Super-Rapid *Pro-Fit*® fittings for plastic tube Patented

Threads: 1/8”, 1/4”, 3/8”, 1/2” NPTF
Diameter of tube: 1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Reusable thread seal, PTFE seal ring

CAMOZZI

The Original Camozzi design - 100% All-metal, nickel-plated brass gives equipment that stainless-steel look while eliminating the danger of broken plastic pieces. Full I.D. tube flow is always maintained for maximum Cv ratings and quick cycle times. “Push-in” and lock the tube quickly and effortlessly.

Low Profile Fit - New “Pro-Fit fittings offer the lowest profile fit for tight places. Their unique design eliminates all exposed threads making them ideal for food processing and hygienic applications.

Fast Installation - Assembly is fast due to the lack of thread preparation often necessary with other brands. The shortened thread makes for Super-rapid installations. Just a few turns and the fitting is secure.

Perfect Seal - A captured teflon ring seated around the base of the hex shoulder makes for a perfect, reusable (SAE-type) seal every time. There’s no risk of defiling pneumatic components susceptible to loose particles typical of conventional thread sealants.

Patented

Technical Data	
Material	Brass OT58 UNI 5705, nickel plated, PTFE seal ring
Collet	Brass OT58 UNI 5705, nickel plated
O-ring	Buna-N [viton available]
Threads	1/8”, 1/4” 3/8”, 1/2”NPTF
Operating pressure	From 0 - 250 psi
Vacuum rating	29” of Mercury Hg
Tube to connect	Nylon 6, 11, 12; Polyethylene, Polyurethane (recommended 90A durometer and above
Tube diameter	1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	0°F - 160°F

Camozzi “Pro-Fit” Fittings
Factory Recommended Torque Sepcifications

Thread Size	Minimum Torque		Maximum Torque	
	N-m	lb-ft	N-m	lb-ft
M5 or 10-32 UNF	0.200	0.148	2.000	1.475
1/8 NPT or BSP	1.000	0.738	10.000	7.376
1/4 NPT or BSP	4.000	2.950	20.000	14.751
3/8 NPT or BSP	5.000	3.688	20.000	14.751
1/2 NPT or BSP	8.000	5.900	40.000	29.502


P6510


P6520

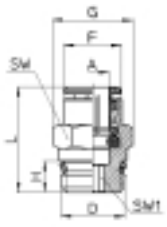

P6430


P6440


P6450


P6525

P6510
MALE CONNECTOR



	OD	THREAD NPTF						
Part No.	A	D	F	G	H	L	SW	SW1
P6510-02-02	1/8	1/8	.346	.551	.200	.728	.472	.098
P6510-02-04	1/8	1/4	.346	.629	.255	.807	.551	.098
P6510-53-02	5/32	1/8	.346	.551	.200	.728	.472	.098
P6510-53-04	5/32	1/4	.346	.629	.255	.807	.551	.098
P6510-04-02	1/4	1/8	.460	.551	.200	.807	.472	.157
P6510-04-04	1/4	1/4	.460	.629	.255	.846	.551	.157
P6510-04-06	1/4	3/8	.460	.866	.294	.885	.748	.157
P6510-05-02	5/16	1/8	.539	.629	.200	.945	.551	.196
P6510-05-04	5/16	1/4	.539	.629	.255	.945	.551	.236
P6510-05-06	5/16	3/8	.539	.866	.294	.924	.748	.236
P6510-06-02	3/8	1/8	.641	.776	.200	1.082	.669	.196
P6510-06-04	3/8	1/4	.641	.776	.255	1.102	.669	.275
P6510-06-06	3/8	3/8	.641	.866	.294	.945	.748	.275
P6510-06-08	3/8	1/2	.641	1.004	.335	.984	.866	.275
P6510-08-04	1/2	1/4	.720	.866	.255	1.161	.748	.276
P6510-08-06	1/2	3/8	.720	.866	.294	1.161	.748	.393
P6510-08-08	1/2	1/2	.720	1.004	.355	1.062	.866	.393

P6520
SWIVEL MALE ELBOW

Part No.	O.D. A	THREAD D	C	E	F	H	L	SW	SW1
		NPTF							
P6520-02-02	1/8	1/8	.236	.589	.346	.200	.807	.354	.472
P6520-02-04	1/8	1/4	.236	.629	.346	.255	.807	.354	.551
P6520-53-02	5/32	1/8	.236	.589	.346	.200	.787	.354	.472
P6520-53-04	5/32	1/4	.236	.629	.346	.255	.787	.354	.551
P6520-04-02	1/4	1/8	.267	.629	.460	.200	.885	.393	.472
P6520-04-04	1/4	1/4	.267	.649	.460	.255	.885	.393	.551
P6520-04-06	1/4	3/8	.267	.649	.460	.294	.885	.472	.748
P6520-05-02	5/16	1/8	.295	.648	.539	.200	.964	.472	.472
P6520-05-04	5/16	1/4	.295	.688	.539	.255	.964	.472	.551
P6520-05-06	5/16	3/8	.295	.688	.539	.294	.964	.472	.748
P6520-06-02	3/8	1/8	.335	.747	.641	.200	1.102	.551	.551
P6520-06-04	3/8	1/4	.335	.767	.641	.255	1.102	.551	.551
P6520-06-06	3/8	3/8	.335	.767	.641	.294	1.102	.551	.748
P6520-06-08	3/8	1/2	.335	.786	.641	.335	1.102	.551	.866
P6520-08-04	1/2	1/4	.393	.806	.720	.255	1.200	.669	.669
P6520-08-06	1/2	3/8	.393	.806	.720	.294	1.200	.669	.748
P6520-08-08	1/2	1/2	.393	.826	.720	.355	1.200	.669	.866

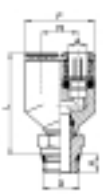
P6430
MALE BRANCH TEE SWIVEL

Part No.	OD A	THREAD D	C	E	F	H	L	SW	SW1
		NPTF							
P6430-02-02	1/8	1/8	.236	.589	.346	.200	1.614	.354	.472
P6430-53-02	5/32	1/8	.236	.589	.346	.200	1.574	.354	.472
P6430-53-04	5/32	1/4	.236	.629	.346	.255	1.574	.354	.551
P6430-04-02	1/4	1/8	.267	.609	.460	.200	1.771	.393	.472
P6430-04-04	1/4	1/4	.267	.649	.460	.255	1.770	.393	.551
P6430-04-06	1/4	3/8	.267	.649	.460	.294	1.770	.472	.748
P6430-06-04	3/8	1/4	.335	.767	.641	.255	2.204	.551	.551
P6430-06-06	3/8	3/8	.335	.767	.641	.294	2.204	.551	.748
P6430-06-08	3/8	1/2	.335	.786	.641	.335	2.204	.551	.866
P6430-08-04	1/2	1/4	.393	.806	.720	.255	2.400	.669	.669
P6430-08-06	1/2	3/8	.393	.806	.720	.294	2.400	.669	.748
P6430-08-08	1/2	1/2	.393	.826	.720	.335	2.400	.669	.866

P6440
MALE RUN TEE SWIVEL

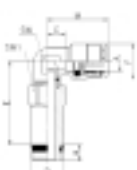
Part No.	OD A	THREAD D	C	E	F	H	L	M	SW	SW1
		NPTF								
P6440-02-02	1/8	1/8	.236	.589	.346	.200	1.594	.807	.354	0.472
P6440-53-02	5/32	1/8	.236	.589	.346	.200	1.574	.787	.354	0.472
P6440-53-04	5/32	1/4	.236	.629	.346	.255	1.673	.787	.354	0.551
P6440-04-02	1/4	1/8	.267	.609	.460	.200	1.692	.885	.393	0.472
P6440-04-04	1/4	1/4	.267	.649	.460	.255	1.791	.885	.393	0.551
P6440-04-06	1/4	3/8	.267	.649	.460	.294	1.830	.885	.472	0.748
P6440-06-04	3/8	1/4	.335	.767	.641	.255	2.125	1.102	.551	0.551
P6440-06-06	3/8	3/8	.335	.767	.641	.294	2.165	1.102	.551	0.748
P6440-06-08	3/8	1/2	.335	.786	.641	.335	2.224	1.102	.551	0.866
P6440-08-04	1/2	1/4	.393	.806	.720	.255	2.263	1.200	.669	0.669
P6440-08-06	1/2	3/8	.393	.806	.720	.294	2.303	1.200	.669	0.748
P6440-08-08	1/2	1/2	.393	.826	.720	.335	2.362	1.200	.669	0.866

P6450
SWIVEL MALE "Y"



Part No.	OD A	THREAD D	F	H	M	L
		NPTF				
P6450-02-02	1/8	1/8	.826	.200	.393	1.278
P6450-53-02	5/32	1/8	.826	.200	.393	1.278
P6450-04-02	1/4	1/8	.964	.200	.492	1.397

P6525
EXTENDED SWIVEL ELBOW



Part No.	OD A	THREAD D	C	E	F	H	M	SW	SW1
P6525-04-02	1/4	1/8	.276	1.339	.461	.197	.886	.394	.472
P6525-04-04	1/4	1/4	.276	1.339	.461	.256	.886	.394	.748
P6525-06-02	3/8	1/8	.335	1.378	.642	.197	1.102	.551	.472
P6525-06-04	3/8	1/4	.335	1.378	.642	.256	1.102	.551	.748

Super-Rapid fittings for plastic tube

Threads: 10-32 UNF, 1/8”, 1/4”, 3/8”, 1/2” NPTF
Diameter of tube: 1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”

CAMOZZI

Super-Rapid fittings are available in 24 different models. Connection and disconnection of the tube can be repeated several times and can be performed without tools. The sealing ring (o-ring) can easily be replaced if it is damaged or worn out.

Technical Data	
Material	Brass OT58 UNI 5705, nickel plated
Collet	Brass OT58 UNI 5705, nickel plated
O-ring	Buna-N [viton available]
Threads	10-32 UNF, 1/8”, 1/4” 3/8”, 1/2”NPTF
Operating pressure	From 0 - 250 psi; [same as *Pro-Fit*®]
Vacuum rating	29” of mercury Hg
Tube to connect	Nylon 6, 11, 12, Polyethylene, Polyurethane (Recommended 90A durometer and above
Tube diameter	1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	0°F - 160°F


6510


6440


6450


6430


6463


6500


6520


6800


6580


6590


6550


6540


6560


6950


6900


6810


6700


1631-01


1631-02


1631-03

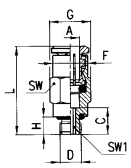

6610


6620


2023

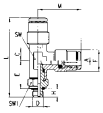

6555

6510
MALE CONNECTOR



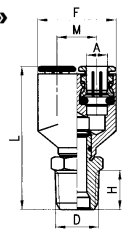
Part No.	OD A	THREAD D	C	F	G	H	L	SW	SW1
		UNF							
6512-02-32	1/8	10-32	.236	.307	.363	.157	.787	.315	.078
6512-53-32	5/32	10-32	.236	.307	.363	.157	.787	.315	.078
6512-04-32	1/4	10-32	.228	.460	.577	.157	.846	.472	.078
		NPTF							
6510-02-32	1/8	1/8	.248	.346	.551	.354	.807	.472	.098
6510-02-04	1/8	1/4	.385	.346	.629	.511	.944	.551	.098
6510-53-02	5/32	1/8	.255	.346	.551	.354	.807	.472	.098
6510-53-04	5/32	1/4	.393	.346	.629	.511	.944	.551	.098
6510-04-02	1/4	1/8	.346	.460	.551	.354	.964	.472	.157
6510-04-04	1/4	1/4	.444	.460	.629	.511	1.062	.551	.157
6510-04-06	1/4	3/8	.464	.460	.866	.511	1.082	.748	.157
6510-05-02	5/16	1/8	.452	.539	.629	.354	1.122	.551	.196
6510-05-04	5/16	1/4	.452	.539	.629	.511	1.122	.551	.236
6510-05-06	5/16	3/8	.452	.539	.866	.511	1.122	.748	.236
6510-06-02	3/8	1/8	.452	.641	.776	.354	1.220	.669	.157
6510-06-04	3/8	1/4	.590	.641	.776	.511	1.358	.669	.275
6510-06-06	3/8	3/8	.393	.641	.866	.511	1.161	.748	.275
6510-06-08	3/8	1/2	.472	.641	1.004	.708	1.240	.866	.275
6510-08-04	1/2	1/4	.610	.720	.866	.511	1.417	.748	.276
6510-08-06	1/2	3/8	.531	.720	.866	.511	1.338	.748	.393
6510-08-08	1/2	1/2	.531	.720	1.004	.708	1.338	.866	.393

6440
MALE RUN TEE SWIVEL



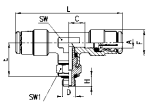
Part No.	OD A	THREAD D	C	E	F	H	L	M	SW	SW1
		UNF								
6442-02-32	1/8	10-32	.248	.512	.393	.157	1.476	.807	.354	.315
6442-53-32	5/32	10-32	.236	.512	.393	.157	1.456	.787	.354	.315
		NPTF								
6440-02-02	1/8	1/8	.248	.708	.393	.354	1.692	.807	.354	.472
6440-53-02	5/32	1/8	.236	.708	.393	.354	1.673	.787	.354	.472
6440-53-04	5/32	1/4	.236	.748	.393	.511	1.830	.787	.354	.551
6440-04-02	1/4	1/8	.267	.728	.500	.354	1.790	.885	.393	.472
6440-04-04	1/4	1/4	.267	.767	.500	.511	1.948	.885	.393	.551
6440-04-06	1/4	3/8	.267	.728	.500	.511	1.948	.885	.472	.748
6440-06-04	3/8	1/4	.335	.885	.688	.511	2.283	1.102	.551	.551
6440-06-06	3/8	3/8	.335	.846	.688	.511	2.283	1.102	.551	.748
6440-06-08	3/8	1/2	.335	.964	.688	.708	2.480	1.102	.551	.866
6440-08-04	1/2	1/4	.393	.925	.767	.511	2.421	1.200	.669	.669
6440-08-06	1/2	3/8	.393	.885	.767	.511	2.421	1.200	.669	.748
6440-08-08	1/2	1/2	.393	1.004	.767	.708	2.618	1.200	.669	.866

6450
SWIVEL MALE «Y»



Part No.	OD A	THREAD D	F	H	M	L
		UNF				
6451-02-32	1/8	10-32	.826	.177	.393	1.043
		NPTF				
6450-02-02	1/8	1/8	.826	.374	.393	1.594
6450-53-02	5/32	1/8	.826	.374	.393	1.594
6450-04-02	1/4	1/8	.964	.374	.492	1.732

6430
MALE BRANCH TEE SWIVEL



Part No.	OD A	THREAD D	C	E	F	H	L	SW	SW1
		UNF							
6432-02-32	1/8	10-32	.248	.512	.393	.157	1.614	.354	.315
6432-53-32	5/32	10-32	.236	.512	.393	.157	1.574	.354	.315
		NPTF							
6430-02-02	1/8	1/8	.248	.708	.393	.354	1.614	.354	.472
6430-53-02	5/32	1/8	.236	.708	.393	.354	1.574	.354	.472
6430-53-04	5/32	1/4	.236	.748	.393	.511	1.574	.354	.551
6430-04-02	1/4	1/8	.267	.728	.500	.354	1.771	.393	.472
6430-04-04	1/4	1/4	.267	.767	.500	.511	1.771	.393	.551
6430-04-06	1/4	3/8	.287	.728	.500	.511	1.771	.472	.748
6430-06-04	3/8	1/4	.335	.885	.688	.511	2.204	.551	.551
6430-06-06	3/8	3/8	.335	.846	.688	.511	2.204	.551	.748
6430-06-08	3/8	1/2	.335	.964	.688	.708	2.204	.551	.866
6430-08-04	1/2	1/4	.393	.925	.767	.511	2.401	.669	.669
6430-08-06	1/2	3/8	.393	.885	.767	.511	2.401	.669	.748
6430-08-08	1/2	1/2	.393	1.004	.767	.708	2.401	.669	.866

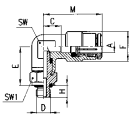
6463
FEMALE CONNECTOR

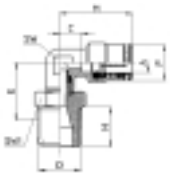
Part No.	OD A	THREAD D	C	F	G	H	L	SW
		NPTF						
6463-02-02	1/8	1/8	.413	.354	.639	.335	1.003	.551
6463-02-04	1/8	1/4	.551	.346	.776	.472	1.141	.669
6463-53-02	5/32	1/8	.413	.354	.639	.335	.964	.551
6463-53-04	5/32	1/4	.551	.346	.776	.472	1.102	.669
6463-04-02	1/4	1/8	.425	.460	.639	.335	1.063	.551
6463-04-04	1/4	1/4	.562	.460	.776	.472	1.200	.669
6463-06-04	3/8	1/4	.571	.641	.776	.472	1.358	.669
6463-06-06	3/8	3/8	.590	.641	1.004	.492	1.377	.866

6500
MALE ELBOW

Part No.	OD A	THREAD D	C	E	F	H	M	SW
		NPTF						
6500-04-02	1/4	1/8	.267	.531	.500	.374	.905	0.393
6500-04-04	1/4	1/4	.267	.590	.500	.511	.905	0.393
6500-06-04	3/8	1/4	.335	.688	.688	.511	1.122	0.551
6500-06-06	3/8	3/8	.335	.688	.688	.511	1.122	0.551

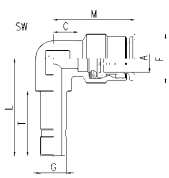
6520
SWIVEL MALE ELBOW





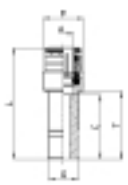
Part No.	OD A	THREAD D	C	E	F	H	M	SW	SW1
		UNF							
6522-02-32	1/8	10-32	.248	.512	.393	.157	.807	.354	.315
6522-53-32	5/32	10-32	.236	.512	.393	.157	.787	.354	.315
		NPTF							
6520-02-02	1/8	1/8	.248	.708	.393	.354	.807	.354	.472
6520-02-04	1/8	1/4	.248	.748	.393	.511	.807	.354	.551
6520-53-02	5/32	1/8	.236	.708	.393	.354	.787	.354	.472
6520-53-04	5/32	1/4	.236	.748	.393	.511	.787	.354	.551
6520-04-02	1/4	1/8	.267	.728	.500	.354	.905	.393	.472
		UNF							
6522-04-32	1/4	10-32	.267	.531	.500	.157	.905	.394	.394
		NPTF							
6520-04-04	1/4	1/4	.267	.767	.500	.511	.905	.393	.551
6520-04-06	1/4	3/8	.267	.728	.500	.511	.905	.472	.748
6520-05-02	5/16	1/8	.295	.767	.590	.354	.964	.472	.472
6520-05-04	5/16	1/4	.295	.807	.590	.511	.964	.472	.551
6520-05-06	5/16	3/8	.295	.807	.590	.511	.964	.472	.748
6520-06-02	3/8	1/8	.335	.866	.688	.354	1.102	.551	.551
6520-06-04	3/8	1/4	.335	.885	.688	.511	1.102	.551	.551
6520-06-06	3/8	3/8	.335	.846	.688	.511	1.102	.551	.748
6520-06-08	3/8	1/2	.335	.964	.688	.708	1.102	.551	.866
6520-08-04	1/2	1/4	.393	.925	.767	.511	1.200	.669	.669
6520-08-06	1/2	3/8	.393	.885	.767	.511	1.200	.669	.748
6520-08-08	1/2	1/2	.393	1.004	.767	.708	1.200	.669	.866

6555
PLUG-IN ELBOW



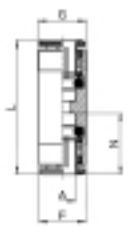
Part No.	OD A	OD G	C	L	F	T	M	SW
6555-53-53	5/32	5/32	.236	.945	.354	.650	.787	.354
6555-04-04	1/4	1/4	.276	1.024	.461	.709	.886	.394
6555-06-06	3/8	3/8	.295	1.18	.539	.807	.965	.472

6800
REDUCER



Part No.	OD A	G	C	F	L	T
6800-02-04	1/8	1/4	.787	.393	1.377	.708
6800-53-04	5/32	1/4	.787	.393	1.338	.708
6800-04-06	1/4	3/8	.858	.511	1.496	.905
6800-04-08	1/4	1/2	.858	.511	1.496	.905
6800-06-08	3/8	1/2	1.003	.669	1.791	.944

6580
UNION

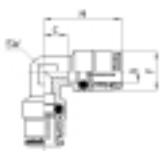


Part No.	OD A	F	G	L	N
6580-02-00	1/8	.346	.393	1.259	.590
6580-53-00	5/32	.346	.393	1.181	.551
6580-04-00	1/4	.460	.472	1.397	.637
6580-05-00	5/16	.539	.551	1.229	.688
6580-06-00	3/8	.641	.669	1.673	.787
6580-08-00	1/2	.720	.748	1.751	.826

6590
BULKHEAD UNION

Part No.	OD A	B	F	L	N	MAX	SW	SW1	T
6590-02-00	1/8	M10X1	.346	1.259	.590	.354	.551	.551	.826
6590-53-00	5/32	M10X1	.346	1.181	.551	.315	.551	.551	.787
6590-04-00	1/4	M14X1	.492	1.397	.637	.374	.669	.669	.826
6590-05-00	5/16	M16X1	.539	1.496	.688	.413	.748	.748	.826
6590-06-00	3/8	M18X1	.641	1.673	.767	.472	.866	.866	.925
6590-08-00	1/2	M20X1	.720	1.751	.826	.531	.944	.944	.984

6550
UNION ELBOW

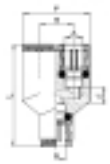


Part No.	O.D. A	C	F	M	SW
6550-02-00	1/8	.236	.393	.826	.354
6550-53-00	5/32	.236	.393	.787	.354
6550-04-00	1/4	.267	.500	.905	.393
6550-05-00	5/16	.295	.590	.984	.472
6550-06-00	3/8	.335	.688	1.122	.551
6550-08-00	1/2	.393	.767	1.220	.669

6540
UNION TEE

Part No.	OD A	C	F	L	M	SW
6540-02-00	1/8	.236	.393	1.653	.826	.354
6540-53-00	5/32	.236	.393	1.574	.787	.354
6540-04-00	1/4	.267	.500	1.811	.905	.393
6540-05-00	5/16	.295	.590	1.968	.984	.472
6540-06-00	3/8	.335	.688	2.244	1.122	.551
6540-08-00	1/2	.393	.767	2.440	1.220	.748

6560
UNION «Y»

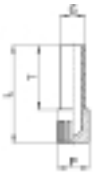


Part No.	OD A	C	F	L	M
6560-02-00	1/8	.236	.826	1.417	.393
6560-53-00	5/32	.236	.826	1.338	.393
6560-04-00	1/4	.236	.964	1.515	.492

6950
DOUBLE UNION

Part No.	G	L
6950-02-00	1/8	1.279
6950-53-00	5/32	1.279
6950-04-00	1/4	1.397
6950-05-00	5/16	1.594
6950-06-00	3/8	1.811
6950-08-00	1/2	1.889

6900
PLUG

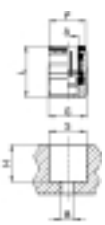


Part No.	G	L	P	T
6900-02-00	1/8	1.043	.236	.649
6900-53-00	5/32	1.043	.236	.649
6900-04-00	1/4	1.102	.315	.708
6900-05-00	5/16	1.200	.393	.807
6900-06-00	3/8	1.377	.472	.905
6900-08-00	1/2	1.417	.551	.944

6810
STEM ADAPTER

Part No.	G	THREAD D NPTF	H	T	L	SW
6810-02-02	1/8	1/8	.374	.649	1.200	.472
6810-02-04	1/8	1/4	.511	.649	1.358	.551
6810-53-02	5/32	1/8	.374	.649	1.200	.472
6810-53-04	5/32	1/4	.511	.649	1.358	.551
6810-04-02	1/4	1/8	.374	.708	1.259	.472
6810-04-04	1/4	1/4	.511	.708	1.417	.551
6810-05-02	5/16	1/8	.374	.807	1.358	.472
6810-05-04	5/16	1/4	.511	.807	1.338	.551
6810-06-04	3/8	1/4	.511	.905	1.614	.669
6810-06-06	3/8	3/8	.511	.905	1.614	.748
6810-08-06	1/2	3/8	.511	.944	1.653	.748
6810-08-08	1/2	1/2	.708	.944	1.870	.866

6700
CARTRIDGE



Part No.	OD A	F	G	L	S	H	B
6700-02-00	1/8	.338	.354	.590	.344	.433	.137
6700-53-00	5/32	.338	.354	.570	.344	.433	.137
6700-04-00	1/4	.464	.480	.649	.470	.472	.157
6700-05-00	5/16	.543	.559	.689	.549	.551	.236
6700-06-00	3/8	.622	.637	.787	.627	.590	.315
6700-08-00	1/2	.740	.755	.826	.746	.629	.413

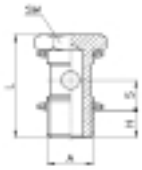
* Hole tolerances: +0.002-0.000 [in.]

* For plastic [non-metal] manifolds, reduce all hole dimensions “S” by 0.02 mm [0.001 in.]

* INSTALLATION: Drill or bore hole per specifications per size of cartridge. Simply press fit cartridge into hole with an evenly distributed force over the top suface. Removal of the collet ring is not necessary.

* Cartridge fittings are useful for installations in various manifolds and/or distribution blocks when drilling and tapping are not desirable.

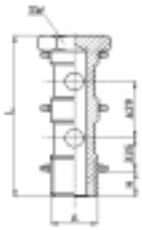
1631-01
STUD MANIFOLDS



*NPTF 2520 ADAPTERS INCLUDED

Part No.	A	H	L	S	SW
	UNF				
1631-01-32	10-32	.157	.708	.177	.315
	NPTF*				
1631-01-02	1/8	.236	1.063	.335	.551
1631-01-04	1/4	.354	1.161	.335	.669
1631-01-06	3/8	.354	1.181	.335	.748

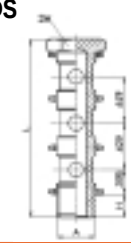
1631-02
STUD MANIFOLDS



*NPTF 2520 ADAPTERS INCLUDED

Part No.	A	H	L	SW
	NPTF*			
1631-02-02	1/8	.236	1.692	.551
1631-02-04	1/4	.315	1.791	.669
1631-02-06	3/8	.354	1.811	.748

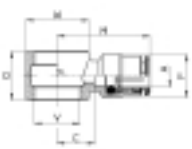
1631-03
STUD MANIFOLDS



*NPTF 2520 ADAPTERS INCLUDED

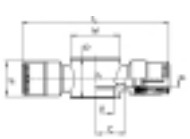
Part No.	A	H	L	SW
	NPTF*			
1631-03-02	1/8	.236	2.322	.551
1631-03-04	1/4	.315	2.421	.669
1631-03-06	3/8	.354	2.440	.748

6610
BANJO



Part No.	O.D. A	V	C	F	M	O	V	W
6610-53-32	5/32	10-32	.196	.354	.748	.354	.204	.354
6610-02-02	1/8	1/8	.315	.393	.885	.571	.385	.551
6610-53-02	5/32	1/8	.315	.393	.885	.571	.385	.551
6610-04-02	1/4	1/8	.346	.500	.984	.571	.385	.551
6610-04-04	1/4	1/4	.425	.500	1.063	.571	.519	.708
6610-06-04	3/8	1/4	.393	.688	1.181	.571	.519	.708
6610-06-06	3/8	3/8	.452	.688	1.240	.571	.657	.826

6620
DOUBLE BANJO



Part No.	O.D. A	V	C	F	L	O	V	W
6620-53-32	5/32	10-32	.197	.354	1.496	.354	.205	.354
6620-04-02	1/4	1/8	.315	.512	1.890	.571	.386	.551
6620-04-04	1/4	1/4	.394	.512	2.087	.571	.520	.709
***6620-06-04**	3/8	1/4	.394	.689	2.323	.571	.520	.709
6620-06-06	3/8	3/8	.453	.689	2.441	.571	.657	.827

***** Special order only.

2023
FEMALE BANJO

Part No.	B	V	O	M	W
	UNF				
2023-32-32	10-32	10-32	.354	.413	.354
	NPTF				
2023-02-02	1/8	1/8	.570	.826	.551
2023-04-04	1/4	1/4	.570	1.023	.708
2023-06-06	3/8	3/8	.570	1.122	.826

Example assembly of stud manifold with various banjos

Coated Super-Rapid fittings for plastic tube

Threads: 1/8”, 1/4”, 3/8”, 1/2” NPTF
Diameter of tube: 1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Pre-applied thread sealant style fittings

Coated Super-Rapid fittings are available in 6 different models. Connection and disconnection of the tube can be repeated several times and can be performed without tools. The sealing ring (o-ring) can easily be replaced if it is damaged or worn out.
Coating material is VibraSeal 516 by Loctite.

