

GEDORE TORQUE SOLUTIONS



„WE CANNOT CHANGE THE WIND
BUT WE CAN ADJUST OUR SAILS.“

Aristoteles (384 - 322 B.C.), Greek philosopher



Dear customers, business partners, dear tool users,

with a new logo and fresh impetus, the LÖSOMATS from GEDORE remain the proven product of your choice for 2016. Made in Germany in proven quality and with top service for you.

Nothing changes for you - as usual we offer you active and competent support with our equipment and solutions. Also your usual sales channels and contacts will remain unchanged just as the high-quality fast service we offer.










Our products remain innovative, demanding and benefit from 40 years of concentrated expertise in toolmaking and high level torque bolting technology.

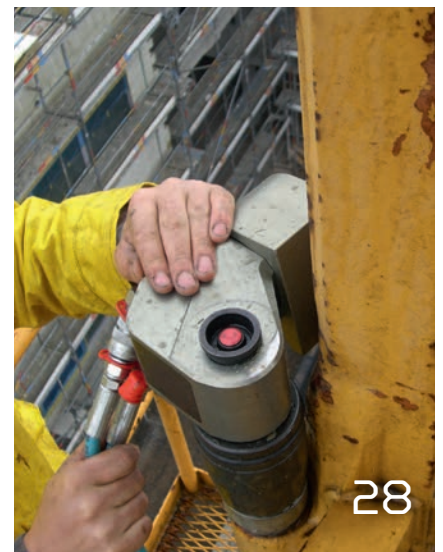
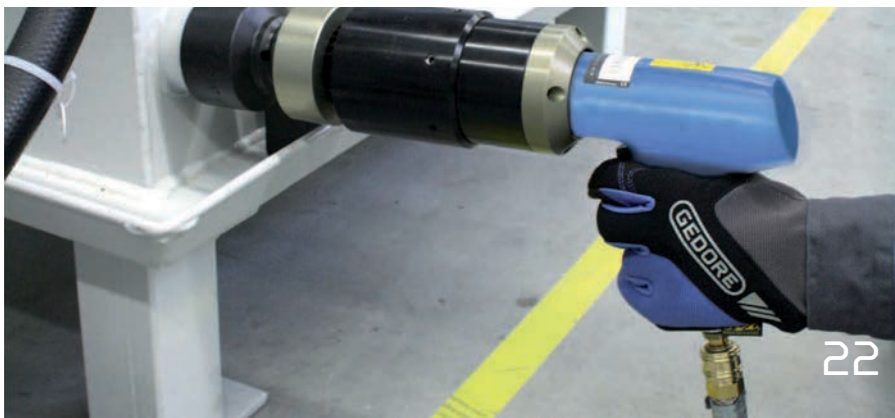
We have succeeded in turning an eagerly awaited customer wish into reality: With the launch of the new hybrid drive for our cordless wrenches, customers can now operate the wrench in battery mode or connected to the mains. As a further highlight, we present the world's most powerful Cordless Torque Wrench with a massive 6.000 Nm torque, brand new with our more powerful high-power battery (140 Wh / 5 Ah / 28 V) - a strong team! Our cordless Railway Torque Wrench LDB-10 is another new development, awarded with the Competence Prize for Innovation and Quality Baden-Württemberg 2015. The LDB-10 is a battery-driven lightweight (only 17.2 kg) suitable for one-man operation, also replacing the classic bolting machine, impact wrench and sleeper drill. The latest generation of high-speed bolting also comes from GEDORE Torque Solutions GmbH. Our LHD-80 combines power and speed: for a faster insertion bolt by bolt. With a powerful 8,000 Nm it defies wind and weather.

You can find out more about these innovations on the following pages.

We hope you enjoy browsing through the new 2016/17 catalogue.

YOUR GEDORE TORQUE SOLUTIONS GMBH TEAM OF EXPERTS

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INNOVATIONS



Our most powerful cordless wrench - 6.000 Nm with a new power-battery

As the market leader for high-torque cordless wrenches, GEDORE has now paved the way for wrenches in the 6,000 Nm category. In contrast to the commonly used 18V technology, all our cordless wrenches work with 28V which delivers significantly faster and more efficient bolting and wrenching. Our team of engineers was inspired by the idea to bolt connections faster and more conveniently. Together with our new, more powerful high-power battery (140 Wh / 5 Ah / 28 V) a strong team!

In a nutshell:

- › The intelligent electronics of the Cordless Torque Wrench recognise when the required torque has been reached. The device is switched off and the reaction arm relaxes automatically so that it can be easily taken from the bolt
- › A temperature sensor protects from overheating and switches the device off in time
- › The drive unit is braked and can be rotated through 360°. The pistol grip sits securely in the hand
- › A high-torque Cordless Torque Wrench to 500 Nm weighs, without reaction arm, 4.2 kg. The heavy-duty aluminium gearing facilitates lifting and working and greatly enhances work safety
- › High work performance thanks to the lithium-ion batteries and microprocessor electronics. The powerful lithium-ion battery (24 V/5 Ah/140 Wh) works with consistent top performance until it is fully discharged
- › The torque precision of our high-torque wrench fluctuates within a tolerance significantly under 3% for identical bolting operations. Every device is measured individually



We are driven by your needs - our hybrid technology

- › All of our cordless wrenches are now available with the new hybrid battery technology
- › Simply slide on the hybrid battery, plug in the power supply unit and get working
- › 230 V standard version, all frequencies. 110 V available on request



Reliable documentation of results now available for the electric high-torque wrench - LDE Track

- › Our classical electric high-torque wrench is now also available with the LE.Track documentation function
- › data transmission system is used for the wireless transfer of your data to the laptop/PC where you can then conveniently edit it further



The latest generation of highspeed-bolting

The new torque wrench, combining power and speed: more than twice as fast as other suppliers - for a faster insertion bolt by bolt. Brushless Technology for a longer tool life of the torque wrench thanks to the brushless, low-wear DC drive. Due to strong voltage fluctuations it is often impossible in the wind power sector to use electrically driven bolting equipment with the required accuracy. This is avoided with the LHD-80 bolting device by a voltage conversion using our Powerbox - this way the bolting device is always provided with the necessary voltage for proper function.

In a nutshell:

- › Reliable operation regardless of the wind or weather conditions
- › Documentation of over 10.000 bolted connections (modul TRACK) - optional
- › Evaluation as well as sowie reprogramming of bolting applications comfortable on the PC with a plausibly structured software: storable bolting operation assignment (module LOCK, module QS) - optional
- › Inductive interface for data transmission
- › Torque adjustment in 10 Nm steps
- › Clear and intuitive handling directly on the machine with the help of a LCD-display and only three operating elements
- › Optical and acoustical zero defect strategy
- › Repeatability +/-2 %

Further informations on the pages 74-75.

Convince yourself at an individual demonstration of our Heavy Duty Torque Wrench LHD-80.

One solution for all challenges: The universal LDB-10 railway torque wrench

On behalf of and in close cooperation with DB Bahnbaugruppe, we have developed a compact and powerful answer to this challenge. The LDB-10 is a battery-operated railway torque wrench weighing less than 20 kg.

In a nutshell:

- › Lightweight & compact for 1-man operation at just 17.2 kg
- › No exhaust and emission with 0.0g-CO₂-footprint
- › For all types of rail track systems
- › High power for maximum flexibility with 16 kW (22 HP)
- › High bolting precision
- › Reliably prevents concrete sleepers from being damaged
- › Logs all bolt connections (optional)
- › Powerful enough to tighten up to 1,400 rail track bolts

Further informations on the pages 72-73.

We gladly introduce our railway torque wrench in detail at an individual presentation to you.



Watch our LDB-video -
see for yourself!





GEDORE

Li-Ion
20V-5 Ah

140

Watt Stunden
Watt Hours

LDA, LAW

CORDLESS TORQUE WRENCH



LDA

- › MACHINE
- › REACTION ARM CRANKED
- › 2 BATTERIES
- › BATTERY CHARGER
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE

LAW

- › MACHINE
- › REACTION ARM CRANKED
- › 2 BATTERIES
- › BATTERY CHARGER
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE

THE CORDLESS TORQUE WRENCH

LDA/LAW SERIES, 90 - 6.000 Nm

LDA series

Patented microprocessor-controlled switch-off electronics detect hard and soft tightening operations



torque values readable on the label



Electronic on/off switch for specific control of the bolting operation

Automatic device switch-off when torque achieved. Wrench slackens (backs off) after torque is applied.



Safety function protects the gears and increases the service life of the device



Supplied with individual GEDORE factory calibration certificate



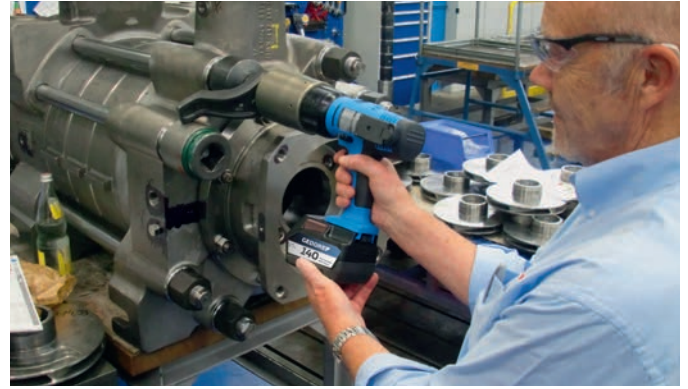
Powerfull 140 Wh (28 V / 5 Ah) lithium-ion battery, attachable from two sides for easy handling



Hybrid set optionally available

LAW series



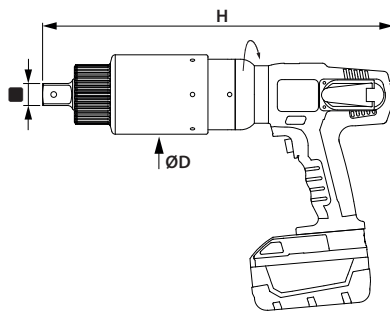


We are showcasing our cordless torque wrenches up to 6,000 Nm

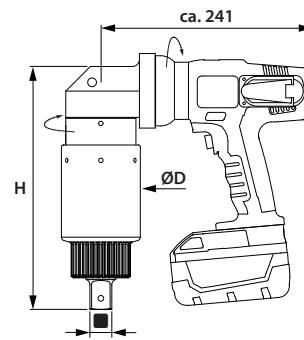
From now on, bolting operations can be implemented independently and flexibly with the GEDORE high-torque cordless torque wrench. It is the first of its kind which can generate precise torques up to 6,000 Nm without slip coupling and impact mechanism.

Applications at great heights or in confined spaces are child's play with the powerful lithium ion battery. Once the battery is fully discharged, you can switch to electrical operation thanks to the optionally available hybrid set.

Technical data



LDA series – straight version



LAW series – angled version

Type	N·m min ^{*1} /max ^{*2}	lbf·ft min ^{*1} /max ^{*2}	~ U/min	■	Ø D mm	H mm	kg ^{*3}
LDA - 05	90 - 500	70 - 370	48	3/4"	80	308	4.2
LDA - 07	120 - 700	90 - 520	27	3/4"	80	342	4.7
LDA - 09ST	130 - 900	100 - 670	24	3/4"	80	342	4.7
LDA - 15	180 - 1500	110 - 1110	20	1"	88	357	5.9
LDA - 16ST	250 - 2100	180 - 1550	9	1"	90	375	6.5
LDA - 28ST	350 - 3100	260 - 2290	7	1"	90	398	7.2
LDA - 40	430 - 4000	320 - 2950	5	1"	94	398	7.5
LDA - 60	650 - 6000	480 - 4430	4	1 1/2"	102	412	8.7
LAW - 09ST	130 - 900	100 - 670	24	3/4"	80	220	5.9
LAW - 16ST	250 - 2100	180 - 1550	9	1"	90	254	7.5
LAW - 28ST	350 - 3000	260 - 2200	7	1"	90	277	8.3
LAW - 40	430 - 4000	320 - 2950	5	1"	94	277	8.5

*1 Lowest torque in 2nd gear *2 Maximum torque in 1st gear *3 Without reaction arm with battery
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WHAT MAKES THE CORDLESS TORQUE WRENCH SO POWERFUL?

The secret:
the intelligent microprocessor electronics

The heart of the cordless torque wrench is the switch-off electronics with microprocessor control developed. This allows the tightening torque for each bolting operation to be precisely maintained and ensures stable torque accuracy over the entire discharging cycle of the battery.

In addition, the device detects a wide range of hard and soft bolting operations, automatically adapting to the properties of the bolted connection.

Integrated gear protection and
processor-controlled safety

The microprocessor prevents gear damage when loosening hard bolted connections. The low-backlash gear with a housing made of high-performance aluminium was specially developed further for this series. An active release function ensures that the wrench automatically releases after work is complete and can thus be easily removed from the bolt.

Lies comfortably in the hand

By shifting the gear centre of gravity, the soft grip of the motor unit lies fatigue-free and non-slip in the hand. The powerful lithium ion battery can be inserted from two sides. The braked 360°-rotating drive unit prevents any injuries to the operator when used in confined spaces.



The roof structure of the football stadium belonging to TSG 1899 Hoffenheim mounted using GEDORE cordless torque wrenches.

Optional Accessories:



Charger 110V/60Hz; 220V/50Hz



140 Wh Battery (28 V / 5 Ah)



Charger with 12/24V connector



Reaction arm cranked with lock on function, made of drop-forged chrome-vanadium steel



Reaction arm made of light alloy, straight with adjustable locking knob with movable square-end and retaining ring.



Reaction ring for bespoke reaction arm design

LONGER RUNNING TIME WITH THE RIGHT BATTERY TECHNOLOGY

Technology which makes the work much easier

The lithium ion batteries operate 100% longer in comparison to nickel-cadmium batteries. In addition, they operate with uniform peak performance until they are fully discharged. This saves you having to change the battery frequently while working.

An unbeatable combination

Battery technology and microprocessor electronics supplement each other optimally. Our microprocessor electronics increases and regulates the battery voltage. This increases the running time of the battery and maintains the torque at a constant level throughout the entire working cycle. This technology has also been patented by us.



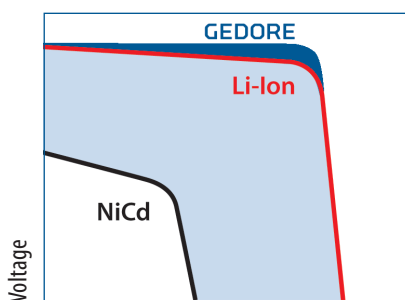
Reserve capacity of battery and charger



The charging time on the charger is approx. 30-50 min when the battery is empty. Once the battery is fully charged, the charger LED changes from red to green



Lithium ion technology



Discharging during work



The flashing LED signals that the battery has a reserve capacity of 10%

Pressure switch for displaying the charge status



Four lit up LEDs signal that the battery is fully charged



LEICA
709-8127
401

VISIBILITY
KARSAK

LDE, LEW

ELECTRIC TORQUE WRENCH

LDE

- › MACHINE
- › REACTION ARM CRANKED
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE

LEW

- › MACHINE
- › REACTION ARM CRANKED
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE



THE ELECTRIC TORQUE WRENCH

LDE/LEW SERIES, 90 - 13.000 Nm

LDE series

High input voltage and frequency range (200-260V, 47-63Hz), designed for international use



Electronic R/L switching function

torque values readable on the label



Digital display with visual-acoustic operator guidance for even simpler operation



optional: Torque-Angle of Rotation Mode



Optional LE.TRACK: Data read-out function via non-contact, inductive high-performance interface.

Planet gear unit with Ceramic-Teflon®-coated tooth flanks



Drop-forged reaction arm made of chrome-vanadium steel for even greater stability



Supplied with individual GEDORE factory calibration certificate



LEW series





Rugged gear unit combined with intelligent electronics

Setting new standards with the robust gear unit housing and intelligent electronics under the display: Service functions such as overload and recalibration are displayed to the user. In default, the display shows the torque level. In addition, if required, the display can be changed from torque level to torque value.

Further functions

Optionally, the electric torque wrench, which is available in straight and angled versions, can be upgraded with a data read-out function, the torque-rotation angle mode and the fast mode.

Reliable documentation of results – LE. Track

In response to many requests, the classical electric high-level torque wrench is now also available with the LE-Track documentation function. Designed for the toughest construction site applications, the inductive data transmission system is used for non-contact transfer of your data to the laptop/PC where you can then conveniently edit it further (see page 6).



The display and its functions



HAND GRIP



From version size LDE-70, the electric torque wrench is supplied with a rotating hand grip to facilitate the easy operation of the device.



The hand grip is included as of size LEW-60 for the angled electric torque wrenches.

Accessories



Reaction arm cranked with lock on function, made of drop-forged chrome-vanadium steel

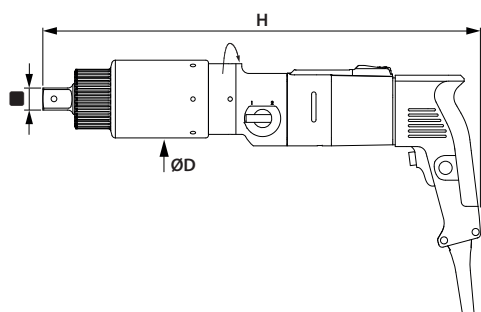


Reaction arm made of light alloy, straight with adjustable locking knob with movable square-end and retaining ring

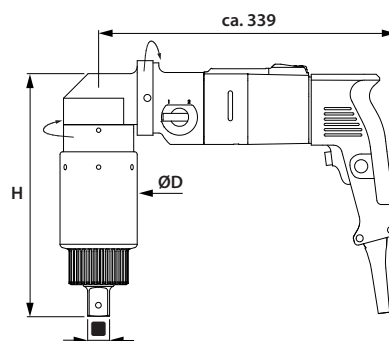


Reaction ring for bespoke reaction arm design

Technical data



LDE series – straight version



LEW series – angled version

LDE series - straight version

Type	N-m min ^{*1} /max ^{*2}	lbf-ft min ^{*1} /max ^{*2}	~ U/min	■	Ø D mm	H mm	⚖ ^{*3} kg
LDE - 05	90 - 500	70 - 370	44	3/4"	80	405	4.5
LDE - 075	100 - 750	80 - 550	22	3/4"	80	439	5.0
LDE - 15	250 - 1500	180 - 1110	20	1"	88	455	6.1
LDE - 28	500 - 2800	370 - 2050	6	1"	88	495	7.3
LDE - 40	750 - 4000	550 - 2950	5	1"	88	495	7.3
LDE - 60	700 - 6000	520 - 4400	3.5	1 1/2"	102	515	9.2
LDE - 70	900 - 7500	660 - 5500	3	1 1/2"	128	531	12.1
LDE - 90	1100 - 9000	810 - 6600	2.5	1 1/2"	142	542	14.0
LDE - 120	1800 - 13000	1330 - 9500	2	1 1/2"	174.5	560	20.0

*1 Lowest torque in 2nd gear *2 Maximum torque in 1st gear *3 Without reaction arm
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LEW series - angled version

Type	N-m min ^{*1} /max ^{*2}	lbf-ft min ^{*1} /max ^{*2}	~ U/min	■	Ø D mm	H mm	⚖ ^{*3} kg
LEW - 05	90 - 500	70 - 370	44	3/4"	80	187	5.8
LEW - 075	100 - 750	80 - 550	22	3/4"	80	220	6.4
LEW - 15	250 - 1500	180 - 1110	20	1"	88	236	7.3
LEW - 28	500 - 2800	370 - 2050	6	1"	88	276	8.6
LEW - 40	750 - 4000	550 - 2950	5	1"	88	276	8.6
LEW - 60	700 - 6000	520 - 4400	3.5	1 1/2"	102	296	10.7
LEW - 70	900 - 7500	660 - 5500	3	1 1/2"	128	311	12.9
LEW - 95	1100 - 9500	810 - 7000	2.5	1 1/2"	142	323	14.6
LEW - 120	1800 - 13000	1330 - 9500	2	1 1/2"	174.5	340	20.6

*1 Lowest torque in 2nd gear *2 Maximum torque in 1st gear *3 Without reaction arm
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THE CRANE TORQUE WRENCH

There are applications where electric torque wrenches have to provide even more power. This includes crane assembly at great heights. The LEW-60L and LEW-95L devices are specially designed for the HV bolted connections on the tower sections of the Liebherr HC and EC models.

