

# INTRODUCTION FLOW MICRO-REGULATOR

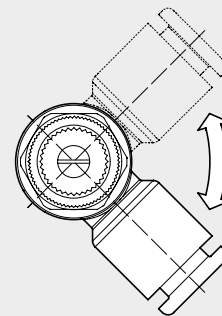
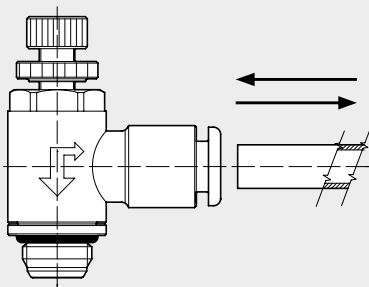
The job of flow microregulators is to regulate speed in the pneumatic cylinders. The configuration of both type C (to be mounted on the cylinder inlet) and type V (to be mounted on the valve port) is such as to ensure full flow on feed and regulated flow on discharge. Type B (bidirectional) can be used to regulate the flow both on feed and discharge. Flow microregulators are divided into 4 series:

- **MRF COMPACT O:** can be adjusted using a screwdriver; the regulation pin is lubricated with a particular antivibration grease; it has reduced dimensions and fine adjustment in the first turns; adjustment can be prevented by assembling a disposable cap (supplied separately) that can be removed using a tool.
- **MRF COMPACT N:** can be adjusted using the knob and/or screwdriver; adjustment can be prevented by tightening the ring nut; it has the same regulation curve as those in series O.
- **MRF HIGH-FLOW:** can be adjusted using the knob and/or screwdriver; adjustment can be prevented by tightening the ring nut; it is ideal for use in installations requiring high flow rates both on regulation and discharge. Available in G1/8 and G1/4 and with a technopolymer ring.
- **MRF PUSH-LOCK:** it is the only one in the MRF series with a PUSH-LOCK knob, that can be replaced by an anti-tampering knob (supplied separately). Available in G1/8 and G1/4 and with a technopolymer ring.

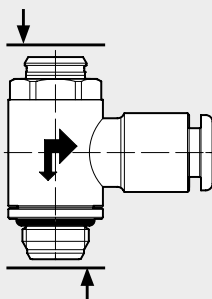


All the MRF with a pipe engage-release system of the latest generation that facilitates detachment of the pipe even under difficult operating conditions.

The rings can be rotated even with the MRF installed, which means that they can be mounted with the pipe facing towards any direction.

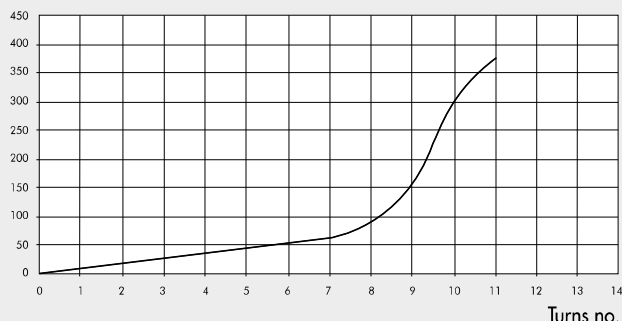


Special focus has been placed on miniaturisation of the components (mainly for COMPACT MRF series O), which saves considerable space.



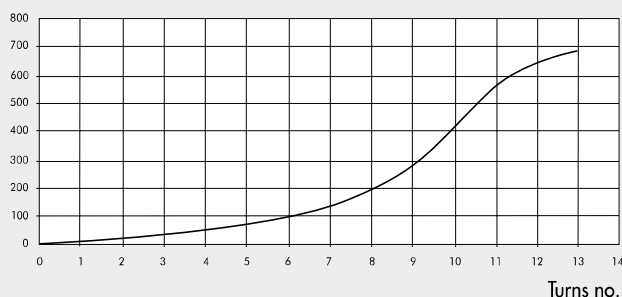
## FLOW CHARTS

Flow rate [Nl/min]

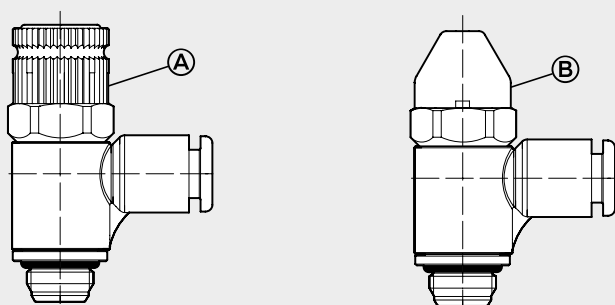


The regulation curve in the MRF series COMPACT N, COMPACT O and PUSH-LOCK takes place in two sections: in the first half of the flash pin stroke for very fine regulation and relatively low flow rates; in the second half, the flash pin quickly opens the passage so as to reach the maximum flow rate quickly.

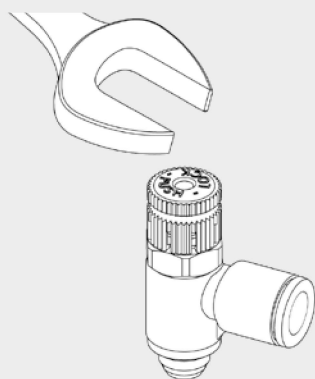
Flow rate [Nl/min]



The regulation curve in the MRF series HIGH-FLOW is divided into 3 sections: regulation is particularly accurate along the entire flash pin stroke and the maximum flow rate is reached at a good steady rate; in this way, the user can choose the solution which best fits the specific application.



A major innovative aspect of the new MRF is the possibility of using the PUSH-LOCK series that can be mounted with either a push-lock (A) or an anti-tampering knob (B). The push-lock knob prevents decalibration of the MRF due to vibration or incorrect torque. With the anti-tampering knob there is no way to change the position unless you remove the knob using a special tool.



All the new MRF can be fixed from the top using a universal wrench, a pipe wrench or an automatic screwdriver.

Thread	Maximum torque [Nm]*
M5	max 1.8
G1/8-1/8 NPT	max 6
G1/4-1/4 NPT	max 8
G3/8-3/8 NPT	max 10
G1/2-1/2 NPT	max 15

\* measured on a metal female thread

# FLOW MICROREGULATOR SERIES MRF COMPACT N and COMPACT O

## Main features:

- reduced dimensions
- excellent regulation
- regulation with a screwdriver and disposable anti-tampering cap (COMPACT O)
- regulation with either a screwdriver and/or a knob, can be fixed with a ring nut (COMPACT N)
- available in all sizes (from M5 to G1/2) with a brass or a technopolymer ring
- available (from 10-32 UNF to 1/2 NPT) only with brass ring version COMPACT N
- can be mounted with an automatic screwdriver
- comes with a ring that can rotate even with the MRF mounted in position.

