

# REFRIGERATION & AIR CONDITIONING

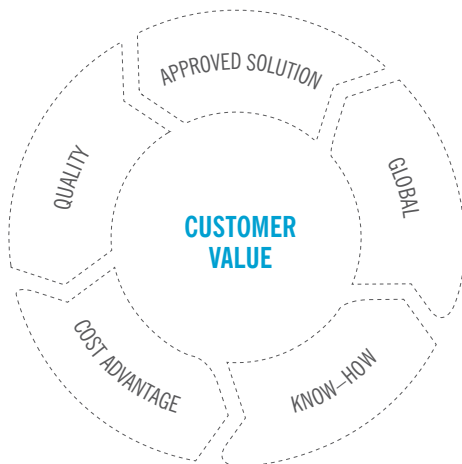
SOLDER-FREE TUBE CONNECTIONS FOR THE INSTALLATION AND SERVICING



## FOR THE LAST 36 YEARS, VULKAN LOKRING HAS DEVELOPED, MANUFACTURED AND MARKETED MECHANICAL TUBE JOINING SYSTEMS FOR REFRIGERANT LINES.

**VULKAN Lokring** is a company that belongs to the VULKAN Group, which is a medium-sized family-owned enterprise for technical industrial applications with its head office in Germany. As a developer of the LOKRING technology, VULKAN Lokring is a market leader in the field of solder-free and non-detachable tube joints.

Developed originally for the most extreme conditions encountered in manned space travel, the LOKRING tube joining technique has undergone constant advanced development for applications in commercial refrigeration and air conditioning technology.



Therefore, VULKAN Lokring nowadays provides customised solutions for tube connections in the fields of the manufacturing, installation and servicing of refrigeration and air conditioning technology.

All from a single source – from separate development for customers to their own production range and right up to sales & service by local subsidiaries or authorised business partners.

### APPROVED SOLUTION

**1,500,000,000** LOKRING® CONNECTIONS

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

### GLOBAL

**470,000** LOKRINGS PER DAY

are produced in the 5 international manufacturing facilities of VULKAN Lokring 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 Lokring quality management system.

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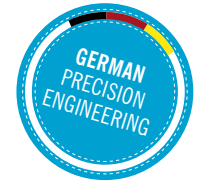
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## IMPRINT

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# VULKAN LOKRING

**VULKAN LOKRING.** LOKRING tube connections and tools are made by VULKAN Lokring in-house: Development, construction, manufacture as well as sales & service. For the customers, this means „all from a single source“ and directly from the manufacturer: customised planning and consultancy, supervision at the time of introduction, and support and service locally wherever required.



**RESEARCH AND DEVELOPMENT.** VULKAN Lokring is the inventor and developer of the patented LOKRING tube joint. For the last 36 years, experienced engineers have built new solutions for customers' applications in the development centre in Germany.



**PRODUCTION.** Approximately 500,000 LOKRINGs per day are produced on modern multi-spindle automatic machines in Germany, Brazil, India, USA and China. Therefore, for customers, LOKRING is the optimal partner when it comes to safety, flexibility and logistics.



**QUALITY.** The German standard of quality management is the benchmark for the international production of LOKRING. The certified quality management and the deployment of highly advanced industrial image processing systems facilitate 100% quality control.



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



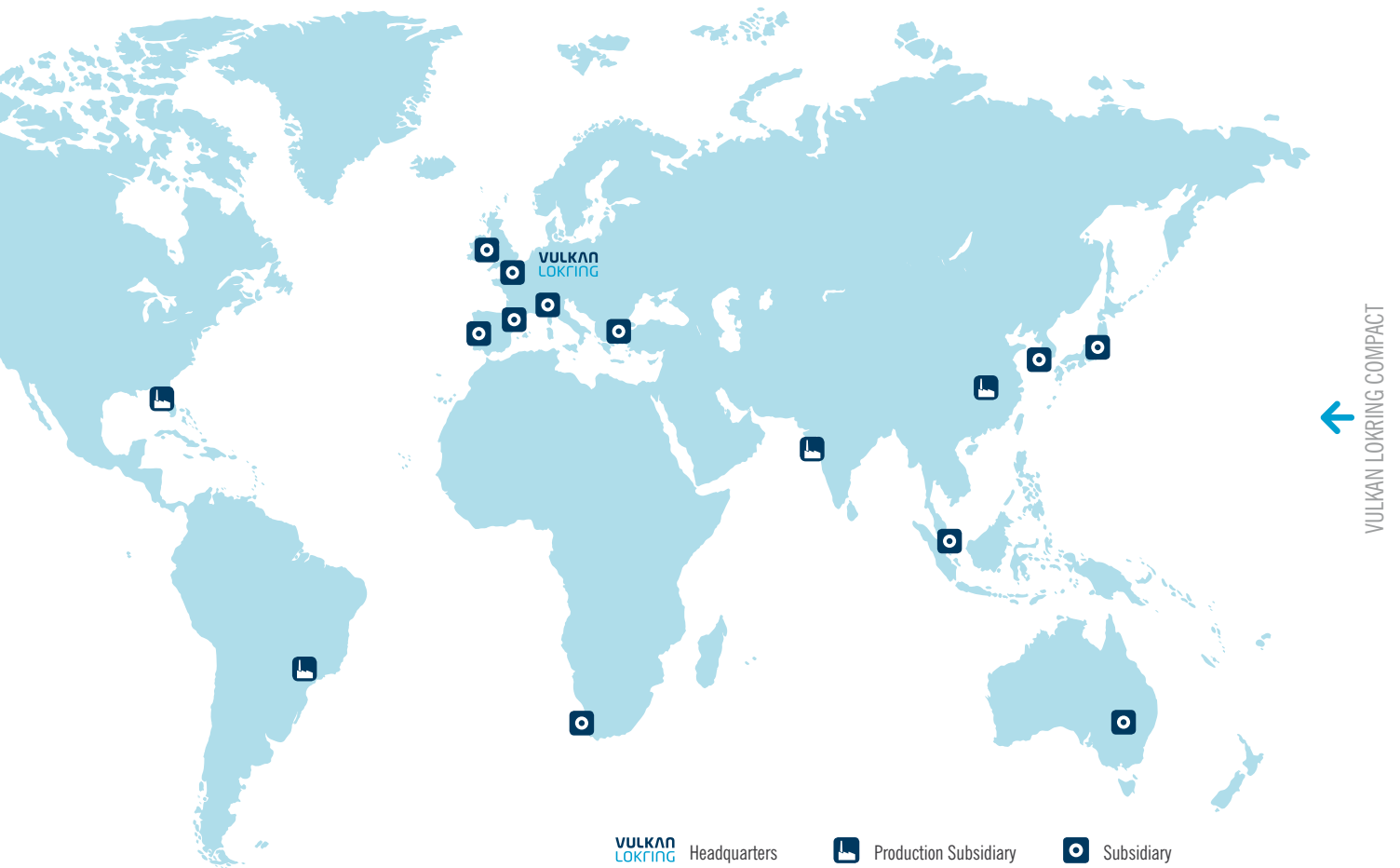
**PRODUCT AND MANAGEMENT CERTIFICATION.** TÜV and UL product certification. ISO 9001 certification of the quality management system. ISO 14001 certification of the environment management system. AEO certification. Leak-proof tests. Expert survey reports.



**ENVIRONMENTAL ENGAGEMENT.** 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 CO<sub>2</sub> (R744). Thus, by using LOKRING tube connections you make a contribution to the active protection of the environment.



