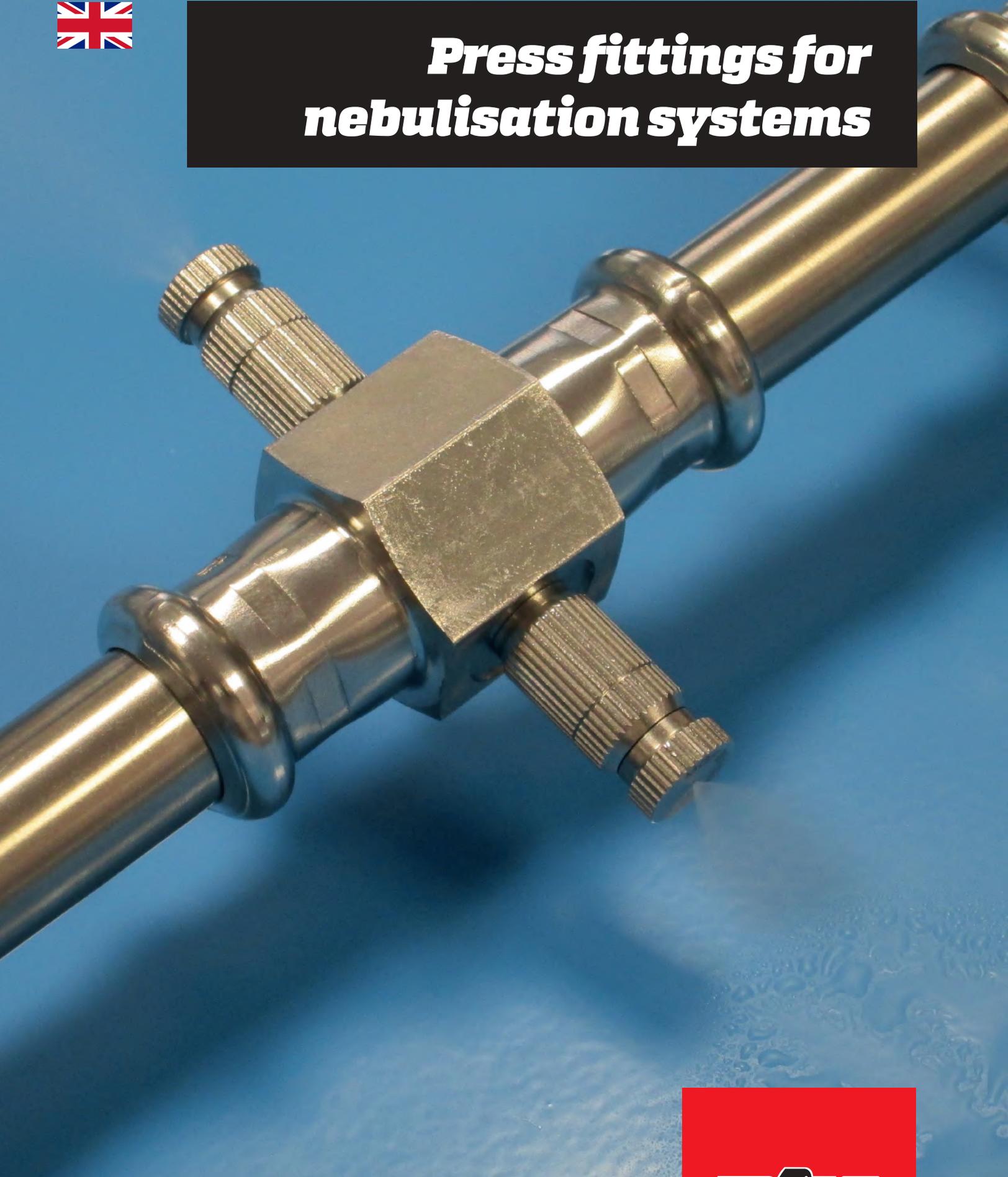




# ***Press fittings for nebulisation systems***



inoxPRES®

**ROM**  
RACCORDERIE METALLICHE

# Certified Company

**DNV**

## MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 1000047222-MSC-ACCREDIA-ITA Initial certification date: 23 November 2019 (based on OHSAS 18001) Valid: 07 December 2021 - 23 November 2024 Expiry date of last certification cycle: 23 November 2021 Date of last re-certification: 06 October 2021

This is to certify that the management system of **RACCORDERIE METALLICHE S.p.A. - Sede Legale e Operativa** Strada Sabbionetana, 59 - 46010 Campitello di Marcaria (MN) - Italy and the sites as mentioned in the appendix accompanying this certificate has been found to conform to the Occupational Health and Safety Management System standard: **ISO 45001:2018**