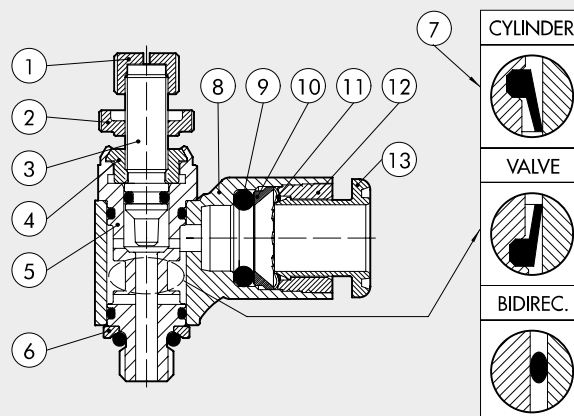


TECHNICAL DATA METRIC or G (BSP)		M5		G1/8				G1/4				G3/8		G1/2			
Pipe		Ø 4	Ø 5*	Ø 6	Ø 4	Ø 5*	Ø 6	Ø 8	Ø 6	Ø 8	Ø 10	Ø 12	Ø 8	Ø 10	Ø 12	Ø 12	Ø 14
Max input pressure	MPa	1															
	bar	10															
	psi	145															
Temperature range: Technopolymer ring	°C	- 10 to + 50															
	°F	+ 14 to + 122															
Brass ring	°C	- 10 to + 70															
	°F	+ 14 to +158															
Max flow rate on regulation at 6.3 bar	Nl/min	150	155	155	350	360	380	400	750	850	950	1000	1250	1300	1400	2000	
Max flow rate on exhaust at 6.3 bar with closed needle	Nl/min	140	145	150	300	320	350	390	450	500	500	550	1030	1050	1250	1750	
Max flow rate on exhaust at 6.3 bar with open needle	Nl/min	240	245	245	450	510	600	650	850	1050	1150	1250	1700	1700	2100	2700	
Regulation		Manual (COMPACT N only) or using a screwdriver															
Internal system		Tapered needle															
Fluid		Filtered, lubricated or unlubricated compressed air															
* Pipe Ø 5 is only available with a brass ring																	

TECHNICAL DATA UNF or NPT		10-32 UNF		1/8 NPT				1/4 NPT				3/8 NPT		1/2 NPT	
Pipe		Ø 5/32	Ø 1/4	Ø 5/32	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	Ø 3/8	Ø 1/2	Ø 1/2	
Max input pressure	MPa	1													
	bar	10													
	psi	145													
Temperature range: Brass ring	°C	- 10 to + 70													
	°F	+ 14 to +158													
Max flow rate on regulation at 6.3 bar	Nl/min	150	155	350	380	400	400	750	850	950	1000	1300	1400	2000	
Max flow rate on exhaust at 6.3 bar with closed needle	Nl/min	140	150	300	350	390	390	450	275	500	550	1050	1250	1750	
Max flow rate on exhaust at 6.3 bar with open needle	Nl/min	240	245	450	600	650	650	850	1050	1150	1250	1700	2100	2700	
Regulation		Manual or using a screwdriver													
Internal system		Tapered needle													
Fluid		Filtered, lubricated or unlubricated compressed air													

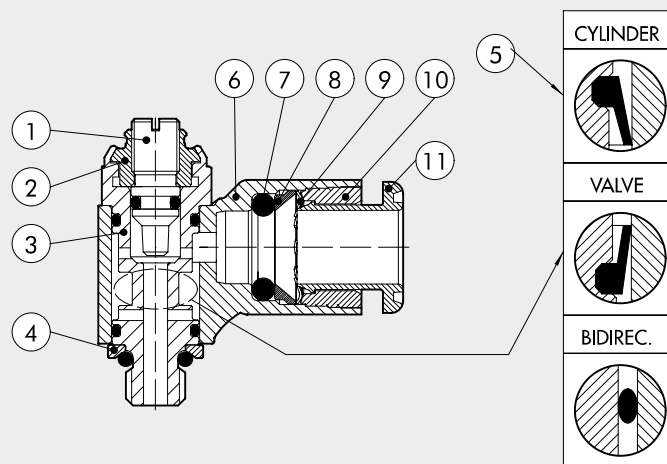
## TYPE N COMPONENTS - M5 THREAD - 10-32 UNF

- ① Nichel-plated brass knob
- ② Nickel-plated brass securing ring nut
- ③ Brass needle
- ④ Nickel-plated brass bush
- ⑤ Nickel-plated brass body
- ⑥ Nickel-plated brass retaining ring
- ⑦ NBR gasket
- ⑧ Nickel-plated or technopolymer brass revolving ring
- ⑨ NBR gasket
- ⑩ Technopolymer spring supporting ring
- ⑪ Stainless steel grabbing spring
- ⑫ Technopolymer retaining bush
- ⑬ Technopolymer release bush



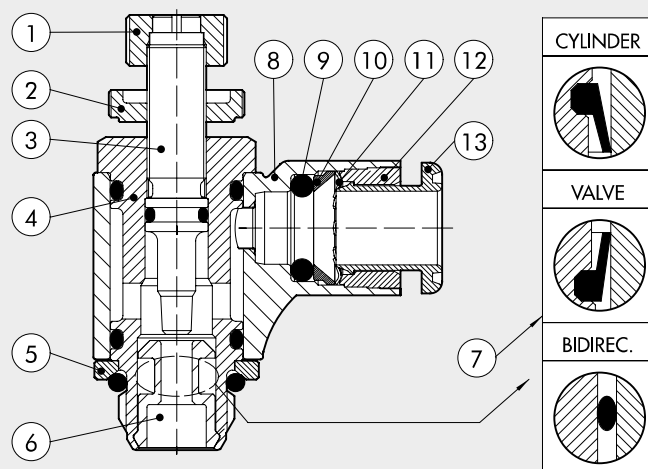
### TYPE O COMPONENTS - M5 THREAD

- ① Brass needle
- ② Nickel-plated brass bush
- ③ Nickel-plated brass body
- ④ Nickel-plated brass retaining ring
- ⑤ NBR gasket
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- ⑩ Technopolymer retaining bush
- ⑪ Technopolymer release bush



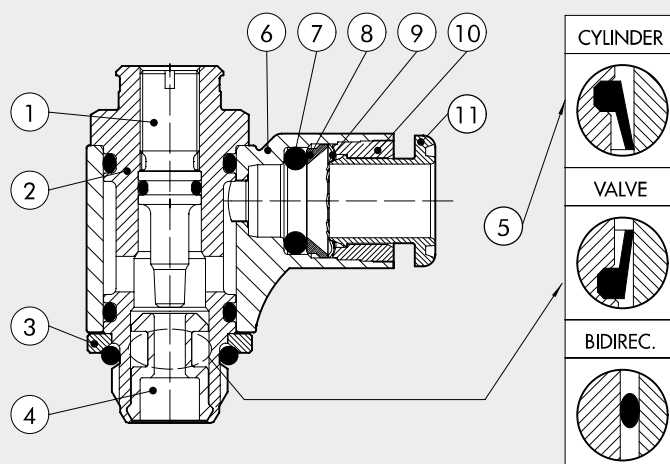
### TYPE N COMPONENTS - THREAD FROM G1/8 TO G1/2 - FROM 1/8 NPT TO 1/2 NPT

- ① Nickel-plated brass knob
- ② Nickel-plated brass securing ring nut
- ③ Brass needle
- ④ Nickel-plated brass body
- ⑤ Nickel-plated brass retaining ring
- ⑥ Brass gasket holding insert
- ⑦ NBR gasket
- ⑧ Nickel-plated or technopolymer brass revolving ring
- ⑨ NBR gasket
- ⑩ Technopolymer spring supporting ring
- ⑪ Stainless steel grabbing spring
- ⑫ Technopolymer retaining bush
- ⑬ Technopolymer release bush



### TYPE O COMPONENTS - THREAD FROM G1/8 TO G1/2

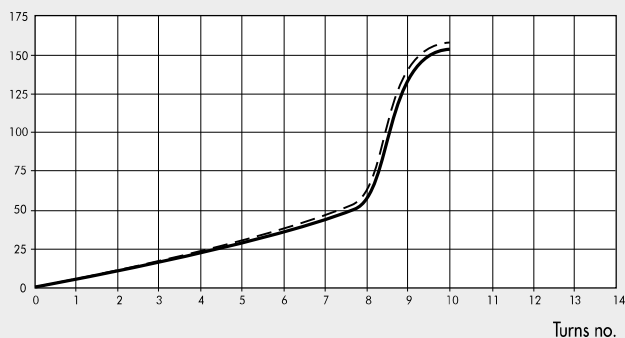
- ① Brass needle
- ② Nickel-plated brass body
- ③ Nickel-plated brass retaining ring
- ④ Brass gasket holding insert
- ⑤ NBR gasket
- ⑥ Nickel-plated or technopolymer brass revolving ring
- ⑦ NBR gasket
- ⑧ Technopolymer spring supporting ring
- ⑨ Stainless steel grabbing spring
- ⑩ Technopolymer retaining bush
- ⑪ Technopolymer release bush