We also offer the complete package here for the demanding user. Starting from the gear unit diameter precisely matched to the tower section and conical impact sockets right up to the appropriate reaction arm made of high-performance aluminium.

In addition, higher loosening torques for disassembly, as well as special equipment and torque settings for other crane manufactures are available.



Accessories for Crane Torque Wrench



HC Design



EC Design



SL type impact socket

Reaction arms for other crane manufacturers on request.

Technical data

Also available as a Heavy Duty version. LEW-60L with increased torque.

Type	N-m min ^{*1} / max ^{*2}	lbf-ft min ^{*1} / max ^{*2}	~ U/min	■	Ø D mm	H mm	kg ^{*3}
LEW - 60L	1200 - 6500	880 - 4800	3.5	1 1/2"	102	296	10.7
LEW - 95L	1100 - 9500	810 - 7000	2.2	1 1/2"	138	324	17.7

*1 Lowest torque in 2nd gear *2 Maximum torque in 1st gear *3 Without reaction arm
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THE STEEL STRUCTURE TORQUE WRENCH

The steel structure torque wrench must be light but rugged in design for the assembly of bridges or steel construction projects.

We specialise in such situations.

Decades of experience and development work, combined with the known high quality requirements, are clearly demonstrated by the torque wrenches in this range. As with all series devices, you can rely on the acknowledged torque precision of these special versions.



Technical Data

Type	N·m min*1/ max*2	lbf·ft min*1/ max*2	~ U/min	■	Ø D mm	H mm	⚖ *3 kg
LDE - 09ST	120 - 900	90 - 670	19.0	3/4"	80	439	5.2
LDE - 16ST	300 - 2200	220 - 1620	7.0	1"	88	472	6.6
LDE - 28ST	450 - 3200	330 - 2360	6.1	1"	88	495	7.3
LEW - 09ST	120 - 900	90 - 670	19.0	3/4"	80	220	6.5
LEW - 16ST	300 - 2200	220 - 1620	7.0	1"	88	253	7.9
LEW - 28ST	450 - 3200	330 - 2360	6.1	1"	88	276	8.6

*1 Lowest torque in 2nd gear *2 Maximum torque in 1st gear *3 Without reaction arm
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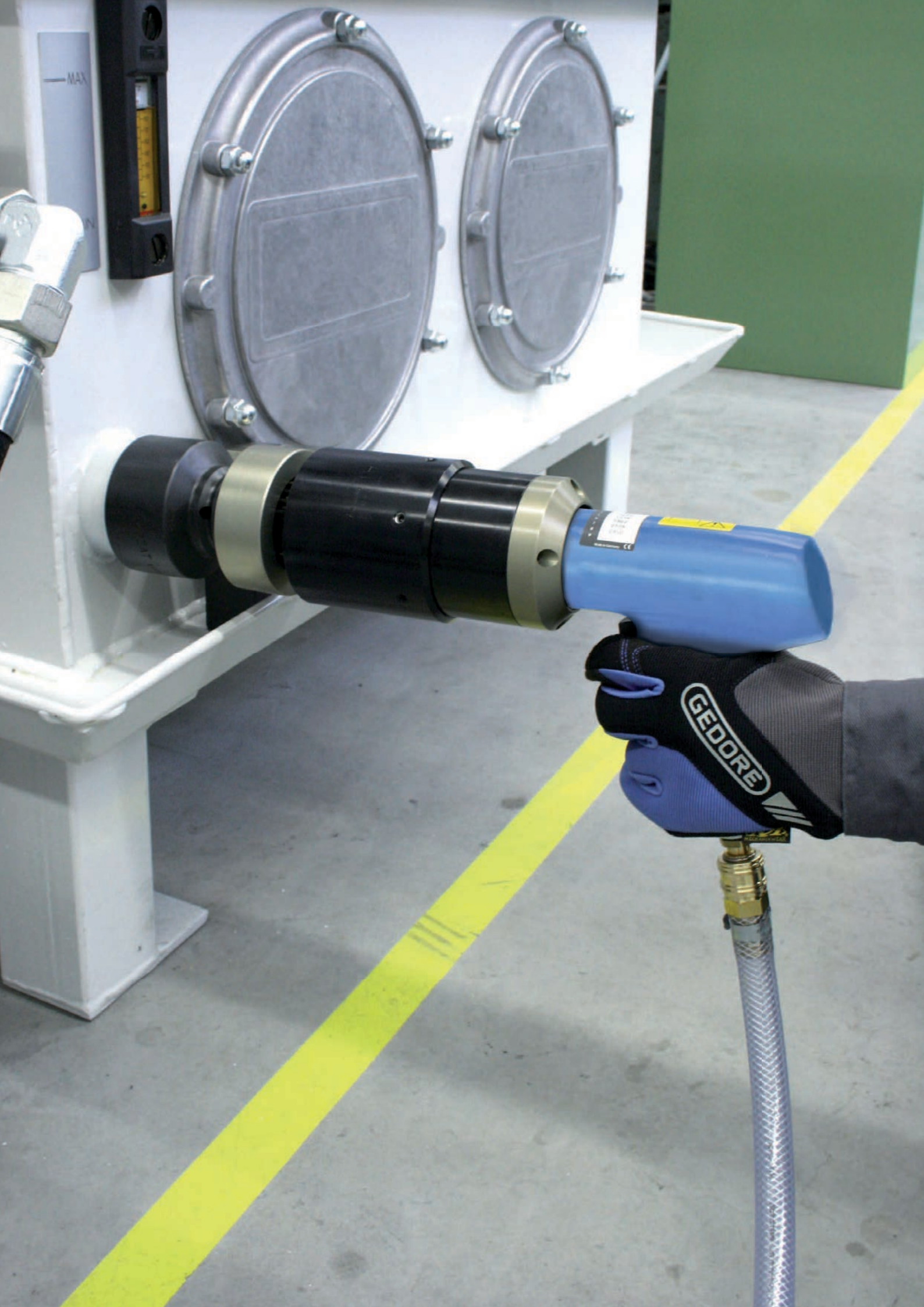
Steel Structure Torque Wrench

LDE-/LEW-09ST; Tightening of HV-connections from M12 to M24 (10.9)

LDE-/LEW-16ST; Tightening of HV-connections from M16 to M30 (10.9)

LDE-/LEW-28ST; Tightening of HV-connections from M20 to M36 (10.9)





LPK, LPK-X

PNEUMATIC TORQUE WRENCH

LPK

- › MACHINE
- › REACTION ARM CRANKED
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE



THE PNEUMATIC TORQUE WRENCH

LPK SERIES, 80 - 12.800 Nm

LPK series



Maintenance unit optionally available



Supplied with individual GEDORE factory calibration certificate



Quiet and accurate torque - even from just 2 bar operating pressure

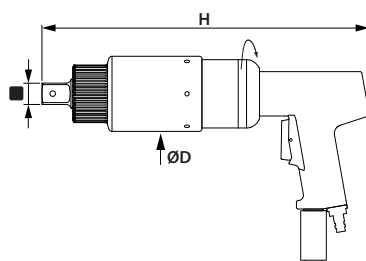
The pneumatic torque wrench is not an impact wrench. It functions without vibrations, thus protecting the user. Hand on vibration and hearing loss can be significantly reduced with the GEDORE Torque Solutions GmbH pneumatic torque wrenches.

The force is transmitted quietly and precisely from just 2 bar operating pressure via the proven high-performance gear unit to the bolt connection.

Rugged pneumatic torque wrench for a wide range of environments

Because of the continuously generated overpressure in the device, the pneumatic torque wrench is particularly resistant when used in extremely dirty or dusty environments. Pressure fluctuations in the supply network are effectively compensated for by the proven maintenance unit comprising of an air filter, oiler and pressure reducers. The device is supplied with a constantly uniform airflow and the torque is constantly maintained.

Technical data



LPK series – pneumatic

Type	N-m min ^{*1} /max ^{*2}	lbf-ft min ^{*1} /max ^{*2}	~ U/min	■	Ø D mm	H mm	⚖ ^{*3} kg
LPK - 05	80 - 450	60 - 330	55	3/4"	80	295	3.0
LPK - 09	200 - 900	150 - 670	24	3/4"	80	328	3.2
LPK - 15	300 - 1500	220 - 1110	12	1"	88	343	4.7
LPK - 22	500 - 2200	370 - 1620	7	1"	88	360	5.1
LPK - 32	800 - 3200	590 - 2360	4	1"	88	383	5.8
LPK - 40	850 - 4200	620 - 3100	4	1"	88	383	5.8
LPK - 60	1200 - 6000	880 - 4400	4	1 1/2"	102	400	7.7
LPK - 70	1500 - 7000	1110 - 5160	3	1 1/2"	128	416	10.6
LPK - 95	2000 - 9500	1470 - 7000	2.5	1 1/2"	142	431	12.5
LPK - 120	2500 - 12800	1840 - 9440	1.5	1 1/2"	174.5	448	18.5

*1 Lowest torque at 1.5 bar *2 Maximum torque at 8 bar *3 Without reaction arm
At 8 bar ca. 1,400 l/min. All rights reserved. Subject to modifications without prior notice.

THE PNEUMATIC TORQUE WRENCH

LPK-X SERIES, 80 - 4.200 Nm

LPK-X series

Braked 360°-rotating motor unit for comfortable working with optimal operator safety



torque values readable on the label



Rocker switch for simple change of rotation direction

Low-backlash high-performance gear unit for reliable, long-term operation



Smallest dimensions and compact construction for extremely confined spaces



2-speed planet gear unit for up to 7-fold faster tightening speed



Supplied with individual GEDORE factory calibration certificate



Accessories for the series LPK and LPK-X



Reaction arm cranked with lock on function, made of drop-forged chrome-vanadium steel



Reaction arm made of light alloy, straight with adjustable locking knob with movable square-end and retaining ring



Reaction ring for bespoke reaction arm design



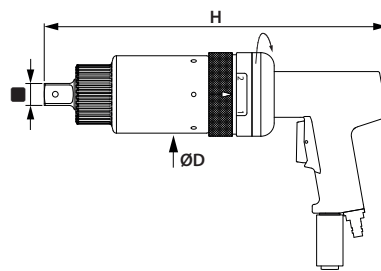
Up to 7 times higher bolting speed

The LPK-X series has a 2-speed planet gear unit. The user can therefore select between rapid and torque mode. The rapid mode drives the bolt in up to the joining torque with a speed up to 300 rpm. It is then possible to switch to the torque mode that tightens the bolt to the precise torque required. Once the required torque has been achieved, the device switches off automatically.

If a torque wrench is not available, bolt connections are usually pre-tightened and then finished off with a torque wrench. These two working steps are combined in the LPK-X, saving working time for the user. In extensive on-site applications, the assembly times can be reduced by up to 30% through the combination of two working steps in one device with the LPK-X.



Technical data



LPK-X series – pneumatic

Typw	N-m min ^{*1} /max ^{*2}	lbf-ft min ^{*1} /max ^{*2}	~ U/min ^{*3}	■	Ø D mm	H mm	⚖ ^{*4} kg
LPK - 05 X	80 - 450	60 - 330	300	¾"	80	301	3.0
LPK - 09 X	200 - 900	150 - 670	100	¾"	88	333	4.0
LPK - 22 X	500 - 2200	370 - 1620	30	1"	88	367	5.5
LPK - 32 X	800 - 3200	590 - 2360	25	1"	88	390	6.2
LPK - 40 X	850 - 4200	620 - 3100	20	1"	88	390	7.0

*1 Lowest torque in 2nd gear at 1.5 bar

*2 Maximum torque in 1st gear at 8 bar

*3 Maximum speed in 2nd gear

*4 Without reaction arm



LDH, LDK, LHU

HYDRAULIC SOLUTIONS

LDH

- › MACHINE INCL. SQUARE DRIVE AND COUNTER BEARING
- › TOOL CASE
- › TORQUE-ADJUSTMENT -TABEL
- › OPERATING MANUAL

LDK

- › MACHINE
- › TOOL CASE
- › TORQUE-ADJUSTMENT -TABEL
- › OPERATING MANUAL

LHU

- › MACHINE OIL-FILLED
- › OPERATING MANUAL



THE HYDRAULIC TORQUE WRENCH

LDH SERIES, 60 - 27.000 Nm

Integrated relief valve in hydraulic connection increases work safety



360° rotating hydraulic connection under load for flexible bolting work



Quick-change mechanism for rapid shifting of the reaction arm



Super-light high performance aluminium for rugged and ergonomic handling

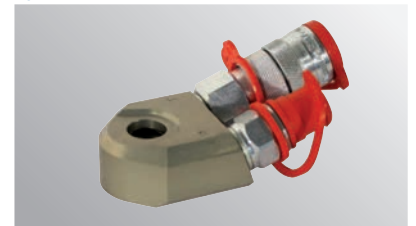


Smallest dimensions and compact construction for extremely confined spaces



Various inserts as accessories for flexible working

Optional: inclined connection



Accessories



Toothed impact sockets and special inserts



Square drive



Allen screw - ISW



Light, easy to handle and with high torque

The LDH is used where very little space is available, but where high torque is necessary. In order to facilitate bolting operations for the user, the hydraulic torque wrench series has been designed with high-performance aluminium and subject to continuous improvements. The size has therefore been constantly reduced while ever more details have been included to make the difficult work easier for the user.

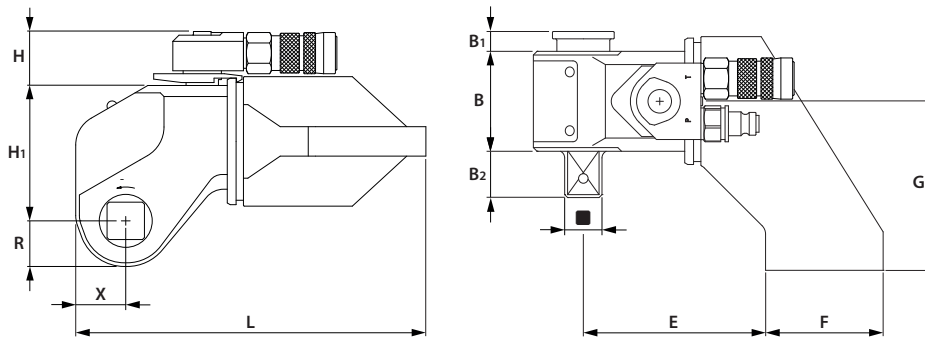
An integrated relief valve ensures working safety and the flow-optimised, generously dimensioned oil channels reduce heating up of the device during high continuous loads to a minimum.

The perfect combination

Together with our hydraulic units, the hydraulic torque wrenches achieve a maximum in work performance. Both components together create an excellent synergy of user-friendliness and operating convenience.



Technical Data



Series LDH – hydraulic

Type	N·m min*1/ max*2	lbf·ft min*1/ max*2	□	B mm	B ₁ mm	B ₂ mm	E mm*3	F mm*3	G mm	H mm	H ₁ mm	L mm*3	R mm	X mm	kg*2
LDH - 12V	60 - 1200	45 - 880	3/4"	46	7	28	-/88	-/48	78	37	62	-/158	19	22	1.9
LDH - 24V	120 - 2350	90 - 1730	3/4"	53	6	28	59/109	60/58	95	37	72	146/194	24	27	2.0
LDH - 48V	230 - 4800	170 - 3500	1"	68	14	32	70/125	89/80	115	37	92	193/239	31	34	3.9
LDH - 75V	400 - 7560	290 - 5570	1 1/2"	76	12	44	74/134	94/93	122	37	107	207/266	36	39	6.2
LDH - 100V	500 - 10000	370 - 7300	1 1/2"	84	13	39	85/150	105/99	130	37	115	233/292	39	43	7.8
LDH - 170V	800 - 16000	590 - 11800	1 1/2"	100	11	45	93/163	118/108	150	50	135	265/325	48	54	11.8
LDH - 270V	1300-27000	960 - 19900	2 1/2"	119	18	76	121/206	145/133	200	50	164	329/402	59	63	24.0

*1 Maximum torque at 800 bar *2 Without reaction arm
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*3 Reaction arm type L(LM) / Reaction arm type S(LM)

Technical data: Allen screw - ISW, Reaction arm - RA

Type	ISW mm
LDH - 12V	ISW 12V-14
	ISW 12V-17
	ISW 12V-19
LDH - 24V	ISW 24V-14
	ISW 24V-17
	ISW 24V-19
	ISW 24V-22
	ISW 24V-24
LDH - 48V	ISW 48V-17
	ISW 48V-19
	ISW 48V-22
	ISW 48V-24
	ISW 48V-27
	ISW 48V-30
	ISW 48V-32
LDH - 75V	ISW 75V-17
	ISW 75V-19
	ISW 75V-22
	ISW 75V-24
	ISW 75V-27
	ISW 75V-30
LDH - 100V	ISW 100V-19
	ISW 100V-22
	ISW 100V-24
	ISW 100V-27
	ISW 100V-30
	ISW 100V-32
	ISW 100V-36
LDH - 170V	ISW 170V-27
	ISW 170V-30
	ISW 170V-32
	ISW 170V-36
	ISW 170V-41
LDH - 270V	ISW 170V-46
	ISW 270V-36
	ISW 270V-41
	ISW 270V-46
	ISW 270V-50
	ISW 270V-55
	ISW 270V-60
ISW 270V-65	
ISW 270V-70	

Reaction arms



Reaction arm S(LM)
Standard design



Reaction arm L(LM)
(except LDH-12V) Compact design



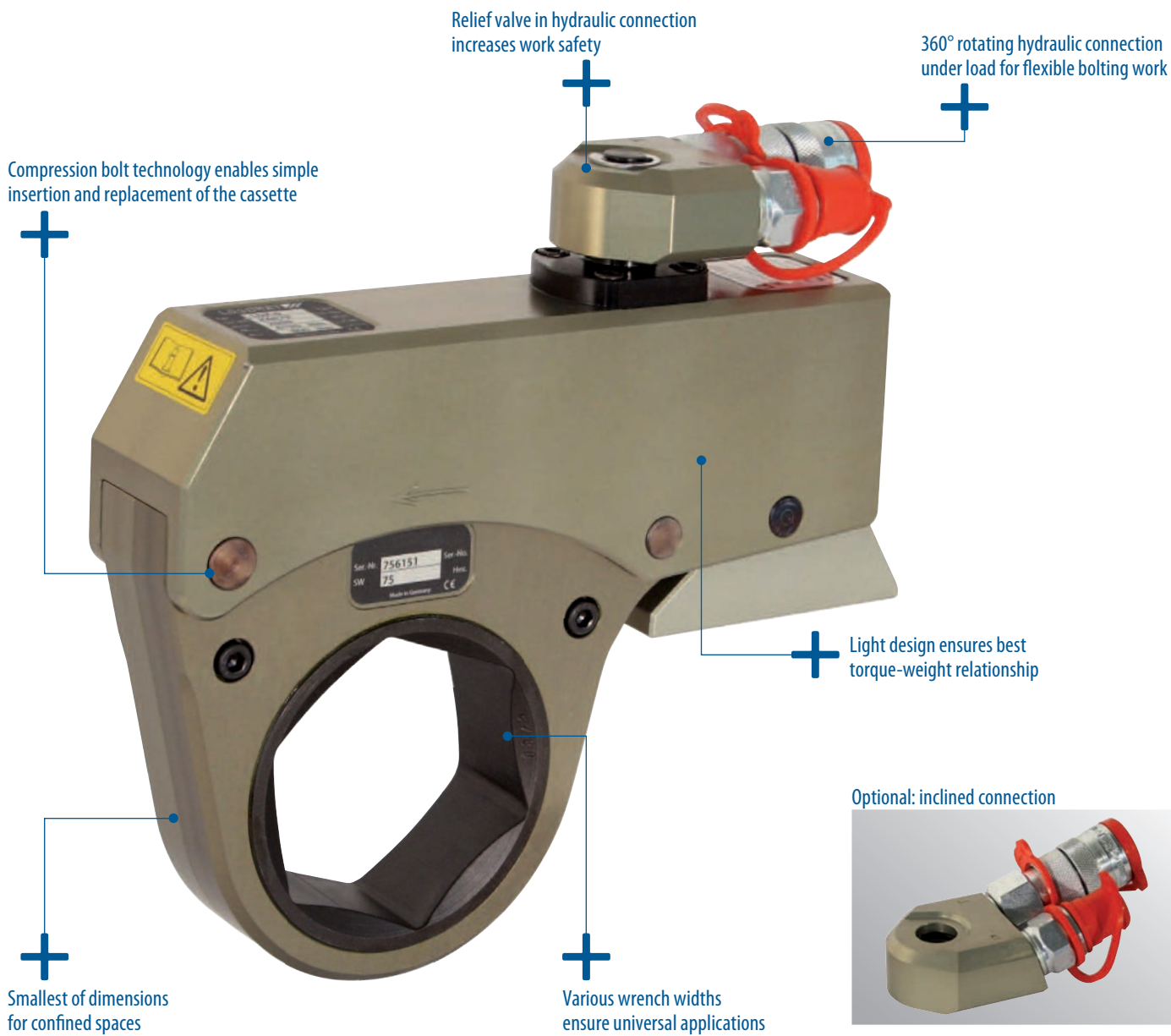
Reaction arm K(LM)
for embedded screws and
raised Allen screws



Reaction sleeve RH (St)

THE CASSETTE WRENCH

LDK SERIES, 160 - 24.000 Nm



Accessories



Hexagon insert - SA
Retaining ring - HR



Exchangeable cassette - WK
Inch sizes on request



In-Out impact socket





Simple loosening and precise tightening in confined spaces

Tight spots can become problem spots. In such situations, the LDK series is the ideal solution. Compact dimensions are paired here with high torques. The flat hexagon cassettes have been optimised for minimum radius and compact construction heights.