This certificate is valid for the following scope: **Production and marketing of metal fittings, welded, threaded, press-on and insulating collars and fixing systems for pipes and radiators. Marketing mix of valves and air vent, products and complementary accessories for use hydro-thermal health, according to national/international customer specifications and internal specifications established. Marketing of metal pipes made of steel and other metals. (IAF 17, 29)**

Place and date: Vimercate (MB), 07 December 2021

For the issuing office: DNV - Business Assurance Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

Zeno Beltrami Management Representative

La validità del presente certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione/ Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid. ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 03 90 905, www.dnv.it

## ISO 45001:2018 - DNV

**DNV**

## MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: CERT-00317-94-AQ-MEL-SINCERT Initial certification date: 10 November 1994 Valid: 08 October 2021 - 07 October 2024

This is to certify that the management system of **RACCORDERIE METALLICHE S.p.A. - Sede Legale e Operativa** Strada Sabbionetana, 59 - 46010 Campitello di Marcaria (MN) - Italy and the sites as mentioned in the appendix accompanying this certificate has been found to conform to the Quality Management System standard: **ISO 9001:2015**

This certificate is valid for the following scope: **Manufacture and trade of welded, threaded and press metal pipe fittings and dedicated insulation systems; collars and clamping systems for pipes and radiators. Trade of mixing valves and automatic float air vents, products and accessories for heating and plumbing uses in conformity with national/international standards, specifications furnished by the customer and established company specifications (IAF 17, 29)**

Place and date: Vimercate (MB), 06 October 2021

For the issuing office: DNV - Business Assurance Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

Zeno Beltrami Management Representative

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## ISO 9001:2015 - DNV

**DNV-GL**

## MANAGEMENT SYSTEM CERTIFICATE

Certificato no./Certificate No.: 90476-2010-AE-ITA-SINCERT Data prima emissione/Initial date: 22 dicembre 2010 Validità/Valid: 24 dicembre 2019 - 23 dicembre 2022

Si certifica che il sistema di gestione di/This is to certify that the management system of **RACCORDERIE METALLICHE S.p.A.** Strada Sabbionetana, 59 - 46010 Campitello di Marcaria (MN) - Italia e i siti come elencati nell'Appendice che accompagna questo certificato / and the sites as mentioned in the appendix accompanying this certificate È conforme ai requisiti della norma per il Sistema di Gestione Ambientale/ Has been found to conform to the Environmental Management System standard: **ISO 14001:2015**

Valutato secondo le prescrizioni del Regolamento Tecnico RT-09/ Evaluated according to the requirements of Technical Regulations RT-09

Questa certificazione è valida per il seguente campo applicativo: **Produzione (attraverso le fasi di taglio, deformazione e filettatura) e commercializzazione di raccorderia metallica, a saldare, filettata, a pressare e relativo isolante; collari e sistemi di fissaggio per tubi e radiatori. Commercializzazione di valvole mix e a sfogo d'aria, prodotti/accessori complementari per impieghi idro-termo sanitari, in accordo a normative nazionali/internazionali, specifiche fornite dal cliente e specifiche interne consolidate (IAF: 17, 29)**

This certificate is valid for the following scope: **Production (through cutting, deformation and thread phases) and marketing of metal fittings, welded, threaded, press-on and insulating collars and fixing systems for pipes and radiators. Marketing mix of valves and air vent, products and complementary accessories for use hydro-thermal health, according to national / international customer specifications and internal specifications established (IAF: 17, 29)**

Luogo e Data/Place and date: Vimercate (MB), 09 gennaio 2020

Per l'Organismo di Certificazione/ For the Certification Body: DNV GL - Business Assurance Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

Zeno Beltrami Management Representative

La validità del presente certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione/ Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid. DNV GL Business Assurance Italia S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 03 90 905, www.dnvgl.it

## ISO 14001:2015 - DNV



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# 1.0 Nebulisation

Nebulisation is the transformation of a liquid into small droplets, by passing the liquid through a very narrow orifice. Nebulisation should not be confused with humidification: during the nebulisation process, the liquid does not change state, albeit small the droplets still have macroscopic dimensions in the liquid phase, without passing into a vapour state (humidification).

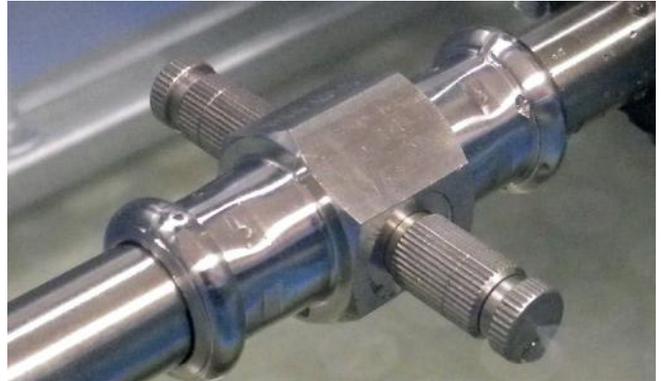


Figure 1 - Nebulisation nozzle

## 2.0 Where is nebulisation used

Nebulisation is used in various construction fields from civil and industrial installations to the livestock and farming sectors.