## FLOW CHARTS

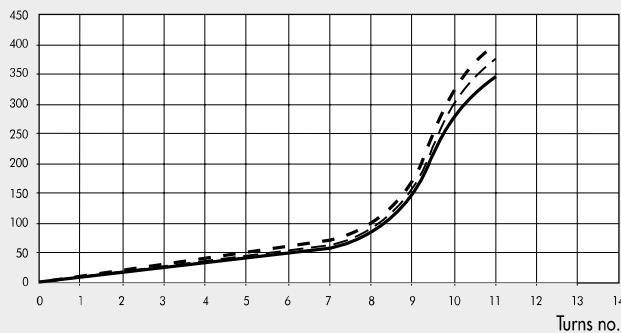
## MRF M5 - 10-32 UNF

Flow rate [Nl/min]



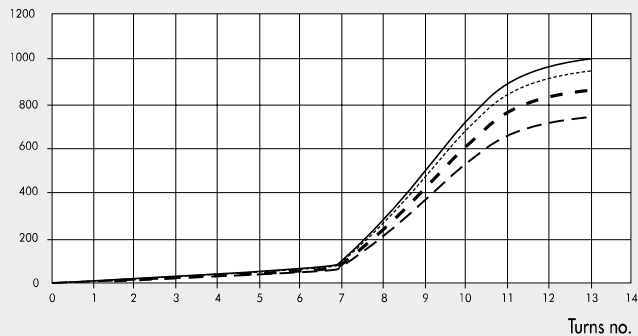
## MRF G1/8 - 1/8 NPT

Flow rate [Nl/min]



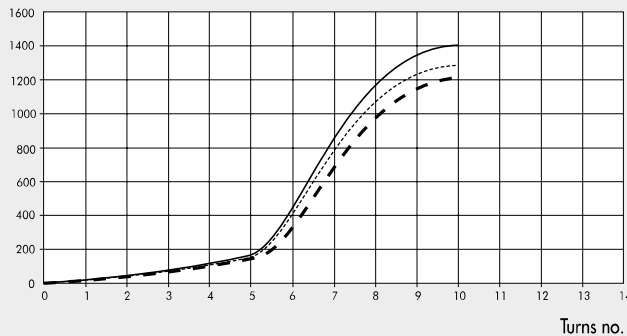
## MRF G1/4 - 1/4 NPT

Flow rate [Nl/min]



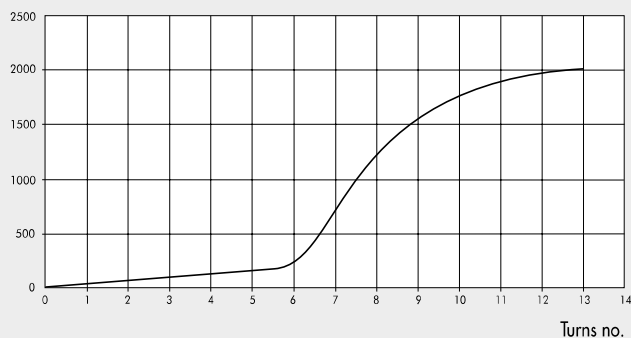
## MRF G3/8 - 3/8 NPT

Flow rate [Nl/min]



## MRF G1/2 - 1/2 NPT

Flow rate [Nl/min]



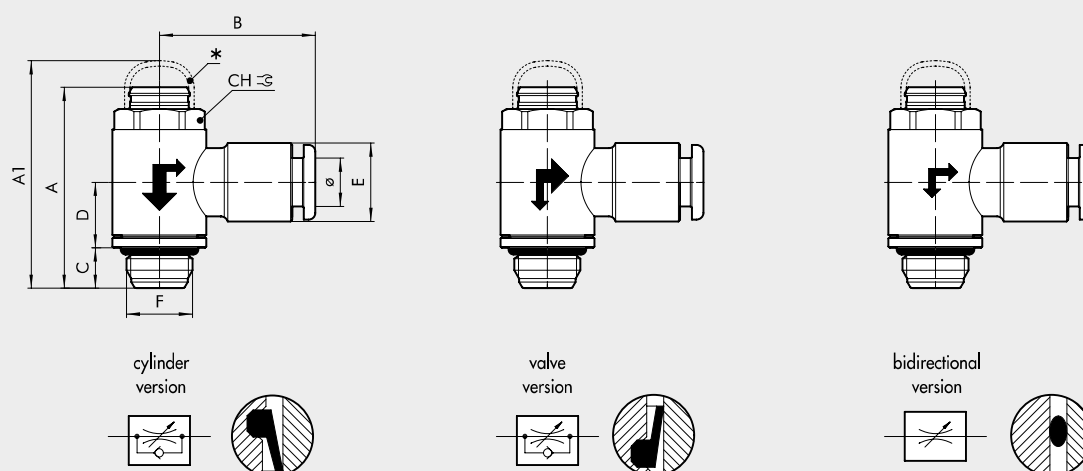
- Ø4 (5/32")
- - - Ø6 - Ø1/4"
- - - Ø8 (5/16")
- · · · · Ø10 - Ø3/8"
- Ø12 - Ø14 - Ø1/2"

## SYNOPTIC, SIZES AND VERSIONS

M R F FAMILY	N TYPE	M RING	C FUNCTION	4 Ø TUBE / THREAD	M5 THREAD
Flow microregulator	N With knob and ring nut O Flash needle	M Nickel-plated brass with push-in fitting T Technopolymer with push-in fitting F Nickel-plated brass with female thread	C For cylinder V For valve B Bidirectional	<b>MILLIMETER TUBE</b> 4 Ø 4 (5/32") 5 Ø 5 6 Ø 6 8 Ø 8 (5/16") 10 Ø 10 12 Ø 12 14 Ø 14 <b>G (BSP) THREAD</b> 1/8 G1/8 Female 1/4 G1/4 Female 3/8 G3/8 Female 1/2 G1/2 Female <b>INCH TUBES ▲</b> 1/4 Ø 1/4" 3/8 Ø 3/8" 1/2 Ø 1/2"	<b>MTERIC or G (BSP)</b> M5 M5 1/8 G1/8 1/4 G1/4 3/8 G3/8 1/2 G1/2 <b>UNF or NPT ▲</b> 10-32 UNF 10-32 UNF 1/8 NPT 1/8 NPT 1/4 NPT 1/4 NPT 3/8 NPT 3/8 NPT 1/2 NPT 1/2 NPT

▲ Available only for version MRF compact "N" with brass ring.