**THE BEST CONNECTION – WORLDWIDE.** Operating with five international production locations, with 16 subsidiary companies and an additional 13 agencies worldwide, we ensure that VULKAN 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 6,600 satisfied customers:



# LOKRING®

## THE PATENTED LOKRING® TUBE CONNECTION SYSTEM PROVIDES AN INNOVATIVE SYSTEM OF SOLDER-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

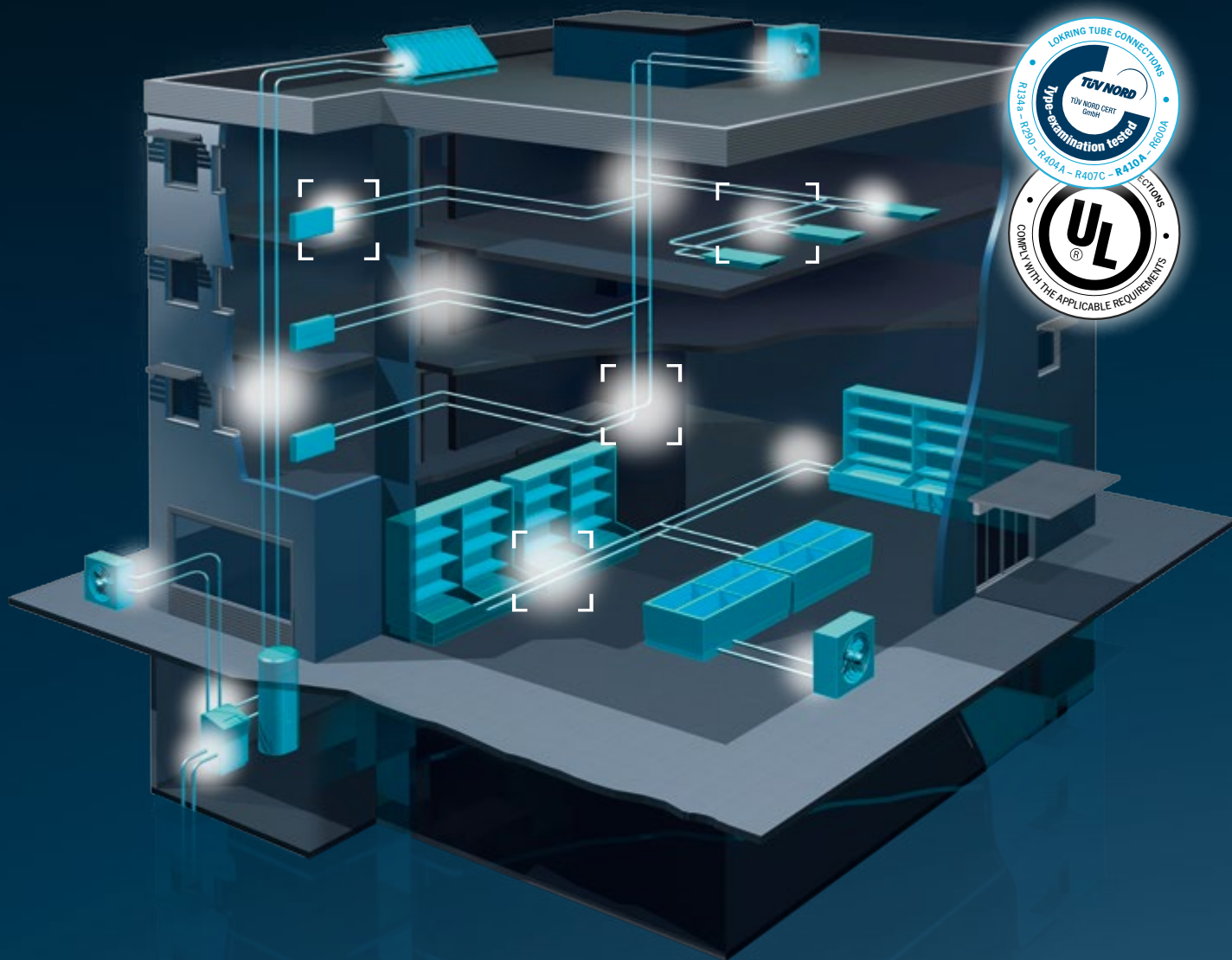
- ⊕ Approx. 40 % time saving
- ⊕ Absolutely clean, efficient and reliable
- ⊕ Installation work during business hours and public access
- ⊕ Installation work in situations where there is a fire hazard
- ⊕ Light hand assembly tool without energy exertion
- ⊕ Installation can also be carried out by non-skilled workers
- ⊕ No nitrogen as purge gas
- ⊕ No solder-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

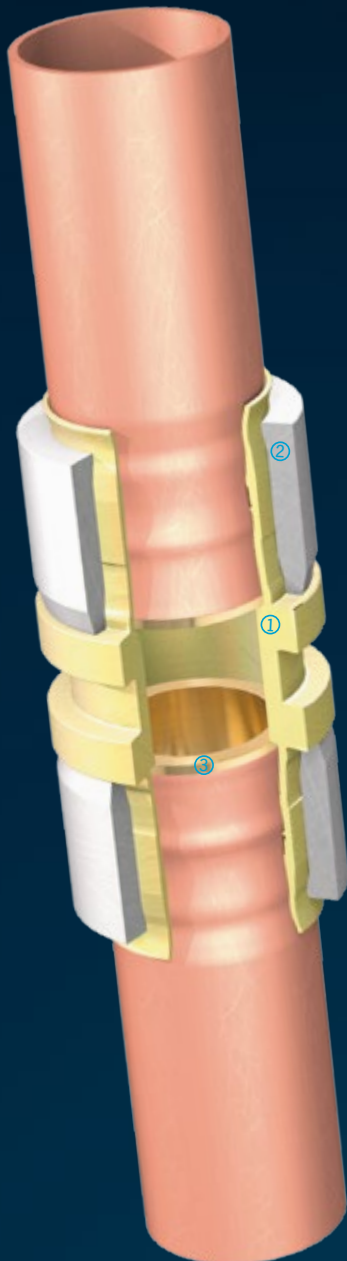
- ⊗ Straight connections
- ⊗ Flare-fittings
- ⊗ Elbows
- ⊗ Branches
- ⊗ T-connections
- ⊗ Special connections



# 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 connection. The lifetime gas-tightness of the fitted connection is ensured by the state of permanent elastic pre-tension, 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 EN 16084

### Max. operating pressure:

75 bar (1088 psi)

### Admissible refrigerants:

Suitable for all HFCs and mixtures, all HCs and CO<sub>2</sub>\*. Not suitable for NH<sub>3</sub>.

### Temperature range:

-50°C up to 150°C (-58°F up to 302°F)

### Tube diameter range:

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

### Minimum tube wall thickness:

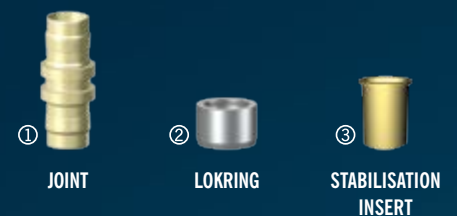
0.7 mm

### Approvals:

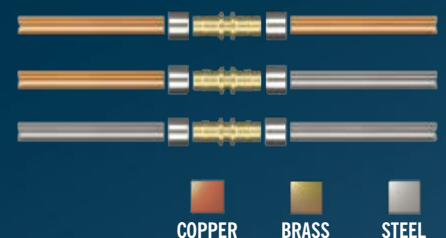
TÜV (Registered No. 44 780 08 344780)

UL (File SA12004)

## COMPONENTS



## MATERIAL COMBINATIONS\*\*

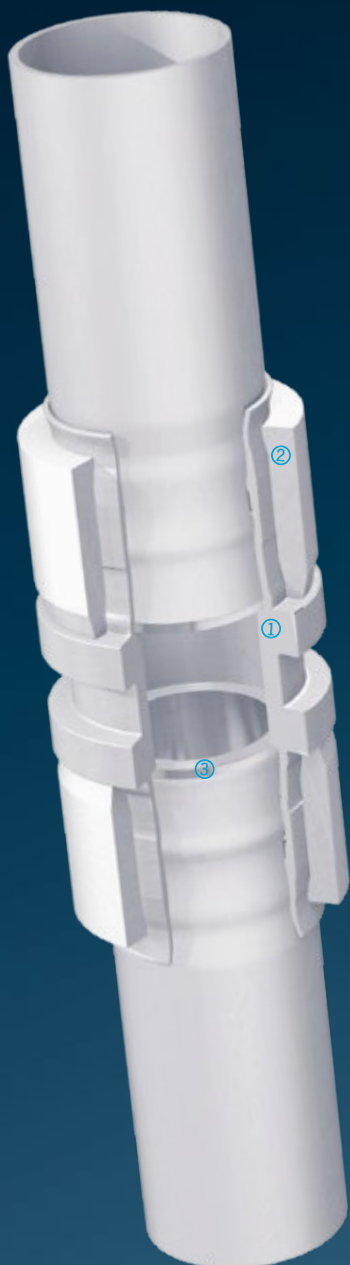


\* Up to the max. operating pressure specified for each connector.

\*\* Other material combinations on request.



# LOKRING® ALUMINIUM CONNECTORS



## TECHNICAL SPECIFICATIONS

### Reference standards:

EN 378-2 and EN 16084

### Max. operating pressure:

50 bar (725 psi)

### Admissible refrigerants:

Suitable for all HCs, HFCs and mixtures.  
Not suitable for NH<sub>3</sub>.