Among the many uses, we briefly summarize here the typical contexts in which nebulisation is found.

### Civil construction

Cooling environments during the summer in restaurants, hotels, nightclubs, spas, swimming pools, etc.



Figure 2 - Civil sector

### Industrial construction

Reduction of odours and dust in workplaces such as wood and marble transformation industries as well as in construction, etc.

Cooling in harsh working environments (moulding industry, steel industry, ironing facilities, etc).



Figure 3 - Industrial sector

**Animal husbandry and agriculture**

Cooling of the animals, reduction of odours, humidification of greenhouses, spraying of chemicals, irrigation.



Figure 4 - Animal husbandry and agriculture sector

# 3.0 Operating principle

## 3.1 Reduction of odours and dust

The atomized water droplets, are attracted electrostatically with the particles present in the air and join together. By gravity, the tiny droplets that have captured the particles fall to the ground, purifying the air itself and also reducing electrostatic charges.

## 3.2 Cooling

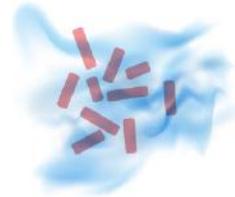
Through special nozzles, the water is ejected under high pressure (up to 70 bar) turning into a fine mist. The nebulised water evaporates very quickly causing the cooling of the air in the warehouse/work environment and consequently lowers the temperature. This cooling effect saves energy because it reduces the operating times of fans.

The table below shows a table indicative of the ambient temperature reduction in relation to the initial relative humidity.

**Phase 1:** dust is produced by the production process



**Phase 2:** dust is intercepted by nebulisation



**Phase 3:** the drops accumulate around the particles of dust which, become heavy and fall to the ground



Maximum cooling capacity

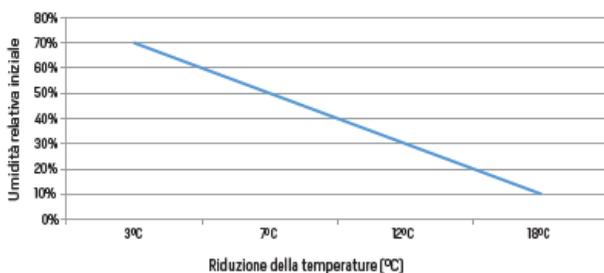


TABLE 1: MAXIMUM COOLING CAPACITY

Initial conditions	Temperature	36°C	36°C	36°C	36°C
	Humidity	10%	30%	50%	70%
Final conditions	Temperature	18°C	24°C	29°C	33°C
	Humidity	85%	85%	85%	85%
Cooling	°C	18°C	12°C	7°C	3°C

## 4.0 Advantages

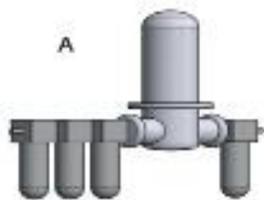
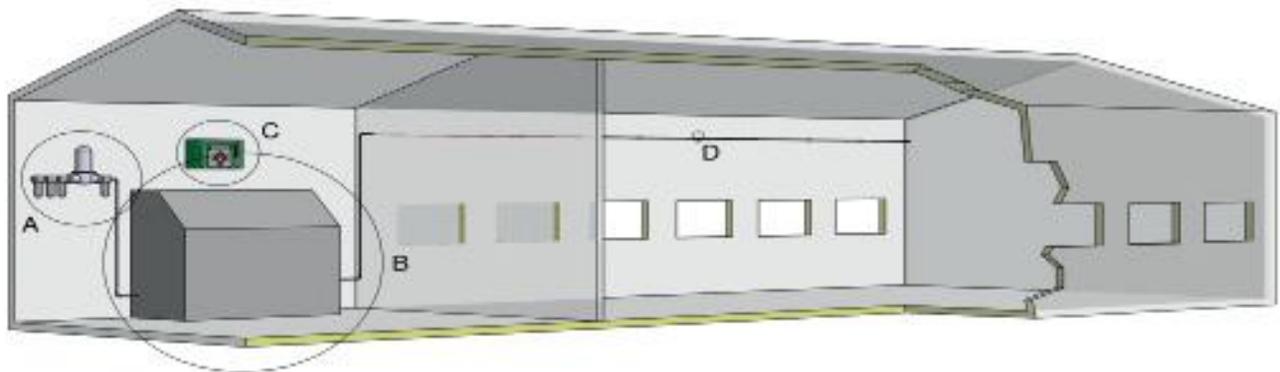
The use of humidification in both civil and industrial environments leads to a series of important advantages, among which we summarize here:

- cooling improves the environment quickly without wetting the areas where applied;
- environmental humidity can be increased to the desired value: remember that the best level of relative humidity is between 60-70%;
- beneficial effect on the respiratory organs of both people (in the workplace) and animals (on farms);
- beneficial effect on the animals on farms in terms of maintaining the temperature and humidity conditions and the eviction of insects.