Technical Data	
Material	Brass OT58 UNI 5705, nickel plated, VibraSeal 516 (Loctite)
Collet	Brass OT58 UNI 5705, nickel plated
O-ring	Buna-N [viton available]
Threads	1/8”, 1/4” 3/8”, 1/2”NPTF
Operating pressure	From 0 - 250 psi
Vacuum rating	29” of mercury Hg
Tube to connect	Nylon 6, 11, 12, Polyethylene, Polyurethane (recommended 90A and above
Tube diameter	1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	0°F - 160°F


C6510


C6440

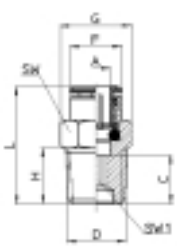

C6450


C6430


C6500


C6520

C6510
MALE CONNECTOR

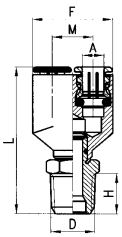


Part No.	OD A	THREAD D	C	F	G	H	L	SW	SW1
		NPTF							
C6510-02-02	1/8	1/8	.248	.346	.551	.354	.807	.472	.098
C6510-02-04	1/8	1/4	.385	.346	.629	.511	.944	.551	.098
C6510-53-02	5/32	1/8	.255	.346	.551	.354	.807	.472	.098
C6510-53-04	5/32	1/4	.393	.346	.629	.511	.944	.551	.098
C6510-04-02	1/4	1/8	.346	.460	.551	.354	.964	.472	.157
C6510-04-04	1/4	1/4	.444	.460	.629	.511	1.062	.551	.157
C6510-04-06	1/4	3/8	.464	.460	.866	.511	1.082	.748	.157
C6510-05-02	5/16	1/8	.452	.539	.629	.354	1.122	.551	.196
C6510-05-04	5/16	1/4	.452	.539	.629	.511	1.122	.551	.236
C6510-05-06	5/16	3/8	.452	.539	.866	.511	1.122	.748	.236
C6510-06-02	3/8	1/8	.452	.641	.776	.354	1.220	.669	.157
C6510-06-04	3/8	1/4	.590	.641	.776	.511	1.358	.669	.275
C6510-06-06	3/8	3/8	.393	.641	.866	.511	1.161	.748	.275
C6510-06-08	3/8	1/2	.472	.641	1.004	.708	1.240	.866	.275
C6510-08-04	1/2	1/4	.610	.720	.866	.511	1.417	.748	.275
C6510-08-06	1/2	3/8	.531	.720	.866	.511	1.338	.748	.393
C6510-08-08	1/2	1/2	.531	.720	1.004	.708	1.338	.866	.393

C6440
MALE RUN TEE SWIVEL

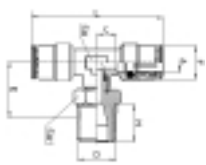
Part No.	OD A	THREAD D	C	E	F	H	L	M	SW	SW1
		NPTF								
C6440-02-02	1/8	1/8	.248	.708	.393	.354	1.692	.807	.354	.472
C6440-53-02	5/32	1/8	.236	.708	.393	.354	1.673	.787	.354	.472
C6440-53-04	5/32	1/4	.236	.748	.393	.511	1.830	.787	.354	.551
C6440-04-02	1/4	1/8	.267	.728	.500	.354	1.790	.885	.393	.472
C6440-04-04	1/4	1/4	.267	.767	.500	.511	1.948	.885	.393	.551
C6440-04-06	1/4	3/8	.287	.728	.500	.511	1.948	.885	.472	.748
C6440-06-04	3/8	1/4	.335	.885	.688	.511	2.283	1.102	.551	.551
C6440-06-06	3/8	3/8	.335	.846	.688	.511	2.283	1.102	.551	.748
C6440-06-08	3/8	1/2	.335	.964	.688	.708	2.480	1.102	.551	.866
C6440-08-04	1/2	1/4	.393	.925	.767	.511	2.421	1.200	.669	.669
C6440-08-06	1/2	3/8	.393	.885	.767	.511	2.421	1.200	.669	.748
C6440-08-08	1/2	1/2	.393	1.004	.767	.708	2.618	1.200	.669	.866

C6450
SWIVEL MALE "Y"



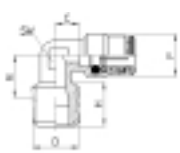
Part No.	OD A	THREAD D	F	H	M	L
		NPTF				
C6450-02-02	1/8	1/8	.826	.374	.393	1.594
C6450-53-02	5/32	1/8	.826	.374	.393	1.594
C6450-04-02	1/4	1/8	.964	.374	.492	1.732

C6430
MALE BRANCH TEE SWIVEL



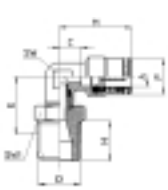
Part No.	OD A	THREAD D	C	E	F	H	L	SW	SW1
		NPTF							
C6430-02-02	1/8	1/8	.248	.708	.393	.354	1.614	.354	.472
C6430-53-02	5/32	1/8	.236	.708	.393	.354	1.574	.354	.472
C6430-53-04	5/32	1/4	.236	.748	.393	.511	1.574	.354	.551
C6430-04-02	1/4	1/8	.267	.728	.500	.354	1.771	.393	.472
C6430-04-04	1/4	1/4	.267	.767	.500	.511	1.771	.393	.551
C6430-04-06	1/4	3/8	.267	.728	.500	.511	1.771	.472	.748
C6430-06-04	3/8	1/4	.335	.885	.688	.511	2.204	.551	.551
C6430-06-06	3/8	3/8	.335	.846	.688	.511	2.204	.551	.748
C6430-06-08	3/8	1/2	.335	.964	.688	.708	2.204	.551	.866
C6430-08-04	1/2	1/4	.393	.925	.767	.511	2.401	.669	.669
C6430-08-06	1/2	3/8	.393	.885	.767	.511	2.401	.669	.748
C6430-08-08	1/2	1/2	.393	1.004	.767	.708	2.401	.669	.866

C6500
MALE ELBOW



Part No.	OD A	THREAD D	C	E	F	H	M	SW
		NPTF						
C6500-04-02	1/4	1/8	.267	.531	.500	.374	.905	0.393
C6500-04-04	1/4	1/4	.267	.590	.500	.511	.905	0.393
C6500-06-04	3/8	1/4	.335	.688	.688	.511	1.122	0.551
C6500-06-06	3/8	3/8	.335	.688	.688	.511	1.122	0.551

C6520
SWIVEL MALE ELBOW



Part No.	OD A	THREAD D	C	E	F	H	M	SW	SW1
		NPTF							
C6520-02-02	1/8	1/8	.248	.708	.393	.354	.807	.354	.472
C6520-02-04	1/8	1/4	.248	.748	.393	.511	.807	.354	.551
C6520-53-02	5/32	1/8	.236	.708	.393	.354	.787	.354	.472
C6520-53-04	5/32	1/4	.236	.748	.393	.511	.787	.354	.551
C6520-04-02	1/4	1/8	.267	.728	.500	.354	.905	.393	.472
C6520-04-04	1/4	1/4	.267	.767	.500	.511	.905	.393	.551
C6520-04-06	1/4	3/8	.287	.728	.500	.511	.905	.472	.748
C6520-05-02	5/16	1/8	.295	.767	.590	.354	.964	.472	.472
C6520-05-04	5/16	1/4	.295	.807	.590	.511	.964	.472	.551
C6520-05-06	5/16	3/8	.295	.807	.590	.511	.964	.472	.748
C6520-06-02	3/8	1/8	.335	.866	.688	.354	1.102	.551	.551
C6520-06-04	3/8	1/4	.335	.885	.688	.511	1.102	.551	.511
C6520-06-06	3/8	3/8	.335	.846	.688	.511	1.102	.551	.748
C6520-06-08	3/8	1/2	.335	.964	.688	.708	1.102	.551	.866
C6520-08-04	1/2	1/4	.393	.925	.767	.511	1.200	.669	.669
C6520-08-06	1/2	3/8	.393	.885	.767	.511	1.200	.669	.748
C6520-08-08	1/2	1/2	.393	1.004	.767	.708	1.200	.669	.866

Pipe fittings and accessories

Connections: 10-32 UNF, 1/8”, 1/4”, 3/8”, 1/2” NPTF

When involved in factory maintenance or plant installation, its often difficult to be certain which size of fittings will be required. Pipe fittings provide a cost effective solution to this problem. The full range of fittings includes straight, L-shaped, T-shaped, and cross piece male or female couplings and are available in a varitey of thread sizes up to 1/2”.
Material brass: OT58 UNI 5705

Technical Data	
Material	Brass OT58 UNI 5705, nickel plated
Threads	10-32 UNF, 1/8”, 1/4” 3/8”, 1/2”NPTF
Operating pressure	From 0 - 250 psi
Fluid	Compressed air
	[for other types of fluid please contact our engineers]


2500


2520


2521


2530


2543


2020

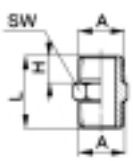

2013


2003


2033

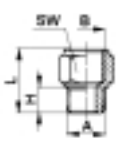

3033

2500
HEX NIPPLE

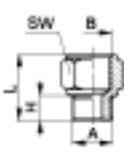
Part No.	A	H	L	SW
	NPTF			
2500-02-02	1/8	.374	.925	.472
2500-04-04	1/4	.511	1.220	.551
2500-06-06	3/8	.511	1.220	.748
2500-08-08	1/2	.708	.633	.866

2520
ADAPTER
BSP - FEMALE
NPTF - MALE

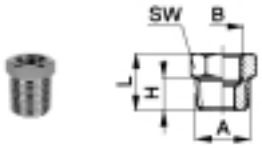
Part No.	A	B	H	L	SW
	UNF	METR.			
2520-32-M5	10-32	M5	.177	.472	.315
	NPTF	BSP			
2520-02-1/8	1/8	1/8	.374	.767	.551
2520-04-1/4	1/4	1/4	.511	1.063	.669
2520-06-3/8	3/8	3/8	.511	1.082	.748

2521
ADAPTER
BSP - MALE
NPTF - FEMALE

Part No.	A	B	H	L	SW
	BSP	NPTF			
2521-1/8-02	1/8	1/8	.236	.669	.551
2521-1/4-04	1/4	1/4	.315	.905	.669
2521-3/8-06	3/8	3/8	.354	.964	.866
2521-1/2-08	1/2	1/2	.393	1.161	1.063

2530
NPTF - NPTF REDUCER

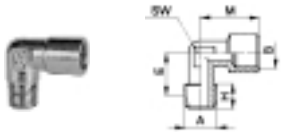


Part No.	A	B	H	L	SW
	NPTF	UNF			
2530-02-32	1/8	10-32	.374	.551	.472
		NPTF			
2530-04-02	1/4	1/8	.511	.708	.551
2530-06-02	3/8	1/8	.511	.708	.748
2530-06-04	3/8	1/4	.511	.708	.748
2530-08-04	1/2	1/4	.708	.925	.866
2530-08-06	1/2	3/8	.708	.925	.866

2543
COUPLING
NPTF FEMALE TO NPTF FEMALE

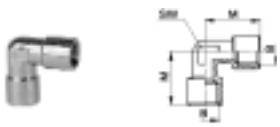
Part No.	THREAD B	L	SW
	NPTF		
2543-02-02	1/8	.708	.551
2543-04-04	1/4	.984	.669
2543-06-06	3/8	1.023	.866
2543-08-08	1/2	1.338	1.063

2020
ELBOW
NPTF FEMALE TO NPTF MALE



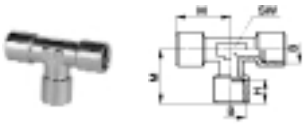
Part No.	A	B	E	H	M	SW
	NPTF	NPTF				
2020-02-00	1/8	1/8	.610	.335	.846	.433
2020-04-00	1/4	1/4	.767	.511	1.023	.511
2020-06-00	3/8	3/8	.807	.511	1.122	.669
2020-08-00	1/2	1/2	.964	.649	1.338	.836

2013
ELBOW
NPTF FEMALE TO NPTF FEMALE



Part No.	THREAD B	M	SW
	NPTF		
2013-02-00	1/8	.846	.433
2013-04-00	1/4	1.023	.511
2013-06-00	3/8	1.122	.669
2013-08-00	1/2	1.338	.826

2003
NPTF TEE FEMALE

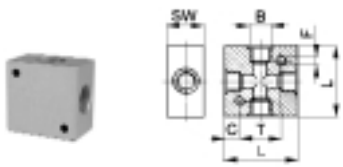


Part No.	THREAD B	H	M	SW
	NPTF			
2003-02-00	1/8	.335	.846	.433
2003-04-00	1/4	.472	1.023	.511
2003-06-00	3/8	.492	1.122	.669
2003-08-00	1/2	.649	1.338	.826

2033
FEMALE CROSS

Part No.	THREAD B	H	M	SW
	UNF			
2033-32-00	10-32	.157	.354	.354
	NPTF			
2033-02-00	1/8	.295	.827	.433
2033-04-00	1/4	.433	1.004	.512
2033-06-00	3/8	.453	1.102	.699

3033
DISTRIBUTION BLOCK [aluminum]



Part No.	THREAD B	C	F	L	T	SW
	NPTF					
3033-02-00	1/8	.157	.177	.984	.669	.630
3033-04-00	1/4	.276	.217	1.575	1.024	.787
3033-06-00	3/8	.315	.217	1.969	1.339	1.024
3033-08-00	1/2	.315	.217	1.969	1.339	1.260

Nylon 11 tubing and accessories - inch sizes

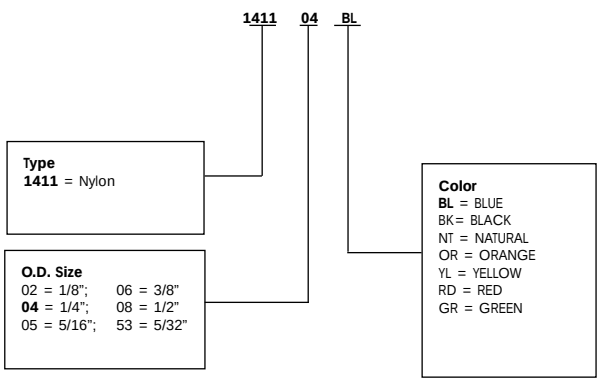
Diameter of tube: 1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2” OD
Reel length 100 feet

O.D.	I.D.	STD reel length feet
1/8	.093	100
5/32	.106	100
1/4	.180	100
5/16	.232	100
3/8	.275	100
1/2	.375	100

Technical Data	
Material	Nylon 11 (Polyamide)
Melting point	354° ± 4° (flame retardant rating UL-94 HB)
Water absorption (ASTM D-50)	1.1%
Operating pressure	From 0 - 250 psi*
Bursting pressure	1000 psi
Hardness	78 Rockwell R
Tensile strength at break (D-638)	9500 psi
Elongation at break (D-638)	360 psi
Flexural modulus (D-790)	47,000 psi
Tube diameter	1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	-60°F - 160°F * (See working pressure table below)

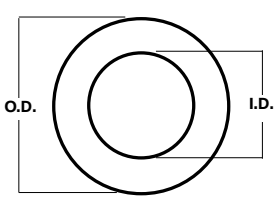
** See page 95 for additional technical data

Code of Tubing



Working Pressure Information*

Size Inches	Tolerances for OD (inches)	Min. Bend. Rad. Inches	Working Pressure (PSI) @75°F	@100°F	@125°F	@150°F
1/8 x .093	+.002 - .003	.375	225	171	148	125
5/32 x .106	+.002 - .003	.500	275	209	181	160
1/4 x .180	+.002 - .004	.875	250	190	165	137
5/16 x .232	+.002 - .004	1.250	220	170	145	121
3/8 x .275	+.002 - .004	1.500	220	170	145	128
1/2 x .375	+.002 - .004	2.00	200	152	133	125



PART NUMBER: PNZ - 12
PLASTIC TUBE CUTTER

REPLACEMENT BLADES:
PNZ-12 BLADES

How To Use:
Insert plstic tube to desired length, allow tube cutter to close, then apply pressure until tube snaps off.

Chemical resistance of nylon tubing	
Acids	Good to ph-5
Alkalies	Good to ph-11
Hydrocarbons - aromatic	Excellent
Hydrocarbons - aliphatic	Excellent
Ketones	Excellent
Ethers	Excellent
Esters	Excellent
Alcohols	Good
Salts, neutral	Excellent
Freons	Excellent
Continuos sunlight	Fair
Zinc chloride	Good

Polyurethane tubing - inch sizes

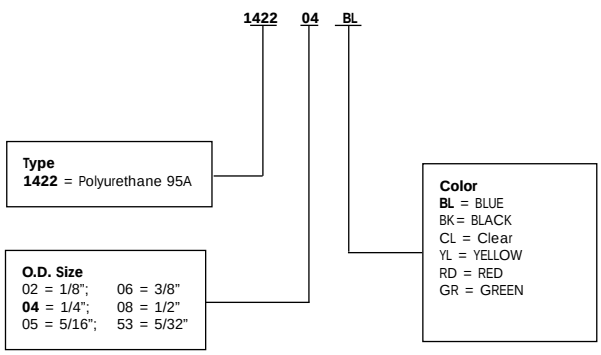
Diameter of tube: 1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2” OD
Shore 95A durometer
Reel length 100 feet

O.D.	I.D.	STD reel length feet
1/8	.066	100
5/32	3/32	100
1/4	.160	100
5/16	.216	100
3/8	.245	100
1/2	.320	100

Technical Data	
Material	Polyurethane (Ether Based), PUR 95A
Vacuum rating	to 28” Hg
Operating pressure	From 0 - 230 psi
Bursting pressure	690 psi
Hardness	95 Shore A
Tube diameter	1/8”, 5/32”, 1/4”, 5/16”, 3/8”, 1/2”
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	-40°F - 165°F

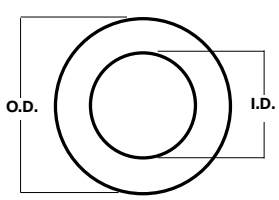
** See page 95 for additional technical data; * See working pressure table below

Code of Tubing

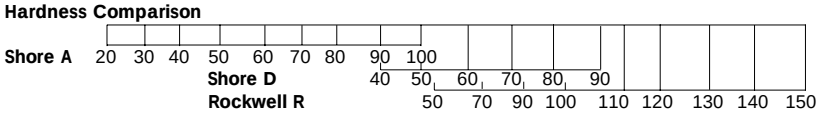


Working Pressure Information*

Size Inches	Tolerances for OD (inches)	Min. Bend. Rad. Inches	Working Pressure (PSI) @75°F	@100°F	@125°F	@150°F
1/8 x .066	±.005	1/4	233	172	140	116
5/32 x 3/32	±.005	3/8	176	130	106	88
1/4 x .160	±.005	1/2	148	110	89	74
5/16 x .216	±.005	3/4	150	111	90	75
3/8 x .245	±.005	7/8	147	109	88	74
1/2 x .320	±.005	1 1/8	140	104	84	70



Hardness Comparison

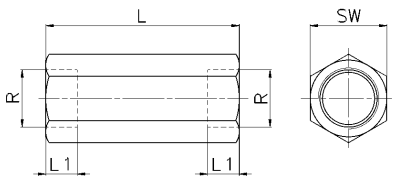


Automatic valves

Series VNR, VSO, VSC
Ports 10-32 UNF, 1/8”, 1/4”, 3/8”, 1/2” NPTF
cartridge dia. 4 mm [5/32” O.D.]

Automatic valves are defined as all those valves which change their state simply as a result of compressed air being present or absent at their inlets.

General Data	
Valve group	Automatic valves
Construction	Poppet type
Mounting	In-line
Materials	Nickel-plated brass body, Brass body, Buna-N seals, Polyurethane seals, Stainless steel spring
Port sizes	10-32 UNF, 1/8", 1/4", 3/8", 1/2" NPTF; 5/32" O.D. cartridge
Installation	In-line
Operating temperature	32 - 175° F, [dry air necessary down to −4° F]
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, [3º - 10º E]
Pneumatic Data	
Operating pressure	0.3 - 10 bar, [5 - 145 psi]
Nominal pressure	6 bar, [87 psi]
Nominal flow	*Qn Series VNR: 1/8" = 600 NL/min. [21.18 SCFM] 1/4" = 1400 NL/min. [49.44 SCFM]
	Series VSC: P -> A, 1/8" = 600 NL/min. [21.19 SCFM] 1/4" = 1100 NL/min. [38.84 SCFM) 3/8" = 3300 NL/min. [116.53 SCFM] 1/2" = 3300 NL/min. [116.53 SCFM]
	A -> R, 1/8" = 950 NL/min. [33.55 SCFM] 1/4" = 1900 NL/min. [67.09 SCFM] 3/8" = 5100 NL/min. [180.08 SCFM] 1/2" = 5100 NL/min. [180.08 SCFM]
	Series VSO: P -> A, 5/32" O.D. = 30 NL/min. [1.06 SCFM] A -> R, 5/32" O.D. = 80 NL/min. [2.82 SCFM]
*Qn flowrate [SCFM] determined with a supply pressure of 6 bar, [87 psi], and with a pressure drop of 1 bar, [14.5 psi].	
** Soft-seal repair kits are available for Series VSC Quick-exhaust valves.	
***Dimensions are in inches.	



Mod.	R	L	L1	SW
VNR-205-M5	10-32 UNF	0.984	.236	.314
VNR-210-02	1/8”	1.338	.274	.511
VNR-843-07TF	1/4”	1.889	.354	.669

Unidirectional valves

The unidirectional valves in the VNR Series are available with 10-32 UNF, 1/8”, and 1/4” ports. They must be used when it is required to intercept a flow in one direction only. The design of these valves is of the poppet type and this feature allows operation at low pressures both when there is a free flow and during retention.
Materials used:
—OT58 [brass] body
—Buna-N seals
—stainless steel spring

Quick exhaust valves

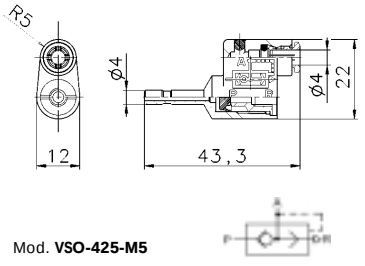
Quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air. The models VSO-425-M5 and VSO-426-04 are specially designed for mounting on solenoid valves and valves incorporating a 5/32” O.D. port.
We recommend that a silencer be mounted on the outlet. [2931-M5]
Materials used:
—OT58 [brass] body
—Buna-N seal

Nominal flowrate
from P->A, Qn* 30 NL/min. [1.06 SCFM]
from A->R, Qn* 80 NL/min. [2.83 SCFM]

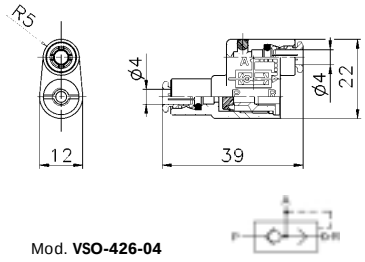
Qn* = determinated with 6 bar [87 psi] and ΔP=1 bar [14.5 psi]

Cv Rating
from P->A: Cv = 0.04
from A->R: Cv = 0.09

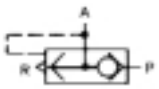
*Dimensions are in millimeters

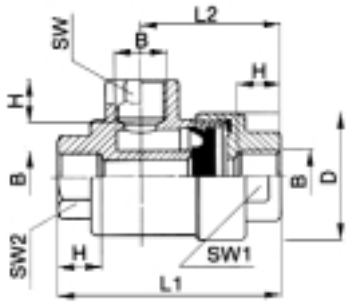


Mod. **VSO-425-M5**



Mod. **VSO-426-04**





Mod.	B	H	D	L1	L2	SW	SW1	SW2	Qn P->A	Cv	Qn‡R	Cv
VSC-588-02	1/8”	.2953	1.082	1.673	1.082	.551	.551	.551	21.2	.63	33.5	1.00
VSC-544-04	1/4”	.4331	1.299	2.165	1.397	.669	.669	.669	38.8	1.16	67.1	2.00
VSC-538-06	3/8”	.5906	1.692	2.814	1.751	1.062	1.062	1.063	116.5	3.47	180.1	5.37
VSC-522-08	1/2”	.5906	1.692	2.814	1.751	1.062	1.062	1.063	116.5	3.47	180.1	5.37

Quick exhaust valves

Quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air.
We recommend that a silencer be mounted on the outlet.
Materials used:
—OT58 [brass] body
—Desmopan seal [polyurethane]

Adjustable-diaphragm pressure switches

Series PM [normally closed or open] Ports 1/8”

Electro-pneumatic transducer

Series TRP [normally closed or open] Ports 1/8”

The diaphragm pressure switches in the PM Series are available in two versions: one with N.C. [normally closed] contacts and one with N.O. [normally open] contacts. A regulating screw, which can be adjusted using a small screwdriver, allows the switch to be set to the required pressure.
These pressure switches are particularly suitable for use as safety devices. In fact, the calibrated diaphragm enables an electrical signal to be generated or inhibited depending on the pressure set.

General Data	
Valve group	Automatic valves
Construction	Diaphragm type, adjustable
Mounting	Body through holes, ports
Materials	Brass body
Port sizes	1/8" NPTF [with adapters 2520-02-1/8]
Installation	According to requirements
Operating temperature	23 - 140° F
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, [3 - 10 E]
Operating pressure	1.0 - 10 bar, [14.5 - 145 psi]
Min. activation pressure of the Series TRP-8	1.5 bar, [22 psi]
Electrical Data	
Voltage	220 V max.
Max. power	100 VA *
Protection class	IP54 ** [with rubber bonnet]
Max. no. of pulses per min.	300
Lifetime	1 million cycles
Max. current	0.5 A
Isolation voltage	1500 V

* Maximum power using standard P = V * I formula

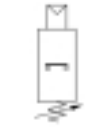
** Protection class rating for resistance to penetration and water, [IP54 equals total protection against contact, possible powder penetration, and water-proof for water coming from any direction.]

*** Dimensions in millimeters.

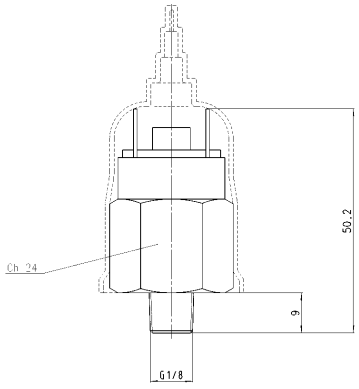
Electrical data	
voltage	48V AC/DC
max. power	24 VA
isolation voltage	500V
operating type	heavy

Normally Closed

NC = The pressure switch opens an electric contact when it reaches the fixed pressure



Mod. **PM 11 NC**



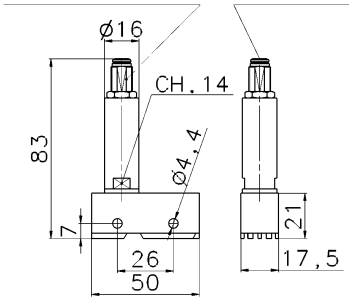
Normally Open

NA = The pressure switch closed an electric contact when it reaches the fixed pressure

Mod. **PM 11 NA**

The TRP Series transducer is specially designed to convert a pneumatic signal into an electrical signal. The contacts are N.C. (normally closed) or N.O. (normally open), thus making it possible to generate or eliminate current when the pneumatic signal is present.

Mod. 14N1A06A05 Tube 4/2 OD/ID mm



Mod. **TRP-8**

VMS

3/2-way slide valve
Ports 1/8”, 1/4”, 3/8”, and 1/2” NPTF

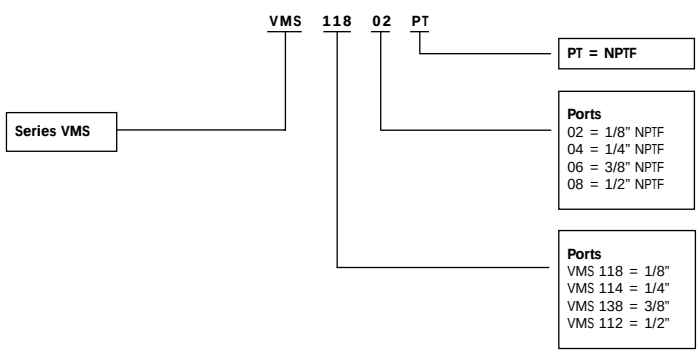
2

The VMS series slide valves are commonly used upstream of FRL units to ease repair and replacement. They can also be used in situations requiring the exhausting of all downstream air. This would assist in maintenance applications where ball valves may be too large and bulky to maneuver in tight assembly spaces. The exhausting of downstream air while simultaneously blocking inlet flow helps in building component groups to be tested in stages, and assembled later onto the main body of a machine.

General Data			
Valve group	3/2, [way/positions]		
Construction	Shuttle slide		
Mounting	In/line thread ports		
Materials	Nickel-Plated brass body, Buna-N seals		
Threaded port sizes	1/8”, 1/4”, 3/8”, 1/2”, NPTF		
Installation	In-line		
Operating temperature	32 - 175° F, [dry air necessary down to −4° F]		
Fluid	Filtered air		
Lubricant	Oil compatible with Buna-N, [3 - 10 E]		
Pneumatic Data			
Operating pressure	0 - 10 bar, [0 - 145 psi])		
Nominal pressure	6 bar, [87 psi]		
Nominal flow	*Qn Series VMS:	P->A 1/8” = 700 NL/min. [24.71 SCFM]	1/4” = 1350 NL/min. [47.67 SCFM]
		3/8” = 2100 NL/min. [74.15 SCFM]	1/2” = 3900 NL/min. [137.71 SCFM]
		A->R 1/8” = 1250 NL/min. [44.14 SCFM]	1/4” = 2900 NL/min. [102.4 SCFM]
		3/8” = 3900 NL/min. [137.71 SCFM]	1/2” = 5500 NL/min. [194.21 SCFM]
Cv Rating	Series VMS:	1/8” = 0.73	1/4” = 1.41
		3/8” = 2.21	1/2” = 4.10

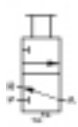
*Qn flowrate [SCFM] determined with a supply pressure of 6 bar, [87 psi], and with a pressure drop of 1 bar, [14.5 psi].
Exhausting flowrate [A->R], determined with an inlet pressure of 6 bar, [87 psi], while exhausting to atmosphere.

Coding for slide valves



3/2-way manually operated slide valve

These bistable manually operated valves direct air between their ports by use of a manual hand slide. In the closed position, downstream air is exhausted underneath the slide handle.



Mod.	A	BØ	L
VMS-118-02PT	1/8”	25	48
VMS-114-04PT	1/4”	30	58
VMS-138-06PT	3/8”	35	70
VMS-112-08PT	1/2”	40	80

Ball Valves - Full Flow Design

Series 2940, 2930
Ports 1/4”, 3/8”, 1/2”, 3/4”, 1”, 1 1/4”, 1 1/2”, 2”, 2 1/2”, 3”, 4”, NPT
Nickel-Plated (2940) and Plain Brass (2930)

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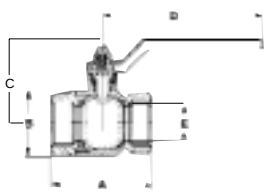
2

Benefits

Electroless Nickel-Plated: This plating offers excellent corrosion resistance, and is an FDA approved material, making the Camozzi ball valve suitable for food packaging, chemical processing, medical, dental, water treatment, and printing markets, in addition to standard application.

