3	-	27	24	6	-	11	86 [3.03]
AUKM12-03-□				36.3	12.4	14			20.8				7		65 [2.29]
UKM12-04-□	12	Rc1/2	M22×1	41.9	18.4	18	13	23.3	-	27	24	6	-	11	80 [2.82]
AUKM12-04-□				39.3	12.4	17			25				7		67 [2.36]

* -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

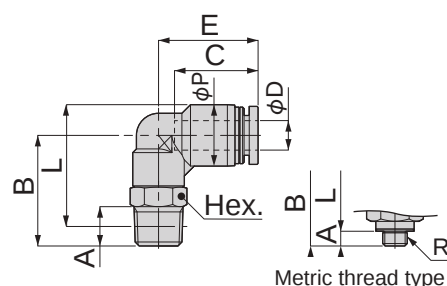
* Prices are the same.

TL/ATL Elbow

● Existing model TL



● New model ATL



Unit: mm

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	E	Width across flats Hex.	Orifice diameter (ϕ mm)	Mass g [oz]
TL4-M5-D	4	M5 $\times$ 0.8	3	20.3	22.3	10	14.9	18	10	1.8	8 [0.28]
ATL4-M5-D			2.8	16	18.2			17.7	8	2.4	5.7 [0.2]
TL4-M6-D	4	M6 $\times$ 1	4	21.3	22.3	10	14.9	18	10	2.4	8.3 [0.29]
ATL4-M6-D			3.8	20	21.2			18.7	10	2.4	8 [0.28]
TL4-01-D	4	R1/8	8	23.3	24.3	10	14.9	18	10	2.8	11 [0.39]
ATL4-01-D			8	22	23			18.7	10	2.8	10 [0.35]
TL4-02-□	4	R1/4	11	26.3	25.3	10	14.9	18	14	2.8	21 [0.74]
ATL4-02-□			11	29	28			20.7	14	2.8	18 [0.63]
TL6-M5-D	6	M5 $\times$ 0.8	3	22	25.3	12.5	16.8	19.8	12	1.8	13 [0.46]
ATL6-M5-D			2.8	19.5	23		17	20.3	10	2.4	8.9 [0.31]
TL6-M6-D	6	M6 $\times$ 1	4	23	25.3	12.5	16.8	19.8	12	3	13 [0.46]
ATL6-M6-D			3.8	20.5	23		17	20.3	10	3	8 [0.28]
TL6-01-D	6	R1/8	8	25	27.3	12.5	16.8	19.8	12	4.3	14 [0.49]
ATL6-01-D			8	22.5	24.8		17	20.3	10	4.3	11 [0.39]
TL6-02-□	6	R1/4	11	28	28.2	12.5	16.8	19.8	14	4.3	22 [0.78]
ATL6-02-□			11	28	28.2		17	21.8	14	4.3	19 [0.67]
TL6-03-□	6	R3/8	12	29.8	29.7	12.5	16.8	19.8	17	4.3	35 [1.23]
ATL6-03-□			12	31.5	31.4		17	23.8	17	4.3	30 [1.06]
TL8-01-□	8	R1/8	8	28	31.3	14.5	18.1	22.7	14	6	19 [0.67]
ATL8-01-□			8	24	27.3			22.7	12	6	14 [0.49]
TL8-02-□	8	R1/4	11	31	32.2	14.5	18.1	22.7	14	6	24 [0.85]
ATL8-02-□			11	28	29.2			23.7	14	6.7	20 [0.71]
TL8-03-□	8	R3/8	12	32.8	33.7	14.5	18.1	22.7	17	6	37 [1.31]
ATL8-03-□			12	31	31.9			24.7	17	6.7	31 [1.09]
TL10-01-□	10	R1/8	8	33	37.8	17.5	20.2	26.2	17	6	31 [1.09]
ATL10-01-□			8	25	29.8			25.5	12	6	18 [0.63]
TL10-02-□	10	R1/4	11	36	38.7	17.5	20.2	26.2	17	8	34 [1.2]
ATL10-02-□			11	28.5	31.2			26	14	8	23 [0.81]
TL10-03-□	10	R3/8	12	37	39.4	17.5	20.2	26.2	17	8	43 [1.52]
ATL10-03-□			12	32	34.4			27	17	8.3	34 [1.2]
TL10-04-□	10	R1/2	15	40	40.6	17.5	20.2	26.2	21	8	65 [2.29]
ATL10-04-□			15	36	36.6			27.5	21	8.3	57 [2.01]
TL12-02-□	12	R1/4	11	38	42.5	21	23.4	29.4	21	8	51 [1.8]
ATL12-02-□			11	29.8	34.2			29	14	8	27 [0.95]
TL12-03-□	12	R3/8	12	39	43.2	21	23.4	29.4	21	10	52 [1.83]
ATL12-03-□			12	32.5	36.7			29.7	17	10	38 [1.34]
TL12-04-□	12	R1/2	15	42	44.3	21	23.4	29.4	21	10	67 [2.36]
ATL12-04-□			15	36.5	38.8			30.7	21	10.3	61 [2.15]

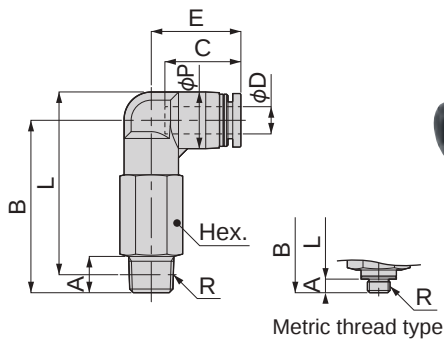
* -D $\Rightarrow$ Non-lubricant specification only. -□ $\Rightarrow$ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

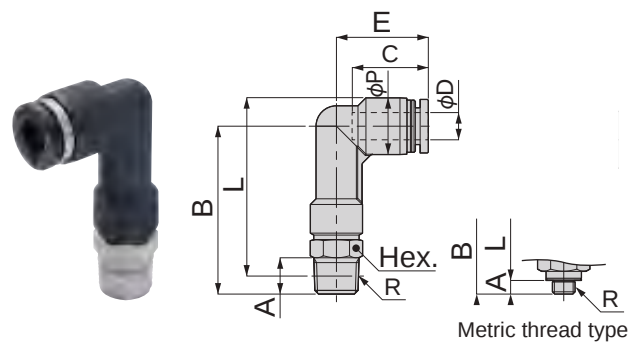
* Prices are the same.

TLL/ATLL Long elbow

● Existing model TLL



● New model ATLL



Unit: mm

Model	Tube outer diameter ϕD	R	A	B	L	ϕP	C	E	Width across flats Hex.	Orifice diameter (ϕ mm)	Mass g [oz]
TLL4-M5-D	4	M5×0.8	3	32.3	34.3	10	14.9	18	10	1.8	8.4 [0.3]
ATLL4-M5-D			2.8	28	30.2			18.7	8	2.4	6.4 [0.23]
TLL4-01-D	4	R1/8	8	35.3	36.3	10	14.9	18	10	2.8	17 [0.6]
ATLL4-01-D			8	34	35			18.7	10	2.8	11 [0.39]
TLL6-01-D	6	R1/8	8	38	40.3	12.5	16.8	19.8	12	4.3	26 [0.92]
ATLL6-01-D			8	37	39.3		17	20.3	10	4.3	13 [0.46]
TLL6-02-□	6	R1/4	11	41	41.2	12.5	16.8	19.8	14	4.3	39 [1.38]
ATLL6-02-□			11	42.5	42.7		17	21.8	14	4.3	20 [0.71]
TLL6-03-□	6	R3/8	12	43.3	43.2	12.5	16.8	19.8	17	4.3	62 [2.19]
ATLL6-03-□			12	46	45.9		17	23.8	17	4.3	33 [1.16]
TLL8-01-□	8	R1/8	8	43.5	46.8	14.5	18.1	22.7	14	6	37 [1.31]
ATLL8-01-□			8	40.5	43.8		18.1	22.7	12	6	16 [0.56]
TLL8-02-□	8	R1/4	11	46.5	47.7	14.5	18.1	22.7	14	6	43 [1.52]
ATLL8-02-□			11	44.5	45.7		18.1	23.7	14	6.7	22 [0.78]
TLL8-03-□	8	R3/8	12	48.3	49.2	14.5	18.1	22.7	17	6	66 [2.33]
ATLL8-03-□			12	47.5	48.4		18.1	24.7	17	6.7	35 [1.23]
TLL10-02-□	10	R1/4	11	54.5	57.2	17.5	20.2	26.2	17	8	65 [2.29]
ATLL10-02-□			11	48	50.7		20.2	26	14	8	26 [0.92]
TLL10-03-□	10	R3/8	12	55.5	57.9	17.5	20.2	26.2	17	8	74 [2.61]
ATLL10-03-□			12	51.5	53.9		20.2	27	17	8.3	38 [1.34]
TLL10-04-□	10	R1/2	15	60	60.6	17.5	20.2	26.2	21	8	121 [4.27]
ATLL10-04-□			15	55.5	56.1		20.2	27	21	8.3	63 [2.22]
TLL12-02-□	12	R1/4	11	60	64.5	21	23.4	29.4	21	8	112 [3.95]
ATLL12-02-□			11	52.8	57.2		23.4	29	14	8	30 [1.06]
TLL12-03-□	12	R3/8	12	61	65.2	21	23.4	29.4	21	10	107 [3.77]
ATLL12-03-□			12	55.5	59.7		23.4	29.7	17	10	42 [1.48]
TLL12-04-□	12	R1/2	15	64	66.3	21	23.4	29.4	21	10	123 [4.34]
ATLL12-04-□			15	59.5	61.8		23.4	29.7	21	10.3	68 [2.4]

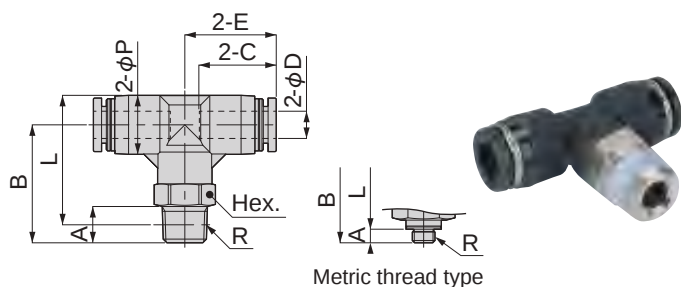
* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

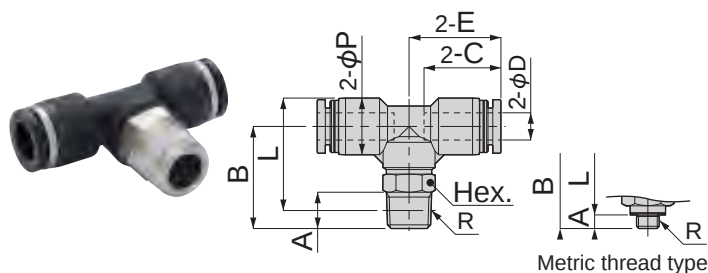
* Prices are the same.