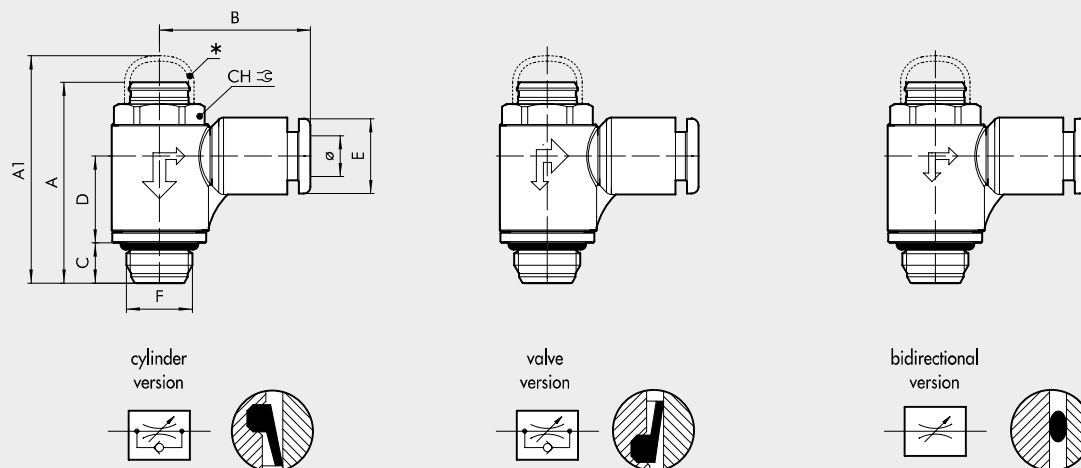
## MRF COMPACT "O" BRASS RING



\* OPTIONAL ANTI-TAMPERING CAP

Code	Description	F	Ø	CH	A min	A max	A1	B	C	D	E
9001001C	MRF O M C 4 M5	M5	4	9	23.9	25	26.5	20.2	4	9.2	9.5
9001110V	MRF O M V 4 M5	M5	4	9	23.9	25	26.5	20.2	4	9.2	9.5
9001601B	MRF O M B 4 M5	M5	4	9	23.9	25	26.5	20.2	4	9.2	9.5
9001002C	MRF O M C 5 M5	M5	5	9	23.9	25	26.5	23.8	4	9.2	12
9001113V	MRF O M V 5 M5	M5	5	9	23.9	25	26.5	23.8	4	9.2	12
9001603B	MRF O M B 5 M5	M5	5	9	23.9	25	26.5	23.8	4	9.2	12
9001007C	MRF O M C 6 M5	M5	6	9	23.9	25	26.5	23.5	4	9.2	11.3
9001105V	MRF O M V 6 M5	M5	6	9	23.9	25	26.5	23.5	4	9.2	11.3
9001612B	MRF O M B 6 M5	M5	6	9	23.9	25	26.5	23.5	4	9.2	11.3
9001011C	MRF O M C 4 1/8	1/8	4	12	29.8	30.9	34	21.3	6	9.8	9.5
9001111V	MRF O M V 4 1/8	1/8	4	12	29.8	30.9	34	21.3	6	9.8	9.5
9001602B	MRF O M B 4 1/8	1/8	4	12	29.8	30.9	34	21.3	6	9.8	9.5
9001012C	MRF O M C 5 1/8	1/8	5	12	29.8	30.9	34	24.8	6	9.8	12
9001112V	MRF O M V 5 1/8	1/8	5	12	29.8	30.9	34	24.8	6	9.8	12
9001604B	MRF O M B 5 1/8	1/8	5	12	29.8	30.9	34	24.8	6	9.8	12
9001003C	MRF O M C 6 1/8	1/8	6	12	29.8	30.9	34	23	6	9.8	11.5
9001101V	MRF O M V 6 1/8	1/8	6	12	29.8	30.9	34	23	6	9.8	11.5
9001605B	MRF O M B 6 1/8	1/8	6	12	29.8	30.9	34	23	6	9.8	11.5
9001005C	MRF O M C 8 1/8	1/8	8	12	29.8	30.9	34	24.8	6	9.8	13.8
9001103V	MRF O M V 8 1/8	1/8	8	12	29.8	30.9	34	24.8	6	9.8	13.8
9001607B	MRF O M B 8 1/8	1/8	8	12	29.8	30.9	34	24.8	6	9.8	13.8
9001004C	MRF O M C 6 1/4	1/4	6	15	35.4	37	38.9	24.5	8	11.1	11.5
9001102V	MRF O M V 6 1/4	1/4	6	15	35.4	37	38.9	24.5	8	11.1	11.5
9001606B	MRF O M B 6 1/4	1/4	6	15	35.4	37	38.9	24.5	8	11.1	11.5
9001006C	MRF O M C 8 1/4	1/4	8	15	35.4	37	38.9	26.5	8	11.1	13.8
9001104V	MRF O M V 8 1/4	1/4	8	15	35.4	37	38.9	26.5	8	11.1	13.8
9001608B	MRF O M B 8 1/4	1/4	8	15	35.4	37	38.9	26.5	8	11.1	13.8
9001010C	MRF O M C 8 3/8	3/8	8	19	42.7	42.7	49.5	28.5	9	13.4	13.8
9001115V	MRF O M V 8 3/8	3/8	8	19	42.7	42.7	49.5	28.5	9	13.4	13.8
9001611B	MRF O M B 8 3/8	3/8	8	19	42.7	42.7	49.5	28.5	9	13.4	13.8
9001008C	MRF O M C 10 1/4	1/4	10	15	35.4	37	38.9	31.4	8	11.1	16.5
9001106V	MRF O M V 10 1/4	1/4	10	15	35.4	37	38.9	31.4	8	11.1	16.5
9001609B	MRF O M B 10 1/4	1/4	10	15	35.4	37	38.9	31.4	8	11.1	16.5
9001014C	MRF O M C 12 1/4	1/4	12	15	35.4	37	38.9	33	8	11.1	19.5
9001123V	MRF O M V 12 1/4	1/4	12	15	35.4	37	38.9	33	8	11.1	19.5
9001623B	MRF O M B 12 1/4	1/4	12	15	35.4	37	38.9	33	8	11.1	19.5
9001009C	MRF O M C 10 3/8	3/8	10	19	42.7	42.7	49.5	32.8	9	13.4	16
9001114V	MRF O M V 10 3/8	3/8	10	19	42.7	42.7	49.5	32.8	9	13.4	16
9001610B	MRF O M B 10 3/8	3/8	10	19	42.7	42.7	49.5	32.8	9	13.4	16
9001015C	MRF O M C 12 3/8	3/8	12	19	42.7	42.7	49.5	35.3	9	13.4	19.5
9001124V	MRF O M V 12 3/8	3/8	12	19	42.7	42.7	49.5	35.3	9	13.4	19.5
9001624B	MRF O M B 12 3/8	3/8	12	19	42.7	42.7	49.5	35.3	9	13.4	19.5
9001016C	MRF O M C 12 1/2	1/2	12	22	50.6	51.4	55.3	37	11	15.9	19.5
9001125V	MRF O M V 12 1/2	1/2	12	22	50.6	51.4	55.3	37	11	15.9	19.5
9001625B	MRF O M B 12 1/2	1/2	12	22	50.6	51.4	55.3	37	11	15.9	19.5
9001019C	MRF O M C 14 1/2	1/2	14	22	50.6	51.4	55.3	35	11	15.9	22
9001128V	MRF O M V 14 1/2	1/2	14	22	50.6	51.4	55.3	35	11	15.9	22
9001628B	MRF O M B 14 1/2	1/2	14	22	50.6	51.4	55.3	35	11	15.9	22