### Temperature range:

-50°C up to 150°C (-58°F up to 302°F)

### Tube diameter range:

6.35 to 22.23 mm (1/4" to 7/8")

### Minimum tube wall thickness:

0.8 mm

### Approvals:

TÜV (Registered No. 44 780 08 344780)

UL (File SA12004)

## COMPONENTS



## MATERIAL COMBINATIONS\*\*\*



ALUMINIUM      COPPER

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

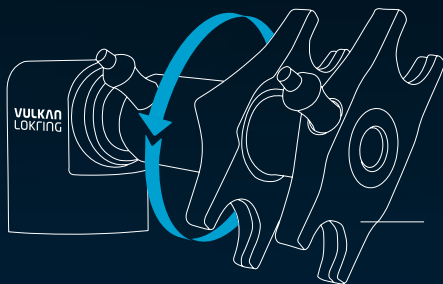




# ASSEMBLY TOOLS

# 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 of only 2.2 kg (4.85 lb) 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.
- Diameters: 6 to 35 mm (1/4" to 1 3/8")
- 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

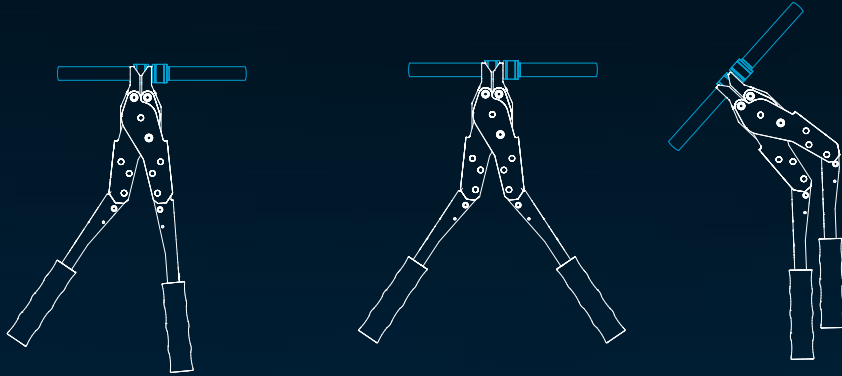
Dimensions (L x W x H):	325 x 69 x 195 mm
Operating temperature:	-10°C to 50°C (14°F to 122°F)
Power consumption:	240 W
Pressing force:	up to 23 kN
Rechargeable battery:	9.6V / 3.0 Ah NiMH
Recharge time:	30 to 60 min
Weight (incl. rechargeable battery):	2.2 kg (4.85 lb)

### Scope of supply

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

# LOKTOOL MZ-V

## 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.
- ⊕ Made in Germany!

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.
- ⊕ Made in Germany!

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- $\phi$ [ mm   " ]	PU
L13005506	LOKTOOL MB 8 EVP	6 - 8   1/4 - 5/16	2
L13005507	LOKTOOL MB 10 EVP	9 - 11   3/8	2
L13005508	LOKTOOL MB 12 EVP	12 - 13   1/2	2
L13005509	LOKTOOL MB 16 EVP	14 - 17   5/8	2
L13005510	LOKTOOL MB 19 EVP	18 - 20   3/4	2
L13005511	LOKTOOL MB 22 EVP	22   7/8	2
L13005752	LOKTOOL MB 25 EVP	25,4   1	2
L13005753	LOKTOOL MB 28 EVP	28 - 28,6   1 1/8	2
L13005755	LOKTOOL MB 35 EVP	35   1 3/8	2

# 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
L13002811	LOKTOOL MZ-V	Hand assembly tool
L13005506	LOKTOOL MB 8 EVP	1 pair of assembly jaws
L13005507	LOKTOOL MB 10 EVP	1 pair of assembly jaws
L13005508	LOKTOOL MB 12 EVP	1 pair of assembly jaws
L13005509	LOKTOOL MB 16 EVP	1 pair of assembly jaws
L13005510	LOKTOOL MB 19 EVP	1 pair of assembly jaws
L13005511	LOKTOOL MB 22 EVP	1 pair of assembly jaws
L13005753	LOKTOOL MB 28 EVP	1 pair of assembly jaws
L13005755	LOKTOOL MB 35 EVP	1 pair of assembly jaws



## 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
L13002095	LOKTOOL MZ	Hand assembly tool
L13005506	LOKTOOL MB 8 EVP	1 pair of assembly jaws
L13005507	LOKTOOL MB 10 EVP	1 pair of assembly jaws
L13005508	LOKTOOL MB 12 EVP	1 pair of assembly jaws

## 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
L13002811	LOKTOOL MZ-V	Hand assembly tool
L13005506	LOKTOOL MB 8 EVP	1 pair of assembly jaws
L13005507	LOKTOOL MB 10 EVP	1 pair of assembly jaws
L13005508	LOKTOOL MB 12 EVP	1 pair of assembly jaws





# STARTER KIT



HAND ASSEMBLY TOOL  
LOKPREP  
ASSEMBLY JAWS



STRAIGHT CONNECTORS  
STRAIGHT REDUCING CONNECTORS  
STABILISATION INSERTS  
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:

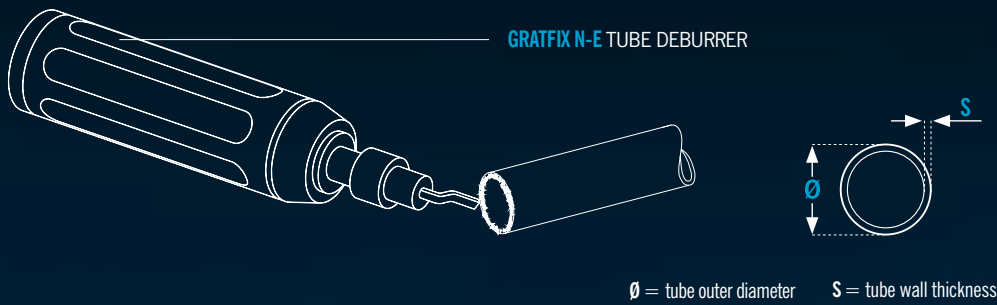
Article name	Description	Quantity
LOKTOOL MZ-V	Hand assembly tool	1
LOKTOOL MB 8 EVP	Assembly jaws	1
LOKTOOL MB 10 EVP	Assembly jaws	1
LOKTOOL MB 12 EVP	Assembly jaws	1
LOKTOOL MB 16 EVP	Assembly jaws	1
LOKTOOL MB 19 EVP	Assembly jaws	1
LOKTOOL MB 22 EVP	Assembly jaws	1
LOKPREP LT 50 ML	Anaerobic sealant	1
LOKPREP HT 50 ML	Anaerobic sealant	1
LOKRING 6,35 VH MS 08	Stabilisation inserts	14
LOKRING 9,53 VH MS 08	Stabilisation inserts	16
LOKRING 12,7 VH MS 08	Stabilisation inserts	18
LOKRING 16 VH MS 10	Stabilisation inserts	12
LOKRING 19 VH MS 10	Stabilisation inserts	10
LOKRING 22 VH MS 10	Stabilisation inserts	4
LOKRING 6,35 NK MS 50	Straight connectors	5
LOKRING 9,53 NK MS 50	Straight connectors	5
LOKRING 12,7 NK MS 50	Straight connectors	5
LOKRING 16 NK MS 50	Straight connectors	3
LOKRING 19 NK MS 50	Straight connectors	3
LOKRING 22 NK MS 50	Straight connectors	2
LOKRING 9,53/6,35 NR MS 50	Straight reducing connectors	2
LOKRING 12,7/6,35 NR MS 50	Straight reducing connectors	2
LOKRING 12,7/9,53 NR MS 50	Straight reducing connectors	2
LOKRING 16/9,53 NR MS 50	Straight reducing connectors	2
LOKRING 16/12,7 NR MS 50	Straight reducing connectors	2
LOKRING 19/12,7 NR MS 50	Straight reducing connectors	2
LOKRING 19/16 NR MS 50	Straight reducing connectors	2
LOKRING LR-EURO-06,35-EB	EURO flare-fittings	4
LOKRING LR-EURO-09,53-EB	EURO flare-fittings	4
LOKRING LR-EURO-12,7-EB	EURO flare-fittings	2
LOKRING LR-EURO-16-EB	EURO flare-fittings	2
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 „Ø“ 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](http://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:

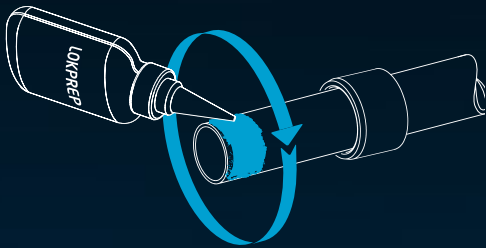
Stabilisation inserts must not be used within an NRA adaptor or within the stainless steel tube of a EURO flare-fitting.