TT/ATT Tee

● Existing model TT



● New model ATT



Unit: mm

Model	Tube outer diameter φ D	R	A	B	L	φ P	C	E	Width across flats Hex.	Orifice diameter (φ mm)	Mass g [oz]
TT4-M5-D	4	M5×0.8	3	20.2	22.2	10	14.9	16.9	10	1.8	11 [0.39]
ATT4-M5-D			2.8	16	18.2			17.7	8	2.4	8 [0.28]
TT4-M6-D	4	M6×1	4	21.2	22.2	10	14.9	16.9	10	2.4	11 [0.39]
ATT4-M6-D			3.8	20	21.2			18.7			
TT4-01-D	4	R1/8	8	23.2	24.2	10	14.9	16.9	10	2.8	14 [0.49]
ATT4-01-D				22	23			18.7			13 [0.46]
TT4-02-□	4	R1/4	11	26.2	25.2	10	14.9	16.9	14	2.8	23 [0.81]
ATT4-02-□				29	28			20.7			20 [0.71]
TT6-M5-D	6	M5×0.8	3	23	26.5	13	17	20.15	12	1.8	16 [0.56]
ATT6-M5-D			2.8	19.5	23	12.5		20.25	10	2.4	12 [0.42]
TT6-M6-D	6	M6×1	4	24	26.5	13	17	20.15	12	3	16 [0.56]
ATT6-M6-D			3.8	20.5	23	12.5		20.25	10		13 [0.46]
TT6-01-D	6	R1/8	8	26	28.5	13	17	20.15	12	4.3	18 [0.63]
ATT6-01-D				22.5	24.8	12.5		20.25	10		14 [0.49]
TT6-02-□	6	R1/4	11	29	29.5	13	17	20.15	14	4.3	26 [0.92]
ATT6-02-□				28	28.2	12.5		21.75			22 [0.78]
TT6-03-□	6	R3/8	12	30.8	31	13	17	20.15	17	4.3	39 [1.38]
ATT6-03-□				31.5	31.4	12.5		23.75			33 [1.16]
TT8-01-□	8	R1/8	8	26.3	29.8	15	18.1	22.4	14	5.8	23 [0.81]
ATT8-01-□				24	27.3	14.5		22.7	12	6	19 [0.67]
TT8-02-□	8	R1/4	11	29.3	30.8	15	18.1	22.4	14	5.8	29 [1.02]
ATT8-02-□				28	29.2	14.5		23.7		6.7	25 [0.88]
TT8-03-□	8	R3/8	12	31.1	32.3	15	18.1	22.4	17	5.8	42 [1.48]
ATT8-03-□				31	31.9	14.5		24.7		6.7	35 [1.23]
TT10-02-□	10	R1/4	11	36	38.7	17.5	20.2	25.2	17	8	42 [1.48]
ATT10-02-□				28.5	31.2			26	14		31 [1.09]
TT10-03-□	10	R3/8	12	37	39.4	17.5	20.2	25.2	17	8	50 [1.76]
ATT10-03-□				32	34.4			27		8.3	42 [1.48]
TT10-04-□	10	R1/2	15	40	40.6	17.5	20.2	25.2	21	8	72 [2.54]
ATT10-04-□				36	36.6			27.5		8.3	65 [2.29]
TT12-02-□	12	R1/4	11	38	42.5	21	22.9	28.4	21	8	61 [2.15]
ATT12-02-□				29.8	34.2			23.4	14		38 [1.34]
TT12-03-□	12	R3/8	12	39	43.2	21	22.9	28.4	21	10	62 [2.19]
ATT12-03-□				32.5	36.7			23.4	17		48 [1.69]
TT12-04-□	12	R1/2	15	42	44.3	21	22.9	28.4	21	10	78 [2.75]
ATT12-04-□				36.5	38.8			23.4		10.3	72 [2.54]

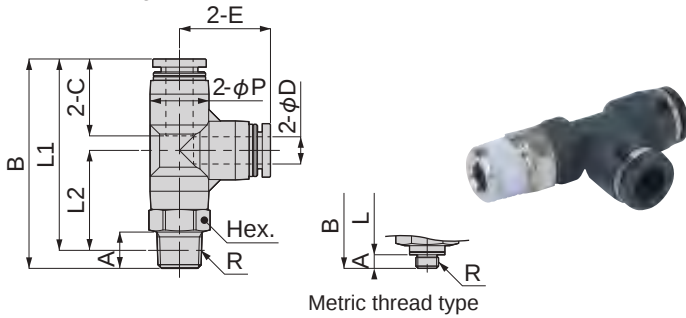
* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

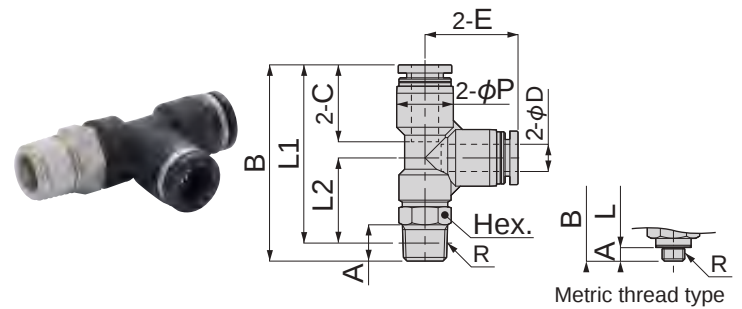
* Prices are the same.

TB/ATB Branch tee

● Existing model TB



● New model ATB



Unit: mm

Model	Tube outer diameter φ D	R	A	B	L1	L2	φ P	C	E	Width across flats Hex.	Orifice diameter (φ mm)	Mass g [oz]
TB4-M5-D	4	M5×0.8	3	37.1	34.1	17.2	10	14.9	16.9	10	1.8	11 [0.39]
ATB4-M5-D			2.8	33.7	30.9	13.7			17.2	8	2.4	7.8 [0.28]
TB4-M6-D	4	M6×1	4	38.1	34.1	17.2	10	14.9	16.9	10	2.4	11 [0.39]
ATB4-M6-D			3.8	38.2	34.4				17.2			
TB4-01-D	4	R1/8	8	40.1	36.1	19.2	10	14.9	16.9	10	2.8	14 [0.49]
ATB4-01-D				40.2	36.2	19			17.2			13 [0.46]
TB4-02-□	4	R1/4	11	43.1	37.1	20.2	10	14.9	16.9	14	2.8	23 [0.81]
ATB4-02-□				46.2	40.2	23			19.2			20 [0.71]
TB6-M5-D	6	M5×0.8	3	43.2	40.2	20	13	17	20.1	12	1.8	16 [0.56]
ATB6-M5-D			2.8	40.3	37.5	17			20.5	10	2.4	12 [0.42]
TB6-M6-D	6	M6×1	4	44.2	40.2	20	13	17	20.1	12	3	17 [0.6]
ATB6-M6-D			3.8	41.3	37.5	17			20.5	10		12 [0.42]
TB6-01-D	6	R1/8	8	46.2	42.2	22	13	17	20.1	12	4.3	18 [0.63]
ATB6-01-D				43.3	39.3	18.8			20.5	10		14 [0.49]
TB6-02-□	6	R1/4	11	49.2	43.1	23	13	17	20.1	14	4.3	26 [0.92]
ATB6-02-□				48.8	42.7	22.2			20.5			22 [0.78]
TB6-03-□	6	R3/8	12	51	44.6	24.5	13	17	20.1	17	4.3	39 [1.38]
ATB6-03-□				52	45.7	25.2			21.5			32 [1.13]
TB8-01-□	8	R1/8	8	50.4	46.4	24.2	15	18.1	22.2	14	6	23 [0.81]
ATB8-01-□				46.9	42.9	20			22.9	12		19 [0.67]
TB8-02-□	8	R1/4	11	53.4	47.4	25.2	15	18.1	22.2	14	6	29 [1.02]
ATB8-02-□				51.7	45.7	22.8			22.9		6.7	25 [0.88]
TB8-03-□	8	R3/8	12	55.2	48.9	26.7	15	18.1	22.2	17	6	42 [1.48]
ATB8-03-□				55.4	49.1	26.2			22.9		6.7	35 [1.23]
TB10-02-□	10	R1/4	11	61.2	55.2	30	17.5	20.2	25.2	17	8	42 [1.48]
ATB10-02-□				54.7	48.7	22.5			26.2	14		31 [1.09]
TB10-03-□	10	R3/8	12	62.2	55.9	30.7	17.5	20.2	25.2	17	8	50 [1.76]
ATB10-03-□				58.2	51.9	25.7			26.2		8.3	42 [1.48]
TB10-04-□	10	R1/2	15	65.2	57	31.8	17.5	20.2	25.2	21	8	72 [2.54]
ATB10-04-□				62.2	54	27.8			27.3		8.3	65 [2.29]
TB12-02-□	12	R1/4	11	66.6	60.6	32.2	21	22.9	28.2	21	8	62 [2.19]
ATB12-02-□				60.3	54.2	23.7			30	14		38 [1.34]
TB12-03-□	12	R3/8	12	67.6	61.3	32.9	21	22.9	28.2	21	10	78 [2.75]
ATB12-03-□				63.5	57.2	26.7			30.5	17		48 [1.69]
TB12-04-□	12	R1/2	15	70.6	62.4	34	21	22.9	28.2	21	10	78 [2.75]
ATB12-04-□				67.5	59.3	28.8			30.7		10.3	72 [2.54]

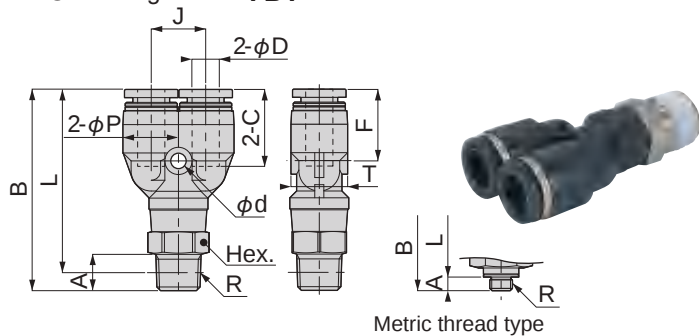
* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

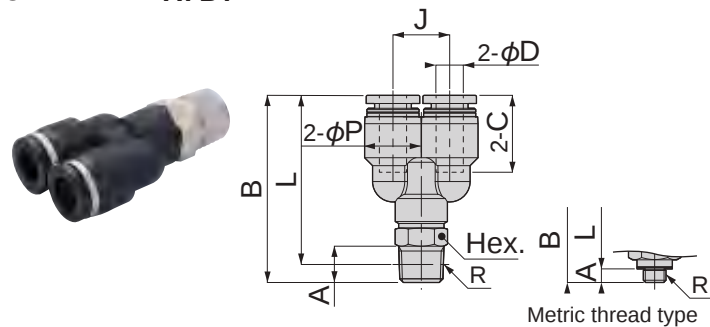
* Prices are the same.

