

We ensure that systems work better.

VULKAN

Solutions for refrigeration and air conditioning technology

Refrigeration and Air Conditioning

Braze-free tube connections
for installation and servicing



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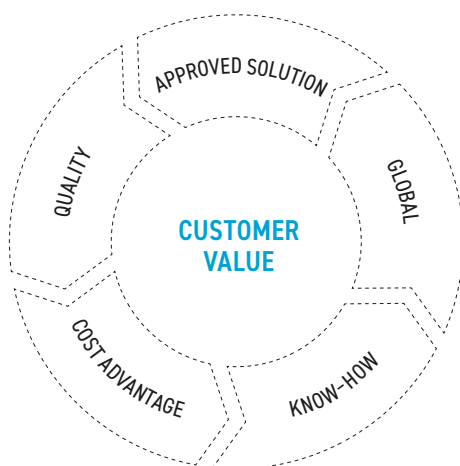


THE VULKAN GROUP

SINCE 1979 VULKAN HAS DEVELOPED, MANUFACTURED AND MARKETING MECHANICAL TUBE JOINING SYSTEMS FOR REFRIGERANT LINES.

With five production sites, over 50 sales companies and around 1,400 employees at 18 locations worldwide, the VULKAN Group is one of the technology and market leaders in the field of marine, industrial and energy technology as well as refrigeration and air conditioning technology.

Under the slogan "We ensure that systems work better." we provide our customers with customized solutions that help to improve their systems both technically and economically.



MARKETS AND PRODUCTS

Due to its diversified business portfolio, the VULKAN Group - in line with the markets it serves - is made up of three divisions: Marine, Industry and Energy and Refrigeration and Air Conditioning.

EXPERTS FOR REFRIGERATION AND AIR CONDITIONING TECHNOLOGY

Originally developed for the most extreme conditions of aerospace applications, VULKAN's LOKRING tube joining technology has been continuously developed for domestic and commercial refrigeration as well as air conditioning applications.

APPROVED SOLUTION

2,500,000,000 LOKRING® CONNECTIONS

have been successfully used in the industrial volume production of refrigerators, freezers and air conditioning systems.

GLOBAL

1,000,000 LOKRINGS PER DAY

are produced in the five international production facilities of VULKAN on modern multi-spindle automatic lathe machines and shipped to 83 destination countries.

COST ADVANTAGE

7,000 CUSTOMERS

optimise their international competitive edge by using LOKRING tube connections as cost and quality benefit compared to brazed ones.

KNOW-HOW

650 UNIQUE TYPES OF LOKRING

are used at present by customers in order to optimally join tubes made of different materials and combinations of diameters.

QUALITY

100% QUALITY INSPECTION

of LOKRING based on automated industrial image processing as part of the certified VULKAN quality management system.

THE VULKAN GROUP

CUSTOMIZED SOLUTIONS FOR BRAZE-FREE TUBE CONNECTIONS

Since 1979, we have continuously applied the expert knowledge gained as an original equipment manufacturer for the industry to our braze-free tube connections, providing customized solutions for tube connections used in the manufacture, installation and maintenance of refrigeration and air conditioning equipment. As the market leader in braze-free, permanent tube connections, we can supply a matched system of tube connections in original equipment quality and with all necessary certifications for almost any installation or service application. This also includes the corresponding assembly tools and accessories.

EVERYTHING FROM A SINGLE SOURCE

Our customers receive everything from a single source - from special development for specific customer requirements and in-house production to sales and service through local subsidiaries or authorized distributors. VULKAN's Refrigeration and Air Conditioning division is divided into the following business segments:

⊕ OEM | PRODUCTION

The LOKRING Single Ring technology is a method for connecting metallic refrigerant lines without brazing so that they are permanent and hermetically sealed. For this purpose, VULKAN constructs customised LOKRING tube connectors for any application based on the tube materials, dimensions and tolerances and the associated assembly tools. Whether it is a matter of optimising costs, improving quality, or solving a problem – LOKRING Single Ring is the answer!

⊕ INSTALLATION OF HVAC SYSTEMS

The patented LOKRING tube connection system provides an innovative system of braze-free tube connectors for every installation situation in refrigeration and air conditioning technology.

⊕ REPAIR OF REFRIGERATION APPLIANCES

VULKAN provides an innovative system of braze-free tube connectors for every repair situation in refrigeration appliances.

⊕ REPAIR OF VEHICLE A/C SYSTEMS

Our technology includes an innovative system of braze-free tube connectors as well as hose connectors for every repair situation in vehicle air conditioning systems & E-Vehicle battery cooling circuits.

RESEARCH AND DEVELOPMENT

For the last decades, experienced engineers have built new solutions for customers' applications in the development centre in Germany.

PRODUCT AND MANAGEMENT CERTIFICATION

The products of VULKAN Refrigeration and Air Conditioning have of course TÜV and UL product approval. Furthermore, the quality management system is certified according to ISO 9001 and the environmental management system according to ISO 14001. In addition, AEO certifications, leak tests and expert reports are available.

CLIMATE PROTECTION

Since our tube connections are hermetically sealed, we can ensure that no climate damaging refrigerants leak into the environment. Furthermore, LOKRING makes the use of environmental friendly but flammable refrigerants (HC) safer and allows the use of CO₂ (R744). Thus, by using LOKRING tube connections you make a contribution to the active protection of the environment.

SERVICE

Whether you are seeking planning and consultancy for optimising the refrigeration cycle system by using braze-free tube connections, support with the introduction of the LOKRING technology in production or after-sales service – everything is available locally with competent VULKAN technicians.

THE BEST CONNECTION - WORLDWIDE

Operating with five international production facilities, with 18 VULKAN subsidiaries and an additional 13 agencies worldwide, we ensure that LOKRING expertise is available on site throughout the world. This means that our customers have rapid access to our specialists and that the necessary solutions are quickly available exactly where they are needed.



CUSTOMER REFERENCES

A small selection from more than 7,000 satisfied customers:



BOSCH



Electrolux



Godrej

gorenje

GRAM

HITACHI

Haier

INDESIT

IVECO

LIEBHERR



MAHLE

Miele



PORSCHE

SAMSUNG

SIEMENS

Valeo

Whirlpool

LOKRING®

THE PATENTED LOKRING® TUBE CONNECTION SYSTEM PROVIDES AN INNOVATIVE SYSTEM OF BRAZE-FREE TUBE CONNECTIONS FOR EVERY INSTALLATION SITUATION IN REFRIGERATION AND AIR-CONDITIONING TECHNOLOGY.

LOKRING tube connections can be made without a great deal of force being necessary, using simple hand assembly tools. LOKRING ensures an absolutely clean, permanent and purely mechanical tube connection with long-term hermetic air-tightness. This is confirmed by the

special TÜV test and approval. All this makes LOKRING tube connections one of the most economical and reliable methods of connecting refrigerant tubes.

THE BENEFITS

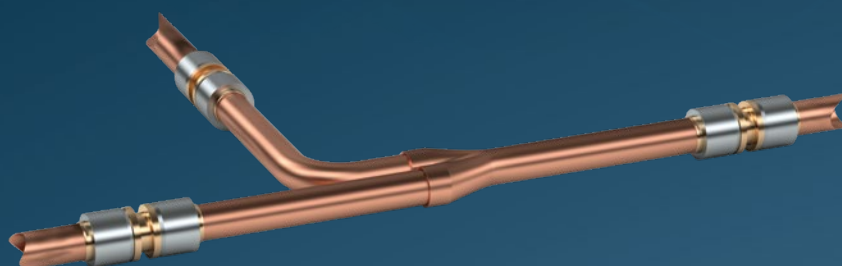
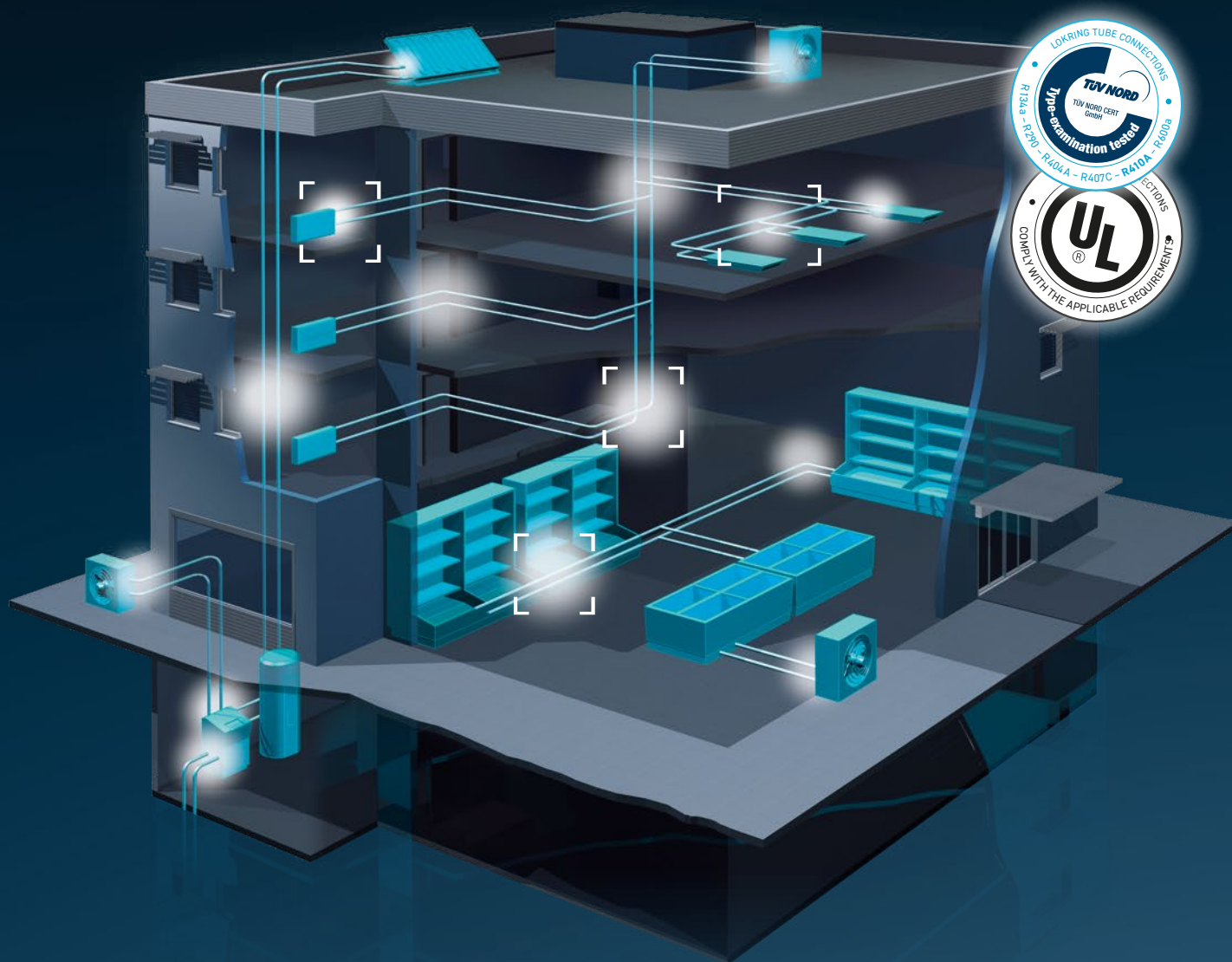
- ⊕ Approx. 40 % time saving
- ⊕ Absolutely clean, efficient and reliable
- ⊕ Installation work during business hours and public access
- ⊕ Installation work in situations where there is a fire hazard
- ⊕ Light hand assembly tool without energy exertion
- ⊕ No nitrogen as purge gas
- ⊕ No braze-related quality problems

AREAS OF APPLICATION

- ⊕ Air-conditioning systems (split, multi-split, VRV, HVAC)
- ⊕ Commercial product refrigeration
- ⊕ Heat pumps
- ⊕ Solar thermal energy
- ⊕ Geothermal energy



THE BEST CONNECTION



ONE SYSTEM - ENDLESS POSSIBILITIES

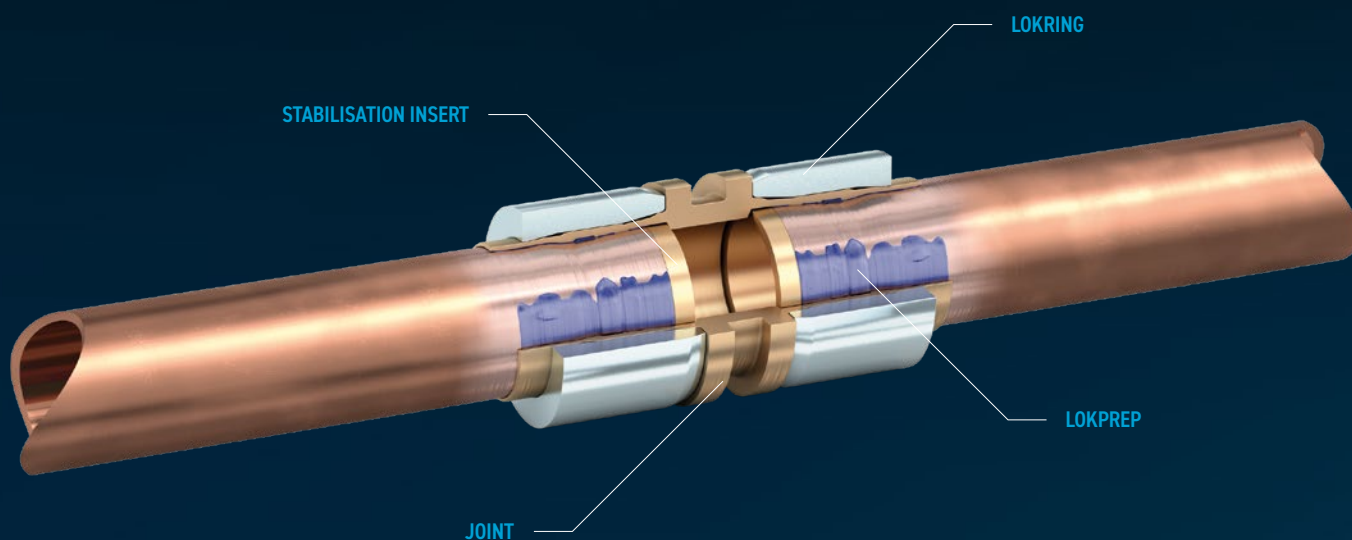
- ⊕ Straight connections
- ⊕ Straight reducing connections
- ⊕ Flare-fittings
- ⊕ Elbows
- ⊕ Branches
- ⊕ T-connections
- ⊕ Special connections

LOKRING[®]

BRASS-CONNECTORS

THE TYPICAL LOKRING union joint consists of two LOKRINGS and one tubular joint for the acceptance of the two tube ends. Thanks to the conical inner contour of the LOKRING and the

special outer contour of the joint, the diameter of the connection is reduced during assembly to such an extent that the joint and the tube create a hermetically sealed metal-to-metal



TECHNICAL SPECIFICATIONS

Reference standards:
EN 378-2 and ISO 14903

Max. operating pressure:
75 bar (1088 psi)

Admissible refrigerants:
Suitable for all HFCs and mixtures, all HCs, R32, HFO and CO₂*. Not suitable for NH₃.