Article no.	Article name	For tube outer-ø		For wall thickness [mm]
		[mm]	[inch]	
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
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
L12003089	LOKRING 16 VH Ms 09	16	5/8	0.9

Article no.	Article name	For tube outer-ø		For wall thickness [mm]
		[mm]	[inch]	
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	22	7/8	0.8
L12003288	LOKRING 22 VH Ms 09	22	7/8	0.9
L12001997	LOKRING 22 VH Ms 10	22	7/8	1.0
L12003093	LOKRING 22 VH Ms 11	22	7/8	1.1
L12002895	LOKRING 22 VH Ms 12	22	7/8	1.2
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

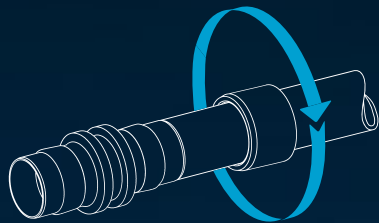
# LOKPREP APPLICATION

## LOKPREP LT & HT



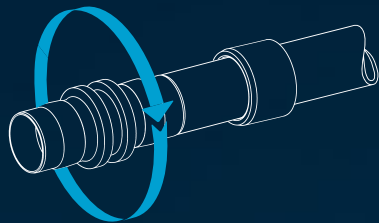
### POSSIBILITY A

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



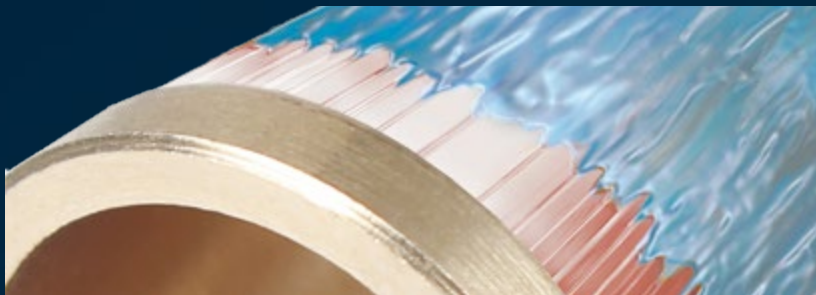
### POSSIBILITY B

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)

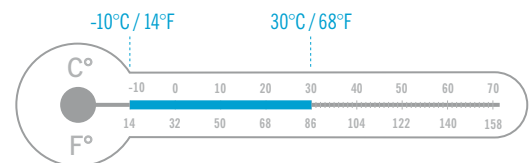


- ⊕ Specially developed for use with LOKRING brass connectors.
- ⊕ Can be used in ambient temperatures up to 30°C (86°F).
- ⊕ Must be used for all LOKRING assemblies.
- ⊕ Compensates for any unevenness in the tube surface.
- ⊕ Ensures that every LOKRING connection is hermetically sealed.

### 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 ml	15
L14003406	LOKPREP LT 50 ml	50



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

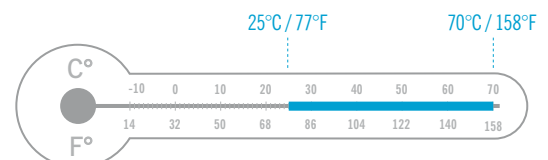


- ⊕ Specially developed for use with LOKRING brass connectors in high ambient temperatures.
- ⊕ Can be used in ambient temperatures from 25°C (77°F).
- ⊕ Must be used for all LOKRING assemblies.
- ⊕ Compensates for any unevenness in the tube surface.
- ⊕ Ensures that every LOKRING connection is hermetically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

### IMPORTANT:

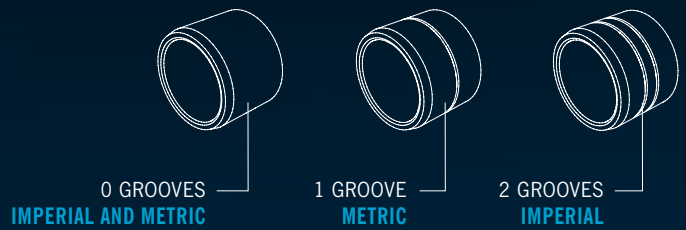
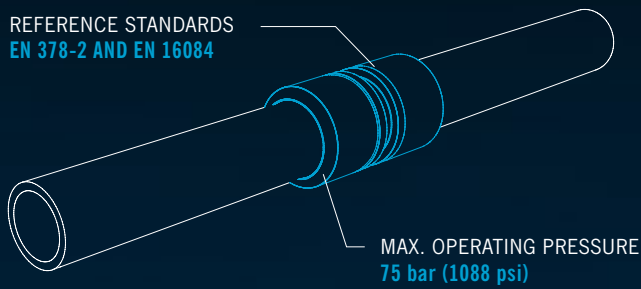
- ⊕ LOKPREP 65G must be used for LOKRING aluminium connectors.
- ⊕ LOKPREP LT must be used for LOKRING brass connectors in ambient temperatures below 25°C (77°F).

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

# 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   -
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
L13001831	LOKRING 12,7/8 NR Ms 50	12.7   1/2	→ 8   5/16
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   -

Article no.	Article name	Outer-ø tube 1 [ mm   " ]	Outer-ø tube 2 [ mm   " ]
L13001314	LOKRING 16/12 NR Ms 50	16   5/8	→ 12   -
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

# ELBOW CONNECTORS



## 90° BRASS ELBOW CONNECTORS



- ⊕ 90° elbow for connecting copper and/or steel tubes with identical tube outer diameters.
- ⊕ In conjunction with LOKRING NRA brass reducing adaptors, reducing connectors with a 90° elbow can be created.

Article no.	Article name	For tube outer-ø [ mm   " ]	
L13004621	LOKRING 6 NWK Ms 50	6	-
L13004775	LOKRING 6,35 NWK Ms 50	6.35	1/4
L13001978	LOKRING 8 NWK Ms 50	8	5/16
L13001397	LOKRING 9,53 NWK Ms 50	9.53	3/8
L13001313	LOKRING 10 NWK Ms 50	10	-
L13001205	LOKRING 12 NWK Ms 50	12	-
L13001699	LOKRING 12,7 NWK Ms 50	12.7	1/2
L13001201	LOKRING 16 NWK Ms 50	16	5/8
L13001202	LOKRING 19 NWK Ms 50	19	3/4
L13001204	LOKRING 22 NWK Ms 50	22	7/8
L13003182	LOKRING 28,6 NWK Ms 50	28.6	1 1/8

# ELBOW CONNECTORS



## 90° COPPER ELBOWS WITH LOKRING CONNECTIONS



- ⊕ 90° elbow for connecting copper and/or steel tubes with identical tube outer diameters.
- ⊕ In conjunction with LOKRING NRA brass reducing adaptors, reducing connectors with a 90° elbow can be created.
- ⊕ Manufactured in accordance with EN 1254-1.

Article no.	Article name	For tube outer-ø [ mm   " ]	
L13004625	LOKRING 9,53 NBK Cu 50-90°	9.53	3/8
L13004626	LOKRING 10 NBK Cu 50-90°	10	-
L13004627	LOKRING 12 NBK Cu 50-90°	12	-
L13004628	LOKRING 12,7 NBK Cu 50-90°	12.7	1/2
L13003944	LOKRING 16 NBK Cu 50-90°	16	5/8
L13004115	LOKRING 18 NBK Cu 50-90°	18	-
L13003945	LOKRING 19 NBK Cu 50-90°	19	3/4
L13003946	LOKRING 22 NBK Cu 50-90°	22	7/8
L13003979	LOKRING 25,4 NBK Cu 50-90°	25.4	1
L13003947	LOKRING 28 NBK Cu 50-90°	28	-
L13003948	LOKRING 28,6 NBK Cu 50-90°	28.6	1 1/8
L13003949	LOKRING 35 NBK Cu 50-90°	35	1 3/8

### Max. operating pressure

Operating temp. [ °C   °F ]	Tube outer-ø	
	6 – 28.6 mm (1/4" – 1 1/8") [ bar   psi ]	35 mm (1 3/8") [ bar   psi ]
30   86	40   580	25   363
65   149	25   363	16   232
110   230	16   232	10   145



## 45° COPPER ELBOWS WITH LOKRING CONNECTIONS



- ⊕ 45° elbow for connecting copper and/or steel tubes with identical tube outer diameters.
- ⊕ In conjunction with LOKRING NRA brass reducing adaptors, reducing connectors with a 45° elbow can be created.
- ⊕ Manufactured in accordance with EN 1254-1.