General Data	
Valve group	2/2, [way/positions]
Construction	Ball valve
Mounting	In-line
Materials	Brass body [2930], Nickel Plated brass body [2940], Zinc-plated steel handles [2940]
	Plastic handles [2930], Hardened chrome-plated brass ball, Teflon seat (P.T.F.E.)
Threaded port sizes	1/8”, 1/4”, 3/8”, 1/2” NPT [2930]
	1/4”, 3/8”, 1/2”, 3/4”, 1”, 1-1/4”, 1-1/2”, 2” NPT [2940]
Installation	In-line
Operating temperature	Series 2940 5° - 300°F
	Series 2930 5° - 300°F
Fluid	Filtered air
Pneumatic Data	
Working pressure	Series 2940: 1/4”, 3/8”, 1/2” - 710 PSI; 2-1/2” - 260 PSI
	3/4”, 1” - 570 PSI; 3” - 230 PSI
	1-1/4”, 1-1/2” - 430 PSI; 4” - 200 PSI
	2” - 360 PSI
	Series 2930: 1/4”, 3/8”, 1/2” - 220 PSI
Nominal flow	Full flow design
**Dimensions are in inches	

2940
Ball Valve



Electroless Nickel-Plated

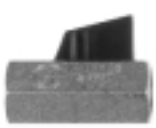
Part No.	A	B	C	D	E	PSI
2940-1/4PT	1.880	.984	1.693	3.140	.394	710
2940-3/8PT	1.880	.984	1.693	3.150	.394	710
2940-1/2PT	2.047	1.259	1.692	3.149	.472	710
2940-3/4PT	2.205	1.260	1.732	4.330	.591	570
2940-1PT	2.600	1.654	2.402	4.449	.787	570
2940-1 1/4PT	2.913	1.969	2.560	4.449	.984	430
2940-1 1/2PT	3.228	2.323	3.071	5.433	1.260	430
2940-2PT	3.898	2.835	3.701	6.220	1.575	360
2940-2 1/2PT	5.040	3.819	4.410	7.677	2.126	260
2940-3PT	5.827	4.803	4.606	9.724	2.560	230
2940-4PT	6.693	5.630	5.157	9.724	3.150	200

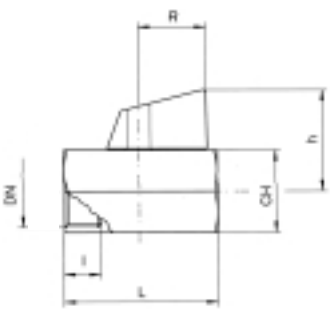
These valves are constructed of a electroless nickel-plated brass body, a steel handle, a hardened chrome-plated brass ball, and a teflon seat. These valves are suitable for industrial, pneumatic, hydraulic, and various domestic installations. Among the various types of compounds which can be transported through these valves are steam, gasoline, fuel, oils, kerosene, acids, and compressed air.

These valves are constructed of all brass body, hardened chrome-plated brass ball, teflon seat, and light weight plastic handle.

Kv - Flow coefficient in M^3/h @ 100kPa differential pressure (ΔP 14.5 psi)

2930
Mini Ball Valves (Brass)





Economical Ball Valves

Part No.	DN(NPT)	CH	l	h	L	R	Kv(M^3/h)	Kg
2930-1/8PT	1/8	.857	.315	1.14	1.614	.807	4.3	0.11
2930-1/4PT	1/4	.857	.394	1.14	1.614	.807	4.3	0.10
2930-3/8PT	3/8	.857	.394	1.14	1.614	.807	2.7	0.09
2930-1/2PT	1/2	.984	.433	1.22	1.811	.807	5.4	0.13

The company reserves the right to vary models and dimensions without notice

Ball Valves - Full Flow Design

Series 2960, 2930-N
Ports 1/4”, 3/8”, 1/2”, 3/4”, 1”, 1 1/4”, 1 1/2”, 2” NPT
Plain Brass (2960), L-Passage, 3 way – 2 position, Lockable Chrome-Plated (2930-N), 2 way – 2 position

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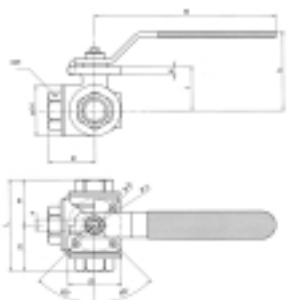
General Data	
Valve group	3/2, 2/2, [way/positions]
Construction	Ball valve
Mounting	In-line
Materials	Brass body [2960], chrome-plated steel body [2930-N], steel handles (2960)
	Plastic handles [2930-N], Hardened chrome-plated brass ball, Teflon seat
Threaded port sizes	1/4”, 3/8”, 1/2” NPT [2930-N]
	1/4”, 3/8”, 1/2”, 3/4”, 1”, 1-1/4”, 1-1/2”, 2” NPT [2960]
Installation	In-line
Operating temperature	Series 2960 5° - 300°F
	Series 2930-N 14° - 300°F
Fluid	Filtered air
Pneumatic Data	
Working pressure	Series 2960: 1/4”, 3/8”, 1/2”, 3/4” - 430 PSI
	1” - 230 PSI
	1-1/4”, 1-1/2”, 2” - 150 PSI
	Series 2930-N: 1/4”, 3/8”, 1/2” - 220 PSI
Nominal flow	Full flow design

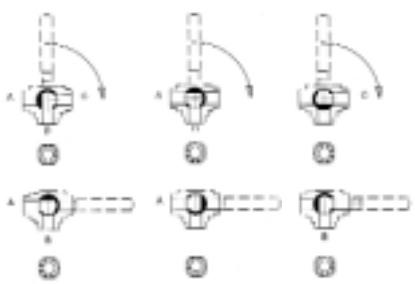
**Dimensions are in inches

2960 L-Passage, 3 way, 2 position
Ball Valve (90° rotation of handle, lockable)



Part No.	DN(NPT)	H	L	m	CH	R	h	øB	e	f	g	❑	n	Kv	Kg
2960-1/4PT	1/4	1.339	2.638	1.319	.866	4.724	2.461	.236	.197	1.200	.276	1.469	.354	2.8	.55
2960-3/8PT	3/8	1.339	2.638	1.319	.866	4.724	2.461	.236	.197	1.200	.276	1.469	.354	3.0	.58
2960-1/2PT	1/2	1.535	3.032	1.516	1.063	4.724	2.5	.236	.197	1.287	.276	1.469	.354	3.9	.65
2960-3/4PT	3/4	1.890	3.425	1.713	1.260	6.693	2.953	.276	.276	1.634	.437	1.968	.433	7.9	1.05
2960-1PT	1	2.362	4.134	2.067	1.614	6.693	3.130	.276	.276	1.850	.437	1.968	.433	13.0	1.83
2960-1 1/4PT	1 1/4	2.835	4.823	2.411	1.969	6.693	3.661	.276	.276	2.343	.437	1.968	.433	20.7	2.76
2960-1 1/2PT	1 1/2	3.386	5.453	2.726	2.165	9.055	4.469	.354	.315	2.908	.591	2.756	.551	38.7	4.52
2960-2PT	2	4.370	6.535	3.268	2.756	9.055	4.862	.354	.315	3.347	.591	2.756	.551	54.0	8.30

These valves are constructed of a brass body, a steel handle, a hardened chrome-plated brass ball, and a teflon seat. These valves are suitable for industrial, pneumatic, hydraulic, and various domestic installations. Among the various types of compounds which can be transported through these valves are steam, gasoline, fuel, oils, kerosene, acids, and compressed air.

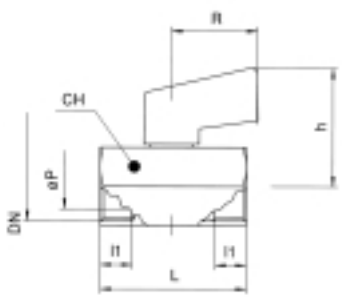


Ball bores position is by the stem's milling: A B C = outlets 90° lever rotations
To change outlets combination operation as follow: Remove the lever; turn the stem into the desired starting position (position nº1); Reset the lever

These valves are constructed of all chrome-plated, brass body, hardened chrome-plated brass ball, teflon seat, and light weight plastic handle.

Kv = Flow coefficient in M³/h @ 100kPa differential pressure (ΔP 14.5 psi)

2930-N
Mini Ball Valves (chrome-plated, brass body]



Economical Ball Valves (chrome-plated, brass body)

Part No.	DN(NPT)	CH	l	h	L	R	Kv (M³/h)	Kg	PSI
2930-N-1/4PT	1/4	.857	.384	1.437	1.614	1.063	4.3	0.11	220
2930-N-3/8PT	3/8	.857	.394	1.437	1.614	1.063	2.7	0.10	220
2930-N-1/2PT	1/2	.984	.433	1.484	1.811	1.063	5.4	0.14	220

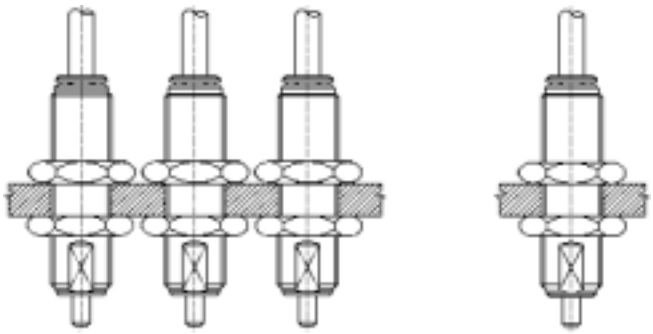
Compact minicylinders

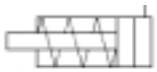
Series 14
ø 6 - 10 - 16 [mm]
Single-acting
5/32” OD cartridge connection

General Data	
Type of construction	Compact
Operation	Single-acting
Materials	Body OT 58 - NBR seals - other stainless steel
Operating pressure	P. min. 1 bar - P. max. 8 bar [14.5 PSI - 116 PSI]
Operating temperature	32°- 175°F [only dry air down to −4°]
Fluid	Clean air, lubricated or without lubrication
Bore (mm)	Dia. 6 - 10 - 16
Stroke	See table
Mounting method	By means of threaded body

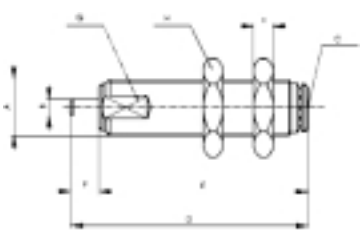
The compact minicylinders, series 14, (single-acting) have been designed to be installed in small places.
The available stroke with these minicylinders is shown on the table.
Their design favors assemblies in panels and manifolds which are part of the machine.
All of the minicylinders are incorporated with a rapid fitting for a 5/32 O.D. tube, and they are available with threaded or non threaded rods.

Example of assembly

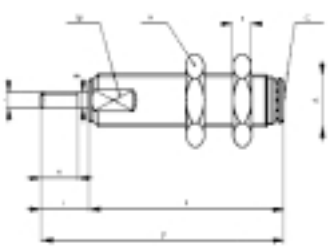




Code	ø Cyl	Stoke	A	B	TUBE OD C	D	E	F	SW G	SW H	I
14N1A6A05	6	5	M10x1	3	5/32	34	29	5	9	12	3
14N1A6A10	6	10	M10x1	3	5/32	42	37	5	9	12	3
14N1A6A15	6	15	M10x1	3	5/32	47	42	5	9	12	3
14N1A10A05	10	5	M15x1.5	5	5/32	50	38	12	13	19	4
14N1A10A10	10	10	M15x1.5	5	5/32	57	45	12	13	19	4
14N1A10A15	10	15	M15x1.5	5	5/32	62	50	12	13	19	4
14N1A16A05	16	5	M22x1.5	6	5/32	53.5	39.5	14	20	27	5
14N1A16A10	16	10	M22x1.5	6	5/32	62	48	14	20	27	5
14N1A16A15	16	15	M22x1.5	6	5/32	67	53	14	20	27	5



Code	ø Cyl	Stoke	A	B	TUBE OD C	D	E	F	SW G	SW H	I	L	M
14N1A6B05	6	5	M10x1	3	5/32	38	29	9	9	12	3	M3x0.5	7
14N1A6B10	6	10	M10x1	3	5/32	46	37	9	9	12	3	M3x0.5	7
14N1A6B15	6	15	M10x1	3	5/32	51	42	9	9	12	3	M3x0.5	7
14N1A10B05	10	5	M15x1.5	5	5/32	50	38	12	13	19	4	M4x0.7	10
14N1A10B10	10	10	M15x1.5	5	5/32	57	45	12	13	19	4	M4x0.7	10
14N1A10B15	10	15	M15x1.5	5	5/32	62	50	12	13	19	4	M4x0.7	10
14N1A16B05	16	5	M22x1.5	6	5/32	53.5	39.5	14	20	27	5	M5x0.8	12
14N1A16B10	16	10	M22x1.5	6	5/32	62	48	14	20	27	5	M5x0.8	12
14N1A16B15	16	15	M22x1.5	6	5/32	67	53	14	20	27	5	M5x0.8	12



Flow control valves

Unidirectional and bidirectional banjo flow controllers

Series SCU, MCU, SVU, MVU, SCO, MCO

Ports M5 [10-32 UNF], 1/8”, 1/4”, 3/8”, NPTF

These bidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders. The MCU's and SCU's feature Camozzi's new design. This new design features a fully rotatable swivel design and is constructed with a lower profile.

General Data	
Valve group and needle valve]	Unidirectional and bidirectional controller, [meter-in, meter-out,
Construction	Needle type
Mounting	Right-angle male thread
Materials	Nickel-plated brass body, Buna-N seals, Nylon gaskets
Port sizes	10-32 UNF, 1/8", 1/4", 3/8" NPTF
Tube sizes	1/8", 5/32", 1/4", 3/8" [O.D.]
Installation	Any position
Operating temperature	32 - 175° F, [dry air necessary down to ⁻4° F]
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, [3 - 10 E]
Pneumatic Data	
Operating pressure	1.0 - 10 bar, [14.5 - 145 psi]
Nominal pressure	6 bar, [87 psi]
Nominal flow	See graphs below
Nominal diameter	10-32 UNF = 1.5mm [.059"], 1/8" = 2 mm [.079"], 1/4" = 4 mm [.157"], 3/8" = 7 mm[.275"]
*Qn flowrate [SCFM] determined with a supply pressure of 6 bar, [87 psi], and with a pressure drop of 1 bar, [14.5 psi].	
For regulated flow, A->B	See graphs below
**Dimensions are in inches	

Coding of Banjo flow controllers

G M C U - 04 - 02

G = Swivel

Adjustment
M = Manual
S = Screwdriver

Assembly
C = on cylinders
V= on valves

Function
U = unidirectional (flow control)
O = bidirectional (needle valve)

Thread
32 = 10-32 UNF
02 = 1/8" NPTF
04 = 1/4" NPTF
06 = 3/8" NPTF

Attachments
32F = 10-32 UNF Female Thread
53 = 5/32" O.D. Tube
02 = 1/8" O.D. Tube
02F = 1/8" NPTF Female Thread
04 = 1/4" O.D. Tube
04F = 1/4" NPTF Female Thread
06 = 3/8" O.D. Tube
06F = 3/8" NPTF Female Thread

Identification of different types (on hex of valve)

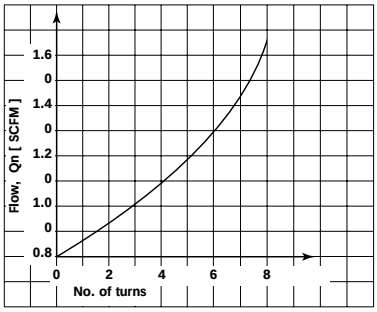
SCU
MCU

SVU
MVU

SCO
MCO

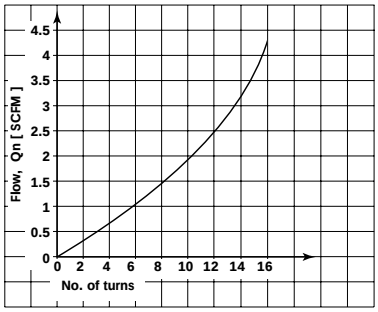
Unidirectional and Bidirectional flow control 53-32

Unregulated Flow B➔A with needle fully open - 60 NL/min. [2.12 SCFM]
Unregulated Flow B➔A with needle fully closed - 43 NL/min. [1.52 SCFM]



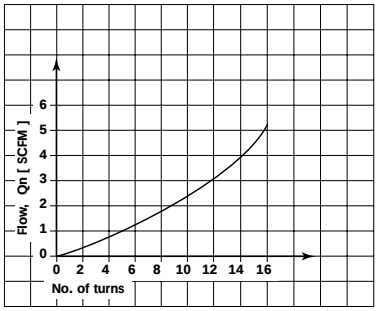
Unidirectional and Bidirectional flow control 53-02

Unregulated Flow B➔A with needle fully open - 107 NL/min. [3.78 SCFM]
Unregulated Flow B➔A with needle fully closed - 28.3 NL/min. [1.0 SCFM]



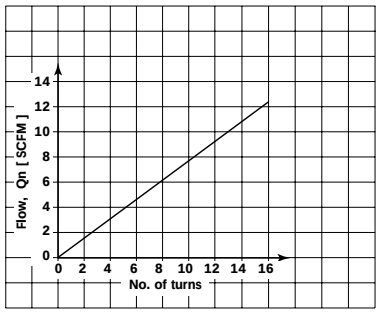
Unidirectional and Bidirectional flow control 04-02

Unregulated Flow B➔A with needle fully open - 164 NL/min. [5.79 SCFM]
Unregulated Flow B➔A with needle fully closed - 33.0 NL/min. [1.17 SCFM]



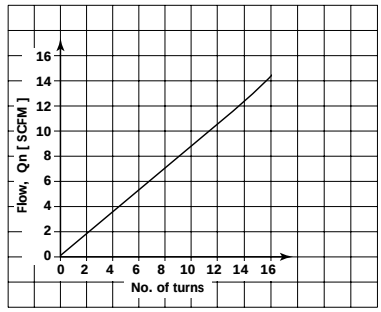
Unidirectional and Bidirectional flow control 04-04

Unregulated Flow B➔A with needle fully open - 367 NL/min. [12.96 SCFM]
Unregulated Flow B➔A with needle fully closed - 133.0 NL/min. [4.71 SCFM]



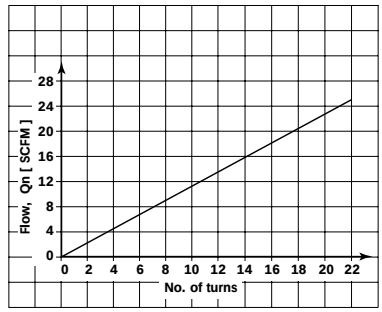
Unidirectional and Bidirectional flow control 06-04

Unregulated Flow B➔A with needle fully open - 466 NL/min. [16.45 SCFM]
Unregulated Flow B➔A with needle fully closed - 153 NL/min. [5.40 SCFM]

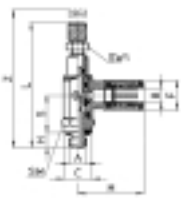


Unidirectional and Bidirectional flow control 06-06

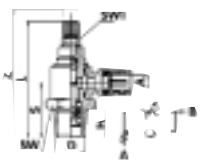
Unregulated Flow B➔A with needle fully open - 875 NL/min. [30.90 SCFM]
Unregulated Flow B➔A with needle fully closed - 428 NL/min. [15.11 SCFM]



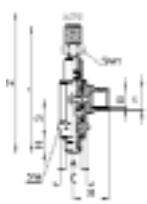
This unidirectional flow control is designed to be mounted on single-acting or double-acting cylinders. It has a manual adjustment with a right-angle push to connect tube fitting.



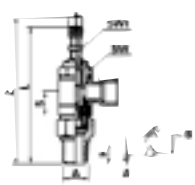
Part No.	TUBE O.D. A	B	C	S	H	L	Z	M	F	SW	SW1
	UNF										
GMCU 53-32	10-32	5/32	.307	.433	.177	1.457	1.614	.709	.346	.315	.217



Part No.	TUBE O.D. A	D	S	H	L	Z	SW	SW1
		NPTF						
GMCU 53-02	5/32”	1/8”	.840	.374	1.913	2.149	.551	.275
GMCU 04-02	1/4”	1/8”	.840	.374	1.913	2.149	.551	.275
GMCU 04-04	1/4”	1/4”	.978	.511	2.046	2.282	.748	.275
GMCU 06-04	3/8”	1/4”	.978	.511	2.046	2.282	.748	.275
GMCU 06-06	3/8”	3/8”	1.000	.511	2.322	2.637	.866	.393



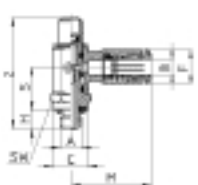
Part No.	A	B	C	S	H	L	Z	M	F	SW	SW1
	UNF	UNF									
GMCU 32F-32	10-32	10-32	.307	.433	.177	1.457	1.770	.413	.256	.315	.217



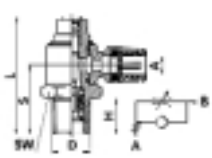
Part No.	Banjo Female Thread A	A	S	H	L	Z	SW	SW1
	NPTF	NPTF						
MCU 02F-02	1/8”	1/8”	.511	.374	2.375	2.564	.551	.275
MCU 04F-04	1/4”	1/4”	.453	.511	2.844	3.090	.669	.275
MCU 06F-06	3/8”	3/8”	.484	.511	2.950	3.252	.748	.393

This unidirectional flow control is designed to be mounted on single-acting or double-acting cylinders. It has a manual adjustment with right-angle female threads.

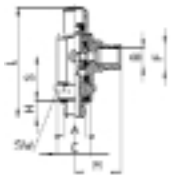
This unidirectional flow control is designed to be mounted on single-acting or double-acting cylinders. It has a screwdriver adjustment with a right-angle push to connect tube fitting.



Part No.	TUBE O.D. A	B	C	S	H	L	M	F	SW
	UNF								
GSCU 53-32	10-32	5/32	.307	.433	.177	1.080	.709	.346	.315

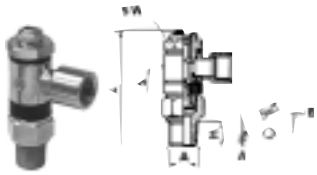


Part No.	TUBE O.D. A	D	S	H	L	SW
		NPTF				
GSCU 53-02	5/32”	1/8”	.840	.374	1.500	.551
GSCU 04-02	1/4”	1/8”	.840	.374	1.500	.551
GSCU 04-04	1/4”	1/4”	.978	.511	1.633	.748
GSCU 06-04	3/8”	1/4”	.978	.511	1.633	.748
GSCU 06-06	3/8”	3/8”	1.000	.511	1.830	.866



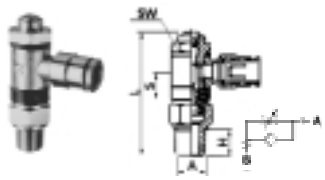
Part No.	A	B	C	S	H	L	M	F	SW
	UNF	UNF							
GSCU 32F-32	10-32	10-32	.307	.433	.177	1.080	.413	.256	.315

This unidirectional flow control is designed to be mounted on single-acting or double-acting cylinders. It has a manual adjustment with right-angle female threads.

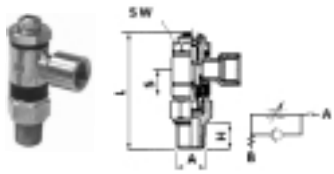


Part No.	Banjo Female Thread	A	S	H	L	SW
	NPTF	NPTF				
SCU 02F-02	1/8”	1/8”	.511	.374	2.000	.551
SCU 04F-04	1/4”	1/4”	.453	.511	2.250	.669
SCU 06F-06	3/8”	3/8”	.484	.511	2.440	.748

This unidirectional flow control is designed to be mounted on valves. It has a screwdriver adjustment with a right-angle push to connect tube fitting.



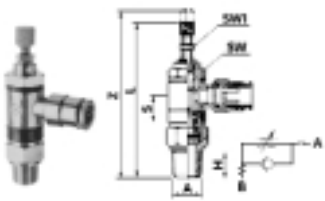
Part No.	TUBE O.D.	A	S	H	L	SW
		UNF				
SVU 53-32	5/32”	10-32	.216	.177	1.141	.315
		NPTF				
SVU 53-02	5/32”	1/8”	.511	.374	2.000	.551
SVU 04-02	1/4”	1/8”	.511	.374	2.000	.551
SVU 04-04	1/4”	1/4”	.453	.511	2.250	.669
SVU 06-04	3/8”	1/4”	.453	.511	2.250	.669



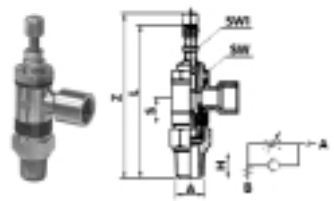
Part No.	Banjo Female Thread	A	S	H	L	SW
	UNF	UNF				
SVU 32F-32	10-32	10-32	.216	.177	1.141	.315
	NPTF	NPTF				
SVU 02F-02	1/8”	1/8”	.511	.374	2.000	.551
SVU 04F-04	1/4”	1/4”	.453	.511	2.250	.669

This unidirectional flow control is designed to be mounted on valves. It has a screwdriver adjustment with right-angle female threads.

This unidirectional flow control is designed to be mounted on valves. It has a manual adjustment with a right-angle push to connect tube fitting.



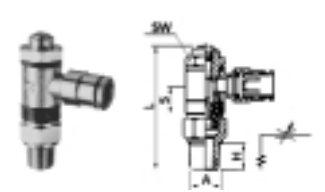
Part No.	TUBE O.D.	A	S	H	L	Z	SW	SW1
		UNF						
MVU 53-32	5/32”	10-32	.216	.177	1.500	1.670	.315	.216
		NPTF						
MVU 53-02	5/32”	1/8”	.511	.374	2.375	2.564	.551	.275
MVU 04-02	1/4”	1/8”	.511	.374	2.375	2.564	.551	.275
MVU 04-04	1/4”	1/4”	.453	.511	2.844	3.090	.669	.275
MVU 06-04	3/8”	1/4”	.453	.511	2.844	3.090	.669	.275



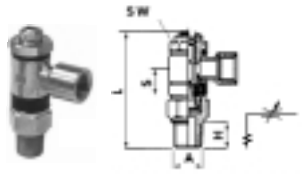
Part No.	Banjo Female Thread	A	S	H	L	Z	SW	SW1
	UNF	UNF						
MVU 32F-32	10-32	10-32	.216	.177	1.500	1.670	.315	.216
	NPTF	NPTF						
MVU 02F-02	1/8”	1/8”	.511	.374	2.375	2.564	.551	.275
MVU 04F-04	1/4”	1/4”	.453	.511	2.844	3.090	.669	.275

This unidirectional flow control is designed to be mounted on valves. It has a manual adjustment with right-angle female threads.

This bidirectional flow control is designed with a needle orifice. It has a screwdriver adjustment with a right-angle push to connect tube fitting.



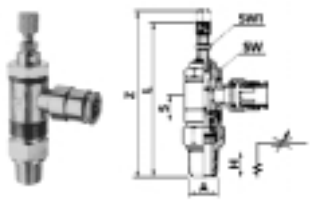
Part No.	TUBE O.D.	A	S	H	L	SW
		UNF				
SCO 53-32	5/32”	10-32	.216	.177	1.141	.315
		NPTF				
SCO 53-02	5/32”	1/8”	.511	.374	2.000	.551
SCO 04-02	1/4”	1/8”	.511	.374	2.000	.551
SCO 04-04	1/4”	1/4”	.453	.511	2.250	.669
SCO 06-04	3/8”	1/4”	.453	.511	2.250	.669



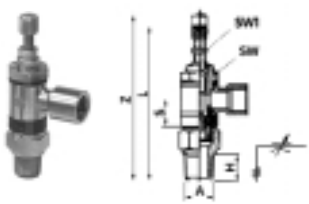
Part No.	Banjo Female Thread	A	S	H	L	SW
	UNF	UNF				
SCO 32F-32	10-32	10-32	.216	.177	1.141	.315
	NPTF	NPTF				
SCO 02F-02	5/32”	1/8”	.511	.374	2.000	.551
SCO 04F-04	1/4”	1/4”	.453	.511	2.250	.669

This bidirectional flow control is designed with a needle orifice. It has a screwdriver adjustment with right-angle female threads.

This bidirectional flow control is designed with a needle orifice. It has a manual adjustment with a right-angle push to connect tube fitting.



Part No.	TUBE O.D.	A	S	H	L	Z	SW	SW1
		UNF						
MCO 53-32	5/32”	10-32	.216	.177	1.500	1.670	.315	.216
		NPTF						
MCO 53-02	5/32”	1/8”	.511	.374	2.375	2.564	.551	.275
MCO 04-02	1/4”	1/8”	.511	.374	2.375	2.564	.551	.275
MCO 04-04	1/4”	1/4”	.453	.511	2.844	3.090	.669	.275
MCO 06-04	3/8”	1/4”	.453	.511	2.844	3.090	.669	.275



Part No.	Banjo Female Thread	A	S	H	L	Z	SW	SW1
	UNF	UNF						
MCO 32F-32	10-32	10-32	.216	.177	1.500	1.670	.315	.216
	NPTF	NPTF						
MCO 02F-02	1/8”	1/8”	.511	.374	2.375	2.564	.551	.275
MCO 04F-04	1/4”	1/4”	.453	.511	2.844	3.090	.669	.275

This bidirectional flow control is designed with a needle orifice. It has a manual adjustment with right-angle female threads.

Flow control valves

Panel or wall-mounted flow controllers
Series RFU
Ports M5 [10-32 UNF], 1/8”, 1/4” NPTF

The unidirectional flow controllers are equipped with M5 [10-32 UNF], 1/8” and 1/4” ports, each of which is available with two different types of adjustment [see diagrams].
They are used mainly for controlling the speed of cylinders. They may be mounted on control panels or cylinders, as required.

