

Self-operated regulator

Introduction

This Installation Guide provides instructions and safety information on pressure equipment so as to avoid any foreseeable risk during the use.

For further information refer to Types MN Instruction Manual, n° 0125 and Bulletin, n° 0120.

To receive a copy of the Bulletin, contact your local O.M.T. Tartarini Sales Office or O.M.T. Tartarini Sales Representative.

General Remark

The standard gas pressure devices (regulators and safety shut-off devices) are those used in the assemblies dealt with into EN 12186 and EN 12279 and their use has to be under the provisions into ENs 12186 & 12279.

Fail-to-open stand-alone regulators cannot be used as a safety accessory according PED 97/23/EC to protect downstream pressure equipment.

In the pressure regulators (with or without built-in safety shut-off devices) manufactured by OMT Tartarini shall be used additional pressure accessories (e.g. pilots or filters) manufactured and labeled by OMT Tartarini.

OMT Tartarini will be not responsible for any possible inefficiency due to installation of not own production additional pressure accessories (e.g. pilots or filters).

When pressure containing parts of possible built-in safety shut-off device (SSD) valve and pilot have different maximum allowable pressures, the SSD is differential strength type.

P.E.D. Categories and Fluid Group

According to EN 14382, only in integral strength type and Class A configuration (when both over and under pressure protections are set up), the possible built-in safety shut-off device can be classified like a safety accessory according to PED.

The minimum PS between SSD valve and pilot shall be the PS of the safety accessory to comply the provisions of EN 14382 about integral strength type.

Downstream equipments, protected by possible built-in safety shut-off device (in its Class A and integral strength configuration) of this product, shall have technical features such as to be category per table below according Directive 97/23/EC "PED".

Product Size	Category	Fluid Group
DN 25	SEP	1
From DN 40 to 50	I	
From DN 65 to 100	II	
All size for regulators with built-in SSD	IV	

Possible built-in pressure accessories (e.g. pilots OS66/) conform to Pressure Equipment Directive (PED) 97/23/EC

Article 3 section 3 and were designed and manufactured in accordance with sound engineering practice (SEP).

Per Article 3 section 3, these "SEP" products must not bear the CE marking.

Specifications

Body Sizes and End Connection Styles

MN • MBN • MBN-M
 DN 25x50-40x80-50x100-65x100-80x150-100x200
 ANSI Class 150 flanged (PN 16 on request)

MF • MBF • MBF-M
 DN 25-40-50-80-100
 ANSI Class 150 flanged (PN 16 on request)

! WARNING !

Maximum Operating Inlet Pressure (1)

MN • MBN • MBN-M DN 25-40-50: 10 bar **
 MN • MBN • MBN-M DN 65-80-100: 5 bar **
 MF • MBF • MBF-M DN 25-40-50: 10 bar **
 MF • MBF • MBF-M DN 80-100: 5 bar **

MN-AP • MBN-AP • MBN-M-AP: 19.6 bar *
 MF-AP • MBF-AP • MBF-M-AP: 19.6 bar *

MN-APA • MBN-APA • MBN-M-APA: 19.6 bar *
 MF-APA • MBF-APA • MBF-M-APA: 19.6 bar *

* at average ambient temperature

** -PST is version available on request to allow a Maximum Operating Inlet Pressure =19.6 bar at average ambient temperature

Operating Outlet Set Pressure Ranges

MN • MF: 10 ÷ 500 mbar *
 MN-AP • MF-AP: 0.5 ÷ 1 bar
 MN-APA • MF-APA: 1 ÷ 3 bar

* For DN 80 and 100 the Operating Outlet Set Pressure Range is allowable with M...-BP version.



Minimum/Maximum Allowable Temperature (TS) (1)

See nameplate

(1) : The pressure/temperature limits in this Safe Use Guide and any applicable standard or code limitation should not be exceeded.



Marking

 		APPARECCHIO TIPO / DEVICE TYPE Note 1	
MATRICOLA SERIAL Nr.		DN1	
ANNO YEAR	Note 2	DN2	
NORME ARMONIZ. HARMONIZED STD.	EN	Wa	bar
CLASSE DI PERDITA LEAKAGE CLASS		Wao	bar
CLASSE FUNZIONALE FUNCTIONAL CLASS	Cg	Wau	bar
FLUIDO GRUPPO FLUID GROUP	1	pmax	bar
TS	Note 3 °C	PS covers	Note 5 bar
	PS body	Note 4	bar
		PT=	1.5 x PS bar

Note 1: See "Specifications" paragraph

Note 2: See page header

Note 3: Class 1: -10/+60 °C

Note 4: PN 16 PS = 16 bar
 ANSI 150 PS = 19,3 bar

Note 5: 1,5 bar for M...N-BP/80-100
 4 bar for all other models

Overpressure Protection

The recommended maximum allowable pressures are stamped on the regulator nameplate.

If actual version hasn't a built-in safety shut-off device, some type of overpressure protection is needed if the actual outlet pressure exceeds the actual maximum operating outlet pressure rating.

