

# LÜBBERING

19 | 06 | 2022

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# AGENDA



- Lübbering
- L.SP3 system
  - L.SP3 access
  - L.SP3 access inline
  - L.SP3 access straight
  - L.SP3 touch
  - L.SP3 connect
  - L.SP3 x-connect
  - L.SP3 angle
  - L.SP3 angle HD
  - L.SP3 angle touch
  - All advantages at a glance
- Additional Information | Accessories
- L.SMR

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LÜBBERING  
COMPANY HISTORY



Elektro Strotkamp,  
Herzebrock

Lübbering Abrollsysteme  
Herzebrock, Germany

Johannes Lübbering GmbH  
Herzebrock, Germany

Market entry  
North America

Luebbering (UK) Ltd.  
United Kingdom

Market entry  
China

Luebbering Corp., USA  
Luebbering Tools Trading  
(Shanghai) Co. Ltd., China

1934

1978

1984

1994

1999

2008

2013

2018

Fastening Technology

Drilling Technology



- ⊕ Production and assembly only located in Germany/Herzebrock
  
- ⊕ Global market
  - >3500 customers worldwide
  - Endcustomers in automotive and aerospace industry
  - Cooperation with all main industrial tool suppliers
  - Strong connection to many machine builders
  - 12 strategic partners
  
- ⊕ In-house-production rate > 95%
  - Fast and flexible
  
- ⊕ Certificate ISO 9001
- ⊕ Certificate ISO 14001



# LSP3



# LSMR



# Roll..Profi



# LADU electronic 260



DESIGNED TO PERFORM

# C-TIX



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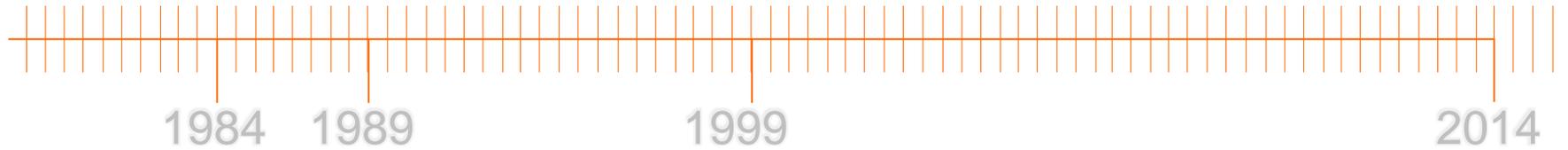
# PURSUING DEVELOPMENTS, DEVELOPING SUCCESSES.

The **first LÜBBERING geared offset head**

LÜBBERING standard programme **Generation 1**

LÜBBERING standard programme **Generation 2**

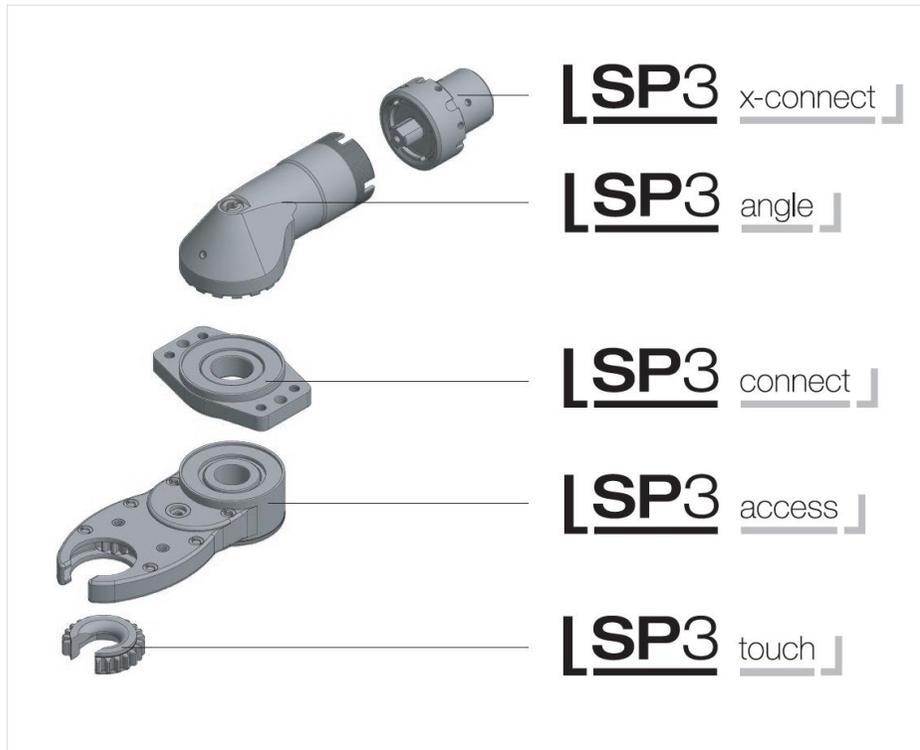
LÜBBERING standard programme **Generation 3**



## LÜBBERING standard programme – Generation 3

- |                  |   |
|------------------|---|
| <b>ACCURATE</b>  | Process reliability through higher levels of accuracy |
| <b>COMPACT</b>   | Improved ergonomics through compact design            |
| <b>MODULAR</b>   | Higher flexibility through modular construction       |
| <b>EFFICIENT</b> | Cost savings from easy maintenance                    |