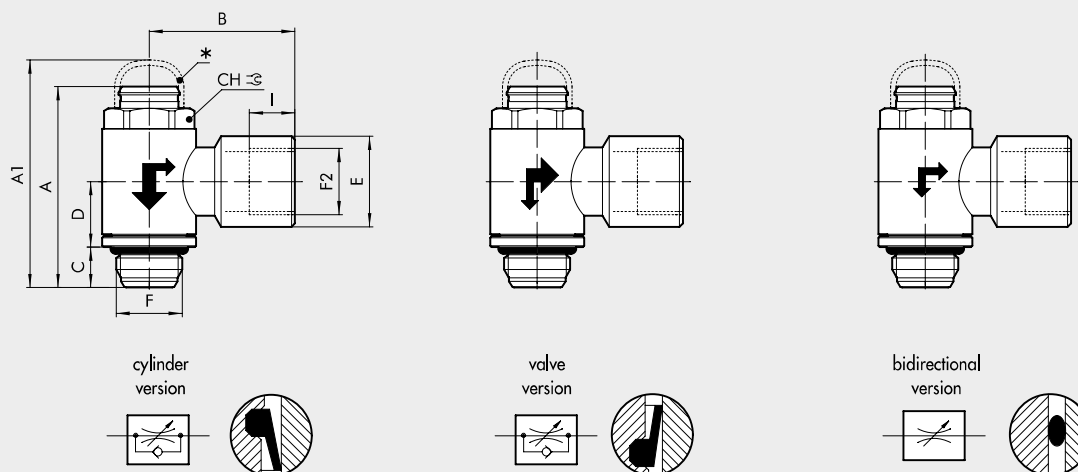
## MRF COMPACT "O" TECHNOLYMER RING



\* OPTIONAL ANTI-TAMPERING CAP

Code	Description	F	Ø	CH	A min	A max	A1	B	C	D	E
9011001C	MRF OTC 4 M5	M5	4	9	23.9	25	26.5	19.1	4	9.5	9.2
9011110V	MRF OTV 4 M5	M5	4	9	23.9	25	26.5	19.1	4	9.5	9.2
9011601B	MRF OTB 4 M5	M5	4	9	23.9	25	26.5	19.1	4	9.5	9.2
9011007C	MRF OTC 6 M5	M5	6	9	23.9	25	26.5	20.8	4	9.5	11.3
9011105V	MRF OTV 6 M5	M5	6	9	23.9	25	26.5	20.8	4	9.5	11.3
9011612B	MRF OTB 6 M5	M5	6	9	23.9	25	26.5	20.8	4	9.5	11.3
9011011C	MRF OTC 4 1/8	1/8	4	12	29.8	30.9	34	21	6	12.9	9.2
9011111V	MRF OTV 4 1/8	1/8	4	12	29.8	30.9	34	21	6	12.9	9.2
9011602B	MRF OTB 4 1/8	1/8	4	12	29.8	30.9	34	21	6	12.9	9.2
9011003C	MRF OTC 6 1/8	1/8	6	12	29.8	30.9	34	22.3	6	12.9	11.3
9011101V	MRF OTV 6 1/8	1/8	6	12	29.8	30.9	34	22.3	6	12.9	11.3
9011605B	MRF OTB 6 1/8	1/8	6	12	29.8	30.9	34	22.3	6	12.9	11.3
9011005C	MRF OTC 8 1/8	1/8	8	12	29.8	30.9	34	25.6	6	12.9	13.8
9011103V	MRF OTV 8 1/8	1/8	8	12	29.8	30.9	34	25.6	6	12.9	13.8
9011607B	MRF OTB 8 1/8	1/8	8	12	29.8	30.9	34	25.6	6	12.9	13.8
9011004C	MRF OTC 6 1/4	1/4	6	15	35.4	37	38.9	24.3	8	15	11.3
9011102V	MRF OTV 6 1/4	1/4	6	15	35.4	37	38.9	24.3	8	15	11.3
9011606B	MRF OTB 6 1/4	1/4	6	15	35.4	37	38.9	24.3	8	15	11.3
9011006C	MRF OTC 8 1/4	1/4	8	15	35.4	37	38.9	27.2	8	15	13.8
9011104V	MRF OTV 8 1/4	1/4	8	15	35.4	37	38.9	27.2	8	15	13.8
9011608B	MRF OTB 8 1/4	1/4	8	15	35.4	37	38.9	27.2	8	15	13.8
9011008C	MRF OTC 10 1/4	1/4	10	15	35.4	37	38.9	28.6	8	15	16
9011106V	MRF OTV 10 1/4	1/4	10	15	35.4	37	38.9	28.6	8	15	16
9011609B	MRF OTB 10 1/4	1/4	10	15	35.4	37	38.9	28.6	8	15	16
9011014C	MRF OTC 12 1/4	1/4	12	15	35.4	37	38.9	31	8	15	19.5
9011123V	MRF OTV 12 1/4	1/4	12	15	35.4	37	38.9	31	8	15	19.5
9011623B	MRF OTB 12 1/4	1/4	12	15	35.4	37	38.9	31	8	15	19.5
9011009C	MRF OTC 10 3/8	3/8	10	19	42.7	42.7	49.5	30.3	9	17.9	16
9011114V	MRF OTV 10 3/8	3/8	10	19	42.7	42.7	49.5	30.3	9	17.9	16
9011610B	MRF OTB 10 3/8	3/8	10	19	42.7	42.7	49.5	30.3	9	17.9	16
9011015C	MRF OTC 12 3/8	3/8	12	19	42.7	42.7	49.5	32.4	9	17.9	19.5
9011124V	MRF OTV 12 3/8	3/8	12	19	42.7	42.7	49.5	32.4	9	17.9	19.5
9011624B	MRF OTB 12 3/8	3/8	12	19	42.7	42.7	49.5	32.4	9	17.9	19.5
9011016C	MRF OTC 12 1/2	1/2	12	22	50.6	51.4	55.3	34	11	20.1	19.5
9011125V	MRF OTV 12 1/2	1/2	12	22	50.6	51.4	55.3	34	11	20.1	19.5
9011625B	MRF OTB 12 1/2	1/2	12	22	50.6	51.4	55.3	34	11	20.1	19.5

## MRF COMPACT "O" THREADED BRASS RING

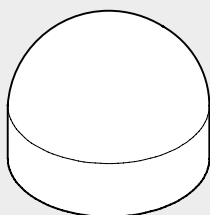


\* OPTIONAL ANTI-TAMPERING CAP

Code	Description	F	F2	CH	A min	A max	A1	B	C	D	E	I
9001020C	MRF O F C 1/8 1/8	1/8	1/8	12	29.8	30.9	34	21.4	6	9.8	13.3	6.7
9001120V	MRF O F V 1/8 1/8	1/8	1/8	12	29.8	30.9	34	21.4	6	9.8	13.3	6.7
9001620B	MRF O F B 1/8 1/8	1/8	1/8	12	29.8	30.9	34	21.4	6	9.8	13.3	6.7
9001021C	MRF O F C 1/4 1/4	1/4	1/4	15	35.4	37	38.9	25.5	8	11.1	16.7	8
9001121V	MRF O F V 1/4 1/4	1/4	1/4	15	35.4	37	38.9	25.5	8	11.1	16.7	8
9001621B	MRF O F B 1/4 1/4	1/4	1/4	15	35.4	37	38.9	25.5	8	11.1	16.7	8
9001022C	MRF O F C 3/8 3/8	3/8	3/8	19	42.7	42.7	49.5	31.5	9	13.4	20.2	10
9001122V	MRF O F V 3/8 3/8	3/8	3/8	19	42.7	42.7	49.5	31.5	9	13.4	20.2	10
9001622B	MRF O F B 3/8 3/8	3/8	3/8	19	42.7	42.7	49.5	31.5	9	13.4	20.2	10
9001023C	MRF O F C 1/2 1/2	1/2	1/2	22	50.6	51.4	55.3	36	11	15.9	25.5	11
9001126V	MRF O F V 1/2 1/2	1/2	1/2	22	50.6	51.4	55.3	36	11	15.9	25.5	11
9001626B	MRF O F B 1/2 1/2	1/2	1/2	22	50.6	51.4	55.3	36	11	15.9	25.5	11

## ACCESSORIES MRF COMPACT "O"

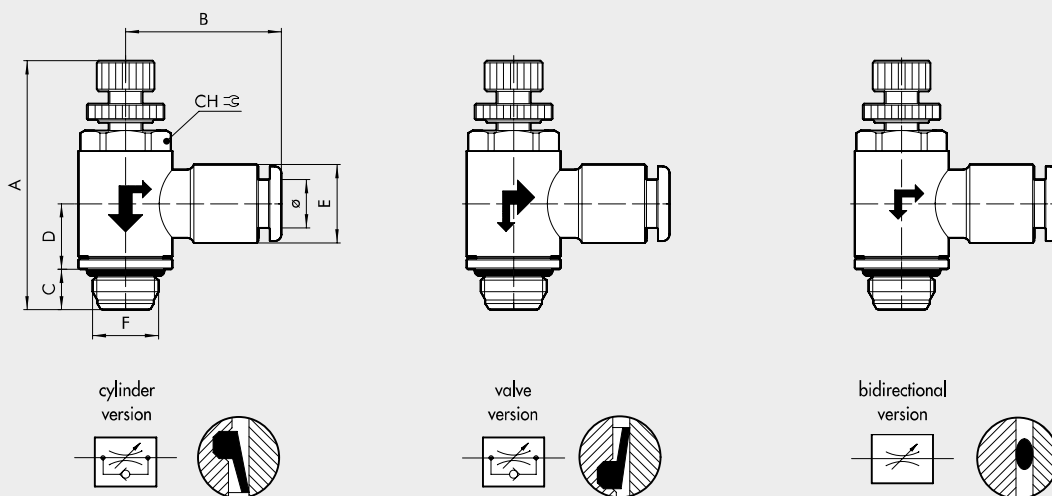
### ANTI-TAMPERING CAP



Code	Description
9090001	Cap MRF O M5
9090002	Cap MRF O 1/8-1/4
9090003	Cap MRF O 3/8-1/2