General Data	
Valve group	Unidirectional controller, [meter-in, meter-out]
Construction	Needle type
Mounting	Through holes in body, or control panel
Materials	Aluminum body, Brass needle, Buna-N seals
Port sizes	M5 [10-32 UNF], 1/8”, 1/4”, NPTF
Installation	As required
Operating temperature	32 - 175° F, [dry air necessary down to −4° F]
Fluid	Filtered air
Lubricant	Oil compatible with Buna-N, [3 - 10 E]
Pneumatic Data	
Operating pressure	1.0 - 10 bar, [14.5 - 145 psi]
Nominal pressure	6 bar, [87 psi]
Nominal flow	See graphs
Nominal diameter	1/8” = 2 mm [.079”], or 3 mm [.118”]
	1/4” = 4 mm [.157”], or 6 mm [.236”]
*Qn flowrate [SCFM] determined with a supply pressure of 6 bar, [87 psi], and with a pressure drop of 1 bar, [14.5 psi].	
For regulated flow, A -> B	See graphs below
**Dimensions are in inches	

Coding of flow controllers

RF U - 4 8 2 02

Series = RF

Function
U-4 = unidirectional

Ports
M5 = M5 [10-32 UNF]
02 = 1/8” NPTF
04 = 1/4” NPTF

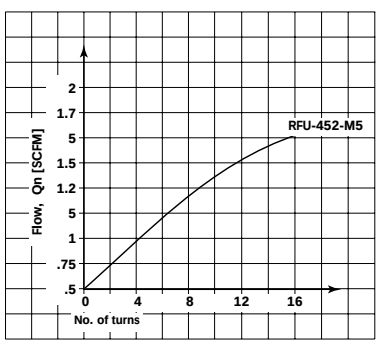
Flow control range (orifice diameter)
2 = ø 2 max
3 = ø 3 max
4 = ø 4 max
6 = ø 6 max

Ports
5 = M5 [10-32 UNF]
8 = 1/8” NPTF
4 = 1/4” NPTF

An example of assembling

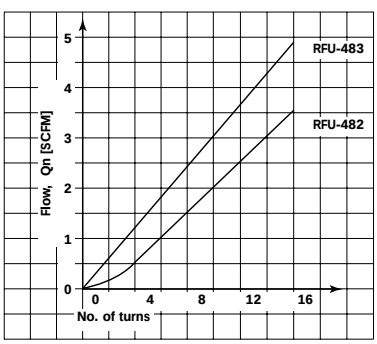
Unidirectional flow control M5 [10-32 UNF]

Unregulated Flow B➔A **RFU 452** needle fully open - 55 NL/min. [1.94 SCFM]
RFU 452 needle fully closed - 41 NL/min. [1.45 SCFM]



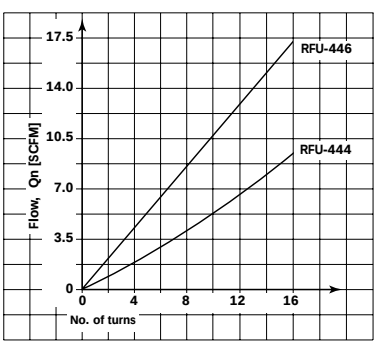
Unidirectional flow control [1/8”NPTF]

Unregulated Flow B➔A **RFU 482** needle fully open - 121 NL/min. [4.27 SCFM]
RFU 482 needle fully closed - 120 NL/min. [4.24 SCFM]
Unregulated Flow B➔A **RFU 483** needle fully open - 145 NL/min.[5.12 SCFM]
RFU 483 fully closed - 120 NL/min. [4.24 SCFM]



Unidirectional flow control [1/4” NPTF]

Unregulated Flow B➔A **RFU 444** needle fully open - 550 NL/min. [19.42 SCFM]
RFU 444 needle fully closed - 446 NL/min. [15.75 SCFM]
Unregulated Flow B➔A **RFU 446** needle fully open - 616 NL/min. [21.75 SCFM]
RFU 446 needle fully closed - 446 NL/min. [15.75 SCFM]

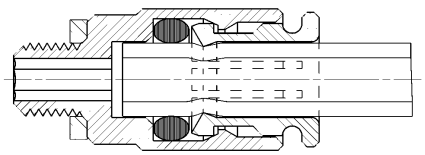


To regulate the speed of a cylinder, the air flow from the chamber which is being discharged must be regulated. For this reason, the unidirectional flow controller must be connected as follows: connect the threaded outlet marked “A” to the cylinder inlet and the threaded outlet marked “B” to the user port.

Part No.	A	B	H	D	F	G	L	M1	M2	M3	T	Z	SMax	SW	SW1	SW2
	METR.	UNF														
RFU-452-M5	M10x1	10-32	.256	.165	.551	.630	1.02	.728	.520	.280	1.54	1.750	.118	.472	.551	.315
		NPTF														
RFU-482-02	M12X1	1/8”	.354	.177	.629	.826	1.338	.964	.649	.315	1.811	2.007	.157	.551	.669	.354
RFU-483-02	M12X1	1/8”	.354	.177	.629	.826	1.338	.964	.649	.315	1.811	2.007	.157	.551	.669	.354
RFU-444-04	M20x1.5	1/4”	.492	.255	.984	1.181	2.047	1.377	.944	.472	2.362	2.716	.275	.866	.944	.551
RFU-446-04	M20x1.5	1/4”	.492	.255	.984	1.181	2.047	1.377	.944	.472	2.362	2.716	.275	.866	.944	.551

Micro Super-Rapid fittings for plastic tubes - for inch and metric sizes

Connections M3 - M5
Tube od. 3mm



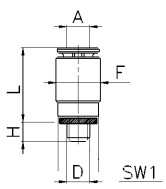
Micro Super-Rapid fittings are constructed in 14 different models.
Connection and disconnection of the tube, can be repeated several times and is performed with one hand only and without the use of tools. The sealing ring (O-ring) can be easily replaced if it is damaged or should the rubber compound from which it is made wear with time.

Technical data

material	brass OT58 UNI 5705, nickel-plated
threads	M3 - M5
pressure	min. 0, max 16 bar (see tubes) 0 – 250 PSI
tube to connect	rilsan
	nylon 6, 11, 12
	polyethylene
	polyurethane (min. shore 90A durometer)
tube diameter	ø 3 x 1.5 mm
fluid	compressed air
	(for other types of fluid, contact our engineers)
temperature	-10°C to +60°C (14°F - 140°F)
	(See data for tubing used)

with Mod. 2661 assembled

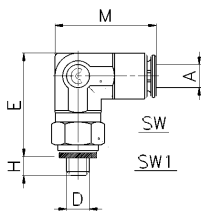
* with O-ring assembled



Mod.	A	D	H	F	G	L	SW1
#6512- 3 - M3			2.5	5.8	5.3	10.2	1.5
***6512 - 3 - M5**			3.2	6.5	7.8	10.3	2

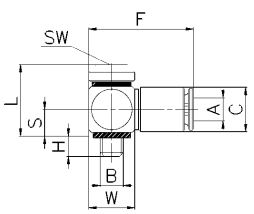
with Mod. 2661 assembled

* with O-ring assembled



Mod.	A	D	H	E	M	SW	SW1
#6522- 3 - M3			2.5	13.7	13.7	6	6
***6522 - 3 - M5**			3.2	14	13.7	6	8

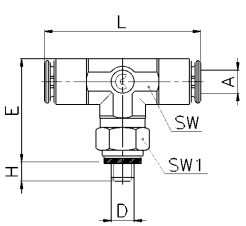
with Mod. 2661 assembled



Mod.	A	B	H	C	F	L	S	W	SW
#6621- 3- M3			2.5	5.8	14.2	9.3	3.5	6	1.5
6621- 3- M5			3.2	6.5	16	11.9	4.8	8	2

with Mod. 2661 assembled

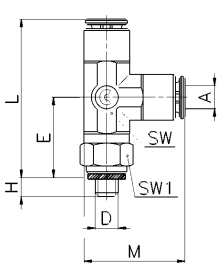
* with O-ring assembled



Mod.	A	D	H	E	L	SW	SW1
#6432- 3 - M3			2.5	13.7	21.4	6	6
***6432 - 3 - M5**			3.2	14	21.4	6	8

with Mod. 2661 assembled

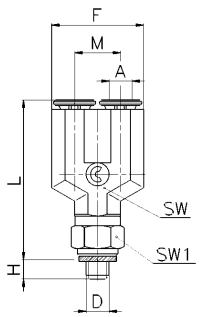
* with O-ring assembled



Mod.	A	D	H	F	L	M	SW	SW1
#6442- 3 - M3			2.5	10.7	21.4	13.7	6	6
***6442 - 3 - M5**			3.2	11	21.4	13.7	6	8

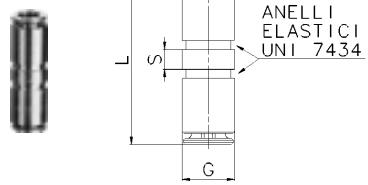
with Mod. 2661 assembled

* with O-ring assembled

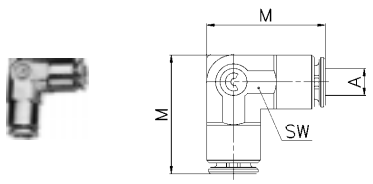


Mod.	A	D	H	F	L	M	SW	SW1
#6452- 3 - M3			2.5	12	20.9	6	6	6
***6452 - 3 - M5**			3.2	12	20.9	6	6	8

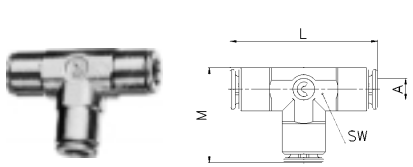
The company reserves the right to vary models and dimensions without notice



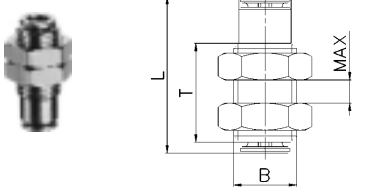
Mod. A	G	L	S
6580-3	5.8	19.9	2.2



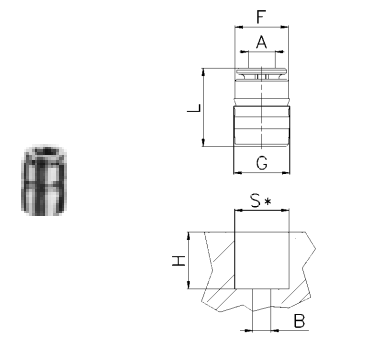
Mod. A	M	SW
6550-3	13.7	6



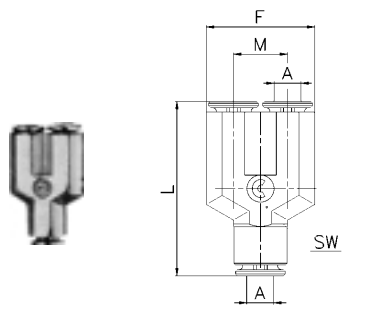
Mod. A	L	M	SW
6540-3	21.4	13.7	6



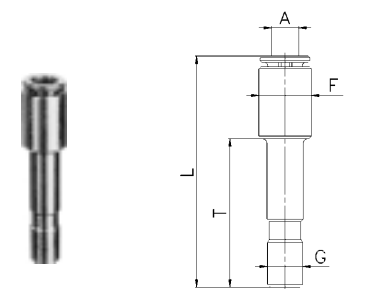
Mod. A	B	F	L	MAX	T
6590-3	M7x	5.8	18.4	5	11.4



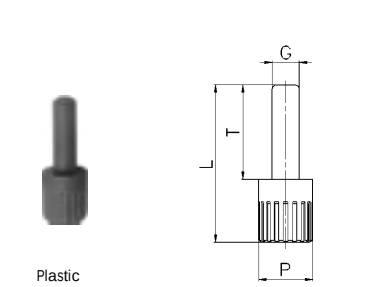
Mod. A	F	G	H	L	S	B
6700-3	5.9	6.2	6.3	9.2	6	2



Mod. A	F	L	M	SW
6560-3	12	20.4	6	6



Mod. A	G	F	L	T
6800-3 -	**4**	5.8	26	16.5



Mod. G	L	P	T
6900-3	20.5	5	10.5

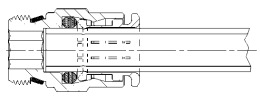
Super-rapid fittings
for plastic tubes *Sprint*® (PTFE Seal Ring)

Connections M5, 1/8", 1/4", 3/8", 1/2" BSP

Tube od 4 - 5 - 6 - 8 - 10 - 12 - 14

***Sprint*® fittings assemble in both BSPP and BSPT ports**

CAMOZZI

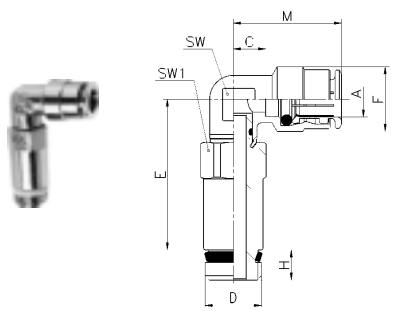


Super-rapid fittings are available in 32 different models.
Connection and disconnection of the tube, can be repeated several times and is performed with one hand only and without the use of tools. The sealing ring (O-ring) can be easily replaced if it is damaged or should the rubber compound from which it is made wear with time.

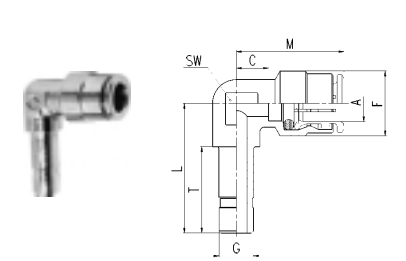
Technical data

material	brass OT58 UNI 5705 nickel-plated
threads	GAS, conical (BSPT)
	GAS, cylindrical (BSP)
	M5, M6
pressure	min. 0, max. 16 bar (see tubes) (0 – 250 PSI
tube to connect	rilsan
	nylon 6, 11, 12, Polyethylene, Polyurethane*
diameters	4, 5, 6, 8, 10, 12, 14 mm OD
fluid	compressed air
	(for other types of fluid, contact our engineers)
temperature	-10°C to +60°C (14°F - 140°F)
	(see data for tubing used)

* Recommended 90A durometer and above for PUR.

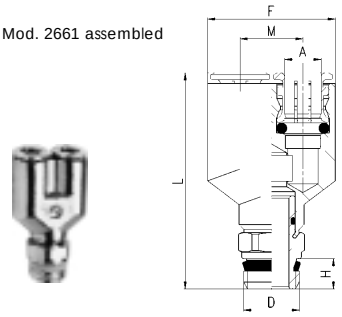


Mod.	A	D	C	E	F	H	M	SW	SW1
6525 - 6 - 1/8			6.5	33.8	12.7	5.5	22.5	10	12
6525 - 6 - 1/4			6.5	34	12.7	7	22.5	10	14
6525 - 8 - 1/8			7.5	34.8	15	5.5	25	12	12
6525 - 8 - 1/4			7.5	35	15	7	25	12	14



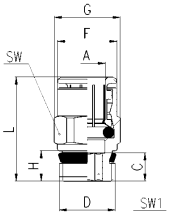
Mod.	A	G	C	L	F	T	M	SW
6555 - 4 - 4			6	24	10	16.5	20	9
6555 - 6 - 6			6.5	26	12.7	18	22.5	10
6555 - 8 - 8			7.5	30	15	20	25	12
6555 - 10 - 10			8.5	33.5	17.5	23	28.5	14

*with Mod. 2661 assembled



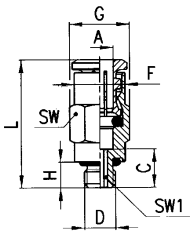
Mod.	A	D	F	H	M	L
***6451 - 4 - M5**			18		10	27
***6451 - 6 - M5**			24.5		12.5	31
S6450 - 4 - 1/8			18	5.5	10	38
S6450 - 6 - 1/8			24.5	5.5	12.5	41.5
S6450 - 8 - 1/8			29.5	5.5	14.5	48.5
S6450 - 8 - 1/4			29.5	7	14.5	50

Mod. *Sprint*®

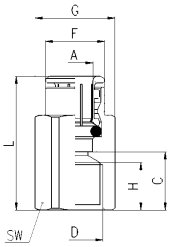


When ordering model 6511, model S6510 will be delivered as shown in this photo and in this table.

Mod.	A	D	C	F	G	H	L	SW	SW1
S6510 - 4 - 1/8			3.8	8.8	13.2	5.5	18	12	2.5
S6510 - 4 - 1/4			6	8.8	15.2	7	19.5	14	2.5
S6510 - 5 - 1/8			3.8	9.8	13.2	5.5	19	12	3
S6510 - 5 - 1/4			5.5	9.8	15.2	7	20	14	3
S6510 - 6 - 1/8			5	11.7	13.2	5.5	22	12	4
S6510 - 6 - 1/4			5.5	11.7	15.2	7	21	14	4
S6510 - 8 - 1/8			7.5	13.7	15.2	5.5	25	14	5
S6510 - 8 - 1/4			6.5	13.7	15.2	7	24	14	6
S6510 - 8 - 3/8			6.5	13.7	20.5	8	23.5	19	6
S6510 -10 - 1/4			8.5	16.3	18.5	7	28.5	17	7
S6510 -10 - 3/8			5.5	16.3	20.5	8	25.5	19	8
S6510 -10 - 1/2			5	16.3	24.5	9	25	22	8
S6510 -12 - 1/4			10.5	18.3	20.5	7	31.5	19	7
S6510 -12 - 3/8			9.5	18.3	20.5	8	30.5	19	9
S6510 -12 - 1/2			6	18.3	24.5	9	27	22	10
S6510 -14 - 3/8			10.5	21	24.5	8	33.5	22	9
S6510 -14 - 1/2			6.5	21	24.5	9	29.5	22	12

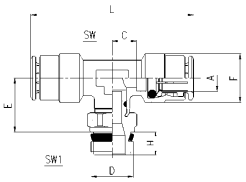


Mod.	A	D	C	F	G	H	L	SW	SW1
6512 - 4 - M5			5.5	7.8	8.8	3.5	19.5	8	2
6512 - 5 - M5			5.5	8.8	9.9	3.5	20.5	9	2
6512 - 6 - M5			5.5	11.7	13.2	3.5	21.5	12	2

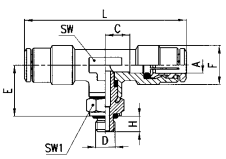


Mod.	A	D	C	F	G	H	L	SW
6463 - 4 - M5			6.5	8.8	9.9	5	20.5	9
6463 - 4 - 1/8			9.5	9	15.2	7.5	23.5	14
6463 - 5 - 1/8			10	9.8	15.2	7.5	25	14
6463 - 6 - 1/8			9.5	11.7	15.2	7.5	25.5	14
6463 - 6 - 1/4			13	11.7	18.5	11	29	17
6463 - 8 - 1/8			10	13.7	15.2	7.5	27.5	14
6463 - 8 - 1/4			13.5	13.7	18.5	11	31.5	17
6463 -10 - 1/4			13.5	16.3	18.5	11	33.5	17

Mod. *Sprint*®

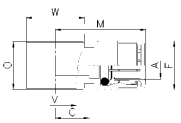


Mod.	A	D	C	F	G	H	L	SW	SW1
S6430 - 4 - 1/8			6	14.5	10	5.5	40	9	12
S6430 - 5 - 1/8			6	14.5	11	5.5	42	9	12
S6430 - 5 - 1/4			6	14.5	11	7	42	9	14
S6430 - 6 - 1/8			6.5	15	12.7	5.5	45	10	12
S6430 - 6 - 1/4			6.5	15	12.7	7	45	10	14
S6430 - 8 - 1/8			7.5	16	15	5.5	50	12	12
S6430 - 8 - 1/4			7.5	16	15	7	50	12	14
S6430 - 8 - 3/8			7.5	16.5	15	8	50	12	9
S6430 -10 - 1/4			8.5	18.5	17.5	7	57	14	14
S6430 -10 - 3/8			8.5	18	17.5	8	57	14	19
S6430 -12 - 1/4			10	20	19.5	7	62	16	17
S6430 -12 - 3/8			10	20	19.5	8	62	16	19
S6430 -12 - 1/2			10	20.5	19.5	9	62	16	22
S6430 -14 - 1/2			12	21.5	22	9	70	18	22



Mod.	A	D	C	E	F	H	L	SW	SW1
6432 - 4 - M5			6	12.5	10	3.5	40	9	8
6432 - 5 - M5			6	12.5	11	3.5	42	9	8

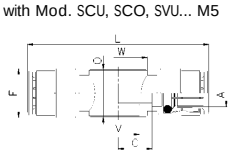
* Assembly required with Mod. 1635
• Assembly possible only with Mod. SCU, SCO, SVU... M5



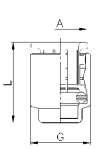
Mod.	A	V	C	F	M	O	V	W
6610 - 4 - M5			5	9	19	9	5.1	9
•6610 - 4 - M6			5	9	19	9	5.1	9
6610 - 4 - 1/8			8.5	10	22.5	14.5	9.8	14
6610 - 5 - M5			5	10	20	9	5.1	10
•6610 - 5 - M6			5	10	20	9	5.1	10
6610 - 5 - 1/8			8.5	11	23.5	14.5	9.8	14
6610 - 6 - M5			6.5	12.7	22.5	9	5.1	10
•6610 - 6 - M6			6.5	12.7	22.5	9	5.1	10
6610 - 6 - 1/8			8.5	12.7	24.5	14.5	9.8	14
6610 - 6 - 1/4			10.5	12.7	26.5	14.5	13.2	18
6610 - 8 - 1/8			8.5	15	26	14.5	9.8	14
6610 - 8 - 1/4			10.5	15	28	14.5	13.2	18
6610 - 8 - 3/8			11.5	15	29	14.5	16.7	21
***6610 -10 - 1/4**			10	17.5	30	14.5	13.2	18
***6610 -10 - 3/8**			11.5	17.5	31.5	14.5	16.7	21
***6610 -12 - 1/2**			14	19.5	35	14.5	21	26

The dimension of the banjo bolts, Mod. 1631-01, 1631-02 and 1631-03 are given on page 25 of NPTF section.

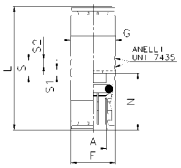
* Assembly required with Mod. 1635
• Assembly possible only with Mod. SCU, SCO, SVU... M5



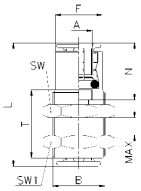
Mod.	A	C	F	L	O	V	W
6620 - 4 - M5		5	9	38	9	5.1	9
6620 - 4 - 1/8		8.5	10	45	14.5	9.8	14
6620 - 6 - 1/8		8.5	12.7	49	14.5	9.8	14
6620 - 6 - 1/4		10.5	12.7	53	14.5	13.2	18
6620 - 8 - 1/8		8.5	15	52	14.5	9.8	14
6620 - 8 - 1/4		10.5	15	56	14.5	13.2	18



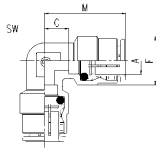
Mod.	A	G	L
6750 - 4		8.8	15
6750 - 6		11.8	17
6750 - 8		13.8	18.5
6750 -10		15.8	21
6750 -12		17.8	22

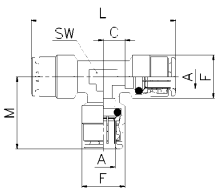
Mod.	A	F	G	L	N	S	S1	S2
6580 - 4		8.8	10	30	14	5	2.2	1.6
6580 - 5		9.8	11	33	14.5	5	2.2	1.6
6580 - 6		11.7	12	34	15.5	5	2.2	1.6
6580 - 8		13.7	14	38	17.5	5	2.2	1.6
6580 - 10		16.3	17	42.5	20	5	2.2	1.6
6580 - 12		18.3	9	44.5	21	5.2	2.2	1.6
6540 - 14		21	22	48	23	5.2	2.2	1.6

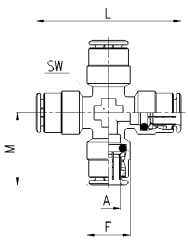
Mod.	A	B	F	L	N	MAX	SW	SW1	SW2
6590 - 4		M10x1	8.6	30	14	10.5	14	14	20
6590 - 5		M12x1	9.8	33	14.5	10.5	17	17	20
6590 - 6		M14x1	12.5	34	15.5	10.5	17	17	20
6590 - 8		M16x1	14.5	38	17.5	11.5	19	19	21
6590 - 10		M18x1	16.3	42.5	20	13	22	22	23.5
6590 - 12		M20x1	18.3	44.5	21	14.5	24	24	25
6590 - 14		M22x1	20.5	48	23	17.5	27	27	30

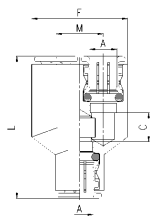
Mod.	A	C	F	M	SW
6550 - 4		6	10	20	9
6550 - 5		6	11	21	9
6550 - 6		6.5	12.7	22.5	10
6550 - 8		7.5	15	25	12
6550 - 10		8.5	17.5	28.5	14
6550 - 12		10	19.5	31	17
6550 - 14		12	22	35	19

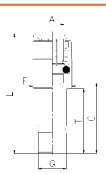
Mod.	A	C	F	L	M	SW
6540 - 4		6	10	40	20	9
6540 - 5		6	11	42	21	9
6540 - 6		6.5	12.7	45	22.5	10
6540 - 8		7.5	15	50	25	12
6540 - 10		8.5	17.5	57	28.5	14
6540 - 12		10	19.5	62	31	17
6540 - 14		12	22	70	35	19

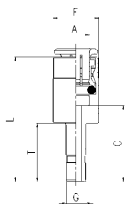
Mod.	A	F	L	M	SW
6600 - 4		10	40	20	9
6600 - 5		11	42	21	9
6600 - 6		12.7	45	22.5	10
6600 - 8		15	50	25	12
6600 - 10		17.5	57	28.5	14
6600 - 12		19.5	62	31	16

Mod.	A	C	F	L	M
6560 - 4		6	18	33	10
6560 - 6		7	24.5	39	12.5
6560 - 8		9	29.5	44	14.5
6560 - 10		15.5	33.5	53.5	16

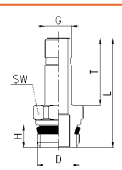



Mod.	A	G	C	F	L	T
6800 - 4 - 5			20	10	34	18
6800 - 4 - 6			20	10	34	18
6800 - 4 - 8			19	10	33	20.5
6800 - 5 - 6			20	11	35	18
6800 - 5 - 8			19	11	34	20.5
6800 - 6 - 8			22.5	13	38.5	20.5
6800 - 6 - 10			21	13	36.5	23
6800 - 6 - 12			22	13	37.5	24
6800 - 8 - 10			25	14	42.5	23
6800 - 8 - 12			22.5	14	40	24
6800 - 10 - 12			25.5	17	45.5	24
6800 - 10 - 14			25.5	17	45.5	28
6800 - 12 - 14			30	18.8	51	28

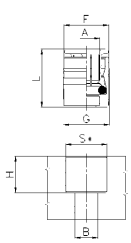



Mod.	A	G	C	F	L	T
6850 - 6 - 4			19	13	34.5	16.5
6850 - 8 - 6			23.5	14	41	18

* with O-ring assembled

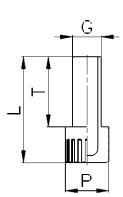
Mod.	G	D	H	T	L	SW	
***6811 - 4 - M5**				3.5	16.5	24	8
6811 - 4 - 1/8				5.5	16.5	27.8	12
6811 - 5 - 1/8				5.5	18	29.3	12
6811 - 5 - 1/4				7	18	31	14
6811 - 6 - 1/8				5.5	18	29.3	12
6811 - 6 - 1/4				7	18	31	14
6811 - 8 - 1/8				5.5	20.5	31.8	12
6811 - 8 - 1/4				7	20.5	33.5	14
6811 - 10 - 1/4				7	23	36	14
6811 - 10 - 3/8				8	23	37.3	19
6811 - 12 - 3/8				8	24	38.3	19
6811 - 14 - 1/2				9	28	44	22

* metallic seat $^{+0.05}_{0}$ synthetic seat $^{+0.03}_{-0.02}$

Mod.	A	F	G	L	Misura	S	H	B
6700 - 4		8.6	9	14.5	4	8.75	11	3.5
6700 - 5		9.6	10	15.5	5	9.75	11.5	3.5
6700 - 6		11.8	12.2	16.5	6	11.95	12	4
6700 - 8		13.8	14.2	18	8	13.95	14	6
6700 - 10		15.8	16.2	20.5	10	15.95	15	8

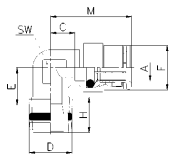

Mod.	G	L
6950 - 4		32.5
6950 - 6		35.5
6950 - 8		40.5
6950 - 10		46
6950 - 12		48
6950 - 14		52

plastic

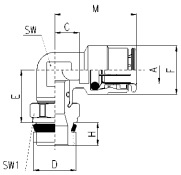
Mod.	G	L	P	T
6900 - 4		25	8	16
6900 - 5		25.5	8	16.5
6900 - 6		26.5	8	17.5
6900 - 8		29.5	12	19.5
6900 - 10		32	12	19.5
6900 - 12		35.5	16	23.5
6900 - 14		37.5	16	25.5

Mod. *Sprint*®



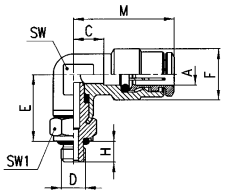
Mod.	A	D	C	E	F	H	M	SW
S6500 - 4 -1/8			6	8.5	10	7.5	20	9
S6500 - 4 -1/4			6	10.5	10	11	20	9
S6500 - 5 -1/8			6	8.5	11	7.5	21	9
S6500 - 5 -1/4			6	10.5	11	11	21	9
S6500 - 6 -1/8			6.5	10	12.7	8.5	22.5	10
S6500 - 6 -1/4			6.5	11.5	12.7	11.5	22.5	10
S6500 - 8 -1/8			7.5	10.5	15	8.5	25	12
S6500 - 8 -1/4			7.5	12	15	11	25	12
S6500 - 8 -3/8			7.5	12	15	11.5	25	12
S6500 -10 -1/4			7.5	14	17.5	11.5	28.5	14
S6500 -10 -3/8			7.5	13.5	17.5	11.5	28.5	14
S6500 -12 -1/4			10	15.5	19.5	11.5	31	16
S6500 -12 -3/8			10	15	19.5	11.5	31	16

Mod. *Sprint*®



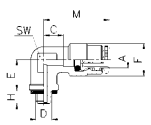
When ordering model 6521, model S6520 will be delivered as shown in this photo and in this table.