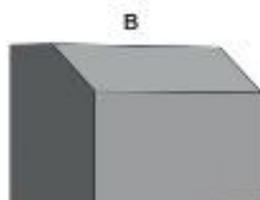
## 5.0 Components

In nebulisation systems pipes with small diameter ( $\varnothing$  12-15 mm) are usually used.

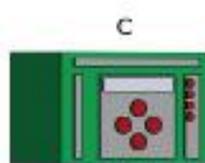
The uses are varied and installation environments often critical in terms of resistance to corrosion, for this reason the most suitable material for this kind of application is stainless steel.



CENTRAL FILTERING UNIT



PUMP UNIT



CONTROL PANEL



NOZZLE LINE

## 5.1 Elements of the nebulisation system

At the side is a summary of the components (pipes, fittings and accessories) in AISI 316L stainless steel, indispensable for the installation of a nebulisation system.

The fittings are supplied with a black sealing ring made of EPDM, suitable and certified for contact with drinking water.

Nebulisation occurs via the dedicated nozzles with calibrated orifices. The stainless steel AISI 316L nozzles together with the spray sleeve are shown in the figure below.



### List of components for nebulisation

Pipe DN 15 x 1 mm thickness in AISI316L  CODE: 116015200	Elbow DN 15 90° FF in AISI 316L  CODE: 181015900
Elbow DN 15 90° MF in AISI 316L  CODE: 181015901	Elbow DN 15 45° FF in AISI 316L  CODE: 181015450
Elbow DN 15 45° MF in AISI 316L  CODE:181015451	Sleeve DN 15 in AISI 316L  CODE:183015000
Tee DN 15 in AISI 316L  CODE:182015000	Cap DN 15 in AISI 316L  CODE:183015003
Mixed male thread sleeve DN15x1/2"  CODE:187102015	Mixed female thread sleeve DN15x1/2"  CODE:190102015
Connection DN 15 for 1 nebuliser in AISI 316L  CODE:195015017	Connection DN 15 for 2 nebulisers in AISI 316L  CODE:195015027
Nebuliser connector 10/24"  CODE: UPON REQUEST	Rubber-coated collars AISI 304 Dn15  CODE: 156150304G

## 5.2 Nozzles - Design and flow references

The number of nozzles to be installed in a system is defined according to the coverage requirements .

The following steps are recommended:

- > 75 cm in the case of ventilated areas;
- > 100 cm in the case of breeze;
- > 125 cm in the case of still air (closed environments).

On average a nozzle covers a surface area of 1 m<sup>2</sup>

The distribution line is usually installed at a height of between 2 and 4 metres but given the flexibility of the nozzles, it is possible to go up to 6 metres high.

The diameter of the nebulised water droplet is defined as a function of the result that we want to obtain:

- > 15 µm (microns) to obtain fast evaporation and no soaking (e.g. ambient cooling);
- > 30/40 µm (microns), for a heavier drop that is less subject to wind (e.g. removal of odours);
- > 50 µm (microns) for a compact and wet fog (e.g. dust removal).

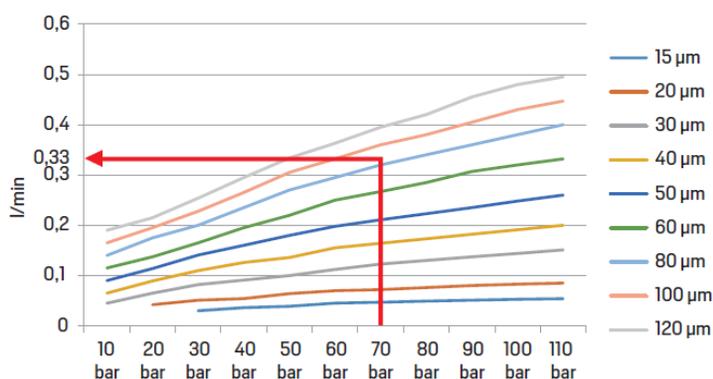
Below are the water flow rates of the nozzles as a function of the delivery pressure.