Temperature range:
-50 °C up to 150 °C
(-58 °F up to 302 °F)

Tube diameter range:
6 to 41.3 mm (1/4" to 1 5/8")

Minimum tube wall thickness:
0.7 mm

Approvals:
TÜV, UL (File SA12004)

MATERIAL COMBINATIONS**



 Copper  Brass  Steel

* Up to the max. operating pressure specified for each connector.

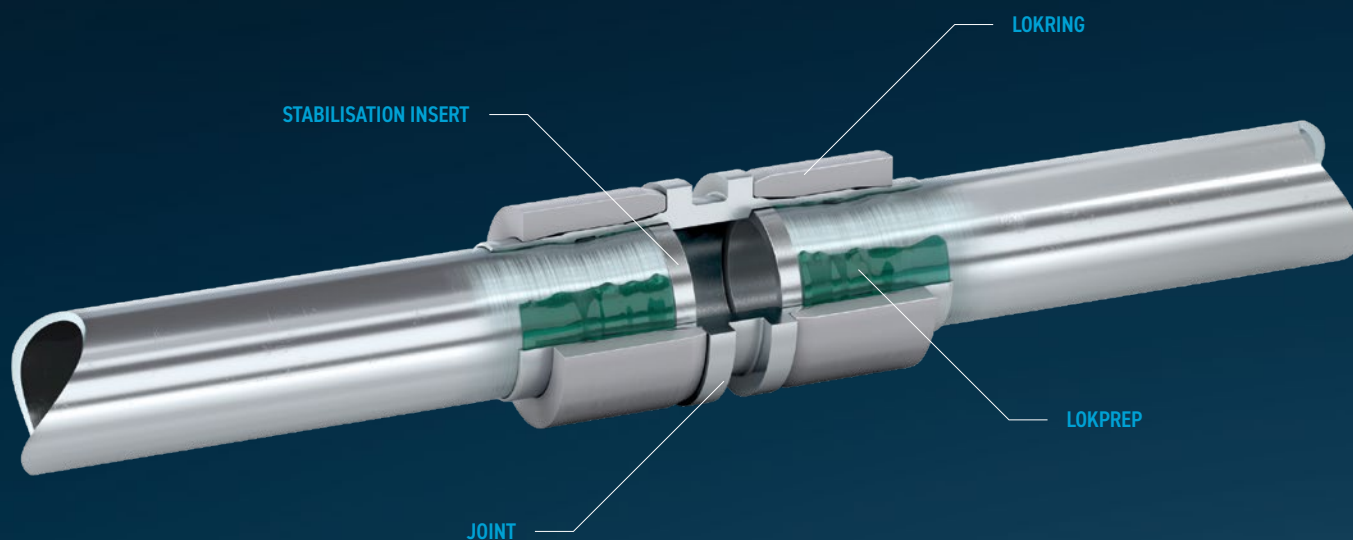
** Other material combinations on request.

LOKRING[®]

ALUMINIUM-CONNECTORS

al connection. The lifetime gas-tightness of the fitted connection is ensured by the state of permanent elastic pretension, which is produced by the radial forces of the LOKRINGS

acting in the opposite direction to the tube-joint connection.



TECHNICAL SPECIFICATIONS

Reference standards:

EN 378-2 and ISO 14903

Max. operating pressure:

50 bar (720 psi) for Al-Al
35 bar (507 psi) for Al-Cu

Admissible refrigerants:

Suitable for all HCs, HFCs, HFO and mixtures. Not suitable for NH₃.

Temperature range:

-50 °C up to 150 °C
(-58 °F up to 302 °F)

Tube diameter range:

6.35 to 35 mm (1/4" to 1 3/8")

Minimum tube wall thickness:

0.8 mm

Approvals:

TÜV

MATERIAL COMBINATIONS***



Aluminium Brass Copper

*** When connecting aluminium tubes to copper tubes, use a heat shrink sleeve to protect the connection against corrosion.

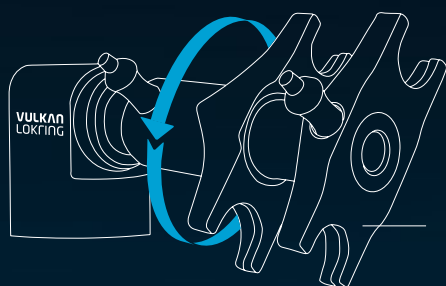




ASSEMBLY TOOLS

LOKPRESS

LOKPRESS



ROTATING HEAD CAN BE SWIVELLED THROUGH 360°
IDEAL FOR AREAS THAT ARE DIFFICULT TO ACCESS.

The compact assembly tool ensures the safe and fast installation of LOKRING tube connections. The steplessly rotatable assembly head and low weight guarantees one-handed operation and assembly in awkward installation positions. Modern high-performance rechargeable batteries ensure lots of connections can be made without interruption. When the diameter of the tubes to be connected changes, the assembly jaws are simply turned round or replaced in seconds.

CORDLESS ASSEMBLY TOOL



CORDLESS ASSEMBLY TOOL



- Special hydraulic valve for quick and safe assembling of LOKRING connections type 50.
- Diameters: 6 to 41.3 mm (1/4" to 1 5/8").
- Lightweight for single-hand operation.
- Rotatable mounting head makes working in any situation easy.
- Delivered in a robust plastic case.
- Made in Germany.

| Article no. | Article name |
|-------------|------------------|
| L14003952 | LOKTOOL LOKPRESS |

Technical data

| | |
|--|-----------------------------------|
| Dimensions without rechargeable battery (H x W x L): | 330 x 69 x 219 mm |
| Operating temperature: | -10 °C to 50 °C (14 °F to 122 °F) |
| Power consumption: | 240 W |
| Pressing force: | Up to 23 kN |
| Rechargeable battery: | 12 V / 2.0 Ah Li-Ion |
| Recharge time: | 30 to 60 min |
| Weight (incl. rechargeable battery): | 2,34 kg (5,16 lb) |
| Protection class: | IP20 |

Scope of supply

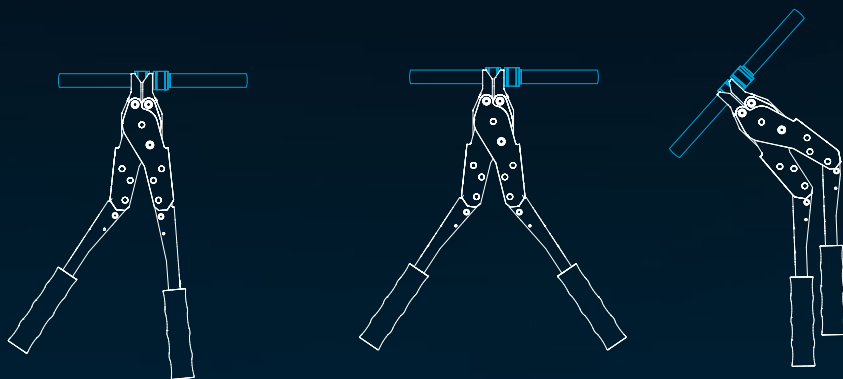
| Article no. | Article name | Description |
|-------------|----------------------|-------------------------|
| L13005424 | LOKPRESS MB 06-10 mm | 1 pair of assembly jaws |
| L13005714 | LOKPRESS MB 12-16 mm | 1 pair of assembly jaws |
| L13005715 | LOKPRESS MB 18-22 mm | 1 pair of assembly jaws |
| L13005716 | LOKPRESS MB 28-35 mm | 1 pair of assembly jaws |
| L14004026 | LOKPRESS RB | Rechargeable battery |
| L14004183 | LOKPRESS BC | Battery charger |

Also available separately

| Article no. | Article name | Description |
|-------------|------------------------|-------------------------|
| L13006052 | LOKPRESS MB 25,4/42 mm | 1 pair of assembly jaws |

ASSEMBLY TOOLS

LOKTOOL MZ-V



Our patented hand assembly tools were developed especially for LOKRING assembly. You only need one tool, because the assembly jaws can be exchanged quickly and easily. Since the handles are offset on both sides, the MZ-V is also suitable for flexible use during work in hard-to-reach areas.

HAND ASSEMBLY TOOLS

HAND ASSEMBLY TOOL



- ⊕ Specially developed for the LOKRING assembly.
- ⊕ Patented lever mechanism for assembly with minimum effort.
- ⊕ Assembly jaws are easy to change for different tube diameters.
- ⊕ German technology.

IMPORTANT: Assembly jaws not included.

Article no. Article name

L13002095 LOKTOOL MZ

HAND ASSEMBLY TOOL WITH TWO BENDABLE HANDLES



- ⊕ Specially developed for the LOKRING assembly.
- ⊕ Patented lever mechanism for assembly with minimum effort.
- ⊕ Assembly jaws are easy to change for different tube diameters.
- ⊕ Both handles bend for use in hard-to-reach areas.
- ⊕ German technology.

IMPORTANT: Assembly jaws not included.

Article no. Article name

L13002811 LOKTOOL MZ-V

ASSEMBLY JAWS



Suitable for the LOKTOOL MZ and MZ-V hand assembly tools.

| Article no. | Article name | For tube outer- [mm] "] |
|-------------|-------------------|-----------------------------------|
| L20000304 | LOKTOOL MB 8 EVP | 6 – 8 1/4 - 5/16 |
| L20000305 | LOKTOOL MB 10 EVP | 9 – 11 3/8 |
| L20000306 | LOKTOOL MB 12 EVP | 12 – 13 1/2 |
| L20000307 | LOKTOOL MB 16 EVP | 14 – 17 5/8 |
| L20000308 | LOKTOOL MB 19 EVP | 18 – 20 3/4 |
| L20000309 | LOKTOOL MB 22 EVP | 22 7/8 |
| L20000589 | LOKTOOL MB 25 EVP | 25.4 1 |
| L20000607 | LOKTOOL MB 28 EVP | 28 – 28.6 1 1/8 |
| L20000623 | LOKTOOL MB 35 EVP | 35 1 3/8 |
| L20001289 | LOKTOOL MB 42 EVP | 41.3 1 5/8 |

ASSEMBLY TOOL SETS



LOKRING ASSEMBLY SET UP TO 35 MM (1 3/8")



- ⊕ LOKRING assembly tool for tube outer diameters from 6 to 35 mm (1/4" to 1 3/8").
- ⊕ Neatly organised in a handy case with rigid foam insert.

| Article no. | Article name |
|-------------|---------------------|
| L13004600 | LOKBOX MZ-V MB 0835 |

| Scope of supply | | | |
|-----------------|-------------------|--------------------|----------|
| Article no. | Article name | Description | Quantity |
| L13002811 | LOKTOOL MZ-V | Hand assembly tool | 1 |
| L20000304 | LOKTOOL MB 8 EVP | Assembly jaws | 2 |
| L20000305 | LOKTOOL MB 10 EVP | Assembly jaws | 2 |
| L20000306 | LOKTOOL MB 12 EVP | Assembly jaws | 2 |
| L20000307 | LOKTOOL MB 16 EVP | Assembly jaws | 2 |
| L20000308 | LOKTOOL MB 19 EVP | Assembly jaws | 2 |
| L20000309 | LOKTOOL MB 22 EVP | Assembly jaws | 2 |
| L20000607 | LOKTOOL MB 28 EVP | Assembly jaws | 2 |
| L20000623 | LOKTOOL MB 35 EVP | Assembly jaws | 2 |

LOKRING ASSEMBLY SET UP TO 12.7 MM (1/2") WITH LOKTOOL MZ



- ⊕ Set of tools for assembling LOKRING connections up to 12.7 mm (1/2").
- ⊕ With LOKTOOL MZ hand assembly tool.

| Article no. | Article name |
|-------------|----------------------------------|
| L13005504 | LOKRING Split/Multi-split kit MZ |

Scope of supply

| Article no. | Article name | Description | Quantity |
|-------------|-------------------|--------------------|----------|
| L13002095 | LOKTOOL MZ | Hand assembly tool | 1 |
| L20000304 | LOKTOOL MB 8 EVP | Assembly jaws | 2 |
| L20000305 | LOKTOOL MB 10 EVP | Assembly jaws | 2 |
| L20000306 | LOKTOOL MB 12 EVP | Assembly jaws | 2 |

LOKRING ASSEMBLY SET UP TO 12.7 MM (1/2") WITH LOKTOOL MZ-V



- ⊕ Set of tools for assembling LOKRING connections up to 12.7 mm (1/2").
- ⊕ With LOKTOOL MZ-V hand assembly tool.

| Article no. | Article name |
|-------------|------------------------------------|
| L13005505 | LOKRING Split/Multi-split kit MZ-V |

Scope of supply

| Article no. | Article name | Description | Quantity |
|-------------|-------------------|--------------------|----------|
| L13002811 | LOKTOOL MZ-V | Hand assembly tool | 1 |
| L20000304 | LOKTOOL MB 8 EVP | Assembly jaws | 2 |
| L20000305 | LOKTOOL MB 10 EVP | Assembly jaws | 2 |
| L20000306 | LOKTOOL MB 12 EVP | Assembly jaws | 2 |





LOKRING® BRASS-CONNECTORS

STARTER KIT



HAND ASSEMBLY TOOL
ASSEMBLY JAWS
LOKPREP

STABILISATION INSERTS
STRAIGHT CONNECTORS
STRAIGHT REDUCING CONNECTORS
EURO FLARE-FITTINGS

LOKRING® STARTER KIT

For a perfect start in the world of quick, easy and, above all, low-cost repairs to air-conditioning systems.

