

Composite Right Angle Flow Control Valves Series TMCU – TMVU – TMCO – NPTF/INCH

NEW

Meter In, Meter Out, Needle Orifice 1/8", 1/4", 3/8", 1/2" NPTF
Tube OD 5/32", 1/4", 5/16", 3/8", 1/2"
Reusable thread seal, PTFE seal ring (Teflon®) - **Pro-Fit®**

The Meter In, Meter Out, Needle Orifice flow controllers, series TMCU, TMVU, TMCO have been designed to offer a solution with reduced overall dimensions in combination with higher flow rate characteristics.

Their construction allows an easy assembly on cylinders and valves and offers the possibility of locking the regulation screw once it has been set.

The flow regulation range which is extremely wide and gradual has been optimized further, allowing a very accurate flow regulation over the whole scale.

For **Pro-Fit®** Torque Specifications, see Page 6.



TECHNICAL SPECIFICATIONS

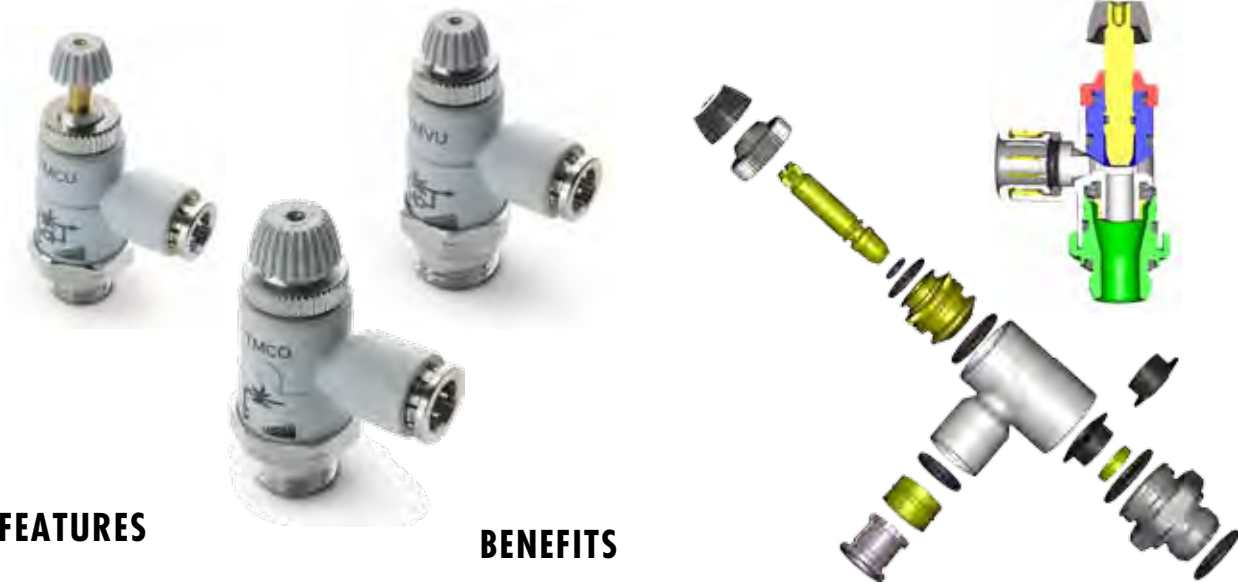
Construction	needle-type
Valve group	Meter In, Meter Out, Needle Orifice flow controlle
Materials	OT58 Nickel Plated Brass Threads and Collet - Technopolymer (Glass-Reinforced Nylon® 66 Resin) - BUNA-N Seals, PTFE thread seal
Mounting	by male thread
Ports	1/8", 1/4", 3/8", 1/2" NPTF
Position	in any position
Operating temperature	0 - 60°C (with dry air -20°C) (32°F - 140°F, with dry air -4°F). Consult factory for higher temperature requirements.

*If lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.