## STRUCTURE AND COMPONENTS OF THE NEW FASTENING SYSTEM

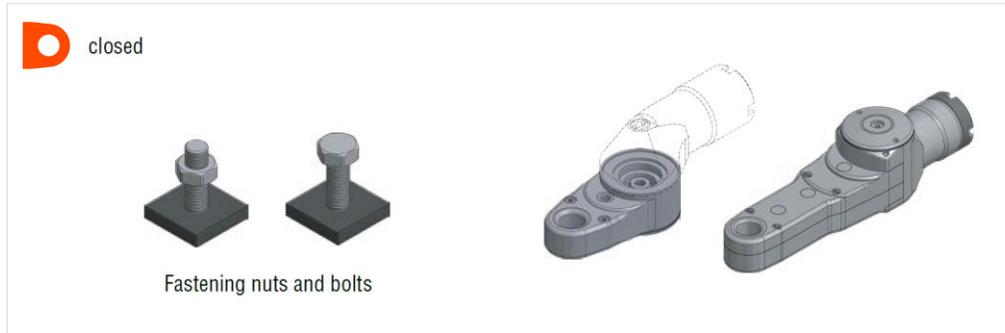


- ▶ Individually combinable
- ▶ Configured for every application
- ▶ Optional additional components
- ▶ Wide range of variations possible thanks to modular system
- ▶ High availability

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# STANDARD GEARED OFFSET HEAD | CLOSED DESIGN



Module	12	22	35	55	85	140	190	250
Maximum input torque [Nm]	12	22	35	55	85	140	190	250
Maximum output torque [Nm]								
2-stage	10	18	29	46	71	116	158	207
3-stage	9	17	27	43	66	109	148	195
4-stage	9	16	26	40	62	102	139	182
6-stage	8	15	24	37	-	-	-	-

## STANDARD GEARED OFFSET HEAD | CLOSED DESIGN

▶ **Modular system**

- 8 different modules
- Each module has 2, 3 or 4 stage geared offset heads

▶ **Highest accuracy of  $\pm 6\%$ \***

▶ Even **the smallest designs** transmit **high torques**

▶ Uniform housing for **all types of interfaces**

▶ Compact design: **optimized ergonomics**

▶ Highly modular

▶ Uniform housing for the **upward and downward** installation direction for output socket gears with holder

\*Screwdriver independent absolute accuracy

# STANDARD GEARED OFFSET HEAD | OPEN DESIGN



Module	12	22	35	55	85	140	190	250
Maximum input torque [Nm]	-	22	35	55	85	140	190	-
Maximum output torque [Nm]								
2-stage	-	17	27	43	66	109	148	-
3-stage	-	16	26	40	62	102	139	-
4-stage	-	15	24	37	58	95	129	-

## STANDARD GEARED OFFSET HEAD | OPEN DESIGN

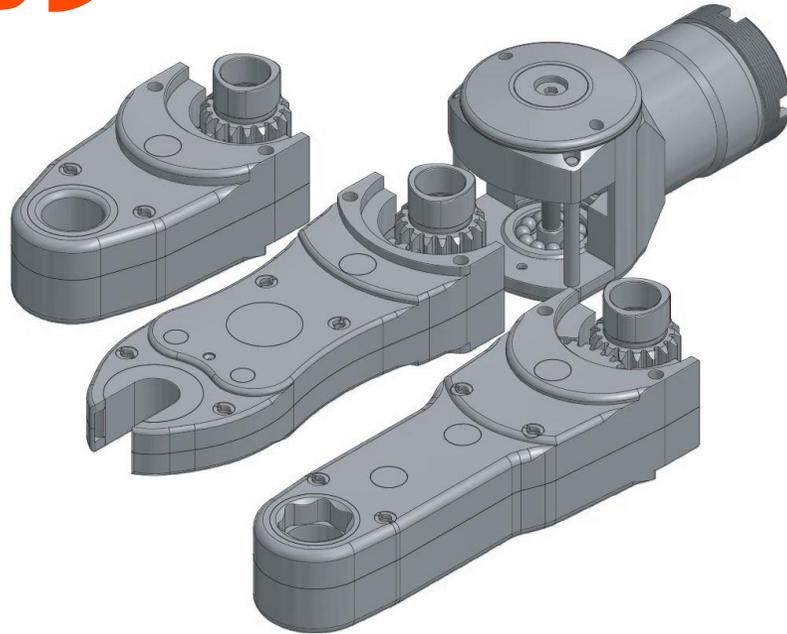
- ▶ **Modular system**
  - 6 different modules
  - Each module has 2, 3 or 4 stage geared offset heads
  
- ▶ **Highest accuracy of  $\pm 15\%$ \***
  
- ▶ Even **the smallest designs** transmit **high torques**
  
- ▶ Uniform housing for **all types of interfaces**
  
- ▶ Compact design: **optimized ergonomics**
  
- ▶ Highly modular
  
- ▶ Uniform housing for direction of rotation **left and right**

\*Screwdriver independent absolute accuracy

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## INLINE GEARED OFFSET HEAD | CLOSED + OPEN DESIGN



- ▶ Separable housing
- ▶ Open design of the geared offset head:
  - Uniform housing for rotation direction **left/right**
- ▶ Closed design of the geared offset head:
  - Uniform housing for the **upward/downward** installation direction for offset heads with counter units

**i** The key feature of **L.SP3 access inline** is that **the drive modules are interchangeable.**

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## FOR COMFORTABLE, PERFECT ACCESS



