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1 Purpose

This LESER Global (LGS) describes the recommended Tool KIT requirements for equipping an agency or a warehouse for goods receiving/storage, adjusting, testing and shipping of safety valves.

2 Scope

This LGS applies to all members of the LESER quality cluster as defined in the global quality management manual.

3 Introduction

- The Tool KIT is an important part of the equipment of an assembly workplace. It is required for the different work listed for most series of safety valves.

Order number

0161.0000

Internet

www.sales@leser.com

3.1 Designated use

- Assembly of safety valves
- Disassembly of safety valves
- Adjusting the set pressure of safety valves
- Lapping the valve seat
- Repair work

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4 Components of the Standard Tool KIT

- All tools found in this LWN are part of the Standard Tool KIT. The following pages specify the individual tools through descriptions and by giving practical examples. The technical illustrations show how the respective tools look.

4.1 Double-ended open spanner with unequal widths across flats

The double-ended open spanner is used for tightening or unscrewing bolts and nuts.

Designated use

- Tool for tightening or unscrewing bolts and nuts such as caps, levers, and inflow devices



Fig. 1 Unscrewing a screw connection



Fig. 2 Sealing the drain hole

Technical requirements (1)

Requirements / Quality	Data	Data	Data
DIN		3110	
Spanner width in mm	16 x 18	17 x 19	22 x 24
Length	205 mm	222 mm	250 mm
Manufacturer	GEDORE		
Material	Chrome-vanadium-steel		
Vendor	Hahn & Kolb		
External order number	52012-222	52012-230	52012-290

Technical illustration



Fig. 1: Double-ended open spanner

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4.2 Single-ended open spanner

Single-ended open spanners are required for tightening or unscrewing the lever and cap.

Designated use

- lever and cap screw connections



Fig. 3 Installation of the lever and cap

Technical requirements

Requirements / Quality	Data	Data
DIN	894	
Spanner width in mm	41	60
Manufacturer	ORION	
Material	Special steel	
Length	345 mm	495 mm
Head thickness	14 mm	18 mm
Vendor	Hahn & Kolb	
External order number	52002-041	52002-060
LESER order number	596.0063.0000	596.0030.0000
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 2: Single-ended open spanner

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4.3 Flat-tip and Phillips PH screwdrivers

The screw driver is required for a variety of auxiliary work such as, for example, to remove jammed workpieces or to insert an O-ring.

Designated use

- screwing in of locking screws (H4 lever)
- insert O-rings (type 462)
- remove jammed workpieces



Fig. 3 Lifting the protective cap

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Technical requirements

Requirements / Quality	Data	Data	Data	Data
DIN		5265A		
Edge width mm	3.5	4.5	5.5	6.5
Edge thickness mm	0.6	0.8	1.0	1.2
Shaft length mm	100	125	150	150
Total length mm	204	236	261	268
Vendor	Hahn & Kolb			
External order number	52736-120	52736-135	52736-141	52736-150
LESER order number	596.0039.0000			
Tool kit number	0161.0000			
Internet	www.hahn-kolb.de			

Technical illustration



Illustration 3: Flat-head/Phillips screwdriver

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4.4 Combination pliers

The combination pliers are required as an auxiliary tool for various work. For example, it can be used to cut soft and hard wire. The long cutting edges are suitable for thick cable.

Designated use

- removal of sealing wire



Technical requirements

Requirements / Quality	Data
DIN ISO	5746
Length	180 mm
Largest Ø that can be cut	3.4 mm
Cutting edges	Induction-hardened 60 HRC
Vendor	Hahn & Kolb
External order number	52279-130
LESER order number	596.0064.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 4: Combination pliers

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4.5 Pin punch

The pin punch is required for the assembly and disassembly of discs and spindles. The pins are driven in and out by means of a pin punch.

Designated use

- driving pins in and out
- fixing the spindle in place, when adjusting the set pressure



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Technical requirements

Requirements / Quality	Data
DIN	6450 C
Tips – Ø mm	3 / 4 / 5 / 6 / 7 / 8
Length x thickness mm	150 x 10/ 150 x 10/ 150 x 10/ 150 x 10/ 150 x 12/ 150 x 12
Punch head	Hardened and tempered
Delivery	In holder with base
Vendor	Hahn & Kolb
External order number	51284-500
LESER order number	596.0065.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 5: Combination pliers

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4.6 Hammer

The hammer is used for marking flanges and bodies and for fastening individual parts like, for example, discs and spindles.

