

## Composite Right Angle Flow Control Valves Series TMCU-TMVU-TMCO- BSP/METRIC

NEW

Meter In, Meter Out, Needle Orifice G1/8, G1/4, G3/8, G1/2  
Banjo flow controllers  
Nominal diameters Ø 2 - 3.8 - 5.8 - 8 mm

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.



### TECHNICAL SPECIFICATIONS

Construction	needle-type
Valve group	Meter In, Meter Out, Needle Orifice flow controller
Materials	OT58 Nickel-plated brass threads and collet - technopolymer (glass-reinforced Nylon® 66 resin) - NBR, BUNA-N seals
Mounting	by male thread
Ports	G1/8, G1/4, G3/8, G1/2
Installation	in any position (spot face o-ring thread seal)
Operating temperature	0 - 60°C (with dry air -20°C) (32°F - 140°F, with dry air -4°F)

\*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 dia.	Tube 4 ø2 mm (.079") - Tube 6 ø3.8 mm (.150") - Tube 8 ø5.8 mm (.228") - Tube 10 and 12 ø8 mm (.315")
Fluid	filtered air

# Composite Flow Control Valves: BSP Threads with Spot-Face O-Ring 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
- Multiple Thread sealant systems: O-Ring Spot Face seals effectively 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

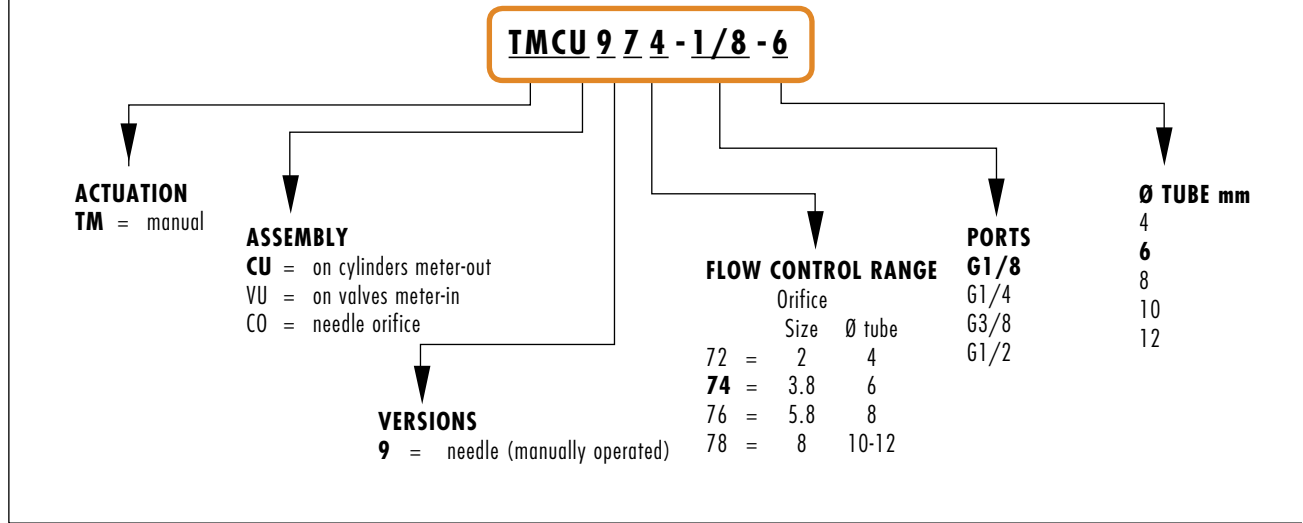
### Body

- 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**

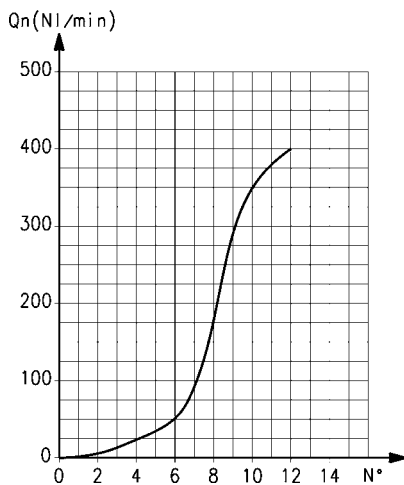


**UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS**

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.

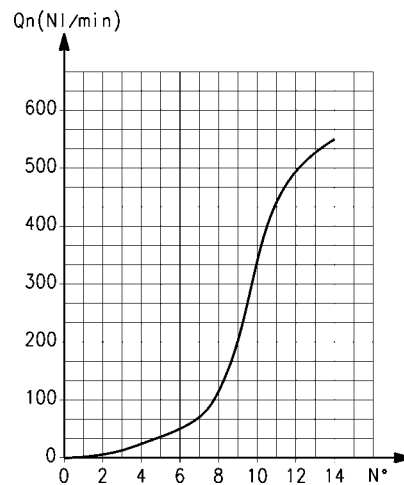
TUBE Ø4

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 Ø6

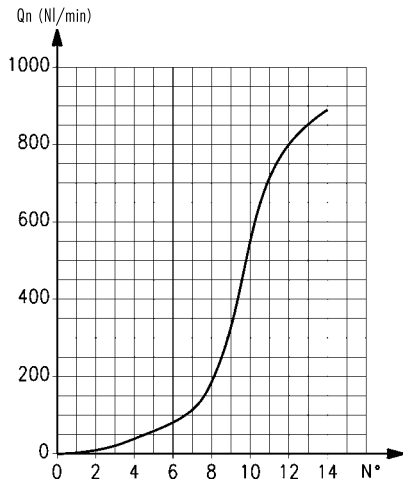
Flow Qn (NI/min.) from 2 → 1 with needle OPEN: 550  
 Flow Qn (NI/min.) from 2 → 1 with needle CLOSED: 280  
 NB: Qn is determined with a supply pressure of 6 bar and with DP= bar at the outlet  
 N° = of screw turns



**UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS**

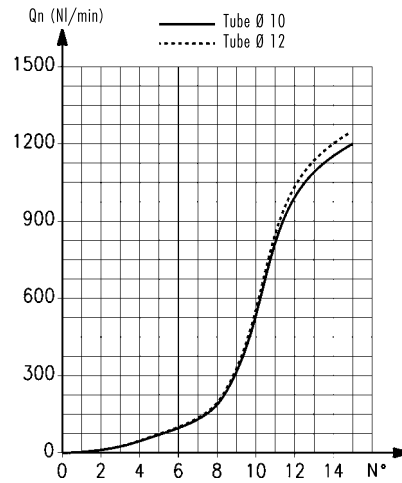
**TUBE Ø8**

Flow Qn (NI/min.) from 2 → 1 with needle OPEN: 890  
 Flow Qn (NI/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



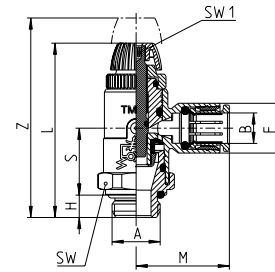
**TUBE Ø10 - Ø12**

Flow Qn (NI/min.) from 2 → 1 with needle OPEN: Ø 10-1200/Ø12-1250  
 Flow Qn (NI/min.) from 2 → 1 with needle CLOSED: Ø 10-600/Ø12-600  
 NB: Qn is determined with a supply pressure of 6 bar and with DP= bar at the outlet  
 N° = of screw turns



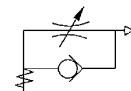
**Valves Series TMCU (Meter out)**

Right angle flow controller for mounting on single-acting and double-acting cylinders and valves. Knurled screw adjustment with internal hex slot.  
 Ports G1/8, G1/4, G3/8, G1/2



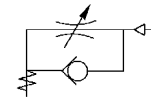
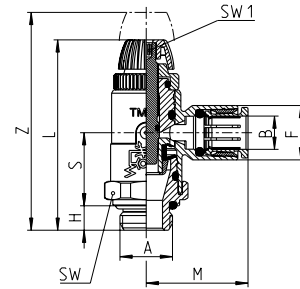
**DIMENSIONS**

Mod.	OD mm		F	H	L	M	S	SW	SW1	Z
	A	B								
TMCU 972 1/8-4	G1/8	4	11.5	5	41	21.5	16.5	16	1.5	48
TMCU 974 1/8-6	G1/8	6	11.5	5	41	21.5	16.5	16	1.5	48
TMCU 974 1/4-6	G1/4	6	11.5	6	42	21.5	16.5	17	1.5	49
TMCU 976 1/4-8	G1/4	8	13.5	6	46.5	25	18	19	2.5	53.5
TMCU 976 3/8-8	G3/8	8	13.5	7	47.5	25	18	20	2.5	54.5
TMCU 978 3/8-10	G3/8	10	16	7	49	29	17	25	2.5	57.5
TMCU 978 1/2-10	G1/2	10	16	8	50	29	17	25	2.5	58.5



Valves Series TMVU (Meter in)

Unidirectional flow controller for mounting on single-acting and double-acting cylinders and valves. Knurled screw with internal hex slot. Ports G1/8, G1/4, G3/8, G1/2

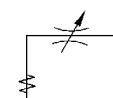
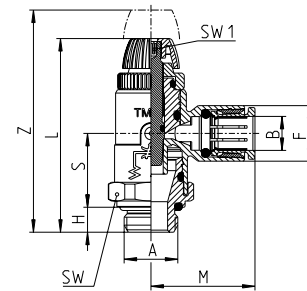


DIMENSIONS

	OD mm									
Mod.	A	B	F	H	L	M	S	SW	SW1	Z
TMVU 972-1/8-4	G1/8	4	11.5	5	41	21.5	16.5	16	1.5	48
TMVU 974-1/8-6	G1/8	6	11.5	5	41	21.5	16.5	16	1.5	48
TMVU 974-1/4-6	G1/4	6	11.5	6	42	21.5	16.5	17	1.5	49
TMVU 976-1/4-8	G1/4	8	13.5	6	46.5	25	18	19	2.5	53.5
TMVU 976-3/8-8	G3/8	8	13.5	7	47.5	25	18	20	2.5	54.5
TMVU 978-3/8-10	G3/8	10	16	7	49	29	17	25	2.5	57.5
TMVU 978-1/2-10	G1/2	10	18	8	50	29	17	25	2.5	58.5

Valves Series TMCO (Needle orifice)

Bidirectional flow controller for mounting on single-acting and double-acting cylinders and valves. Knurled screw with internal hex slot. Ports G1/8, G1/4, G3/8, G1/2



DIMENSIONS

	OD mm									
Mod.	A	B	F	H	L	M	S	SW	SW1	Z
TMCO 972-1/8-4	G1/8	4	11.5	5	41	21.5	16.5	16	1.5	48
TMCO 974-1/8-6	G1/8	6	11.5	5	41	21.5	16.5	16	1.5	48
TMCO 974-1/4-6	G1/4	6	11.5	6	42	21.5	16.5	17	1.5	49
TMCO 976-1/4-8	G1/4	8	13.5	6	46.5	25	18	19	2.5	53.5
TMCO 976-3/8-8	G3/8	8	13.5	7	47.5	25	18	20	2.5	54.5
TMCO 978-3/8-10	G3/8	10	16	7	49	29	17	25	2.5	57.5
TMCO 978-1/2-10	G1/2	10	16	8	50	29	17	25	2.5	58.5