PNEUMATIC DATA

Operating pressure	0.5 - 10 bar (7.25 - 145 psi)
Nominal pressure	6 bar (87 psi)
Nominal flow	see graph
Nominal diam.	Tube OD 5/32", 1/4", 5/16", 3/8", 1/2"
Fluid	filtered air

Composite Flow Control Valves NPTF Threads with **Pro-Fit**® Teflon® Seals



FEATURES

- All metal, Nickel-Plated collet and threads
- Strong, specialized Nylon compound body material
- Specialized O-ring choices for High-Temp, Low-Temp, Special Fluids, Food-Grade compatibility
- Patented **Pro-Fit**® Thread sealant system: Captured Teflon ring seals effectively on NPT and NPTF ports: (plus optional hybrid use on BSPP, BSPT or JIS (Rpt or Rc , G or Rg) thread ports)
- Broad Range of Tube/Thread combinations
- Removable Collet and tube o-rings
- Highly accurate Flow-rate repeatability & Higher Flow than typical brass bodied flow control valves
- Large ¼-Turn Locking-nut
- Precise Manual knob, w/ Internal hex-key
- Full Swivel design, NPTF and Metric/BSP, with integrated Push-In Fittings
- Meter-IN, Meter-OUT and Needle-Orifice flow designs for assembly on valves, cylinders or in-line use
- ANSI symbol stamped on all bodies
- Tube O.D. size stamped on all collet faces
- Meter-IN, Meter-OUT and Needle-Orifice flow designs for assembly on valves, cylinders or in-line use

BENEFITS

Collet

- Won't break like plastic release rings and bodies; More Durable design
- Higher holding force, with easier release
- Won't scratch tubes like "bite-ring" designs
- Less chance of micro-leakage and bubble-leaks over time due to damaged tubing

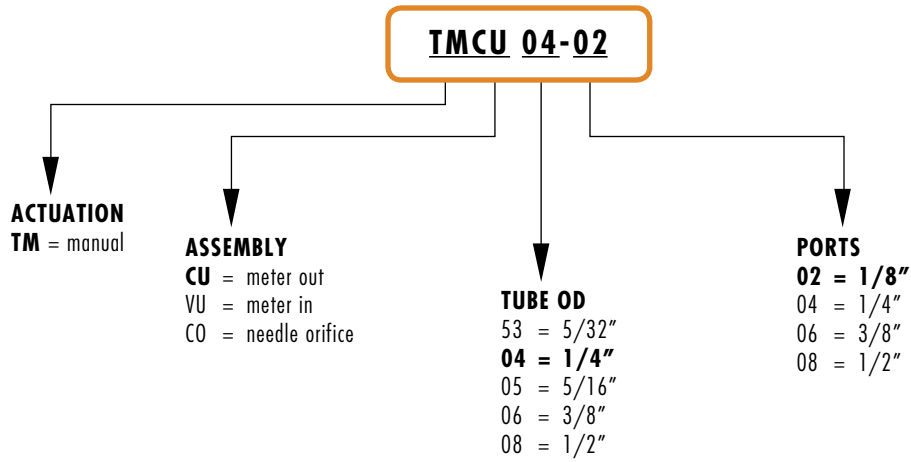
Body

- Resistant to UV exposure
- Better resistance to stress-cracking, abrasion, solvents, detergents, hydrocarbons and other fluid media
- FDA/NSF approved materials, (Including customized Nickel-Plating and o-ring options)
- Simplified manifold circuits with broader variety of fitting combinations and shapes to select
- Lighter weight for End-of-Arm tooling & Robotic handling,
- Compact design reduces overall dimensions for valve & cylinder assemblies, packaging applications and control cabinets
- 10% Reduction in Flow-Control size over previous brass bodies

Design

- Accuracy and Repeatability of Flow-Control valves allows timing circuits to be design, faster OEM set-up and simplified MRO field installation and replacements
- Simplified manifold circuits with broader variety of Tube – Thread combinations to select
- Lighter weight for End-of-Arm tooling & Robotic handling
- Compact design reduces overall dimensions for valve assemblies, packaging applications and control cabinets
- More compact flow capacity reduces cylinder spacing with improved overall speed
- Fine tuning of flow with manual knob or hex-key adjustment
- Convertible into "Tamper-Proof" by removing manual knob and sealing hex-key slot
- Interchangeable Inch and Metric Thread adapters for "hybrid" Fittings and Flow-control valve requirements. (**Pro-Fit**® NPTF threads and BSP Spot-Face o-ring seals in opposite port standards)

CODING OF FLOW CONTROL VALVES

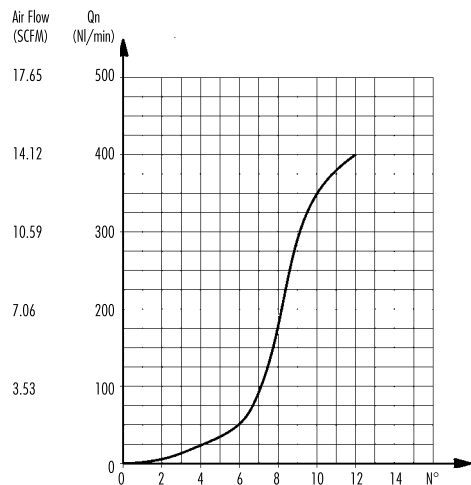


METER IN, METER OUT, NEEDLE ORIFICE FLOW CONTROLLERS

To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in NI/min (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 bi-directional regulators, refer to the graph and check whether the flow control range is suitable for the work required.