Designated use

- hammering in punch numbers
- fastening of discs and spindles
- hammering in pins



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Technical requirements

Requirements / Quality	Data	Data
DIN	1041	
Weight without handle	200	800
Manufacturer	ORION	
External order number	51180-510	51180-560
LESER order number	596.0066.0000	596.0067.0000
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 6: Hammer

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4.7 Punch numbers

Punch numbers are required for a variety of marking work. At the request of the customer, the safety valve must also be marked on the edge of the flange or on the body with the set pressure or tag.

Designated use

- marking flanges and bodies



Technical requirements

Requirements / Quality	Data	Data
DIN	1451	
Type of characters	Numbers	
Character height	0.2 mm	0.6 mm
Characters	0 - 9	0 - 9
Number of punches	9	
Max workpiece strength	1200 Nm ²	1200 Nm ²
Hardness on end of punch	58 – 60 HRC	58 – 60 HRC
Vendor	Hahn & Kolb	
External order number	56930-020	56930-060
LESER order number	596.0068.0000	596.0069.0000
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 7: Punch numbers

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4.8 Punch letters

Punch letters are required for a variety of marking work. At the request of the customer, the safety valve must also be marked on the edge of the flange or on the body with the set pressure or tag or name.

Designated use

- marking flanges and bodies



Technical requirements

Requirements / Quality	Data	Data
DIN	1451	
Type of characters	Letters	
Character height	0.2 mm	0.6 mm
Characters	A - Z - &	
Number of punches	27	
Max workpiece strength	1200 Nm ²	1200 Nm ²
Hardness on end of punch	58 – 60 HRC	58 – 60 HRC
Vendor	Hahn & Kolb	
External order number	56932-020	56932-060
LESER order number	596.0070.0000	596.0071.0000
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 8: Punch letters

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4.9 Brush set

The brush set consists of brushes of different sizes.

Designated use

- repair of paint damage
- application of lubricants



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Technical requirements

Requirements / Quality		Data
Flat brush	1 each	20 / 25 / 35 / 50 mm
Ring brush	1 each	Size 2 / 4 / 6
Enamel paintbrush		Size 10 / 12 / 16
Vendor		Hahn & Kolb
External order number		56932-005
LESER order number		596.0072.0000
Tool kit number		0161.0000
Internet		www.hahn-kolb.de

Technical illustration



Illustration 9: Brush set

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4.10 Sliding vernier calliper

Basically, the sliding vernier calliper is used to measure components, for example stroke limits. The set pressure for several identical safety valves can be roughly adjusted with the sliding vernier calliper.

Designated use

- pressure setting
- measuring stroke limits
- measuring components



Technical requirements

Requirements / Quality	Data
DIN	862
Application	outside, inside, step and depth measurements
Material	INOX steel
Measuring span	150 mm
Measuring jaw length	40 mm
Length of the vernier	15.5 mm
Manufacturer	ATRON
Vendor	Hahn & Kolb
External order number	31065-110
LESER order number	596.0074.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 10: Sliding vernier calliper

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4.11 Sealing pliers

Sealing pliers are required for sealing the bonnet and the body after setting the pressure of the safety valve.

Designated use

- sealing bonnets and bodies



Technical requirements

Requirements / Quality	Data
Length	150 mm
Seal Ø	9 mm
Colour	Blue
Vendor	Hahn & Kolb
External order number	53205-145
LESER order number	596.0053.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 11: Sealing pliers

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4.12 V-Block

When assembling the disc and spindle, there is a risk of damaging the spindle or disc by incorrect loading. To prevent this, the V-block is used as an underlay or to fix the round components in place.

Designated use

- assembly of discs and spindles
- offloading the spindle



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Technical requirements

Requirements / Quality	Data	Data
Name	Small V-block	Large V-block
Weight	0.93 kg	0.90 kg
Material	Steel	
Vendor	LESER	
LESER order number	445.0759.0000	445.0859.0000
Tool kit number	0161.0000	
Internet	www.sales@leser.com	

Technical illustration

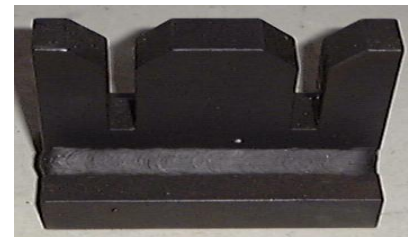


Illustration 19: V-block

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4.13 Ratchet box

Besides the “ratchet”, the ratchet box contains two different extenders and a number of different sized sockets.