TBY/ATBY Branch Y

● Existing model TBY



● New model ATBY



Unit: mm

Model	Tube outer diameter φ D	R	A	B	L	φ P	C	J	φ d	F	T	Width across flats Hex.	Orifice diameter (φ mm)	Mass g [oz]
TBY4-M5-□	4	M5×0.8	3	37.6	34.6	10	14.9	11	3.2	14.1	10.4	10	1.8	11 [0.39]
ATBY4-M5-□			2.8	32.9	30.1			10.3	-	-	-	8	2.4	8 [0.28]
TBY4-01-□	4	R1/8	8	40.6	36.6	10	14.9	11	3.2	14.1	10.4	10	2.7	14 [0.49]
ATBY4-01-□				38.4	34.4			10.3	-	-	-		2.8	13 [0.46]
TBY4-02-□	4	R1/4	11	43.6	37.6	10	14.9	11	3.2	14.1	10.4	14	2.7	23 [0.81]
ATBY4-02-□				43.4	37.4			10.3	-	-	-		2.8	20 [0.71]
TBY6-M5-□	6	M5×0.8	3	41.4	38.4	12.5	17	12	3.4	15.8	13.5	12	1.8	16 [0.56]
ATBY6-M5-□			2.8	38.3	35.5			12.5	-	-	-	10	2.4	13 [0.46]
TBY6-M6-□	6	M6×1	4	42.4	38.4	12.5	17	12	3.4	15.8	13.5	12	3	17 [0.6]
ATBY6-M6-□			3.8	39.3	35.5			12.5	-	-	-	10		13 [0.46]
TBY6-01-□	6	R1/8	8	44.4	40.4	12.5	17	12	3.4	15.8	13.5	12	4.4	18 [0.63]
ATBY6-01-□				41.3	37.3			12.5	-	-	-	10	4.3	15 [0.53]
TBY6-02-□	6	R1/4	11	47.4	41.3	12.5	17	12	3.4	15.8	13.5	14	4.4	26 [0.92]
ATBY6-02-□				48.3	42.2			12.5	-	-	-		4.3	22 [0.78]
TBY6-03-□	6	R3/8	12	49.2	42.8	12.5	17	12	3.4	15.8	13.5	17	4.4	40 [1.41]
ATBY6-03-□				51.3	44.9			12.5	-	-	-		4.3	33 [1.16]
TBY8-01-□	8	R1/8	8	48.7	44.7	14.5	18.1	14	3.4	17.2	15.1	14	5.9	24 [0.85]
ATBY8-01-□				46.1	42.1			14.5	-	-	-	12	6	20 [0.71]
TBY8-02-□	8	R1/4	11	51.7	45.7	14.5	18.1	14	3.4	17.2	15.1	14	5.9	29 [1.02]
ATBY8-02-□				49.3	43.3			14.5	-	-	-		6.7	25 [0.88]
TBY8-03-□	8	R3/8	12	53.5	47.2	14.5	18.1	14	3.4	17.2	15.1	17	5.9	43 [1.52]
ATBY8-03-□				52.5	46.2			14.5	-	-	-		6.7	36 [1.27]
TBY10-02-□	10	R1/4	11	58.3	52.3	18	20.7	18	4.5	19.5	18	17	6.7	44 [1.55]
ATBY10-02-□				53.6	47.6			17.5	-	-	-	14	8	32 [1.13]
TBY10-03-□	10	R3/8	12	59.3	53	18	20.7	18	4.5	19.5	18	17	6.7	52 [1.83]
ATBY10-03-□				56.7	50.4			17.5	-	-	-		8.3	43 [1.52]
TBY10-04-□	10	R1/2	15	62.3	54.1	18	20.7	18	4.5	19.5	18	21	6.7	74 [2.61]
ATBY10-04-□				60.2	52			17.5	-	-	-		8.3	66 [2.33]
TBY12-02-□	12	R1/4	11	63.5	57.5	21	23.4	20	4.2	22.2	21	21	8	64 [2.26]
ATBY12-02-□				58.6	52.6			21	-	-	-	14		40 [1.41]
TBY12-03-□	12	R3/8	12	64.5	58.2	21	23.4	20	4.2	22.2	21	21	8	65 [2.29]
ATBY12-03-□				60.6	54.3			21	-	-	-	17	10	51 [1.8]
TBY12-04-□	12	R1/2	15	67.5	59.3	21	23.4	20	4.2	22.2	21	21	8	81 [2.86]
ATBY12-04-□				64.7	56.5			21	-	-	-		10.3	74 [2.61]

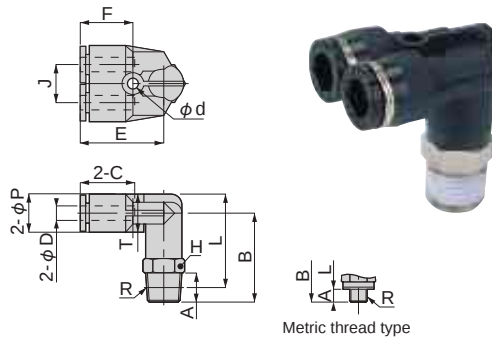
* -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

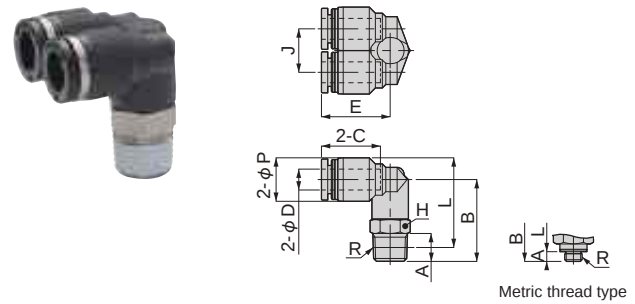
* Prices are the same.

TBLY/ATBLY Branch elbow Y

● Existing model TBLY



● New model ATBLY



indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter φD	R	A	B	L	φP	C	J	E	Width across flats Hex.	φd	F	T	Orifice diameter (φmm)	Mass g [oz]
TBLY4-M5-□	4	M5×0.8	3	21.7	23.7	10	14.9	11	22.7	10	3.2	14.2	10	1.8	12 [0.423]
ATBLY4-M5-□			2.8	20	22.2			10.3	18.2		—	—	—	2.4	11 [0.388]
TBLY4-M6-□	4	M6×1	4	22.7	23.7	10	14.9	11	22.7	10	3.2	14.2	10	2.8	12 [0.423]
ATBLY4-M6-□			3.8	21	22.2			10.3	18.2		—	—	—	3	11 [0.388]
TBLY4-01-□	4	R1/8	8	24.7	25.7	10	14.9	11	22.7	10	3.2	14.2	10	2.8	15 [0.529]
ATBLY4-01-□			—	23	24			10.3	18.2		—	—	—	3.9	13 [0.459]
TBLY4-02-□	4	R1/4	11	27.7	26.7	10	14.9	11	22.7	14	3.2	14.2	10	2.8	24 [0.847]
ATBLY4-02-□			—	27	26			10.3	19.2		—	—	—	3.9	20 [0.705]
TBLY6-M5-□	6	M5×0.8	3	25	28.3	12.5	17	12	26.2	12	4.2	15.5	12.5	1.8	17 [0.600]
ATBLY6-M5-□			2.8	20.5	24			12.5	19.8	10	—	—	—	2.4	12 [0.423]
TBLY6-M6-□	6	M6×1	4	26	28.3	12.5	17	12	26.2	12	4.2	15.5	12.5	3	18 [0.635]
ATBLY6-M6-□			3.8	21.5	24			12.5	19.8	10	—	—	—		13 [0.459]
TBLY6-01-□	6	R1/8	8	28	30.3	12.5	17	12	26.2	12	4.2	15.5	12.5	4	19 [0.670]
ATBLY6-01-□			—	23.5	25.8			12.5	19.8	10	—	—	—	4.2	15 [0.529]
TBLY6-02-□	6	R1/4	11	31	31.2	12.5	17	12	26.2	14	4.2	15.5	12.5	4	27 [0.952]
ATBLY6-02-□			—	29	29.2			12.5	21.8		—	—	—	5.3	22 [0.776]
TBLY6-03-□	6	R3/8	12	32.8	32.7	12.5	17	12	26.2	17	4.2	15.5	12.5	4	40 [1.411]
ATBLY6-03-□			—	31.5	31.4			12.5	23.8		—	—	—	5.3	34 [1.199]
TBLY8-01-□	8	R1/8	8	31	34.3	14.5	18.1	14	29.4	14	4.2	16.9	14.5	4.1	25 [0.882]
ATBLY8-01-□			—	25	28.3			14.5	22.7	12	—	—	—	5.7	20 [0.705]
TBLY8-02-□	8	R1/4	11	34	35.2	14.5	18.1	14	29.4	14	4.2	16.9	14.5	4.1	31 [1.093]
ATBLY8-02-□			—	29	30.2			14.5	23.7		—	—	—	7.3	25 [0.882]
TBLY8-03-□	8	R3/8	12	35.8	36.7	14.5	18.1	14	29.4	17	4.2	16.9	14.5	4.1	44 [1.552]
ATBLY8-03-□			—	32	32.9			14.5	24.7		—	—	—	7.3	37 [1.305]
TBLY10-02-□	10	R1/4	11	37	39.7	17.5	20.2	18	33.5	17	4.2	18.5	17.5	7.5	46 [1.623]
ATBLY10-02-□			—	29.5	32.2			17.5	26	14	—	—	—	8	32 [1.129]
TBLY10-03-□	10	R3/8	12	38	40.4	17.5	20.2	18	33.5	17	4.2	18.5	17.5	7.5	54 [1.905]
ATBLY10-03-□			—	32.5	34.9			17.5	27		—	—	—	9.2	43 [1.517]
TBLY10-04-□	10	R1/2	15	41	41.6	17.5	20.2	18	33.5	21	4.2	18.5	17.5	7.5	76 [2.681]
ATBLY10-04-□			—	37	37.6			17.5	28		—	—	—	9.2	66 [2.328]
TBLY12-02-□	12	R1/4	11	41.2	45.7	21	23.4	20	35.2	21	4.2	20.4	21	8	67 [2.363]
ATBLY12-02-□			—	29.5	34			21	28.2	14	—	—	—		39 [1.376]
TBLY12-03-□	12	R3/8	12	42.2	46.4	21	23.4	20	35.2	21	4.2	20.4	21	9.8	68 [2.399]
ATBLY12-03-□			—	33.5	37.7			21	29.2	17	—	—	—	9.7	51 [1.799]
TBLY12-04-□	12	R1/2	15	45.2	47.5	21	23.4	20	35.2	21	4.2	20.4	21	9.8	83 [2.928]
ATBLY12-04-□			—	38	40.3			21	30.2		—	—	—	10.6	74 [2.610]

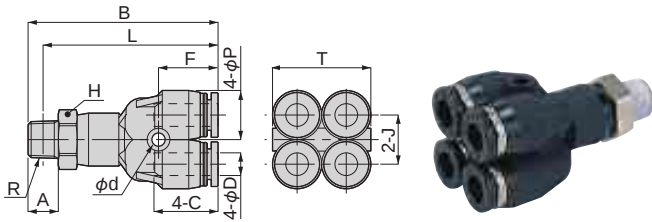
* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

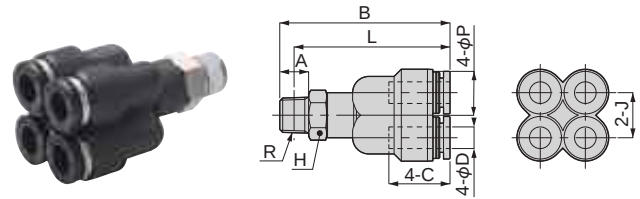
* Prices are the same.