**NOTE:** Adjust the flow rate via the regulating pin.  
Apply the anti-tampering cap and press on firmly to prevent access to the regulation pin.  
If the MRF needs to be recalibrated, remove the cap using the grippers provided.  
**IMPORTANT:** The cap cannot be re-used after it has been removed.

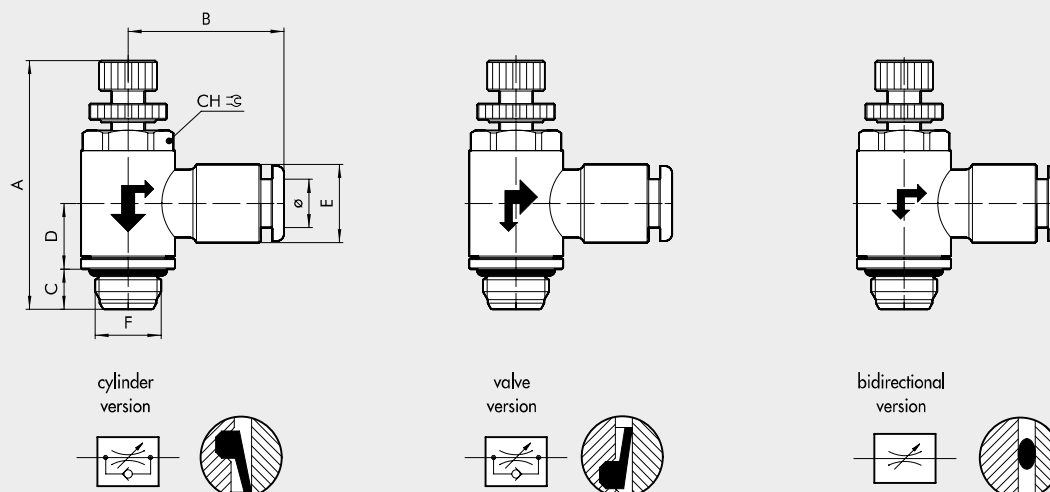
## MRF COMPACT "N" BRASS RING



Code	Description	F	Ø	CH	A min	A max	B	C	D	E
9031001C	MRF N M C 4 M5	M5	4	9	27.7	31	20.2	4	9.2	9.5
9031101V	MRF N M V 4 M5	M5	4	9	27.7	31	20.2	4	9.2	9.5
9031201B	MRF N M B 4 M5	M5	4	9	27.7	31	20.2	4	9.2	9.5
9031003C	MRF N M C 5 M5	M5	5	9	27.7	31	23.8	4	9.2	12
9031103V	MRF N M V 5 M5	M5	5	9	27.7	31	23.8	4	9.2	12
9031203B	MRF N M B 5 M5	M5	5	9	27.7	31	23.8	4	9.2	12
9031005C	MRF N M C 6 M5	M5	6	9	27.7	31	23.5	4	9.2	11.3
9031105V	MRF N M V 6 M5	M5	6	9	27.7	31	23.5	4	9.2	11.3
9031205B	MRF N M B 6 M5	M5	6	9	27.7	31	23.5	4	9.2	11.3
9031002C	MRF N M C 4 1/8	1/8	4	12	33.5	37.6	21.3	6	9.8	9.5
9031102V	MRF N M V 4 1/8	1/8	4	12	33.5	37.6	21.3	6	9.8	9.5
9031202B	MRF N M B 4 1/8	1/8	4	12	33.5	37.6	21.3	6	9.8	9.5
9031004C	MRF N M C 5 1/8	1/8	5	12	33.5	37.6	24.8	6	9.8	12
9031104V	MRF N M V 5 1/8	1/8	5	12	33.5	37.6	24.8	6	9.8	12
9031204B	MRF N M B 5 1/8	1/8	5	12	33.5	37.6	24.8	6	9.8	12
9031006C	MRF N M C 6 1/8	1/8	6	12	33.5	37.6	23	6	9.8	11.5
9031106V	MRF N M V 6 1/8	1/8	6	12	33.5	37.6	23	6	9.8	11.5
9031206B	MRF N M B 6 1/8	1/8	6	12	33.5	37.6	23	6	9.8	11.5
9031008C	MRF N M C 8 1/8	1/8	8	12	33.5	37.6	24.8	6	9.8	13.8
9031108V	MRF N M V 8 1/8	1/8	8	12	33.5	37.6	24.8	6	9.8	13.8
9031208B	MRF N M B 8 1/8	1/8	8	12	33.5	37.6	24.8	6	9.8	13.8
9031007C	MRF N M C 6 1/4	1/4	6	15	38.8	43.7	24.5	8	11.1	11.5
9031107V	MRF N M V 6 1/4	1/4	6	15	38.8	43.7	24.5	8	11.1	11.5
9031207B	MRF N M B 6 1/4	1/4	6	15	38.8	43.7	24.5	8	11.1	11.5
9031009C	MRF N M C 8 1/4	1/4	8	15	38.8	43.7	26.5	8	11.1	13.8
9031109V	MRF N M V 8 1/4	1/4	8	15	38.8	43.7	26.5	8	11.1	13.8
9031209B	MRF N M B 8 1/4	1/4	8	15	38.8	43.7	26.5	8	11.1	13.8
9031010C	MRF N M C 8 3/8	3/8	8	19	47.2	52	28.5	9	13.4	13.8
9031110V	MRF N M V 8 3/8	3/8	8	19	47.2	52	28.5	9	13.4	13.8
9031210B	MRF N M B 8 3/8	3/8	8	19	47.2	52	28.5	9	13.4	13.8
9031011C	MRF N M C 10 1/4	1/4	10	15	38.8	43.7	31.4	8	11.1	16.5
9031111V	MRF N M V 10 1/4	1/4	10	15	38.8	43.7	31.4	8	11.1	16.5
9031211B	MRF N M B 10 1/4	1/4	10	15	38.8	43.7	31.4	8	11.1	16.5
9031014C	MRF N M C 12 1/4	1/4	12	15	38.8	43.7	33	8	11.1	19.5
9031114V	MRF N M V 12 1/4	1/4	12	15	38.8	43.7	33	8	11.1	19.5
9031214B	MRF N M B 12 1/4	1/4	12	15	38.8	43.7	33	8	11.1	19.5
9031012C	MRF N M C 10 3/8	3/8	10	19	47.2	52	32.8	9	13.4	16
9031112V	MRF N M V 10 3/8	3/8	10	19	47.2	52	32.8	9	13.4	16
9031212B	MRF N M B 10 3/8	3/8	10	19	47.2	52	32.8	9	13.4	16
9031015C	MRF N M C 12 3/8	3/8	12	19	47.2	52	35.3	9	13.4	19.5
9031115V	MRF N M V 12 3/8	3/8	12	19	47.2	52	35.3	9	13.4	19.5
9031215B	MRF N M B 12 3/8	3/8	12	19	47.2	52	35.3	9	13.4	19.5
9031016C	MRF N M C 12 1/2	1/2	12	22	53	59.8	37	11	15.9	19.5
9031116V	MRF N M V 12 1/2	1/2	12	22	53	59.8	37	11	15.9	19.5
9031216B	MRF N M B 12 1/2	1/2	12	22	53	59.8	37	11	15.9	19.5
9031019C	MRF N M C 14 1/2	1/2	14	22	53	59.8	35	11	15.9	22
9031119V	MRF N M V 14 1/2	1/2	14	22	53	59.8	35	11	15.9	22
9031219B	MRF N M B 14 1/2	1/2	14	22	53	59.8	35	11	15.9	22