Designated use

- assembly and disassembly work on safety valves
- various screwing work



Technical requirements

Requirements / Quality	Data
Sockets	Hexagonal 13 sockets, 4 drive handles
Widths across flats	10, 11, 12, 13, 14, 15, 17, 19, 22, 24, 27, 30, 32
T handle	1x
Universal joint	1x
Reversible ratchet	1x
Box outside dimensions	410 x 216 x 65 mm
Vendor	Hahn & Kolb
External order number	58584-025
LESER order number	596.0076.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 20: Ratchet box

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4.14 Torque wrench

A defined torque must be applied for screw connections on safety valves (for example for connecting the bonnet and the body). The torque wrench is required for this.

The torque wrench is required for this.

Due to the accessibility of the connection with open-end spanners, such an attachment is recommended.

Designated use

- screw connections of bonnets and bodies
- use with bolt size 9 / 12 mm or alternatively 14 / 18 mm



Technical requirements

Requirements / Quality	Data	Data
Measurement range	20 – 100 Nm	80 – 400 Nm
Scale division value	1 Nm	2 Nm
Ø of seat for heads	9 x 12 mm	14 x 18 mm
Jaw size(s)	19 / 24	19 / 24
Length	400 mm	607 mm
Margin of error	+/- 2 % of set value	+/- 3 % of set value
Torque application	left / right	
Vendor	Hahn & Kolb	
External order number	52264-010	52264-040
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 21: Torque wrench

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4.15 Jaw attachments

Jaw attachments for the torque wrench are required, for example, for connecting the bonnet to the body.

The jaw attachments are used together with the torque wrench (see 6.14).

Designated use

- screw connections of bonnets and bodies
- bolt size 19 / 24 mm



Technical requirements

Requirements / Quality	Data	Data
Spanner width	19 mm	24 mm
Width	41 mm	51 mm
Height	9 mm	11 mm
Plug-in shaft	14 x 18 mm	14 x 18 mm
Vendor	Hahn & Kolb	
External order number	52286-119	52286-124
External order LESER	596.0078.0000	596.0079.0000
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 22: Jaw attachment

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4.16 Plug-in reversible ratchet

Plug-in reversible ratchets are required, for example, for connecting the bonnet to the body. The plug-in reversible ratchets are used together with the torque wrench (see 6.14).

Designated use

- screw connections of bonnets and bodies
- to hold the socket (see 6.18)



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Technical requirements

Requirements / Quality	Data
Cross-section of the plug-in shaft	14x18 mm
Square drive	Square 12.5 = 1/2 Inch
Vendor	Hahn & Kolb
External order number	52286-655
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 23: Plug-in reversible ratchet

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4.17 Plug-in adapter

The plug-in adapter is required as a connecting piece for the torque wrench (see 6.14) and the plug-in reversible ratchet (see 6.16). It makes it possible to connect the two tools.

Designated use

- holder of the plug-in reversible ratchet (see 6.16) or the jaw attachments (see 6.14)
- screw connections of bonnets and bodies



Figure 4.1

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Technical requirements

Requirements / Quality	Data
Plug connection	9 x 12 mm
Drive	Square
Step-up	9 x 12 mm to 14x18
Vendor	Hahn & Kolb
External order number	52286-655
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 24: Plug-in adapter

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4.18 Socket

The socket is used together with the torque wrench (see 6.14) and the plug-in reversible ratchet (see 6.16). It is used, for example, for the screw connection of the bonnet to the body.

Designated use

- screw connections of bonnets and bodies



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Technical requirements

Requirements / Quality	Data
DIN	3120
Width across flats	36 mm
Size	Ø 60/49.5 mm
Material	31 Cr V 3
Vendor	Hahn & Kolb
External order number	58596-360
LESER order number	596.0082.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 25:Socket

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4.19 Wire brush

The wire brush made of stainless steel is used on grey cast iron and stainless steel safety valves. Any surface rust can be easily removed with the wire brush.

Designated use

- removal of surface rust
- removal of soiling



Technical requirements

Requirements / Quality	Data	Data
Wire material	Stainless steel	Steel
Total length	290 mm	290 mm
Width	35 mm	35 mm
Length of wire brushes	25 mm	25 mm
Wire Ø	0.3 mm	0.3 mm
Vendor	Hahn & Kolb	
External order number	56726-530	56725-530
LESER order number	596.0083.0000	
Tool kit number	0161.0000	
Internet	www.hahn-kolb.de	

Technical illustration



Illustration 26: Wire brush

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4.20 Safety glasses

The safety glasses are used to protect your eyes. They must be worn during grinding work on safety valves.