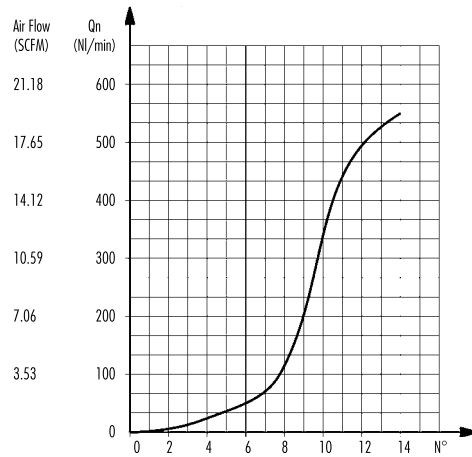
TUBE OD 5/32"

Flow Qn (NI/min.) from 2 → 1 with needle OPEN: 400
 Flow Qn (NI/min.) from 2 → 1 with needle CLOSED: 280
 NB: Qn is determined with a supply pressure of 6 bar and with DP= 1 bar at the outlet
 N° = of screw turns



TUBE OD 1/4"

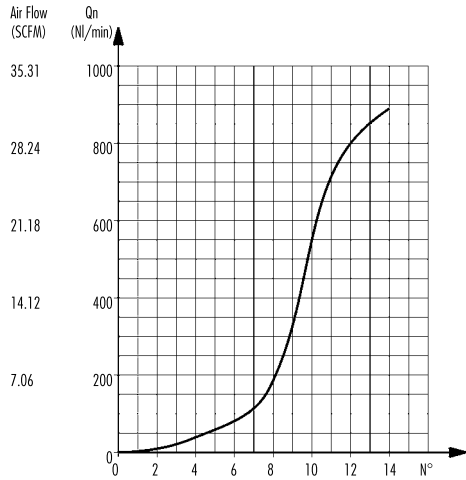
Flow Qn (NI/min.) from 2 → 1 with needle OPEN: 550
 Flow Qn (NI/min.) from 2 → 1 with needle CLOSED: 280
 NB: Qn is determined with a supply pressure of 6 bar and with DP= bar at the outlet
 N° = of screw turns



METER IN, METER OUT, NEEDLE ORIFICE FLOW CONTROLLERS

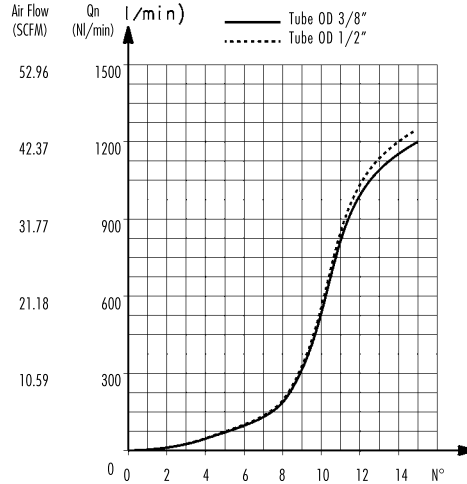
TUBE OD 5/16"

Flow Qn (NL/min.) from 2 @ 1 with needle OPEN: 890
 Flow Qn (NL/min.) from 2 @ 1 with needle CLOSED: 460
 NB: Qn is determined with a supply pressure of 6 bar and with DP= bar at the outlet
 N° = of screw turns



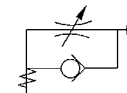
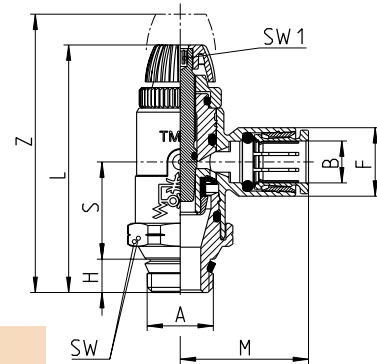
TUBE OD 3/8" - 1/2"

Flow Qn (NL/min.) from 2 @ 1 with needle OPEN: Ø 3/8"-1200/
 Ø 1/2"-1250
 Flow Qn (NL/min.) from 2 @ 1 with needle CLOSED: Ø 3/8"-
 600/Ø 1/2"-600
 NB: Qn is determined with a supply pressure of 6 bar and with DP= bar at the outlet
 N° = of screw turns