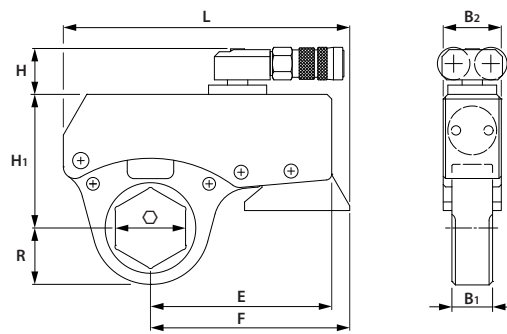
Simple operation and handling characterises the cassette torque wrench

The exchangeable cassettes can be rapidly and easily changed with the compression bolt technology. Different types of hydraulic connections enable adaptation to diverse bolting operations even in difficult to access points.

Economic in use

A separate cassette size is not always necessary for every wrench width. The installation spaces often leave enough room for the economic hexagon adapters. These are, like all the adaptations, locked in the corresponding interchangeable cassette with a holding ring so that they cannot be lost.

Technical data



LDK series – hydraulic

Type	N·m min/ max*1	lbf·ft min/ max*1	⊘ mm	⊘"	B ₁ mm	B ₂ mm	E mm	F mm	H mm	H ₁ mm	L mm	R mm	kg ^{*2}
LDK - 3	160 - 3300	120 - 2400	32 - 60	1 1/4" - 2 3/8"	28	40	137	145	39.2	91/103	137	28 - 48	1.6
LDK - 6	350 - 6200	260 - 4500	41 - 80	1 5/8" - 3 1/8"	35	50	156	172	39.2	115/130	156	34 - 60	2.4
LDK - 12	550 - 12500	410 - 9200	55 - 100	2 3/16" - 3 7/8"	47	65	200	215	39.2	141/156	200	46 - 73	4.4
LDK - 24	1200 - 24000	880 - 17700	80 - 130	3 1/8" - 5"	56	82	245	260	50.0	182/202	245	62 - 96	8.2

*1 Maximum torque at 800 bar *2 Without exchangeable cassette
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Technical data: Exchangeable cassettes - WK, Hexagon insert - SA, Retaining ring - HR

Type	WK Typ	R mm	H ₁ mm	N-m max*1	lbf·ft max*1	SA*2 SW/SW			HR mm
LDK - 3	WK3-32	28.5	91	1700	1300	-	-	-	-
	WK3-36	31.5	91	2100	1550	-	-	-	-
	WK3-41	34.5	91	2500	1850	SA3-41»36	SA3-41»32	SA3-41»30	HR-41
	WK3-46	38.5	91	2890	2130	SA3-46»41	SA3-46»36	SA3-46»32	HR-46
	WK3-50	42.0	103	3290	2430	SA3-50»46	SA3-50»41	SA3-50»36	HR-50
	WK3-55	45.0	103	3290	2430	SA3-55»50	SA3-55»46	SA3-55»41	HR-55
	WK3-60	47.5	103	3290	2430	SA3-60»55	SA3-60»50	SA3-60»46	HR-60
LDK - 6	WK6-41	34.5	115	3840	2830	SA6-41»36	-	-	HR-41
	WK6-46	39.5	115	4805	3540	SA6-46»41	SA6-46»36	SA6-46»32	HR-46
	WK6-50	43.5	115	5410	3990	SA6-50»46	SA6-50»41	SA6-50»36	HR-50
	WK6-55	46.5	115	5410	3990	SA6-55»50	SA6-55»46	SA6-55»41	HR-55
	WK6-60	48.5	115	5410	3990	SA6-60»55	SA6-60»50	SA6-60»46	HR-60
	WK6-65	52.5	130	6190	4570	SA6-65»60	SA6-65»55	SA6-65»50	HR-65
	WK6-70	55.5	130	6190	4570	SA6-70»65	SA6-70»60	SA6-70»55	HR-70
	WK6-75	57.5	130	6190	4570	SA6-75»70	SA6-75»65	SA6-75»60	HR-75
	WK6-80	60.5	130	6190	4570	SA6-80»75	SA6-80»70	SA6-80»65	HR-80
LDK - 12	WK12-55	46.5	141	8000	5900	SA12-55»50	SA12-55»46	SA12-55»41	HR-55
	WK12-60	48.5	141	8000	5900	SA12-60»55	SA12-60»50	SA12-60»46	HR-60
	WK12-65	52.5	141	9800	7230	SA12-65»60	SA12-65»55	SA12-65»50	HR-65
	WK12-70	55.5	141	9800	7230	SA12-70»65	SA12-70»60	SA12-70»55	HR-70
	WK12-75	57.5	141	9800	7230	SA12-75»70	SA12-75»65	SA12-75»60	HR-75
	WK12-80	60.5	141	10860	8010	SA12-80»75	SA12-80»70	SA12-80»65	HR-80
	WK12-85	64.5	156	12500	9220	SA12-85»80	SA12-85»75	SA12-85»70	HR-85
	WK12-90	67.5	156	12500	9220	SA12-90»85	SA12-90»80	SA12-90»75	HR-90
	WK12-95	70.5	156	12500	9220	SA12-95»90	SA12-95»85	SA12-95»80	HR-95
	WK12-100	73.5	156	12500	9220	SA12-100»95	SA12-100»90	SA12-100»85	HR-100
LDK - 24	WK24-80	62.0	182	13950	10290	SA24-80»75	SA24-80»70	SA24-80»65	HR-80
	WK24-85	66.0	182	15810	11660	SA24-85»80	SA24-85»75	SA24-85»70	HR-85
	WK24-90	69.0	182	16430	12120	SA24-90»85	SA24-90»80	SA24-90»75	HR-90
	WK24-95	72.0	182	17860	13170	SA24-95»90	SA24-95»85	SA24-95»80	HR-95
	WK24-100	76.0	182	17860	13170	SA24-100»95	SA24-100»90	SA24-100»85	HR-100
	WK24-105	80.0	182	17860	13170	SA24-105»100	SA24-105»95	SA24-105»90	HR-105
	WK24-110	84.0	202	24000	17700	SA24-110»105	SA24-110»100	SA24-110»95	HR-110
	WK24-115	87.0	202	24000	17700	SA24-115»110	SA24-115»105	SA24-115»100	HR-115
	WK24-120	90.0	202	24000	17700	SA24-120»115	SA24-120»110	SA24-120»105	HR-120
	WK24-125	93.0	202	24000	17700	SA24-125»120	SA24-125»115	SA24-125»110	HR-125
	WK24-130	96.0	202	24000	17700	SA24-130»125	SA24-130»120	SA24-130»115	HR-130

*1 Maximum torque at 800 bar *2 Special adapter on request
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THE HYDRAULIC UNIT LHU SERIES

LHU series

Completely sealed housing protects unit and operator even in the roughest of applications

Sensors are installed fully in the unit, not in the hydraulic torque wrench. This makes the unit compatible with all hydraulic torque wrenches (dual-hose system)

Wear-free pump technology means that the unit is maintenance-free

Novel cooling air supply (patent-filed) for optimal cooling of the unit even under extreme loads

Maximum pressure: 800 bar



Plug-in connections for power and control system



Manual control - M
The classic, semi-automatic control system enables the user to manually initiate every stroke of the hydraulic torque wrench. The return stroke is automatic.



Automatic control - A
The bolting operation is started by pressing a button, then automatically implemented and ended in the automatic control mode.

Modular control - Solution
The Solution control system is modularly expandable. All settings can be configured and bolting operations documented via the display.

Technical data

Manual control - M	Type	V / Hz	MP L/min., bar	HP L/min., bar	Tank L ^{*1}	LxBxH mm	 *3
	LHU-30 M	110 / 50	2.1 / 320	0.7 / 800	3.0	400x240x380	27.0
	LHU-30 M	110 / 60	2.5 / 320	0.8 / 800	3.0	400x240x380	27.0
	LHU-30 M	230 / 50	2.1 / 320	0.7 / 800	3.0	400x240x380	27.0
	LHU-30 M	230 / 60	2.5 / 320	0.8 / 800	3.0	400x240x380	27.0
	LHU-35 M	110 / 50	3.0 / 320	0.8 / 800	3.5	570x275x400	41.5
	LHU-35 M	110 / 60	3.5 / 320	1.0 / 800	3.5	570x275x400	41.5
	LHU-40 M	230 / 50	3.1 / 320	0.7 / 800	4.0	480x270x400	33.0
	LHU-40 M	230 / 60	3.7 / 320	0.9 / 800	4.0	480x270x400	33.0
	LHU-60 M	400 / 50 , 60	6.1 , 7.4 / 320	1.4 , 1.7 / 800	6.0	480x270x400	36.5

Automatic control - A	Type	V / Hz	MP L/min., bar	HP L/min., bar	Tank L ^{*1}	LxBxH mm	 *3
	LHU-30 A	110 / 50	2.1 / 320	0.7 / 800	3.0	400x240x380	27.2
	LHU-30 A	110 / 60	2.5 / 320	0.8 / 800	3.0	400x240x380	27.2
	LHU-30 A	230 / 50	2.1 / 320	0.7 / 800	3.0	400x240x380	27.2
	LHU-30 A	230 / 60	2.5 / 320	0.8 / 800	3.0	400x240x380	27.2
	LHU-35 A	110 / 50	3.0 / 320	0.8 / 800	3.5	570x275x400	42.0
	LHU-35 A	110 / 60	3.5 / 320	1.0 / 800	3.5	570x275x400	42.0
	LHU-40 A	230 / 50	3.1 / 320	0.7 / 800	4.0	480x270x400	33.5
	LHU-40 A	230 / 60	3.7 / 320	0.9 / 800	4.0	480x270x400	33.5
	LHU-60 A	400 / 50 , 60	6.1 , 7.4 / 320	1.4 , 1.7 / 800	6.0	480x270x400	37.2

Modular control - Solution	Type	V / Hz	MP L/min., bar	HP L/min., bar	Tank L ^{*1}	LxBxH mm	 *3
	LHU-30 Solution	110 / 50	2.1 / 320	0.7 / 800	3.9	400x240x380	27.5
	LHU-30 Solution	110 / 60	2.5 / 320	0.8 / 800	3.9	400x240x380	27.5
	LHU-30 Solution	230 / 50	2.1 / 320	0.7 / 800	3.9	400x240x380	w27.5
	LHU-30 Solution	230 / 60	2.5 / 320	0.8 / 800	3.9	400x240x380	27.5
	LHU-35 Solution	110 / 50	3.0 / 320	0.8 / 800	3.7	570x275x400	42.5
	LHU-35 Solution	110 / 60	3.5 / 320	1.0 / 800	3.7	570x275x400	42.5
	LHU-40 Solution	230 / 50	3.1 / 320	0.7 / 800	3.7	480x270x400	34.0
	LHU-40 Solution	230 / 60	3.7 / 320	0.9 / 800	3.7	480x270x400	34.0
	LHU-60 Solution	400 / 50 , 60	6.1 , 7.4 / 320	1.4 , 1.7 / 800	4.1	480x270x400	37.5

*1 Supplied filled with oil and ready for operation
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*2 LHA-881/3D with tank cooling

*3 Weight with control system, without oil





Patent applied for cooling air supply

The novel cooling air supply in the LHU series differs from other units in that the air is not blown into the unit, but sucked in. A vacuum is generated in the unit by the separately driven ventilator, enabling a targeted cooling air flow within the housing. This improves the cooling efficiency by 60% compared to open units.

The cooling air supply is routed according to the arrangement of the individual components in the unit. The most cooling air is routed to where the warmest components are located. This technology is unique and of enormous benefit for bolting operations.



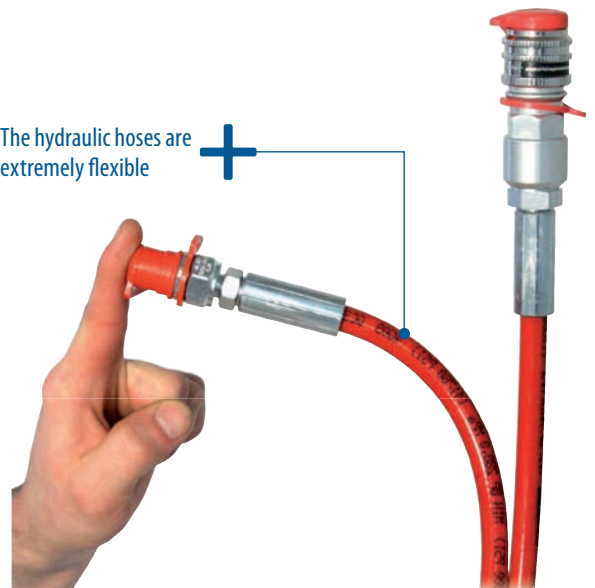
Hydraulic hoses

All our hydraulic unit models are equipped with a dual-hose system. The connections of both high-pressure hoses are uniquely identified. This prevents any connection errors when connecting the unit and hydraulic torque wrench.



Thanks to the new coupling, the high-pressure hoses can be easily mounted using just one hand

The hydraulic hoses are extremely flexible



MODULAR CONTROL - SOLUTION



LHU Solution

The LHU Solution series is the High End model in modern hydraulic unit technology. In addition to the basic bolting methods (manual, automatic and torque-rotation angle), the control system can be retrofitted according to your requirements with additional modules. The operator controls the entire bolting process per remote control.

The visual, acoustic operator guidance is an innovation. The entire hydraulic unit is programmed in a flash using the potentiometer wheel. The large colour display simplifies input significantly. In addition to acoustic feedback, the operator is visually informed about the completion of bolting operations. This is done by the display taking in different background colours.

LHU Solution basic equipment

The LHU Solution unit includes as standard, with the modular Solution control system, the following functions:

Manual bolting (M)

This setting enables the user to manually initiate every stroke of the hydraulic torque wrench. The return stroke is automatic.

Automatic bolting (A)

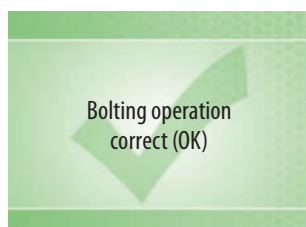
The bolting operation is started by pressing a button, then automatically implemented and ended.

Torque-rotation angle (M+a)

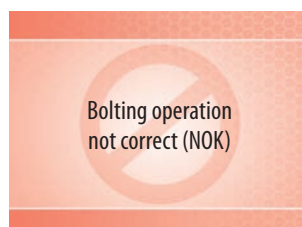
The rotary knob can be used to set and confirm the joining torque and the prevailing angle.



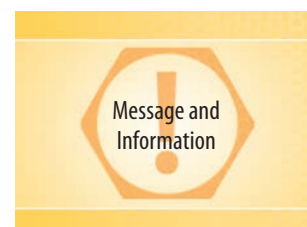
Standard



Bolting operation
correct (OK)



Bolting operation
not correct (NOK)



Message and
Information



+ Optional modul (documentation):
LH.Track

Bolting operations can be tracked with the TRACK module. Data are documented during the bolting operation and subsequently exported to a PC. From there, a bolting protocol can be created and archived.



Bolting operations with the LHM and the Solution control system

Export to PC via inductive interface (USB)

Bolting protocol

Bolted Screw Protocol **GEDORE**

28.04.2016

Master data

Personal Number		Project Number	
Date			
Application		Subassembly	
Type		Department	
ID No. bolt		Quantity	
Tool		Serial Number	

Verschraubungsverfahren
Drehmomentanzug

Auswertung

Legende Status:
AB = Abbruch, UL = Überlast, TEMP = Oberflächentemperatur, i.O. = in Ordnung, n.i.O. = nicht in Ordnung

Nr.	Datum	Uhrzeit	R/L	SOLL Drehmoment (Nm)	Ist Drehmoment (Nm)	Typische Schraube	Status
1	27.10.2015	12:15:31	R	800	0	M24	AB
2	27.10.2015	12:15:34	R	800	0	M24	AB
3	27.10.2015	12:15:38	R	800	0	M24	AB
4	27.10.2015	12:15:40	R	800	0	M24	AB
5	27.10.2015	12:15:43	R	800	0	M24	AB
6	02.11.2015	12:19:43	R	2000	0	M33	AB
7	02.11.2015	12:20:38	R	800	0	M24	AB
8	03.11.2015	15:01:07	R	3500	0	M39	AB
9	03.11.2015	15:27:43	R	3500	1165	M39	AB
10	03.11.2015	15:28:36	R	3500	0	M39	AB
11	03.11.2015	15:30:34	R	3500	784	M39	AB
12	03.11.2015	15:31:47	R	3500	3503	M39	i.O.
13	03.11.2015	15:34:39	R	3500	0	M39	AB
14	03.11.2015	15:34:46	R	3500	1165	M39	AB
15	05.12.2015	13:33:42	R	2860	0	M39	AB
16	05.12.2015	13:34:36	R	2860	0	M39	AB
17	05.12.2015	13:43:45	R	1000	0	M27	AB
18	17.12.2015	13:37:33	R	4500	0	M42	AB
19	17.12.2015	13:37:47	R	4500	4508	M42	i.O.
20	17.12.2015	13:38:31	R	4500	4503	M42	i.O.
21	08.01.2016	14:54:11	R	2150	0	M33	AB
22	08.01.2016	14:57:03	R	800	0	M24	AB
23	13.01.2016	14:12:26	R	800	0	M24	AB
24	13.01.2016	14:12:33	R	800	0	M24	AB
25	13.01.2016	14:12:34	R	800	0	M24	AB
26	21.01.2016	8:30:35	R	3990	0	M42	AB
27	21.01.2016	8:30:39	R	3990	0	M42	AB
28	21.01.2016	8:37:01	R	6580	0	M56	AB
29	21.01.2016	8:38:44	R	6580	0	M56	AB
30	21.01.2016	11:18:37	R	800	0	M24	AB
31	21.01.2016	11:19:01	R	800	0	M24	AB
32	21.01.2016	11:19:48	R	800	0	M24	AB
33	21.01.2016	15:59:12	R	2800	0	M36	AB
34	21.01.2016	15:59:28	R	2800	2810	M36	i.O.
35	21.01.2016	15:59:49	R	2800	2816	M36	i.O.
36	21.01.2016	16:00:09	R	2800	2807	M36	i.O.
37	21.01.2016	16:00:28	R	2800	2810	M36	i.O.
38	21.01.2016	16:00:48	R	2800	2804	M36	i.O.
39	22.01.2016	8:56:37	R	2800	0	M36	AB
40	22.01.2016	8:56:39	R	2800	0	M36	AB
41	22.01.2016	8:56:41	R	2800	0	M36	AB
42	22.01.2016	8:56:53	R	2800	2803	M36	i.O.
43	22.01.2016	8:57:12	R	2800	2817	M36	i.O.