Designated use

- general safety of the eyes
- to be worn during grinding work on the safety valve



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Technical requirements

Requirements / Quality	Data
DIN EN	166 F
Manufacturer	ARTILUX
Design	with side guards
Vendor	Hahn & Kolb
External order number	55660-100
LESER order number	596.0085.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 27: Safety glasses

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4.21 Wire twisting pliers

The wire twisting pliers are required for sealing the bonnet and body. This secures the pressure setting of the safety valve. The sealing wire is twisted and tightened by the pliers.

Designated use

- twisting the sealing wire
- sealing bonnets and bodies



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Technical requirements

Requirements / Quality	Data
DIN	5256
Manufacturer	STAHLWILLE
Weight	0.330 kg
Length	230 mm
Vendor	Hahn & Kolb
External order number	53137-010
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 27: Wire twisting pliers

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4.22 Sealing blocks

The sealing blocks are used to seal the cap / lever and thus certify the set pressure that has been set.

Designated use

- sealing safety valves



Technical requirements

Requirements / Quality	Data
Size L x H x D	9 x 9 x 5 mm
Hole □	1.5 mm
Material	Plastic
Temp. application limit	+ 85° C
Vendor	Johan Pützfeld B.V.
LESER order number	525.0107.0000
Tool kit number	0161.0000
Internet	www.skiffy.com

Technical illustration



Illustration 29: Sealing blocks

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4.23 Sealing wire

After adjusting the set pressure on the safety valve, LESER must guarantee that the pressure cannot be changed without being noticed. For this measure, LESER seals the lever/cap to the bonnet. Sealing wire is used to connect these components.

Designated use

- sealing the bonnet and the lever/cap



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Technical requirements

Requirements / Quality	Data
Wire material	Galvanised iron wire
Delivered as	On a roll
Wire gauge	0.3 – 0.5 mm
Quantity	1 kg
For sealing	Lead 9, 12 mm
Vendor	Hahn & Kolb
External order number	53212-010
LESER order number	525.0208.0000
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration 30: Sealing wire

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4.24 Pipe for large spanner

The pipe for the large spanner is an extension of the spanner. It is used to extend the lever arm when assembling the lever and makes it possible to apply high torque in order to securely connect the bonnet to the lever.

Designated use

- lever and bonnet connections



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Technical requirements

Requirements / Quality	Data
Code	EG Class III
Diameter	50 mm
Length	1500 mm
Rod gauge	0.3 – 0.5 mm
Quantity	1 kg
For sealing	Lead 9, 12 mm
Vendor	LESER
LESER order number	596.0097.0000
Tool kit number	0161.0000
Internet	www.sales@leser.com

Technical illustration



Illustration 24: Pipe for large spanner

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4.25 Folding rule

A folding rule is required for any measuring work.

Designated use

- measuring the outside dimensions of packaging



Technical requirements

Requirements / Quality	Data
Length	2 m
Material	Wood
Width of sections	16 mm
EC class	III
Vendor	Hahn & Kolb
External order number	37332-005
LESER order number	TB D
Tool kit number	0161.0000
Internet	www.hahn-kolb.de

Technical illustration



Illustration. 32: Folding rule

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4.26 Glass plate

For the finishing of the seat and disc, LESER offers lapping stamps, glass plates and lapping material.

The seat and disc with the integrally attached lifting aid and with the same **do** are lapped with the lapping stamp or glass plate of the same size. Discs with a detachable lifting aid or generally without a lifting aid are **not** lapped with a lapping stamp, but are lapped on a glass plate after disassembling the lifting aid.

Designated use

- re-lapping discs



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Technical requirements

Requirements / Quality	Data
LWN	001.32
Ø	140 mm
Vendor	LESER
LESER order number	828.0000.0016
Tool kit number	0161.0000
Internet	www.sales@leser.com

Technical illustration



Illustration 17: Glass plate

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4.27 Lapping stamp

For the finishing of the seat and disc, LESER offers lapping stamps, glass plates and lapping material.

The seat and disc with the integrally attached lifting aid and with the same **do** are lapped with the lapping stamp of the same size.

Designated use

- relapping seats and nozzles

Technical illustration



protected

Technical requirements (1)

Requirements / Quality	Data	Data	Data
Number	3	4	5
do	18	23	29
Material	0.6025 / 1.4021	0.6025 / 1.4021	0.6025 / 1.4021
Manufacturer	LESER		
Length	205 mm	222 mm	250 mm
LESER order number	445.1359.0000	445.1459.0000	445.1559.0000
Tool kit number	0161.0000		
Internet	www.sales@leser.com		

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doc. type:	LGS	change rep. No.:	00882A	retention period:	10y.		