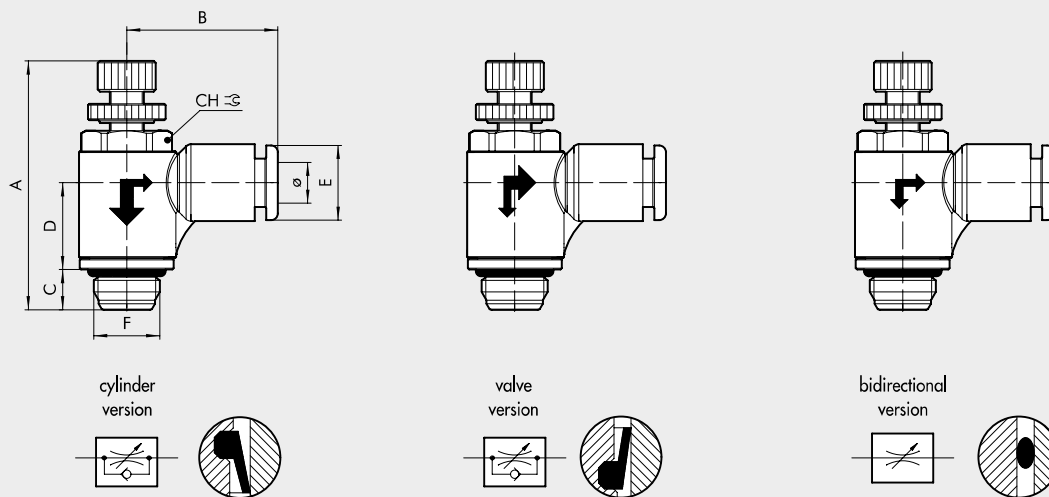
UNF  
NPT

## MRF COMPACT "N" BRASS RING - INCH TUBES AND UNF or NPT THREAD



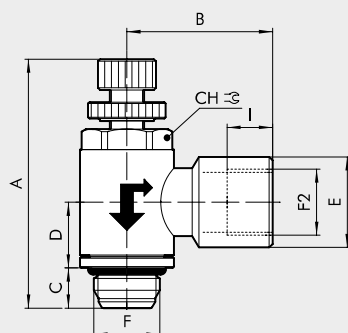
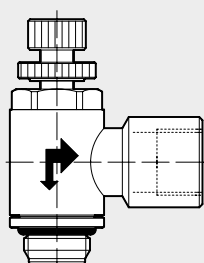
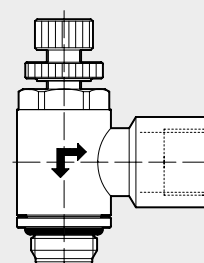
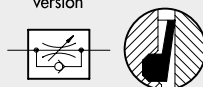
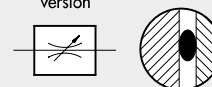
Code	Description	F	Ø	Ch		A min	A max	B	C	D	E
				Inc	mm						
9U31001C	MRF N M C 5/32 10-32 UNF	10-32 UNF	5/32"	0.354	9	27.7	31	20.2	4	9.2	9.5
9U31101V	MRF N M V 5/32 10-32 UNF	10-32 UNF	5/32"	0.354	9	27.7	31	20.2	4	9.2	9.5
9U31201B	MRF N M B 5/32 10-32 UNF	10-32 UNF	5/32"	0.354	9	27.7	31	20.2	4	9.2	9.5
9U31005C	MRF N M C 1/4 10-32 UNF	10-32 UNF	1/4"	0.354	9	27.7	31	21.3	4	9.2	11.8
9U31105V	MRF N M V 1/4 10-32 UNF	10-32 UNF	1/4"	0.354	9	27.7	31	21.3	4	9.2	11.8
9U31205B	MRF N M B 1/4 10-32 UNF	10-32 UNF	1/4"	0.354	9	27.7	31	21.3	4	9.2	11.8
9U31002C	MRF N M C 5/32 1/8 NPT	1/8 NPT	5/32"	0.472	12	33.5	37.6	21.3	6	9.8	9.5
9U31102V	MRF N M V 5/32 1/8 NPT	1/8 NPT	5/32"	0.472	12	33.5	37.6	21.3	6	9.8	9.5
9U31202B	MRF N M B 5/32 1/8 NPT	1/8 NPT	5/32"	0.472	12	33.5	37.6	21.3	6	9.8	9.5
9U31006C	MRF N M C 1/4 1/8 NPT	1/8 NPT	1/4"	0.472	12	33.5	37.6	21.3	6	9.8	11.8
9U31106V	MRF N M V 1/4 1/8 NPT	1/8 NPT	1/4"	0.472	12	33.5	37.6	21.3	6	9.8	11.8
9U31206B	MRF N M B 1/4 1/8 NPT	1/8 NPT	1/4"	0.472	12	33.5	37.6	21.3	6	9.8	11.8
9U31008C	MRF N M C 5/16 1/8 NPT	1/8 NPT	5/16"	0.472	12	33.5	37.6	24.8	6	9.8	13.8
9U31108V	MRF N M V 5/16 1/8 NPT	1/8 NPT	5/16"	0.472	12	33.5	37.6	24.8	6	9.8	13.8
9U31208B	MRF N M B 5/16 1/8 NPT	1/8 NPT	5/16"	0.472	12	33.5	37.6	24.8	6	9.8	13.8
9U31010C	MRF N M C 3/8 1/8 NPT	1/8 NPT	3/8"	0.472	12	33.5	37.6	27.8	6	9.8	16.5
9U31110V	MRF N M V 3/8 1/8 NPT	1/8 NPT	3/8"	0.472	12	33.5	37.6	27.8	6	9.8	16.5
9U31210B	MRF N M B 3/8 1/8 NPT	1/8 NPT	3/8"	0.472	12	33.5	37.6	27.8	6	9.8	16.5
9U31007C	MRF N M C 1/4 1/4 NPT	1/4 NPT	1/4"	0.591	15	38.8	43.7	23	8	11.1	13.8
9U31107V	MRF N M V 1/4 1/4 NPT	1/4 NPT	1/4"	0.591	15	38.8	43.7	23	8	11.1	13.8
9U31207B	MRF N M B 1/4 1/4 NPT	1/4 NPT	1/4"	0.591	15	38.8	43.7	23	8	11.1	13.8
9U31009C	MRF N M C 5/16 1/4 NPT	1/4 NPT	5/16"	0.591	15	38.8	43.7	26.5	8	11.1	13.8
9U31109V	MRF N M V 5/16 1/4 NPT	1/4 NPT	5/16"	0.591	15	38.8	43.7	26.5	8	11.1	13.8
9U31209B	MRF N M B 5/16 1/4 NPT	1/4 NPT	5/16"	0.591	15	38.8	43.7	26.5	8	11.1	13.8
9U31011C	MRF N M C 3/8 1/4 NPT	1/4 NPT	3/8"	0.591	15	38.8	43.7	29.8	8	11.1	16.5
9U31111V	MRF N M V 3/8 1/4 NPT	1/4 NPT	3/8"	0.591	15	38.8	43.7	29.8	8	11.1	16.5
9U31211B	MRF N M B 3/8 1/4 NPT	1/4 NPT	3/8"	0.591	15	38.8	43.7	29.8	8	11.1	16.5
9U31014C	MRF N M C 1/2 1/4 NPT	1/4 NPT	1/2"	0.591	15	38.8	43.7	34.3	8	11.1	21
9U31114V	MRF N M V 1/2 1/4 NPT	1/4 NPT	1/2"	0.591	15	38.8	43.7	34.3	8	11.1	21
9U31214B	MRF N M B 1/2 1/4 NPT	1/4 NPT	1/2"	0.591	15	38.8	43.7	34.3	8	11.1	21
9U31012C	MRF N M C 3/8 3/8 NPT	3/8 NPT	3/8"	3/4	19	47.2	52	30.6	9	13.4	16
9U31112V	MRF N M V 3/8 3/8 NPT	3/8 NPT	3/8"	3/4	19	47.2	52	30.6	9	13.4	16
9U31212B	MRF N M B 3/8 3/8 NPT	3/8 NPT	3/8"	3/4	19	47.2	52	30.6	9	13.4	16
9U31015C	MRF N M C 1/2 3/8 NPT	3/8 NPT	1/2"	3/4	19	47.2	52	36.5	9	13.4	20.2
9U31115V	MRF N M V 1/2 3/8 NPT	3/8 NPT	1/2"	3/4	19	47.2	52	36.5	9	13.4	20.2
9U31215B	MRF N M B 1/2 3/8 NPT	3/8 NPT	1/2"	3/4	19	47.2	52	36.5	9	13.4	20.2
9U31016C	MRF N M C 1/2 1/2 NPT	1/2 NPT	1/2"	7/8	22	53	59.8	37.8	11	15.9	20.2
9U31116V	MRF N M V 1/2 1/2 NPT	1/2 NPT	1/2"	7/8	22	53	59.8	37.8	11	15.9	20.2
9U31216B	MRF N M B 1/2 1/2 NPT	1/2 NPT	1/2"	7/8	22	53	59.8	37.8	11	15.9	20.2