Article no. Article name

L13005829 LOKBOX SK-RAC-01

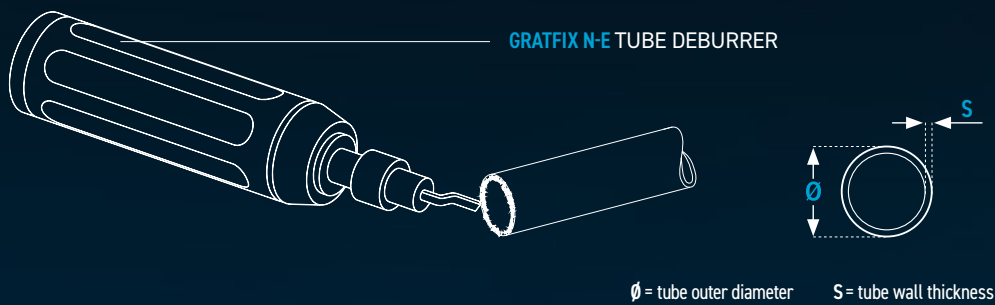
Scope of supply

| Article no. | Article name | Description | Quantity |
|-------------|----------------------------|------------------------------|----------|
| L13002811 | LOKTOOL MZ-V | Hand assembly tool | 1 |
| L20000304 | LOKTOOL MB 8 EVP | Assembly jaws | 2 |
| L20000305 | LOKTOOL MB 10 EVP | Assembly jaws | 2 |
| L20000306 | LOKTOOL MB 12 EVP | Assembly jaws | 2 |
| L20000307 | LOKTOOL MB 16 EVP | Assembly jaws | 2 |
| L20000308 | LOKTOOL MB 19 EVP | Assembly jaws | 2 |
| L20000309 | LOKTOOL MB 22 EVP | Assembly jaws | 2 |
| L14003406 | LOKPREP LT 50 ML | Anaerobic sealant | 1 |
| L14003581 | LOKPREP HT 50 ML | Anaerobic sealant | 1 |
| L12003214 | LOKRING 6,35 VH MS 08 | Stabilisation inserts | 14 |
| L12003085 | LOKRING 9,53 VH MS 08 | Stabilisation inserts | 16 |
| L12003087 | LOKRING 12,7 VH MS 08 | Stabilisation inserts | 18 |
| L12001990 | LOKRING 16 VH MS 10 | Stabilisation inserts | 12 |
| L12001991 | LOKRING 19 VH MS 10 | Stabilisation inserts | 10 |
| L12001997 | LOKRING 22 VH MS 10 | Stabilisation inserts | 4 |
| L13004772 | LOKRING 6,35 NK MS 50 | Straight connectors | 5 |
| L13001390 | LOKRING 9,53 NK MS 50 | Straight connectors | 5 |
| L13001571 | LOKRING 12,7 NK MS 50 | Straight connectors | 5 |
| L13001261 | LOKRING 16 NK MS 50 | Straight connectors | 3 |
| L13000605 | LOKRING 19 NK MS 50 | Straight connectors | 3 |
| L13000607 | LOKRING 22 NK MS 50 | Straight connectors | 2 |
| L13004773 | LOKRING 9,53/6,35 NR MS 50 | Straight reducing connectors | 2 |
| L13004785 | LOKRING 12,7/6,35 NR MS 50 | Straight reducing connectors | 2 |
| L13001702 | LOKRING 12,7/9,53 NR MS 50 | Straight reducing connectors | 2 |
| L13001407 | LOKRING 16/9,53 NR MS 50 | Straight reducing connectors | 2 |
| L13001703 | LOKRING 16/12,7 NR MS 50 | Straight reducing connectors | 2 |
| L13001826 | LOKRING 19/12,7 NR MS 50 | Straight reducing connectors | 2 |
| L13001446 | LOKRING 19/16 NR MS 50 | Straight reducing connectors | 2 |
| L13004846 | LOKRING LR-EURO-06,35-EB | EURO flare-fittings | 4 |
| L13004344 | LOKRING LR-EURO-09,53-EB | EURO flare-fittings | 4 |
| L13004847 | LOKRING LR-EURO-12,7-EB | EURO flare-fittings | 2 |
| L13004347 | LOKRING LR-EURO-16-EB | EURO flare-fittings | 2 |
| L13004388 | LOKRING LR-EURO-19-EB | EURO flare-fittings | 1 |

CORRECT CHOICE OF INSERTS



CHOOSING THE STABILISATION INSERT



Determine the tube wall thickness "S" and the outer tube diameter " \emptyset " on the basis of tube coding or using a slide gauge on a thoroughly deburred tube.

For further information please refer to our submittals:

www.vulkan.com/en-us/lokring/downloads/technical-documentation-and-submittal

STABILISATION INSERTS



BRASS STABILISATION INSERTS



- ⊕ For additional stabilisation of the LOKRING connection under mechanical loads.
- ⊕ Supports calibration of coiled tube.

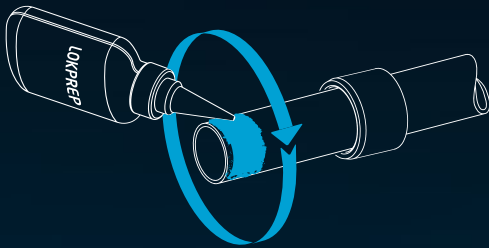
IMPORTANT: Stabilisation inserts must not be used within an NRA adaptor or within the stainless steel tube of a EURO flare-fitting.

| Article no. | Article name | For tube outer- \varnothing [mm "] | | For wall thickness [mm] |
|-------------|-----------------------|---|------|------------------------------|
| L12003155 | LOKRING 6 VH Ms 08 | 6 | – | 0.8 |
| L12003156 | LOKRING 6 VH Ms 10 | 6 | – | 1.0 |
| L12003526 | LOKRING 6,35 VH Ms 07 | 6.35 | 1/4 | 0.7 |
| L12003214 | LOKRING 6,35 VH Ms 08 | 6.35 | 1/4 | 0.8 |
| L12003287 | LOKRING 6,35 VH Ms 09 | 6.35 | 1/4 | 0.9 |
| L12003215 | LOKRING 6,35 VH Ms 10 | 6.35 | 1/4 | 1.0 |
| L12002894 | LOKRING 8 VH Ms 08 | 8 | 5/16 | 0.8 |
| L12002175 | LOKRING 8 VH Ms 10 | 8 | 5/16 | 1.0 |
| L12001978 | LOKRING 9,53 VH Ms 07 | 9.53 | 3/8 | 0.7 |
| L12003085 | LOKRING 9,53 VH Ms 08 | 9.53 | 3/8 | 0.8 |
| L12003086 | LOKRING 9,53 VH Ms 09 | 9.53 | 3/8 | 0.9 |
| L12001988 | LOKRING 9,53 VH Ms 10 | 9.53 | 3/8 | 1.0 |
| L12002457 | LOKRING 10 VH Ms 08 | 10 | – | 0.8 |
| L12002018 | LOKRING 10 VH Ms 10 | 10 | – | 1.0 |
| L12003646 | LOKRING 12 VH Ms 08 | 12 | – | 0.8 |
| L12002017 | LOKRING 12 VH Ms 10 | 12 | – | 1.0 |
| L12001979 | LOKRING 12,7 VH Ms 07 | 12.7 | 1/2 | 0.7 |
| L12003087 | LOKRING 12,7 VH Ms 08 | 12.7 | 1/2 | 0.8 |
| L12003088 | LOKRING 12,7 VH Ms 09 | 12.7 | 1/2 | 0.9 |
| L12001989 | LOKRING 12,7 VH Ms 10 | 12.7 | 1/2 | 1.0 |
| L12002290 | LOKRING 15 VH Ms 10 | 15 | – | 1.0 |
| L12003443 | LOKRING 16 VH Ms 08 | 16 | 5/8 | 0.8 |
| L12003089 | LOKRING 16 VH Ms 09 | 16 | 5/8 | 0.9 |

| Article no. | Article name | For tube outer- \varnothing [mm "] | | For wall thickness [mm] |
|-------------|-----------------------|---|-------|------------------------------|
| L12001990 | LOKRING 16 VH Ms 10 | 16 | 5/8 | 1.0 |
| L12003090 | LOKRING 16 VH Ms 11 | 16 | 5/8 | 1.1 |
| L12002033 | LOKRING 18 VH Ms 10 | 18 | – | 1.0 |
| L12003091 | LOKRING 19 VH Ms 09 | 19 | 3/4 | 0.9 |
| L12001991 | LOKRING 19 VH Ms 10 | 19 | 3/4 | 1.0 |
| L12003092 | LOKRING 19 VH Ms 11 | 19 | 3/4 | 1.1 |
| L12002766 | LOKRING 19 VH Ms 12 | 19 | 3/4 | 1.2 |
| L12003649 | LOKRING 22 VH Ms 08 | – | 7/8 | 0.8 |
| L12003288 | LOKRING 22 VH Ms 09 | – | 7/8 | 0.9 |
| L12001997 | LOKRING 22 VH Ms 10 | 22 | 7/8 | 1.0 |
| L12003093 | LOKRING 22 VH Ms 11 | – | 7/8 | 1.1 |
| L12002895 | LOKRING 22 VH Ms 12 | – | 7/8 | 1.2 |
| L12003442 | LOKRING 22 VH Ms 14 | – | 7/8 | 1.4 |
| L12002547 | LOKRING 25,4 VH Ms 10 | 25.4 | 1 | 1.0 |
| L12002153 | LOKRING 28 VH Ms 10 | 28 | – | 1.0 |
| L12003068 | LOKRING 28 VH Ms 15 | 28 | – | 1.5 |
| L12003290 | LOKRING 28,6 VH Ms 09 | 28.6 | 1 1/8 | 0.9 |
| L12002550 | LOKRING 28,6 VH Ms 10 | 28.6 | 1 1/8 | 1.0 |
| L12003067 | LOKRING 28,6 VH Ms 12 | 28.6 | 1 1/8 | 1.2 |
| L12003070 | LOKRING 35 VH Ms 12 | 35 | 1 3/8 | 1.2 |
| L12003094 | LOKRING 35 VH Ms 14 | 35 | 1 3/8 | 1.4 |
| L12002530 | LOKRING 35 VH Ms 15 | 35 | 1 3/8 | 1.5 |
| L12004015 | LOKRING 41,3 VH Ms 15 | 41.3 | 1 5/8 | 1.5 |

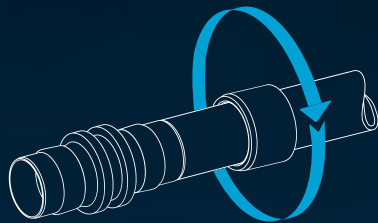
LOKPREP® APPLICATION

LOKPREP LT & HT



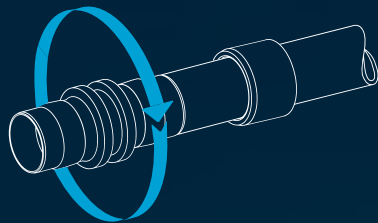
POSSIBILITY A

Move the nozzle 360° around the tube to distribute the LOKPREP evenly.



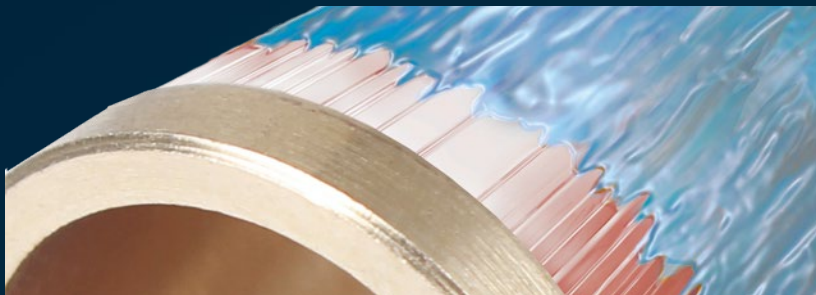
POSSIBILITY B

Rotate the moistened tube through 360° inside the joint.