**TABLE 2: NOZZLE FLOW IN LITRES PER MINUTE**

Pressure	10 bar	20 bar	30 bar	40 bar	50 bar	60 bar	70 bar	80 bar	90 bar	100 bar	110 bar
15 µm	--	--	0.03	0.036	0.039	0.045	0.047	0.049	0.051	0.053	0.054
20 µm	--	0.042	0.051	0.054	0.064	0.07	0.072	0.076	0.08	0.083	0.085
30 µm	0.045	0.065	0.082	0.091	0.1	0.112	0.123	0.13	0.137	0.144	0.151
40 µm	0.065	0.089	0.11	0.126	0.136	0.155	0.164	0.173	0.182	0.191	0.2
50 µm	0.09	0.114	0.141	0.16	0.18	0.198	0.211	0.223	0.235	0.248	0.26
60 µm	0.115	0.137	0.165	0.195	0.22	0.25	0.267	0.285	0.307	0.32	0.332
80 µm	0.14	0.175	0.2	0.235	0.27	0.295	0.32	0.34	0.36	0.38	0.4
100 µm	0.165	0.195	0.228	0.265	0.305	0.332	0.36	0.38	0.405	0.43	0.447
120 µm	0.19	0.215	0.254	0.295	0.334	0.363	0.395	0.42	0.455	0.48	0.495

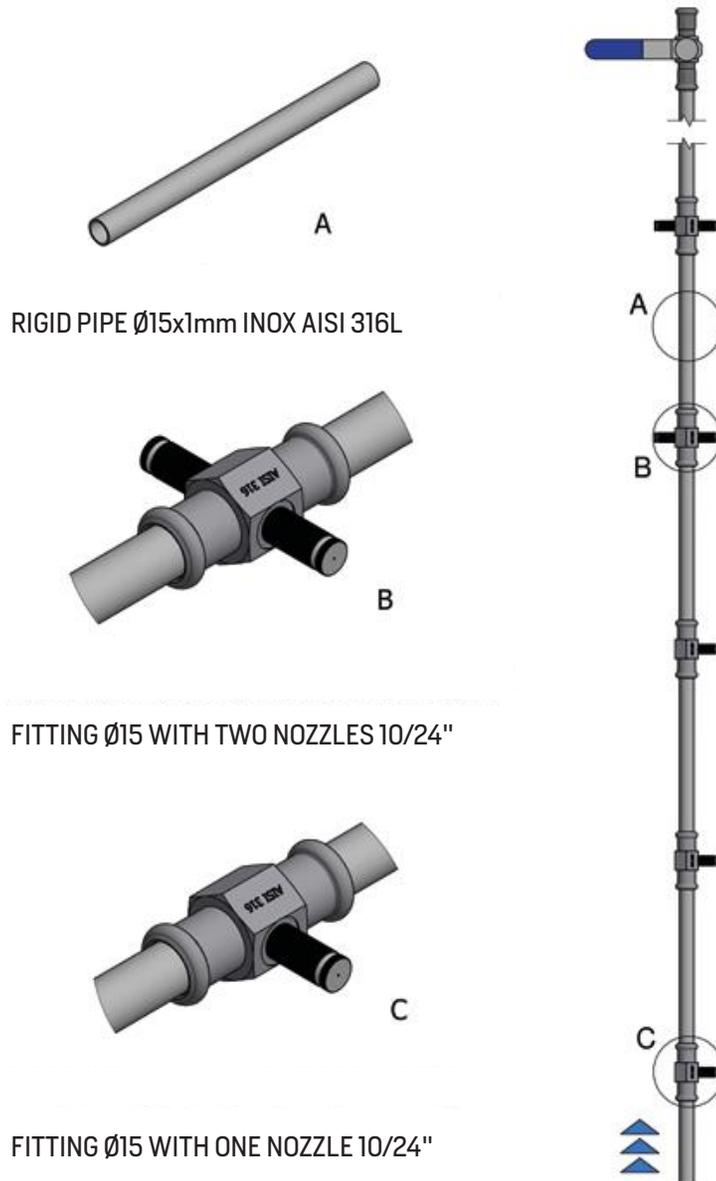
### Calculation formulas

Minimum flow rate required by the pump = number of nozzles x characteristic flow of nozzle at the maximum working pressure. Maximum number of nozzles installed = pump flow rate / nozzle flow at max working pressure.



At 70 bar with an 80 µm nozzle, there is a flow of 0.33 l/min.

The press fittings DN 15 are tested at a maximum working pressure of 70 bar. Any other working condition, must be evaluated regularly. The designer has the responsibility to carry out detailed implementation planning and a risk analysis in accordance with the provisions of Directive 97/23/CE PED for pressurized systems.



### 5.3 Technical characteristics of the components

#### ► A

The components of the nebulisation systems have been tested to be used under the following working conditions:  
Water with a maximum working pressure of 70 bar, having passed acceptance tests at the test pressure of 120 bar.

#### ► B

Connectors for nebulisers have 10/24" threading in order to receive the corresponding nebulisers.

#### ► C

The most commonly used nebulisers have a nebulisation nozzle diameter equal to 20/30 µm.