TBW/ATBW Branch double Y

● Existing model TBW



● New model ATBW



indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter φD	R	A	B	L	φP	C	J	Width across flats Hex.	φd	F	T	Orifice diameter (φmm)	Mass g [oz]
TBW4-01-□	4	R1/8	8	45.7	41.7	10.5	14.9	10	12	3.2	14.2	20.5	2.1	22 [0.776]
ATBW4-01-□				38.9	34.9			10.3		—	—	—	2.6	16 [0.564]
TBW4-02-□	4	R1/4	11	48.7	42.7	10.5	14.9	10	14	3.2	14.2	20.5	2.1	30 [1.058]
ATBW4-02-□				42.4	36.4			10.3		—	—	—	2.6	21 [0.741]
TBW6-01-□	6	R1/8	8	50.3	46.3	13	17	13	14	3.5	15.8	26	4.3	29 [1.023]
ATBW6-01-□				47.2	43.2			12.5		—	—	—	5.2	25 [0.882]

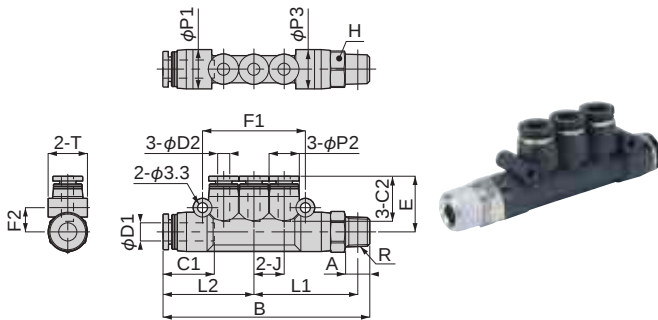
* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

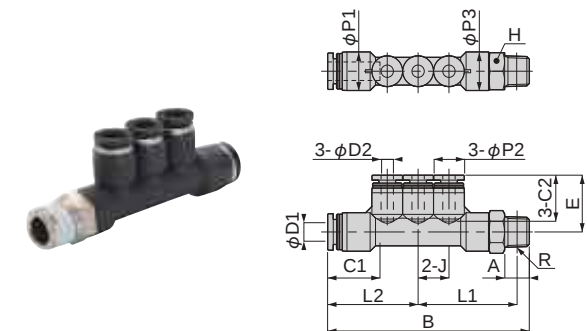
* Prices are the same.

TBE/ATBE Branch triple

● Existing model TBE



● New model ATBE



indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter φD1	Tube outer diameter φD2	R	A	B	E	L1	L2	J	φP1	φP2	φP3	C1	C2	F1	F2	Width across flats Hex.	T	Orifice diameter (φmm)	Mass g [oz]
TBE6-4-01-□	6	4	R1/8	8	68.4	18.4	34.3	30.1	10	13	10	13	17	14.9	34	8	12	13	3	24 [0.847]
ATBE6-4-01-□					65.4		32.1	29.3		12.5		12.5			—	—		—	3	21 [0.741]
TBE8-4-02-□	8	4	R1/4	11	73.7	19.2	36.5	31.2	10	15	10	15	18.1	14.9	34	9.2	14	15	3	34 [1.199]
ATBE8-4-02-□					69.2		32	—		14.5		14.5			—	—		—	3	28 [0.988]
TBE8-6-02-□	8	6	R1/4	11	80.7	21.3	40	34.7	12	15	13	15	18.1	17	40.2	9	14	15	4.6	37 [1.305]
ATBE8-6-02-□					76.9		36.5	34.4		14.5		12.5			—	—		—	4.6	35 [1.235]
TBE10-8-03-□	10	8	R3/8	12	93	23.7	46.7	40	14	15	17.5	17.5	20.7	18.1	46.2	10.5	17	17.5	7	60 [2.116]
ATBE10-8-03-□					87.8		41.5	—		14.5		18			—	—		—	6.7	50 [1.764]

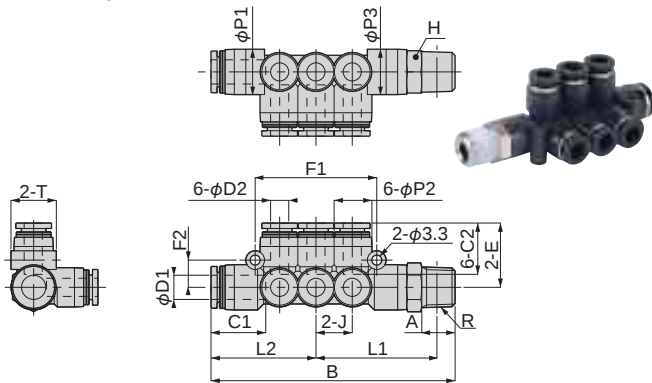
* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L1 dimension for the tapered thread types is a reference dimension when mated and tightened.

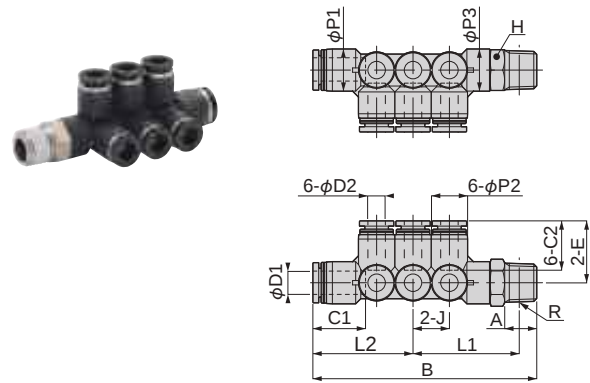
* Prices are the same.

TBEW/ATBEW Branch triple double

● Existing model **TBEW**



● New model **ATBEW**



indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter φD1	Tube outer diameter φD2	R	A	B	E	L1	L2	J	φP1	φP2	φP3	C1	C2	F1	F2	Width across flats Hex.	T	Orifice diameter (φmm)	Mass g [oz]
TBEW8-4-02-□	8	4	R1/4	11	80.7	20.7	40	34.7	12	15	13	15	18.1	14.9	40.2	9	14	15	3	45 [1.587]
ATBEW8-4-02-□					69.2	19.2	32	31.2	10	14.5	10	14.5			—	—				32 [1.129]
TBEW8-4-03-□	8	4	R3/8	12	82.5	20.7	41.5	34.7	12	15	13	15	18.1	14.9	40.2	9	17	15	3	58 [2.046]
ATBEW8-4-03-□					72.2	19.2	34.7	31.2	10	14.5	10	18			—	—				46 [1.623]
TBEW8-6-02-□	8	6	R1/4	11	80.7	21.3	40	34.7	12	15	13	15	18.1	17	40.2	9	14	15	4.6	47 [1.658]
ATBEW8-6-02-□					76.9		36.5	34.4	12.5	14.5	12.5	14.5			—	—				41 [1.446]
TBEW8-6-03-□	8	6	R3/8	12	82.5	21.3	41.5	34.7	12	15	13	15	18.1	17	40.2	9	17	15	4.6	60 [2.116]
ATBEW8-6-03-□					80.7		39.9	34.4	12.5	14.5	12.5	18			—	—				52 [1.834]
TBEW10-6-03-□	10	6	R3/8	12	93	23.8	46.7	40	14	17.5	15	17.5	20.2	17	46.2	10.5	17	17.5	4.6	70 [2.469]
ATBEW10-6-03-□					81.5	22.3	38.2	37	12.5		12.5	18			—	—				56 [1.975]
TBEW10-6-04-□	10	6	R1/2	15	96	23.8	47.8	40	14	17.5	15	17.5	20.2	17	46.2	10.5	21	17.5	4.6	93 [3.280]
ATBEW10-6-04-□					85.5	22.3	40.3	37	12.5		12.5	20			—	—				78 [2.751]
TBEW10-8-03-□	10	8	R3/8	12	93	23.7	46.7	40	14	17.5	15	17.5	20.2	18.1	46.2	10.5	17	17.5	7	74 [2.610]
ATBEW10-8-03-□					87.8		41.5		14.5		14.5	18			—	—				65 [2.293]
TBEW10-8-04-□	10	8	R1/2	15	96	23.7	47.8	40	14	17.5	15	17.5	20.2	18.1	46.2	10.5	21	17.5	7	96 [3.386]
ATBEW10-8-04-□					91.8		43.6		14.5		14.5	20			—	—				87 [3.069]

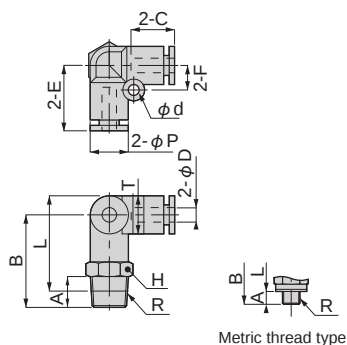
* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

* The L1 dimension for the tapered thread types is a reference dimension when mated and tightened.

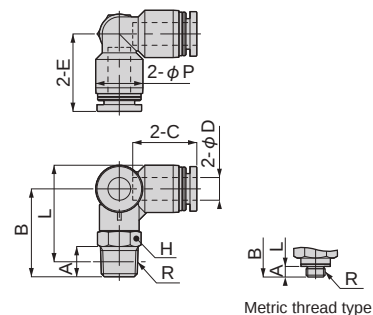
* Prices are the same.