POSSIBILITY C

Rotate the joint through 360° around the end of the tube.



Metal tubes can have longitudinal grooves on the surface from production. These production-related faults can be compensated quite easily by moistening the tube ends to be connected with LOKPREP fluid before assembly. Thanks to its capillary characteristic, it can even flow into microscopic cavities and fill these out completely. LOKPREP is not an adhesive, rather an anaerobic sealant which hardens under oxygen exclusion and in contact with free metal ions.

LOKPREP®

ANAEROBIC SEALANT FOR BRASS LOKRING CONNECTORS (UP TO 30 °C)

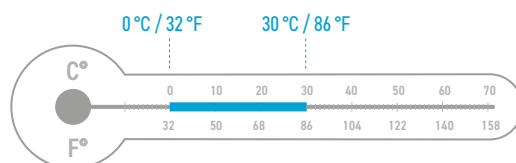


- ⊕ Specially developed for use with LOKRING brass-connectors.
- ⊕ Can be used in ambient temperatures up to 30 °C (86 °F).
- ⊕ Must be used for all LOKRING assemblies.
- ⊕ Compensates for any unevenness in the tube surface.
- ⊕ Ensures that every LOKRING connection is hermetically sealed.

IMPORTANT:

- ⊕ LOKPREP 65G must be used for LOKRING aluminium-connectors.
- ⊕ LOKPREP HT must be used for LOKRING brass-connectors in ambient temperatures above 30 °C (86 °F).

| Article no. | Article name | Content [ml] |
|-------------|--------------|----------------|
| L14003407 | LOKPREP LT | 15 |
| L14003406 | LOKPREP LT | 50 |



ANAEROBIC SEALANT FOR BRASS LOKRING CONNECTORS (FROM 25 °C)

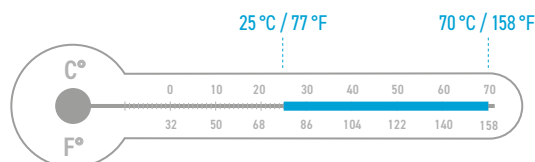


- ⊕ Specially developed for use with LOKRING brass-connectors in high ambient temperatures.
- ⊕ Can be used in ambient temperatures from 25 °C (77 °F).
- ⊕ Must be used for all LOKRING assemblies.
- ⊕ Compensates for any unevenness in the tube surface.
- ⊕ Ensures that every LOKRING connection is hermetically sealed.

IMPORTANT:

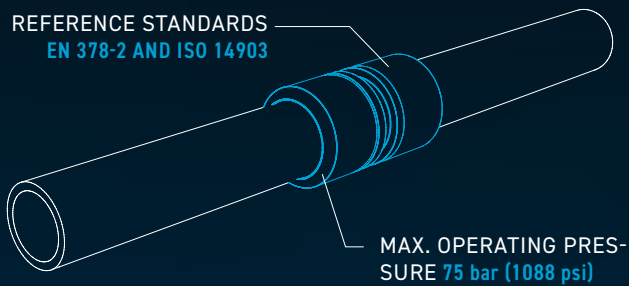
- ⊕ LOKPREP 65G must be used for LOKRING aluminium-connectors.
- ⊕ LOKPREP LT must be used for LOKRING brass-connectors in ambient temperatures below 25 °C (77 °F).

| Article no. | Article name | Content [ml] |
|-------------|--------------|----------------|
| L14003404 | LOKPREP HT | 15 |
| L14003581 | LOKPREP HT | 50 |

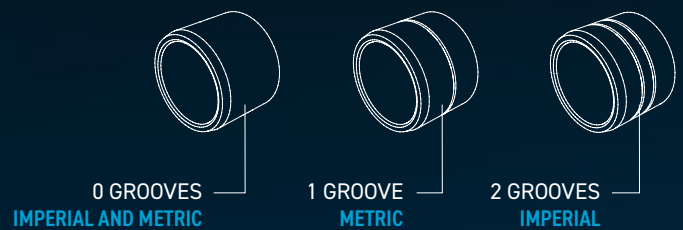


LOKRING®

LOKRING BRASS-CONNECTORS



- ⊕ CORROSION TEST ACCORDING TO ISO 9227 NSS
- ⊕ TEMPERATURE CHANGE CYCLE TEST
- ⊕ TENSILE TEST ACCORDING TO DIN EN 10 002
- ⊕ ALTERNATING PRESSURE TEST WITH 250,000 CYCLES
- ⊕ BURST PRESSURE TEST UP TO 300 bar (4350 psi)
- ⊕ JOINS*: COPPER TO COPPER / COPPER TO STEEL / STEEL TO STEEL



In order to easily identify if a brass LOKRING connector is suitable for imperial tubes, metric tubes or both, the steel rings are marked as follows:

- ⊕ 0 GROOVES IMPERIAL AND METRIC
- ⊕ 1 GROOVE METRIC
- ⊕ 2 GROOVES IMPERIAL

STRAIGHT CONNECTORS



STRAIGHT BRASS-CONNECTORS

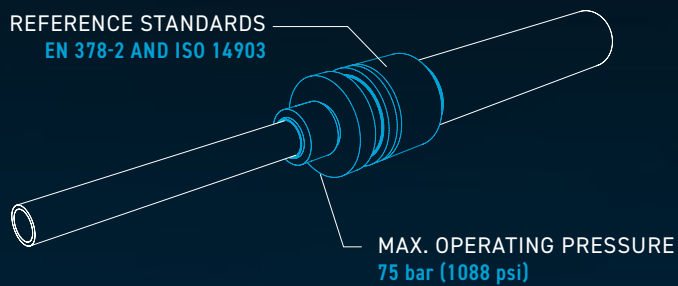
For connecting copper and/or steel tubes with identical tube outer diameters.



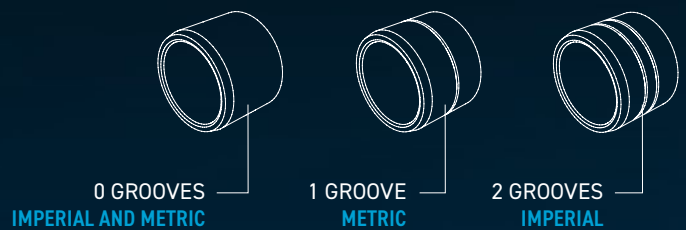
| Article no. | Article name | For tube outer-ø | |
|-------------|-----------------------|------------------|-------|
| | | [mm] | ["] |
| L13004601 | LOKRING 6 NK Ms 50 | 6 | - |
| L13004772 | LOKRING 6,35 NK Ms 50 | 6.35 | 1/4 |
| L13001392 | LOKRING 8 NK Ms 50 | 8 | 5/16 |
| L13001390 | LOKRING 9,53 NK Ms 50 | 9.53 | 3/8 |
| L13001391 | LOKRING 10 NK Ms 50 | 10 | - |
| L13001220 | LOKRING 12 NK Ms 50 | 12 | - |
| L13001571 | LOKRING 12,7 NK Ms 50 | 12.7 | 1/2 |
| L13001226 | LOKRING 15 NK Ms 50 | 15 | - |
| L13001261 | LOKRING 16 NK Ms 50 | 16 | 5/8 |
| L13001262 | LOKRING 18 NK Ms 50 | 18 | - |
| L13000605 | LOKRING 19 NK Ms 50 | 19 | 3/4 |
| L13000607 | LOKRING 22 NK Ms 50 | 22 | 7/8 |
| L13000608 | LOKRING 25,4 NK Ms 50 | 25.4 | 1 |
| L13001944 | LOKRING 28 NK Ms 50 | 28 | - |
| L13001945 | LOKRING 28,6 NK Ms 50 | 28.6 | 1 1/8 |
| L13003346 | LOKRING 35 NK Ms 50 | 35 | 1 3/8 |
| L13006037 | LOKRING 41,3 NK Ms 50 | 41.3 | 1 5/8 |

LOKRING®

LOKRING BRASS-CONNECTORS



- ⊕ CORROSION TEST ACCORDING TO ISO 9227 NSS
- ⊕ TEMPERATURE CHANGE CYCLE TEST
- ⊕ TENSILE TEST ACCORDING TO DIN EN 10 002
- ⊕ ALTERNATING PRESSURE TEST WITH 250,000 CYCLES
- ⊕ BURST PRESSURE TEST UP TO 300 bar (4350 psi)
- ⊕ JOINS*: COPPER TO COPPER / COPPER TO STEEL / STEEL TO STEEL



In order to easily identify if a brass LOKRING connector is suitable for imperial tubes, metric tubes or both, the steel rings are marked as follows:

- ⊕ 0 GROOVES IMPERIAL AND METRIC
- ⊕ 1 GROOVE METRIC
- ⊕ 2 GROOVES IMPERIAL

STRAIGHT REDUCING CONNECTORS



STRAIGHT BRASS REDUCING CONNECTORS



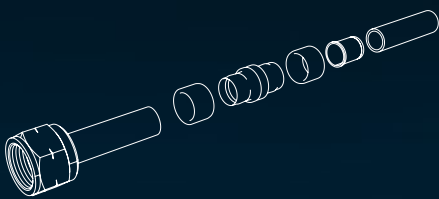
For connecting copper and/or steel tubes with different tube outer diameters.

| Article no. | Article name | Outer-ø tube 1 [mm "] | | Outer-ø tube 2 [mm "] | |
|-------------|----------------------------|------------------------------|------|------------------------------|------|
| L13004603 | LOKRING 6,35/6 NR Ms 50 | 6.35 | 1/4 | 6 | - |
| L13004604 | LOKRING 8/6 NR Ms 50 | 8 | 5/16 | 6 | - |
| L13004774 | LOKRING 8/6,35 NR Ms 50 | 8 | 5/16 | 6.35 | 1/4 |
| L13004606 | LOKRING 9,53/6 NR Ms 50 | 9.53 | 3/8 | 6 | - |
| L13004773 | LOKRING 9,53/6,35 NR Ms 50 | 9.53 | 3/8 | 6.35 | 1/4 |
| L13001629 | LOKRING 9,53/8 NR Ms 50 | 9.53 | 3/8 | 8 | 5/16 |
| L13004607 | LOKRING 10/6 NR Ms 50 | 10 | - | 6 | - |
| L13001651 | LOKRING 10/8 NR Ms 50 | 10 | - | 8 | 5/16 |
| L13001396 | LOKRING 10/9,53 NR Ms 50 | 10 | - | 9.53 | 3/8 |
| L13004608 | LOKRING 12/6 NR Ms 50 | 12 | - | 6 | - |
| L13001233 | LOKRING 12/9,53 NR Ms 50 | 12 | - | 9.53 | 3/8 |
| L13001234 | LOKRING 12/10 NR Ms 50 | 12 | - | 10 | - |
| L13004609 | LOKRING 12,7/6 NR Ms 50 | 12.7 | 1/2 | 6 | - |
| L13004785 | LOKRING 12,7/6,35 NR Ms 50 | 12.7 | 1/2 | 6.35 | 1/4 |
| L13001702 | LOKRING 12,7/9,53 NR Ms 50 | 12.7 | 1/2 | 9.53 | 3/8 |
| L13001789 | LOKRING 12,7/10 NR Ms 50 | 12.7 | 1/2 | 10 | - |
| L13001822 | LOKRING 12,7/12 NR Ms 50 | 12.7 | 1/2 | 12 | - |
| L13004786 | LOKRING 16/6,35 NR Ms 50 | 16 | 5/8 | 6.35 | 1/4 |
| L13001407 | LOKRING 16/9,53 NR Ms 50 | 16 | 5/8 | 9.53 | 3/8 |
| L13001408 | LOKRING 16/10 NR Ms 50 | 16 | 5/8 | 10 | - |
| L13001314 | LOKRING 16/12 NR Ms 50 | 16 | 5/8 | 12 | - |

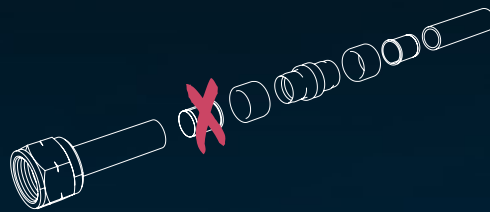
| Article no. | Article name | Outer-ø tube 1 [mm "] | | Outer-ø tube 2 [mm "] | |
|-------------|----------------------------|------------------------------|-------|------------------------------|-------|
| L13001703 | LOKRING 16/12,7 NR Ms 50 | 16 | 5/8 | 12.7 | 1/2 |
| L13001315 | LOKRING 18/16 NR Ms 50 | 18 | - | 16 | 5/8 |
| L13003552 | LOKRING 19/9,53 NR Ms 50 | 19 | 3/4 | 9.53 | 3/8 |
| L13001826 | LOKRING 19/12,7 NR Ms 50 | 19 | 3/4 | 12.7 | 1/2 |
| L13001446 | LOKRING 19/16 NR Ms 50 | 19 | 3/4 | 16 | 5/8 |
| L13001823 | LOKRING 19/18 NR Ms 50 | 19 | 3/4 | 18 | - |
| L13003897 | LOKRING 22/12,7 NR Ms 50 | 22 | 7/8 | 12.7 | 1/2 |
| L13001400 | LOKRING 22/16 NR Ms 50 | 22 | 7/8 | 16 | 5/8 |
| L13001447 | LOKRING 22/19 NR Ms 50 | 22 | 7/8 | 19 | 3/4 |
| L13003333 | LOKRING 25,4/19 NR Ms 50 | 25.4 | 1 | 19 | 3/4 |
| L13003534 | LOKRING 28/16 NR Ms 50 | 28 | - | 16 | 5/8 |
| L13003334 | LOKRING 28,6/12,7 NR Ms 50 | 28.6 | 1 1/8 | 12.7 | 1/2 |
| L13003335 | LOKRING 28,6/16 NR Ms 50 | 28.6 | 1 1/8 | 16 | 5/8 |
| L13003543 | LOKRING 28,6/19 NR Ms 50 | 28.6 | 1 1/8 | 19 | 3/4 |
| L13003106 | LOKRING 28,6/22 NR Ms 50 | 28.6 | 1 1/8 | 22 | 7/8 |
| L13003336 | LOKRING 28,6/25,4 NR Ms 50 | 28.6 | 1 1/8 | 25.4 | 1 |
| L13003696 | LOKRING 28,6/28 NR Ms 50 | 28.6 | 1 1/8 | 28 | - |
| L13004088 | LOKRING 35/22 NR Ms 50 | 35 | 1 3/8 | 22 | 7/8 |
| L13004611 | LOKRING 35/28,6 NR Ms 50 | 35 | 1 3/8 | 28.6 | 1 1/8 |
| L13006038 | LOKRING 41,3/35 NR Ms 50 | 41.3 | 1 5/8 | 35 | 1 3/8 |

EURO FLARE-FITTINGS

EURO FLARE-FITTINGS



EXAMPLE OF USE



INCORRECT*

The fast and simple solution for the installation and repair of air-conditioning systems. The pre-pressed copper seal on the cone ensures safe assembly without the seal slipping even in spots that are difficult to reach.