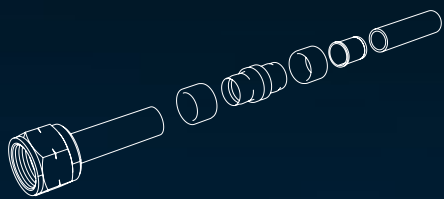
Article no.	Article name	For tube outer-ø [ mm   " ]	
L13005122	LOKRING 9,53 NBK Cu 50-45°	9.53	3/8
L13005112	LOKRING 12,7 NBK Cu 50-45°	12.7	1/2
L13005114	LOKRING 16 NBK Cu 50-45°	16	5/8
L13005116	LOKRING 19 NBK Cu 50-45°	19	3/4
L13005117	LOKRING 22 NBK Cu 50-45°	22	7/8
L13005120	LOKRING 28 NBK Cu 50-45°	28	-
L13005119	LOKRING 28,6 NBK Cu 50-45°	28.6	1 1/8
L13005121	LOKRING 35 NBK Cu 50-45°	35	1 3/8

### Max. operating pressure

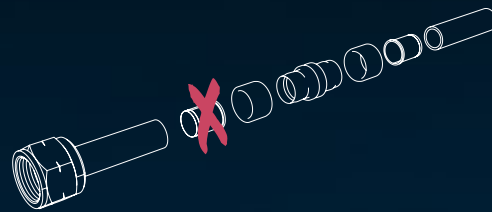
Operating temp. [ °C   °F ]	Tube outer-ø	
	6 – 28.6 mm (1/4" – 1 1/8") [ bar   psi ]	35 mm (1 3/8") [ bar   psi ]
30   86	40   580	25   363
65   149	25   363	16   232
110   230	16   232	10   145

# 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 prepressed copper seal on the cone ensures safe assembly without the seal slipping even in spots that are difficult to reach.



# FLARE-FITTINGS

## EURO FLARE-FITTINGS WITH LOKRING CONNECTIONS



- ⊕ 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.

Article no.	Article name	For tube outer-ø		Thread		Tightening torque [Nm]
		[ mm ]	[ " ]	[ SAE ]	[ Wrench size ]	
L13004811	LOKRING LR-EURO-06,35-EBK	6.35	1/4	1/4"	17	14 - 18
L13004322	LOKRING LR-EURO-09,53-EBK	9.53	3/8	3/8"	22	33 - 42
L13004324	LOKRING LR-EURO-10-EBK	10	-	3/8"	22	33 - 42
L13004325	LOKRING LR-EURO-12-EBK	12	-	1/2"	24	50 - 62
L13004326	LOKRING LR-EURO-12,7-EBK	12.7	1/2	1/2"	24	50 - 62
L13004328	LOKRING LR-EURO-16-EBK	16	5/8	5/8"	27	63 - 77
L13004331	LOKRING LR-EURO-19-EBK	19	3/4	3/4"	36	90 - 110

## 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 ]	
L13004343	LOKRING LR-EURO-06-EB	6	-	1/4"	17	14 - 18
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
L13004345	LOKRING LR-EURO-10-EB	10	-	3/8"	22	33 - 42
L13004346	LOKRING LR-EURO-12-EB	12	-	1/2"	24	50 - 62
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

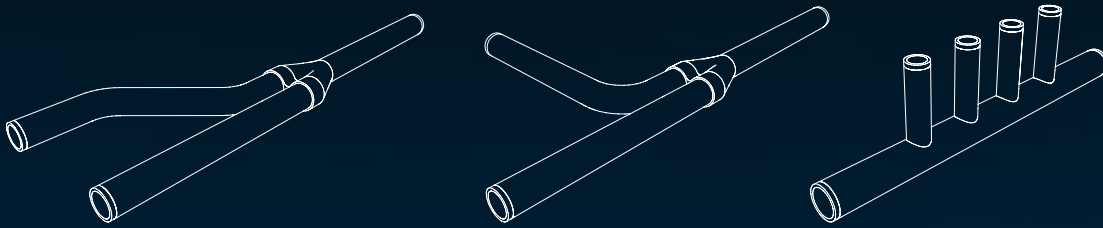


Specifically designed for LOKRING flare connections.

Article no.	Article name	Size
L12003036	LOKRING EBD-06	1/4" SAE
L12003037	LOKRING EBD-10	3/8" SAE
L12003038	LOKRING EBD-12	1/2" SAE
L12003039	LOKRING EBD-16	5/8" SAE
L12003143	LOKRING EBD-19	3/4" SAE

# 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.
- ⊕ Manufactured in accordance with EN 1254-1.
- ⊕ 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



# T-BRANCHES



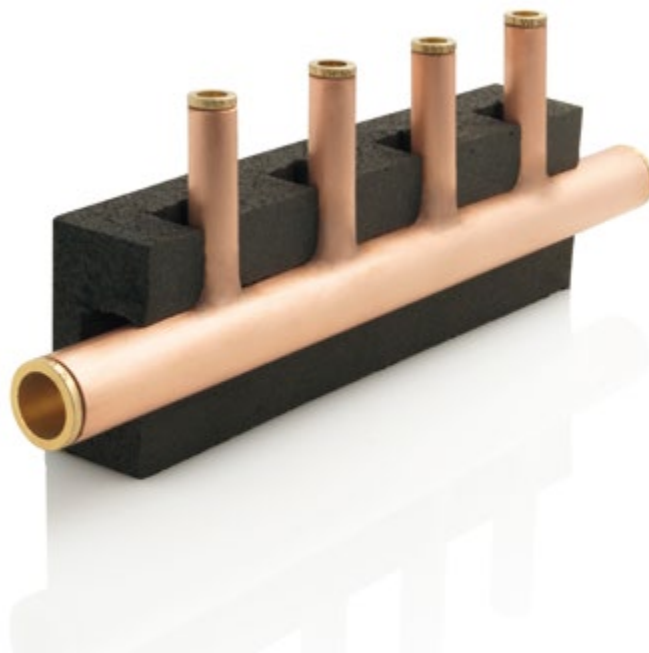
## T-BRANCHES (YT) MADE OF COPPER



- ⊕ YT branch with B1 fire protection class foam insulation.
- ⊕ Supplied with the necessary stabilisation inserts.
- ⊕ Manufactured in accordance with EN 1254-1.
- ⊕ 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

# HEADERS AND STOPPERS



## HEADERS MADE OF COPPER



- ④ Header with B1 fire protection class foam insulation.
- ④ Supplied with the necessary stabilisation inserts.
- ④ Manufactured in accordance with EN 1254-1.
- ④ Max. operating pressure: 45 bar (650 psi)

Article no.	Article name	Outer-ø tube 1 [ mm   " ]	Outer-ø tube 2 [ 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

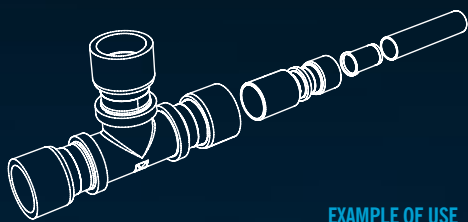


- ④ For hermetically sealing tube ends.
- ④ Can be used with LOKRING copper header for example.

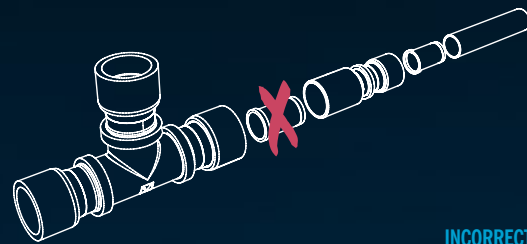
Article no.	Article name	For tube outer-ø [ mm   " ]
L13004940	LOKRING 6 VS Ms 50	6   -
L13004941	LOKRING 6,35 VS Ms 50	6.35   1/4
L13004943	LOKRING 9,53 VS Ms 50	9.53   3/8
L13004946	LOKRING 12,7 VS Ms 50	12.7   1/2
L13004947	LOKRING 16 VS Ms 50	16   5/8
L13004949	LOKRING 19 VS Ms 50	19   3/4
L13004953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

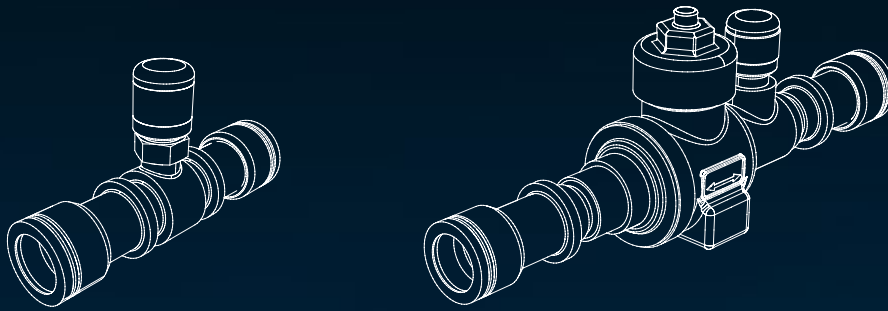
IMPORTANT: Stabilisation inserts must not be used within an NRA adaptor.