- ▶ Primary application in the aerospace industry
- ▶ Connected to pistol grip machine or screw driver via axial adapter **L.SP3 x-connect**
- ▶ Output in threaded axle
- ▶ Highest accuracy of  $\pm 5\%$
- ▶ Sockets interchangeable with holder

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# OUTPUT SOCKET GEARS | STANDARD PROFILES



**HEX**  
Hexagon profile



**SFD**  
Surface Drive



**SD**  
Square drive



**AVZ**  
Triple square  
profile, male



**DH**  
Double hex



**DSD**  
Diagonal S drive



**Torx E**



**2flach**  
Two-flat



**AF**  
Width across flats



**PF**  
Pathfinder



**Torx TX**



**Oktagon**  
Octagon



**BH**  
Bit-holder



**NH**  
Nut holder



**IVZ**  
Triple square profile,  
female



**DIN 5480**  
DIN 5480  
Plug-in gearing

**i** We offer you a wide range of output socket gear profiles for various fastening applications.

# FLEXIBLE DIRECTION OF ROTATION & DIRECTION OF INSTALLATION



**i** The rotation direction to be blocked must be set according to the desired **output direction of rotation (right/ left rotating)** and the **direction of installation (upward or downward offset)** of the out-put socket gear.



- ▶ In principle, all output socket gears can be operated in both directions of rotation
- ▶ Uniform housing
- ▶ Installation direction (upward/downward) regardless of design

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## ADAPTER FOR DRIVE UNIT WITH ANGLE HEAD

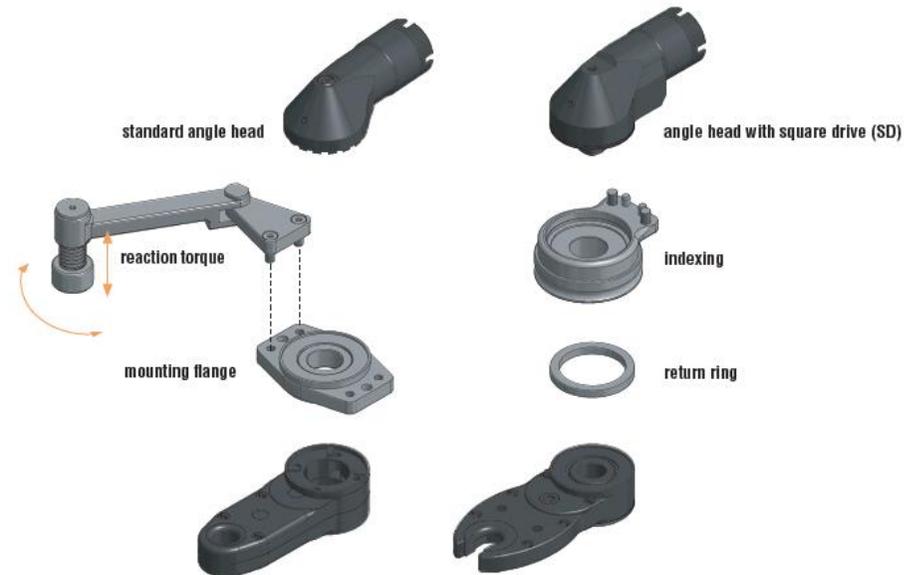


- ▶ Standardised adapter interfaces
- ▶ Screw or clamp adapters can be used depending on angle head design

**i** Take advantage of the benefits of **L.SP3 connect** and maximize your tools' overall performance.

## COMBINATION OF 3 DIFFERENT ADDITIONAL COMPONENTS

- ▶ **Mounting flange** enables additional accessories to be attached (such as a reaction torque) in conjunction with a standard angle head
- ▶ **Reaction bar** offers additional equilibrium of forces as of 60 Nm
- ▶ **Indexing** allows you to adjust the angle of a geared offset head / angle head; 360° swivel range; in conjunction with a stand-alone angle head



**i** If the optional components like flange or return ring are not desired, the standard angle head can be assembled directly onto the geared offset head.

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## AXIAL-ADAPTER FOR CONNECTION TO A DRIVE UNIT



- ▶ Connection of a wide range of drive units
- ▶ Compact design guarantees low weight
- ▶ Fast and simple tool changing

**i** Optionally available: **L.SP3 x-connect with integrated planetary gearbox** transfers the desired torque with a transmission ratio  $> 1$ .

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## MORE COMPACT ANGLE HEADS IN 90° AND 110°

- ▶ Optimised ergonomics due to compact design
- ▶ Reduced installation size thanks to low installation height in conjunction with **L.SP3 angle**
- ▶ Reduced weight thanks to the omission of an adapter
- ▶ Two versions in 90° and 110°
- ▶ Easy maintenance
- ▶ Two transmission ratios as standard available  $i = 1.45$  |  $i = 2.0$