*Stabilisation inserts must not be used within the stainless steel tube of a EURO flare-fitting.

FLARE-FITTINGS

EURO FLARE-FITTINGS



- ⊕ Pre-pressed copper seal for safe assembly without the seal slipping.
- ⊕ Connecting piece: stainless steel.
- ⊕ Flare nut: brass.
- ⊕ Can be used with all LOKRING type 50 brass-connectors.

IMPORTANT: Stabilisation inserts must not be used within the stainless steel tube of a EURO flare-fitting.

| Article no. | Article name | For tube outer-ø | | Thread | | Tightening torque [Nm] |
|-------------|--------------------------|------------------|-------|---------|-----------------|------------------------|
| | | [mm] | ["] | [SAE] | [Wrench size] | |
| L13004846 | LOKRING LR-EURO-06,35-EB | 6.35 | 1/4 | 1/4" | 17 | 14 – 18 |
| L13004344 | LOKRING LR-EURO-09,53-EB | 9.53 | 3/8 | 3/8" | 22 | 33 – 42 |
| L13004847 | LOKRING LR-EURO-12,7-EB | 12.7 | 1/2 | 1/2" | 24 | 50 – 62 |
| L13004347 | LOKRING LR-EURO-16-EB | 16 | 5/8 | 5/8" | 27 | 63 – 77 |
| L13004388 | LOKRING LR-EURO-19-EB | 19 | 3/4 | 3/4" | 36 | 90 – 110 |

EURO FLARE-FITTING SEALS

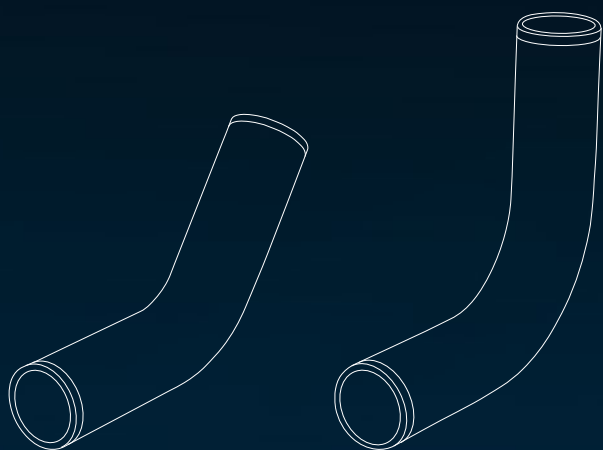


Specifically designed for LOKRING flare connections.

| Article no. | Article name | Size |
|-------------|-------------------|----------|
| L12003036 | LOKRING EBD-06,35 | 1/4" SAE |
| L12003037 | LOKRING EBD-09,53 | 3/8" SAE |
| L12003038 | LOKRING EBD-12,7 | 1/2" SAE |
| L12003039 | LOKRING EBD-16 | 5/8" SAE |
| L12003143 | LOKRING EBD-19 | 3/4" SAE |

ELBOWS

ELBOWS



The LOKRING elbows are made from copper tube in accordance with EN 12735-1 and suitable for an operating pressure up to 50 bar (725 psi).

ELBOWS

90° COPPER ELBOWS



- ⊕ Supplied with the necessary stabilisation inserts.
- ⊕ In accordance with EN 12735-1.
- ⊕ Max. operating pressure: 50 bar (725 psi).

| Article no. | Article name | Outer-ø | |
|-------------|-----------------------|------------|-------|
| | | [mm "] | |
| L13005952 | LOKRING Cu 90-EB 9,53 | 9.53 | 3/8 |
| L13005953 | LOKRING Cu 90-EB 12,7 | 12.7 | 1/2 |
| L13005954 | LOKRING Cu 90-EB 16 | 16 | 5/8 |
| L13005955 | LOKRING Cu 90-EB 19 | 19 | 3/4 |
| L13005956 | LOKRING Cu 90-EB 22 | 22 | 7/8 |
| L13005957 | LOKRING Cu 90-EB 28,6 | 28.6 | 1 1/8 |
| L13005958 | LOKRING Cu 90-EB 35 | 35 | 1 3/8 |
| L13006041 | LOKRING Cu 90-EB 41,3 | 41.3 | 1 5/8 |

45° COPPER ELBOWS

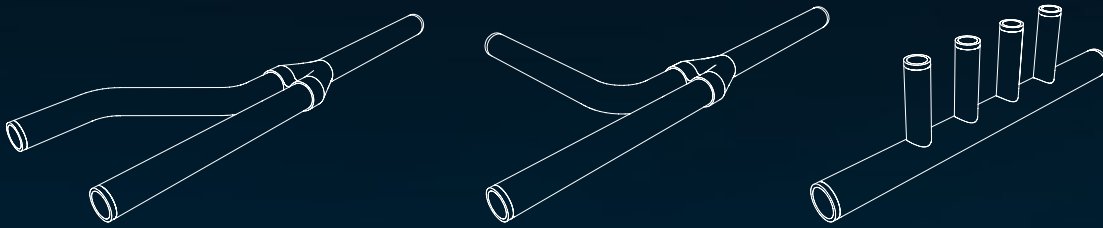


- ⊕ Supplied with the necessary stabilisation inserts.
- ⊕ In accordance with EN 12735-1.
- ⊕ Max. operating pressure: 50 bar (725 psi).

| Article no. | Article name | Outer-ø | |
|-------------|-----------------------|------------|-------|
| | | [mm "] | |
| L13005959 | LOKRING Cu 45-EB 9,53 | 9.53 | 3/8 |
| L13005960 | LOKRING Cu 45-EB 12,7 | 12.7 | 1/2 |
| L13005961 | LOKRING Cu 45-EB 16 | 16 | 5/8 |
| L13005962 | LOKRING Cu 45-EB 19 | 19 | 3/4 |
| L13005963 | LOKRING Cu 45-EB 22 | 22 | 7/8 |
| L13005964 | LOKRING Cu 45-EB 28,6 | 28.6 | 1 1/8 |
| L13005965 | LOKRING Cu 45-EB 35 | 35 | 1 3/8 |
| L13006040 | LOKRING Cu 45-EB 41,3 | 41.3 | 1 5/8 |

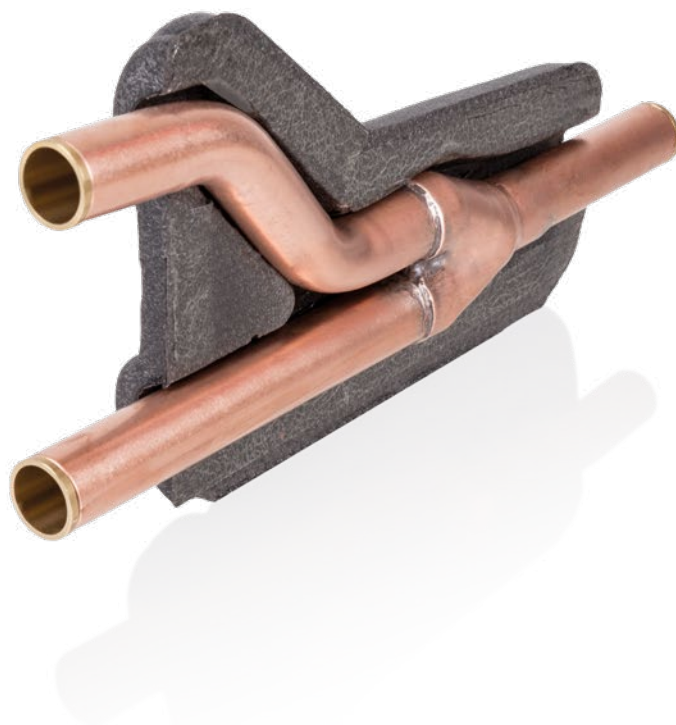
BRANCHES

BRANCHES



The LOKRING branch system has been specially developed by our engineers for the simple planning and fast installation of VRF air-conditioning systems or for retrofitting air-conditioning systems.

YP-BRANCHES



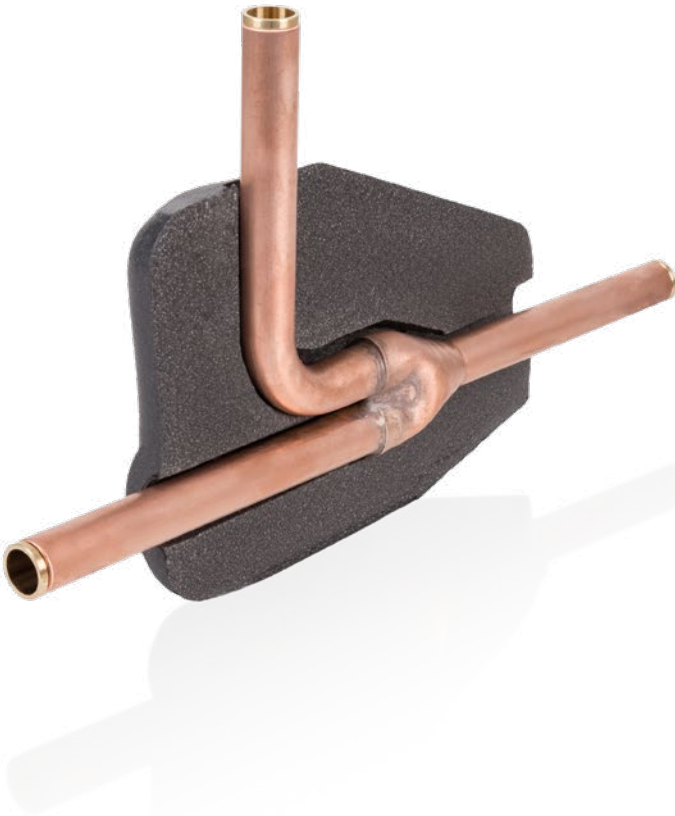
PARALLEL BRANCHES (YP) MADE OF COPPER

- ⊕ YP-branch with B1 fire protection class foam insulation.
- ⊕ Supplied with the necessary stabilisation inserts.
- ⊕ In accordance with EN 12735-1.
- ⊕ Max. operating pressure: 45 bar (650 psi).



| Article no. | Article name | Outer-ø | |
|-------------|--------------------|---------|-------|
| | | [mm] | ["] |
| L12003242 | LOKRING Cu YP 9,53 | 9.53 | 3/8 |
| L12003243 | LOKRING Cu YP 12,7 | 12.7 | 1/2 |
| L12003244 | LOKRING Cu YP 16 | 16 | 5/8 |
| L12003245 | LOKRING Cu YP 19 | 19 | 3/4 |
| L12003246 | LOKRING Cu YP 22 | 22 | 7/8 |
| L12003247 | LOKRING Cu YP 28,6 | 28.6 | 1 1/8 |
| L12003799 | LOKRING Cu YP 35 | 35 | 1 3/8 |
| L12004042 | LOKRING Cu YP 41,3 | 41.3 | 1 5/8 |

T-BRANCHES



T-BRANCHES (YT) MADE OF COPPER



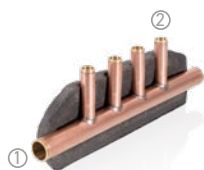
- ⊕ YT-branch with B1 fire protection class foam insulation.
- ⊕ Supplied with the necessary stabilisation inserts.
- ⊕ In accordance with EN 12735-1.
- ⊕ Max. operating pressure: 45 bar (650 psi).

| Article no. | Article name | Outer-ø | |
|-------------|--------------------|---------|-------|
| | | [mm] | ["] |
| L12003010 | LOKRING Cu YT 9,53 | 9.53 | 3/8 |
| L12003013 | LOKRING Cu YT 12,7 | 12.7 | 1/2 |
| L12003014 | LOKRING Cu YT 16 | 16 | 5/8 |
| L12003294 | LOKRING Cu YT 19 | 19 | 3/4 |
| L12003295 | LOKRING Cu YT 22 | 22 | 7/8 |
| L12003297 | LOKRING Cu YT 28,6 | 28.6 | 1 1/8 |
| L12003298 | LOKRING Cu YT 35 | 35 | 1 3/8 |
| L12004043 | LOKRING Cu YT 41,3 | 41.3 | 1 5/8 |

HEADERS AND STOPPERS



HEADERS MADE OF COPPER



- ⊕ Header with B1 fire protection class foam insulation.
- ⊕ Supplied with the necessary stabilisation inserts.
- ⊕ In accordance with EN 12735-1.
- ⊕ Max. operating pressure: 45 bar (650 psi).

| Article no. | Article name | Outer-ø tube 1 | | Outer-ø tube 2 | |
|-------------|-----------------------------|----------------|-------|----------------|-----|
| | | [mm "] | | [mm "] | |
| L13005130 | LOKRING Cu Header 12,7-6,35 | 12.7 | 1/2 | → 6.35 | 1/4 |
| L13005131 | LOKRING Cu Header 16-9,53 | 16 | 5/8 | → 9.53 | 3/8 |
| L13005132 | LOKRING Cu Header 19-12,7 | 19 | 3/4 | → 12.7 | 1/2 |
| L13005133 | LOKRING Cu Header 28,6-16 | 28.6 | 1 1/8 | → 16 | 5/8 |

BRASS STOPPERS

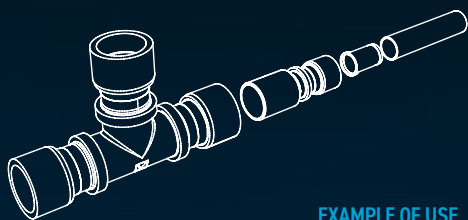


- ⊕ For hermetically sealing tube ends.
- ⊕ Can be used with LOKRING copper header for example.