1/4

+ Optional modul (production):
LH.Track

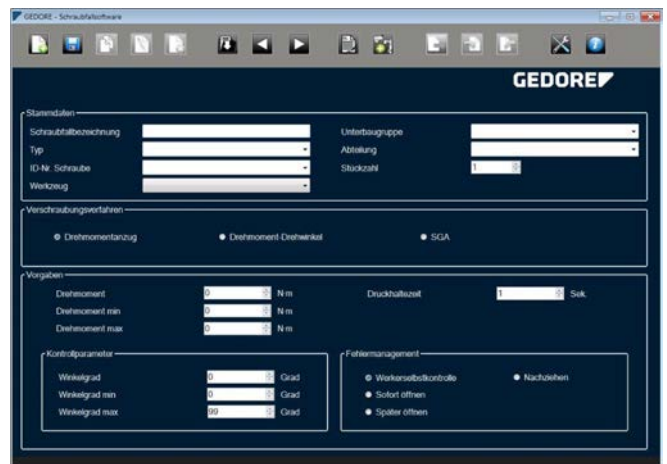
The bolting data are precisely specified by quality management and loaded into the Solution control system via the inductive data transmission system. The following fields can be edited in the master data: bolting process torque, torque-rotating angle, SGA (yield point-controlled tightening process), tool, bolt and quantity. Up to 50 different bolting operations can be pre-defined. The operator can only select from the pre-defined bolting operations in the Solution control system. These cannot subsequently be changed by the operator.



Definition of bolting operation

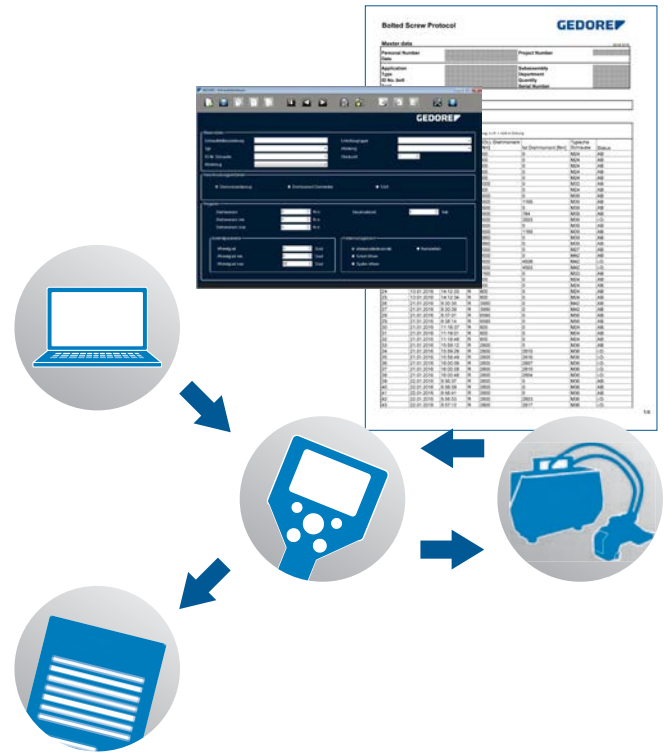
Export to Solution control system via inductive interface

Bolting operation with the LHM under defined specifications



+ Optional module (quality management):
LH.QS

The „QS“ module is suitable for all companies that need to define and document bolting operations according to quality management specifications. The working steps and values are pre-defined on the PC. These are transferred via the inductive interface to the Solution control system. The operator can only select from the pre-defined bolting operations. After bolting operations are complete, the bolting results for each bolt can be reloaded onto the PC and documented there in the form of a bolting protocol. This ensures that all bolts were tightened with the correct settings.



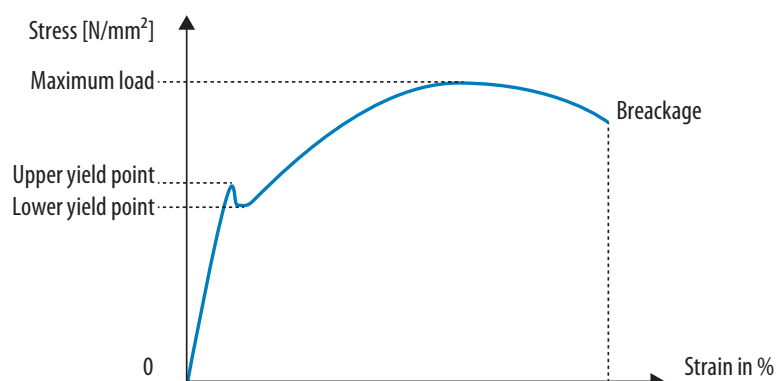
+ Optional module (yield point):
LH.QS

The yield point-controlled tightening process SGA occurs independent of the friction coefficient. This method is an alternative to the torque method. The settings can be made on the PC or directly with the Solution control system. The following settings can be made:

- Yield point: 80 % – 110 % (standard: 100 %)
- Control parameters: Theoretical torque,
Torque min./max.
Angular degree



Stress-stain diagram





LKV, LKS

MANUAL SOLUTIONS

LKV

- › MACHINE
- › REACTION ARM CRANKED
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION CERTIFICATE

LKV-L

- › MACHINE
- › REACTION ARM STRAIGHT, ADJUSTABLE
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION CERTIFICATE

LKS

- › MACHINE
- › OPERATING MANUAL



THE TORQUE MULTIPLIER LKV SERIES, 500 - 54.000 Nm

Series LKV-40 bis 550RS

Integrated return safety „RS“ for CW/CCW rotation and safe operation (as of model LKV-40RS)



Supplied with individual GEDORE factory calibration certificate



Reinvented: The torque multiplier

The torque multiplier is probably the simplest device in high level torque bolting technology and has been around for over forty years. The GEDORE Torque Solutions GmbH has reinvented this proven tool. With a clever design and new functions, the new torque multiplier series is a great contribution to facilitating operations.

Housing and gear unit

The housing and gear unit are the innovations in this series. A new production method was created, based on nature. The housing is therefore approx. 30% lighter but still as rugged.

At the same time, the ceramic-Teflon® coating enables minimum device lubrication. While conventionally lubricated torque multipliers decrease in performance (efficiency) when the outside temperatures are colder, due to the increasing tenacity of the grease, this unit operates independently of the temperature.

Reaction arm

The reaction arm, which must resist the counter-forces during bolting operations, has also been completely reworked.

Force distribution was analysed using complex FEM methods. It is therefore even more stable and durable than before due to the shape and materials selected. In addition, the reaction arm is equipped with a patented hold function that prevents the gear teeth from slipping.

Non-destructive overload protection

The 40-550RS models are equipped with a non-destructive overload safety mechanism. This patent-filed innovation represents real cost savings for the user. The basis of this extra feature is a highly-dynamic, pre-tensioned slip-coupling. As soon as the maximum permissible input torque is exceeded, the „Slipper“ triggers with a clearly audible acoustic noise.

The torque multiplier is not damaged so that normal operation can be started again. This means that no assembly downtimes occur and the safety of the operator is actively supported.

Certified safety

A completely new benefit for the torque multiplier is the individual factory calibration certificate for each device. This has never been the case before. This allows bolting operations to be implemented at a high level of torque precision. The torque tables on the devices display the standard torque for HV bolts. The tables can also be modified on request to the individual torques of the operator.



LKV-40

LKV-40RS

LKV-60RS

LKV-80RS

LKV-100RS

LKV-120RS

LKV-550RS

ACCESSORIES FOR THE LKV-40 TO LKV-120RS



Reaction arm cranked with lock on function, made of drop-forged chrome-vanadium steel (up to LKV-80)

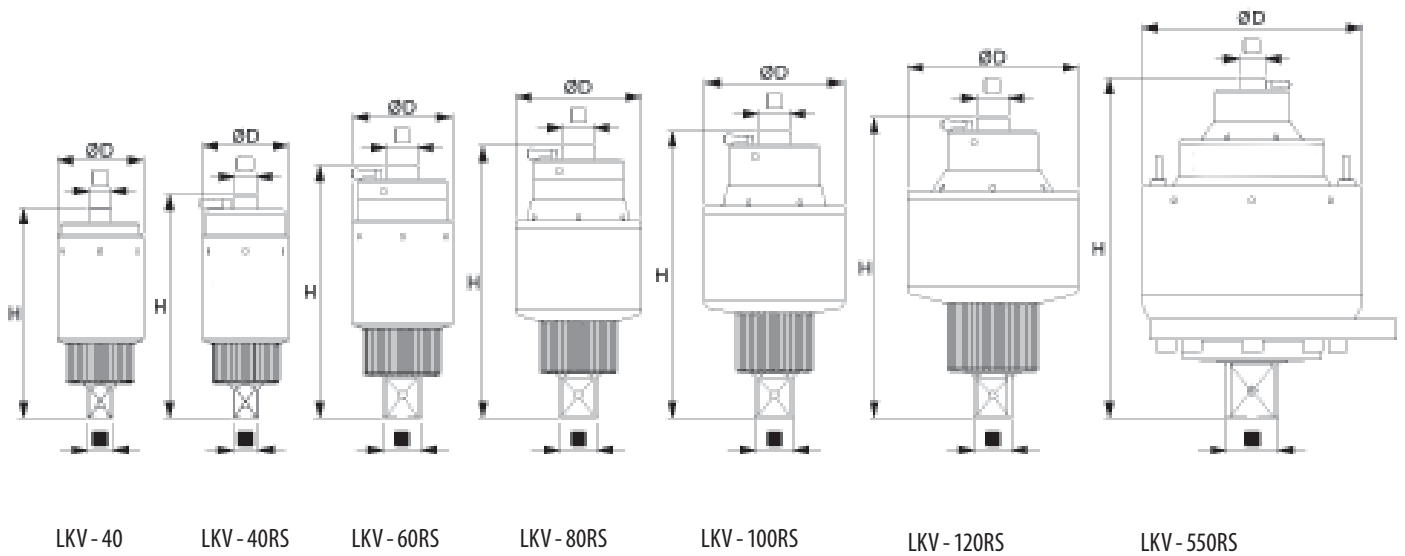


Reaction arm cranked with lock on function, made of light alloy with protective cap made of steel (from LKV-100)



Reaction arm made of light alloy, straight with adjustable locking knob with moveable square-end and retaining ring (up to LKV-100)

Technical data LKV-40 - 550RS



Type	N-m max	lbf-ft max	N-m min / max ^{*1}	lbf-ft min / max ^{*1}	^{*2}	Q		Ø D mm	H mm	kg ^{*3}
LKV - 40	300	220	500 - 4000	400 - 2930	1:16	½"	1"	88	212.8	3.9
LKV - 40RS	310	230	500 - 4000	400 - 2930	1:16	½"	1"	88	226.9	4.2
LKV - 60RS	400	300	650 - 6000	500 - 4400	1:18	¾"	1 ½"	102	256.2	6.6
LKV - 80RS	420	310	800 - 8000	600 - 5870	1:22	¾"	1 ½"	128	276.5	9.1
LKV - 100RS	410	305	1000 - 10000	700 - 7330	1:28.5	¾"	1 ½"	142	291.5	10.9
LKV - 120RS	380	280	1320 - 13000	1000 - 9530	1:39	¾"	1 ½"	174.5	306	17.0
LKV - 550RS	380	280	5500 - 54000	4000 - 40330	1:175	¾"	2 ½"	270	414.5	64.6

*1 Maximum load limit! Take into account a reserve of ~25% when selecting a device and, where applicable, note increased loosening torques!

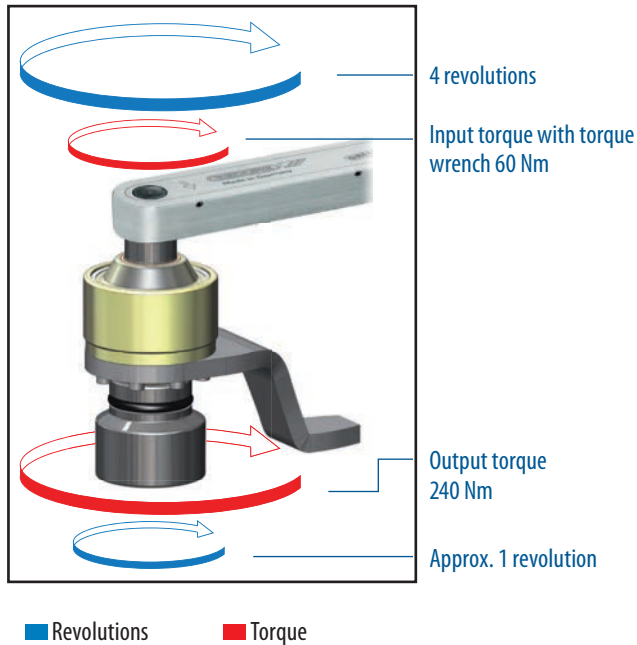
*2 Approximate data *3 Without reaction arm (except for LKV-550RS device with reaction plate)

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THE FUNCTION PRINCIPLE



The principle of torque multiplication



The chart representation demonstrates the principle of torque multiplication. Let us assume a 60 Nm input torque and a 240 Nm output torque. At a 1:4 ratio, 4 revolutions are needed at the input for 1 revolution with a 240 Nm torque to be obtained at the output.

This is based on the physical formula:

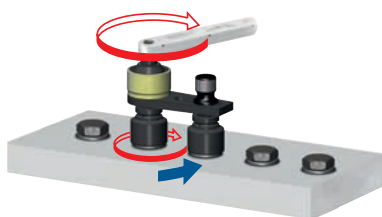
$$\text{Power} = \text{torque} \times \text{revolution}$$

With gear efficiency deducted, the output power can be considered as a constant equal to the input power. Thus multiplication of the torque can only be obtained from an increased number of revolutions at the input.

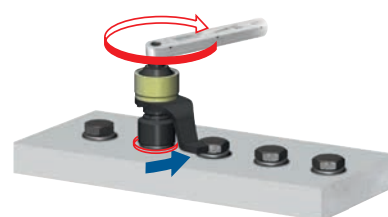


Force and reaction

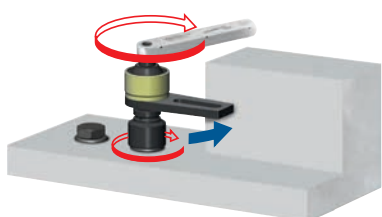
When working with a torque multiplier, torsion wind-up is built up in the gear while the bolt is tightened. This stress must be reduced. A reaction absorbed by reaction arm and thrust bearing is produced.



Reaction arm made of light alloy, straight with adjustable locking knob with slave square: The reaction acts on the adjacent impact socket



Reaction arm cranked: The reaction acts on the adjacent bolt connection



Reaction arm straight without adjustable reaction square drive: The reaction acts on the wall. However, the resulting tilting moment means that the maximum permitted torque is reduced by 20%.



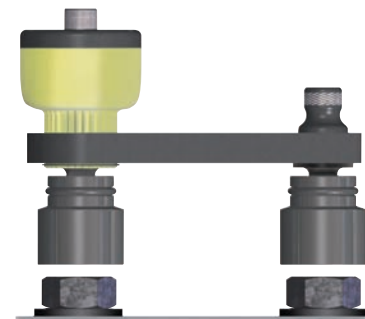
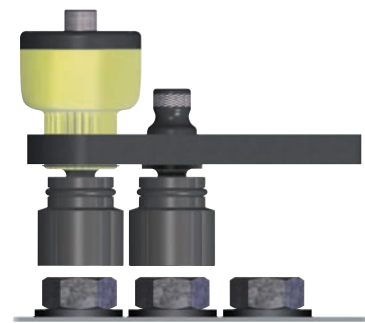
REACTION ARM MADE OF LIGHT ALLOY

straight with adjustable locking knob
with movable square-end



Reaction arm with adjustable locking knob

Reaction square can be released and shifted horizontally. This means the reaction arm can be adapted to the various flange screw fittings.



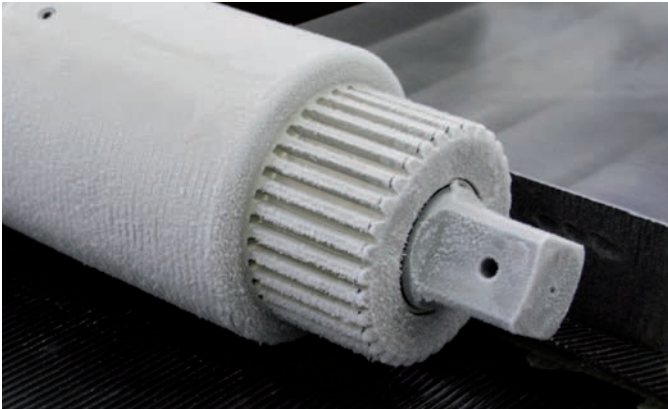
THE TORQUE MULTIPLIER IN TESTS

Our torque multipliers are tested to their limits.

Thanks to temperature and load tests, we can make statements about bolting operations in various climate zones and about the robustness and durability of the device.

Coldtest

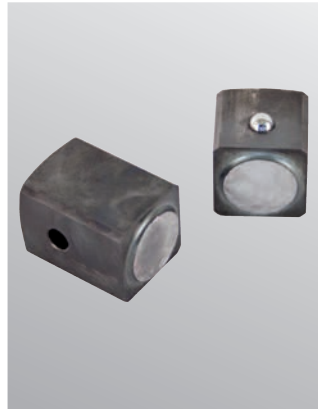
The ambient temperature always has an influence on the degree of efficiency and therefore on the accuracy of the device. The torque multiplier was cooled to -40°C in a cold test. Due to the minimal lubrication in the planetary gearing, the temperature influence could be kept to a minimum and the device could be used as usual.



LKV cooled down to -40°C

Load test

If a torque multiplier is overloaded, there is no danger to the gearing. The square drive of the device has a predetermined breaking point. If a Torque Multiplier is overloaded, there is no danger to the gearing. The square drive of the device has a predetermined breaking point, breaking away cleanly if too much load is acting on the device. The broken-off square drive can be replaced without problems. The advantage is that no splinters or deformation occur during breakaway. The device remains functional.



GEDORE Torque Solutions GmbH:
Controlled breakaway



OTHERS: Uncontrolled breakaway can
damage other components



THE TORQUE MULTIPLIER SERIES LKV, 50 - 1.300 Nm

Series LKV-12



Lean, high-performance aluminium housing is 30% lighter than a steel version

Total weight of 1.9 kg for best torque-weight ratio

Easy to handle and compact as optimal on-board tool suitable for utility vehicles or construction machines

Drop-forged reaction arm with lock on function, made of chrome-vanadium steel for even greater stability

Supplied with individual GEDORE factory calibration certificate

CALIBRATION CERTIFICATE	
for Torque Wrenches	
Manufacturer:	GEDORE
Inspector:	Wraah
Temperature:	23.1
Min. Torque:	10
Max. Torque:	9

Accessories for the LKV-12



Reaction arm cranked with lock on function, made of drop-forged chrome-vanadium steel



Reaction arm made of light alloy, straight with adjustable locking knob with slave square and retaining ring



Sun gear

TECHNICAL DATA LKV-12



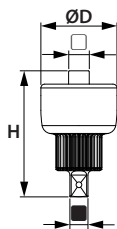
Small, easy to handle, light but rugged

The smallest torque multiplier in this series is particularly suitable for maintenance purposes and in workshops. The little power packet has been reduced to the smallest possible dimensions without losing any robustness or torque power. It is equipped with an offset reaction arm and can be retrofitted with a straight reaction arm.

The sun gear acts as a predetermined breaking point if the device is overloaded. This protects both the operator and the device. The sun gear can be easily and rapidly replaced by the operator. Assembly and cost outlay remain low.