90° design



110° design

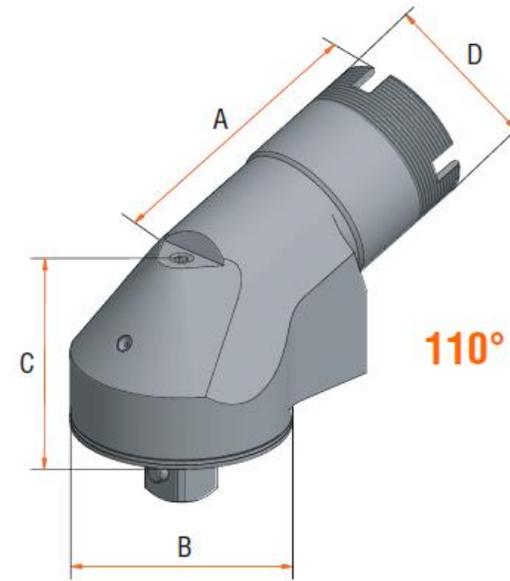
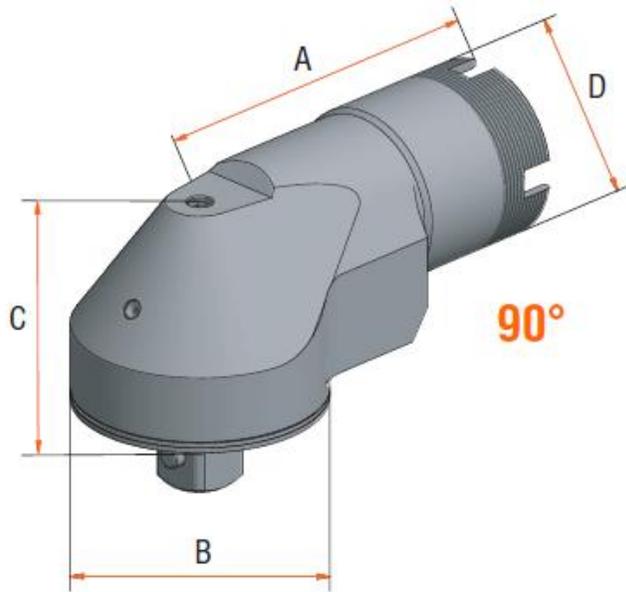
## SELF-CONTAINED, PRECISE AND READY-TO-USE.



- ▶ Compact design
- ▶ Torque transmission with highest accuracy of  $\pm 4\%$
- ▶ Highly efficient
- ▶ Two versions in  $90^\circ$  and  $110^\circ$
- ▶ Two transmission ratios as standard available  $i = 1.45$  |  $i = 2.0$

**i** **L.SP3 angle** as a stand-alone tool has the same function as angle heads do as components, except that there is no geared offset head. All that has to be done is to attach conventional sockets.

SELF-CONTAINED, PRECISE AND READY-TO-USE.



Module	i	12	22	35	55	85	140	190	250
Maximum input torque [Nm]	1,45	9	16	26	41	64	105	143	188
Maximum input torque [Nm]	2,0	6	12	18	29	45	74	100	132
Maximum output torque [Nm]		12	22	35	55	85	140	190	250

i = transmission ratio

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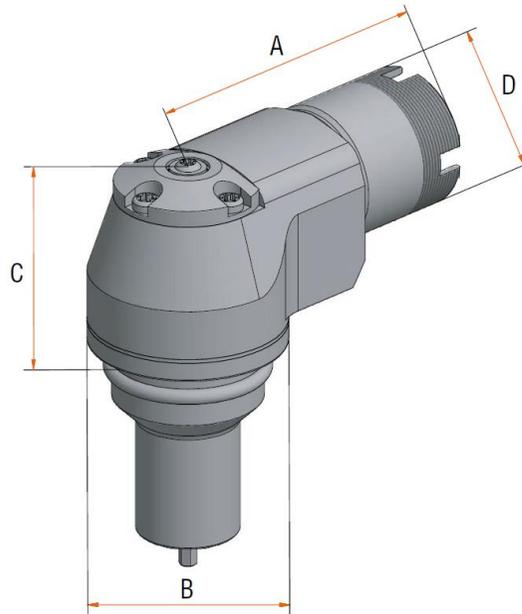
## ANGLE HEAD WITH A HOLD AND DRIVE FUNCTION



- ▶ Compact design
- ▶ Installing various holders and sockets
- ▶ Torque transmission with highest accuracy level of  $\pm 4\%$
- ▶ Transmission ratio  $i = 2.0$

**L.SP3 angle HD** is an angle head with a hollow polygon shaft that accommodates various holder systems. This angle head comes with an outer hexagon that can take different nuts.

SELF-CONTAINED, PRECISE AND READY-TO-USE.