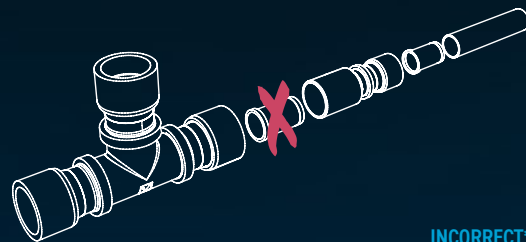
| Article no. | Article name | For tube outer-ø | |
|-------------|-----------------------|------------------|-------|
| | | [mm "] | |
| L13004940 | LOKRING 6 VS Ms 50 | 6 | - |
| L13004941 | LOKRING 6,35 VS Ms 50 | 6.35 | 1/4 |
| L13004943 | LOKRING 9,53 VS Ms 50 | 9.53 | 3/8 |
| L13004946 | LOKRING 12,7 VS Ms 50 | 12.7 | 1/2 |
| L13004947 | LOKRING 16 VS Ms 50 | 16 | 5/8 |
| L13004949 | LOKRING 19 VS Ms 50 | 19 | 3/4 |
| L13004953 | LOKRING 28,6 VS Ms 50 | 28.6 | 1 1/8 |

USE OF REDUCING ADAPTORS

USE OF T-CONNECTORS AND REDUCING ADAPTORS WITH STABILISATION INSERTS



EXAMPLE OF USE



INCORRECT*

The variety of reducing connectors, reducing T-connectors and also reducing elbow connectors needed for combining all the different tube diameters which are nowadays being used in air-conditioning systems is constantly growing. In order to stay flexible installers needed to build a huge stock of all the different connectors. With the new NRA reducing adaptors VULKAN has launched the solution for this problem. You just need the standard connectors, T-connectors and elbow connectors and make the reduction by connecting the correct NRA adaptor. Thus you will always have the correct connection available directly on-site.

T-CONNECTORS AND REDUCING ADAPTORS

BRASS T-CONNECTORS



- ⊕ T-piece for connecting copper and/or steel tubes with identical tube outer diameters.
- ⊕ In conjunction with LOKRING NRA brass reducing adaptors, T-reducing connectors can be created.

| Article no. | Article name | For tube outer- ϕ [mm "] | |
|-------------|------------------------|--------------------------------------|-------|
| L13004614 | LOKRING 6 NTK Ms 50 | 6 | - |
| L13004777 | LOKRING 6,35 NTK Ms 50 | 6.35 | 1/4 |
| L13001193 | LOKRING 9,53 NTK Ms 50 | 9.53 | 3/8 |
| L13001194 | LOKRING 10 NTK Ms 50 | 10 | - |
| L13001195 | LOKRING 12 NTK Ms 50 | 12 | - |
| L13001698 | LOKRING 12,7 NTK Ms 50 | 12.7 | 1/2 |
| L13001198 | LOKRING 16 NTK Ms 50 | 16 | 5/8 |
| L13001190 | LOKRING 18 NTK Ms 50 | 18 | - |
| L13001199 | LOKRING 19 NTK Ms 50 | 19 | 3/4 |
| L13000812 | LOKRING 22 NTK Ms 50 | 22 | 7/8 |
| L13003338 | LOKRING 28,6 NTK Ms 50 | 28.6 | 1 1/8 |
| L13005002 | LOKRING 35 NTK Ms 50 | 35 | 1 3/8 |

BRASS REDUCING ADAPTORS



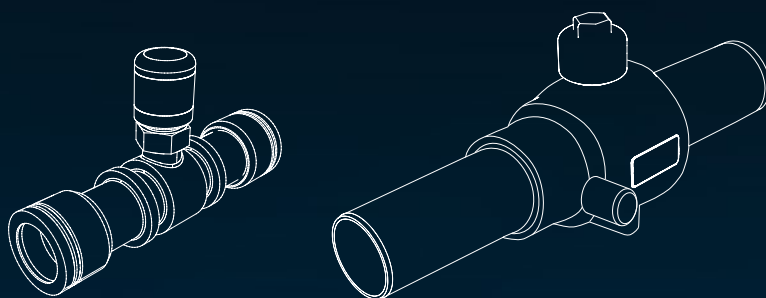
Can be used with all LOKRING type 50 brass connectors (e.g. connectors with elbows and T-connectors) to form reducers.

IMPORTANT: Stabilisation inserts must not be used within an NRA adaptor.

| Article no. | Article name | Outer- ϕ tube 1 [mm "] | | Outer- ϕ tube 2 [mm "] | |
|-------------|-----------------------------|------------------------------------|-------|------------------------------------|-------|
| L13005053 | LOKRING 9,53/6,35 NRA Ms 50 | 9.53 | 3/8 | → 6.35 | 1/4 |
| L13005050 | LOKRING 10/6 NRA Ms 50 | 10 | - | → 6 | - |
| L13005061 | LOKRING 12/10 NRA Ms 50 | 12 | - | → 10 | - |
| L13005054 | LOKRING 12,7/6,35 NRA Ms 50 | 12.7 | 1/2 | → 6.35 | 1/4 |
| L13005058 | LOKRING 12,7/9,53 NRA Ms 50 | 12.7 | 1/2 | → 9.53 | 3/8 |
| L13005059 | LOKRING 16/9,53 NRA Ms 50 | 16 | 5/8 | → 9.53 | 3/8 |
| L13005062 | LOKRING 16/10 NRA Ms 50 | 16 | 5/8 | → 10 | - |
| L13005064 | LOKRING 16/12 NRA Ms 50 | 16 | 5/8 | → 12 | - |
| L13005067 | LOKRING 16/12,7 NRA Ms 50 | 16 | 5/8 | → 12.7 | 1/2 |
| L13005060 | LOKRING 19/9,53 NRA Ms 50 | 19 | 3/4 | → 9.53 | 3/8 |
| L13005068 | LOKRING 19/12,7 NRA Ms 50 | 19 | 3/4 | → 12.7 | 1/2 |
| L13005074 | LOKRING 19/16 NRA Ms 50 | 19 | 3/4 | → 16 | 5/8 |
| L13005912 | LOKRING 19/18 NRA Ms 50 | 19 | 3/4 | → 18 | - |
| L13005066 | LOKRING 22/12 NRA Ms 50 | 22 | 7/8 | → 12 | - |
| L13005069 | LOKRING 22/12,7 NRA Ms 50 | 22 | 7/8 | → 12.7 | 1/2 |
| L13005075 | LOKRING 22/16 NRA Ms 50 | 22 | 7/8 | → 16 | 5/8 |
| L13005078 | LOKRING 22/18 NRA Ms 50 | 22 | 7/8 | → 18 | - |
| L13005079 | LOKRING 22/19 NRA Ms 50 | 22 | 7/8 | → 19 | 3/4 |
| L13005090 | LOKRING 28/22 NRA Ms 50 | 28 | - | → 22 | 7/8 |
| L13005077 | LOKRING 28,6/16 NRA Ms 50 | 28.6 | 1 1/8 | → 16 | 5/8 |
| L13005081 | LOKRING 28,6/19 NRA Ms 50 | 28.6 | 1 1/8 | → 19 | 3/4 |
| L13005083 | LOKRING 28,6/22 NRA Ms 50 | 28.6 | 1 1/8 | → 22 | 7/8 |
| L13005926 | LOKRING 28,6/28 NRA Ms 50 | 28.6 | 1 1/8 | → 28 | - |
| L13005933 | LOKRING 35/22 NRA Ms 50 | 35 | 1 3/8 | → 22 | 7/8 |
| L13005934 | LOKRING 35/28 NRA Ms 50 | 35 | 1 3/8 | → 28 | - |
| L13005935 | LOKRING 35/28,6 NRA Ms 50 | 35 | 1 3/8 | → 28.6 | 1 1/8 |

SPECIAL CONNECTORS

SPECIAL CONNECTORS



Thanks to our LOKRING connection technology, fitting sensitive components is as easy as connecting normal tubes.

SPECIAL CONNECTORS

BRASS-CONNECTORS WITH SCHRADER VALVE



- ⊕ For connecting copper and/or steel tubes with identical tube outer diameters.
- ⊕ With 1/4" SAE schrader valve connection.
- ⊕ Max. operating pressure: 50 bar (725 psi).

| Article no. | Article name | For tube outer-ø | |
|-------------|--------------------------|------------------|-------|
| | | [mm] | ["] |
| L13004779 | LOKRING 6,35 NK Ms SV 50 | 6.35 | 1/4 |
| L13001504 | LOKRING 8 NK Ms SV 50 | 8 | 5/16 |
| L13001398 | LOKRING 9,53 NK Ms SV 50 | 9.53 | 3/8 |
| L13001752 | LOKRING 12,7 NK Ms SV 50 | 12.7 | 1/2 |
| L13001324 | LOKRING 16 NK Ms SV 50 | 16 | 5/8 |

BALL VALVES WITH SCHRADER VALVE



- ⊕ Suitable for all common refrigerants.
- ⊕ Bi-flow system for any mounting direction.
- ⊕ Temperature range: -40 °C to 150 °C (-40 °F to 302 °F).
- ⊕ Max. operating pressure: 50 bar (725 psi).
- ⊕ Supplied with the necessary stabilisation inserts.

| Article no. | Article name | For tube outer-ø | |
|-------------|----------------|------------------|-------|
| | | [mm] | ["] |
| L13005943 | LOKRING BVS 16 | 16 | 5/8 |
| L13005944 | LOKRING BVS 19 | 19 | 3/4 |
| L13005945 | LOKRING BVS 22 | 22 | 7/8 |
| L13005947 | LOKRING BVS 35 | 35 | 1 3/8 |



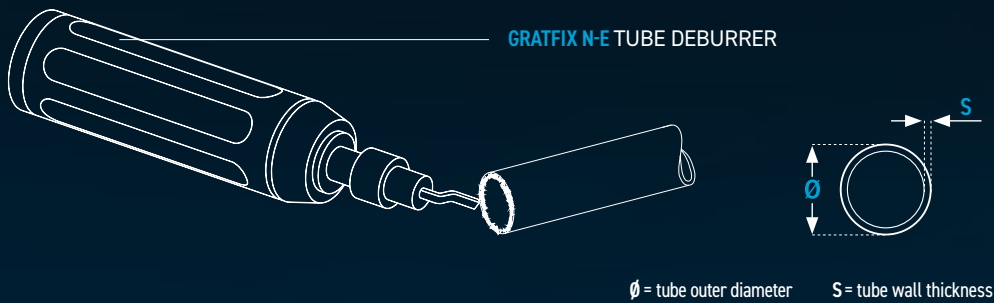


LOKRING® ALUMINIUM-CONNECTORS

CORRECT CHOICE OF INSERTS



CHOOSING THE STABILISATION INSERT



Determine the tube wall thickness "S" and the outer tube diameter " \varnothing " on the basis of tube coding or using a slide gauge on a thoroughly deburred tube.