The optimal on-board tool

The LKV-12 has small dimensions and can fit in a pocket. This device is highly suitable for use as an on-board tool in utility or construction site vehicles. It can be stored in the vehicle in a stable transport case. Due to the minimum lubrication of the gear unit, the device is essentially temperature-independent and can be operated without problems even at freezing temperatures.



Type	N-m max	lbf-ft max	N-m min / max ^{*1}	lbf-ft min / max ^{*1}	^{*2}	Q		Ø D mm	H mm	^{*3} kg
LKV - 12	270	200	50 - 1300	40 - 950	1:5	1/2"	3/4"	80	132.5	1.3

*1 Maximum load limit! Take into account a reserve of ~25% when selecting a device and, where applicable, note increased loosening torques!

*2 Approximate data

*3 Without reaction arm

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THE TORQUE MULTIPLIER SERIES LKV, 100 - 2.800 Nm

Series LKV-20Z/28Z

Lean, high-performance aluminium housing is 30% lighter than a steel one



Fixed reaction arm in straight or cranked version



Output square as overload protection for gear unit protection



Supplied with individual GEDORE factory calibration certificate



Series LKV-20L/28L



Accessories for the LKV-20 and LKV-28



Reaction arm cranked (bolted to the tool)



Reaction arm made of light alloy, straight with adjustable locking knob with reaction slave square (bolted to the tool)



Spare square for LKV-20



Spare square for LKV-28

TECHNICAL DATA LKV-20/28



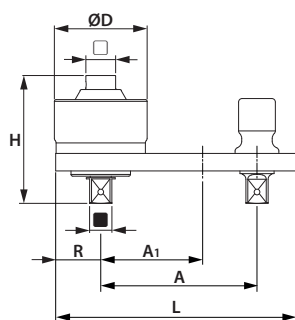
Popular for flange bolt connections:
LKV-20/28L

The positioning of the torque multiplier must be implemented easily and rapidly, particularly for flange bolt connections. The LKV-L is equipped with a fixed straight reaction arm and is therefore a complete solution for flange bolt connections. The required spacing between two bolts can be rapidly and easily set using the adjustable reaction square, accelerating work.

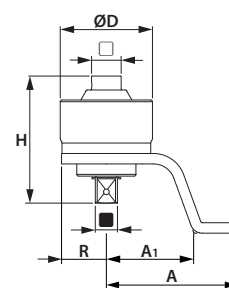


Practical and easy to handle:
LKV-20/28Z

The LKV-Z series is particularly suitable for mechanical and plant engineering, maintenance and the transport industry. This series also has a fixed reaction arm, but cranked version. The gear unit is protected against overload with a shearing square which can be easily replaced.



LKV-L



LKV-Z

Type	N·m max	lbf·ft max	N·m min / max*1	lbf·ft min / max*1	*2			A mm	A ₁ mm	ø D mm	H mm	R mm	*3 kg
LKV - 20L	580	430	100 - 2000	70 - 1500	1:4	¾"	1"	152	73	88	131	43	1.8
LKV - 20Z	580	430	100 - 2000	70 - 1500	1:4	¾"	1"	150	100	88	131	43	1.8
LKV - 28L	550	410	500 - 2800	400 - 2050	1:5.5	¾"	1"	199	83	106	146	52	2.4
LKV - 28Z	550	410	500 - 2800	400 - 2050	1:5.5	¾"	1"	151	101	106	146	52	2.4

*1 Maximum load limit! Take into account a reserve of ~25% when selecting a device and, where applicable, note increased loosening torques!

*2 Approximate data

*3 Without reaction arm

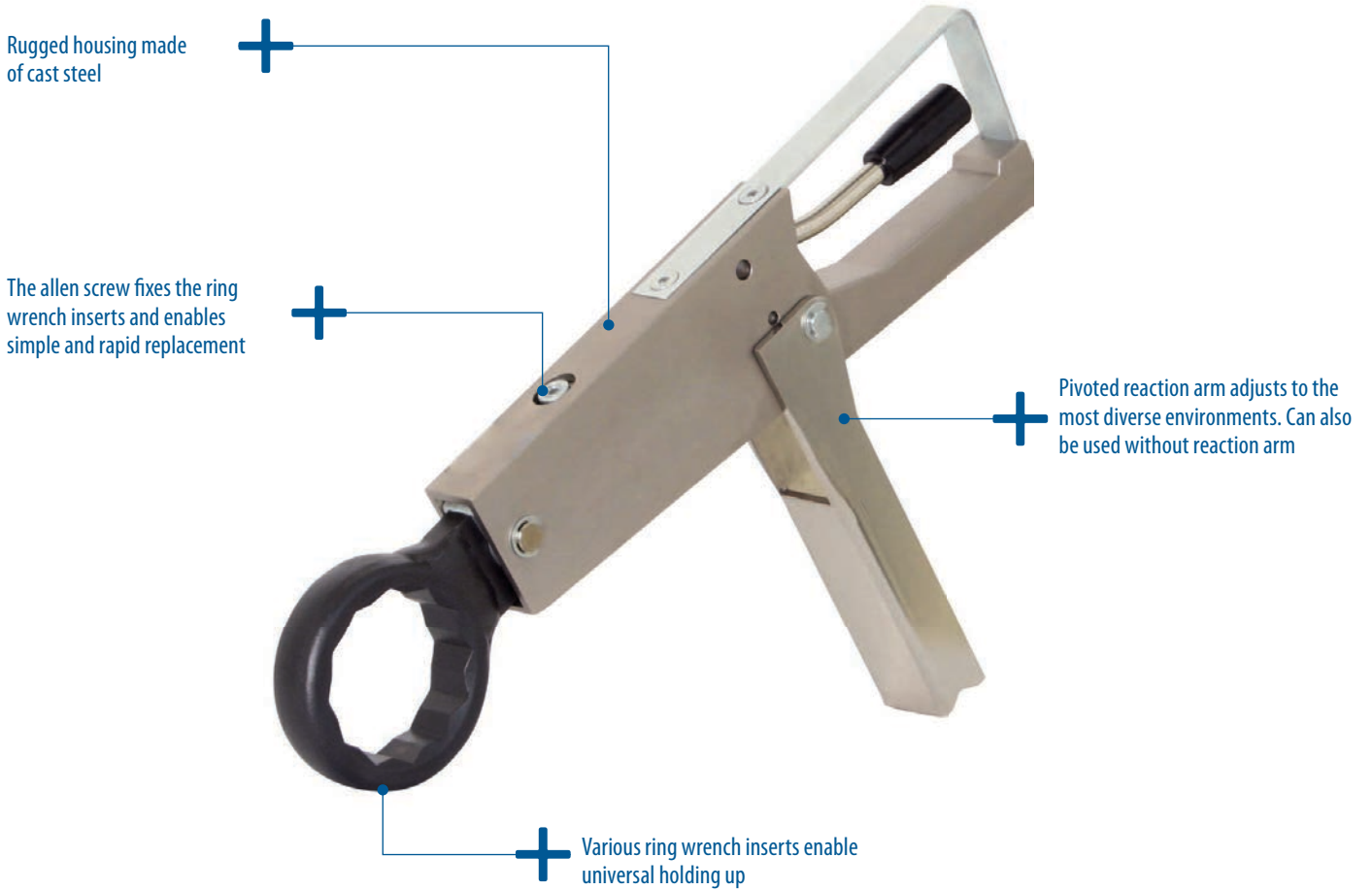
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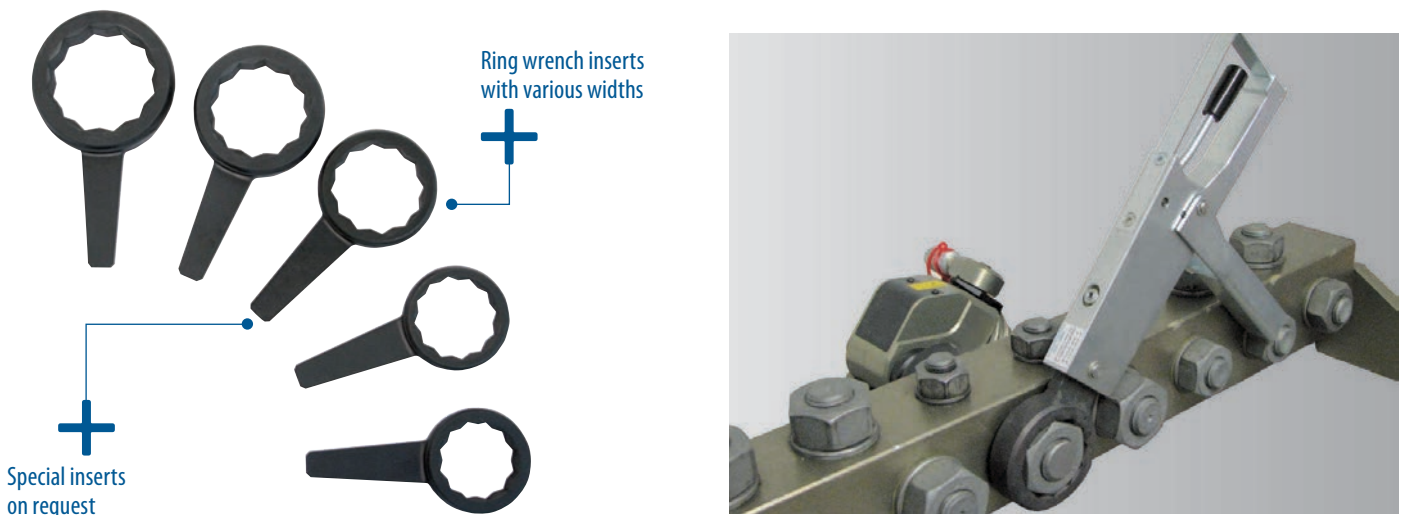
THE COUNTER WRENCH

LKS SERIES, RSW 32 - 115 mm

LKS series



Accessories





Danger to assembly personnel must be avoided

Every user knows the problems and dangerous situations that can arise when counter-holding while a bolted connection is being tightened. The wrench used for counter-holding can often rotate with unpredictable torques, block or jump off. Once the bolting operation is complete, it often needs to be levered off or even knocked off.

The danger of injury for the assembly personnel is very high here and the risk of damaging neighbouring components or the tools is also significant. The results can be irritation, time loss and assembly downtimes.

The solution: The GEDORE Counter Wrench

Equipped with the appropriate insert, the device utilises a thrust bearing and absorbs the driving torque with the integrated mechanics. Following completion of the bolting operation, a simple press of the lever and the counter-wrench can be rapidly and easily released.

Frequently copied, but never matched

The patented mechanism of the GEDORE counter wrench is unique. Only the precise interplay of the individual components ensures correct and problem-free function. Cheaper copies can bend or stick under large loads. The ring inserts are made of forged chrome-vanadium steel as of size 70.

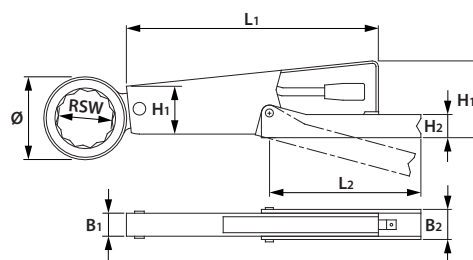
Technical data

Type	L ₁ mm	B ₁ mm	H ₁ mm	L ₂ mm	B ₂ mm	H ₂ mm	kg
LKS	310	27	65/95	190	38	30	2.6 / 0.4 ^{*1}

*1 plus reaction element

Ring wrench inserts type RSW

RSW mm	Ø ^{*2} mm	RSW mm	Ø ^{*2} mm	RSW mm	Ø ^{*2} mm
32	54	60	94	90	152
36	54	65	104	95	152
41	60	70	110	100	155
46	75	75	115	105	172
50	80	80	126	110	172
55	88	85	130	115	172



*1 Head diameter (Ø similar DIN 7444).

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LDP, LTC

TORQUE TESTING BENCH TECHNOLOGY

LDP

- › MACHINE
- › SOFTWARE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE
FOR TORQUE SENSOR

LTC

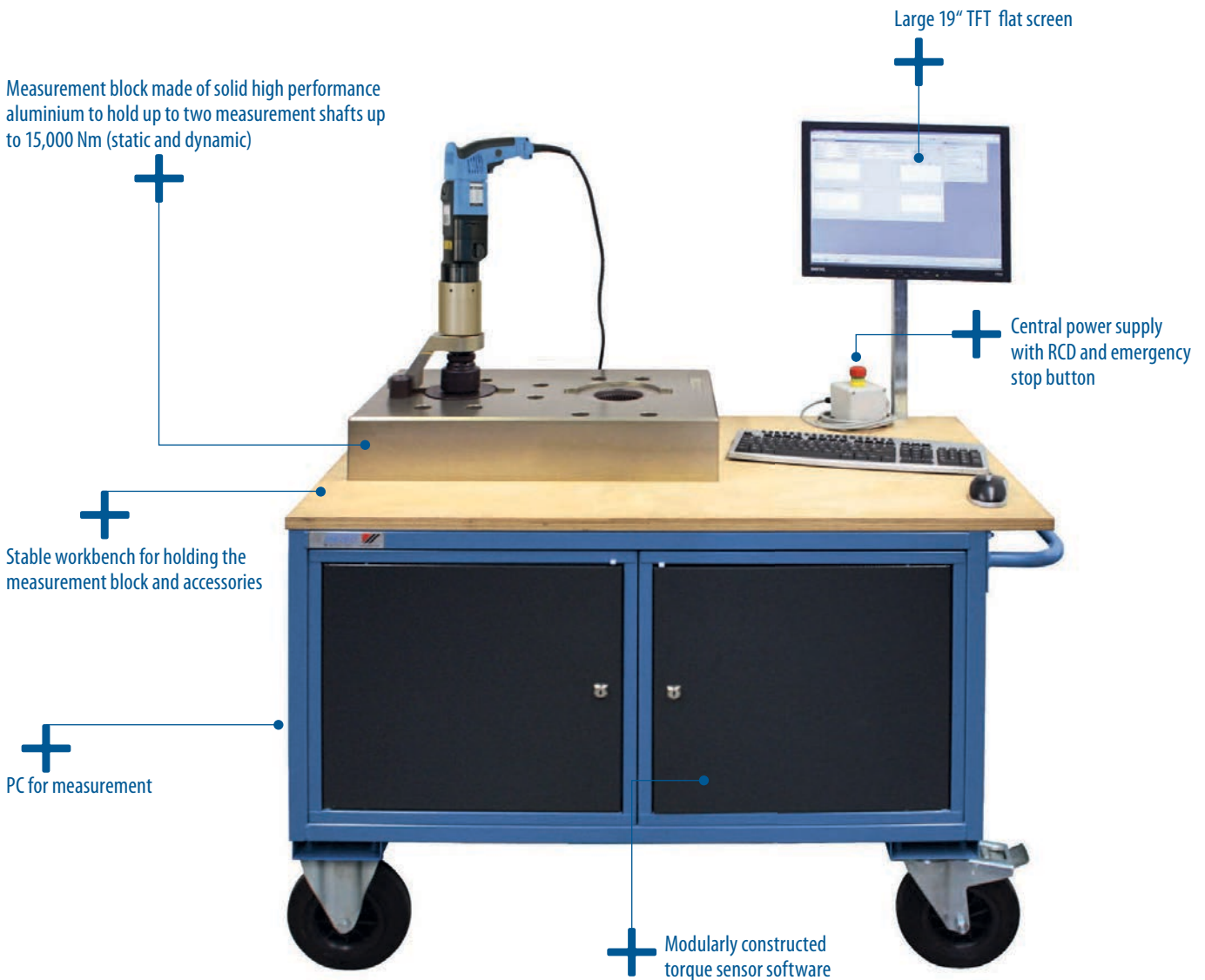
- › MACHINE
- › SOFTWARE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE
FOR TORQUE SENSOR



THE TORQUE TESTING BENCH TECHNOLOGY

LDP SERIES, 100 - 15.000 Nm

LDP series



Measure dynamic torques, but how?

If one looks at the influencing factors that arise during the production of a correct bolted connection, it is clear that the greatest influence is due to the bolt itself: Type and condition of the thread, quality class, diameter, length, bolting in speed, the list could be continued almost endlessly.

For this reason, there are still no recommended measurement regulations from any of the official bodies for the traceable determination of dynamic torques. Torque measurements where the resistance of the bolted connection is simulated via mechanical braking systems or similar systems ignore significant influencing factors.

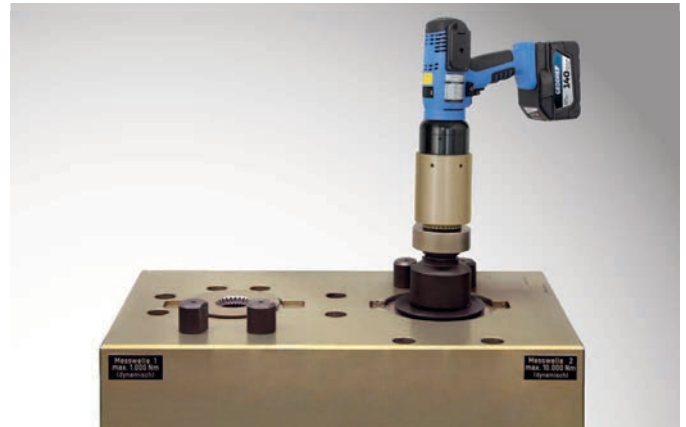
Static and dynamic torque measurements up to 15,000 Nm

Torque measurement with system

The torque testing bench system takes the actual aspects of your bolting applications in practice into account as much as is feasible. Original bolts with all the influencing factors that act on them are measured to determine the dynamic torques.

Correction factors are not necessary

The value determined during measurement is actually equivalent to the dynamic torque applied to the bolted connection. Subsequent addition of correction factors for hard or soft bolting operations, etc. is not necessary. This allows you to implement rational and error-free measurement in all application cases.



The modular kit

The interface between bolt and test bench is the so called bolt adapter. Attachment of the bolt to the bolt adapter is simple and means that the bolted connection can be changed at any time, even during measurements. Special adaptations are just as easy with this system as the direct use of standard female hexagon inserts for static torque measurement of hydraulic wrenches, torque multipliers and torque wrenches.

Module for graphical evaluation

The mean values of all measurement series are recorded graphically and shown on the factory calibration certificate. The torque curve is recorded up to the maximum value for hydraulic torque wrenches and manual torque multipliers.

Module for different languages

Certificates in various languages are increasingly required due to the international use of bolting systems. This is no longer a problem with the language module. The languages of all previously created factory calibration certificates can be changed both during measurement and afterwards. Over 15 European and Asiatic languages are currently available.

Module for measurement unit selection

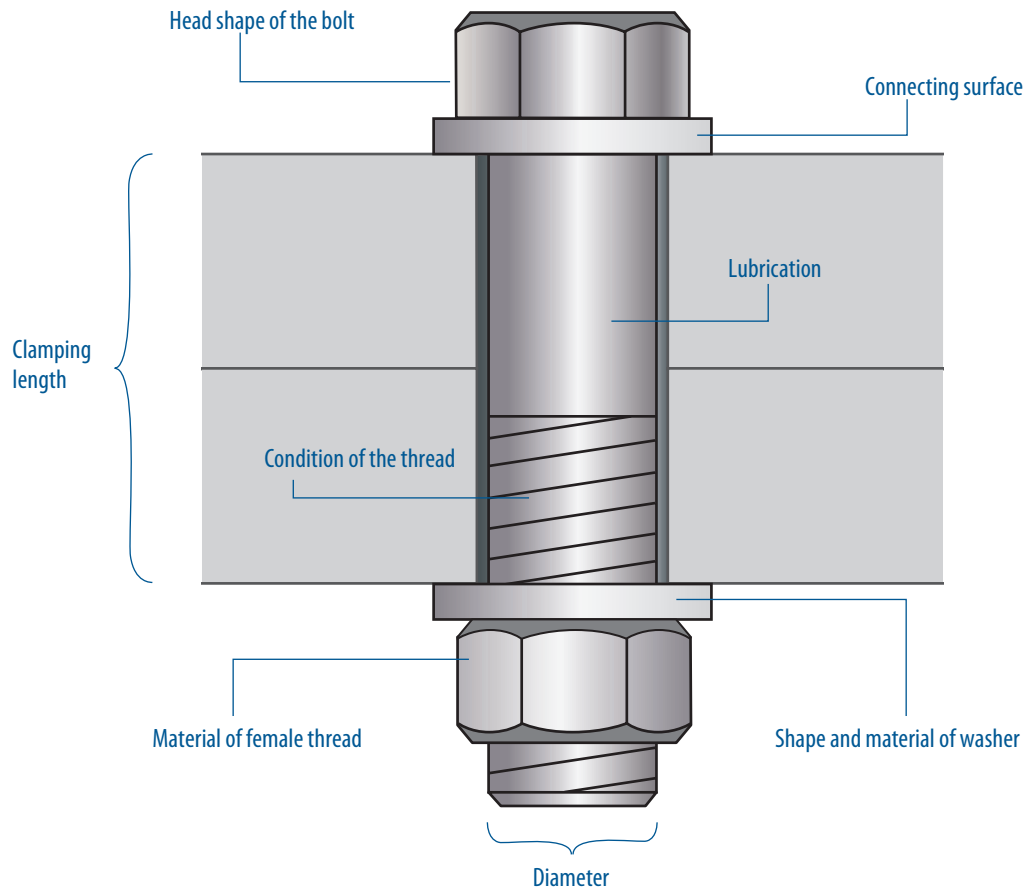
Torque data is frequently given with the imperial units system. This software module allows you to switch the units in all previously created certificates before or after measurement between the metric and imperial units systems.