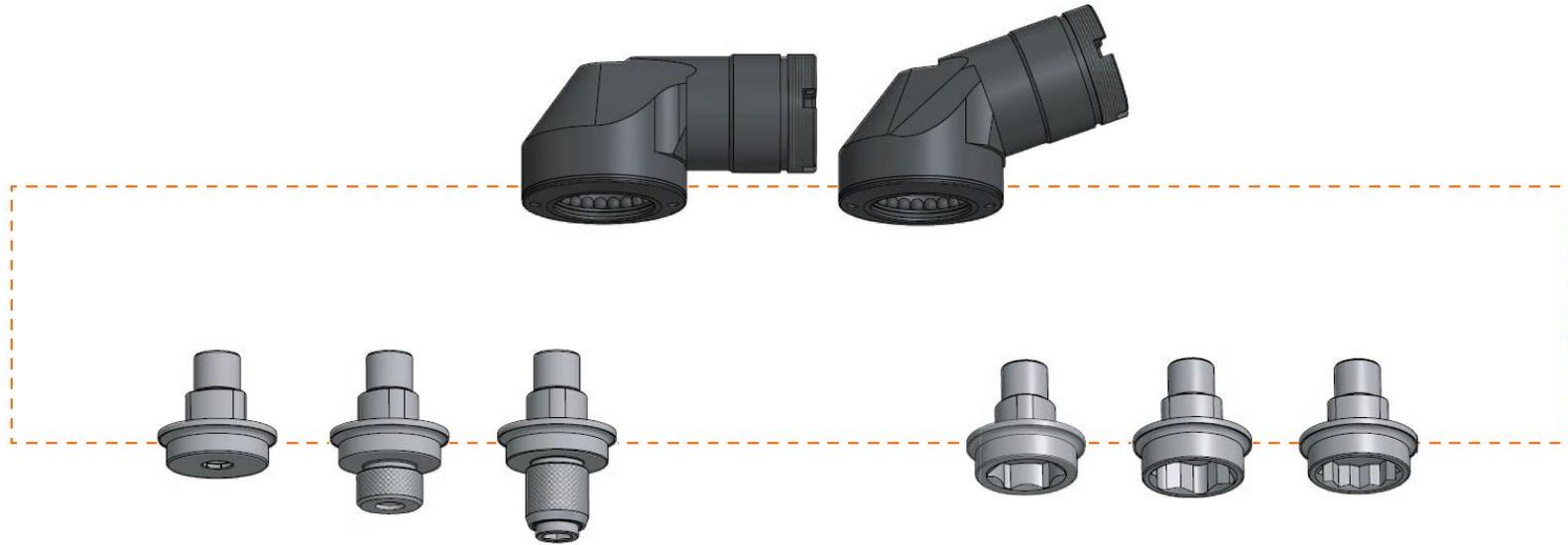
Module	i	12	22	35	55	85	140	190	250
Maximum input torque [Nm]	2,0	-	12	18	29	45	74	100	132
Maximum output torque [Nm]		-	22	35	55	85	140	190	250

i = transmission ratio

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## SPECIAL FEATURES



### bit holder profiles

locking ring, cap nut or quick-change

### flush sockets

sockets with flush or protruding end,  
available with various output profiles and profile depths

**L.SP3 angle touch** is a bit holding system you can master every eventuality with: It's perfectly combinable and interchangeable.

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THE NEW GENERATION OF OFFSET HEADS  
ALL ADVANTAGES AT A GLANCE



- ▶ Process reliability through **higher levels of accuracy**
- ▶ **Large standard programme** up to 250 Nm
- ▶ Small and **compact** design
- ▶ **Optimised ergonomics**
- ▶ Flexibility through **wide range of variations**
- ▶ **Long product life cycle**
- ▶ **High availability**

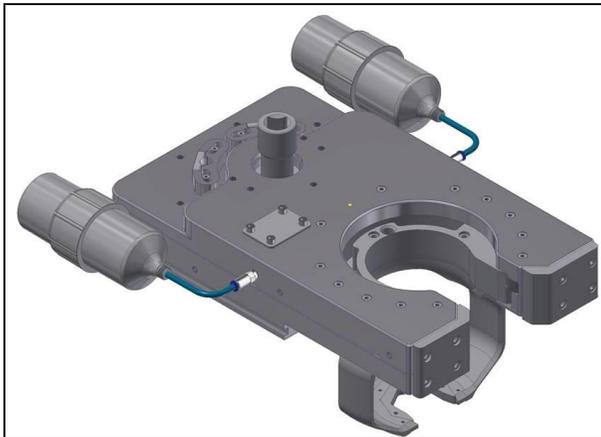


reddot award 2015  
honourable mention

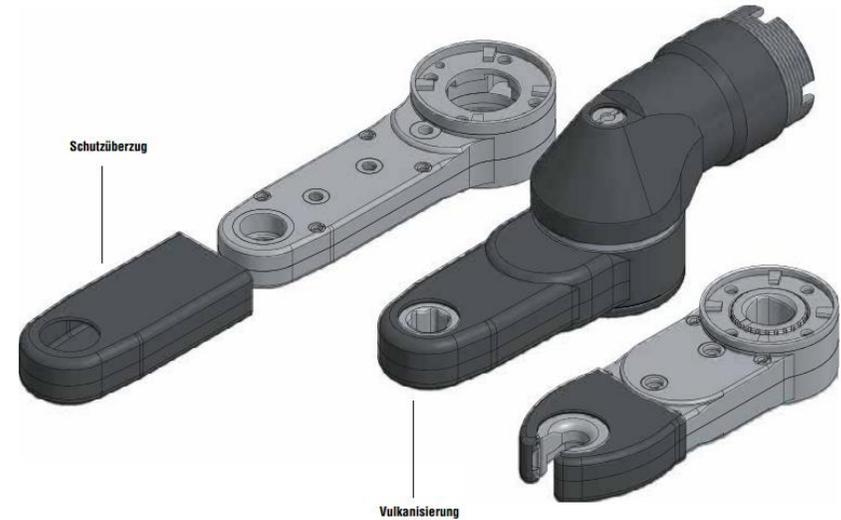
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ADDITIONAL INFORMATION | ACCESSORIES  
PERMA-GREASING



- ▶ Vulcanisation
- ▶ Rubber Protection
- ▶ 3D-printed protection



VARI  
GRIP



- + Variable positions enable several tools to be held in a userfriendly way
- + Your tool is always next to you
- + Easily adjustable for all common fasteners
- + Scratching protection through vulcanized surface
- + Secure hold