Mod.	A	D	C	E	F	H	M	SW	SW1
S6520 - 4 -1/8			6	14.5	10	5.5	20	9	12
S6520 - 4 -1/4			6	14.5	10	7	20	9	14
S6520 - 5 -1/8			6	14.5	11	5.5	21	9	12
S6520 - 5 -1/4			6	14.5	11	7	21	9	14
S6520 - 6 -1/8			6.5	15	12.7	5.5	22	10	12
S6520 - 6 -1/4			6.5	15	12.7	7	22.5	10	14
S6520 - 8 -1/8			7.5	16	15	5.5	25.5	12	12
S6520 - 8 -1/4			7.5	16	15	7	25	12	14
S6520 - 8 -3/8			7.5	16.5	15	8	25	12	19
S6520 -10 -1/4			8.5	18.5	17.5	7	28.5	14	14
S6520 -10 -3/8			8.5	19	17.5	8	28.5	14	19
S6520 -10 -1/2			8.5	19.5	17.5	9	28.5	14	22
S6520 -12 -1/4			10	20	19.5	7	31	16	17
S6520 -12 -3/8			10	20	19.5	8	31	16	19
S6520 -12 -1/2			10	20.5	19.5	9	31	16	22
S6520 -14 -3/8			12	21	22	8	35	18	19
S6520 -14 -1/2			12	21.5	22	9	35	18	22



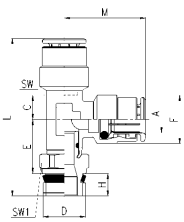
Mod.	A	D	C	E	F	H	M	SW	SW1
6522 - 4 - M5			6	12.5	10	3.5	20	9	8
6522 - 5 - M5			6	12.5	11	3.5	21	9	8
6522 - 6 - M5			6.5	13	12.7	3.5	22.5	10	10

with Mod. 2661 assembled

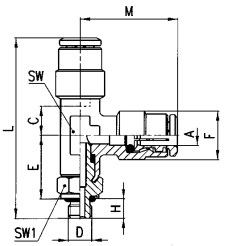


Mod.	A	D	C	E	F	H	M	SW
6501 - 4 - M5			6	10.5	10	4	20	9

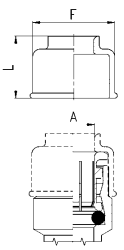
Mod. *Sprint*®



Mod.	A	D	C	E	F	H	L	M	SW	SW1
S6440 - 4 -1/8			6	14.5	10	5.5	40	20	9	12
S6440 - 5 -1/8			6	14.5	11	5.5	41	21	9	12
S6440 - 6 -1/8			6.5	15	12.7	5.5	42.5	22.5	10	12
S6440 - 6 -1/4			6.5	15	12.7	7	44	22.5	10	14
S6440 - 8 -1/8			7.5	16	15	5.5	46.5	25	12	12
S6440 - 8 -1/4			7.5	16	15	7	48	25	12	14
S6440 - 8 -3/8			7.5	16.5	15	8	49.5	25	12	19
S6440 -10 -1/4			8.5	18.5	17.5	7	54	28.5	14	14
S6440 -10 -3/8			8.5	18.5	17.5	8	55.5	28.5	14	19
S6440 -12 -3/8			10	19.5	19.5	8	59	31	16	19
S6440 -14 -1/2			12	21/5	22	9	65.5	35	18	22



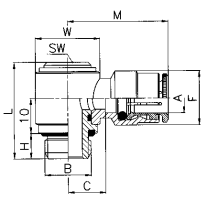
Mod.	A	D	C	E	F	H	L	M	SW	SW1
6442 - 4 - M5			6	12.5	10	3.5	36.5	20	9	8
6442 - 5 - M5			6	12.5	11	3.5	36.5	21	9	8



Self-extinguishing material black colour.

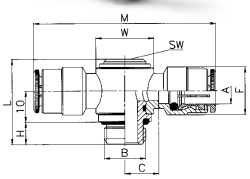
Mod.	A	D	C
6708 - 4		10.7	10
6708 - 5		11.7	10.5
6708 - 6		13.7	11
6708 - 8		15.7	12
6708-10		18.5	12.5
6708-12		20.7	14.5
6708-12		23.7	14.5

Banjo with O-Ring assembled.



Mod.	A	B	C	F	M	W	H	L	SW
6622-4-1/8	4	G1/8	8,5	10	22,5	14	6	26	4
6622-6-1/8	6	G1/8	8,5	12,7	24,5	14	6	26	4
6622-6-1/4	6	G1/4	10,5	12,7	26,5	18	7	27	5
6622-8-1/8	8	G1/8	8,5	15	26	14	6	26	4
6622-8-1/4	8	G1/4	10,5	15	28	18	7	27	5
6622-10-1/4	10	G1/4	10	17,5	30	18	7	27	5

Banjo with O-Ring assembled.

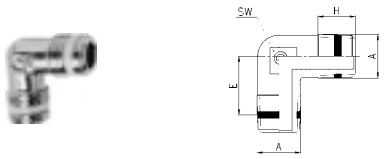


Mod.	A	B	C	F	M	W	H	L	SW
6632-4-1/8	4	G1/8	8,5	10	45	14	6	26	4
6632-6-1/8	6	G1/8	8,5	12,7	49	14	6	26	4
6632-6-1/4	6	G1/4	10,5	12,7	53	18	7	27	5
6632-8-1/8	8	G1/8	8,5	15	52	14	6	26	4
6632-8-1/4	8	G1/4	10,5	15	56	18	7	27	5
6632-10-1/4	10	G1/4	10	17,5	60	18	7	27	5

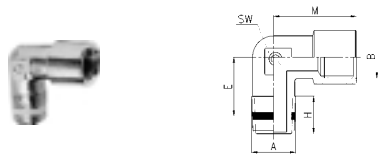
Pipe fittings *Sprint*®

Connections 1/8”, 1/4”, 3/8”, 1/2” BSPT Male, BSPP Female
PTFE Sealing Ring

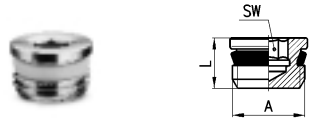
When involved in factory maintenance or plant installation it is often difficult to be absolutely certain which size of fittings will be required.
Pipe fittings provide a cost effective solution to this problem. The full range includes straight, L-shaped, T-shaped and cross piece male or female couplings and are available in a variety of thread sizes up to l/2".
The addition of the Camozzi Sprint seal to twelve different models of pipe fittings eliminates the need to use liquid sealants or tape and save a considerable amount of time during installation. The Sprint fitting can be connected and disconnected several times.
Material: brass OT58 UNI 5705 (nickel-plated).
T. min. - 40°C (-40°F)
T. max. +120°C (250°F)



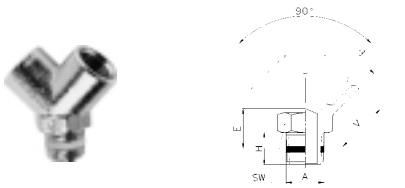
Mod.	A	E	H	SW
S2010 - 1/8	14	7.5	9	
S2010 - 1/4	15.5	11	12	
S2010 - 3/8	19.5	11.5	14	
S2010 - 1/2	21.5	14	16	



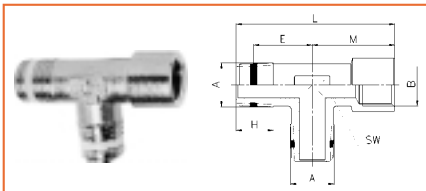
Mod.	A	B	E	H	M	SW
S2020 - 1/8 - 1/8	15	7.5	21	12		
S2020 - 1/4 - 1/4	19	11	25.5	14		
S2020 - 3/8 - 3/8	19.5	11.5	28	16		
S2020 - 1/2 - 1/2	23	14	33	21		



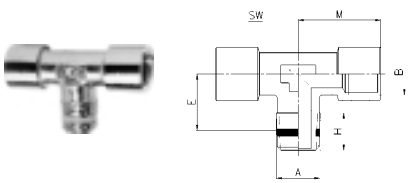
Mod.	A	L	SW
S2610 - 1/8	7.5	4	
S2610 - 1/4	9	6	
S2610 - 3/8	10	8	
S2610 - 1/2	11	10	



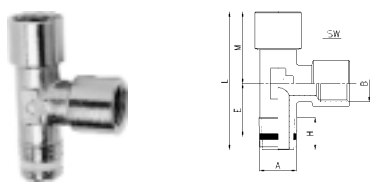
Mod.	A	B	H	E	M	SW
S2040 - 1/8 - 1/8	8.5	13	17.5	14		
S2040 - 1/4 - 1/4	11	13	18.5	17		
S2040 - 3/8 - 3/8	12	18	22.5	22		
S2040 - 1/2 - 1/2	15.5	22.5	28	26		



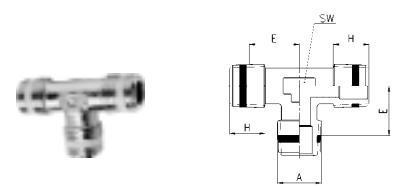
Mod.	A	B	E	H	L	M	SW
S2050 - 1/8 - 1/8	15	8.5	39	21	12		
S2050 - 1/4 - 1/4	19	11	49	25.5	14		
S2050 - 3/8 - 3/8	19.5	11.5	52.5	28	16		
S2050 - 1/2 - 1/2	23	14	63	33	21		



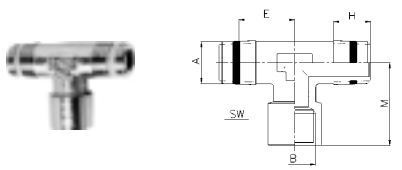
Mod.	A	B	E	H	M	SW
S2060 - 1/8 - 1/8	15	8.5	21	12		
S2060 - 1/4 - 1/4	19	11	25.5	14		
S2060 - 3/8 - 3/8	19.5	11.5	28	16		
S2060 - 1/2 - 1/2	23	14	33	21		



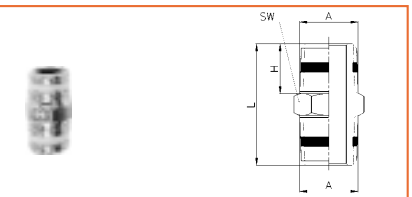
Mod.	A	B	E	H	L	M	SW
S2070 - 1/8 - 1/8	15	8.5	39.5	21	12		
S2070 - 1/4 - 1/4	19	11	49.5	25.5	14		
S2070 - 3/8 - 3/8	19.5	11.5	53	28	16		
S2070 - 1/2 - 1/2	23	14	63	33	21		



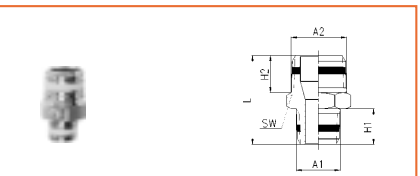
Mod.	A	E	H	SW
S2080 - 1/8	14	7.5	9	
S2080 - 1/4	15.5	11	12	
S2080 - 3/8	19.5	11.5	14	
S2080 - 1/2	21.5	14	16	



Mod.	A	B	E	H	M	SW
S2090 - 1/8 - 1/8	14	8.5	21	12		
S2090 - 1/4 - 1/4	15.5	11	25.5	14		
S2090 - 3/8 - 3/8	19.5	11.5	28	16		
S2090 - 1/2 - 1/2	21.5	14	33	21		

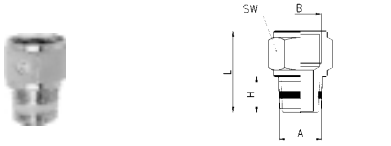


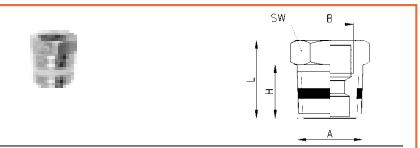
Mod.	A	H	L	SW
S2500 - 1/8	7.5	19.5	12	
S2500 - 1/4	11	27	14	
S2500 - 3/8	11.5	28	17	
S2500 - 1/2	14	33.5	22	



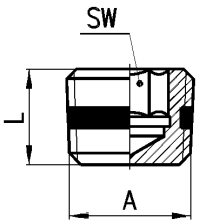
Mod.	A1	A2	H1	H2	L	SW
S2510 - 1/8 - 1/4	7.5	11	23.5	14		
S2510 - 1/8 - 3/8	7.5	11.5	24	17		
S2510 - 1/4 - 3/8	11	11.5	27.5	17		
S2510 - 1/4 - 1/2	11	14	30.5	22		
S2510 - 3/8 - 1/2	11.5	14	31	22		

Mod.	A	B	H	L	SW
S2520 - 1/8 - 1/8	7.5	17.5	14		
S2520 - 1/8 - 1/4	7.5	21.5	17		
S2520 - 1/8 - 3/8	7.5	22	22		
S2520 - 1/4 - 1/4	11	25	17		
S2520 - 1/4 - 3/8	11	25.5	22		
S2520 - 1/4 - 1/2	11	29	27		
S2520 - 3/8 - 3/8	11.5	26	22		
S2520 - 3/8 - 1/2	11.5	29.5	27		
S2520 - 1/2 - 1/2	14	32	27		





Mod.	A	B	H	L	SW
S2530 - 1/4 - 1/8	11	16	14		
S2530 - 3/8 - 1/8	11.5	16.5	17		
S2530 - 1/2 - 1/8	14	19.5	22		
S2530 - 3/8 - 1/4	11.5	16.5	17		
S2530 - 1/2 - 1/4	14	19.5	22		
S2530 - 1/2 - 3/8	14	19.5	22		

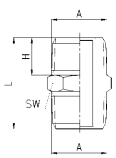


Mod.	A	L	SW
S2615-1/8	R1/8	8	5
S2615-1/4	R1/4	10	7
S2615-3/8	R3/8	10	8

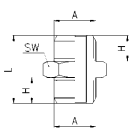
Pipe fittings

Connections M5, 1/8”, 1/4”, 3/8”, 1/2”, 3/4” BSPP/BSPT

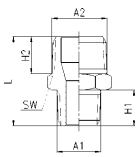
When involved in factory maintenance or plant installation it is often difficult to be absolutely certain which size of fittings will be required. Pipe fittings provide a cost effective solution to this problem. The full range includes straight, L-shaped, T-shaped and cross piece male or female couplings and are available in a variety of thread sizes up to 1/2".
Material: brass OT58 UNI 5705 (nickel-plated).



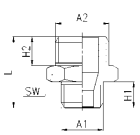
Mod.	A	H	L	SW
2500 - 1/8		7,5	19.5	12
2500 - 1/4		11	27	14
2500 - 3/8		11.5	28	17
2500 - 1/2		145	33.5	22
2500 - 3/4		16.5	40	27



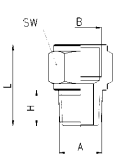
Mod.	A	H	L	SW
2501 - M5		4	11.5	8
2501 - 1/8		6	16.5	14
2501 - 1/4		8	21	17
2501 - 3/8		9	23	19
2501 - 1/2		10	25.5	24



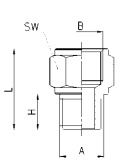
Mod.	A1	A2	H1	H2	L	SW
2510 - 1/8 - 1/4			7.5	11	23.5	14
2510 - 1/8 - 3/8			7.5	11.5	24	17
2510 - 1/4 - 3/8			11	11.5	27.5	17
2510 - 1/4 - 1/2			11	14	30.5	22
2510 - 3/8 - 1/2			11.5	14	31	22
2510 - 1/2 - 3/4			14	16.5	37.5	27



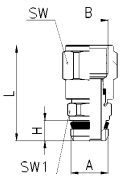
Mod.	A1	A2	H1	H2	L	SW
2511 - M5 - 1/8			4	6	14.5	14
2511 - 1/8 - 1/4			6	8	19	17
2511 - 1/8 - 3/8			6	9	20	19
2511 - 1/4 - 3/8			8	9	22	19
2511 - 1/4 - 1/2			8	10	23.5	24
2511 - 3/8 - 1/2			9	10	24.5	24



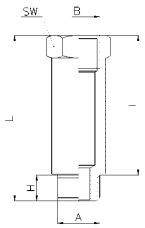
Mod.	A	B	H	L	SW
2520 - 1/8 - 1/8			7.5	17.5	14
2520 - 1/8 - 1/4			7.5	21.5	17
2520 - 1/8 - 3/8			7.5	22	22
2520 - 1/4 - 1/4			11	25	17
2520 - 1/4 - 3/8			11	25.5	22
2520 - 1/4 - 1/2			11	29	27
2520 - 3/8 - 3/8			11.5	26	22
2520 - 3/8 - 1/2			11.5	29.5	27
2520 - 1/2 - 1/2			14	32	27



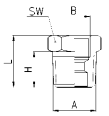
Mod.	A	B	H	L	SW
2521 - M5 - 1/8			4	14	14
2521 - 1/8 - 1/8			6	16	14
2521 - 1/8 - 1/4			6	20	17
2521 - 1/8 - 3/8			6	20.5	22
2521 - 1/4 - 1/4			8	22	17
2521 - 1/4 - 3/8			8	22.5	22
2521 - 1/4 - 1/2			8	26	27
2521 - 3/8 - 3/8			9	23.5	22
2521 - 3/8 - 1/2			9	27	27
2521 - 1/2 - 1/2			10	28	27



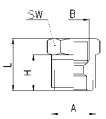
Mod.	A	B	H	L	SW	SW1
2541 - 1/8 - 1/8			5.5	26.5	14	12
2541 - 1/4 - 1/4			7	32.5	17	14
2541 - 3/8 - 3/8			8	34.5	22	19



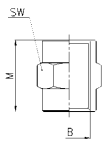
Mod.	A	B	H	I	L	SW
2525 - 1/8 - 16			6	16	22	14
2525 - 1/8 - 36			6	36	42	14
2525 - 1/4 - 27			8	27	35	17
2525 - 1/4 - 43			8	43	51	17



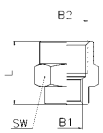
Mod.	A	B	H	L	SW
2530 - 1/8 - 1/8			11	16	14
2530 - 3/8 - 1/8			11.5	16.5	17
2530 - 1/2 - 1/8			14	19.5	22
2530 - 3/8 - 1/4			11.5	16.5	17
2530 - 1/2 - 1/4			14	19.5	22
2530 - 1/2 - 3/8			14	19.5	22
2530 - 3/4 - 1/2			16.5	23.5	27



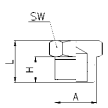
Mod.	A	B	H	L	SW
2531 - 1/8 - M5			6	10.5	14
2531 - 1/4 - 1/8			8	13	17
2531 - 3/8 - 1/8			9	14	19
2531 - 1/2 - 1/8			10	15.5	24
2531 - 3/8 - 1/4			9	14	19
2531 - 1/2 - 1/4			10	15.5	24
2531 - 1/2 - 3/8			10	15.5	24



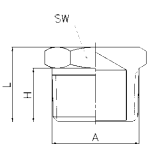
Mod.	B	L	SW
2543 - M5		11	8
2543 - 1/8		15	14
2543 - 1/4		22	17
2543 - 3/8		24	22
2543 - 1/2		30	27



Mod.	B1	B2	L	SW
2553 - M5 - 1/8			13	14
2553 - 1/8 - 1/4			19.5	17
2553 - 1/8 - 3/8			20	22
2553 - 1/8 - 1/2			23.5	27
2553 - 1/4 - 3/8			23	22
2553 - 1/4 - 1/2			27	27
2553 - 3/8 - 1/2			27.5	27

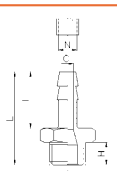


Mod.	A	H	L	SW
2611 - M5		4	7.5	8
2611 - 1/8		6	10.5	14
2611 - 1/4		8	13	17
2611 - 3/8		8	14	19
2611 - 1/2		10	15.5	24

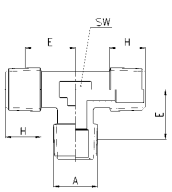


Mod.	A	H	L	SW
2610 - 3/4		16.5	23	27

Mod.	B	L	SW
2613 - 1/8		11	12
2613 - 1/4		19	14
2613 - 3/8		20	17
2613 - 1/2		24	19

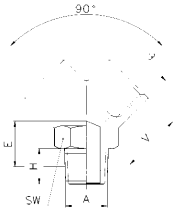


Mod.	N	A	C	H	I	L	SW
2601- 2 - M5			1.2	4	8	16	8
2601-4.5- M5			2.5	4	15	23	8
2601- 7 - 1/8			4	6	20	30	12
2601- 7 - 1/4			4	8	20	33	17
2601- 8 - 1/8			5	6	20	30	12
2601- 9 - 1/8			5	6	20	30	12
2601- 9 - 1/4			6	8	20	33	17
2601- 9 - 3/8			6	9	20	34	19
2601-12 - 1/4			9	8	20	33	17
2601-12 - 3/8			9	9	20	34	19
2601-12 - 1/2			9	10	20	35.5	24
2601-17 - 3/8			13	9	24	38	19
2601-17 - 1/2			13	10	24	39.5	24

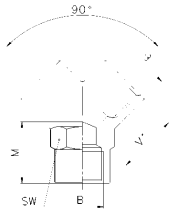


Mod.	A	E	H	SW
2080 - 1/8		14	7.5	9
2080 - 1/4		15.5	11	12
2080 - 3/8		19.5	11.5	14
2080 - 1/2		21.5	14	16

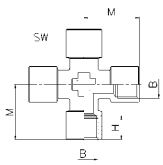
Mod.	A	B	E	H	M	SW
2090 - M5 - 1/8			14	8.5	21	12
2090 - 1/8 - 1/4			15.5	11	25.5	14
2090 - 1/4 - 3/8			19.5	11.5	28	16
2090 - 3/8 - 1/2			21.5	14	33	21

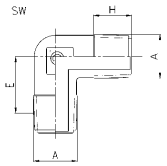
Mod.	A	B	H	E	M	SW
2040	**- 1/8**	**- 1/8**	8.5	13	17.5	14
2040	**- 1/4**	**- 1/4**	11	13	18.5	17
2040	**- 3/8**	**- 3/8**	12	18	22.5	22
2040	**- 1/2**	**- 1/2**	15.5	22.5	28	26

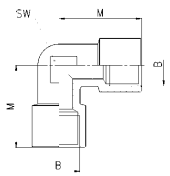
Mod.	B	M	M1	SW
2043 - 1/8		17.5	17.5	14
2043 - 1/4		19	18.5	17
2043 - 3/8		23.5	22.5	22
2043 - 1/2		28	28	26

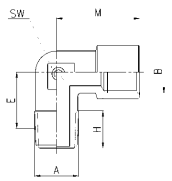
Mod.	B	H	M	SW
2033 - 1/8		7.5	21	12
2033 - 1/4		11	25.5	14
2033 - 3/8		11.5	28	16

Mod.	A	E	H	SW
2010 - 1/8		14	7.5	9
2010 - 1/4		15.5	11	12
2010 - 3/8		19.5	11.5	14
2010 - 1/2		21.5	14	16

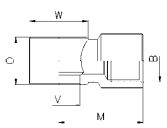



Mod.	B	M	SW
2013 - 1/8		21	12
2013 - 1/4		25.5	14
2013 - 3/8		28	16
2013 - 1/2		33	21

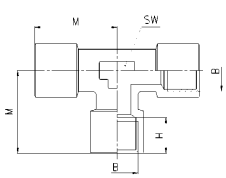



Mod.	A	B	E	H	M	SW
2021 - M5	**- M5**		9	4	10.5	9
2020 - 1/8	**- 1/8**		15	7.5	21	12
2020 - 1/4	**- 1/4**		19	11	25.5	14
2020 - 3/8	**- 3/8**		19.5	11.5	28	16
2020 - 1/2	**- 1/2**		23	14	33	21

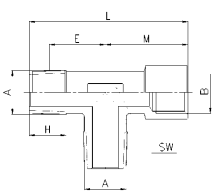
* Assembly required with Mod. 1635
• Assembly possible only with Mod. SCU, SCO, SVU...M5

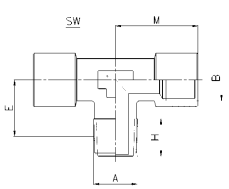
Mod.	B	M	O	V	W	
2023	**- M5 - M5**		10.5	9	5.1	9
•2023	**- M5 - M6**		10.5	9	6.1	9
2023	**- 1/8 - 1/8**		21	14.5	9.8	14
***2023**	**- 1/4 - 1/4**		26	14.5	13.2	18
***2023**	**- 3/8 - 3/8**		29	14.5	16.7	21

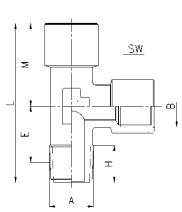
Mod.	B	H	M	SW
2003 - 1/8		7.5	21	12
2003 - 1/4		11	25.5	14
2003 - 3/8		11.5	28	16
2003 - 1/2		15	33	21

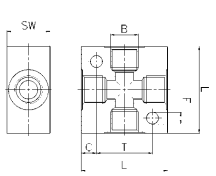
Mod.	A	B	E	H	L	M	SW
2050 - 1/8	**- 1/8**		15	8.5	39	21	12
2050 - 1/4	**- 1/4**		19	11	49	25.5	14
2050 - 3/8	**- 3/8**		19.5	11.5	52.5	28	16
2050 - 1/2	**- 1/2**		23	14	63	33	21

Mod.	A	B	E	H	M	SW
2060 - 1/8	**- 1/8**		15	8.5	21	12
2060 - 1/4	**- 1/4**		19	11	25.5	14
2060 - 3/8	**- 3/8**		19.5	11.5	28	16
2060 - 1/2	**- 1/2**		23	14	33	21

Mod.	A	B	E	H	L	M	SW
2070 - 1/8	**- 1/8**		15	8.5	39	21	12
2070 - 1/4	**- 1/4**		19	11	49	25.5	14
2070 - 3/8	**- 3/8**		19.5	11.5	52.5	28	16
2070 - 1/2	**- 1/2**		23	14	63	33	21

Mod.	B	C	F	L	T	SW
3033 - 1/8		4	4.5	25	17	16
3033 - 1/4		7	5.5	40	26	20
3033 - 3/8		8	5.5	50	34	26
3033 - 1/2		8	5.5	50	34	32

Nylon 11 tubing and accessories - metric sizes

Diameter of tube: (OD/ID mm) 4x2.4, 5x3, 6x4, 8x6, 10x8 12x10
Reel length 100 meters (328 feet)

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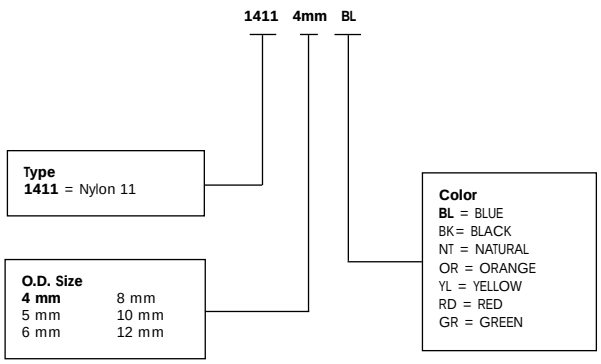
O.D.	I.D.	STD reel length meters
4 mm	2.7 mm	100 (328 feet)
5 mm	3 mm	100 (328 feet)
6 mm	4 mm	100 (328 feet)
8 mm	6 mm	100 (328 feet)
10 mm	8 mm	100 (328 feet)
12 mm	10 mm	100 (328 feet)

Technical Data	
Material	Nylon 11 (Polyamide)
Melting point	354° ± 4° (flame retardant rating UL-94 HB)
Water absorption (ASTM D-570)	1.1%
Operating pressure	From 0 - 250 psi*
Bursting pressure	1000 psi
Hardness	78 Rockwell R
Tensile strength at break (D-638)	9500 psi
Elongation at break (D-638)	360 psi
Flexural modulus (D-790)	47,000 psi
Tube diameter OD	4, 5, 6, 8, 10, 12 mm
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	-60°F - 200°F * (See working pressure table below)

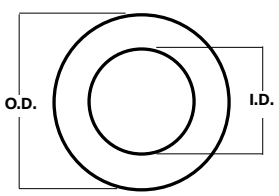
** See page 95 for additional technical data

Code of Tubing



Working Pressure Information*

OD/ID mm	Tolerances for OD (mm)	Min. Bend. Rad. Inches	Working Pressure (PSI) @75°F	@100°F	@125°F	@150°F
4 x 2.7	+.05, - .1	.75	275	209	181	151
5 x 3	+.05, - .1	1.00	375	285	248	206
6 x 4	+.05, - .1	1.50	280	213	185	154
8 x 6	+.05, - .1	2.25	210	160	139	115
10 x 8	+.05, - .1	3.0	180	137	119	99
12 x 10	+.05, - .1	3.5	165	125	109	91



PART NUMBER: PNZ - 12
PLASTIC TUBE CUTTER

REPLACEMENT BLADES:
PNZ-12 BLADES

How To Use:
Insert plstic tube to desired length, allow tube cutter to close, then apply pressure until tube snaps off.