TBZ/ATBZ Branch tetra

● Existing model TBZ



● New model ATBZ



indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter φD	R	A	B	L	φP	C	E	Width across flats Hex.	φd	F	T	Orifice diameter (φmm)	Mass g [oz]
TBZ4-M5-□	4	M5×0.8	3	21.7	23.7	10	14.9	16.9	10	3.2	6.5	10	1.8	11 [0.388]
ATBZ4-M5-□			2.8	20.3	22.5			18.2		—	—	—	2.4	10 [0.353]
TBZ4-M6-□	4	M6×1	4	22.7	23.7	10	14.9	16.9	10	3.2	6.5	10	3	11 [0.388]
ATBZ4-M6-□			3.8	21.3	22.5			18.2		—	—	—		
TBZ4-01-□	4	R1/8	8	24.7	25.7	10	14.9	16.9	10	3.2	6.5	10	3	14 [0.494]
ATBZ4-01-□				23.3	24.3			18.2		—	—	—		13 [0.459]
TBZ4-02-□	4	R1/4	11	27.7	26.7	10	14.9	16.9	14	3.2	6.5	10	3	23 [0.811]
ATBZ4-02-□				29	28			20.7		—	—	—		20 [0.705]
TBZ6-M5-□	6	M5×0.8	3	25.3	28.6	12.5	17	20.1	12	4.2	8	12.5	1.8	17 [0.600]
ATBZ6-M5-□			2.8	20.3	23.7			20.5		—	—	—		12 [0.423]
TBZ6-M6-□	6	M6×1	4	26.3	28.6	12.5	17	20.1	12	4.2	8	12.5	3	17 [0.600]
ATBZ6-M6-□			3.8	21.3	23.7			20.5		—	—	—		12 [0.423]
TBZ6-01-□	6	R1/8	8	28.3	30.6	12.5	17	20.1	12	4.2	8	12.5	4.6	18 [0.635]
ATBZ6-01-□				23.3	25.5			20.5		—	—	—		15 [0.529]
TBZ6-02-□	6	R1/4	11	31.3	31.5	12.5	17	20.1	14	4.2	8	12.5	4.6	26 [0.917]
ATBZ6-02-□				28	28.2			21.8		—	—	—		22 [0.776]
TBZ6-03-□	6	R3/8	12	33.1	33	12.5	17	20.1	17	4.2	8	12.5	4.6	39 [1.376]
ATBZ6-03-□				31.5	31.4			23.8		—	—	—		33 [1.164]
TBZ8-01-□	8	R1/8	8	30.4	33.7	14.5	18.1	22.1	14	4.2	10	14.5	6	24 [0.847]
ATBZ8-01-□				25	28.3			22.7		—	—	—		20 [0.705]
TBZ8-02-□	8	R1/4	11	33.4	34.6	14.5	18.1	22.1	14	4.2	10	14.5	6	30 [1.058]
ATBZ8-02-□				29	30.2			23.7		—	—	—		25 [0.882]
TBZ8-03-□	8	R3/8	12	35.2	36.1	14.5	18.1	22.1	17	4.2	10	14.5	6	42 [1.482]
ATBZ8-03-□				32	32.9			24.7		—	—	—		36 [1.270]
TBZ10-02-□	10	R1/4	11	38.2	40.9	17.5	20.2	26.2	17	4.2	12	17.5	8	44 [1.552]
ATBZ10-02-□				29.4	32.1			26		—	—	—		31 [1.093]
TBZ10-03-□	10	R3/8	12	39.2	41.6	17.5	20.2	26.2	17	4.2	12	17.5	8	52 [1.834]
ATBZ10-03-□				33	35.4			27		—	—	—		42 [1.482]
TBZ10-04-□	10	R1/2	15	42.2	42.8	17.5	20.2	26.2	21	4.2	12	17.5	8	74 [2.610]
ATBZ10-04-□				37	37.6			27.5		—	—	—		66 [2.328]
TBZ12-02-□	12	R1/4	11	41.2	45.7	21	23.4	29.4	21	4.2	14	21	8	64 [2.258]
ATBZ12-02-□				30.8	35.2			30.2		—	—	—		37 [1.305]
TBZ12-03-□	12	R3/8	12	42.2	46.4	21	23.4	29.4	21	4.2	14	21	10	65 [2.293]
ATBZ12-03-□				33.5	37.7			30.2		—	—	—		49 [1.728]
TBZ12-04-□	12	R1/2	15	45.2	47.5	21	23.4	29.4	21	4.2	14	21	10	81 [2.857]
ATBZ12-04-□				38	40.3			31.2		—	—	—		74 [2.610]

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

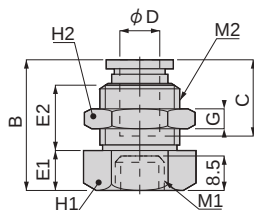
* The L dimension for the tapered thread types is a reference dimension when mated and tightened.

* Prices are the same.

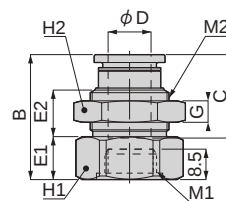
Supply joint

SKR/ASKR Reducer for bulkhead

● Existing model **SKR**



● New model **ASKR**



indicates portion of new models (new shapes) that have changed in dimension.

Unit: mm

Model	Tube outer diameter φD	M1	M2	B	E1	E2	C	G	H1	H2	Effective cross section area (mm ²)	Mass g [oz]
SKR8-4	4	M8×1	M12×1	26	8	13.4	14.9	4	14	14	5.6	19 [0.670]
ASKR8-4						11.8						18 [0.635]
SKR8-6	6	M8×1	M14×1	28.1	8	14.9	17	4	17	17	11.5	29 [1.023]
ASKR8-6						13.9						
SKR12-6	6	M12×1	M14×1	28.1	12	10.9	17	4	17	17	13.2	28 [0.988]
ASKR12-6						9.9						
SKR12-8	8	M12×1	M16×1	28.9	10	13.4	18.2	4	19	19	27.4	34 [1.199]
ASKR12-8						11.7						33 [1.164]
SKR12-10	10	M12×1	M20×1	32.3	10	16.4	20.7	5	22	24	34.8	60 [2.116]
ASKR12-10						13.7						57 [2.011]
SKR14-8	8	M14×1	M16×1	28.9	12	11.4	18.2	4	19	19	27.7	33 [1.164]
ASKR14-8						9.7						32 [1.129]
SKR14-10	10	M14×1	M20×1	32.3	10	16.4	20.7	5	24	24	41.7	64 [2.258]
ASKR14-10						13.7						60 [2.116]
SKR14-12	12	M14×1	M22×1	34.9	12	17.4	23.3	6	24	27	54.7	78 [2.751]
ASKR14-12						13						74 [2.610]
SKR18-12	12	M18×1	M22×1	34.9	12	17.4	23.3	6	27	27	66.7	83 [2.928]
ASKR18-12						13						79 [2.787]

* Prices are the same.

Supply joint (assembly side)

ASKR Reducer for bulkhead



List of models and their specifications

* See the following table for combinations of models of fittings, tube size, and thread size.

Regarding NCU specifications, the "←" indicates that the standard model can be used as NCU specifications, so order the standard model.

- The dimension diagram for the following **NCU** specifications and the **CS** specifications are the same as the standard model or the non-lubricant specifications. Refer to the dimension diagrams on pages ① to ⑩.

● Table of models

Name	Tube outer diameter	Thread size	Standard model or non-lubricant specifications	NCU Specification	CS Specification
Straight ATS	4	M5×0.8	ATS4-M5-D	—	CS-ATS4-M5
			ATS4-M50-□	←	CS-ATS4-M50
		M6×1	ATS4-M6-D	—	CS-ATS4-M6
		R1/8	ATS4-01-D	NCU-ATS4-01	CS-ATS4-01
		R1/4	ATS4-02-□	NCU-ATS4-02	CS-ATS4-02
	6	M5×0.8	ATS6-M5-D	—	CS-ATS6-M5
		M6×1	ATS6-M6-D	—	CS-ATS6-M6
		R1/8	ATS6-01-D	NCU-ATS6-01	CS-ATS6-01
		R1/4	ATS6-02-□	NCU-ATS6-02	CS-ATS6-02
		R3/8	ATS6-03-□	NCU-ATS6-03	CS-ATS6-03
	8	R1/8	ATS8-01-□	NCU-ATS8-01	CS-ATS8-01
		R1/4	ATS8-02-□	NCU-ATS8-02	CS-ATS8-02
		R3/8	ATS8-03-□	NCU-ATS8-03	CS-ATS8-03
	10	R1/8	ATS10-01-□	NCU-ATS10-01	CS-ATS10-01
		R1/4	ATS10-02-□	NCU-ATS10-02	CS-ATS10-02
		R3/8	ATS10-03-□	NCU-ATS10-03	CS-ATS10-03
		R1/2	ATS10-04-□	NCU-ATS10-04	CS-ATS10-04
	12	R1/4	ATS12-02-□	NCU-ATS12-02	CS-ATS12-02
		R3/8	ATS12-03-□	NCU-ATS12-03	CS-ATS12-03
		R1/2	ATS12-04-□	NCU-ATS12-04	CS-ATS12-04
	16	R3/8	ATS16-03-□	NCU-ATS16-03	CS-ATS16-03
		R1/2	ATS16-04-□	NCU-ATS16-04	CS-ATS16-04
Straight with hexagon socket ATSH	4	M5×0.8	ATSH4-M5-D	—	CS-ATSH4-M5
		M6×1	ATSH4-M6-D	—	CS-ATSH4-M6
		R1/8	ATSH4-01-D	NCU-ATSH4-01	CS-ATSH4-01
	6	M5×0.8	ATSH6-M5-D	—	CS-ATSH6-M5
		M6×1	ATSH6-M6-D	—	CS-ATSH6-M6
		R1/8	ATSH6-01-D	NCU-ATSH6-01	CS-ATSH6-01
	8	R1/4	ATSH6-02-□	NCU-ATSH6-02	CS-ATSH6-02
		R1/8	ATSH8-01-□	NCU-ATSH8-01	CS-ATSH8-01
		R1/4	ATSH8-02-□	NCU-ATSH8-02	CS-ATSH8-02
	10	R3/8	ATSH8-03-□	NCU-ATSH8-03	CS-ATSH8-03
		R1/4	ATSH10-02-□	NCU-ATSH10-02	CS-ATSH10-02
		R3/8	ATSH10-03-□	NCU-ATSH10-03	CS-ATSH10-03
	12	R1/2	ATSH10-04-□	NCU-ATSH10-04	CS-ATSH10-04
		R3/8	ATSH12-03-□	NCU-ATSH12-03	CS-ATSH12-03
		R1/2	ATSH12-04-□	NCU-ATSH12-04	CS-ATSH12-04
Female straight ATSM	4	Rc1/8	ATSM4-01-□	←	CS-ATSM4-01
		Rc1/4	ATSM4-02-□	←	CS-ATSM4-02
	6	Rc1/8	ATSM6-01-□	←	CS-ATSM6-01
		Rc1/4	ATSM6-02-□	←	CS-ATSM6-02
	8	Rc1/8	ATSM8-01-□	←	CS-ATSM8-01
		Rc1/4	ATSM8-02-□	←	CS-ATSM8-02
		Rc3/8	ATSM8-03-□	←	CS-ATSM8-03
	10	Rc1/4	ATSM10-02-□	←	CS-ATSM10-02
		Rc3/8	ATSM10-03-□	←	CS-ATSM10-03
	12	Rc1/4	ATSM12-02-□	←	CS-ATSM12-02
		Rc3/8	ATSM12-03-□	←	CS-ATSM12-03

* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

Name	Tube outer diameter	Thread size	Standard model or non-lubricant specifications	NCU Specification	CS Specification
Union for bulkhead AUK	4	—	AUK4-D	—	CS-AUK4
	6	—	AUK6-D	—	CS-AUK6
	8	—	AUK8-□	←	CS-AUK8
	10	—	AUK10-□	←	CS-AUK10
	12	—	AUK12-□	←	CS-AUK12
Female union for bulkhead AUKM	4	Rc1/8	AUKM4-01-□	←	CS-AUKM4-01
		Rc1/4	AUKM6-01-□	←	CS-AUKM6-01
	6	Rc1/8	AUKM6-02-□	←	CS-AUKM6-02
		Rc1/4	AUKM8-01-□	←	CS-AUKM8-01
	8	Rc1/4	AUKM8-02-□	←	CS-AUKM8-02
		Rc3/8	AUKM8-03-□	←	CS-AUKM8-03
	10	Rc1/4	AUKM10-02-□	←	CS-AUKM10-02
		Rc3/8	AUKM10-03-□	←	CS-AUKM10-03
	12	Rc3/8	AUKM12-03-□	←	CS-AUKM12-03
		Rc1/2	AUKM12-04-□	←	CS-AUKM12-04
Elbow ATL	4	M5×0.8	ATL4-M5-D	—	CS-ATL4-M5
		M6×1	ATL4-M6-D	—	CS-ATL4-M6
		R1/8	ATL4-01-D	NCU-ATL4-01	CS-ATL4-01
		R1/4	ATL4-02-□	NCU-ATL4-02	CS-ATL4-02
	6	M5×0.8	ATL6-M5-D	—	CS-ATL6-M5
		M6×1	ATL6-M6-D	—	CS-ATL6-M6
		R1/8	ATL6-01-D	NCU-ATL6-01	CS-ATL6-01
		R1/4	ATL6-02-□	NCU-ATL6-02	CS-ATL6-02
	8	R3/8	ATL6-03-□	NCU-ATL6-03	CS-ATL6-03
		R1/8	ATL8-01-□	NCU-ATL8-01	CS-ATL8-01
		R1/4	ATL8-02-□	NCU-ATL8-02	CS-ATL8-02
		R3/8	ATL8-03-□	NCU-ATL8-03	CS-ATL8-03
	10	R1/8	ATL10-01-□	NCU-ATL10-01	CS-ATL10-01
		R1/4	ATL10-02-□	NCU-ATL10-02	CS-ATL10-02
		R3/8	ATL10-03-□	NCU-ATL10-03	CS-ATL10-03
		R1/2	ATL10-04-□	NCU-ATL10-04	CS-ATL10-04
	12	R1/4	ATL12-02-□	NCU-ATL12-02	CS-ATL12-02
		R3/8	ATL12-03-□	NCU-ATL12-03	CS-ATL12-03
		R1/2	ATL12-04-□	NCU-ATL12-04	CS-ATL12-04
Long elbow ATLL	4	M5×0.8	ATLL4-M5-D	—	CS-ATLL4-M5
		R1/8	ATLL4-01-D	NCU-ATLL4-01	CS-ATLL4-01
	6	R1/8	ATLL6-01-D	NCU-ATLL6-01	CS-ATLL6-01
		R1/4	ATLL6-02-□	NCU-ATLL6-02	CS-ATLL6-02
	8	R3/8	ATLL6-03-□	NCU-ATLL6-03	CS-ATLL6-03
		R1/8	ATLL8-01-□	NCU-ATLL8-01	CS-ATLL8-01
		R1/4	ATLL8-02-□	NCU-ATLL8-02	CS-ATLL8-02
	10	R3/8	ATLL8-03-□	NCU-ATLL8-03	CS-ATLL8-03
		R1/4	ATLL10-02-□	NCU-ATLL10-02	CS-ATLL10-02
		R3/8	ATLL10-03-□	NCU-ATLL10-03	CS-ATLL10-03
	12	R1/2	ATLL10-04-□	NCU-ATLL10-04	CS-ATLL10-04
		R1/4	ATLL12-02-□	NCU-ATLL12-02	CS-ATLL12-02
		R3/8	ATLL12-03-□	NCU-ATLL12-03	CS-ATLL12-03
	12	R1/2	ATLL12-04-□	NCU-ATLL12-04	CS-ATLL12-04

* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

List of models and their specifications

* See the following table for combinations of models of fittings, tube size, and thread size.

Regarding NCU specifications, the "←" indicates that the standard model can be used as NCU specifications, so order the standard model.

● The dimension diagram for the following **NCU** specifications and the **CS** specifications are the same as the standard model or the non-lubricant specifications. Refer to the dimension diagrams on pages ① to ⑩.

● Table of models

Name	Tube outer diameter	Thread size	Standard model or non-lubricant specifications	NCU Specification	CS Specification
Tee ATT	4	M5×0.8	ATT4-M5-D	—	CS-ATT4-M5
		M6×1	ATT4-M6-D	—	CS-ATT4-M6
		R1/8	ATT4-01-D	NCU-ATT4-01	CS-ATT4-01
		R1/4	ATT4-02-□	NCU-ATT4-02	CS-ATT4-02
	6	M5×0.8	ATT6-M5-D	—	CS-ATT6-M5
		M6×1	ATT6-M6-D	—	CS-ATT6-M6
		R1/8	ATT6-01-D	NCU-ATT6-01	CS-ATT6-01
		R1/4	ATT6-02-□	NCU-ATT6-02	CS-ATT6-02
		R3/8	ATT6-03-□	NCU-ATT6-03	CS-ATT6-03
	8	R1/8	ATT8-01-□	NCU-ATT8-01	CS-ATT8-01
		R1/4	ATT8-02-□	NCU-ATT8-02	CS-ATT8-02
		R3/8	ATT8-03-□	NCU-ATT8-03	CS-ATT8-03
	10	R1/4	ATT10-02-□	NCU-ATT10-02	CS-ATT10-02
		R3/8	ATT10-03-□	NCU-ATT10-03	CS-ATT10-03
		R1/2	ATT10-04-□	NCU-ATT10-04	CS-ATT10-04
	12	R1/4	ATT12-02-□	NCU-ATT12-02	CS-ATT12-02
		R3/8	ATT12-03-□	NCU-ATT12-03	CS-ATT12-03
		R1/2	ATT12-04-□	NCU-ATT12-04	CS-ATT12-04
Branch tee ATB	4	M5×0.8	ATB4-M5-D	—	CS-ATB4-M5
		M6×1	ATB4-M6-D	—	CS-ATB4-M6
		R1/8	ATB4-01-D	NCU-ATB4-01	CS-ATB4-01
		R1/4	ATB4-02-□	NCU-ATB4-02	CS-ATB4-02
	6	M5×0.8	ATB6-M5-D	—	CS-ATB6-M5
		M6×1	ATB6-M6-D	—	CS-ATB6-M6
		R1/8	ATB6-01-D	NCU-ATB6-01	CS-ATB6-01
		R1/4	ATB6-02-□	NCU-ATB6-02	CS-ATB6-02
		R3/8	ATB6-03-□	NCU-ATB6-03	CS-ATB6-03
	8	R1/8	ATB8-01-□	NCU-ATB8-01	CS-ATB8-01
		R1/4	ATB8-02-□	NCU-ATB8-02	CS-ATB8-02
		R3/8	ATB8-03-□	NCU-ATB8-03	CS-ATB8-03
	10	R1/4	ATB10-02-□	NCU-ATB10-02	CS-ATB10-02
		R3/8	ATB10-03-□	NCU-ATB10-03	CS-ATB10-03
		R1/2	ATB10-04-□	NCU-ATB10-04	CS-ATB10-04
	12	R1/4	ATB12-02-□	NCU-ATB12-02	CS-ATB12-02
		R3/8	ATB12-03-□	NCU-ATB12-03	CS-ATB12-03
		R1/2	ATB12-04-□	NCU-ATB12-04	CS-ATB12-04
Branch Y ATBY	4	M5×0.8	ATBY4-M5-□	←	CS-ATBY4-M5
		R1/8	ATBY4-01-□	NCU-ATBY4-01	CS-ATBY4-01
		R1/4	ATBY4-02-□	NCU-ATBY4-02	CS-ATBY4-02
	6	M5×0.8	ATBY6-M5-□	←	CS-ATBY6-M5
		M6×1	ATBY6-M6-□	←	CS-ATBY6-M6
		R1/8	ATBY6-01-□	NCU-ATBY6-01	CS-ATBY6-01
		R1/4	ATBY6-02-□	NCU-ATBY6-02	CS-ATBY6-02
		R3/8	ATBY6-03-□	NCU-ATBY6-03	CS-ATBY6-03
	8	R1/8	ATBY8-01-□	NCU-ATBY8-01	CS-ATBY8-01
		R1/4	ATBY8-02-□	NCU-ATBY8-02	CS-ATBY8-02
		R3/8	ATBY8-03-□	NCU-ATBY8-03	CS-ATBY8-03
	10	R1/4	ATBY10-02-□	NCU-ATBY10-02	CS-ATBY10-02
		R3/8	ATBY10-03-□	NCU-ATBY10-03	CS-ATBY10-03
		R1/2	ATBY10-04-□	NCU-ATBY10-04	CS-ATBY10-04
	12	R1/4	ATBY12-02-□	NCU-ATBY12-02	CS-ATBY12-02
		R3/8	ATBY12-03-□	NCU-ATBY12-03	CS-ATBY12-03
		R1/2	ATBY12-04-□	NCU-ATBY12-04	CS-ATBY12-04

* -D ⇒ Non-lubricant specification only. -□ ⇒ Select either blank (standard) or D (non-lubricant specification)

● Tightening torque (reference value), sealant color, and gasket material for targeted models

Thread type	Thread size	Tightening torque N·m [in·lbf]	Sealant color	Gasket material
Metric thread	M5 × 0.8	1 to 1.5 [8.85 to 13.28]	—	SUS304 NBR
	M6 × 1	2 to 2.7 [17.70 to 23.90]		
Tapered threads for pipes*	R1/8	4.5 to 6.5 [39.83 to 57.53]	White	—
	R1/4	7 to 9 [61.96 to 79.66]		
	R3/8	12.5 to 14.5 [110.64 to 128.34]		
	R1/2	20 to 22 [177.02 to 194.72]		

* The tightening torque is the same for all products with tapered threads for quick fitting pipes.