Meter-Out Valves Series TMCU

Right angle flow controller for mounting on cylinders and valves.
 Knurled screw adjustment, with internal hex slot.
 Ports 1/8", 1/4", 3/8", 1/2" NPTF



DIMENSIONS

Mod.	A	B	F	H	L	M	S	SW	SW1	Z
	NPTF									
TMCU 53-02	1/8	5/32	0.453	0.197	1.654	0.846	0.728	0.630	0.059	1.929
TMCU 04-02	1/8	1/4	0.453	0.197	1.654	0.846	0.728	0.630	0.059	1.929
TMCU 04-04	1/4	1/4	0.453	0.256	1.732	0.846	0.709	0.630	0.059	2.008
TMCU 05-04	1/4	5/16	0.531	0.256	1.890	0.984	0.748	0.748	0.098	2.165
TMCU 05-06	3/8	5/16	0.531	0.295	1.929	0.984	0.748	0.748	0.098	2.205
TMCU 06-04	1/4	3/8	0.630	0.256	1.988	1.142	0.709	0.984	0.098	2.323
TMCU 06-06	3/8	3/8	0.630	0.295	1.988	1.142	0.709	0.984	0.098	2.323
TMCU 06-08	1/2	3/8	0.630	0.335	2.028	1.142	0.709	0.984	0.098	2.362

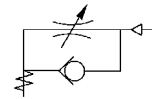
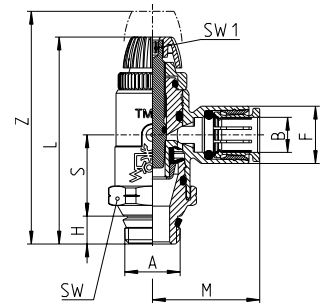
Meter-In Valves Series TMVU

Meter-In Unidirectional flow controller for mounting on cylinders and valves. Knurled screw adjustment, with internal hex slot.
Ports 1/8", 1/4", 3/8", 1/2" NPTF



DIMENSIONS

Mod.	A	B	F	H	L	M	S	SW	SW1	Z
	NPTF	OD								
TMVU 53-02	1/8	5/32	0.453	0.197	1.654	0.846	0.728	0.630	0.059	1.929
TMVU 04-02	1/8	1/4	0.453	0.197	1.654	0.846	0.728	0.630	0.059	1.929
TMVU 04-04	1/4	1/4	0.453	0.256	1.732	0.846	0.709	0.630	0.059	2.008
TMVU 05-04	1/4	5/16	0.531	0.256	1.890	0.984	0.748	0.748	0.098	2.165
TMVU 05-06	3/8	5/16	0.531	0.295	1.929	0.984	0.748	0.748	0.098	2.205
TMVU 06-04	1/4	3/8	0.630	0.256	1.988	1.142	0.709	0.984	0.098	2.323
TMVU 06-06	3/8	3/8	0.630	0.295	1.988	1.142	0.709	0.984	0.098	2.323
TMVU 06-08	1/2	3/8	0.630	0.335	2.028	1.142	0.709	0.984	0.098	2.362



Needle Orifice Valves Series TMCO

Needle Orifice Bi-directional flow controller for mounting on cylinders and valves. Knurled screw adjustment, with internal hex slot.
Ports 1/8", 1/4", 3/8", 1/2" NPTF



DIMENSIONS

Mod.	A	B	F	H	L	M	S	SW	SW1	Z
	NPTF	OD								
TMCO 53-02	1/8	5/32	0.453	0.197	1.654	0.846	0.728	0.630	0.059	1.929
TMCO 04-02	1/8	1/4	0.453	0.197	1.654	0.846	0.728	0.630	0.059	1.929
TMCO 04-04	1/4	1/4	0.453	0.256	1.732	0.846	0.709	0.630	0.059	2.008
TMCO 05-04	1/4	5/16	0.531	0.256	1.890	0.984	0.748	0.748	0.098	2.165
TMCO 05-06	3/8	5/16	0.531	0.295	1.929	0.984	0.748	0.748	0.098	2.205
TMCO 06-04	1/4	3/8	0.630	0.256	1.988	1.142	0.709	0.984	0.098	2.323
TMCO 06-06	3/8	3/8	0.630	0.295	1.988	1.142	0.709	0.984	0.098	2.323
TMCO 06-08	1/2	3/8	0.630	0.335	2.028	1.142	0.709	0.984	0.098	2.362