The nozzle has an anti-drip system and a removable deflector for the cleaning of the orifice measuring 0.02 / 0.03 mm.

**For other required sizes consult Raccorderie Metalliche.**

## 6.0 Processing

### 6.1 Storage and transport

**inoxPRES** system components have to be protected against dirt and damage during transport and storage.

The ends of the pipes are factory-fitted with plugs/caps to prevent dirt. The pipes must be stored in a cradle with a protective coating or protected with plastic material, so that they do not come in contact with other materials. Further more pipes and press fittings must be stored in an environment which is covered and protected from moisture exposure in order to prevent corrosion and / or oxidation of the surface.

### 6.2 Pipes - cutting to length, deburring, bending

The pipes should be cut to length using professional pipe cutters which are suitable for the material in use. Alternatively, fine-tooth hacksaws or suitable electric saws may be used.



**Figure 5** - Cutting the pipe to length



**Figure 6** - Deburring the pipe

Not permitted are:

- tools which cause over-heating of the material and tempering of colours during cutting;
- oil-cooled saws;
- flame cutting or cutting with angle grinders.

To avoid damaging the sealing ring when inserting the pipe into the press fitting, the pipe must be carefully debur-

red, both inside and outside, following cutting to required length.

This can be carried out using manual deburring tools which are suitable for the material in use, whilst for larger dimensions suitable electrical pipe deburring tools or files can be used. The  $\varnothing$  15 mm pipes can be bent cold using standard bending tools ( $R \geq 3.5xD$ ).

## 6.3 Marking the insertion depth

Sufficient mechanical strength of the press fitting connection will only be achieved if the insertion depths are adhered to as shown in table 3. These insertion depths are valid for pipes or fittings with insertion ends (i.e. fittings without pressfit end) and must be marked using a suitable marking tool.

**TABLE 3:  
INSERTION DEPTH AND MINIMUM DISTANCES**

Pipe outside diameter mm	A (*) mm	D mm	L mm
15	20	20	60

\*Tolerance:  $\pm 2$ mm

## 6.4 Press fitting seal ring check

Before assembly the sealing ring must be checked to ensure that it is lying in the pressing groove correctly and that it is clean and undamaged. If necessary, the sealing ring should be replaced.

Additionally, the fitter should check whether the ring in position is suitable for the special application, or whether it should be replaced with another sealing ring.

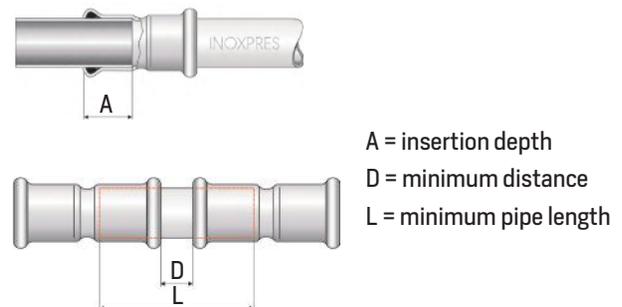
## 6.5 Making the connection $\varnothing 15$ mm

Using light pressure and making a turning movement at the same time, press the pipe into the press fitting up to the marked insertion depth. If the tolerances are so narrow that additional force is required to insert the pipe into the press fitting, then water or soapy water may be used as a lubricant.

Oil and grease are not permitted for use as lubricants.

Pressing is carried out using suitable electromechanical/electrohydraulic pressing tools and dimension-matching pressing jaws or collars/chains. Tested and approved pressing tools or pressing jaws/collars/chains are listed under table 4-5.

The marking of the insertion depth on the pipe must be visible directly next to the press fitting groove following pressing. The distance of the marking on the pipe/fitting from the press fitting formed end may not exceed 10% of the required insertion depth, since otherwise the mechanical stability of the connection cannot be guaranteed.



**Figure 7** - Insertion depth and minimum dimensions



**Figure 8** - Marking the insertion depth



**Figure 9** - Checking the sealing ring

The matching pressing jaw is mounted in the pressing machine, or the appropriate collar/chain mounted on the fitting, depending on the dimensions of the press fitting. The slot of the pressing jaw/collar must be positioned exactly over the press fitting formed end.

Following pressing, the complete connection should then be checked to ensure that the work has been carried out correctly and that the insertion depth is correct.

The fitter should also ensure that all connections have actually been pressed.

React immediately in the event of an unusual press pattern.

Completely pressed systems with faulty press patterns or profiles cannot be fully recognized as a complaint.



**Figure 10** - Inserting pipe into the press fitting

Following completed pressing, the pressing points may not be subjected to further mechanical loading. The positioning and straightening of the pipes and the sealing of threaded connections must therefore take place before the pressing is carried out. Slight movement and lifting of pipes, for example for painting work, is permitted.