Chemical resistance of nylon tubing	
Acids	Good to ph-5
Alkalies	Good to ph-11
Hydrocarbons - aromatic	Excellent
Hydrocarbons - aliphatic	Excellent
Ketones	Excellent
Ethers	Excellent
Esters	Excellent
Alcohols	Good
Salts, neutral	Excellent
Freons	Excellent
Continuos sunlight	Fair
Zinc chloride	Good

Polyurethane tubing - metric sizes

Diameter of tube: 4, 6, 8, 10, 12 mm OD
Shore 95A durometer
Reel length 100 meters (328 feet)

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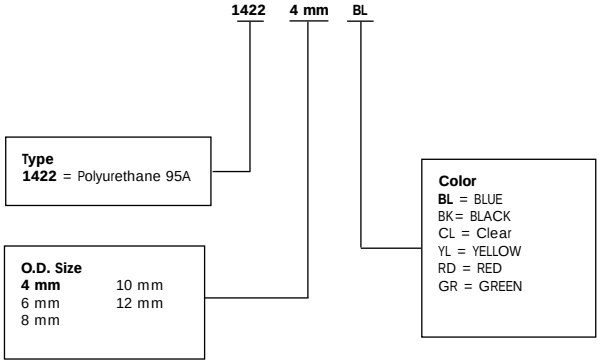
O.D.	I.D.	STD reel length meters
4 mm	2.4 mm	100 (328 feet)
6 mm	4 mm	100 (328 feet)
8 mm	5 mm	100 (328 feet)
10 mm	6.5 mm	100 (328 feet)
12 mm	8 mm	100 (328 feet)

Technical Data	
Material	Polyurethane (Ether Based), PUR
Vacuum rating	to 28" Hg
Operating pressure	From 0 - 180 psi
Bursting pressure	540 psi
Hardness	95 Shore A
Tube diameter	4 mm, 6 mm, 8 mm, 10 mm, 12 mm
Fluid	Compressed air
	[for other types of fluid please contact our engineers]
Operating temperature	-40°F - 165°F

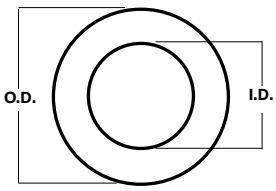
** See page 95 for additional technical data; * See working pressure table below

Code of Tubing



Working Pressure Information*

OD/ID mm	Tolerances for OD (mm)	Min. Bend. Rad. Inches	Working Pressure (PSI) @75°F	@100°F	@125°F	@150°F
4 x 2.4	±.127	3/8	176	130	106	88
6 x 4	±.127	1/2	145	107	87	73
8 x 5	±.127	3/4	155	115	93	78
10 x 6.5	±.127	7/8	149	110	89	75
12 x 8	±.127	1 1/8	133	133	80	67

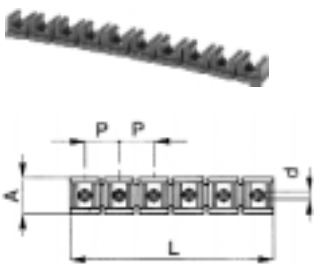


Tubing (PVC reinforced) (blue) (50 meter reels)

Mod. OD/ID	operating pressure at 30ºC
PV - 6/4	25 bar
PV - 8/6	25 bar
PV - 10/8	25 bar
PV - 12/10	25 bar
PV - 15/12.5	25 bar

Tubing (polyethylene) plain, blue (100 meter reels)

Mod.OD/ID	operating pressure at 20ºC
TPE - 5 x 3	12 bar
TPE - 6 x 4	11 bar
TPE - 8 x 6	8 bar
TPE -10 x 8	7 bar



Tube clamp (blue)

Mod.	OD/ID	L	A	d	P
MPL - 4	4 x 2	113	19	2.5	11.5
MPL - 6	6 x 4	113	19	2.5	11.5
MPL - 8	8 x 6	143	19	3.5	14.5
MPL - 10	10 x 8	173	19	3.5	17.5

Mod. **PNZ - 12** (tube cutters)
Mod. **PNZ - 25** (large size)

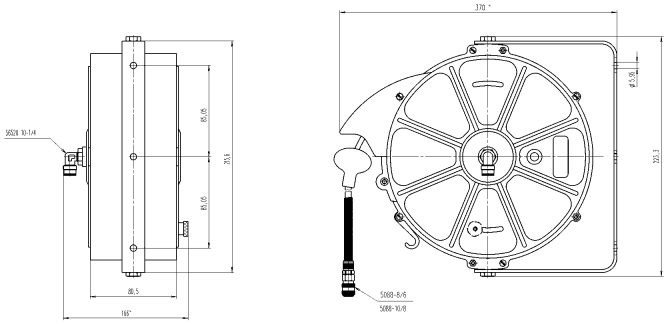
Hose reel for compressed air

Mod. SAC.200, SAC.201, SAC210, SAC.211

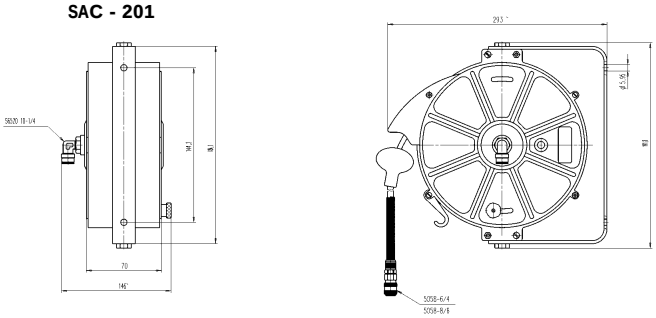
ø 6, 8, 10 mm OD tubes

General data	
type of construction	compact, light weight
operation	fully automatic hose rewind with latching or free run facility
materials	steel bracket, other components in plastic, tube PU
	Nickel platted brass fittings
type of mounting	wall or overhead bracket
Pneumatic data	
operating pressure	ø6 P. Max 10 bar — ø 8 P. max 8 bar — 10 P. max 6 bar at 20º
nominal tube diameter	SAC-200 ø 6, SAC-201 ø8, SAC-210 ø8, SAC-211 ø10
tube length	SAC-200, 2-8 meters; SAC-201, 2-7 meters;
	SAC-210, 2-10 meters; SAC-211, 2-8 meters

SAC - 210
SAC - 211



SAC - 200
SAC - 201



Quick-release couplings

Nominal diameter: ø 5 and 7 mm orifice
Connections 1/8", 1/4", 3/8", 1/2" BSPP
Plastic tubes 6/4, 8/6, 10/8 OD/ID mm
Rubber Hoses 6x14, 8x17, 10x 19, 13x23 mm

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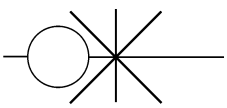
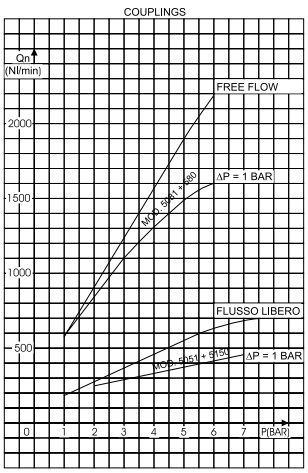
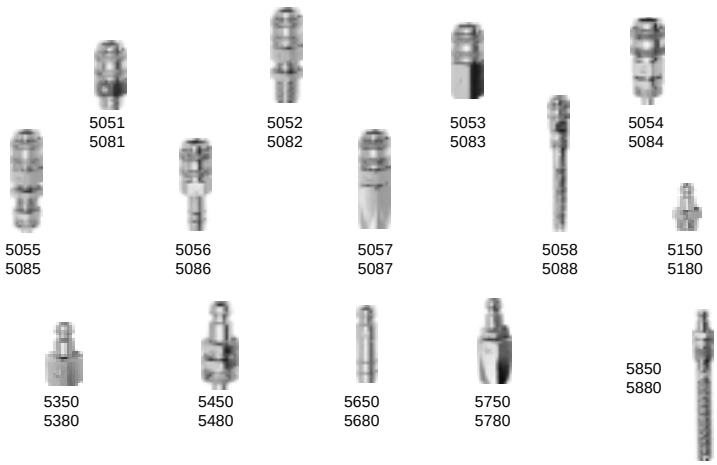
Quick-release couplings (1/8", l/4", 3/8" and 1/2") have been designed to cater for all those situations where, for plant engineering or safety reasons, the tubing in a plant must be frequently connected or disconnected. Quick-release couplings allow these operations to be performed without having to release the pressure and therefore save a considerable amount of time.
The third digit in the code (5 or 8) indicates the orifice and hence the size as well. Models which have the same third digit can be coupled together.

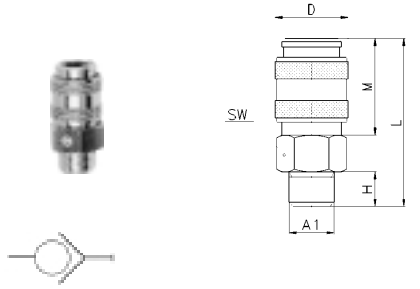


General data	
valve group	automatic quick stop valve
construction	poppet type
mounting	threaded
materials	brass OT58 UNI 5705, nickel-plated, NBR seals (coupling dia. 8 hardened galvanized steel)
connections	1/8" GAS, 1/4" GAS, 3/8" GAS, 1/2" GAS, for plastic tubing and rubber hose
installation	according to requirements
operating temperature	0° - 80°C (using dry air -20°C), 32°F - 176°F (dry air -4°F)
lubricant	compatible with NBR (3° ÷ 10° E)
Pneumatic data	
operating pressure	0-12 bar (0-175 psi)
nominal pressure	6 bar (87 psi)
nominal flow	see graph
nominal diameter	5 or 7 mm

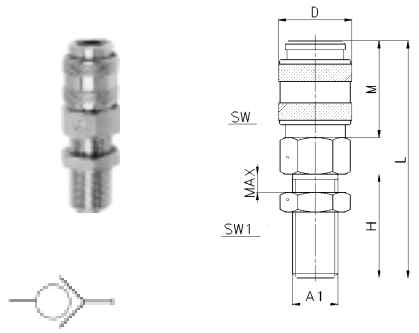
Flowrate diagram for
QUICK-RELEASE COUPLINGS
The graph below is intended to give the user an indication as to which model to use in relation to the operating pressure and required flowrate. The measurements were taken using the models indicated below and represent the ideal maximum flowrate conditions.
If tubes of inferior quality are used, allowances must be made for poorer performance.



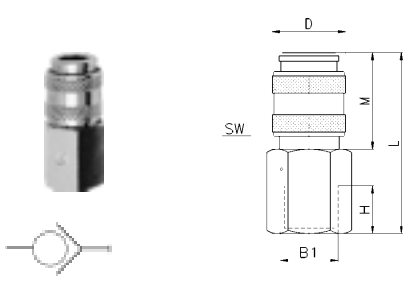




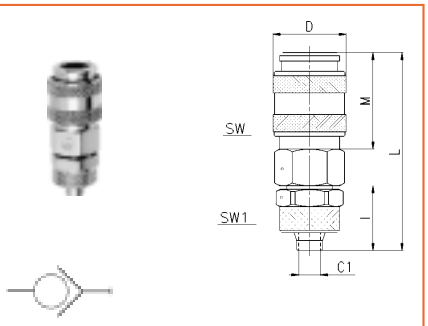
Mod. A1	Ø	D	H	L	M	SW
5051 -1/8	5	17	6	35	20.5	14
5051 -1/4	5	17	8	37	20.5	17
5081 -1/4	7	25	8	47.5	34.5	22
5081 -3/8	7	25	9	48.5	34.5	22
5081 -1/2	7	25	10	49.5	34.5	24



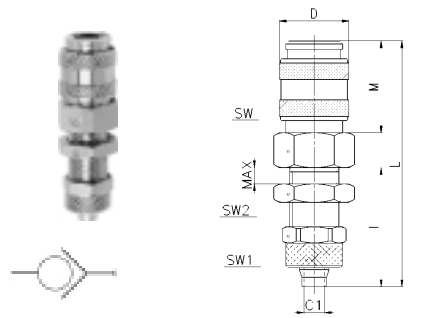
Mod. B1	Ø	D	H	L	M	Max	SW	SW1
5052 -1/8	5	17	23	52	20.5	12	14	14
5051 -1/4	5	17	24	53	20.5	12	17	17
5082 -1/4	7	25	24	63.5	34.5	12	22	17



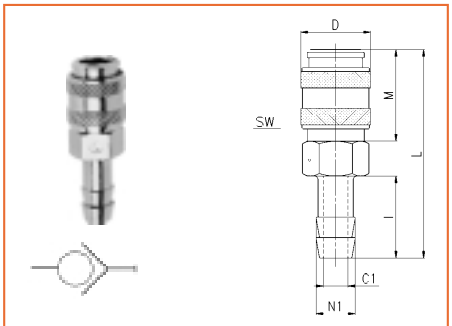
Mod. A1	Ø	D	H	L	M	SW
5053 - 1/8	5	17	7.5	36.5	20.5	14
5053 - 1/4	5	17	11	40	20.5	17
5083 - 1/4	7	25	11	49.5	34.5	22
5083 - 3/8	7	25	11.5	49.5	34.5	22
5083 - 1/2	7	25	11	49.5	34.5	24



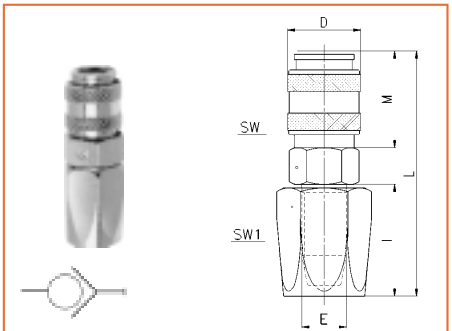
MOD.	TUBE	Ø	C1	D	I	L	M	SW	SW1
5054	**- 6/4**	5	3	17	15	44	20.5	14	12
5054	**- 8/6**	5	5	17	15	44	20.5	14	14
5084	**- 8/6**	7	5	25	15	54.4	34.5	22	14
5084	**-10/8**	7	6.5	25	16.5	56	34.5	22	16



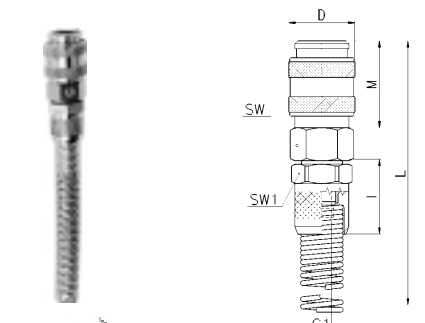
MOD.	TUBE	Ø	C1	D	I	L	M	Max	SW	SW1	SW2
5055	**- 6/4**	5	3	17	29	58	20.5	10	14	12	14
5055	**- 8/6**	5	5	17	29	58	20.5	11	17	14	17
5085	**- 8/6**	7	5	25	33	72.5	34.5	14	22	14	17
5085	**-10/8**	7	6.5	25	33	72.5	34.5	12	22	16	17



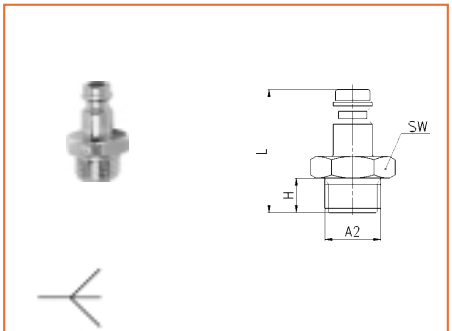
MOD.	N1	Ø	C1	D	I	L	M	SW
5056	**- 06**	5	3	17	20	49	20.5	14
5056	**- 09**	5	5	17	20	49	20.5	14
5086	**- 09**	7	5	25	20	59.5	34.5	22
5086	**- 12**	7	8	25	20	59.5	34.5	22



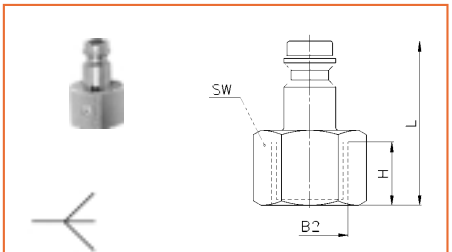
MOD.	HOSE	Ø	E	D	I	L	M	SW	SW1
5057	**-6x14**	5	9	17	25	54.5	20.5	17	17
5087	**-6x14**	7	9	25	25	64.5	34.5	22	17
5087	**-8x17**	7	10	25	25	64.5	34.5	22	19
5087	**-10x19**	7	12	25	27	66.5	34.5	22	22
5087	**-13x23**	7	15	25	37	76.5	34.5	22	27



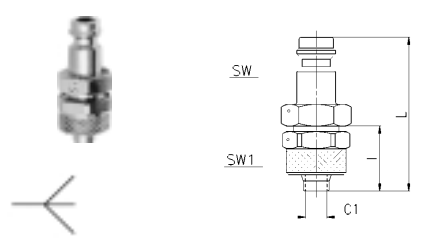
MOD.	TUBE	Ø	C1	D	I	M	L	SW	SW1
5058	**- 6/4**	5	3	17	19	20.5	120.5	14	12
5058	**- 8/6**	5	5	17	19	20.5	124.5	14	14
5088	**- 8/6**	7	5	25	19	34.5	135	22	14
5088	**-10/8**	7	6.5	25	21.5	34.5	139.5	22	16



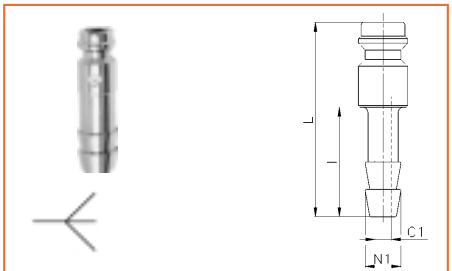
MOD.	A2	Ø	H	L	SW
5150	**- 1/8**	5	6	26	14
5150	**- 1/4**	5	8	28.5	17
5180	**- 1/4**	7	8	33	17
5180	**- 3/8**	7	9	34	19
5180	**- 1/2**	7	10	35.5	24



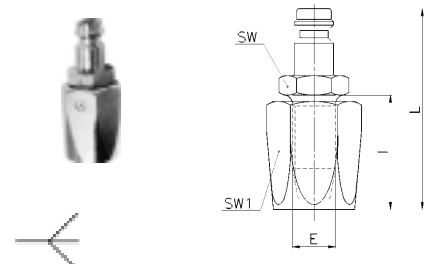
MOD.	B2	Ø	H	L	SW
5350	**- 1/8**	5	7.5	25.5	14
5350	**- 1/4**	5	11	28.5	17
5380	**- 1/4**	7	11	33	17
5380	**- 3/8**	7	11.5	33.5	19
5380	**- 1/2**	7	14	37	24



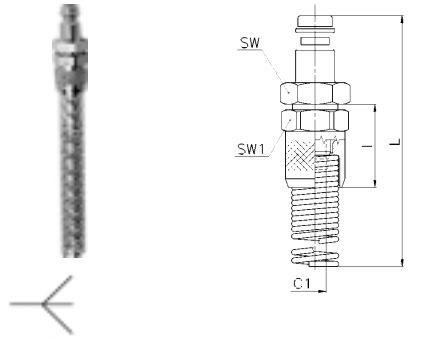
MOD.	TUBE	Ø	C1	I	L	SW	SW1
5450	**- 6/4**	5	3	15	35	12	12
5450	**- 8/6**	5	5	15	35.5	14	14
5480	**- 8/6**	7	5	15	39.5	14	14
5480	**-10/8**	7	6.5	16.5	41.5	17	16



MOD.	N1	Ø	C1	I	L
5650	**- 06**	5	3	20	35.5
5650	**- 09**	5	5	20	35.5
5680	**- 06**	7	3	20	40
5680	**- 09**	7	5	20	40
5680	**- 12**	7	7	20	40



MOD.	HOSE	Ø	E	I	L	SW	SW1
5750	**- 6x14**	5	9	25	45	14	17
5780	**- 6x14**	7	9	25	50	14	17
5780	**- 8x17**	7	10	25	50	14	19
5780	**- 13x23**	7	15	37	62	19	27



MOD.	TUBE	Ø	C1	I	L	SW	SW1
5850	**- 6/4**	5	3	19	111.5	12	12
5850	**- 8/6**	5	5	19	116	14	14
5880	**- 8/6**	7	5	19	120	14	14
5880	**- 10/8**	7	6.5	21.5	125	17	16

Silencers

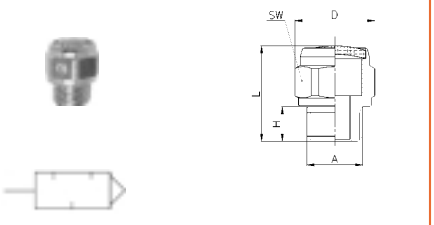
Ports M5, 1/8”, 1/4”, 3/8”, 1/2”, 3/4”, 1” BSPP

The silencers are indispensable elements for eliminating or reducing the characteristic noise of compressed air during discharge operations. They should always be placed on he outlets of 3/2, 5/2 or 5/3-way valves. When carrying out maintenance, the silencers should be degreased using white spirit or paraffin and compressed air blown through them in the opposite direction to operation.

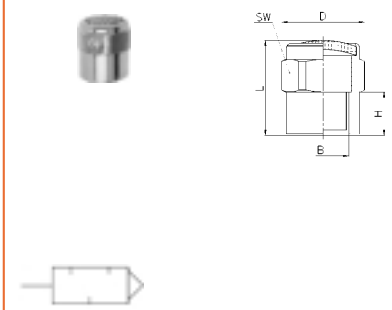
General data

construction	body with male and female thread
materials used for body	OT 58 brass, coppering steel (2921-2931)
materials used for silencing	stainless steel, bronze (sintered)
ports	M5, 1/8", 1/4", 3/8", 1/2", 3/4", 1" BSPP
noise threshold	*dB(A) 2901 and 2903 = 85 ~ - Mod. 2921 and 2931 = 72 ~

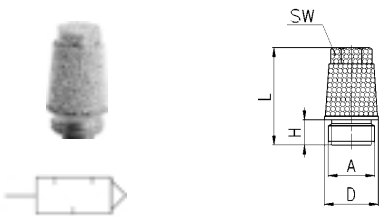
*The measurements were carried out at 6 bar



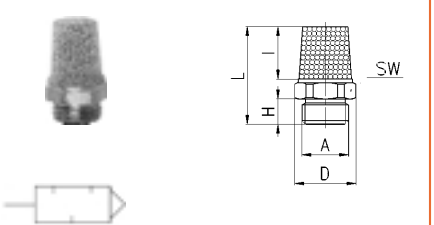
Mod.	A	D	H	L	SW	Operating pressure Kg/cm² bar
2901 – 1/8		15.3	6	17.5	14	Max. 10
2901 –1/4 - 17		18.5	8	22	17	Max. 10
2901 –1/4 - 22		23.5	8	24	22	Max. 10
2901 – 3/8		23.5	9	25	22	Max. 10
2901 – 1/2		29.5	10	31	27	Max. 10
2901 – 3/4		34	13	35	32	Max. 6
2901 – 1		43	15	43.5	40	Max. 6



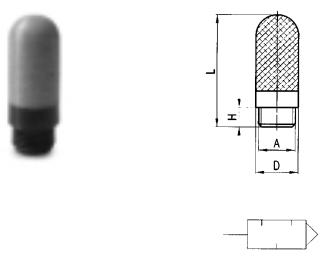
Mod.	B	D	H	L	SW	Operating pressure Kg/cm² bar
2903 – 1/8"	15.3	8	17.5	14		Max. 10



Mod.	A	D	H	L	SW	Operating pressure Kg/cm² bar
2921 – 1/8		11.5	4.5	21.5	8	Max. 16
2921 – 1/4		15	6	28	10	Max. 16
2921 – 3/8		19	7	36	13	Max. 16
2921 – 1/2		23	8	43.5	15	Max. 16
2921 – 3/4		30	9	56	19	Max. 16
2921 – 1		37	11	68.5	24	Max. 16



Mod.	A	D	H	I	L	SW	Operating pressure Kg/cm² bar
2931 – M5	7.7	4	8		16.5	7	Max. 16
2931 – 1/8	13.2	4.5	12.7		21	12	Max. 16
2931 – 1/4	16.2	6	16.5		27	15	Max. 16
2931 – 3/8	20.5	7	23.5		35	19	Max. 16
2931 – 1/2	25.6	8	26.5		40.5	23	Max. 16
2931 – 3/4	33.4	9	35		51.5	30	Max. 16
2931 – 1	40	11	46		66	36	Max. 16



Mod.	A	D	H	L	Operating pressure Kg/cm² bar
2938 – M5	M5	6,5	4,1	23	Max. 10
2938 – 1/8	G1/8	12,5	5,7	34	Max. 10
2938 – 1/4	G1/4	15,5	7	42,5	Max. 10
2938 – 3/8	G3/8	18,5	11,5	67,5	Max. 10
2938 – 1/2	G1/2	23,5	11	78	Max. 10

See flow controllers page 81-83.

See flow controllers (exhaust) page 81-83.

Automatic valves

Series SCS, VNR, VSC and VSO
Ports M5, 1/8”, 1/4”, 1/2” cartridge diam. 4 mm OD
BSPP ports

Automatic valves are defined as all those valves which change their state simply as a result of compressed air being present or absent at their inlets.

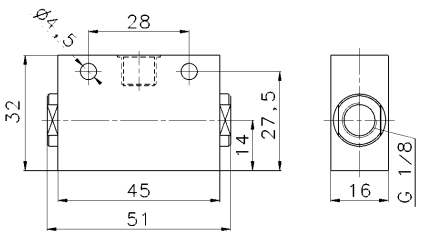
Flow Conversion (Qn)
NL/min ÷ 28.32 = SCFM

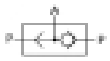
General data	
valve group	automatic valves
construction	poppet-type
mounting	in any position
ports	M5, 1/8", 1/4", 1/2" BSPP/metric
operating temperature	0° - 80°C (with dry air -20°C), 32° - 176°F (-4°F dry air)
fluid	filtered air
lubricant	compatible with NBR (3° ÷10° E)
Pneumatic data	
operating pressure	see single valve

Circuit selector

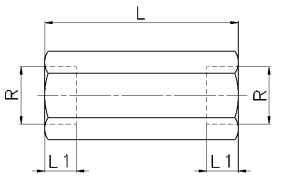
The circuit selector, Mod. SCS 668-06, enables two signals coming alternately from two different points to be channelled towards the same point.
The special design ensures that there is a perfect seal between the inlets, thereby preventing distorted signals or harmful air losses.
The selector is mounted by through holes in the body.
Materials used:
- aluminium body
- OT58 (brass) bush
- NBR seals
- Delrin poppet

Qn * = 800 Nl/min
Minimum operating pressure = 0,2 Bar
*Qn = determinated with 6 bar and ΔP = 1 bar





Mod. SCS 668 - 06



Mod.	R	L	L1	SW
VNR–205–M5	M5	25	6	8
VNR–210–1/8"	1/8"	34	7	13
VNR–843–07	1/4"	48	9	17

Unidirectional valves

The unidirectional valves in the VNR Series are available with M5, 1/8” and 1/4” ports. They must be used when it is required to intercept a flow in one direction only. The design of these valves is of the poppet type and this feature allows operation at low pressures both when there is a free flow and during retendion.
Materials used:
- OT58 (brass) body
- NBR seals
- stainless steel spring

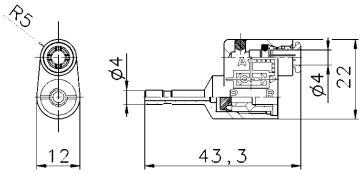
VNR 210 - 1/8”
Qn* = 600 Nl/min
Minimum operating pressure = 0.3 bar

VNR 843 - 07
Qn* = 1400 Nl/min
Minimum operating pressure = 0.2 bar
* Qn = determinated with 6 bar and
Δp = 1 bar

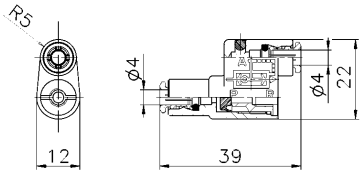
Quick exhaust valves

Quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air. The models **VSO-425-M5** and **VSO-426-04** are specially designed for mounting on solenoid valves and valves incorporating a dia. 4 cartridge.
We recommend that a silencer be mounted on the outlet.
Materials used:
- OT58 (brass) body
- NBR seal

Nominal flowrate
from P → A Qn * 30 NL/min.
from A → R Qn * 80 NL/min.
Qn* = determinated with 6 bar and ΔP = 1 bar
Minimum operating pressure = 1 bar



Mod. **VSO-425-M5**

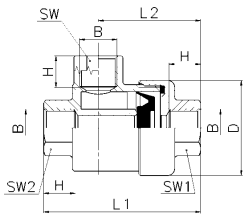


Mod. **VSO-426-04**

Quick exhaust valves

Quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air.
We recommend that a silencer be mounted on the outlet.
Materials used:
- OT58 (brass) body
- Desmopan seal (polyurethane)

VSC 588-1/8" - 06 Qn = P → A 650 Nl/min
A → R 1000 Nl/min
Minimum operating pressure = 0,5 bar
VSC 544-1/4"-09 Qn = P → A 1100 Nl/min
A → R 1900 Nl/min
Minimum operating pressure = 0,3 bar
VSC 522 1/2"-14 Qn = P → A 3300 Nl/min
A → R 5100 Nl/min
Minimum operating pressure = 0,2 bar
* Qn = determinated with 6 bar and
Δp = 1 bar



MOD.	B	H	D	L1	L2	SW	SW1	SW2	Flow-rate Fill QNP→A	Flow-rate Rapid-exhaust QNA→R
VSC–588–1/8"	1/8"	7.5	27.5	42.5	27.5	14	14	14	650	1000
VSC–544–1/4"	1/4	11	33	55	35.5	17	17	17	1100	1900
VSC–522–1/2"	1/2"	15	43	71.5	44.5	27	27	27	3300	5100

Adjustable-diaphragm pressure switches
Series PM (normally closed or open) Ports 1/8" BSP
Electro-pneumatic transducer
Series TRP (normally closed or open) Ports 1/8" BSP
Pressure indicators Ports M5

The diaphragm pressure switches in the PM Series are available in two versions: one with NC (normally closed) contacts and one with NO (normally open) contacts. A regulating screw, which can be adjusted using a small screwdriver, allows the switch to be set to the required pressure.
These pressure switches are particularly suitable for use as safety devices. In fact, the calibrated diaphragm enables an electrical signal to be generated or inhibited depending on the pressure set.