Database module

You can administrate all your torque wrenches as well as static and dynamic bolting systems with this module. Over 500 test specimens can be recorded for 20 years with the basic module alone. Identification is implemented with a bar code scanner.



THE INFLUENCING FACTORS OF A BOLT



Influencing factors of the bolt connection

The aim of every bolt tightening operation is to achieve the required clamp force that is generated between two components being connected. The clamp force is influenced by numerous factors in the torque process.

This means that the expected clamp force may not be reached in the end because other influencing factors have reduced the force. Influencing factors can be the condition of the thread, lubrication, etc.

It is therefore very important to know the bolted connection and relevant influencing factors before any bolt tightening using torque.

But how can the required clamp force be achieved with reproducible accuracy?

The answer is: system setting using original bolts.

Teach-in with original bolts

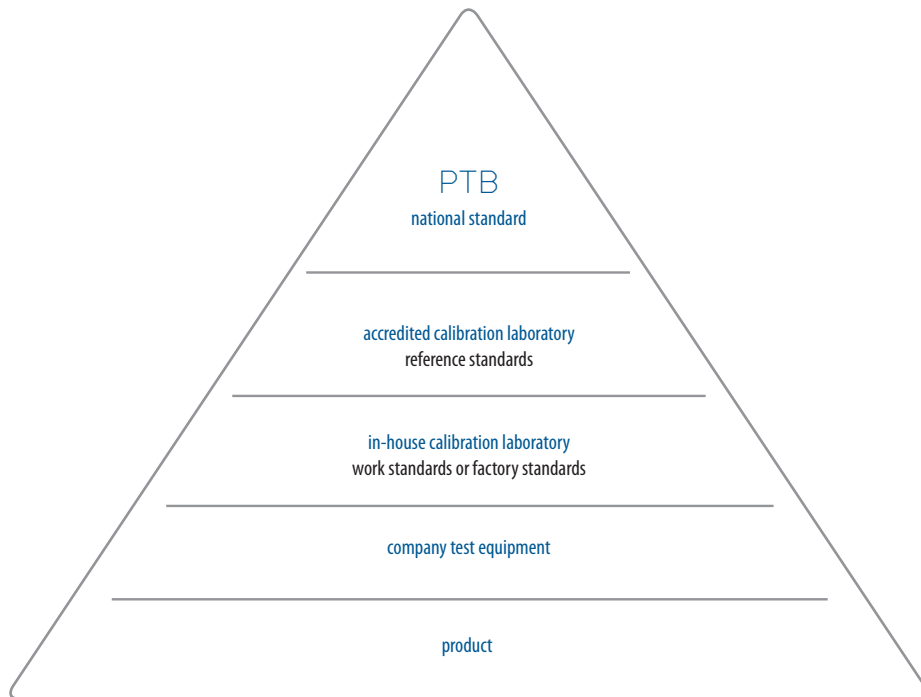
We know the influencing factors for bolt connections and take them into consideration during the test procedure.

Our philosophy is very close to practice. The bolt adapters in the torque testing benches are realised 1:1 with the real application case. All influencing factors are taken into account with this process.

Even exotic bolting operations can be individually simulated with our torque testing benches. The entire system reacts flexibly to hard and soft, static and dynamic bolting operations.

At the end of measurement, each device receives the individual factory calibration certificate.

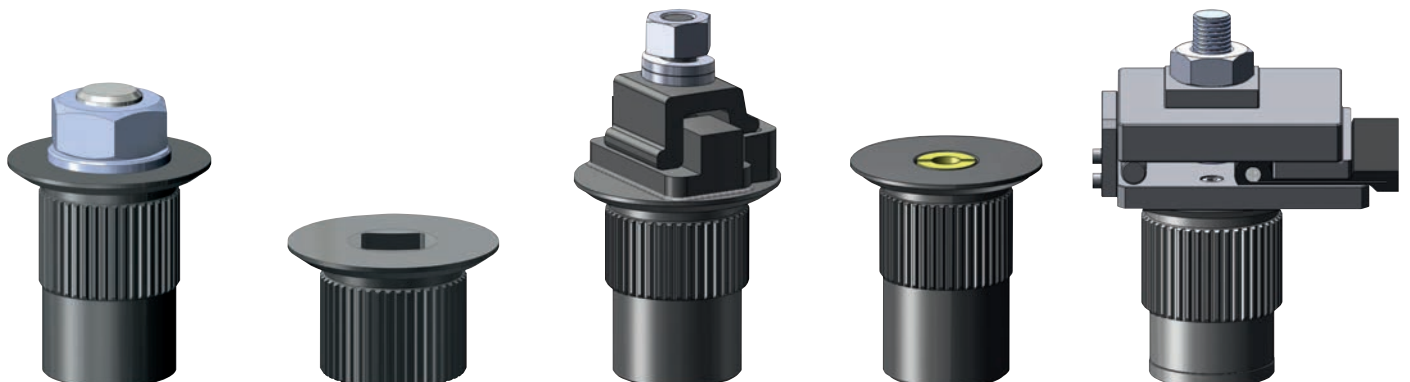
FACTORY CALIBRATION CERTIFICATE CLASSIFICATION



In-house calibration laboratory

Our factory test certificate is classified in the „in-house calibration laboratory“ category.

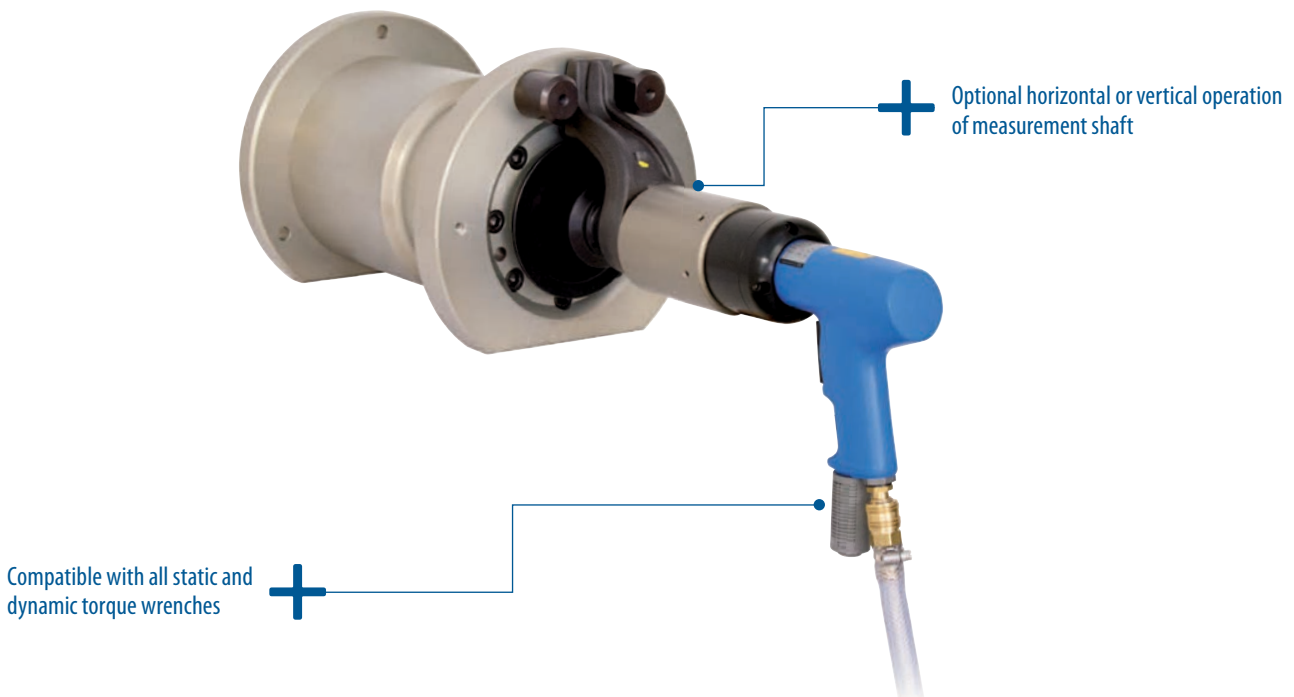
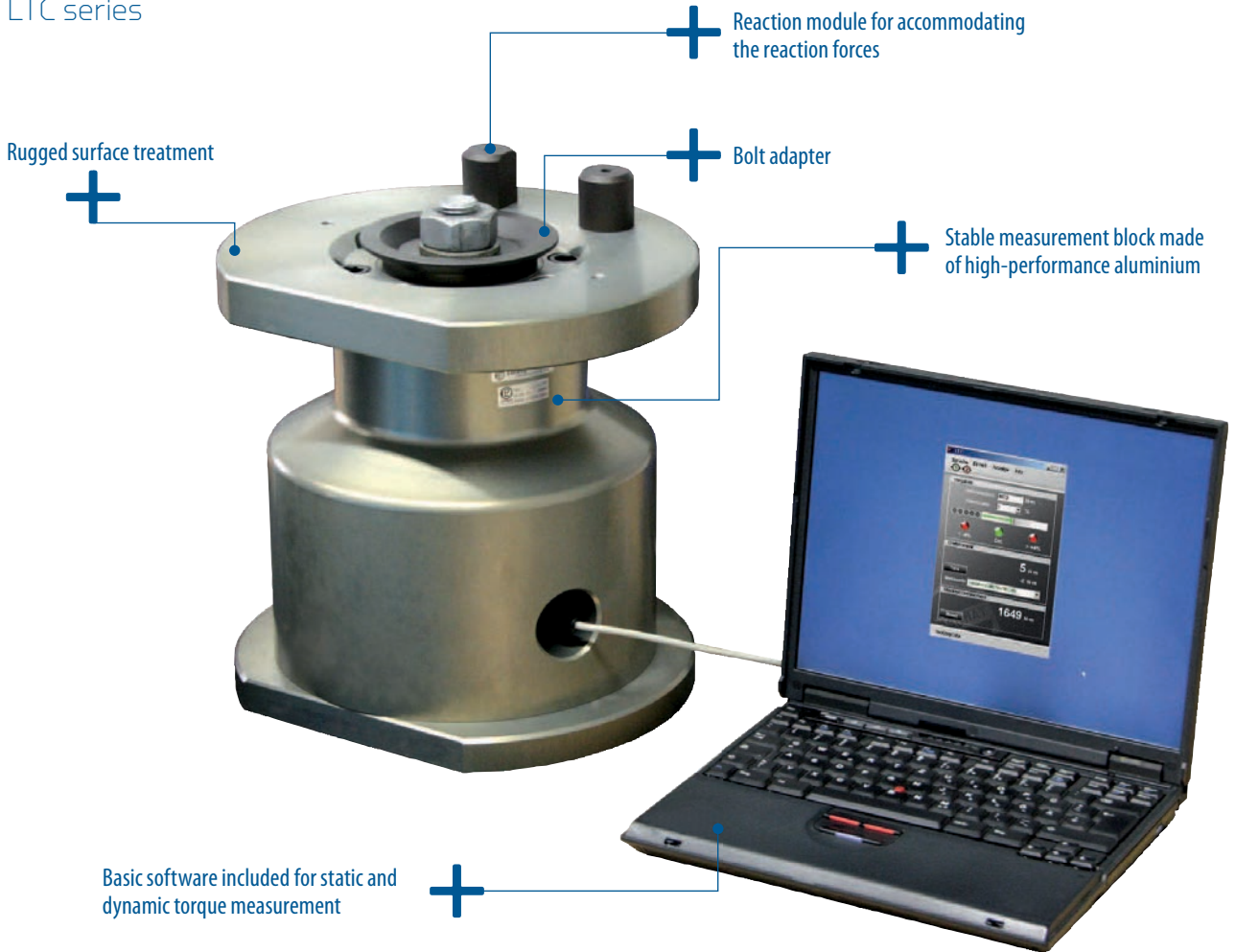
screw adapter



THE TORQUE TESTING BENCH TECHNOLOGY

LTC SERIES, 100 - 5.000 Nm

LTC series



Static and dynamic torque measurements up to 5.000 Nm

Static and dynamic bolting systems must be regularly checked for their torque accuracy. The Torque Check (LTC) system was developed for simple, mobile and professional dynamic torque measurement.

Torque measurement with our system

You do not need to omit proven, close to practice measurement of your bolting operation with this model. As in the larger LDP series the dynamic torque is determined using an original bolt. The supplied bolt adapter can be exchanged and replaced.

Basic software with comprehensive utility

The basic software included with the system has comprehensive utilities for rapid static and dynamic torque measurement in metric and imperial units. Both German and English are available as the operating languages. At the end of each measurement, the system signals the operator immediately as to whether the determined value lies within the specified tolerances or not. The operator is constantly informed visually and numerically about the torque progress. This is particularly helpful when testing torque wrenches.

The basic software can be upgraded modularly to a complete test bench environment. So that the test bench grows from the entry model to a fully professional system together with your requirements.



The LTC is available for the following measuring ranges:

LTC-10	100 – 1.000 Nm
LTC-30	300 – 3.000 Nm
LTC-50	500 – 5.000 Nm





SPECIAL SOLUTIONS

FOR DIFFERENT CUSTOMERS REQUIREMENTS

GATE VALVE WRENCHES LDA-S

- › MACHINE INCL.
REACTION ARM,
STRAIGHT(LM)
- › 2 BATTERIES
- › BATTERY CHARGER
- › TOOL CASE
- › OPERATING MANUAL

GATE VALVE WRENCHES LDE-S

- › MACHINE INCL.
REACTION ARM,
STRAIGHT(LM)
- › TOOL CASE
- › OPERATING MANUAL

GATE VALVE WRENCHES LEW-S

- › MACHINE INCL.
REACTION ARM,
STRAIGHT(LM)
- › TOOL CASE
- › OPERATING MANUAL

SIDE POWER WRENCHES LES

- › MACHINE INCL.
HEXAGON ADAPTER
AND HOLDER
- › TOOL CASE
- › OPERATING MANUAL

SIDE POWER WRENCHES LPS

- › MACHINE INCL.
REACTION ARM,
STRAIGHT(LM)
- › TOOL CASE
- › OPERATING MANUAL

RAILWAY TORQUE WRENCH LDB

- › MACHINE INCL.
REACTION ARM, STRAIGHT
(LM) WITH HOLDFUNCTION
- › 2 BATTERIES
- › BATTERY CHARGER
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE

HEAVY DUTY TORQUE WRENCH LHD

- › MACHINE INCL.
REACTION ARM, CRANKED
(ST) WITH HOLDFUNCTION
- › POWERBOX
- › TOOL CASE
- › OPERATING MANUAL
- › FACTORY CALIBRATION
CERTIFICATE



THE GATE VALVE WRENCHES SERIES LDA-S, LDE-S, LEW-S

LDA-S series

Infinitely adjustable breakaway torque for individual settings on your gate valves



Flexible drive systems: electric and battery-operated



2-speed gearbox for 3x higher speed



Rugged planet gear unit for high breakaway torques



Robust planetary gear for high breakaway torques



Optional counter



LEW-S (electric)

LDE-S (electric)
Display with integrated counter





Open every gate valve with these tools

Our gate valve wrenches are derived from the development of precision torque wrenches. Once again, unnecessary weight has been saved in this new generation. At the same time, the mountings of the moving parts in the rugged planet gear unit were improved, leading to an enormous increase in service life of the entire machine.

Impact-free and accident-free work, even with difficult gate valves

Our gate valve wrenches work rapidly and reliably without wear-inducing slip-coupling. The electronically infinite torque settings and the soft start-up behaviour of the motor make a sudden tearing away of the gate valve spindle impossible.

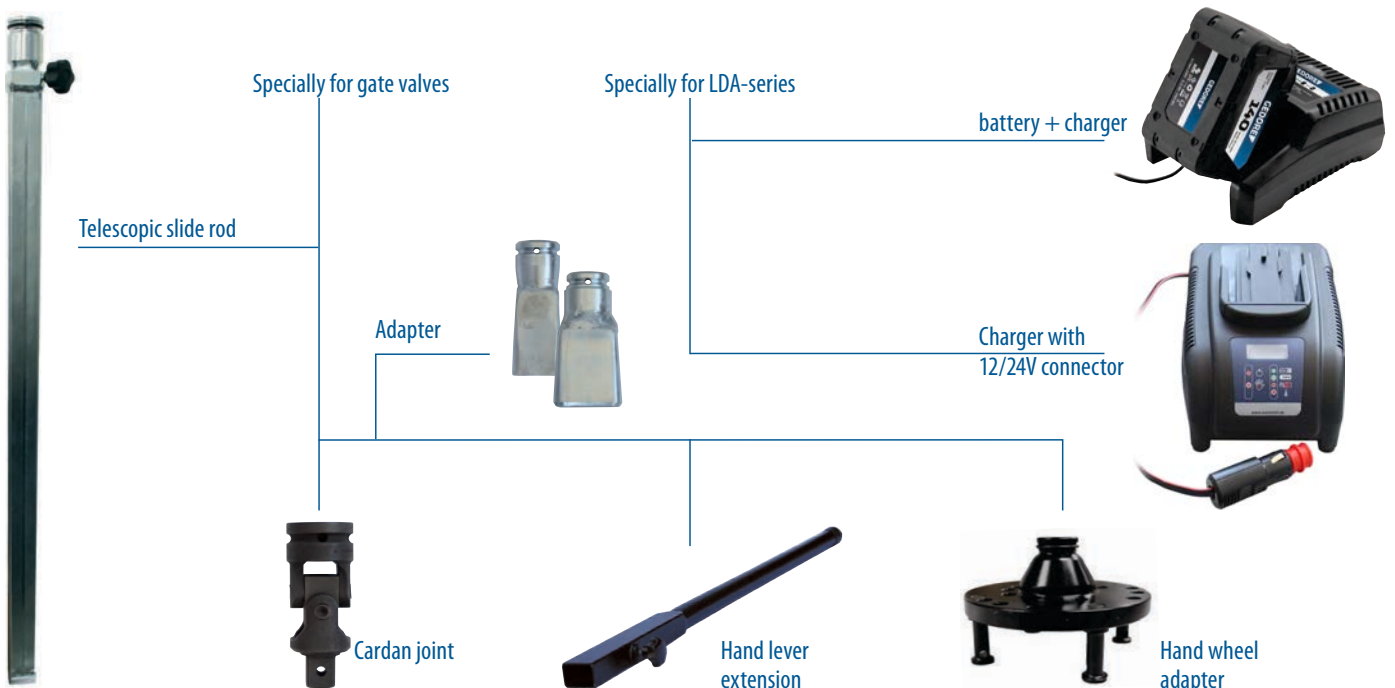
Optimal working weight of just 4.7 kg with a breakaway torque of over 900 Nm

Our gate valve wrenches are consistently weight-optimised without losing any operating comfort or the necessary safety. The complete motor unit can be rotated through 360° in all models and adapts comfortably to your application case due to the ergonomic design. The reaction forces are securely accommodated by the device. The operator can easily open even jammed gate valves up to size DN 1.000.