Technical requirements (2)

Requirements / Quality	Data	Data	Data	Data
Number	6	7	8	9
do	37	46	60	74
Material	0.6025 / 1.4021	0.6025 / 1.4021	0.6025 / 1.4021	0.6025 / 1.4021
Manufacturer	LESER			
Length	172 mm	205 mm	222 mm	250 mm
LESER order number	445.1659.0000	445.1759.0000	445.1859.0000	445.1959.0000
Tool kit number	0161.0000			
Internet	www.sales@leser.com			

Requirements / Quality	Data	Data	Data	Data
Number	10	12	13	14
do	92	125	165	200
Material	0.6025 / 1.4021	0.6025 / 1.4021	0.6025 / 1.4021	0.6025 / 1.4021
Manufacturer	LESER			
Length	172 mm	205 mm	222 mm	250 mm
LESER order number	445.2059.0000	445.2259.0000	445.2359.0000	445.2459.0000
Tool kit number	0161.0000			
Internet	www.sales@leser.com			

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Global Standard	LESER Global Standard Standardisation of Worldwide Warehouses Standard: Tool-Kit Specifications	LGS 4456
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4.28 Lapping pastes

As a lapping paste, LESER uses ready-to-use, water-soluble lapping pastes with different grit size depending on the damage to the sealing surface.

Designated use

- lapping discs



Technical requirements

Requirements / Quality	Data	Data	Data	Data
LWN	001.32	001.32	001.32	001.32
Name	TETRABOR			
Identifier	F 320	F 600	F 800	F 1200
Grit size in μ	49 – 17	19 – 3	14 – 2	7 – 1
Packaging	Tube			
Contents	75 ml			
Vendor	Artur Glöckler GmbH			
LESER order number	599.0301.0000	599.0401.0000	599.0101.0000	599.0201.0000
Tool kit number	0161.0000			
Internet	http://www.gloeckler.com			

Technical illustration



Illustration 15: Lapping paste

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4.29 Monocrystalline diamond powder

Monocrystalline diamond powder is mixed with an oil solution to the desired consistency and then applied selectively.

The workpiece is re-lapped through uniform movements on the nozzle or on a glass plate.

Designated use

- re-lapping seats and discs



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Technical requirements

Requirements / Quality	Data
DIN	001.32
Grit size	1.5 – 3 μ
Package size	50 g
Vendor	Peter Wolters
LESER order number	599.0102.0000
Tool kit number	0161.0000
Internet	www.peter-wolters.com

Technical illustration



Illustration 16:
 Monocrystalline diamond powder

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4.30 Assembly grease for threads

The assembly grease is used for greasing the adjusting screw. It makes it possible to easily screw the adjusting screw into the bonnet.

Designated use

- greasing the adjusting screw
- greasing components for improved ease of access
- protection against fretting and corrosion



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Technical requirements

Requirements / Quality	Data
Name	Molikote
Qualities	- non-combustible - non-corrosive
Packaging	Can
Weight	1 Kg
Internet	www.molykote.com

Technical illustration



Illustration 12: Molikote

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4.31 Leak detection spray

The required body seal tightness is checked by means of a leak detection spray. The leak is located based on bubble formation after applying the leak detection spray to the valve contour. In addition, it can also be used to visualise leaks in the manometer screw connections.

Designated use

- external leak testing of the safety valve
- functional leak testing
- testing the seal tightness of manometer screw connections



Technical requirements

Requirements / Quality	Data
Name	Güpoiflex
Application	Gas and compressed air
Qualities	- non-combustible - non-corrosive - toxicologically safe
Package size	500 ml spray can
Packaging unit	10 cans
Vendor	GÜPO
LESER order number	596.0094.0000
Tool kit number	0161.0000

Technical illustration



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doc. type:	LGS	change rep. No.:	00882A	retention period:	10y.		

Illustration 13: Leak detection

Internet

www.guepo.de

4.32 LESER paint, blue

Damaged or scratched valve contours must be repaired by LESER blue paint.

Designated use

- repair of damaged valve contours
- repair of scratched valve contours

protected

Technical requirements

Requirements / Quality	Data
Name	LESER paint, blue
Colour	RAL 5005
Application	Valve body
Package size	500 ml can
Packaging unit	1 can
Vendor	LESER
LESER order number	596.0096.0000
Tool kit number	0161.0000
Internet	www.bfl.dk

Technical illustration



Illustration 14: LESER blue paint

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