**L.VARIGRIP** – have your fastening tool always handy with the flexible tool holder of LÜBBERING.

## L.SP3 Projecting Set

- ▶ Simple and fast feasibility study
- ▶ Configuration and assembly of many different fastening systems - thanks to the modular design of the **L.SP3** product series
- ▶ Realistic demonstration of the product portfolio
- ▶ Five different sets for diverse torque areas
- ▶ Maximum confidence in choosing the right product
- ▶ Delivered in a high-quality suitcase



# AGENDA

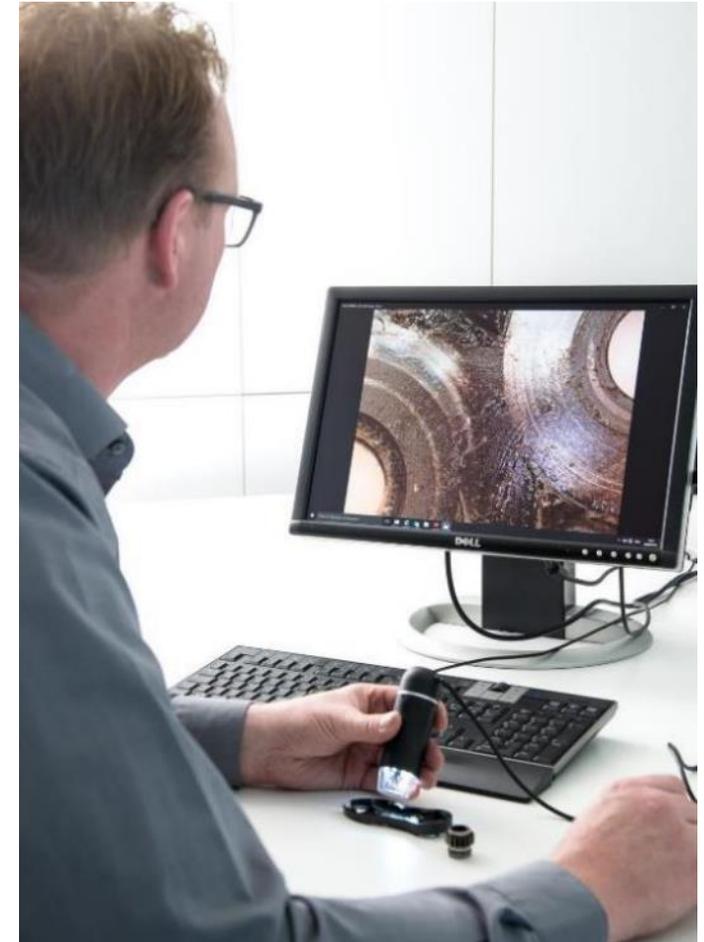
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**LSMR**

OUR SERVICE: RELIABILITY FOR YOUR PROCESS

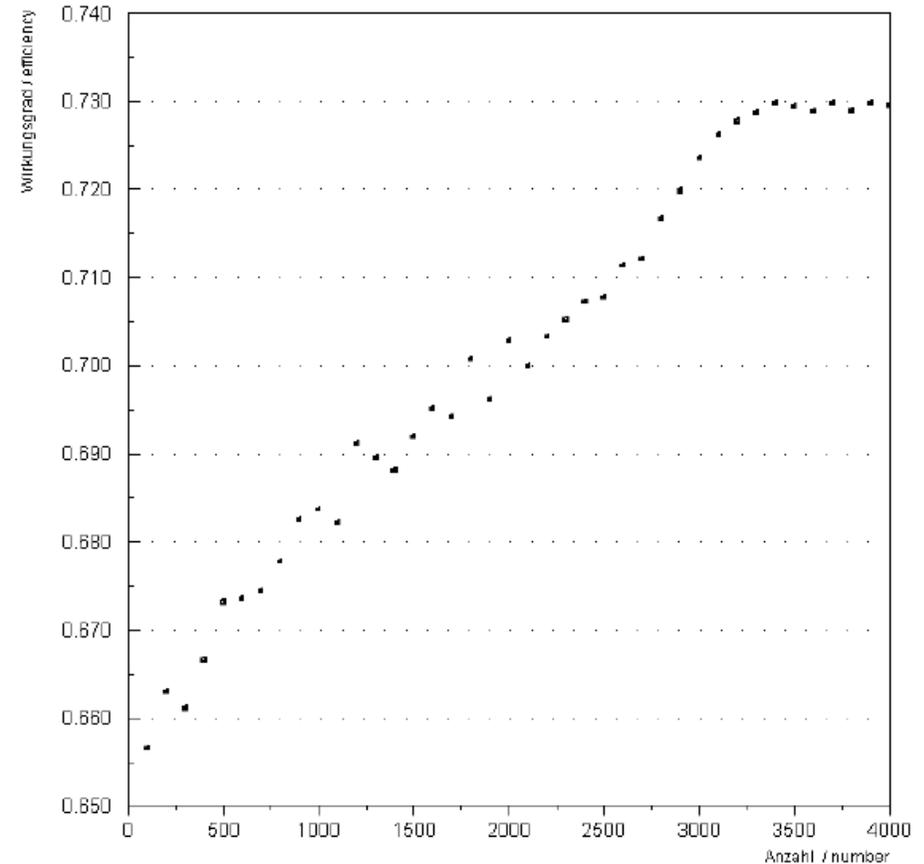
## Life Cycle Simulation

- ▶ Individual service life analyses of our geared offset heads according to the customer's request
- ▶ Torque and efficiency are documented and evaluated cyclically
- ▶ Inspection of the components
- ▶ Detailed description and evaluation
- ▶ Your advantages:
  - Reduced risk of unforeseen failure
  - Optimising the fastening process
  - Creation of new areas of application



## Running-in

- ▶ The running-in of geared offset heads on our specifically designed test rig, meets precisely these requirements:
  - Repeatable quality
  - Consistent performance
  - Consistent precision
  
- ▶ The geared offset head is subject to 3,000 fastening cycles at the maximum permissible torque.
  