Article no.	Article name	Outer-ø tube 1		Outer-ø tube 2	
		[ mm   " ]	[ mm   " ]	[ mm   " ]	[ 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   -
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
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
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
L13005086	LOKRING 35/28,6 NRA Ms 50	35	1 3/8	→	28.6   1 1/8

# SPECIAL CONNECTORS

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## SPECIAL CONNECTORS



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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.

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

## BRASS CONNECTORS WITH BALL VALVE (INCL. SCHRADER VALVE)



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

Article no.	Article name	For tube outer-ø	
		[ mm ]	[ " ]
L13005147	LOKRING BVS 6,35 NK Ms 50	6.35	1/4
L13005148	LOKRING BVS 9,53 NK Ms 50	9.53	3/8
L13005151	LOKRING BVS 12,7 NK Ms 50	12.7	1/2
L13005179	LOKRING BVS 16 NK Ms 50	16	5/8
L13005181	LOKRING BVS 19 NK Ms 50	19	3/4

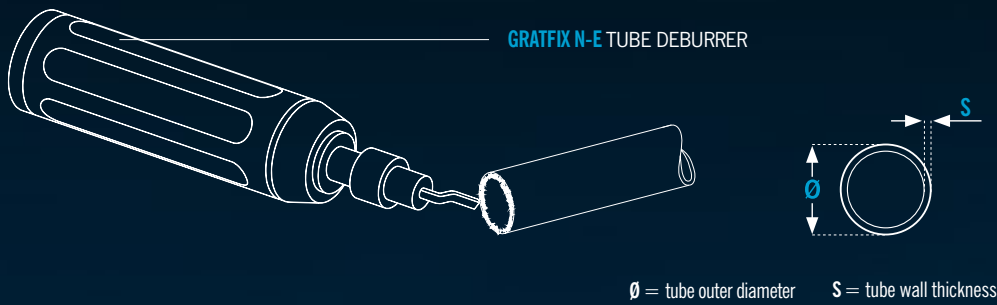




# CORRECT CHOICE OF INSERTS



## 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](http://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.

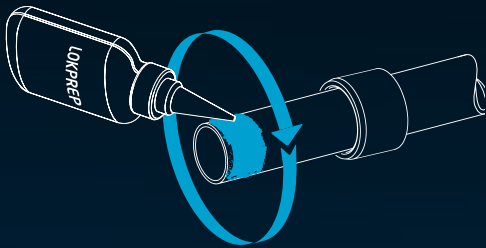
IMPORTANT: For further packing units, please see our official price list.



Article no.	Article name	For tube outer-ø		For wall thickness [mm]	PU
		[ mm ]	[ " ]		
L13005525	LOKRING 6,35 VH AI 08	6.35	1/4	0.8	20
L13005526	LOKRING 6,35 VH AI 10	6.35	1/4	1.0	20
L13005527	LOKRING 8 VH AI 08	8	5/16	0.8	20
L13005528	LOKRING 8 VH AI 10	8	5/16	1.0	20
L13005529	LOKRING 9,53 VH AI 08	9.53	3/8	0.8	20
L13005530	LOKRING 9,53 VH AI 10	9.53	3/8	1.0	20
L13005623	LOKRING 10 VH AI 10	10	-	1.0	20
L13005531	LOKRING 12,7 VH AI 08	12.7	1/2	0.8	20
L13005532	LOKRING 12,7 VH AI 10	12.7	1/2	1.0	20
L13005582	LOKRING 12,7 VH AI 12	12.7	1/2	1.2	20
L13005707	LOKRING 15 VH AI 10	15	-	1.0	10
L13005533	LOKRING 16 VH AI 10	16	5/8	1.0	10
L13005583	LOKRING 16 VH AI 12	16	5/8	1.2	10
L13005585	LOKRING 16 VH AI 15	16	5/8	1.5	10
L13005708	LOKRING 18 VH AI 10	18	-	1.0	10
L13005534	LOKRING 19 VH AI 10	19	3/4	1.0	10
L13005626	LOKRING 19 VH AI 12	19	3/4	1.2	10
L13005584	LOKRING 19 VH AI 15	19	3/4	1.5	10
L13005535	LOKRING 22 VH AI 12	22	7/8	1.2	10

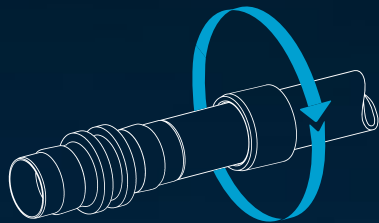
# LOKPREP APPLICATION

## LOKPREP 65G



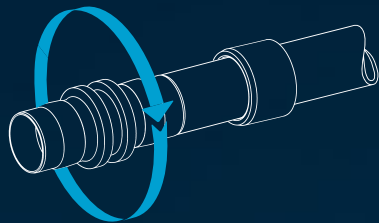
### POSSIBILITY A

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



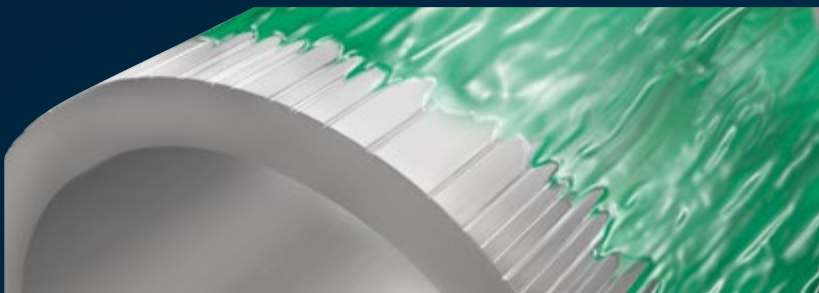
### POSSIBILITY B

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 ALUMINIUM LOKRING CONNECTORS



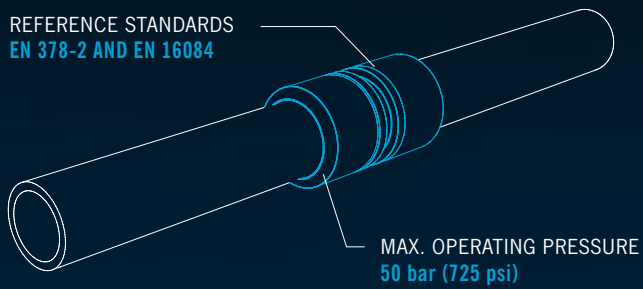
- ⊕ Specially developed for use with LOKRING aluminium connectors.
- ⊕ Must be used for all LOKRING assemblies.
- ⊕ Compensates for any unevenness in the tube surface.
- ⊕ Ensures that every LOKRING connection is hermetically sealed.

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 ml	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.
- ⊕ For further packing units, please see our official price list.

Article no.	Article name	For tube outer-ø [ mm   " ]	PU
L13005513	LOKRING 6,35 NK AI 50	6.35   1/4	10
L13005514	LOKRING 8 NK AI 50	8   5/16	10
L13005515	LOKRING 9,53 NK AI 50	9.53   3/8	10
L13005560	LOKRING 10 NK AI 50	10   -	10
L13005516	LOKRING 12,7 NK AI 50	12.7   1/2	8
L13005566	LOKRING 15 NK AI 50	15   -	2
L13005517	LOKRING 16 NK AI 50	16   5/8	2
L13005581	LOKRING 18 NK AI 50	18   -	2
L13005518	LOKRING 19 NK AI 50	19   3/4	2
L13005519	LOKRING 22 NK AI 50	22   7/8	2

# 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.
- ⊕ For further packing units, please see our official price list.

Article no.	Article name	Outer-ø tube 1		Outer-ø tube 2		PU
		[ mm ]	[ " ]	[ mm ]	[ " ]	
L13005520	LOKRING 9,53/6,35 NR Al 50	9.53	3/8	6.35	1/4	10
L13005802	LOKRING 9,53/8 NR Al 50	9.53	3/8	8	5/16	10
L13005803	LOKRING 10/9,53 NR Al 50	10	-	9.53	3/8	10
L13005521	LOKRING 12,7/9,53 NR Al 50	12.7	1/2	9.53	3/8	8
L13005522	LOKRING 16/12,7 NR Al 50	16	5/8	12.7	1/2	2
L13005805	LOKRING 16/15 NR Al 50	16	5/8	15	-	2
L13005523	LOKRING 19/16 NR Al 50	19	3/4	16	5/8	2
L13005807	LOKRING 19/18 NR Al 50	19	3/4	18	-	2
L13005524	LOKRING 22/19 NR Al 50	22	7/8	19	3/4	2

# FLARE-FITTINGS



## ALUMINIUM FLARE NUTS



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

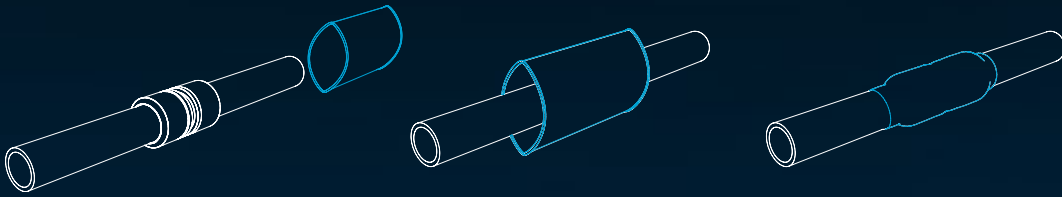
**IMPORTANT:** In conjunction with brass connecting pieces, Teflon tape should be used to protect the connection against contact corrosion.