List of models and their specifications

* See the following table for combinations of models of fittings, tube size, and thread size.

Regarding NCU specifications, the "←" indicates that the standard model can be used as NCU specifications, so order the standard model.

● The dimension diagram for the following NCU specifications and the CS specifications are the same as the standard model or the non-lubricant specifications. Refer to the dimension diagrams on pages ① to ⑤.

● Standard type models of quick fittings

Name	Tube outer diameter	Thread size	Standard model or non-lubricant specifications	NCU Specification	CS Specification
Branch elbow Y ATBLY	4	M5×0.8	ATBLY4-M5-□	←	CS-ATBLY4-M5
		M6×1	ATBLY4-M6-□	←	CS-ATBLY4-M6
		R1/8	ATBLY4-01-□	NCU-ATBLY4-01	CS-ATBLY4-01
		R1/4	ATBLY4-02-□	NCU-ATBLY4-02	CS-ATBLY4-02
	6	M5×0.8	ATBLY6-M5-□	←	CS-ATBLY6-M5
		M6×1	ATBLY6-M6-□	←	CS-ATBLY6-M6
		R1/8	ATBLY6-01-□	NCU-ATBLY6-01	CS-ATBLY6-01
		R1/4	ATBLY6-02-□	NCU-ATBLY6-02	CS-ATBLY6-02
		R3/8	ATBLY6-03-□	NCU-ATBLY6-03	CS-ATBLY6-03
	8	R1/8	ATBLY8-01-□	NCU-ATBLY8-01	CS-ATBLY8-01
		R1/4	ATBLY8-02-□	NCU-ATBLY8-02	CS-ATBLY8-02
		R3/8	ATBLY8-03-□	NCU-ATBLY8-03	CS-ATBLY8-03
	10	R1/4	ATBLY10-02-□	NCU-ATBLY10-02	CS-ATBLY10-02
		R3/8	ATBLY10-03-□	NCU-ATBLY10-03	CS-ATBLY10-03
		R1/2	ATBLY10-04-□	NCU-ATBLY10-04	CS-ATBLY10-04
	12	R1/4	ATBLY12-02-□	NCU-ATBLY12-02	CS-ATBLY12-02
		R3/8	ATBLY12-03-□	NCU-ATBLY12-03	CS-ATBLY12-03
		R1/2	ATBLY12-04-□	NCU-ATBLY12-04	CS-ATBLY12-04
Branch triple ATBE	6-4	R1/8	ATBE6-4-01-□	NCU-ATBE6-4-01	CS-ATBE6-4-01
	8-4	R1/4	ATBE8-4-02-□	NCU-ATBE8-4-02	CS-ATBE8-4-02
	8-6	R1/4	ATBE8-6-02-□	NCU-ATBE8-6-02	CS-ATBE8-6-02
	10-8	R3/8	ATBE10-8-03-□	NCU-ATBE10-8-03	CS-ATBE10-8-03
Branch triple double ATBEW	8-4	R1/4	ATBEW8-4-02-□	NCU-ATBEW8-4-02	CS-ATBEW8-4-02
		R3/8	ATBEW8-4-03-□	NCU-ATBEW8-4-03	CS-ATBEW8-4-03
	8-6	R1/4	ATBEW8-6-02-□	NCU-ATBEW8-6-02	CS-ATBEW8-6-02
		R3/8	ATBEW8-6-03-□	NCU-ATBEW8-6-03	CS-ATBEW8-6-03
	10-6	R3/8	ATBEW10-6-03-□	NCU-ATBEW10-6-03	CS-ATBEW10-6-03
		R1/2	ATBEW10-6-04-□	NCU-ATBEW10-6-04	CS-ATBEW10-6-04
	10-8	R3/8	ATBEW10-8-03-□	NCU-ATBEW10-8-03	CS-ATBEW10-8-03
		R1/2	ATBEW10-8-04-□	NCU-ATBEW10-8-04	CS-ATBEW10-8-04
Branch double Y ATBW	4	R1/8	ATBW4-01-□	NCU-ATBW4-01	CS-ATBW4-01
	6	R1/4	ATBW4-02-□	NCU-ATBW4-02	CS-ATBW4-02
Branch tetra ATBZ	4	M5×0.8	ATBZ4-M5-□	←	CS-ATBZ4-M5
		M6×1	ATBZ4-M6-□	←	CS-ATBZ4-M6
		R1/8	ATBZ4-01-□	NCU-ATBZ4-01	CS-ATBZ4-01
		R1/4	ATBZ4-02-□	NCU-ATBZ4-02	CS-ATBZ4-02
	6	M5×0.8	ATBZ6-M5-□	←	CS-ATBZ6-M5
		M6×1	ATBZ6-M6-□	←	CS-ATBZ6-M6
		R1/8	ATBZ6-01-□	NCU-ATBZ6-01	CS-ATBZ6-01
		R1/4	ATBZ6-02-□	NCU-ATBZ6-02	CS-ATBZ6-02
		R3/8	ATBZ6-03-□	NCU-ATBZ6-03	CS-ATBZ6-03
	8	R1/8	ATBZ8-01-□	NCU-ATBZ8-01	CS-ATBZ8-01
		R1/4	ATBZ8-02-□	NCU-ATBZ8-02	CS-ATBZ8-02
		R3/8	ATBZ8-03-□	NCU-ATBZ8-03	CS-ATBZ8-03
	10	R1/4	ATBZ10-02-□	NCU-ATBZ10-02	CS-ATBZ10-02
		R3/8	ATBZ10-03-□	NCU-ATBZ10-03	CS-ATBZ10-03
		R1/2	ATBZ10-04-□	NCU-ATBZ10-04	CS-ATBZ10-04
	12	R1/4	ATBZ12-02-□	NCU-ATBZ12-02	CS-ATBZ12-02
		R3/8	ATBZ12-03-□	NCU-ATBZ12-03	CS-ATBZ12-03
		R1/2	ATBZ12-04-□	NCU-ATBZ12-04	CS-ATBZ12-04

* - □ ⇒ Select either blank (standard) or D (non-lubricant specification)

● Models of supply joints

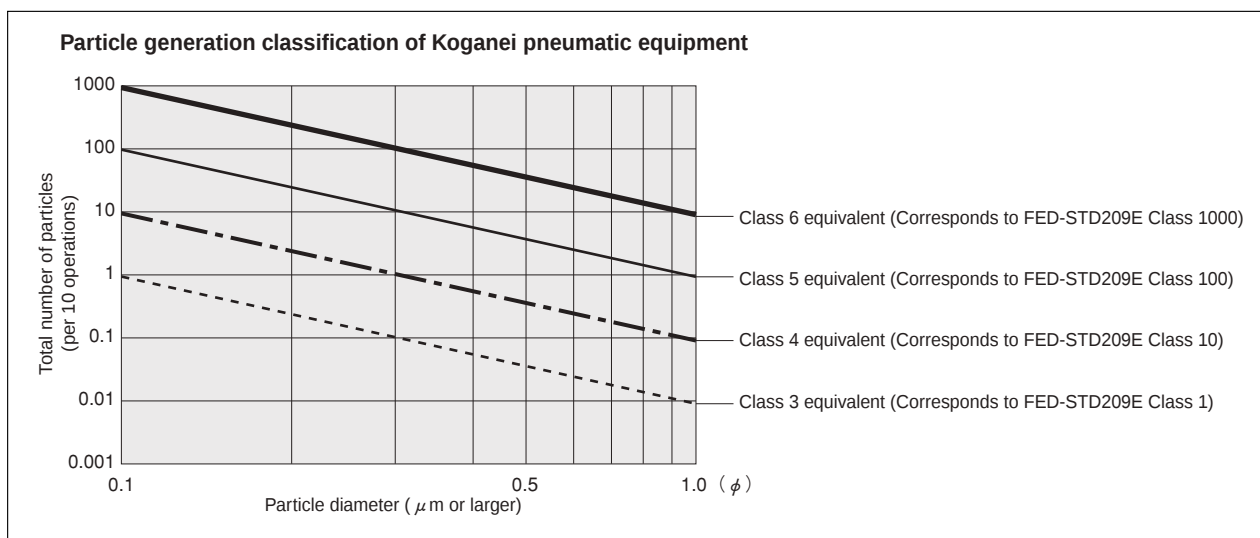
Name	Tube outer diameter	Thread size	Standard model or non-lubricant specifications	NCU Specification	CS Specification
Reducer for bulkhead ASKR	4	M8×1	ASKR8-4	←	CS-ASKR8-4
	6	M8×1	ASKR8-6	←	CS-ASKR8-6
	6	M12×1	ASKR12-6	←	CS-ASKR12-6
	8	M12×1	ASKR12-8	←	CS-ASKR12-8
	10	M12×1	ASKR12-10	←	CS-ASKR12-10
	8	M14×1	ASKR14-8	←	CS-ASKR14-8
	10	M14×1	ASKR14-10	←	CS-ASKR14-10
	12	M14×1	ASKR14-12	←	CS-ASKR14-12
	12	M18×1	ASKR18-12	←	CS-ASKR18-12

Koganei Clean System products provide complete support for the maintenance of a clean environment inside the cleanroom.

Koganei Clean System products meet the needs of the ultra-clean production environment. In everything from actuators and valves to air preparation and auxiliary equipment, anti-corrosion materials processing and other Koganei-developed design concepts serve to prevent particle contamination within the cleanroom. These perfectly designed mechanisms, which resolve even the slightest leaks to the outside during operations, have already won a high level of reliability.

Koganei Cleanliness

There is currently no standard in JIS or elsewhere for methods of evaluating cleanliness for pneumatic equipment in the cleanroom specifications. Therefore, to measure the effects of cleanroom contamination by pneumatic equipment, Koganei has decided to use "number of particles generated per 10 operations," rather than particle density. Koganei has also developed classifications for application classes in cleanroom, based on JIS and other upper limit density tables, and on the company's own experience.



- Remarks:
1. In the above table, product performance in terms of the number of particles generated per 10 operations is expressed as the upper limit of particles corresponding to the equivalent JIS or ISO class.
 2. In the above table, values in the JIS, ISO, and FED-STD upper limit density tables are calculated as upper density per liter.
 3. The classes shown are clean levels as classified in JIS and ISO.

From the above definitions, the Koganei clean level classes can be viewed as the level of average contamination per liter of surrounding air over a period of 10 operations in cleanroom. Air ventilation in cleanrooms is usually faster than 1 cycle per minute, and clean volumetric capacity is usually larger than 1 liter, which should provide a sufficient safety margin in practice.

Caution: The above conclusions are based on an ideal situation in which air ventilation is being implemented. For specific cases where air ventilation is not ensured, caution is needed since the clean classes cannot be maintained.

The clean system diagrams shown here are for Class 5 equivalent products.
For Class 4 or Class 3 equivalent products, consult us.