- ▶ The running-in certificate issued at the end of this test documents efficiency and precision and serves, as the basis for calibrating the entire tool.



Accuracy geared offset heads

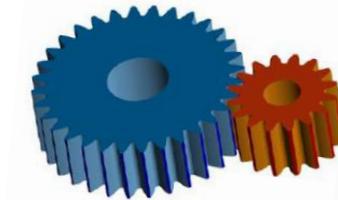
<u>Series</u>	<u>Type</u>	<u>Accuracy</u>
L.SP3	Closed	< $\pm 6\%$
L.SP3	Open	< $\pm 15\%$
L.SP3	Angle head	< $\pm 4\%$
High-Line	Closed	< $\pm 3\%$
Series 2	Closed	< $\pm 10\%$
Series 2	Open	< $\pm 15\%$

- + rolling contact bearing (axial and radial)
- + helical gearing in all gear stages

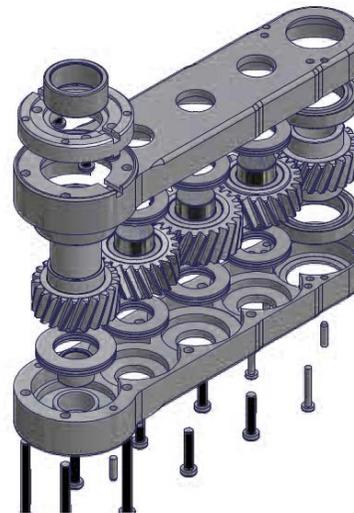
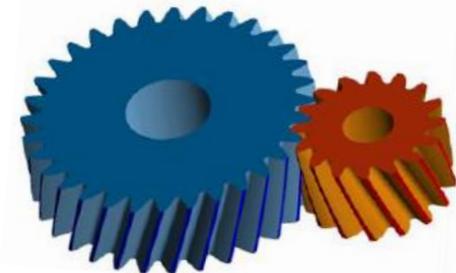
- + Advantages

- High accuracy ( $< \pm 3\%$ )
- Longer maintenance cycles
- Primary used in stationary systems

Standard (Series 2 and L.SP3)

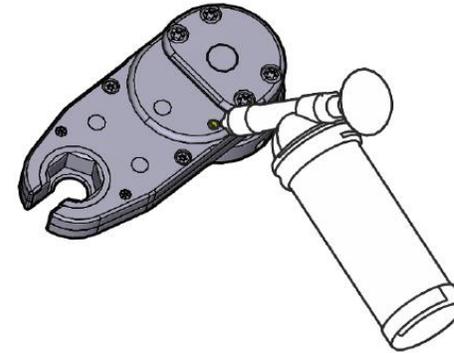


High-Line



Greasing

Version	Interval
Geared offset head (closed)	<p>Start/end of work, at the latest after 6,000 screwing cycles</p> <ul style="list-style-type: none"> <li>In the case of geared offset heads with an output torque &gt; 300 Nm                             <ul style="list-style-type: none"> <li>after 3,000 screwing cycles</li> </ul> </li> <li>In the case of geared offset heads with an output torque &gt; 1,000 Nm                             <ul style="list-style-type: none"> <li>after 1,000 screwing cycles</li> </ul> </li> </ul>
Geared offset head (closed) Design of roller bearing	Start/end of work, at the latest after 20,000 screwing cycles
Geared offset head (open)	Start/end of work, at the latest after 4,000 screwing cycles



Angled head



Version	Interval
Versions without lifetime lubrication	Start/end of work, at the latest after 20,000 screwing cycles

Preventative Maintenance Cycle

Version	Interval	Maintenance task
Geared offset head (open)	Every 100,000 cycles, at the latest after 1 year	Open the fastening system, clean it and fill it with new grease.
Geared offset head (closed)	Every 200,000 cycles, at the latest after 2 years	Open the fastening system, clean it and fill it with new grease.