Various drive systems for flexible applications

The gate valve wrenches are available with electric or cordless power systems. Determine your own gains with regards to working safety, flexibility and time when opening/closing your gate valves in your pipe network.

Accessories



LDA-S SERIES

Robust battery technology for gate valve wrenches

The cordless gate valve wrench battery equipment is a real highlight under the gate valve wrenches.

Battery-operated but just as strong as a mains-based AC wrench, it provides a powerful breakaway torque of max. 900 Nm. Even with this design, the torque can be reduced during operation without reducing the speed until the best possible security is achieved for the gate valve and operator.

Flexible maintenance work and pipe network maintenance

From now on, you can work with your gate valve wrench whenever you want, wherever you want and as long as you want to. Our gate valve wrenches work with lithium ion technology (Li-Ion) instead of conventional nickel-cadmium batteries (Ni-Cd). These are characterised by 100% more operating time per charge compared to Ni-Cd batteries. This provides you with peak performance during the entire usage time without speed or torque loss.



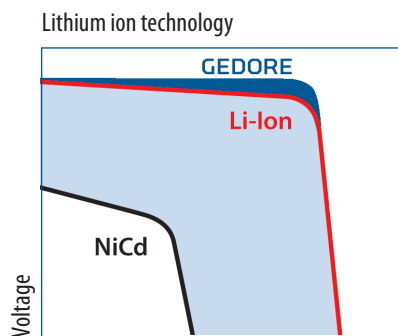
Reserve capacity of battery and charger



The charging time on the charger is approx. 30-50 min when the battery is empty. Once the battery is fully charged, the charger LED changes from red to green



The flashing LED signals that the battery has a reserve capacity of 10%



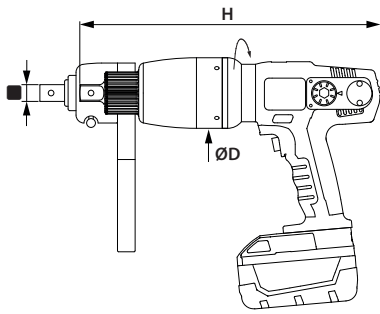
Discharging during work

Four lit up LEDs signal that the battery is fully charged

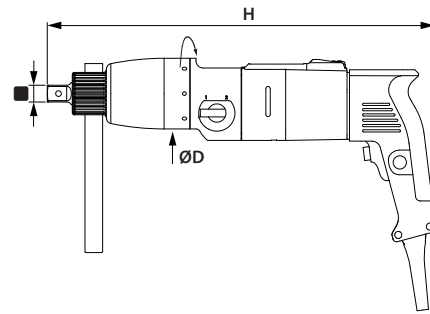


Pressure switch for displaying the charge status

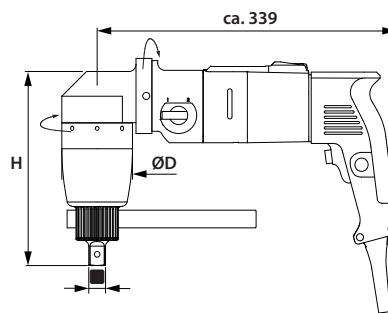
Technical Data



LDA-S – battery-operated



LDE-S – electric straight version



LEW-S – electric angled version

Type	~ N·m max*1	~ lbf·ft max*1	~ U/min	■	Ø D mm	H mm	kg *2
LDA - 05S	500	370	60	¾"	80	308	4.3
LDA - 07S	700	520	41	¾"	80	319	4.5
LDA - 09S	900	660	30	¾"	80	340	4.7
LDE - 075S	770	570	25	¾"	80	440	5.1
LDE - 09S	900	670	17	¾"	80	440	5.2
LEW - 09S	900	670	18	¾"	80	220	6.5

*1 Breakaway torque in 1st gear Other torques on request

*2 Without reaction arm

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THE SIDE POWER WRENCH

LES/LPS SERIES

LES series

Patented switch-off electronics protected against spray water and moisture



Infinitely adjustable torque settings with electronic overload protection



Display with integrated counter and countdown function



Patented tandem gear pulley for secure transmission of large torques up to 4,800 Nm (in LES-16/..)



Optimised design enables space-saving positioning parallel to the tie rod



torque values readable on the label

Braked 360° pivoting drive unit enables simple positioning on the tie rod



Various wrench widths with reduction inserts ensure universal application options

LPS series (pneumatic)



Accessories: Hexagon adapter

⬡	36 mm	41 mm	46 mm	50 mm	55 mm	60 mm	65 mm	70 mm	75 mm	80 mm
55	•	•	•							
60	•	•	•	•	•					
70	•	•	•	•	•					
80	•	•	•	•	•	•	•	•		
95						•	•	•	•	•



Specially developed for working on plate heat exchangers

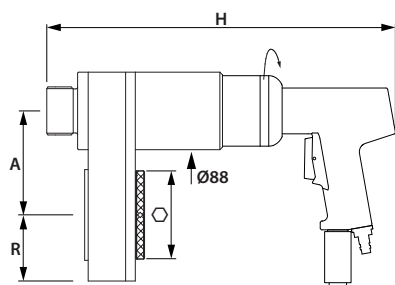
We have specially developed various series of side power wrenches in this sector for the safe assembly and disassembly of plate heat exchanger systems. They work rapidly and reliably, and are – like all of our devices – weight-optimised and designed to be user-friendly. Regardless of whether your exchanger systems are equipped with or without thrust bearings, we have the appropriate system for all types to make your work as easy and comfortable as possible. Our side power wrenches are available with electric or pneumatic drives.



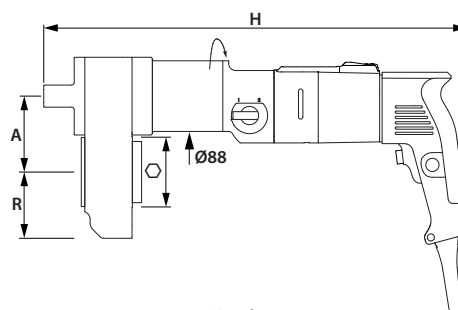
The alternative for smaller plate heat exchangers

The LES-09 model is our entry models with torques up to 1,600 Nm. These side power wrenches are impressive because of their practical and simple operation, particularly for smaller plate heat exchanger versions. High-performance aluminium ensures lower weight and the rotating hand grip adapts individually to the requirements of the user. But, above all, it is the enormous bolting speed that is characteristic of both our new products. The set includes a hexagon adapter for the next smallest wrench width, including the holder for attaching the adapter to the basic unit.

Technical data



LPS - pneumatic



LES - electric

Type	~ N·m max ^{*1}	~ lbf·ft max ^{*1}	~ U/min ^{*2}	□ mm	A/R mm	H mm	kg ^{*3}
LPS - 1/60	3000	2200	7	60	112/61	396	10.0
LPS - 1/80	3600	2650	5	80	118/75	396	12.0
LPS - 1/95	4800	3500	4	95	135/95	396	13.0
LES - 16/60	3000	2200	7	60	112/61	503	11.1
LES - 16/70	3600	2650	5	70	118/75	503	11.7
LES - 16/80	3600	2650	5	80	118/75	503	11.7
LES - 16/95	4800	3500	4	95	135/95	503	13.6
LES - 09/55	1600	1180	13	55	86/75	480	10.0
LES - 09/60	1600	1180	13	60	86/75	480	9.8

*1 Series LES: Breakaway torque in 1st gear

*1 Series LPS: Breakaway torque at 7 bar

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*2 Series LES: Maximum speed in 2nd gear

*2 Series LPS: Maximum speed at 7 bar

*3 Without reaction arm



THE RAILWAY TORQUE WRENCH LDB SERIES

Select the rail system directly on the large, illuminated colour display



Change of direction right on the handle

Robust, lockable 48V Lithium Ion battery. For approx. 1,400 bolts on new W-rail system



Low-wear, brushless direct current drive with 16 kW maximum output



Maximum breakaway torque 1,100 Nm



Additional handles, variable attachment



Supplied with individual GEDORE factory calibration certificate



Watch our LDB-video - see for yourself!

Awarded with the



COMPETENCE PRIZE
BADEN-WÜRTTEMBERG
FOR INNOVATION AND QUALITY
2015



A complex task

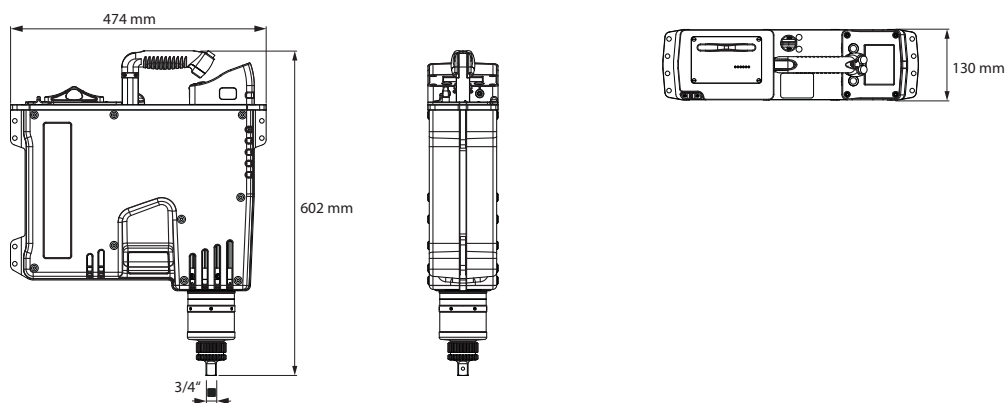
Bolts with two different thread pitches are normally used to fasten rails. When fixing the W-rail system, the sleeper bolt head bolts ten times faster to the sleeper in comparison to the K-rail system due to the larger thread pitch. Various types of fixing equipment are also used which also makes the process complicated. It mainly depends on the skills of the rail track fitter to fasten the bolts quickly yet carefully. A virtually impossible task due to the time restrictions often involved.

All rail systems used to be fastened with the same torque setting of approx. 200 Nm. However this setting is suboptimal for the majority of tracks. In practice one torque setting means that rails are incorrectly fastened and can lead to the sleepers breaking and bolts cracking.

Flexible use is the feature of a universal talent

- › The LDB-10 can be used for tightening and loosening horizontal bolts for insulated rail joints, fishplate joints, check rail bolts, track switch bolts etc. In comparison to the impact wrench, each bolt is opened.
- › It can be held perfectly balanced in the hand of the operator thanks to the ergonomic, height-adjustable handle. Two handles that can be mounted at variable heights allows the operator to adapt the device depending on the type of work.
- › The universal railway torque wrench weighs under 20 kg, a fraction of conventional machines and can easily be operated and moved by one operator.
- › Alongside bolting, the LDB-10 can also be used to drill sleepers using a suitable drilling adapter.
- › Environmentally-friendly battery operation ensures zero-emission working. Advantage: Can be used in tunnels. This tool can be operated during the night as its noise levels are considerably lower than with other drives.
- › The torque no longer has to be set on the LDB-10. The operator simply has to select the type of rail system from a pre-configured menu. The corresponding torques and bolting speeds have been pre-entered at the factory. The correct setting can be made quickly. And above all: Damages on the sleepers and bolts can be easily avoided.
- › The LDB-10 can also be equipped with a universal impact socket. With this, both clip bolts (hexagon 39 mm) and sleeper bolts (square 21/28) and even fishplate bolts (hexagon 41 mm) can be torqued. W-, KS-, K-rail and track switches can be torqued without having to change tools.
- › The quality of each single bolt connection must be verified in line with increasing demands on safety and quality. The LDB-10 has been designed with this in mind and stores the type of rail track system, the time of bolting, the torque and the correct tightening. The memory saves up to 50,000 bolting operations and can be conveniently read out on the PC (documentation optional).

Technical data



LDB - battery operated

Type	~ Nm max*1	~ lbf-ft max*1	~ U/min	■	L mm	B mm	H mm	△ kg △*3
LDB-10	150-1100	110-810	160	3/4"	410	130	420	17.2

1 breakaway torque 2 Without reaction arm, without impact socket, with battery. All rights reserved. Subject to modifications without prior notice.

Type	C _N	U	L mm	B mm	H mm	△ kg △
Li-Ion phosphate-based battery	10 Ah	48 V DC	178	130	337	4.6

Type	Input voltage	Output voltage	P	L mm	B mm	H mm	△ kg △	Charging time
Charger with mains cable	100-260 V / 45-70 HzWh	48 V DC / 1.6 A	100 W	218	121	55	1.35	approx.. 4.6 h

IECC14 connector, Protective insulation Protection class I (DIN EN 61140)



THE HEAVY DUTY TORQUE WRENCH LHD SERIES

Visual and acoustic zero-defect strategy

Brushless Technology for a longer tool life of the torque wrench thanks to the brushless, low-wear DC drive

connection to the powerbox

Supplied with individual GEDORE factory calibration certificate

inductive interface for data transmission

clear and intuitive handling directly on the machine with the help of a LCD-display and only three operating elements

control directly on the handle (right-/left-handed rotation)

Technical data

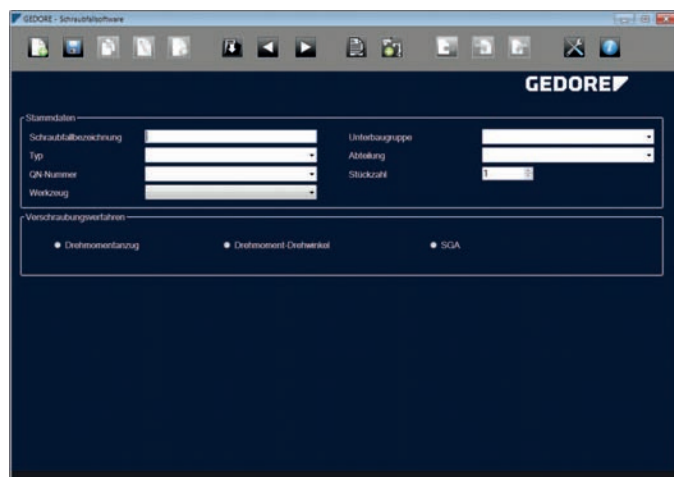
- > more than twice as fast as other suppliers - for a faster insertion bolt by bolt
- > reliable operation regardless of the wind or weather conditions
- > Torque
- > Torque angle
- > torque adjustment in 10 Nm steps
- > repeatability +/-2 %

Torque range	800 - 8.000 Nm
Speed	10,3 U/min
Weight	14,6 kg
Dimension (LxWxH)	180 x 250 x 540 mm
Gear unit diameter	102 mm
Square drive	1 ½"
Protection	IP54

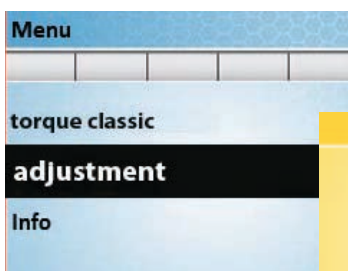
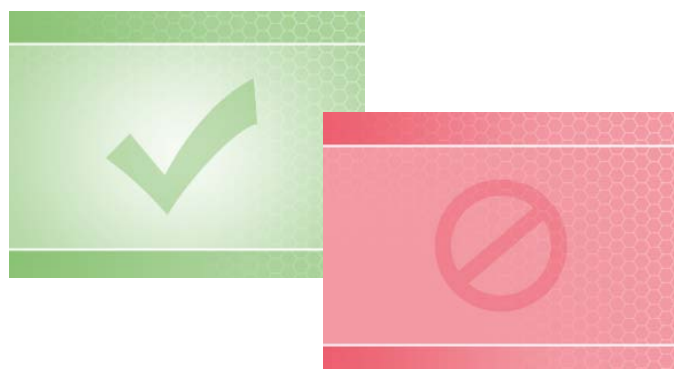
Evaluation as well as reprogramming of bolting applications comfortable on the PC with a plausibly structured software

Documentation of over 10,000 bolted connections is possible with the optional available module TRACK.

With optional available module LOCK and QS it is possible to save storable bolting operation assignments. This simplifies the work on the site and reduces the expenditure of time.



Bolted Screw Protocol		GEDORE				
Master data						
Personal Number		Project Number				
Date						
Application		Subassembly				
Type	ID No. bolt	Department	Quantity			
Tool		Serial Number				
Verschraubungsverfahren						
Drehmomentanlag						
Auswertung						
Lfd. Nr. Datum Uhrzeit RLA (Nm) SGAL Drehmoment (Nm) Typische Schraube Status						
1	27.08.2018	12:19:31	800	0	M24	AB
2	27.08.2018	12:19:34	800	0	M24	AB
3	27.08.2018	12:19:38	800	0	M24	AB
4	27.08.2018	12:19:40	800	0	M24	AB
5	27.08.2018	12:19:43	800	0	M24	AB
6	28.11.2018	12:19:43	2000	0	M24	AB
7	08.11.2018	12:20:38	800	0	M24	AB
8	08.11.2018	12:01:07	3500	0	M24	AB
9	08.11.2018	12:02:43	3500	1185	M24	AB
10	08.11.2018	12:08:36	3500	0	M24	AB
11	08.11.2018	12:09:34	3500	784	M24	AB
12	08.11.2018	12:11:47	3500	3903	M24	IO
13	08.11.2018	12:14:38	3500	0	M24	AB
14	08.11.2018	12:14:46	3500	1185	M24	AB
15	08.12.2018	12:23:42	2800	0	M24	AB
16	08.12.2018	12:24:36	2800	0	M24	AB
17	08.12.2018	12:43:45	1500	0	M24	AB
18	17.12.2018	12:27:33	4500	4500	M24	IO
19	17.12.2018	12:27:47	4500	4500	M24	IO
20	17.12.2018	12:38:31	4500	4503	M24	IO
21	08.01.2019	14:54:11	2150	0	M24	AB
22	08.01.2019	14:57:03	800	0	M24	AB
23	13.01.2019	14:12:28	800	0	M24	AB
24	13.01.2019	14:12:33	800	0	M24	AB
25	13.01.2019	14:12:34	800	0	M24	AB
26	21.01.2019	8:30:35	3992	0	M24	AB
27	21.01.2019	8:30:39	3992	0	M24	AB
28	21.01.2019	8:37:01	8583	0	M24	AB
29	21.01.2019	8:38:14	8583	0	M24	AB
30	21.01.2019	11:18:37	800	0	M24	AB
31	21.01.2019	11:19:01	800	0	M24	AB
32	21.01.2019	11:19:48	800	0	M24	AB
33	21.01.2019	11:20:12	2800	0	M24	AB
34	21.01.2019	11:20:38	2800	2810	M24	IO
35	21.01.2019	11:20:49	2800	2816	M24	IO
36	21.01.2019	11:20:59	2800	2827	M24	IO
37	21.01.2019	11:20:28	2800	2815	M24	IO
38	21.01.2019	11:20:48	2800	2804	M24	IO
39	22.01.2019	8:56:37	2800	0	M24	AB
40	22.01.2019	8:56:39	2800	0	M24	AB
41	22.01.2019	8:56:41	2800	0	M24	AB
42	22.01.2019	8:56:53	2800	2803	M24	IO
43	22.01.2019	8:57:12	2800	2817	M24	IO



Powerbox + accessory case for cable

Due to strong voltage fluctuations it is often impossible in the wind power sector to use electrically driven bolting equipment with the required accuracy. This is avoided with the LHD-80 bolting device by a voltage conversion using our Powerbox - this way the bolting device is always provided with the necessary voltage for proper function.