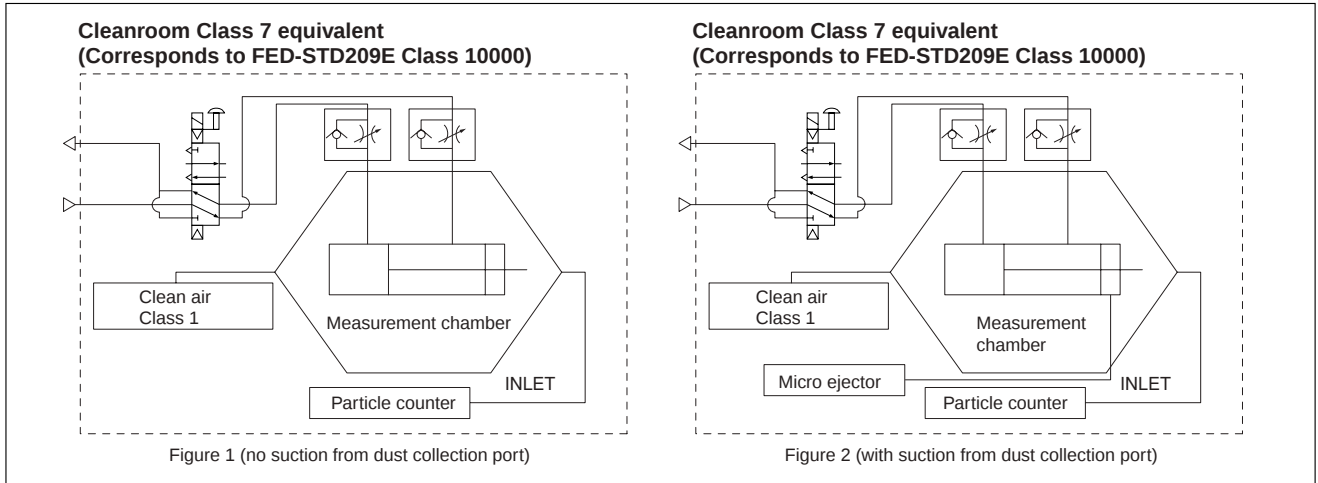
Evaluations of Cleanliness

Koganei has therefore specified its in-house measurement methods, to conduct evaluations on the cleanroom rating.

The number of particles of the Air Cylinder Cleanroom Specification is measured as shown in the method below.

1. Measurement conditions

1-1 Test circuit: Figure 1 (no suction), Figure 2 (with suction)



1-2 Operating conditions of tested cylinder

Operating frequency: 1Hz

Average speed: 500mm/s [20in./sec.]

Applied pressure: 0.5MPa [73psi.]

Suction condition: Microejector ME05, Primary side: 0.5MPa [73psi.] applied, Tube: $\phi 6$ [0.236in.]

Mounting direction: Vertical

Chamber volume: 8.3 ℓ [0.293ft.³]

2. Particle counter

Manufacturer/model: RION/KM20

Suction flow rate: 28.3 ℓ /min [1ft.³/min.]

Particle diameter: 0.1 μm , 0.2 μm , 0.3 μm , 0.5 μm , 0.7 μm , 1.0 μm

3. Measurement method

3-1 Confirmation of number of particles in the measurement system

Under the conditions in the above 1 and 2, using a particle counter to measure the sample for 9 minutes without operating the measurement sample, and confirmed the measured number of particle is 1 piece or less.

3-2 Measurement under operation

Under the conditions in the above 1 and 2, operating the measurement sample for 36 minutes, and measured the total values in the latter half of 18 minutes test.

3-3 Reconfirmation

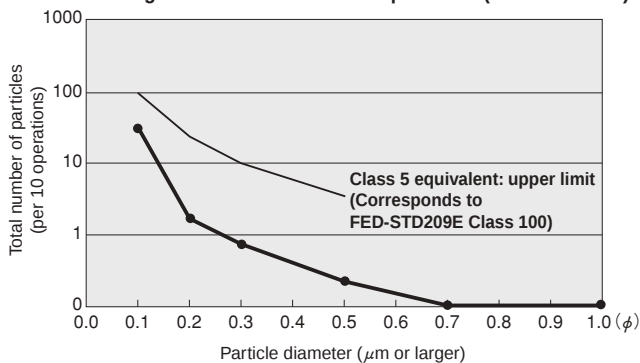
Performed the measurement in 3-1 again, to reconfirm the number of particles in the measurement system.

4. Measurement results

● Cleanroom specification

Jig Cylinder (no suction from dust collection port)

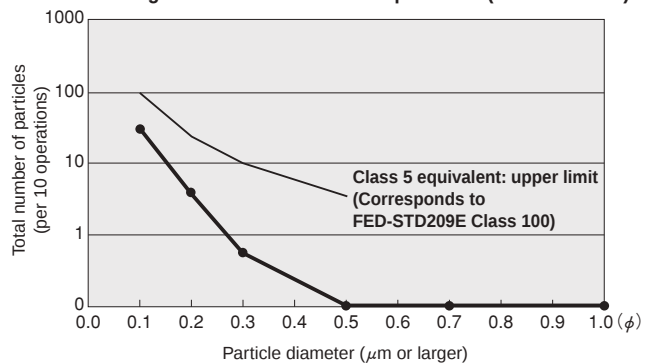
Particle generation over 1 million operations (CS-CDA16 $\times$ 30)



● Cleanroom specification

Slim Cylinder (with suction from dust collection port)

Particle generation over 1 million operations (CS-DA20 $\times$ 100)



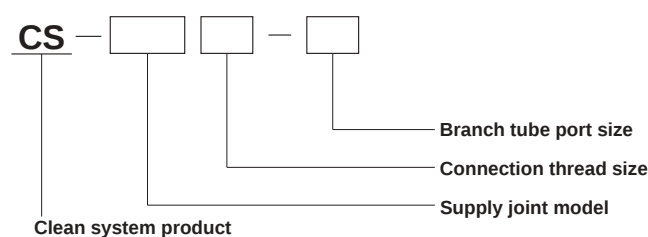
For “safety precautions” listed in the Clean System Product Drawings, see the materials below.

- For actuators, see “Safety Precautions” on p. 45 of the Actuators General Catalog .
- For valves, see “Safety Precautions” on p. 31 of the Valves General Catalog.
- For air treatment and auxiliary equipment, see “Safety Precautions” on p.31 of the General Catalog of Air Treatment, Auxiliary, Vacuum.

Specifications

Media	Air
Maximum operating pressure	0.9MPa [131psi.]
Operating vacuum pressure	-100kPa [-29.5in.Hg]
Operating temperature range	0~60°C [32~140°F]
Recommended tube	Nylon tube, urethane tube
Sales unit	1 pc.

Order Codes



●CS-STQ: Terminal quick



Main side thread size	Sub-main side tube size mm					
	4	6	8	10	12	16
M8X1 (8)	8-4	8-6	—	—	—	—
M12X1 (12)	—	12-6	12-8	—	—	—
M14X1 (14)	—	—	14-8	14-10	14-12	—
M18X1 (18)	—	—	—	—	18-12	18-16

●CS-STB: Terminal branch



Main side thread size	Sub-main side tube size mm	
	10	12
M14X1 (14)	14-10	—
M18X1 (18)	—	18-12

●CS-STS: Terminal straight



Main side thread size	Sub-main side thread size			
	M8X1	M12X1	M14X1	M18X1
M12X1 (12)	12-8	12-12	—	—
M14X1 (14)	—	12-14	14-14	—
M18X1 (18)	—	—	18-14	18-18

●CS-STT: Terminal taper



Main side thread size	Sub-main side thread size				
	M5X0.8	M6X1	Rc1/8	Rc1/4	Rc3/8
M8X1 (8)	8-M5	8-M6	8-01	—	—
M12X1 (12)	—	12-M6	12-01	—	—
M14X1 (14)	—	—	14-01	14-02	—
M18X1 (18)	—	—	—	18-02	18-03

Note: For details of the dimensions, see the General Catalog of Air Treatment, Auxiliary, Vacuum.

●CS-SBA: Bushing A



Main side thread size	Sub-main side thread size (R)			
	1/8	1/4	3/8	1/2
M8×1 (8)	8-01	—	—	—
M12×1 (12)	12-01	12-02	12-03	—
M14×1 (14)	—	14-02	14-03	14-04
M18×1 (18)	—	—	18-03	18-04

●CS-SBB: Bushing B



Main side thread size	Sub-main side thread size		
	M8×1	M12×1	M14×1
M12×1 (12)	12-8	—	—
M14×1 (14)	—	14-12	—
M18×1 (18)	—	—	18-14

●CS-SBC: Bushing C



Main side thread size	Sub-main side thread size			
	M5	M6	Rc1/8	Rc1/4
M8×1 (8)	8-M5	—	—	—
M12×1 (12)	—	12-M6	—	—
M14×1 (14)	—	—	14-01	—
M18×1 (18)	—	—	—	18-02

●CS-SLB: Elbow



Main side thread size	Sub-main side thread size (Rc)			
	1/8	1/4	3/8	1/2
M8×1 (8)	8-01	—	—	—
M12×1 (12)	12-01	12-02	—	—
M14×1 (14)	—	14-02	14-03	14-04
M18×1 (18)	—	—	18-03	18-04

●CS-SST: Socket



Main side thread size	Sub-main side thread size (Rc)			
	1/8	1/4	3/8	1/2
M8×1 (8)	8-01	—	—	—
M12×1 (12)	—	12-02	—	—
M14×1 (14)	—	—	14-03	—
M18×1 (18)	—	—	—	18-04

●CS-SKR: Reducer for bulkhead



Main side thread size	Sub-main side tube size				
	4	6	8	10	12
M8×1 (8)	8-4	8-6	—	—	—
M12×1 (12)	—	12-6	12-8	12-10	—
M14×1 (14)	—	—	14-8	14-10	14-12
M18×1 (18)	—	—	—	—	18-12

●CS-SPG: Plug



Thread size	
M8×1	8
M12×1	12
M14×1	14
M18×1	18

●CS-SCP: Cap



Thread size	
M8×1	8
M12×1	12
M14×1	14
M18×1	18

●CS-SBN: Nipple



Thread size	
M8×1	8-8
M12×1	12-12
M14×1	14-14
M18×1	18-18

●CS-SZB: Bracket



Model	Mounting model
6	SPG, SCP
12	SKR8-4
14	SKR□-6
16	SKR□-8
20	SKR□-10
22	SKR□-12
61	SPG, SCP
62	SPG, SCP

●CS-SZS: Wrench for assembling



Size mm	
Width across flats	Thickness
10×12	3.4
14×17	
19×22	4
24×27	

- Thin wrenches, specially designed for the supply joints.
- Sales unit : 1 set

Note: For details of the dimensions, see the General Catalog of Air Treatment, Auxiliary, Vacuum.