For further information please refer to our submittals:

www.vulkan.com/en-us/lokring/downloads/technical-documentation-and-submittal

STABILISATION INSERTS



ALUMINIUM STABILISATION INSERTS

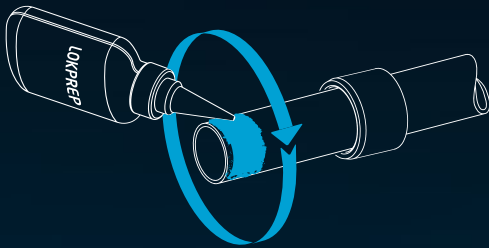
- ⊕ For additional stabilisation of the LOKRING connection under mechanical loads.
- ⊕ Supports calibration of coiled tube.



| Article no. | Article name | For tube outer- \varnothing | | For wall thickness |
|-------------|-----------------------|-------------------------------|-------|--------------------|
| | | [mm] | ["] | |
| L13005456 | LOKRING 6,35 VH Al 08 | 6.35 | 1/4 | 0.8 |
| L13005482 | LOKRING 6,35 VH Al 10 | 6.35 | 1/4 | 1.0 |
| L13005457 | LOKRING 8 VH Al 08 | 8 | 5/16 | 0.8 |
| L13005483 | LOKRING 8 VH Al 10 | 8 | 5/16 | 1.0 |
| L13005458 | LOKRING 9,53 VH Al 08 | 9.53 | 3/8 | 0.8 |
| L13005484 | LOKRING 9,53 VH Al 10 | 9.53 | 3/8 | 1.0 |
| L13005574 | LOKRING 10 VH Al 10 | 10 | - | 1.0 |
| L13005459 | LOKRING 12,7 VH Al 08 | 12.7 | 1/2 | 0.8 |
| L13005485 | LOKRING 12,7 VH Al 10 | 12.7 | 1/2 | 1.0 |
| L13005577 | LOKRING 12,7 VH Al 12 | 12.7 | 1/2 | 1.2 |
| L13005575 | LOKRING 15 VH Al 10 | 15 | - | 1.0 |
| L13005460 | LOKRING 16 VH Al 10 | 16 | 5/8 | 1.0 |
| L13005578 | LOKRING 16 VH Al 12 | 16 | 5/8 | 1.2 |
| L13005580 | LOKRING 16 VH Al 15 | 16 | 5/8 | 1.5 |
| L13005576 | LOKRING 18 VH Al 10 | 18 | - | 1.0 |
| L13005461 | LOKRING 19 VH Al 10 | 19 | 3/4 | 1.0 |
| L13005700 | LOKRING 19 VH Al 12 | 19 | 3/4 | 1.2 |
| L13005579 | LOKRING 19 VH Al 15 | 19 | 3/4 | 1.5 |
| L13005462 | LOKRING 22 VH Al 12 | 22 | 7/8 | 1.2 |
| L13006131 | LOKRING 28,6 VH Al 15 | 28.6 | 1 1/8 | 1.5 |
| L13006247 | LOKRING 35 VH Al 15 | 35 | 1 3/8 | 1.5 |

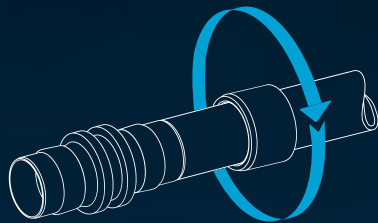
LOKPREP® APPLICATION

LOKPREP 65G



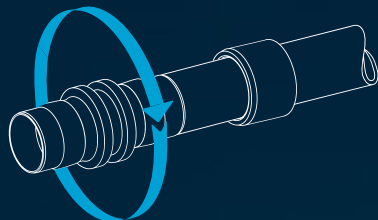
POSSIBILITY A

Move the nozzle 360° around the tube to distribute the LOKPREP evenly.



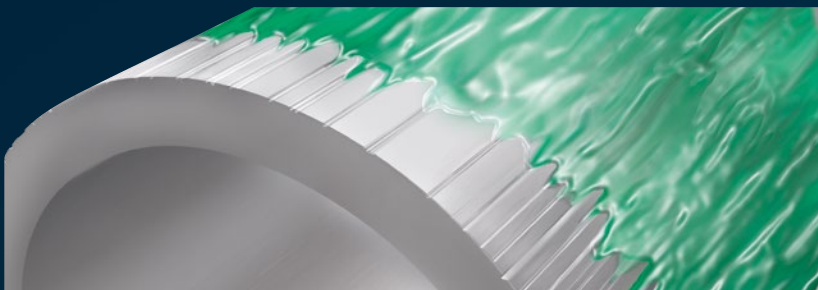
POSSIBILITY B

Rotate the moistened tube through 360° inside the joint.



POSSIBILITY C

Rotate the joint through 360° around the end of the tube.



Metal tubes can have longitudinal grooves on the surface from production. These production-related faults can be compensated quite easily by moistening the tube ends to be connected with LOKPREP fluid before assembly. Thanks to its capillary characteristic, it can even flow into microscopic cavities and fill these out completely. LOKPREP is not an adhesive, rather an anaerobic sealant which hardens under oxygen exclusion and in contact with free metal ions.

LOKPREP®



ANAEROBIC SEALANT FOR LOKRING ALUMINIUM-CONNECTORS



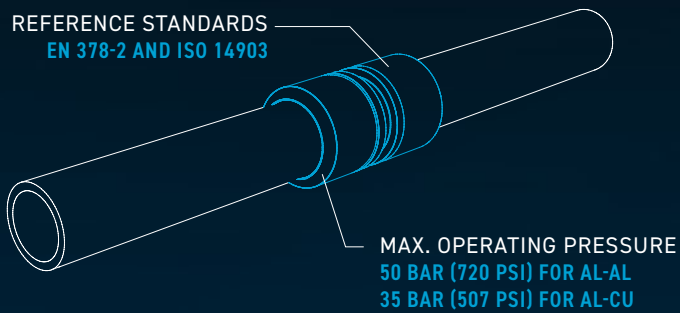
- ⊕ Specially developed for use with LOKRING aluminium-connectors.
- ⊕ Must be used for all LOKRING assemblies.
- ⊕ Compensates for any unevenness in the tube surface.
- ⊕ Ensures that every LOKRING connection is hermetically sealed.

IMPORTANT: For LOKRING brass-connectors, either LOKPREP LT or LOKPREP HT must be used depending on the ambient temperature.

| Article no. | Article name | Content [ml] |
|-------------|--------------|--------------|
| L14000878 | LOKPREP 65G | 15 |

LOKRING®

LOKRING ALUMINIUM-CONNECTORS



- ⊕ CORROSION TEST ACCORDING TO ISO 9227 NSS
- ⊕ TEMPERATURE CHANGE CYCLE TEST
- ⊕ TENSILE TEST ACCORDING TO DIN EN 10 002
- ⊕ ALTERNATING PRESSURE TEST WITH 250,000 CYCLES
- ⊕ BURST PRESSURE TEST UP TO 200 bar (2900 psi)
- ⊕ JOINS*: ALUMINIUM TO ALUMINIUM / ALUMINIUM TO COPPER**

*Other material combinations on request.

**When connecting aluminium tubes to copper tubes, use a heat shrink sleeve to protect the connection against corrosion.

STRAIGHT CONNECTORS



STRAIGHT ALUMINIUM-CONNECTORS



For connecting aluminium tubes and for connecting aluminium tubes to copper or steel tubes with identical tube outer diameters.

IMPORTANT: When connecting aluminium tubes to copper tubes, use a heat shrink sleeve to protect the connection against corrosion.

| Article no. | Article name | For tube outer-Ø | |
|-------------|-----------------------|------------------|-------|
| | | [mm] | ["] |
| L13005444 | LOKRING 6,35 NK Al 50 | 6.35 | 1/4 |
| L13005445 | LOKRING 8 NK Al 50 | 8 | 5/16 |
| L13005446 | LOKRING 9,53 NK Al 50 | 9.53 | 3/8 |
| L13005502 | LOKRING 10 NK Al 50 | 10 | – |
| L13005447 | LOKRING 12,7 NK Al 50 | 12.7 | 1/2 |
| L13005564 | LOKRING 15 NK Al 50 | 15 | – |
| L13005448 | LOKRING 16 NK Al 50 | 16 | 5/8 |
| L13005501 | LOKRING 18 NK Al 50 | 18 | – |
| L13005449 | LOKRING 19 NK Al 50 | 19 | 3/4 |
| L13005450 | LOKRING 22 NK Al 50 | 22 | 7/8 |
| L13006130 | LOKRING 28,6 NK Al 50 | 28.6 | 1 1/8 |
| L13006245 | LOKRING 35 NK Al 50 | 35 | 1 3/8 |

STRAIGHT REDUCING CONNECTORS



STRAIGHT ALUMINIUM REDUCING CONNECTORS



For connecting aluminium tubes and for connecting aluminium tubes to copper or steel tubes with different tube outer diameters.

IMPORTANT: When connecting aluminium tubes to copper tubes, use a heat shrink sleeve to protect the connection against corrosion.

| Article no. | Article name | Outer-ø tube 1 | | | Outer-ø tube 2 | |
|-------------|----------------------------|----------------|-------|---|----------------|-------|
| | | [mm] | ["] | | [mm] | ["] |
| L13005451 | LOKRING 9,53/6,35 NR Al 50 | 9.53 | 3/8 | → | 6.35 | 1/4 |
| L13005664 | LOKRING 9,53/8 NR Al 50 | 9.53 | 3/8 | → | 8 | 5/16 |
| L13005668 | LOKRING 10/9,53 NR Al 50 | 10 | – | → | 9.53 | 3/8 |
| L13005452 | LOKRING 12,7/9,53 NR Al 50 | 12.7 | 1/2 | → | 9.53 | 3/8 |
| L13005453 | LOKRING 16/12,7 NR Al 50 | 16 | 5/8 | → | 12.7 | 1/2 |
| L13005663 | LOKRING 16/15 NR Al 50 | 16 | 5/8 | → | 15 | – |
| L13005454 | LOKRING 19/16 NR Al 50 | 19 | 3/4 | → | 16 | 5/8 |
| L13005671 | LOKRING 19/18 NR Al 50 | 19 | 3/4 | → | 18 | – |
| L13005455 | LOKRING 22/19 NR Al 50 | 22 | 7/8 | → | 19 | 3/4 |
| L13006246 | LOKRING 35/28,6 NR Al 50 | 35 | 1 3/8 | → | 28.6 | 1 1/8 |

FLARE-FITTINGS



ALUMINIUM FLARE NUTS



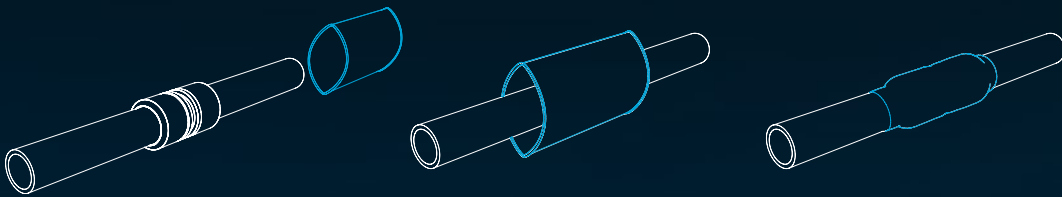
Anodised aluminium flare nuts made from a special alloy for refrigeration and air-conditioning applications.

IMPORTANT: In conjunction with brass connecting pieces, Teflon tape should be used to protect the connection against contact corrosion.

| Article no. | Article name | For tube outer-ø | | Thread | Wrench size | Tightening torque [Nm] |
|-------------|--------------------|------------------|-------|----------|-------------|------------------------|
| | | [mm] | ["] | | | |
| L13005463 | LOKRING Al FN 6,35 | 6.35 | 1/4 | 1/4" SAE | 17 | 20 |
| L13005464 | LOKRING Al FN 9,53 | 9.53 | 3/8 | 3/8" SAE | 22 | 30 |
| L13005465 | LOKRING Al FN 12,7 | 12.7 | 1/2 | 1/2" SAE | 24 | 40 |
| L13005466 | LOKRING Al FN 16 | 16 | 5/8 | 5/8" SAE | 27 | 50 |
| L13005467 | LOKRING Al FN 19 | 19 | 3/4 | 3/4" SAE | 36 | 60 |

ACCESSORIES

HEAT SHRINK SLEEVES WITH HOTMELT ADHESIVE



Heat shrink sleeves must be used with all aluminium to copper tube connections.

ACCESSORIES



HEAT SHRINK SLEEVES WITH HOTMELT ADHESIVE



- ⊕ Protects connections against contact corrosion.
- ⊕ Must be used with all aluminium to copper tube connections.
- ⊕ High shrink ratio.

| Article no. | Article name | For LOKRING connector sizes |
|-------------|------------------|-----------------------------|
| L14004177 | HSS 6-8 NK | 6 – 8 |
| L14004179 | HSS 9,53-12,7 NK | 9.53 – 12.7 |
| L14004181 | HSS 15-22 NK | 15 – 22 |

ACCESSORIES

ABRASIVE MAT



- ⊕ For cleaning tube ends without scratching.
- ⊕ Suitable for all surfaces.
- ⊕ Solvent-resistant.
- ⊕ Dimensions: 158 mm x 224 mm
- ⊕ Highest quality from 3M.

| Article no. | Article name |
|-------------|--------------|
| L14002211 | AM-SV |
| | |

SANDPAPER



- ⊕ For cleaning tube ends.
- ⊕ Grain: 120
- ⊕ Dimensions: 230 mm x 280 mm
- ⊕ Highest quality from 3M.

| Article no. | Article name |
|-------------|--------------|
| L14000002 | SP-SL |
| | |

TUBE DEBURRER



For quick and clean deburring of tubes, edges and steel plates.

| Article no. | Article name | Description |
|-------------|--------------|-------------------|
| L14001362 | Gratfix N-E | Tube deburrer |
| L14001363 | N-E100 | Replacement blade |

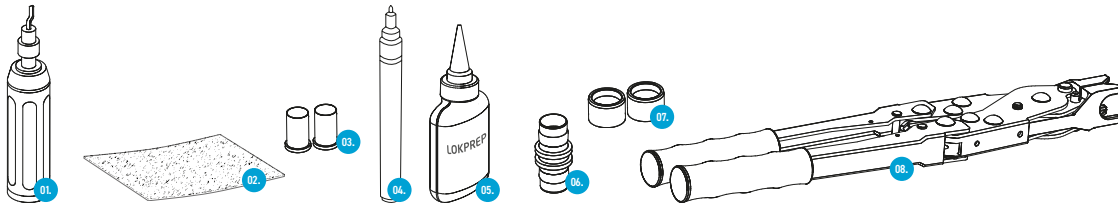
COMPACT TUBE CUTTER



Diameter range: 3 to 16 mm (1/8" to 5/8").

| Article no. | Article name | Description |
|-------------|--------------|---------------|
| L14001102 | TC-1050 | Tube cutter |
| L14001103 | TCS-1050 | Cutting blade |

LOKRING® ASSEMBLY TYPE 50



01. TUBE DEBURRER 02. ABRASIVE MAT 03. STABILISATION INSERTS 04. PERMANENT MARKER 05. LOKPREP 06. JOINT 07. LOKRINGS
08. HAND ASSEMBLY TOOL WITH ASSEMBLY JAWS MB EVP

- !** Deburr the tube end all the way round using a tube deburrer (01). Use different deburring tools for different materials.