Overpressure protection should also be provided if the regulator inlet pressure is greater than the maximum operating inlet pressure.

Downstream side pressure after possible built-in SSD's intervention shall stay within the actual maximum operating set-up range to avoid anomalous back pressures that can damage the SSD's pilot.

Downstream overpressure protection shall be also provided if the SSD outlet pressure can be greater than the PS of the SSD pilot (differential strength type).

Regulator operation below the maximum pressure limitations does not preclude the possibility of damage from external sources or debris in the line.

The regulator should be inspected for damage after any overpressure condition.

Transport and Handling

Established transport and handling procedures shall be followed to avoid any damage on the pressure containing parts by shocks or anomalous stresses.

Ringbolts are designed just for handling of equipment weight.

Built-up sensing lines and pressure accessories shall to be protected by shocks or anomalous stresses.

Installation

! WARNING !

Only qualified personnel should install or service a regulator.

Regulators should be installed, operated, and maintained in accordance with international and applicable codes and regulations, and O.M.T. Tartarini instructions.

If the regulator vents fluid or a leak develops in the system, it indicates that service is required.

Failure to take the regulator out of service immediately may create a hazardous condition.

Personal injury, equipment damage, or leakage due to escaping fluid or bursting of pressure-containing parts may result if this regulator is over pressured or is installed where service conditions could exceed the limits given in the Specifications section, or where conditions exceed any ratings of the adjacent piping or piping connections.

To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation, or standard) to prevent service conditions from exceeding limits.

Additionally, physical damage to the regulator could result in personal injury and property damage due to escaping fluid.

To avoid such injury and damage, install the regulator in a safe location.

Before installation, check shall be done if service conditions are consistent with use limitations and if pilot set-up of possible built-in safety shut-off device are in accordance with service conditions of protected equipment.

All means for venting have to be provided in the assemblies where the pressure equipment are installed (ENs 12186 & 12279).

All means for draining have to be provided in the equipment installed before regulators & shut-off devices (ENs 12186 & 12279).

Further the ENs 12186 & 12279, where this product is used :

- provide the cathodic protection and electrical isolation to avoid any corrosion and
- in accordance with clause 7.3/7.2 of aforesaid standards, the gas shall be cleaned by proper filters/separators/scrubbers to avoid any technical & reasonable hazard of erosion or abrasion for pressure containing parts.

Pressure equipment in subject shall be installed in non-seismic area and hasn't to undergo fire and thunderbolt action.

Clean out all pipelines before installation of the regulator and check to be sure the regulator has not been damaged or has collected foreign material during shipping.

Use suitable line gaskets and approved piping and bolting practices.

Install the regulator in any position desired, unless otherwise specified, but be sure flow through the body is in the direction indicated by the arrow on the body.

Installation must be done avoiding anomalous stresses on the body and using suitable joint means according equipment dimensions and service conditions.

For a correct and safe use of the connections check also Instruction Manual and Bulletin before installation.

User has to check and carry out any protection suitable for assembly's specific environment.

Note: It is important that the regulator be installed so that the vent hole in the spring case is unobstructed at all times.

For outdoor installations, the regulator should be located away from vehicular traffic and positioned so that water, ice, and other foreign materials cannot enter the spring case through the vent.

Avoid placing the regulator beneath eaves or downspouts, and be sure it is above the probable snow level.

Start-up

The regulator and/or safety shut-off pilot is factory set at approximately the midpoint of the spring range or the pressure requested, so an initial adjustment may be required to give the desired results.

With proper installation completed and relief valves properly adjusted, slowly open the upstream and downstream line valves.

Adjustment

To change the outlet pressure turn the adjusting screw clockwise to increase outlet pressure or counter clockwise to decrease pressure.

Monitor the outlet pressure with a test gauge during the adjustment.

Taking Out of Service (Shutdown)

! WARNING !

To avoid personal injury resulting from sudden release of pressure, isolate the regulator from all pressure before attempting disassembly and release trapped pressure from the equipment and pressure line.

In case of disassembly of main pressure retaining parts for checks and maintenance procedures,

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external and internal tightness tests have to be done according applicable codes.

Checks and Maintenance

Regulator and its pressure accessories are subject to normal wear and must be inspected periodically and replaced as necessary.

The frequency of inspection/checks and replacement depends upon the severity of service conditions and upon applicable National or Industry codes, standards and regulations/recommendations.

Maintenance is possible by following proper procedures detailed in the Instruction Manual.

In accordance with applicable National or Industry codes, standards and regulations/recommendations, all hazards covered by specific tests after final assembling before applying the CE marking, shall be covered also after every subsequent reassembly at installation site, in order to ensure that the equipment will be safe throughout its intended life.

Commissioning / de-commissioning

See Instruction Manual for proper operations.

Safety requirements are according taking out of service above information.

Spare parts

See Instruction Manual for spare parts tracing.

Spare parts storage shall be done by proper procedures according also national standard/rules to avoid too much aging or any damage.