Article no.	Article name	For tube outer-ø		Thread	Wrench size	Tightening torque [Nm]	PU
		[ mm ]	[ " ]				
L13005536	LOKRING 6,35 FN Al	6.35	1/4	1/4" SAE	17	20	20
L13005537	LOKRING 9,53 FN Al	9.53	3/8	3/8" SAE	22	30	10
L13005538	LOKRING 12,7 FN Al	12.7	1/2	1/2" SAE	24	40	10
L13005539	LOKRING 16 FN Al	16	5/8	5/8" SAE	27	50	10
L13005540	LOKRING 19 FN Al	19	3/4	3/4" SAE	36	60	6

# ACCESSORIES

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## HEAT SHRINK SLEEVES WITH HOTMELT ADHESIVE



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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	PU
L13005541	HSS 6-8 NK	6 - 8	20
L13005542	HSS 12,7 NK	12.7	20
L13005543	HSS 15-22 NK	15 - 22	20

# 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
L13004251	SV.3

## 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

## TUBE CUTTER



Diameter range: 6 to 28 mm (1/4" to 1 1/8")

Article no.	Article name	Description
L1400022	TC-1000	Tube cutter
L13003601	TCS-1000	Cutting blade

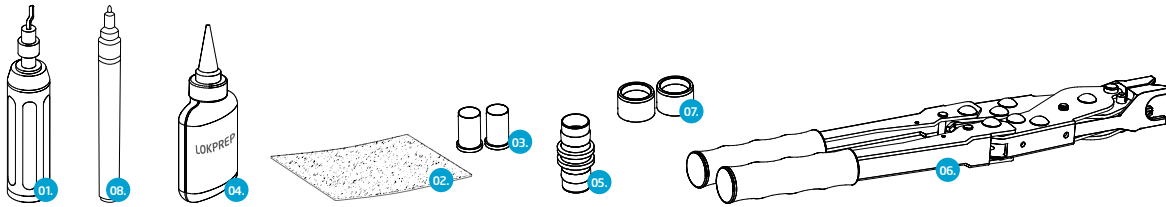
## COMPACT TUBE CUTTER



Diameter range: 6 to 12.7 mm (1/4" to 1/2")

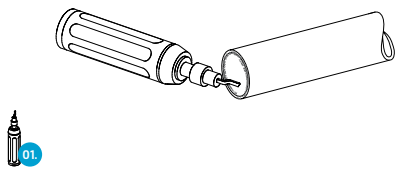
Article no.	Article name	Description
L14001102	TC-1050	Tube cutter
L14001103	TCS-1050	Cutting blade

# LOKRING® ASSEMBLY TYPE 50

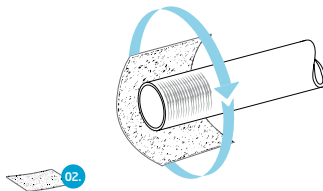


01. TUBE DEBURRER 02. ABRASIVE MAT 03. STABILISATION INSERTS 04. LOKPREP 05. JOINT 06. HAND ASSEMBLY TOOL 07. LOKRINGS 08. PERMANENT MARKER

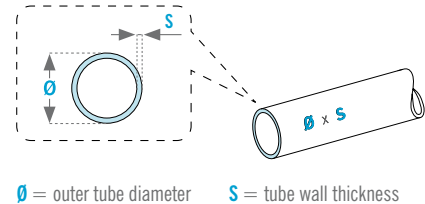
**!** Deburr the tube end all the way round using a tube deburrer (01). Use different deburring tools for different materials.



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

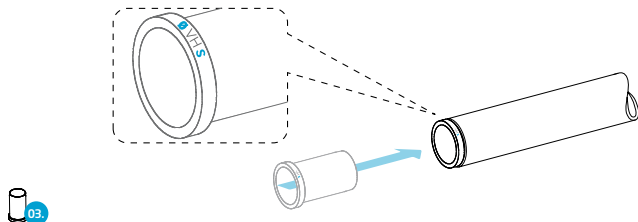


**!** Determine the tube wall thickness  $S$  and the outer tube diameter  $\emptyset$  on the basis of tube coding or using a slide gauge.

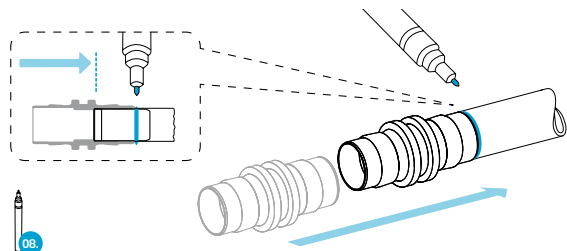


$\emptyset$  = outer tube diameter  $S$  = tube wall thickness

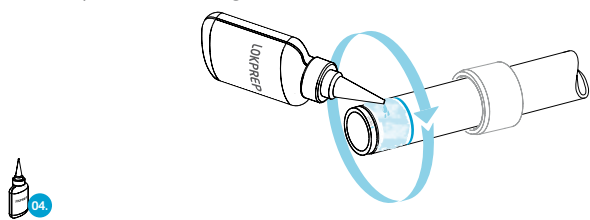
**1** Insert a stabilisation insert (03) suitable for the material, the outer tube diameter  $\emptyset$  and tube wall thickness  $S$ . Stabilisation inserts may not be necessary in case of use with refrigerants with an operating pressure lower than 25 bar (e.g. R134a car A/C systems or refrigerator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



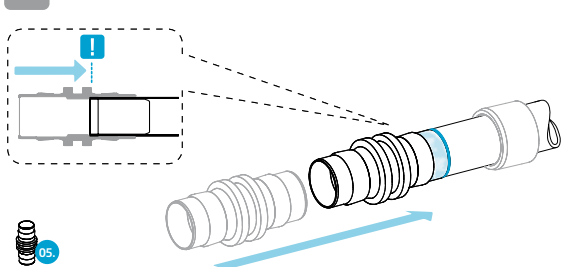
**2** Before applying the LOKPREP (04), push the connecting joint onto the tube until you can feel the inner stop. Mark (08) the correct insertion depth on the tube.



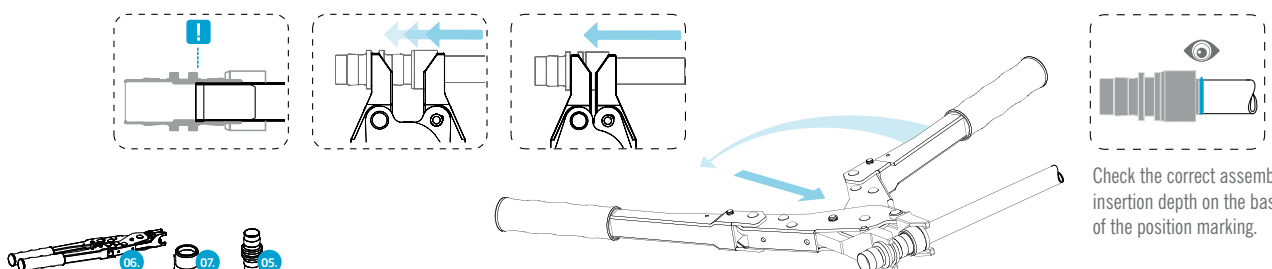
**3** Choose the correct LOKPREP for the tube material and the ambient temperature. Apply LOKPREP (04) all the way round the sealing area of the tube end. Respect the correct curing time of the LOKPREP.



**4** Push the connection joint (05) onto the tube until it reaches the inner stop **!**



**5** Put the assembly jaws (06) in place behind the LOKRING (07) and the assembly stop of the joint (05). Press the tube connection together. **!** Do not change the insertion depth of the tube and connecting joint. Press the tube connection until the LOKRING (07) is flush to the assembly stop of the joint (05).



Check the correct assembly/insertion depth on the basis of the position marking.



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.

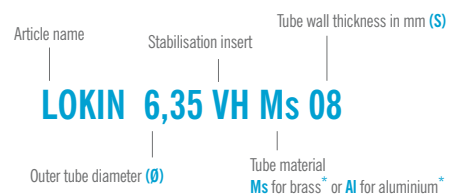
**!** **Wrong:** The tube is not pushed in as far as the inner stop.