**Figure 11** - Making the press connection



**Figure 12** - Checking the press connection

# 7.0 Pressing tools

## 7.1 Basic indications

Pressing tools basically consist of the pressing machine (= drive machine) and pressing jaws. Many of the pressing jaws/collars can generally be used with the pressing machines from one manufacturer. Additionally, many manufacturers of pressing tools have standardised the jaw attachment so pressing jaws from other manufacturers can also be used.

Principally, all metallic press fitting systems have a pressing contour on the press fittings which matches the profile of the pressing jaws/collars. For this reason it is necessary to have the approval of the tooling by the manufacturer of the press fittings intended for use. In addition, it is important to follow exactly the maintenance and servicing instructions issued by the pressing tool manufacturer.



**Figure 13** - Klauke UAP332BT    **Figure 14** - Novopress AC0203 BT

## 7.2 Approved pressing tools

RM approves the tools produced by Klauke and Novopress listed in the tables 4 and 5 below. These are pressing tools with the appropriate pressing jaws or collars/chains.

**TABLE 4: MANUFACTURER KLAUKE**

Tipo	Forza di spinta	Campo d'impiego	Peso	Compatibile con ganasce
MAP1 - MAP2L	15 KN	15 mm	~ 1,7 Kg	--
MAP2L_19 MAP2119BT	19 KN	15 mm	~ 1,7 Kg	--
UAP2 - UAP3L UAP332BT	32 KN	15 mm	~ 3,5 Kg	Novopress EFP2 - EFP201 - AFP201 - EFP202 - AFP202 - ECO1 - AC01
UNP2	32 KN	15 mm	~ 3,5 Kg	Novopress EFP2 - EFP201 - AFP201 - EFP202 - AFP202 - ECO1 - AC01
UAP4 - UAP4L UAP432BT	32 KN	15 mm	~ 4,3 Kg	Novopress EFP2 - EFP201 - AFP201 - EFP202 - AFP202 - ECO1 - AC01
AH- P700LS	PKUAP3	32 KN	~ 12,3 Kg	Novopress EFP2 - EFP201 - AFP201 - EFP202 - AFP202 - ECO1 - AC01
	PKUAP4	32 KN	~ 12,6 Kg	

TABLE 5: MANUFACTURER NOVOPRESS

Tipo	Forza di spinta	Campo d'impiego	Peso	Compatibile con ganasce
AC0102 - AC0103	19 KN	15 mm	~ 1,7 Kg	--
EFP2	32 KN	15 mm	~ 6,1 Kg	EFP201 - AFP201 - EC01 - AC01
EFP201 - EFP202	32 KN	15 mm	~ 4,4 Kg	EFP2 - EC01 - AC01
AFP201 - AFP202	32 KN	15 mm	~ 4,3 Kg	EFP2 - EC01 - AC01
EC0202 - AC0202 EC0203 - AC0203/BT	32 KN	15 mm	~ 3,3 Kg	EC0201 - AC0201 - EC01 - AC01
AC0202XL AC0203XL/BT	32 KN	15 mm	~ 4,6 Kg	EC0202 - AC0202
AC03	36 KN	15 mm	~ 5,0 Kg	EC03
EC0301	45 KN	15 mm	~ 5,0 Kg	AC03

## 7.3 Periodical equipment service

Jaw and chain pressing units are to be serviced for a correct joint production.

**The pressing tools must be checked by an officially authorized repairer according to the manufacturer specifications** (normally once a year or after 10.000 pressing cycles for standard pressing machine).

What is more any moving part (drive rolls) and pressing jaw and chain surfaces (internal profiles) are to be daily serviced, cleaned and lubricated.

**As indicated also on UNI 7129-1 norm.**

Any possible oxidation, paint or dirt in general affect the tool reliability leading to equipment sliding problems on joints during pressing.

## 8.0 Approvals

The following are the **inoxPRES** declaration of suitability for nebulisation. Any other documentation related to systems and materials must be requested from Raccorderie Metalliche.



## DECLARATION OF SUITABILITY FOR NEBULISATION

(EN 10204 - 2.1\_rev 1 of 05-2022)

relating to press fitting systems and stainless steel pipes

### INOXPRES

#### RACCORDERIE METALLICHE S.p.A.

Strada Sabbionetana, 59  
46010 Campitello di Marcaria  
Mantova (ITALY)

DECLARES

that the INOXPRES press fitting systems and stainless steel pipes

- comply with the technical requirements envisaged for nebulisation systems for industrial, agricultural and outdoor use;
- are suitable for the construction of nebulisation networks with the following parameters;
  - > tube and fittings diameter 15mm (DN15)
  - > operating pressure 70 bar;
  - > testing pressure 120 bar;
  - > operating temperature range between -20 / +120 °C;
  - > fluid conveyed: water;
- comply with the requirements of the European Directive 2014/68/UE (PED: Pressure Equipment Directive), article 3 paragraph 3;

The INOXPRES press fitting system and its components are manufactured under the quality management system certificate ISO 9001.