Input voltage	180-264 V AC / 47-63 Hz
Output voltage	48 V DC
Max. efficiency	3.000 W
Dimension (LxWxH)	380 x 445 x 160 mm
Weight	9,4 kg inclusive power cable and accessories box (Powerbox 5,9 kg; accessories box 2,7 kg)
Protection	IP43
Protection class	II

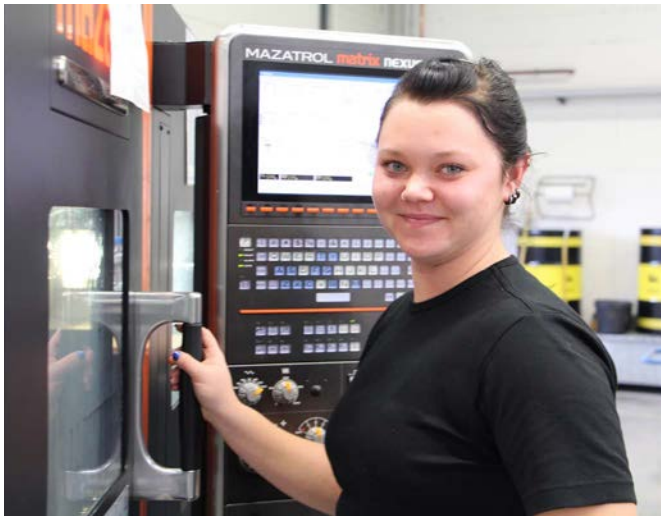


GEDORE



COMPANY AND SERVICES

YOUR SPECIALIST IN HIGH LEVEL TORQUE BOLTING TECHNOLOGY



From pioneer to high-tech centre

We have represented quality and innovation in all branches of bolting technology for 40 years. Production based in Germany on state of the art machining centres ensures excellent quality and precision in our torque wrenches. The difference is quite simply in the detail.

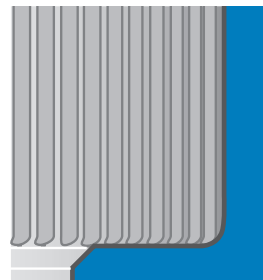


New production method

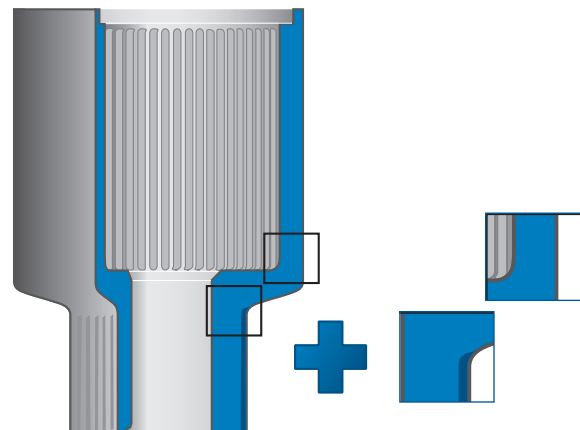
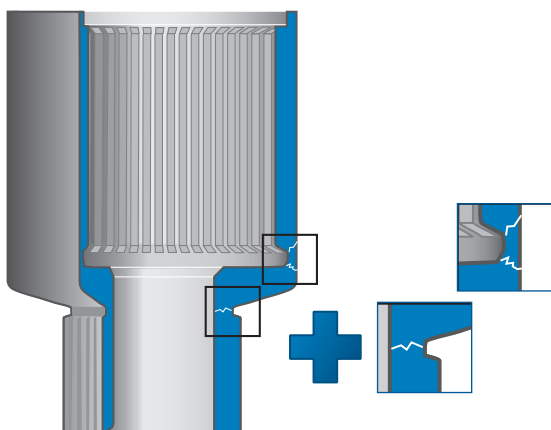
A patent-filed impact operation producing no grooves or notches at all. This enables a lighter and more stable gear housing than traditional type of machining. Your advantage: more safety in the process of bolt tightening with greater convenience.

Customary operation

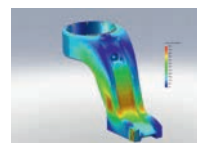
With the usual rolling impact operation, the cutting tool - at the serrated face runout - requires a design-necessitated „clearance cut“ to act as a notch. Cracks in the material may form within if overloaded. The notching needs to be countered by a thicker plate thickness in the gear.



Housing based on a buttress root Buttress root in the jungle



HIGH MANUFACTURING DEPTH OF NEARLY 100%



We develop the torque wrenches for your future

Our specialists develop your torque wrenches with state of the art construction and analysis methods (CAD/CAM/FEM). If a suitable solution is not available in our product range, we can design a specifically customised solution for you. Your applications are our challenge.



Production steps of a gear body



Raw material



Turning



Indenting



Milling



Hardening



Precision testing before release

In our in-house test laboratory, all dynamic devices are precisely measured and configured before they are sent to you. The torque deviation is usually significantly under 3% for identical bolting operations. The individual factory calibration certificate is the proof that is required by every QM system as per DIN EN ISO 9001:2008.



CONSULTATION AND TRAINING BY SPECIALISTS



Always the right solution for you

Our experts can advise you on site and analyse your application case together with you in order to offer you the appropriate system. Our extensive range of products offers you a professional solution.



In-house training


We offer safety instruction and training courses for you in our in-house training centre. Every participant is subsequently issued with a certificate as verification of training.



Financing


The best solution for you counts. We will be happy to consider your wishes and ideas with regards to the contractual arrangement. In order to provide you with flexibility, we can offer various options when purchasing our products, from leasing to paying by instalments.

THE FACTORY CALIBRATION CERTIFICATE



Factory CALIBRATION CERTIFICATE

for Battery torque wrench



Date	12.01.2016	Manufacturer	GEDORE	Bolting Adapter:
Type	LDA-16ST	Inspector	Max Mustermann	M20x90: II 1-3
Serial No	DA07.00153	Temperature	23,1 °C	M24x120: I 1, II 4-7
Inventory No		min. torque:	250 Nm	M30x130: I 2-4
Model Year	2016	max. torque:	2180 Nm	M36x130: I 5-7
		Tolerance	5 %	

MEASURED VALUES 1. Gear										EVALUATION					
Set.	1	2	3	4	5	6	7	8	9	10	Ave.	% Dev.	95% Value	99% Value	Sensor
1	556	540	550	548	550						549	1,05	521	576	
2	835	827	821	815	816						823	1,03	782	864	
3	1113	1141	1113	1148	1137						1130	1,43	1074	1187	
4	1424	1392	1402	1433	1423						1415	1,22	1344	1485	
5	1763	1734	1741	1755	1757						1750	0,69	1663	1838	
6	2034	1994	2021	2044	2016						2022	0,94	1921	2123	
7	2186	2233	2179	2220	2211						2206	1,03	2096	2316	

MEASURED VALUES 2. Gear										EVALUATION					
Set.	1	2	3	4	5	6	7	8	9	10	Ave.	% Dev.	95% Value	99% Value	Sensor
1	233	242	238	237	236						237	1,38	225	249	
2	304	304	300	311	301						304	1,37	289	319	
3	416	412	416	403	408						411	1,34	390	432	
4	511	506	505	514	513						510	0,82	484	535	
5	629	633	628	649	632						634	1,35	602	666	
6	739	747	735	724	727						734	1,25	698	771	
7	778	771	785	768	785						777	1,00	738	816	

Sensor data sheet (in order to their appearance):
 1: Torque Sensor, Lorenz Messtechnik D-2271, SN: 102552, 15000 Nm
 2: Torque Sensor, Lorenz Messtechnik D-2268, SN: 104305, 2000 Nm
 All measured values in this document are executed with a regular proofed calibration equipment.
 So that the lead back to ISO 9000 ff are guaranteed.

LPU: 201101171

- 1** Secure DataMatrix Code
- 2** Individual factory calibration certificate for every planet gear unit system torque wrench with individual serial number for article identification
- 3** Transparency and safety resulting from deviation data taking the efficiency into consideration
- 4** Various languages available on request
- 5** Three to five complete measurement series per torque level depending on the device type
- 6** The torque values are readable on the label:

1. GANG 1. GEAR 1. VITESSE		
1	627	Nm
2	1093	Nm
3	1296	Nm
4	1550	Nm
5	1722	Nm
6	1973	Nm
7	2189	Nm

GEDORE

Ser.-Nr. DA07.00153
 GEDORE Torque Solutions GmbH
 Bertha-Benz-Str.12 71665 Vaihingen/Enz
 T. + 49 70 42 / 94 41-0
 Made in Germany

2. GANG 2. GEAR 2. VITESSE		
1	236	Nm
2	335	Nm
3	442	Nm
4	532	Nm
5	614	Nm
6	680	Nm
7	737	Nm

GEDORE

Mj. 2016 Pmax. 560W
 TYP LDA-16ST CE
 www.gedore-torque-solutions.com
 Made in Germany

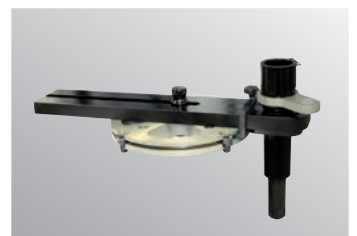
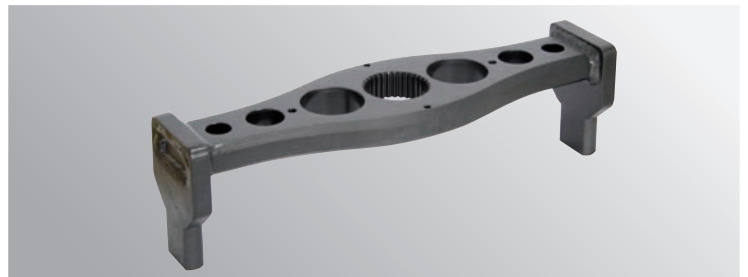
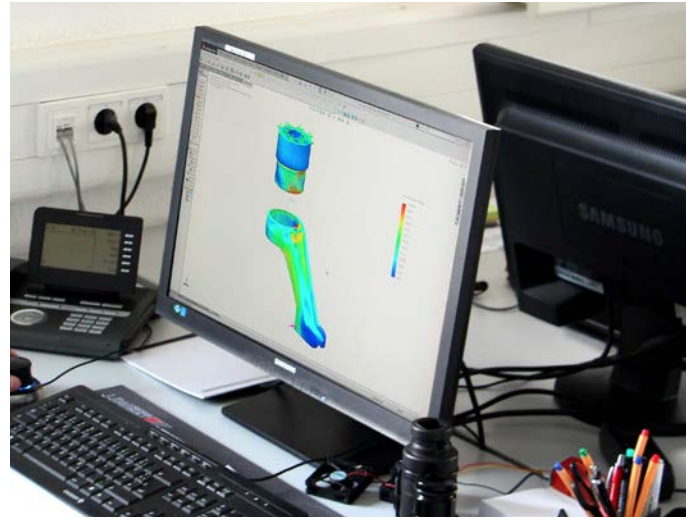
Individual factory calibration certificate for all planet gear unit system torque wrenches in the series: LDA/LAW, LDE/LEW, LPK/LPK-X and LKV
 Tested on standard or original bolts
 We recommend annual tool inspection of the devices, a new factory calibration certificate can be issued following this inspection if required



SPECIAL REACTION ARM VERSIONS

The reaction arm of a high-torque wrench is one of the most important components on the device. It absorbs all reaction forces produced during bolting operations. It therefore has to be stable. In addition, reaction arms require a place in their surroundings where they can support themselves. They therefore not only need to be stable, but also suitable for a variety of environments.

As bolts can be located anywhere, it is possible that the standard reaction arm does not always fit and only a custom design can correctly absorb the reaction force. We are specialised in this area. Custom reaction arms can be built and force effects simulated (FEM) in our own development department in Vaihingen/Enz.



REFERENCE PROJECTS



Football stadium TSG Hoffenheim

The roof structure of the football stadium belonging to TSG 1899 Hoffenheim was mounted with our cordless torque wrench.

Metropol Parasol, Sevilla

The new landmark in Seville, Spain, was mounted with the high-torque cordless torque wrench (LDA). A total of 21900 bolted connections were tightened on the wooden construction.



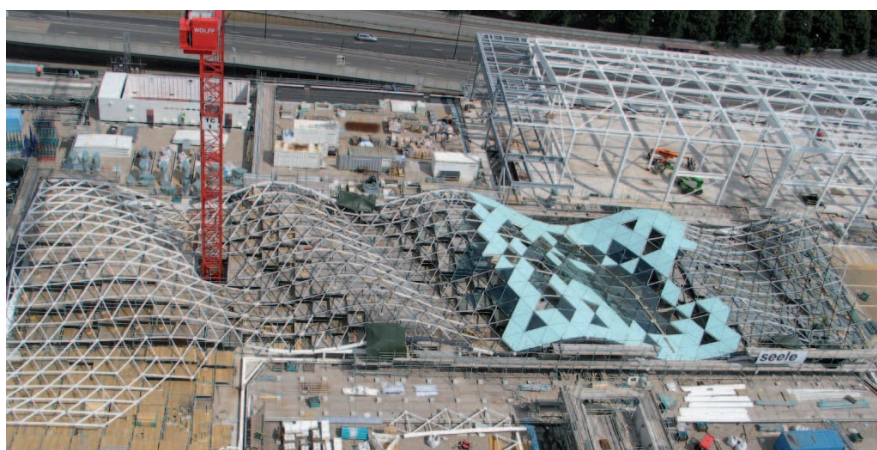
source: MERK Timber GmbH



Shopping centre in England

A custom electric torque wrench was specially developed for the curved roof structure of a shopping centre in England where the bolts were difficult to access.

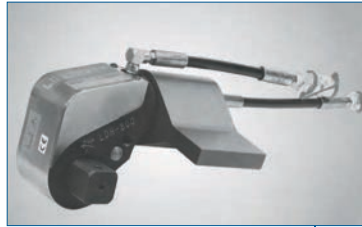
source: seele holding GmbH & Co. KG



OUR SUCCESS STORY



1992
Move to new and larger administration and production facilities in Vaihingen/Enz.



1985
LÖSOMAT develops a square drive wrench with patented ratchet system.

1981
The first self-releasing counter wrench in the world, designed to counter-hold difficult bolt connections, was introduced to the market and patented.

1972
Peter Neef founded a commercial agency for bolt technology.

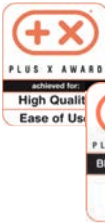


1991
New introduction of the LÖSOMAT electric torque wrench with an angled design for confined spaces.

1988
Trailblazing development and market introduction of the precision torque LÖSOMAT torque electric torque wrench, which achieved 13,000 Nm for the first time. Development of the LÖSOMAT pneumatic torque wrench up to 13,000 Nm with pressure and torque monitoring.

1990
The LÖSOMAT side power wrench sets new yardsticks with a patented tandem gear train.





2010

LÖSOMAT awarded the Plus X Award in the categories "Ease of Use" and "High Quality" for the cordless torque wrench. Also awarded the "Best Product 2010" award.

2008

LÖSOMAT becomes a wholly owned subsidiary of the Gedore Group.



2012

Company's anniversary – 40 years of LÖSOMAT

2007

A world innovation presented here: The LÖSOMAT cordless torque wrench with microprocessor controlled switch-off electronics up to 4,000 Nm.



2005

LÖSOMAT develops and patents the first automatic control unit for hydraulic units that functions without the need for any sensors in the hydraulic torque wrench.



2015

With the LHD, LÖSOMAT develops the new generation of heavy duty screw connections. Brushless Technology and the Powerbox make this torque wrench durable and usable in all weathers.



1995

2000

2005

2010

2015

1996

The LÖSOMAT hydraulic torque wrench sets new yardsticks with regards to size and weight up to 27,000 Nm.



2007

The LÖSOMAT HRPV series makes it possible for the first time in modern unit technology to modularly configure hydraulic units. Each module can be retrofitted.



2011

LÖSOMAT opens their first branch in United Kingdom under the name "LÖSOMAT UK".



2016

LÖSOMAT Schraubtechnik Neef GmbH is fully integrated into the GEDORE Group and receives a new name: GEDORE Torque Solutions GmbH

2009

LÖSOMAT moves to new company premises with double the production area in Vaihingen/Enz.



2014

LÖSOMAT developed the rail track wrench (LDB). With this wrench, users can bolt and drill in vertical and horizontal positions as well as in dual combination on a rail car. In 2015 LÖSOMAT receives the Competence Prize for Innovation and Quality Baden-Württemberg for developing the Railway Torque Wrench LDB-10.



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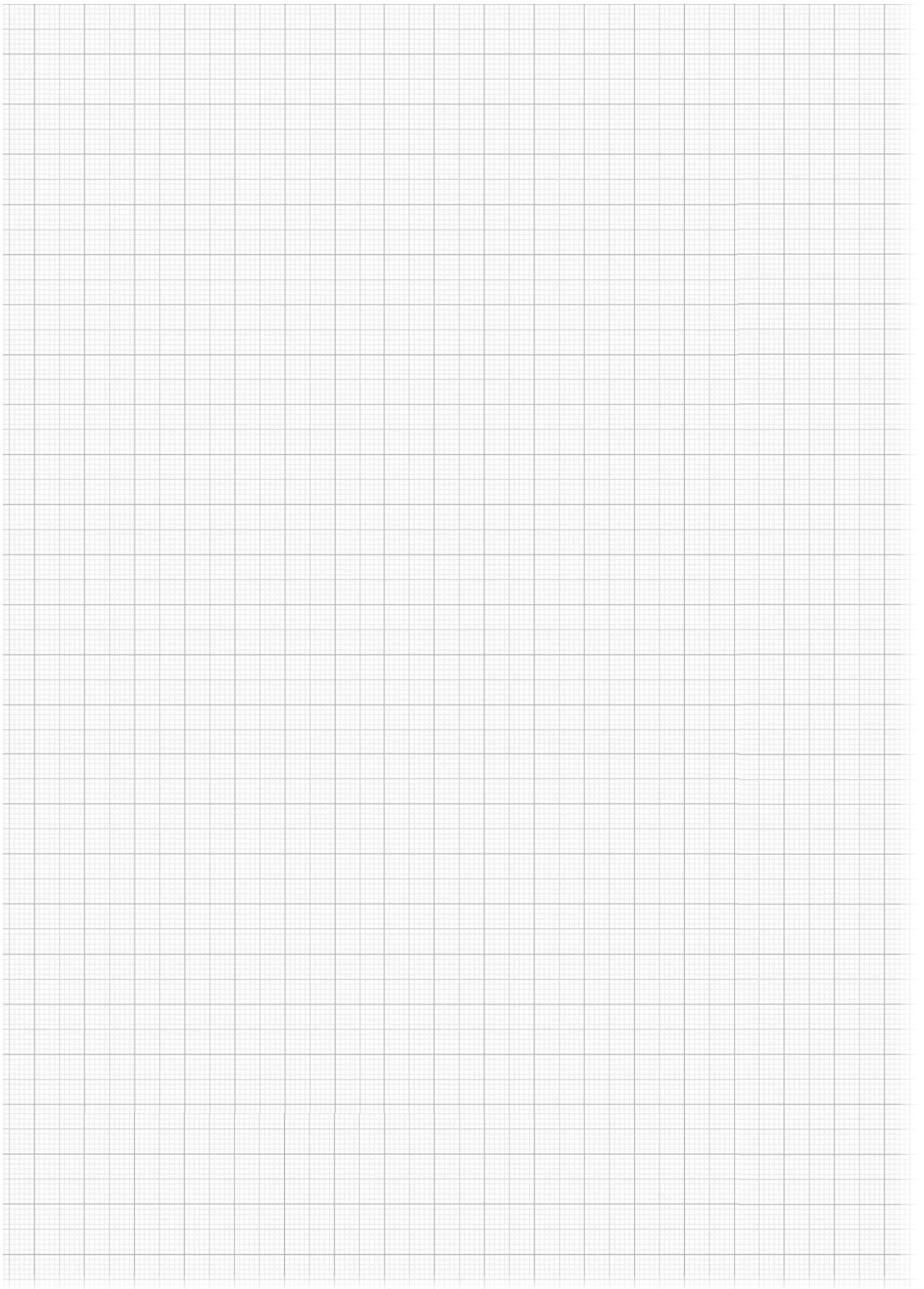


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CAPTIONS



Company, Services, More



Cordless Torque Wrench



Electric Torque Wrench



Pneumatic Torque Wrench



Hydraulic Solutions



Manual Solutions



Torque Testing Bench Technology



Special Solutions



Weight



Square drive (internal)



Square drive (external)



Hexagonal socket drive (internal)



Input torque



Output torque



Transmission ratio



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