Angled head

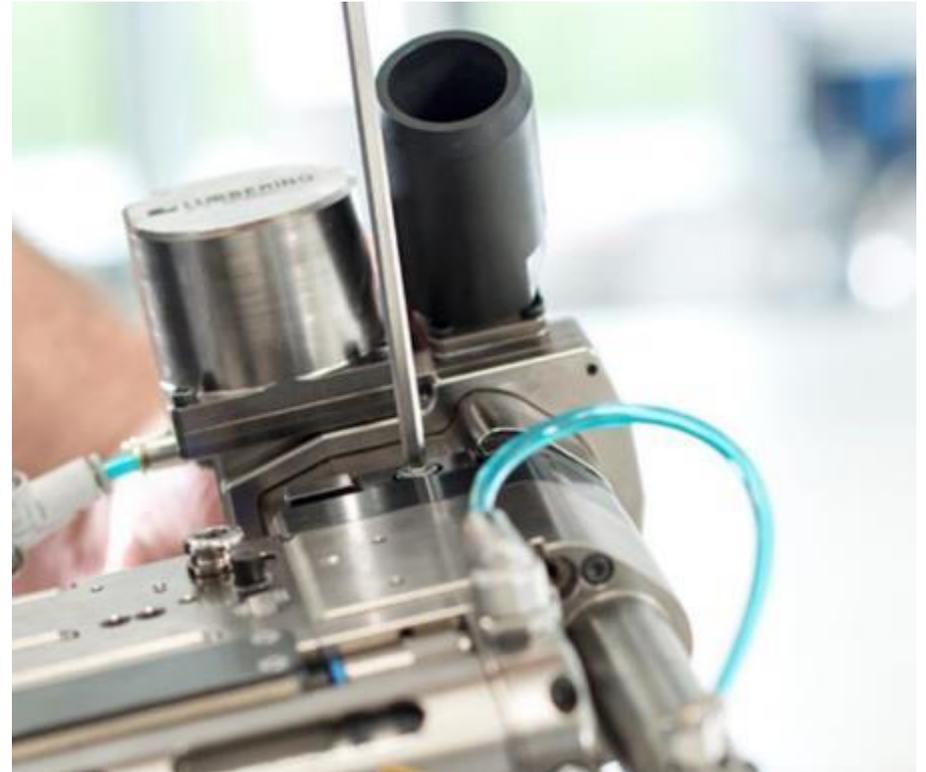


Versions without lifetime lubrication	Every 300,000 cycles, at the latest after 2 years	Open the fastening system, clean it and fill it with new grease.
---------------------------------------	---	--



## Maintenance agreement

- ▶ Quick supply and installation of wear parts
- ▶ Quality test for your LÜBBERING fastening system
- ▶ Replacement of defective parts with subsequent function test
- ▶ Extend of product life
- ▶ Increase in process reliability



A long expression but a short process and excellent reliability.

## Maintenance agreement

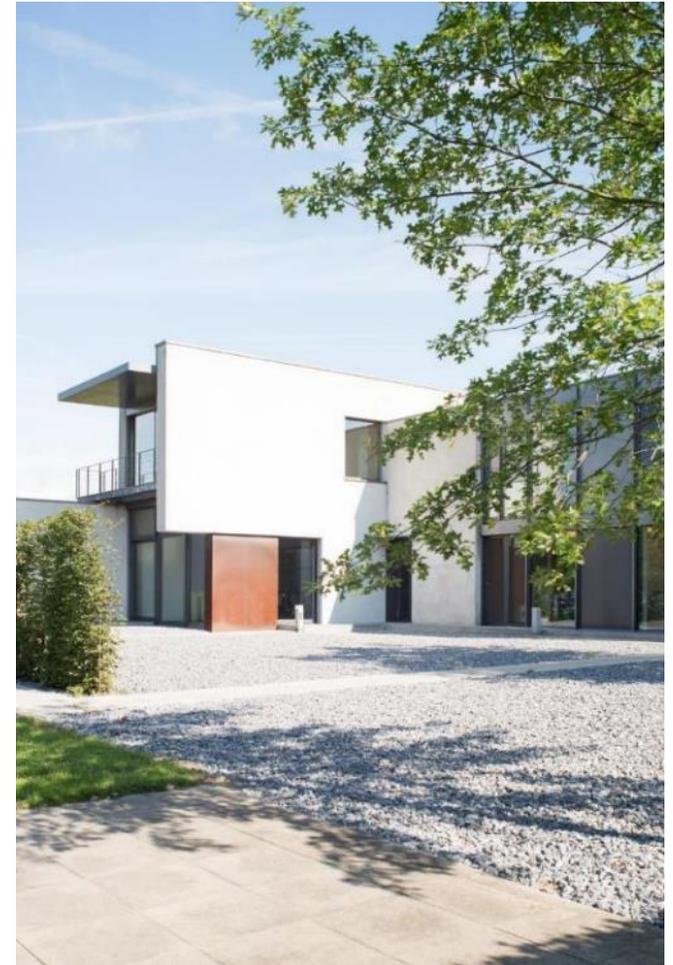
- ▶ Minimising the risk of breakdown
- ▶ Fully benefit from the service life of LÜBBERING products
- ▶ Your advantages:
  - Guaranteed availability of wear parts
  - Calculable downtimes
  - Process reliability
  - Consistent quality
  - Long product life



More planning confidence. More durability. More satisfaction.

## LÜBBERING ACADEMY

- ▶ At our LÜBBERING Service Centre, you will learn all about the different variations and capabilities, the individual operation and maintenance of LÜBBERING products.
- ▶ Our workshops will train you in how to extend the service life of your LÜBBERING products through regular maintenance and proper operation and repair.
- ▶ With specialist knowledge tailored precisely to your needs – straight from the manufacturer – you will become an expert in drilling and fastening technology.



Training

Maintenance on side

Express repair



Johannes Lübbering GmbH  
Industriestraße 4  
33442 Herzebrock-Clarholz | Germany

Fon: +49 (52 45) 83 09 – 0  
Fax: +49 (52 45) 83 09 – 250

[info@luebbering.de](mailto:info@luebbering.de) | [www.luebbering.de](http://www.luebbering.de)