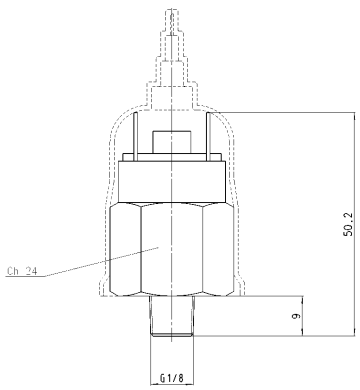
General data	
construction	with adjustable diaphragm
mounting	using thread in body
ports	1/8"
installation	according to requirements
operating temperature	-5° + 60°C (23°F - 140°F)
pressure	1 ÷ 10 bar (14.5 - 145 psi)
Electrical data	
voltage	220V
max. power	100 VA
protection class	IP54
max. no. of pulses per 1'	200
lifetime	10^6 cycles
max. strength of current	0.5 A
isolation voltage	1500V

Electrical data	
voltage	48V AC/DC
max. power	24 VA
isolation voltage	500V
operating type	heavy

Normally Closed

NC = The pressure switch opens an electric contact when it reaches the fixed pressure

Mod. **PM 11 NC**



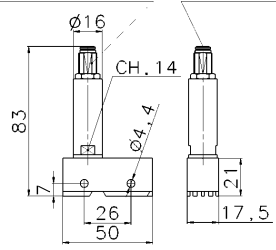
Normally Open

NA = The pressure switch closed an electric contact when it reaches the fixed pressure

Mod. **PM 11 NA**

The TRP Series transducer is specially designed to convert a pneumatic signal into an electrical signal. The contacts are N.C. (normally closed) or N.O. (normally open), thus making it possible to generate or eliminate current when the pneumatic signal is present.

Mod. 14N1A06A05 Tube 4/2 OD/ID mm



Mod. **TRP-8**

Mod.	A	H	L	SW1
2950 –	**M5**	4	13.5	8

The pressure indicator, Mod. 2950-M5 and is passive element (no spring, red).
It is useful for detecting pressure manually without having to remove the connections.

Flow control valves

Unidirectional and bidirectional (meter-in, meter-out, orifice) banjo flow controllers
Series SCU, MCU, SVU, MVU, SCO, MCO
Ports M5, 1/8", 1/4", 3/8", 1/2" BSPP (without adapters)

General data	
valve group	unidirectional and bidirectional controller
construction	needle-type
mounting	by male thread
materials	OT58 (brass) body, NBR seals
ports	M5, 1/8", 1/4", 3/8", 1/2" BSPP
installation	in any position
operating temperature	from 0° - 80°C (with dry air -20°C), 32-180°F (-4°F dry air)
lubricant	compatible with NBR (3° ÷ 10° E)
Pneumatic data	
operating pressure	from 1 to 10 bar (14.5 – 145 psi)
nominal pressure	6 bar (87 psi)
nominal flow	see graph
nominal diameter (orifice)	M5 = 1.5mm, 1/8" = 2 mm, 1/4" = 4mm 3/8" = 7mm, 1/2" = 12mm
fluid	air filtered

These unidirectional and bidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders.
The great variety of adjustable fittings makes it possible to complete the regulator with the most suitable system in relation to the available tube.
Only the 1/2" mod. is supplied complete with banjo flow controllers. For the other models the banjo flow controller is to be requested separately.

Coding of banjo flow controllers

M C U - 7 02 - M5

Actuation
M = Manual
S = Screwdriver

Assembly
CU = on cylinders unidirectional (meter-out)
VU = on valves unidirectional (meter-in)
CO = bidirectional (orifice)

Ports (BSPP)
M5
1/8"
1/4"
3/8"
1/2"

Flow control range (orifice diameter)
02 = ø 1.5 max
04 = ø 2 max
06 = ø 4 max
08 = ø 7 max
10 = ø 12 max

Versions
6 = needle (screwdriver operated)
7 = needle (manually operated)

Identification of different types
Head of Controller

SCU MCU | SVU MVU | SCO MCO

Available banjo flow controllers (see metric fittings section for banjo connections)

MCU / 6610
MVU
MCO

MCU / 1610
MVU
MCO

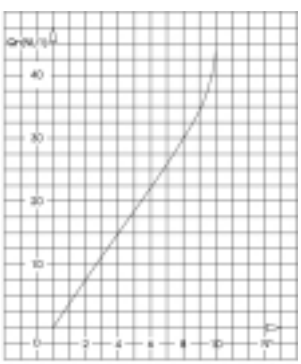
SCU / 2023
SVU
SCO

SCO / 2905

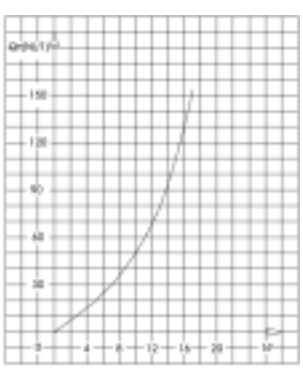
To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in Nl/1' (see cylinder Table); determine the stroke time of the cylinder; refer to graph to see which controller is the right type.
In the case of bidirectional regulators, refer to the graph and check whether the flow control range is suitable for the work required.

Flow Conversion (Qn)
NL/min ÷ 28.32 = SCFM

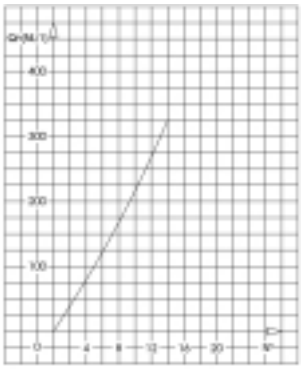
UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS M5
Flow Qn (l/min.) from B → A with controller OPEN: 60
Flow Qn (l/min.) from B → A with controller CLOSED: 43
NB: Qn is determined with a supply pressure of 6 bar and with δP = 1 bar at the outlet
N° = number of screw turns



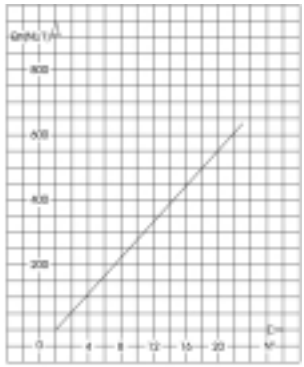
UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS 1/8"
Flow Qn (l/min.) from B → A with controller OPEN: 221
Flow Qn (l/min.) from B → A with controller CLOSED: 136
NB: Qn is determined with a supply pressure of 6 bar and with δP = 1 bar at the outlet
N° = number of screw turns



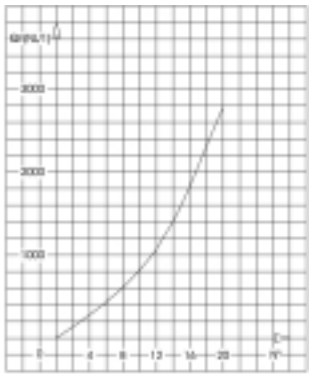
UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS (1/4")
Flow Qn (l/min.) from B → A with controller OPEN: 391
Flow Qn (l/min.) from B → A with controller CLOSED: 230
NB: Qn is determined with a supply pressure of 6 bar and with
δP = 1 bar at the outlet
N° = number of screw turns



UNIDIRECTIONAL OR BIDIRECTIONAL FLOW CONTROLLERS (3/8")
Flow Qn (l/min.) from B → A with controller OPEN: 710
Flow Qn (l/min.) from B → A with controller CLOSED: 410
NB: Qn is determined with a supply pressure of 6 bar and with
δP = 1 bar at the outlet
N° = number of screw turns

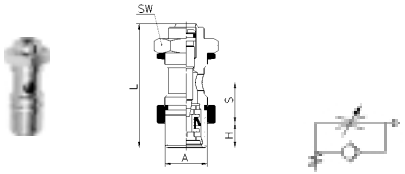


UNIDIRECTIONAL OR BIDIRECTIONAL FLOW CONTROLLERS (1/2")
Flow Qn (l/min.) from B → A with controller OPEN: 2570
Flow Qn (l/min.) from B → A with controller CLOSED: 1330
NB: Qn is determined with a supply pressure of 6 bar and with
δP = 1 bar at the outlet
N° = number of screw turns

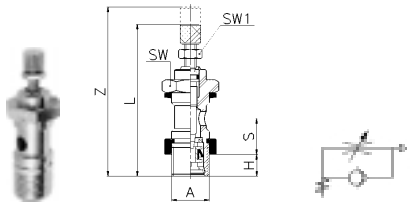


Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Adjustment of setting by a screwdriver.
Ports: M5, 1/8", 1/4" and 3/8", male.

Note: M5 flow controllers must be used together with M6 adjustable fittings.



Mod.	A	S	H	L	SW
SCU–602–M5	5.5	3.5	21.5	8
SCU–604–1/8	12.5	6	35.5	14
SCU–606–1/4	12.5	8	37.5	17
SCU–608–3/8	12.5	8	41.5	19



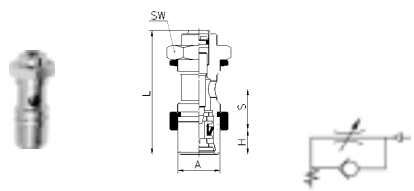
Mod.	A	S	H	L	Z	SW	SW1
MCU–702–M5	5.5	3.5	31	35	8	5.5
MCU–704–1/8	12.5	6	47	52	14	7
MCU–706–1/4	12.5	8	48	53	17	7
MCU–708–3/8	12.5	8	54	62	19	10

Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Adjustment of setting by a manually operated knurled screw.
Ports: M5, 1/8", 1/4", 3/8".

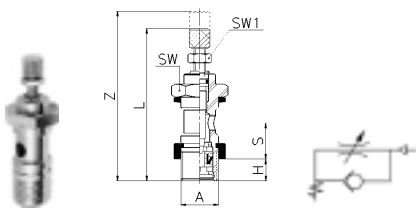
Note: M5 flow controllers must be used together with M6 adjustable fittings.

Unidirectional flow controller for mounting on valves. Adjustment of setting by a screwdriver.
Ports: M5, 1/8", 1/4".

Note: M5 flow controllers must be used together with M6 adjustable fittings.



Mod.	A	S	H	L	SW
SVU–602–M5	5.5	3.5	21.5	8
SVU–604–1/8	12.5	6	35.5	14
SVU–606–1/4	12.5	8	37.5	17



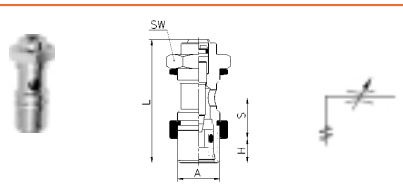
Mod.	A	S	H	L	Z	SW	SW1
MVU–702–M5	5.5	3.5	31	35	8	5.5
MVU–704–1/8	12.5	6	47	52	14	7
MVU–706–1/4	12.5	8	48	53	17	8

Unidirectional flow controller for mounting on valve. Adjustment of setting by a manually operated knurled screw.
Ports: M5, 1/8", 1/4".

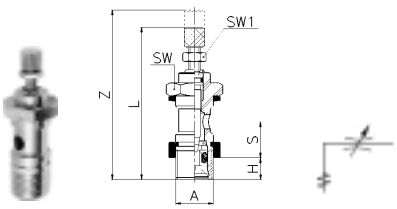
Note: M5 flow controllers must be used together with M6 adjustable fittings.

Bidirectional flow controller.
Adjustment of setting by a screwdriver.
Ports: M5, 1/8", 1/4".

Note: M5 flow controllers must be used together with M6 adjustable fittings.



Mod.	A	S	H	L	SW
SCO–602–M5	5.5	3.5	21.5	8
SCO–604–1/8	12.5	6	35.5	14
SCO–606–1/4	12.5	8	37.5	17

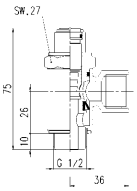


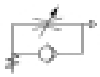
Mod.	A	S	H	L	Z	SW	SW1
MCO–702–M5	5.5	3.5	31	35	8	5.5
MCO–704–1/8	12.5	6	47	52	14	7
MCO–706–1/4	12.5	8	50	56	17	8

Bidirectional flow controller.
Adjustment of setting by a knurled screw.
Ports: M5, 1/8", 1/4".

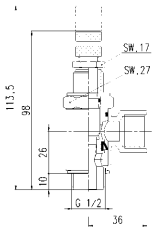
Note: M5 flow controllers must be used together with M6 adjustable fittings.

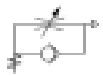
Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Screwdriver adjustment.





Mod. **SCU - 610 - 1/2”**

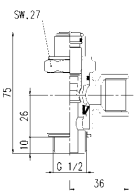




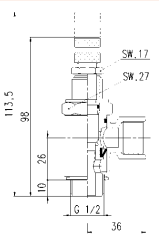
Mod. **MCU - 710 - 1/2”**

Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Knurled screw adjustment.

Unidirectional flow controller for mounting on valves.
Screwdriver adjustment.



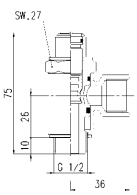
Mod. **SVU - 610 - 1/2”**



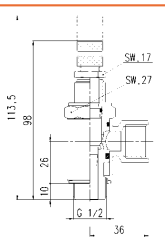
Mod. **MVU - 710 - 1/2”**

Unidirectional flow controller for mounting on valve.
Knurled screw adjustment.

Bidirectional flow controller.
Screwdriver adjustment.



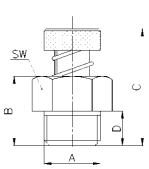
Mod. **SCO - 610 - 1/2”**



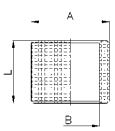
Mod. **MCO - 710 - 1/2”**

Bidirectional flow controller.
Knurled screw adjustment.

Flow control valves with silencer.
Connections: 1/8", 1/4", 1/2".



Mod.	A	B	C	D	SW
RSW – 1/8"	10.5	22	6	13	
RSW – 1/4"	13	27	8	16	
RSW – 1/2"	18	33	11	26	



Mod.	A	B	L
2905 – 1/8"	14	10	14.5
2905 – 1/4"	18	13.5	14.5
2905 – 3/8"	21	16.8	14.5

Silencing bush for Mod. SCO... or MCO...

Flow control valves Series GSCU GMCU-GSVU-GMVU-GSCO-GMCO

Unidirectional and bidirectional M3, M5, 1/8" and 1/4" BSPP banjo flow controllers, Full swivel design
Nominal diameters dia. 1,5 - 3,5 and 5 mm orifice size

CAMOZZI

General data	
construction	needle-type
valve group	unidirectional and bidirectional controller, orifice type
materials	OT58 - NBR seals
mounting	by male thread
ports	M3, M5, 1/8", 1/4" BSPP/metric
Super Rapid fitting	M3 and M5 = 3 OD, 1/8" = 6, 8 OD, 1/4" = 8, 10 OD
installation	in any position
temperature	from 0° - 80°C (with dry air -20°C), 32° - 180°F (-4°F dry air
lubricant	compatible with NBR (3° ÷ 10° E)
Pneumatic data	
operating pressure	from 1 to 10 bar (14.5 – 145 psi)
nominal pressure	6 bar (87 psi)
nominal flow	see graph
nominal dia. orifice	1/8" ø 3.5mm / 1/4" ø 5mm
fluid	filtered air

These unidirectional and bidirectional flow controllers have been designed as small as possible to enable mounting directly on valves or cylinders. The flow regulation range is wide and gradual, allowing the regulation to be very accurate either at minimum or maximum flow.

Coding of banjo flow controllers

GM CU - 8 03 - 1/8

Actuation
GM = Manual
GS = Screwdriver

Assembly
CU = on cylinders unidirectional (meter-out)
VU = on valves unidirectional (meter-in)
CO = bidirectional (orifice)

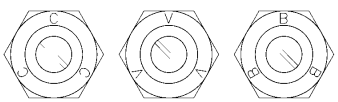
Ports (BSPP)
M3
M5
1/8"
1/4"

Flow control range

	size	ø tube
13 =	1.5	3
03 =	3.5	6
04 =	3.5	8
05 =	5	8
06 =	5	10

Versions
8 = needle (screwdriver operated)
9 = needle (manually operated)

Identification of different types Head of Controller/Hex



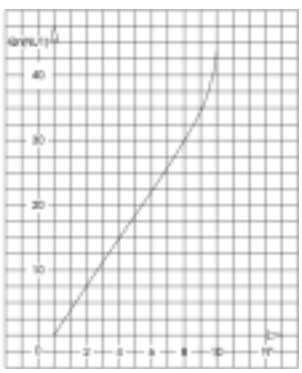
GSCU GMCU | GSVU GMVU | GSCO GMCO

To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in Nl/1' (see cylinder Table); determine the stroke time of the cylinder; refer to graph to see which controller is the right type.
in the case of bidirectional regulators, refer to the graph and check whether the flow control range is suitable for the work required.

Flow Conversion (Qn)
NL/min ÷ 28.32 = 5CFM

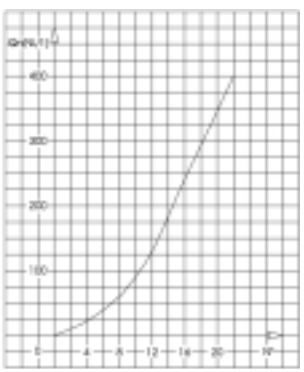
M3 AND M5 UNIDIRECTIONAL AND BIDIRECT. FLOW CONTROLLERS
flow Qn (l/min.) from B → A with controller OPEN: 46.6
flow Qn (l/min.) from B → A with controller CLOSED: 33.3

NB: Qn is determined with a supply pressure of 6 bar and with ΔP = 1 bar at the outlet
N° = number of screw turns



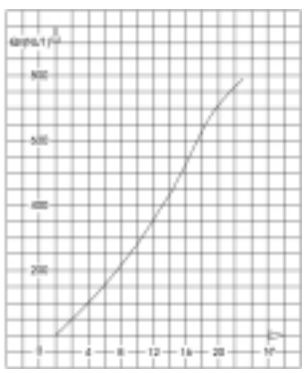
UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS (1/8)
Flow Qn (l/min.) from B → A with controller OPEN: 625
Flow Qn (l/min.) from B → A with controller CLOSED: 335

NB: Qn is determined with a supply pressure of 6 bar and with ΔP = 1 bar at the outlet
N° = number of screw turns

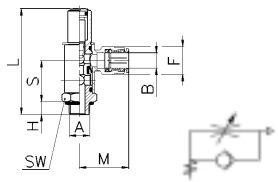


UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS (1/4)
Flow Qn (l/min.) from B → A with controller OPEN: 1230
Flow Qn (l/min.) from B → A with controller CLOSED: 765

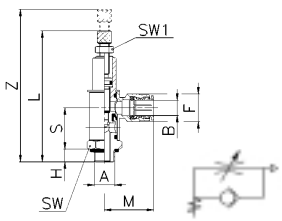
NB: Qn is determined with a supply pressure of 6 bar and with ΔP = 1 bar at the outlet
N° = number of screw turns



Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Screwdriver adjustment.
Ports: M3, M5, 1/8", 1/4" male.



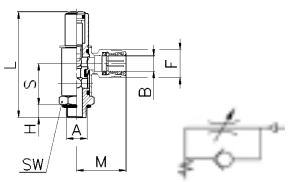
Mod.	A	B	S	H	L	M	F	SW
		Tube OD mm						
GSCU–813–M5 - 3			12	3	27.5	12	6.5	8
GSCU–803–1/8 - 6			21.3	6	48.5	26.5	13	14
GSCU–804–1/8 - 8			21.3	6	48.5	28	15	14
GSCU–805–1/4 - 8			26	8	66.5	28.5	15	19
GSCU–806–1/4 - 10			26	8	66.5	31	17.5	19



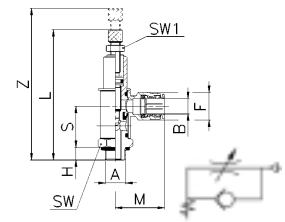
Mod.	A	B	S	H	L	Z	M	F	SW	SW1
		Tube OD mm								
GMCU–913–M5 - 3			12	3	37	40.5	12	6.5	8	5.5
GMCU–903–1/8 - 6			21.3	6	62.5	72	26.5	13	14	7
GMCU–904–1/8 - 8			21.3	6	62.5	72	28	15	14	7
GMCU–905–1/4 - 8			26	8	82.5	96.5	28.5	15	19	10
GMCU–906–1/4 -10			26	8	82.5	96.5	31	17.5	19	10

Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Knurled screw adjustment.
Ports: M3, M5, 1/8", 1/4".

Unidirectional flow controller for mounting on valves. Screwdriver adjustment.
Ports: M3, M5, 1/8", 1/4".



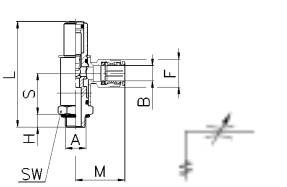
Mod.	A	B	S	H	L	M	F	SW
		Tube OD mm						
GSVU–813–M5 - 3			12	3	27.5	12	6.5	8
GSVU–803–1/8 - 6			21.3	6	48.5	26.5	13	14
GSVU–804–1/8 - 8			21.3	6	48.5	28	15	14
GSVU–805–1/4 - 8			26	8	66.5	28.5	15	19
GSVU–806–1/4 -10			26	8	66.5	31	17.5	19



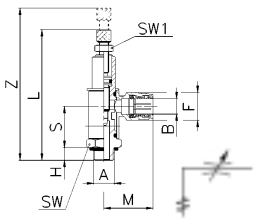
Mod.	A	B	S	H	L	Z	M	F	SW	SW1
		Tube OD mm								
GMVU–913–M5 - 3			12	3	37	40.5	12	6.5	8	5.5
GMVU–903–1/8 - 6			21.3	6	62.5	72	26.5	13	14	7
GMVU–904–1/8 - 8			21.3	6	62.5	72	28	15	14	7
GMVU–905–1/4 - 8			26	8	82.5	96.5	28.5	15	19	10
GMVU–906–1/4 - 10			26	8	82.5	96.5	31	17.5	19	10

Unidirectional flow controller for mounting on valve. Knurled screw adjustment.
Ports: M3, M5, 1/8", 1/4".

Bidirectional flow controller.
Screwdriver adjustment.
Ports: M3, M5, 1/8", 1/4".



Mod.	A	B	S	H	L	M	F	SW
		Tube OD mm						
GSCO–813–M5 - 3			12	3	27.5	12	6.5	8
GSCO–803–1/8 - 6			21.3	6	48.5	26.5	13	14
GSCO–804–1/8 - 8			21.3	6	48.5	28	15	14
GSCO–805–1/4 - 8			26	8	66.5	28.5	15	19
GSCO–806–1/4 - 10			26	8	66.5	31	17.5	19



Mod.	A	B	S	H	L	Z	M	F	SW	SW1
		Tube OD mm								
GMCO–913–M5 - 3			12	3	37	40.5	12	6.5	8	5.5
GMCO–903–1/8 - 6			21.3	6	62.5	72	26.5	13	14	7
GMCO–904–1/8 - 8			21.3	6	62.5	72	28	15	14	7
GMCO–905–1/4 - 8			26	8	82.5	96.5	28.5	15	19	10
GMCO–906–1/4 -10			26	8	82.5	96.5	31	17.5	19	10

Bidirectional flow controller.
Knurled screw adjustment.
Ports: M3, M5, 1/8", 1/4".

Flow control valves

Panel or wall-mounted flow controllers
Series RF

Ports M5, 1/8”, 1/4” BSPP
Nominal diameter: M5=1.5 1/8”=2 and 3mm 1/4”=4 and 6mm
Orifice diameter mm

General data	
valve group	unidirectional or bidirectional controller
construction	needle-type
mounting	by through-holes in valve body or control panel
materials	aluminium body, OT 58 (brass) needle, NBR seals
threaded ports	M5, 1/8", 1/4" BSPP
installation	as required
operating tempreature	0º - 80ºC (with dry air -20ºC), 32º - 180ºF (-4ºF dry air)
lubricant	oil compatible with NBR (3º ÷ 10º E)
Pneumatic data	
operating pressure	1 - 10 bar (14.5 – 145 psi)
nominal pressure	6 bar (87 psi)
nominal flow	see graph
nominal diameter (orifice, mm)	M5 = 1.5mm, 1/8" = 2 or 3mm, 1/4" = 4 or 6mm
fluid	filtered air

The undirectional flow controllers are equipped with M5, 1/8" and l/4" ports, each of which is available with two different types of adjustment (see diagrams).
They are used mainly for controlling the speed of cylinders. They may be mounted on control panels or cylinders, as required.
Bidirectional controllers are also available with the same bodies, but suitably modified.

Coding of flow controllers

RF U - 4 8 2 - 1/8

Series = RF

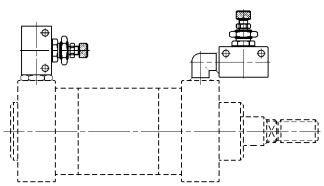
Function
U4 = unidirectional
O3 = bidirectional

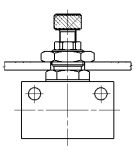
Ports
1/8 = 1/8 BSPP
1/4 = 1/4 BSPP
M5 = M5x0.8

Flow control range (orifice, mm)
2 = ø 2 max
3 = ø 3 max
4 = ø 4 max
6 = ø 6 max

Port BSPP
5 = M5
8 = 1/8"
4 = 1/4"

Examples of valve mounting

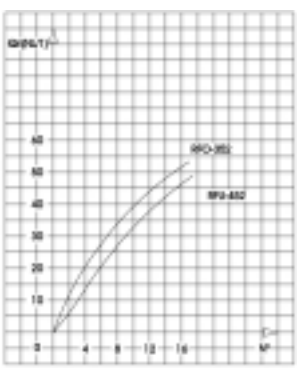




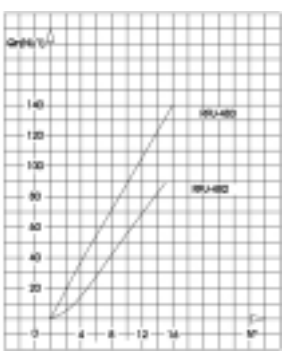
Flow Conversion (Qn)

NL/min ÷ 28.32 = SCFM

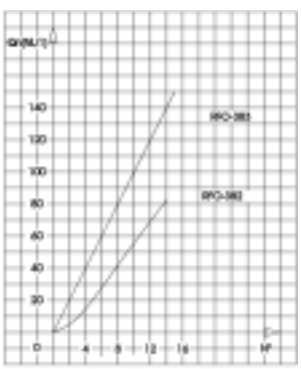
UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS M5
RFU-452 RFO-352
Mod. RFU-452 flow from B → A niddle type OPEN = 55 NL/min
CLOSED = 41 NL/min
NB: Qn is determined with a pressure of 6 bar at the inlet and ΔP=1 bar at the outlet
N° = number of screw turns



UNIDIRECTIONAL FLOW CONTROLLER 1/8”
RFU-482 RFU-483
Mod. RFU-482 flow from B → A niddle type OPEN = 121 NL/min
CLOSED = 120 NL/min
Mod. RFU-483 flow from B → A niddle type OPEN = 145 NL/min
CLOSED = 120 NL/min
NB: Qn is determined with a pressure of 6 bar at the inlet and ΔP=1 bar at the outlet
N° = number of screw turns



BIDIRECTIONAL FLOW CONTROLLER (1/8”)
RFO-382 RFO-383
NB: Qn is determined with a pressure of 6 bar at the inlet and ΔP = 1 bar at the outlet
N° = number of screw turns

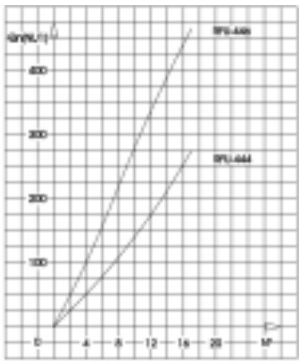


UNIDIRECTIONAL FLOW CONTROLLER (1/4")

RFU-444 RFU-446

Mod. RFU-444 flow from B → A niddle type OPEN = 550 NL/min
CLOSED = 446 NL/min
Mod. RFU-446 flow from B → A niddle type OPEN = 616 NL/min
CLOSED = 466 NL/min

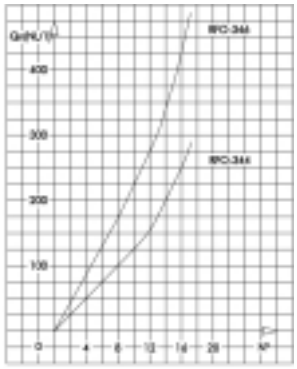
NB: Qn is determined with a pressure of 6 bar at the inlet and ΔP=1 bar at the outlet
N° = number of screw turns



BIDIRECTIONAL FLOW CONTROLLER (1/4")

RFO-344 RFO-346

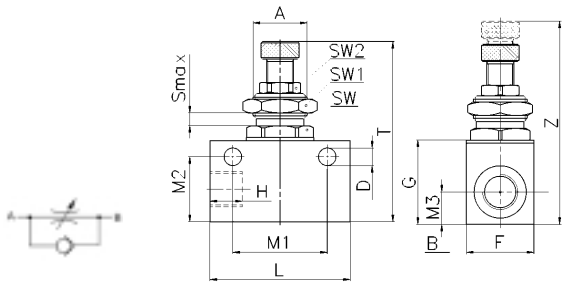
NB: Qn is determined with a pressure of 6 bar at the inlet and ΔP=1 bar at the outlet
N° = number of screw turns



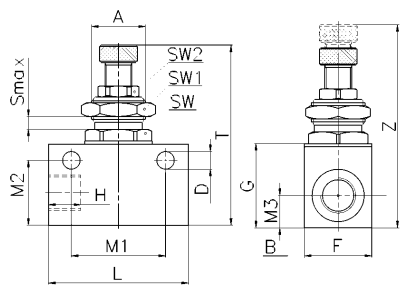
For the correct choice of 1/4" unidirectional flow controller (Mod. RFU-444 or Mod. RFU-446), proceed as follows:
- calculate the quantity of air in Nl/1' (see cylinder Table);
- determine the cylinder stroke time;
- check the graph to see which of the two controllers is suitable.

In the case of bidirectional controllers, refer to the graph and check whether the flow control range is suitable for the work required.

To regulate the speed of a cylinder, the air flow from the chamber which is being discharged must be regulated.
For this reason, the unidirectional flow controller must be connected as follows:
connect the threaded outlet marked A to the cylinder inlet and the threaded outlet marked B to the valve user port.