! Clean the tube end by rubbing it in rotary movements using the abrasive mat (02).

! Determine the tube wall thickness S and the outer tube diameter \varnothing on the basis of tube coding or using a slide gauge.

\varnothing = outer tube diameter S = tube wall thickness

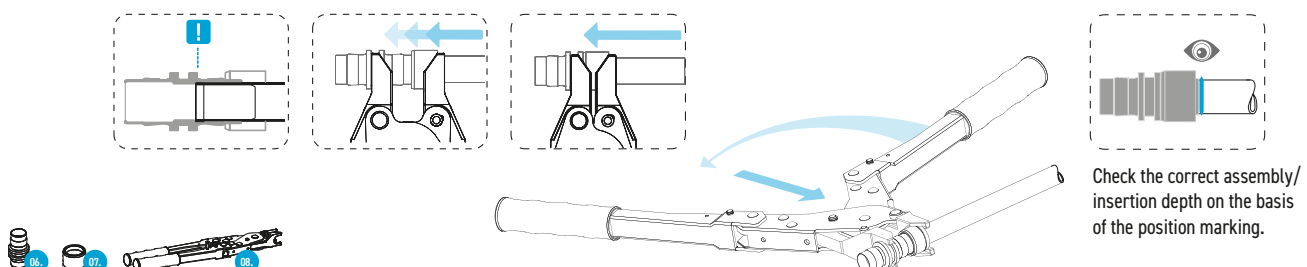
- 1** Insert a stabilisation insert (03) suitable for the material, the outer tube diameter \varnothing and tube wall thickness S . Stabilisation inserts (03) may not be necessary in case of use with refrigerants with an operating pressure lower than 25 bar (e.g. R134a car A/C systems or refrigerator cabinets).

2 Before applying the LOKPREP (05), push the joint (06) onto the tube until you can feel the inner stop. Mark (04) the correct insertion depth on the tube.

- 3** Choose the correct LOKPREP (05) for the tube material and the ambient temperature. Apply LOKPREP (05) all the way round the sealing area of the tube end. Respect the correct curing time of the LOKPREP (05).

4 Push the joint (06) onto the tube until it reaches the inner stop **!**

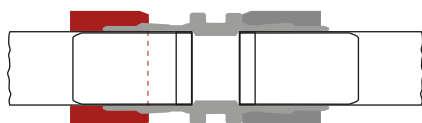
- 5** Put the assembly jaws (08) in place behind the LOKRING (07) and the assembly stop of the joint (06). Press the tube connection together. **!** Do not change the insertion depth of the tube and joint (06). Press the tube connection until the LOKRING (07) is flush to the assembly stop of the joint (06). Respect the curing time of the LOKPREP (05) before applying forces to the connection.



EXAMPLES AS ASSEMBLY AID



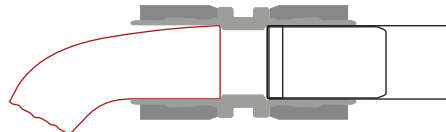
Wrong: LOKRING has not been pressed through to the assembly stop.



Right: LOKRING has been pressed flush to the assembly stop.



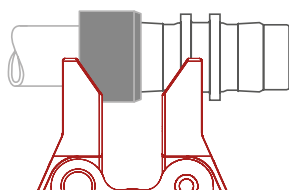
Wrong: Stabilisation insert is missing.



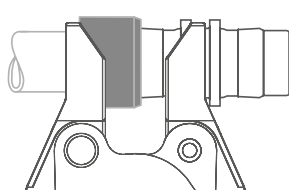
Right: Correct stabilisation insert is inserted.



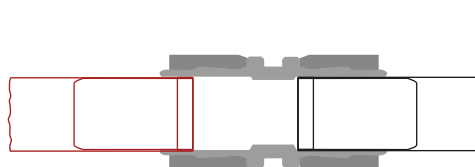
Wrong: Assembly jaws are not set in place correctly.



Right: Assembly jaws are set flush correctly.



Wrong: The tube is not pushed in as far as the inner stop.



Right: Push the tube in until you can feel the inner stop.

CHOOSING THE STABILISATION INSERT

* Use Ms stabilisation inserts for copper tube and Al stabilisation inserts for aluminium tube.

Note: Stabilisation inserts must not be used inside an NRA adaptor or inside the stainless steel tube of a EURO flare-fitting.

Article name Stabilisation insert Tube wall thickness in mm (S)

LOKRING 6,35 VH Ms 08

Outer tube diameter (Ø) Tube material
Ms for brass* or Al for aluminium*

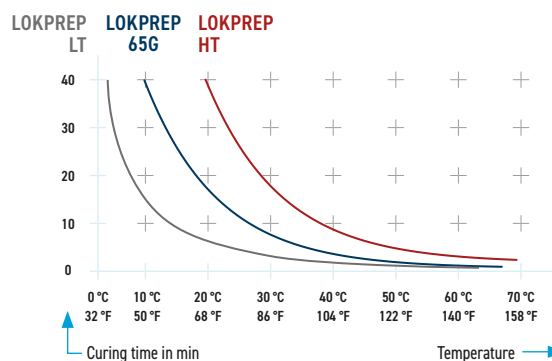
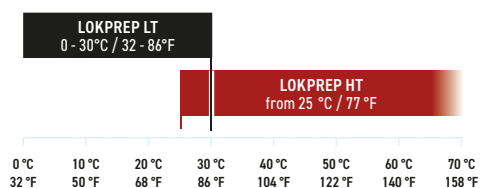
CHOOSING THE LOKPREP



- Use an **aluminium LOKRING connector** and **LOKPREP 65G** for all connections from aluminium to aluminium or aluminium to copper. Always use a heat shrink sleeve for connections from aluminium to copper in order to protect the connection against corrosion.
- Use a **brass LOKRING connector** and **LOKPREP LT** or **LOKPREP HT** for all connections from copper to copper.



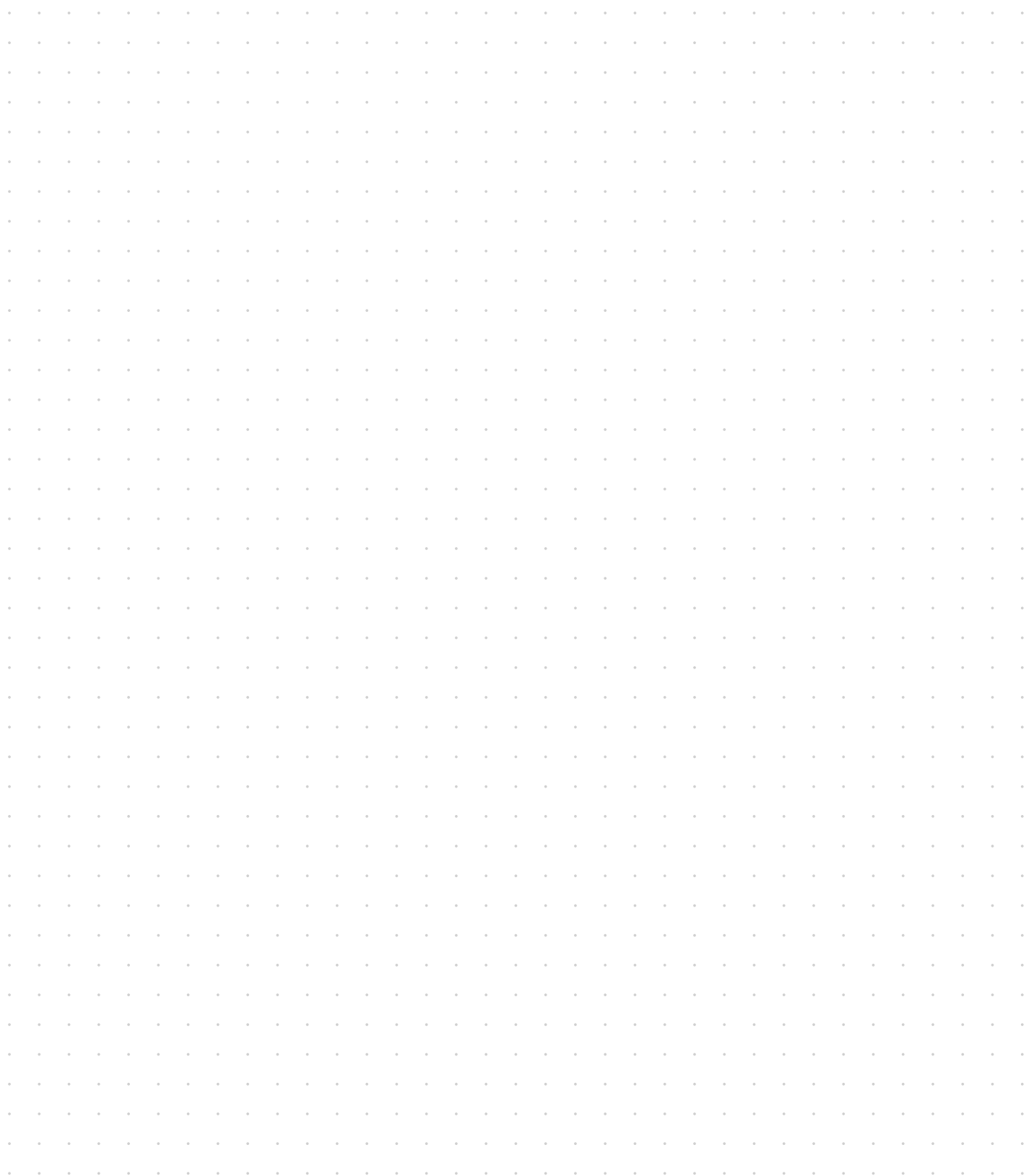
The following diagram shows the suitable temperature ranges for LOKPREP LT and LOKPREP HT.



LOKRING assemblies at an ambient temperature below 0°C (32°F) should be avoided, as the proper curing of LOKPREP cannot be guaranteed. If installation at temperatures below 0°C (32°F) cannot be avoided, it must be ensured that the joint is heated to above 0°C (32°F) after installation. However, the temperature due to heating must not exceed 100°C (212°F).

NOTES

A large grid of dots for taking notes. The grid consists of 20 columns and 30 rows of small, light blue dots, providing a structured space for writing or drawing.



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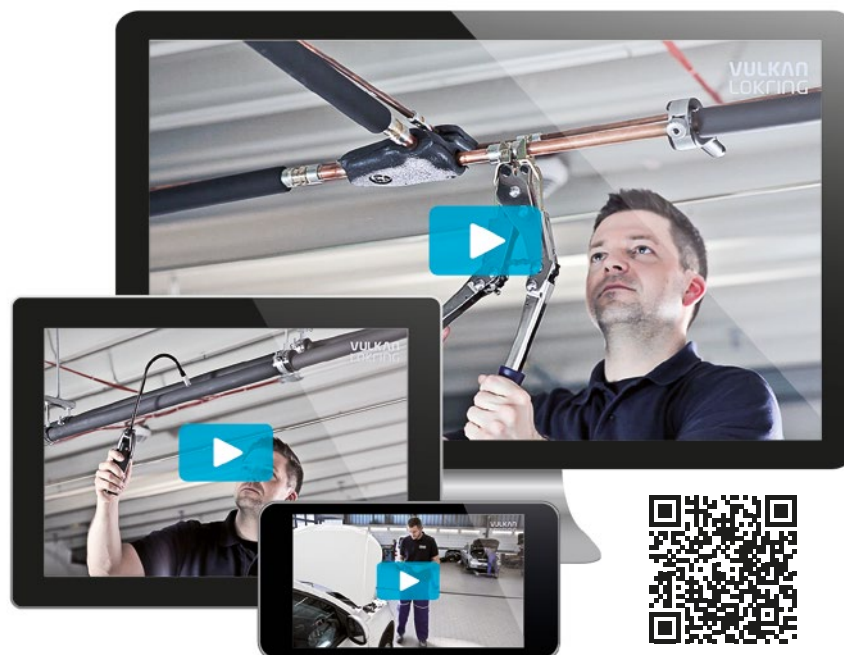
The LOKRING® tube connection technology represents a proven method of producing hermetically sealed metal-to-metal tube connections. The LOKRING® tube connections are mainly used in the refrigeration and air conditioning industries. The use of LOKRING® tube connection technology in other fields is to be discussed with VULKAN. VULKAN as the supplier is responsible for the qualitative delivery of the tube connections and tools which are ordered from this catalogue.

The purchaser is responsible for the use of the LOKRING® tube connections and tools as directed. The assembly has to be done accordingly to the instructions and exclusively with original LOKRING® parts. The present Refrigeration & Air Conditioning catalogue shall replace all previous editions, any previous printings shall no longer be valid. The data contained in this catalogue refers to the valid state of affairs in time of the copy deadline. Any changes due to technical progress are reserved.

Status: 09/2024

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Further remarks for the LOKRING® assembly are available on request.

Article no.: L19000188



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