## MRF COMPACT "N" TECHNOPOLYMER RING



Code	Description	F	Ø	CH	A min	A max	B	C	D	E
9021001C	MRF NTC 4 M5	M5	4	9	27.7	31	19.1	4	9.5	9.2
9021101V	MRF NTV 4 M5	M5	4	9	27.7	31	19.1	4	9.5	9.2
9021201B	MRF NTB 4 M5	M5	4	9	27.7	31	19.1	4	9.5	9.2
9021005C	MRF NTC 6 M5	M5	6	9	27.7	31	20.8	4	9.5	11.3
9021105V	MRF NTV 6 M5	M5	6	9	27.7	31	20.8	4	9.5	11.3
9021205B	MRF NTB 6 M5	M5	6	9	27.7	31	20.8	4	9.5	11.3
9021002C	MRF NTC 4 1/8	1/8	4	12	33.5	37.6	21	6	12.9	9.2
9021102V	MRF NTV 4 1/8	1/8	4	12	33.5	37.6	21	6	12.9	9.2
9021202B	MRF NTB 4 1/8	1/8	4	12	33.5	37.6	21	6	12.9	9.2
9021006C	MRF NTC 6 1/8	1/8	6	12	33.5	37.6	22.3	6	12.9	11.3
9021106V	MRF NTV 6 1/8	1/8	6	12	33.5	37.6	22.3	6	12.9	11.3
9021206B	MRF NTB 6 1/8	1/8	6	12	33.5	37.6	22.3	6	12.9	11.3
9021008C	MRF NTC 8 1/8	1/8	8	12	33.5	37.6	25.6	6	12.9	13.8
9021108V	MRF NTV 8 1/8	1/8	8	12	33.5	37.6	25.6	6	12.9	13.8
9021208B	MRF NTB 8 1/8	1/8	8	12	33.5	37.6	25.6	6	12.9	13.8
9021007C	MRF NTC 6 1/4	1/4	6	15	38.8	43.7	24.3	8	15	11.3
9021107V	MRF NTV 6 1/4	1/4	6	15	38.8	43.7	24.3	8	15	11.3
9021207B	MRF NTB 6 1/4	1/4	6	15	38.8	43.7	24.3	8	15	11.3
9021009C	MRF NTC 8 1/4	1/4	8	15	38.8	43.7	27.2	8	15	13.8
9021109V	MRF NTV 8 1/4	1/4	8	15	38.8	43.7	27.2	8	15	13.8
9021209B	MRF NTB 8 1/4	1/4	8	15	38.8	43.7	27.2	8	15	13.8
9021011C	MRF NTC 10 1/4	1/4	10	15	38.8	43.7	28.6	8	15	16
9021111V	MRF NTV 10 1/4	1/4	10	15	38.8	43.7	28.6	8	15	16
9021211B	MRF NTB 10 1/4	1/4	10	15	38.8	43.7	28.6	8	15	16
9021014C	MRF NTC 12 1/4	1/4	12	15	38.8	43.7	31	8	15	19.5
9021114V	MRF NTV 12 1/4	1/4	12	15	38.8	43.7	31	8	15	19.5
9021214B	MRF NTB 12 1/4	1/4	12	15	38.8	43.7	31	8	15	19.5
9021012C	MRF NTC 10 3/8	3/8	10	19	47.2	52	30.3	9	17.9	16
9021112V	MRF NTV 10 3/8	3/8	10	19	47.2	52	30.3	9	17.9	16
9021212B	MRF NTB 10 3/8	3/8	10	19	47.2	52	30.3	9	17.9	16
9021015C	MRF NTC 12 3/8	3/8	12	19	47.2	52	32.4	9	17.9	19.5
9021115V	MRF NTV 12 3/8	3/8	12	19	47.2	52	32.4	9	17.9	19.5
9021215B	MRF NTB 12 3/8	3/8	12	19	47.2	52	32.4	9	17.9	19.5
9021016C	MRF NTC 12 1/2	1/2	12	22	53	59.8	34	11	20.1	19.5
9021116V	MRF NTV 12 1/2	1/2	12	22	53	59.8	34	11	20.1	19.5
9021216B	MRF NTB 12 1/2	1/2	12	22	53	59.8	34	11	20.1	19.5

## MRF COMPACT "N" THREADED BRASS RING

cylinder  
versionvalve  
versionbidirectional  
version

Code	Description	F	F2	CH	A min	A max	B	C	D	E	I
9031301C	MRF N F C 1/8 1/8	1/8	1/8	12	33.5	37.6	21.4	6	9.8	13.3	6.7
9031401V	MRF N F V 1/8 1/8	1/8	1/8	12	33.5	37.6	21.4	6	9.8	13.3	6.7
9031501B	MRF N F B 1/8 1/8	1/8	1/8	12	33.5	37.6	21.4	6	9.8	13.3	6.7
9031302C	MRF N F C 1/4 1/4	1/4	1/4	15	38.8	43.7	25.5	8	11.1	16.7	8
9031402V	MRF N F V 1/4 1/4	1/4	1/4	15	38.8	43.7	25.5	8	11.1	16.7	8
9031502B	MRF N F B 1/4 1/4	1/4	1/4	15	38.8	43.7	25.5	8	11.1	16.7	8
9031303C	MRF N F C 3/8 3/8	3/8	3/8	19	47.2	52	31.5	9	13.4	20.2	10
9031403V	MRF N F V 3/8 3/8	3/8	3/8	19	47.2	52	31.5	9	13.4	20.2	10
9031503B	MRF N F B 3/8 3/8	3/8	3/8	19	47.2	52	31.5	9	13.4	20.2	10
9031304C	MRF N F C 1/2 1/2	1/2	1/2	22	53	59.8	36	11	15.9	25.5	11
9031404V	MRF N F V 1/2 1/2	1/2	1/2	22	53	59.8	36	11	15.9	25.5	11
9031504B	MRF N F B 1/2 1/2	1/2	1/2	22	53	59.8	36	11	15.9	25.5	11