Mod.	B	øN	A	H	D	F	G	L	M1	M2	M3	T	Z	Smax	SW	SW1	SW2
RFU–452	**M5**	1.5	M10x1	6.5	4.2	14	16	26	18.5	13.2	7	39	44.5	3	12	14	8
RFU–482	**1/8**	2	M12x1	8	4.5	16	21	34	24.5	16.5	8	46	51	4	14	17	9
RFU–483	**1/8**	3	M12x1	8	4.5	16	21	34	24.5	16.5	8	46	51	4	14	17	9
RFU–444	**1/4**	4	M20x1.5	12	6.5	25	30	52	35	24	12	60	69	7	22	24	14
RFU–446	**1/4**	6	M20x1.5	12	6.5	25	30	52	35	24	12	60	69	7	22	24	14



Mod.	B	øN	A	H	D	F	G	L	M1	M2	M3	T	Z	Smax	SW	SW1	SW2
RFO–352	**M5**	1.5	M10x1	6.5	4.2	14	16	26	18.5	13.2	7	39	44.5	3	12	14	8
RFO–382	**1/8**	2	M12x1	8	4.5	16	21	34	24.5	16.5	8	46	51	4	14	17	9
RFO–383	**1/8**	3	M12x1	8	4.5	16	21	34	24.5	16.5	8	46	51	4	14	17	9
RFO–344	**1/4**	4	M20x1.5	12	6.5	25	30	52	35	24	12	60	69	7	22	24	14
RFO–346	**1/4**	6	M20x1.5	12	6.5	25	30	52	35	24	12	60	69	7	22	24	14

The bidirectional flow controller is suitable for regulating the air flow in both directions and for pressurising or depressurising containers.
When choosing the model, reference must always be made to the M5, 1/8" and 1/4" graph, although it is necessary to know in advance the number of litres of air to be regulated per unit of time.

Flow control valves Series 28

Ports 1/8” - 1/4” - 3/8” - 1/2” BSPP
Cartidge diam. 4, 6, 8, 10, 12 mm
(compression type connection)

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These are bidirectional control valves made entirely of nickel-plated brass OT58 UNI 5705, with NBR seals and a plastic control knob. They are suitable for regulating compressed air, water or mineral oil.

General data	
valve group	bidirectional valve
construction	cone-type
fixture	by through-holes in body or console
ports	1/8" - 1/4" - 3/8" - 1/2", ø 4 - 6 - 8 - 10 - 12 mm tube OD
installation	according to requirements
operating temperature	0 ÷ 80ºC (with dry air -20ºC), 32º - 176ºF (-4ºF dry air)
nominal flowrate	see table
working pressure	0 ÷ 10 bar (0 – 145 psi)

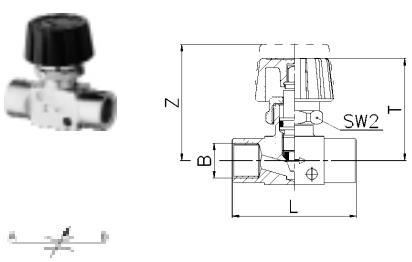
Flow Conversion (Qn)
NL/min ÷ 28.32 = SCFM

Control valve flowrate
(inlet pressure: 6 bar)

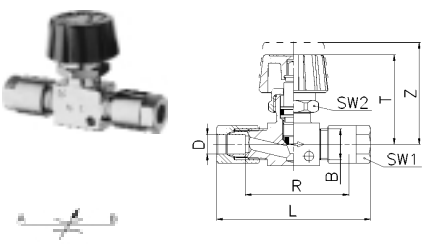
Mod.	ΔP 1 bar	Free flow
2810 – 1/8"	415 NL/min	510 Nl/min
2820 – 1/8"	400 NL/min	640 Nl/min
2830 – 1/8"	415 NL/min	635 Nl/min
2810 – 1/4"	508 NL/min	740 Nl/min
2820 – 1/4"	530 NL/min	840 Nl/min
2830 – 1/4"	530 NL/min	850 Nl/min
2810 – 3/8"	620 NL/min	900 Nl/min
2820 – 3/8"	1415 NL/min	1990 Nl/min
2830 – 3/8"	1415 NL/min	1980 Nl/min
2810 – 1/2"	1540 NL/min	2080 Nl/min
2820 – 1/2"	1520 NL/min	2150 Nl/min
2830 – 1/2"	1520 NL/min	2100 Nl/min

Mod.	A	L	T	Z	SW2
2810 –1/8	40	37	42.5	19	
2810 –1/4	42	37	42.5	19	
2810 –3/8	42	37	42.5	19	
2810 –1/2	54	42	48	22	

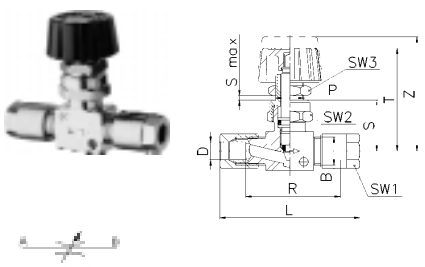
Mod.	A	B	L	T	Z	SW2
2820 –1/8	1/8	41	37	42.5	19	
2820 –1/4	1/4	44	37	42.5	19	
2820 –3/8	3/8	55.5	41.5	48	22	
2820 –1/2	1/2	59	42	49	22	



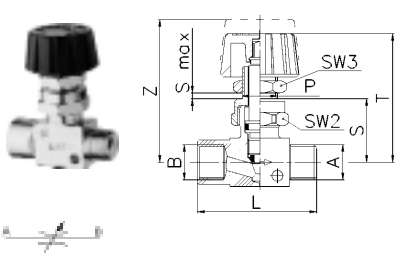
Mod.	B	L	T	Z	SW2
2830 –1/8	42	37	42.5	19	
2830 –1/4	46	37	42.5	19	
2830 –3/8	62	41.5	48	22	
2830 –1/2	64	42	49	22	



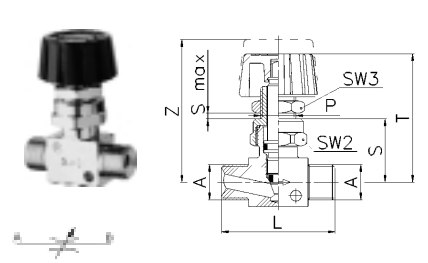
Mod.	D	B	L	R	T	Z	SW1	SW2
2800 – 4	1/8	61	40	37	42.5	12	19	
2800 – 6	1/8	62	41	37	42.5	12	19	
2800 – 8	1/4	70	44	37	42.5	14	19	
2800 –10	3/8	74	43	37	42.5	17	19	
2800 –12	1/2	90	56	42	48	19	22	



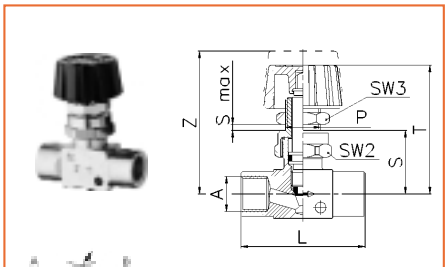
Mod.	D	B	L	P	R	S	T	Z	SW1	SW2	SW3
2809 – 4	1/8	61	1/4	40	23	47	52.5	12	19	17	
2809 – 6	1/8	62	1/4	41	23	47	52.5	12	19	17	
2809 – 8	1/4	70	1/4	44	23	47	52.5	14	19	17	
2809 –10	3/8	74	1/4	43	23	47	52.5	17	19	17	
2809 –12	1/2	90	14x1	56	28	57	52.5	19	22	17	



Mod.	A	B	L	P	S	T	Smax	Z	SW2	SW3
2829 – 1/8	1/8	41	1/4	23	47	7	52.5	19	17	
2829 – 1/4	1/4	44	1/4	23	47	7	52.5	19	17	



Mod.	B	L	P	S	T	Smax	Z	SW2	SW3
2819 – 1/8	40	1/4	23	47	7	52.5	19	17	
2819 – 1/4	42	1/4	23	47	7	52.5	19	17	



Mod.	B	L	P	S	T	Smax	Z	SW2	SW3
2839 –1/8	42	1/4	23	47	7	52.5	19	17	
2839 –1/4	46	1/4	23	47	7	52.5	19	17	
2839 –3/8	62	14x1	28	56.5	7	63	22	17	
2839 –1/2	64	14x1	29	57	7	64	22	17	

Technical Data

Corrosion resistance of electroless nickel-plating

[Camozzi fittings are plated at a thickness of 5-8 µm {microns}]

CAMOZZI

Substance	% Concentration	Temperature Degrees C	Resistance
Acetic Acid	0-70	Ambient Temperature	C-B
Acetone	100	54	A-B
Acidic Well-Water	-	20-4	B
Aliphatic Acid	100	Ambient Temperature	B
Aluminum Chloride	saturated	Ambient Temperature	D
Aluminum Sulphate	saturated	Ambient Temperature	B
Ammonium Chloride	saturated	Ambient Temperature	B
Ammonium Hydroxide	5-28	Ambient Temperature	C
Ammonium Nitrate	saturated	Ambient Temperature	B
Amyl Alcohol	100	Ambient Temperature	A
Amyl Chloride	100	Ambient Temperature	A
Aviation Gasoline	100	Ambient Temperature	A
Barium Chloride	2-40	Ambient Temperature	A
Barium Hyroxide	2-50	60	A
Beer	-	10	A
Benzil Acid	saturated	Ambient Temperature	D
Benzyl	100	Ambient Temperature	A
Boiling Oil	100	Ambient Temperature	A
Borax	saturated	Ambient Temperature	B
Boric Acid	saturated	Ambient Temperature	C
Bromine	100	Ambient Temperature	B
Butane	100	25	A
Butyl Alcohol	100	Ambient Temperature	A
Calcium Chloride	saturated	Ambient Temperature	A
Calcium Hydroxide	saturated	60	A
Calcium Nitrate	saturated	Ambient Temperature	A
Carbon Dioxide	100	Ambient Temperature	B
Carbon Tetrachloride	100	@ boiling point	A
Chlorine	100	Ambient Temperature	B
Chloroform	100	@ boiling point	B
Chloroform	100	Ambient Temperature	A
Chromic Acid	2-100	Ambient Temperature	D
Citric Acid	5	Ambient Temperature	A
Coal Oil	100	Ambient Temperature	A
Coffee		@ boiling point	A
Copper Chloride	saturated	Ambient Temperature	D
Copper Nitrate	saturated	Ambient Temperature	D
Copper Sulphate	2-30	Ambient Temperature	C
Crude Oil	100	Ambient Temperature	A
Dichloro Ethylene	100	@ boiling point	A
Dichloro Ethynol	100	Ambient Temperature	A
Dimethyl Benzol	100	Ambient Temperature	A
Distilled Water		Ambient Temperature	A
Drinkable Water		80	A
Dry Chlorine	100	Ambient Temperature	A
Ethyl Acid	100	Ambient Temperature	A
Ethylene	100	Ambient Temperature	A
Ethylic Glycol	100	Ambient Temperature	A
“Exhaust Gas, Basic”		260	D
“Exhaust Gas, Oxidative”		540	A
Ferrous Chloride	saturated	Ambient Temperature	D
Ferrous Nitrate	saturated	Ambient Temperature	D
Ferrous Sulphate	saturated	Ambient Temperature	D
Formaldehyde	37	Ambient Temperature	B
Formic Acid	88	Ambient Temperature	B
Fruit Juice		Ambient Temperature	A
Gas	100	Ambient Temperature	A
Glucose	saturated	Ambient Temperature	A
Glycerine	100	Ambient Temperature	A
Hydrochloric Acid	30	Ambient Temperature	D
Hydrochloric Acid	conc.	Ambient Temperature	D
Hydrochloric Acid	10	Ambient Temperature	D
Hydrochloric Acid	20	Ambient Temperature	D
Hydrofluoric Acid	2-100	Ambient Temperature	D
Hydrogen Sulphide	100	Ambient Temperature	A
Iron Chloride	saturated	Ambient Temperature	D
Kerosene	100	Ambient Temperature	A
Lactic Acid	85	Ambient Temperature	A
Lactic Acid	10-50	Ambient Temperature	C
Lead Acetate	saturated	Ambient Temperature	B
Lead Nitrate	saturated	Ambient Temperature	A
Linseed Oil	100	Ambient Temperature	A
Lithium Chloride	saturated	Ambient Temperature	A
Magnesium Chloride	2-50	Ambient Temperature	A
Magnesium Hyroxide	2-50	Ambient Temperature	A
Molasses		100	B
Molasses		Ambient Temperature	A
Methyl Alcohol	100	Ambient Temperature	A
Methyl Chloride	100	Ambient Temperature	C
Milk		Ambient Temperature	A
Mineral Oil	100	Ambient Temperature	A
Natural Resin	100	50	A
Nickel Chlorine	saturated	Ambient Temperature	C
Nickel Sulphate	saturated	Ambient Temperature	C

Substance	% Concentration	Temperature Degrees C	Resistance
Nitric Acid	2-100	Ambient Temperature	D
Oleic Acid	100	Ambient Temperature	A
Oleum	20	Ambient Temperature	D
Orange Juice		Ambient Temperature	A
Oxalic Acid	saturated	Ambient Temperature	A
Palm Oil	100	Ambient Temperature	A
Parafin	100	Ambient Temperature	A
Peanut Oil	100	Ambient Temperature	A
Phenol	100	90	A
Phosphoric Acid	0-100	Ambient Temperature	0-10% C
		Ambient Temperature	10-80 % B
Picric Acid	100	Ambient Temperature	D
Polymers	100	20...200	A
Potassium Carbonate	saturated	Ambient Temperature	A
Potassium Chloride	saturated	Ambient Temperature	A
Potassium Hydrate	2-50	Ambient Temperature	A
Potassium Ironcyanide	saturated	Ambient Temperature	B
Propane	100	Ambient Temperature	A
Rosin	100	@ boiling point	A
Sea Water		Ambient Temperature	A
Silver Chloride	saturated	Ambient Temperature	D
Soap		95	A
Sodium Bicarbonate	saturated	Ambient Temperature	B
Sodium Carbonate	saturated	Ambient Temperature	A
Sodium Chloride	saturated	Ambient Temperature	A
Sodium Cyanide	5	Ambient Temperature	B
Sodium Hydrate	2-73	> = 60	A
Sodium Nitrate	10	Ambient Temperature	A
Sodium Phosphate	saturated	Ambient Temperature	A
Sodium Sulphate	saturated	Ambient Temperature	A
Sodium Sulphide	saturated	Ambient Temperature	A
Steam		425	A
Steam Condensate		80	A
Stearic Acid	saturated	Ambient Temperature	A
Sulphuric Acid	20	Ambient Temperature	C
Sulphuric Acid	50-70	Ambient Temperature	C
Sulphuric Acid	30-40	Ambient Temperature	C
Sulphuric Acid	90	Ambient Temperature	C
Sulphuric Acid	10	Ambient Temperature	D
Sulphuric Acid	80	Ambient Temperature	D
Sulphuric Acid	100	Ambient Temperature	D
Sulphurous Acid	2-60	Ambient Temperature	D
Tanning Solution	100	Ambient Temperature	A
Toluol	100	95	A
Trichlorethylene	100	95	A
Turpentine	100	Ambient Temperature	A
Urine	saturated	Ambient Temperature	A
Vinegar	100	Ambient Temperature	B
Vinyl Chloride	100	35	A
Whiskey		Ambient Temperature	A
Wine	100	Ambient Temperature	A
Zinc Chloride	saturated	Ambient Temperature	B
Zinc Nitrate	saturated	Ambient Temperature	B

LEGEND:

A: Very satisfactory result, rate of removal from corrosion less than 2.5 microns per year.

B: Useful result, rate of removal from corrosion less than 12.5 microns per year.

C: To be decided in each case individually, rate of removal from corrosion less than 25 microns per year.

D: Application not recommended for long periods, rate of removal from corrosion more than 25 microns per year.

Technical Data

Corrosion resistance of electroless nickel-plating

CAMOZZI

Corrosion resistance table for various foods

Substance	pH Value	Test Volume (ML)	Test Time (HRS)	Penetration (microns/yr)
Apple Juice	3.1	850	1702	1.2
Bean Soup		500	1702	0.7
Canadian Whiskey	5.2	150	3910	1.6
Canned Corn	6.2	250	1702	0.7
Canned Peaches	3.5	400	1681	0.2
Canned Peas	6.1	450	1702	0.2
Canned Pineapple		500	1681	0.3
Canned Potatoes	5.8	350	1681	1.9
Cherry	3.8	150	3910	6.4
Chicken Broth (3 tests @ 95 degrees C)	6	200	312/502	1
Chocolate Candy		250	1681	
Coffee	5.3	700	1729	9.9
Coffee (4 tests @ 95 degrees C)	4.8	200	312/554	4.7
Cooked Onions		450	1702	0.8
Cranberry Juice		950	1702	0.5
Eggs (2 tests @ 2 degrees C)	8.3	300	1248/1633	0.2
Gin (2 tests)	7.5	150	3910	0.02
Grape Juice	4	800	1702	1.8
Grapefruit Juice	3.2	900	1702	0.5
Lemon Juice	2.3	800	1702	1
Lemonade		950	1702	11.4
Molasses		350	1702	0.2
Margarine (2 degrees C)		200	1633	
Mayonnaise	3.7	470	1681	0.2
Meat Gravy		400	16581	0.6
Milk (2 tests @ 2 degrees C)	6.4	950	1248/1633	0.04
Mushroom Soup		250	1702	0.3
Mushrooms		150	1681	0.6
Peanut Butter		450	1702	
Peeled Tomatoes	4.2	400	1681	0.5
Plum Juice		1000	1702	1
Pork and Beans	5.5	350	1681	0.3
Quark Cheese (2 tests @ 2 degrees C)		300	1248/1633	0.4
Rum	5.8	150	3910	0.2
Sardines in Soybean Oil		30 (oil)	1681	
Scotch Whiskey	5.3	150	3910	1.8
Sliced Radishes	5.2	400	1681	1.8
Sour Kraut	3.5	150	1681	4.4
Spanish Olives	3.7	250	1702	0.3
Tea	2.6	750	1729	4.2
Tea (4 tests @ 95 degrees C)	2.6	200	312/554	9
Tequila (2 tests)	4.8	150	3910	0.4
Tomato Juice (2 tests)	4.2	710	1321/1336	0.5
Tomato Soup		250	1702	0.5
Tomato Soup (2 Tests @ 95 degrees C)	3	200	502	6.1
Tropical Punch		950	1702	1.3
Vegetable Oil		470	1729	
Vegetable Soup		250	1702	1.2
Vinegar	2.9	470	1729	7
Vodka	8.2	150	3910	

Substance	Test Volume (ML)	Test Time (HRS)	Penetration (microns/yr)
Acacia 1%, 4.4 pH	500	5570	0.2
Acetic Acid, 5% CH3COOH (2 tests)	500	2616	13.7
Alum, 5% (A12S04) 3	450	1609	4.3
Ammonia, 28% NH40H	500	3624	12.6
Asorbic Acid, 10% C4H605	500	2660	16.7
Asorbic Acid, 5% C6H806	500	4990	6.6
Carbon Dioxide 5% Fenol	450	4891	4.3
Citric Acid, 5% C6H807	500	2660	14.7
Deionized Water (2 tests @ 95 degrees C)	200	211	
Deionized Water, (1MQ-cm% tests)	900	4536/5089	1.9
Dextrine, 1%, 3.8 pH	500	5570	0.1
Drinkable Water, 8.0 pH (4 tests)	900	4536/5089	0.05
Fecula, 1%	500	3839	0.5
Lactic Acid, 85% C3H603	500	1337	1.3
Phosphoric Acid, 1% H3P04 (2 tests)	450	2599/2618	12.6
Potassium Carbonate, 25% K2C02	450	2302	0.2
Saline Water, 26% NaCl (2 tests)	450	1337/3478	2
Saline Water, 40% CaCl2 (2 tests)	450	1198/3335	0.1
Salt, 5% NaCl, 6.3 pH	450	1198	0.5
Sea Water, Artifical, 8.2 pH (2 tests)	500	1272	1
Sodium Bicarbonate 2% NaHC03	500	3839	6.4
Sodium Hyroxide, 1% NaOH	500	5042	0.2
Sodium Hypochlorite, 1% NaOCL	450	460	0.5
Sodium Nitrate, 42% NaNO2	450	574	12
Sodium Nitrate, 47% NaNO3	450	1198	
Water 700mg/1CO2, 3.9 pH (2 tests)	450	404	7.9

LEGEND:
—Very satisfactory result, rate of removal from corrosion less than 2.5 microns per year.
— Useful result, rate of removal from corrosion less than 12.5 microns per year.
— To be decided in each case individually, rate of removal from corrosion less than 25 microns per year.
— Application not recommended for lond periods, rate of removal from corrosion more than 25 microns per year.

7

Technical Data

Tubing chemical resistance guidelines

CAMOZZI

The following ratings are very general guidelines, designed ONLY to be used as an initial screening tool. Bear in mind that dynamic vs. static application, temperature, chemical mixtures, and the specific tubing compound selected can significantly affect or change these ratings either positively or negatively. Careful testing under actual conditions is essential. Accuracy for these ratings is not given or implied.

N = Nylon
PUR = Polyurethane
P/E = Polyethylene
PVC = Polyvinylchloide (vinyl)

RATINGS:
SOLVENT/CHEMICAL
1 = little or no effect
2 = minor effect
3 = moderate effect
4 = severe effect
- = no tested data available

SOLVENT/CHEMICAL	N	PUR	P/E	PVC
Acetic Acid	-	4	1	4
Acelic Acid 30%	-	4	1	4
Acetone	-	4	2	4
Acetylene	-	4	1	1
Alkazene	-	4	-	-
Aluminum Chloride (aq	-	3	2	1
Aluminum Nitrate (aq)	-	3	-	-
Ammoni Anhydrous	-	4	2	1
Ammonia Gas (cold)	-	3	-	-
Ammonia Gas (hot)	-	4	-	-
Ammonium Chloride (aq)	-	1	1	1
Ammonium Sulfate (aq)	-	1	1	1
Amyl Alcohol	-	4	2	1
Amyl Naphthalene	-	4	-	-
Animal Fats	-	1	-	-
Aqua Regia	-	4	2	3
Arsenic Acid	-	3	2	1
Asphalt	-	2	1	1
ASTM Fuel A	-	2	-	-
ASTM Fuel B	-	3	-	-
ASTM Fuel C	-	3	1	1
Barium Chloride (aq)	-	1	1	1
Beer	1	2	1	1
Beet Sugar Liquors	-	4	1	1
Benzene	1	3	3	3
Benzine	-	2	-	-
Blast Furnace Gas	-	4	-	-
Bleach Solutions	-	4	-	1
Borax	-	1	1	2
Boric Acid		-	1	1
1				
Brake Fluid	-	4	-	-
Brine	-	2	4	3
Bromine Water	4	4	-	-
Bunker Oil	-	2	-	-
Butane	1	1	3	3
Butter	-	1	-	-
Butyl Alcohol	3	4	1	2
Butylene	-	4	1	1
Calcium Chloride (aq)	1	1	2	1
Calcium Hydroxide (aq)	-	1	2	1
Calcium Nitrate (aq)	1	1	-	-
Calcium Sulfide (aq	-	1	-	-
Cane Sugar Liquors	-	4	-	1
Carbolic Acid	-	3	2	3
Carbon Dioxide	-	1	3	1
Carbonic Monoxide	-	1	2	1
Carbon Tetrahchloride	3	4	2	2
Castor Oil	-	1	-	1
Chlorine (dry)	4	4	2	1
Chlorine (wet)	4	4	-	-
Chloroform	3	4	3	4
Chlorox	-	4	-	-
Chromic Acid	4	4	1	1
Citric Acid		1	1	1
2				
Coal Tar	-	3	-	-
Coconut Oil	-	2	-	1
Cod Liver Oil	-	1	-	1
Coke Oven Gas	-	4	-	-
Copper Chloride (aq)	-	1	2	1
Copper Cyanide (aq)	-	1	2	1
Corn Oil	-	1	3	2
Cotton Seed Oil	-	1	2	2
Creosol	4	4	3	4
Cyclohexane	1	1	2	4
Denatured Alcohol	-	4	-	-
Detergent Solution	-	4	1	1
Diesel Oil	-	3	3	1
Dioxane	-	4	-	-
Dowtherm Oil	-	3	-	-
Dry Cleaning Fluids	-	4	-	-
Ethane	-	3	-	4
Ethyl Acrylate	-	4	-	-
Ethyl Alcohol	3	4	-	-
Ethyl Benzine	-	4	-	-
Ethyl Cellulose	-	2	-	-
Ethyl Chloride	-	2	-	-
Ethyl Ether	-	3	-	-
Ethyl Chloride	-	4	3	4
Ethyl Glycol	2	4	1	1
Ethylene Oxide	1	4	3	3
Ethylene Trichloride	-	4	-	-
Ferric Chloride (aq)	-	1	1	1
Ferric Nitrate (aq)	-	1	2	1
Ferric Sulfate (aq)	-	1	1	1
Flourine (liquid)	4	4	3	4
Formaldehyde (RT)	-	4	3	1
Formic Acid	3	3	2	1
Freon 11	-	4	3	1
Freon 12	1	1	3	1
Freon 22	1	4	-	2
Fuel Oil	-	2	3	1
Furlural Glucose	-	4	1	1
Glue	-	1	1	3
Glycerin	1	1	1	1
Glycols	1	4	-	-
Green Sulfate Liquor	-	1	-	-
Hexane	-	2	3	2
Hydraulic Oil	-	1	1	1
Hydrochloric Acid (cold) 37%	-	4	2	2
Hydrochloric Acid (hot) 37%	-	4	-	-
Hydrochloric Acid cold	-	3	-	-
Hyrochloric Acid hot	-	4	-	-
Hydrogen Gas	1	1	1	1
Isobutyl Alcohol	-	4	-	-
Isooctane	-	2	-	-
Isopropyl Acetate	-	4	2	4
Isopropyl Alcohol	1	3	-	-
Isopropyl Ether	-	2	1	2
Kerosene	1	1	3	4
Lacquers	-	4	2	3
Lacquer Solvents	-	4	2	3
Lard	-	1	2	1
Lavender Oil	-	4	-	-
Lead Acetate (aq)	-	4	1	1
Linseed Oil	1	2	3	1
Liquified Petroleum Gas	-		-	-
Lubricating Oils	-	2	4	2
Lye	-	4	-	-
Magnesium Chloride (aq)	1	1	1	1
Magnesium Hydroxide (aq	-	4	1	1
Mecury	1	1	1	2
Methane	1	3	-	-
Methyl Acetate	1	4	2	4
Methyl Acrylate	-	4	-	-
Methyl Alcohol	1	4	1	1
Methyl Butyl Ketone	-	4	-	1
Methyl Chloride	3	4	3	4
Methylene Chloride	-	4	3	4
Methyl Ethyl Ketone	1	4	2	4
Methyl Isobutyl Ketone	1	4	-	-
Milk	1	4	1	1
Mineral Oil	1	1	2	1
Naphtha	1	2	1	3
Naphthaline	1	2	1	4
Natural Gas	-	2	-	-
Nitric Acid (conc.)	4	4	3	4
Nitric Acid (dilute)	4	3	-	4
Nitreothane	-	4	-	-
Nitrogen	-	1	-	-
N-Oclane	-	4	-	-
Oleic Acid		1	2	3
3				
Oleum Spirits	-	3	4	4
Olive Oil	-	1	1	3
Oxygen-cold	1	1	-	-
Oxygen (200-400 Degrees F)	-	4	-	-
“Paint Thinner, Duco”	-	4	-	-
Perchloric Acid	-	4	-	-
Perchloroehylene	3	4	4	3
Petroleum-Below 250 degrees	-	2	-	-
Petroleum-Above 250 degrees	4	4	-	-
Phenol	4	3	2	3
Phenyl Ethyl Ether	-	4	-	-
Phosphoric Acid 45%	2	1	2	2
Pickling Solution	-	4	-	-
Ploric Acid	3	2	-	4
Potassium Acetate (aq)	-	4	-	-
Potassium Chloride (aq)	-	1	1	1
Potassium Cynaide (aq)	-	1	1	1
Potassium Hyroxide (aq)	3	4	1	1
Producer Gas	-	1	1	1
Propane	1	3	3	1
Propyl Alcohol	-	4	-	-
Propylene-	4	-	-	
Propylene Oxide	-	4	-	-
“Pyraul, 10E, 29 ELT”	-	4	-	-
“Pydraul, 30E, 50E,65E”	-	4	-	-
“Pydraul, 115E”	-	4	-	-
“Pydraul, 23DE,312C, 540C”	-	4	-	-
Rapseed Oil	-	2	-	-
Red Oil (MIL-H-5808)	-	1	-	-
RJ-1 (MIL-F-23338 0)	-	1	-	-
RP-1 (MIL-F-25578 C)	-	1	-	-
Salt Water	1	2	1	1
Sewage	-	4	-	-
Silicate Esters	-	1	-	-
Silicone Oils	-	1	1	1
Silver Nitrate	-	1	2	1
Skydrol 500	-	4	-	-
Skydrol 700	-	4	-	-
Soap Solutions	1	3	3	1
Sodium Chloride (aq)	1	1	1	1
Sodium Hydroxide (aq)	2	4	2	1
Sodium Peroxide (aq)	-	4	1	2
Sodium Phosphate (aq)	-	1	-	-
Sodium Sulfate (aq)	-	1	1	1
Soy Bean Oil	-	2	1	1
Steam Under 300 degrees	4	4	-	-
Steam Over 300 degrees	4	4	-	-
Sloddard Solvent	-	1	3	3
Styrene	-	3	-	4
Sucrose Solution	-	4	-	-
Sulfuric Acid (dilute)	-	3	1	1
Sulfuric Acid (conc.)	-	4	3	4
Sulfuric Acid (20% oleum)	-	4	-	-
Sulfurous Acid	-	3	2	1
Tannic Acid	-	1	2	1
Tetrochloroethylene	-	4	2	4
Toluene	1	4	3	4
Transformer Oil	-	1	-	-
Transmission Fluid Type A	-	1	-	-
Trichloroethane	3	4	-	3
Trichloroethylene	3	4	3	4
Turbine Oil	-	1	3	1
Turpentine	1	4	3	2
Varnish	-	3	3	4
Vinegar	1	4	2	1
Vinyl Chloride	-	4	-	-
Water	1	1	1	1
“Whiskey, Wines”	1	2	3	1
White Oil	-	1	-	-
Wood Oil	-	3	-	-
Xylene	2	4	3	4
Zinc Acetate (aq)	-	4	-	-
Zinc Chloride (aq)	1	1	1	1

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