Campitello di Marcaria, May 2022

Ceccardi Guido

*Chief Executive Officer (CEO)*

## DECLARATION OF SUITABILITY FOR NEBULISATION

(EN 10204 - 2.1\_rev 1 of 05-2022)

**RACCORDERIE  
METALLICHE S.P.A.**  
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R.E.A. 169204

[raccorderiemetalliche.com](http://raccorderiemetalliche.com)





relating to press fitting systems and stainless steel pipes

## INOXPRES

### CORRECT USE OF THE SYSTEM

For correct use of the INOXPRES press fitting system, and successful installation please refer to the following documents:

- > Press fitting Technical Manual of Raccorderie Metalliche;  
(on the website [www.racmet.com](http://www.racmet.com) the latest updated edition is always available)
- > National regulations in force in the field of design, installation and maintenance of nebulisation systems;

The INOXPRES press fitting system is used in nebulisation systems used for:

- > cooling, disinfection, dust suppression in agriculture (farms);
- > landscaping, cooling, disinfestation in outdoor areas (gardens, exterior environments);
- > Micro-irrigation of green walls;
- > Cooling, humidification, dust suppression in the industrial sector (textiles, wineries, etc.).

For the delivery of water containing specific chemicals in the system it is necessary to check the compatibility of these substances with the stainless-steel pipes and fittings and the seal inserted in each fitting.

For the selection of pressing equipment, please refer to the Press fitting Technical Manual and use equipment declared compatible and suitable for use by Raccorderie Metalliche S.p.A.

Where required, the designer or installer must apply for the technical opinion of recognized body, which can approve the plant and choice of components installed.

Raccorderie Metalliche S.p.A. leaves it to the plant designer to assess the conformity of the INOXPRES press fitting system in accordance with territorial regulations and national laws that specify and regulate the design, installation and maintenance of systems.

**RACCORDERIE  
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## DECLARATION OF SUITABILITY FOR NEBULISATION

(EN 10204 - 2.1\_rev 1 of 05-2022)

relating to press fitting systems and stainless steel pipes

### INOXPRES

## INOXPRES PRESS FITTING SYSTEM CHARACTERISTICS

Taking note of the following regulations:

- > Art. 7 – Ministerial Decree 37 of 22-01-08 – Rules for plant safety;
- > Art. 5 – Law No. 447 of 06/12/91 – Regulation implementing Law No. 46/90;

#### CERTIFIES

- > that the INOXPRES system consists of press fittings, o-rings in EPDM ( -20 +120°C), connecting pipes, pressing tools and suitable clamps or chains;
- > that the INOXPRES system is approved by the leading international certification bodies such as: DVGW – Germany, CSTBat - France, ETA - Denmark, WRAS – UK, VdS – Germany;
- > that the material used for the production of INOXPRES press fittings is AISI 316, 1.4404, in compliance with EN 10088 – EN 10312 – EN 10217-7;
- > that INOXPRES press fittings are manufactured according to UNI 11179 and the technical regulations of the leading international certification bodies;
- > that INOXPRES pipes are made of stainless steel AISI 316L – 1.4404, AISI 304L – 1.4307, TYPE 444 - 1.4521, in compliance with EN 10088 – EN 10312 – EN 10217-7;
- > that all the threads for the INOXPRES system are produced according to EN 10226-1 (DIN 2999 – UNI ISO 7/1) or UNI ISO 228/1 (DIN 259);
- > that all the welds on the fittings for the INOXPRES system are 100% controlled, under pressure with automatic machines;
- > that although the chloride limit for drinking water is equal to 250 mg/l, based on laboratory and site experiences, it's suggested not to exceed 100 mg/l. Any situations of stagnation and dead branches in the system must be evaluated in the design phase, considering the quality of the water and all the conditions of the installation environment that can generate corrosion conditions;

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- > that the seals used by the INOXPRES system are made of EPDM and approved according to: DIN 681 – 1 Typ WB; KTW 1.3.13 elastomers sector D2; WBS Water Byelaws Scheme - BS 6920; ANSI / NSF Standard 61; FDA - title 21 - part 170 – 199 – item 177.2600 (e) + (f). Supplement: compression strength test, DVR, 3000 hours / 110°C;
- > that the INOXPRES system components are not subject to CE marking as prescribed by Legislative Decree no. 93 of 25 February, 2000;

Campitello di Marcaria, May 2022

Ceccardi Guido

*Chief Executive Officer (CEO)*

Pozzetti Silvio

*Head of Quality System*

Pizzamiglio Fabrizio

*Product Manager Plumbing &  
Heating Division*

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The full references of our officials and business partners are available on our website.  
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