**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.

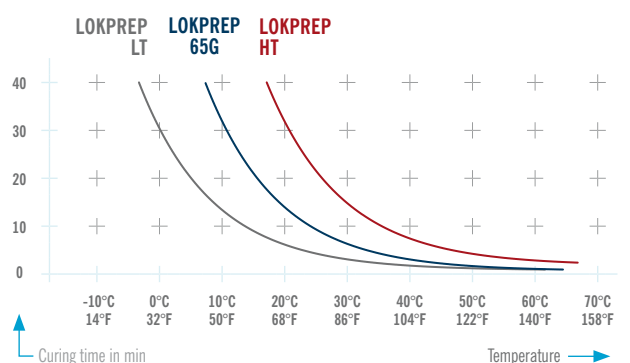
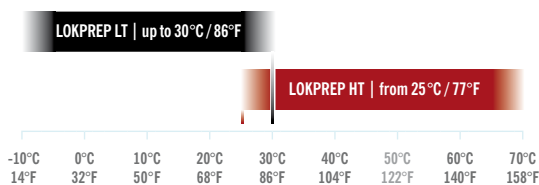


CHOOSING THE LOKPREP



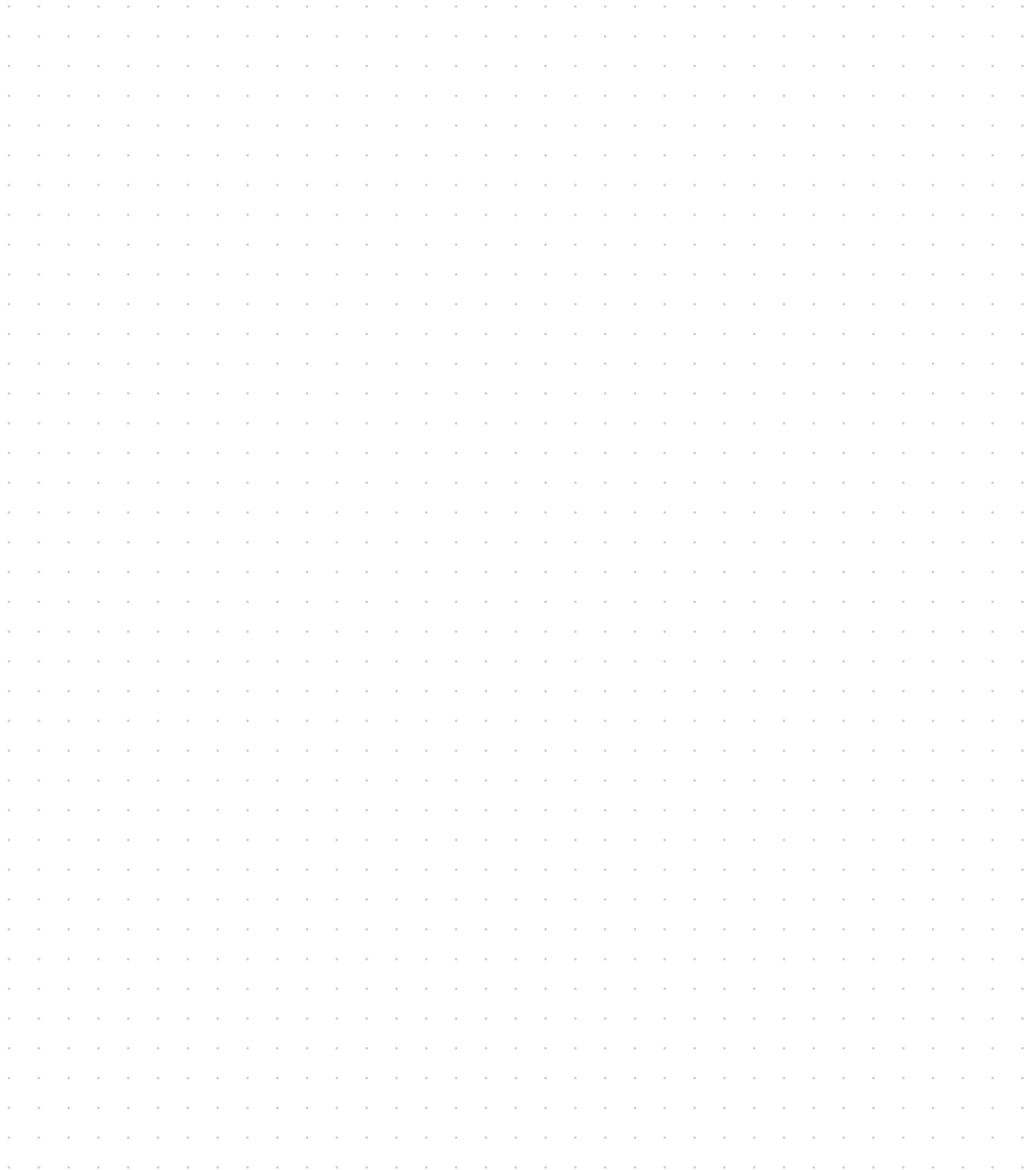
- ➔ Use an **aluminium LOKRING® connector** and **LOKPREP 65G** for all connections from aluminium to aluminium or aluminium to copper. Always use a heat shrink sleeve for connections from aluminium to copper in order to protect the connection against corrosion.
- ➔ Use a **brass LOKRING® connector**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



# NOTES

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# ONLINE-SERVICE

FOR FURTHER INFORMATION, PLEASE REFER TO OUR WEBSITE [WWW.VULKAN.COM](http://WWW.VULKAN.COM).



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# IMPRINT

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**PUBLISHER:**

VULKAN Lokring Rohrverbindungen GmbH & Co. KG  
Heerstraße 66, 44653 Herne / Germany  
Tel.: + 49 (23 25) 922-155  
Fax: + 49 (23 25) 51222  
E-mail: info.lok@vulkan.com

**CONCEPT AND DESIGN:**

Hackforth Holding GmbH & Co. KG  
Marketing Service Center  
Heerstraße 66, 44653 Herne / Germany  
E-mail: marketing@vulkan.com

**PREPRESS:**

Hackforth Holding GmbH & Co. KG  
Marketing Service Center  
Heerstraße 66, 44653 Herne / Germany  
E-mail: marketing@vulkan.com

**VALIDITY CLAUSE**

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 Lokring. VULKAN Lokring as the supplier is responsible for the qualitative delivery of the tube connections and tools which are ordered from this catalogue.

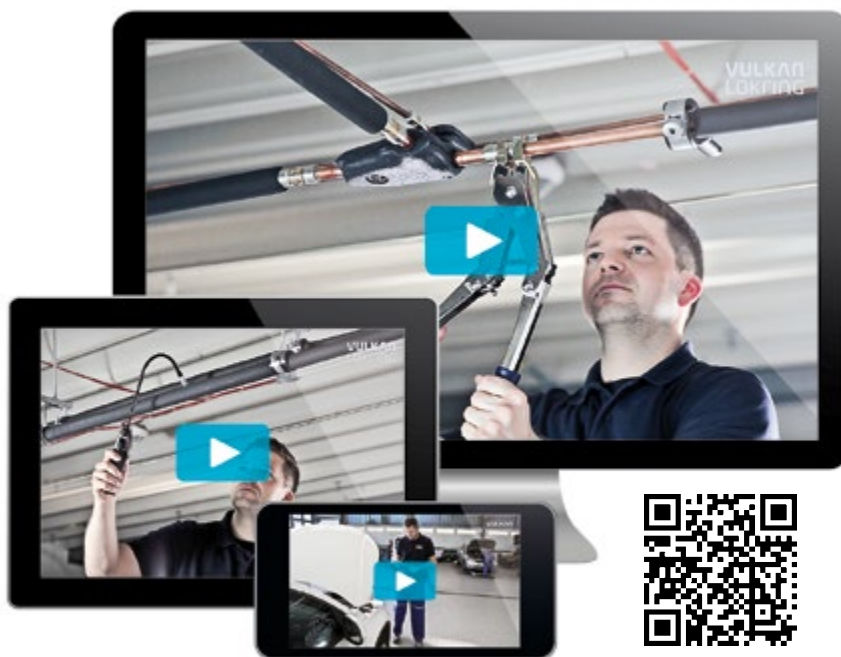
The purchaser is responsible for the use of the LOKRING® tube connections and tools as directed. The assembly has to be done accordingly to the instructions and exclusively with original LOKRING® parts. The present Vehicle Air Conditioning catalogue shall replace all previous editions, any previous printings 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:** 03/2015

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**Article no.:** L19000188

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