



Highlights Aerospace



SLOVAKIA s.r.o.

INTOOL

HIGHLIGHTS AEROSPACE

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DESIGN AND USE IN PERFECT HARMONY.

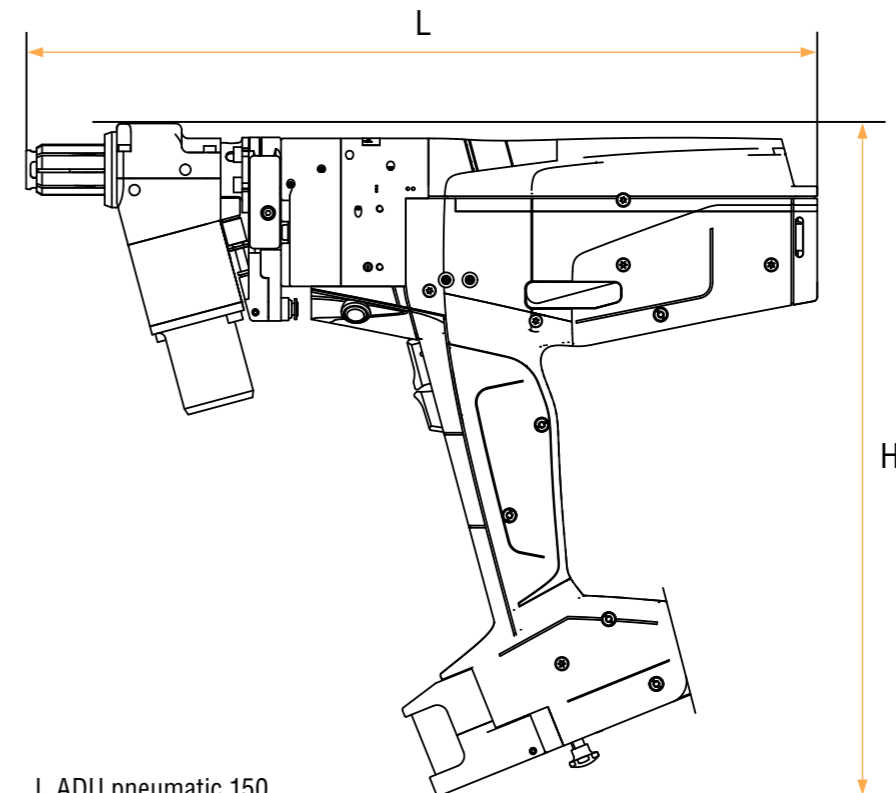
Setting new standards in ergonomics and performance – that was the goal in the new development of the L.ADU pneumatic 150.

The new pneumatic drilling machine from LÜBBERING convinces with its top-class design and ergonomics. And also technically, the L.ADU pneumatic 150 has a lot to offer: The exchangeable lubrication cartridge and the multifunction cycle counter are innovations with high added value for the user. Save time, work more efficiently and get direct access to important, relevant data – easily via the newly integrated wireless interface.

- + Unique product design
- + Ergonomic and user-friendly
- + Quick Change System for fast tool change
- + Exchangeable tank cartridge for minimum quantity lubrication
- + Cycle counter with wireless interface
- + Powerful turbine or vane motor 1.2 kW / 0.9 kW
- + Compatible with all L.ADU locking systems
- + Impulse drilling with Sine-Feed (optional)

TECHNICAL DATA

L.ADU locking system	Concentric Collet, Twist Lock and C-Frame (special solutions on request)
Weight	basic unit vane motor 1.96 kg basic unit turbine 2.18 kg
Motor power	vane motor 0.9 kW turbine 1.2 kW
Spindle speed	500 – 6000 rpm
Feed rate	0.03 – 0.15 mm/rev (also as Micro Peck)
Stroke	various strokes available depending on configuration and application
Noise level	78 dB(A)
Vibration value	< 2.5 m/s
Flow pressure	6.3 bar (min. 6 bar, max. 7 bar)
Compressed air quality	ISO 8573-1:2010 [2:4:3], [3:4:4], [3:5:4]
Air consumption	vane motor 1100 l/min turbine 1500 l/min
Connection Ø (min.)	8 mm
Connection thread	G3/8"
Vane motor	L 318 mm x H 311 mm
Turbine motor	L 366 mm x H 311 mm



L.ADU pneumatic 150

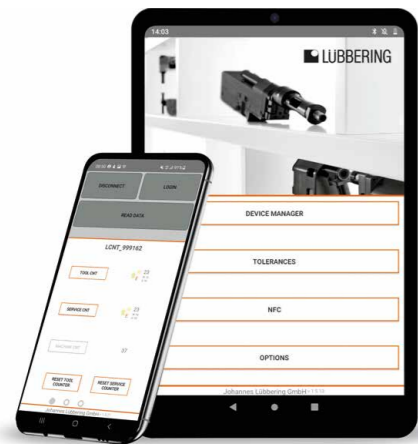


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DESIGN
AWARD
2021

**MODULARLY CONFIGURABLE,
FLEXIBLE AND HIGHLY PRECISE**



Connection with the LÜBBERING app



Cycle Counter with wireless connection

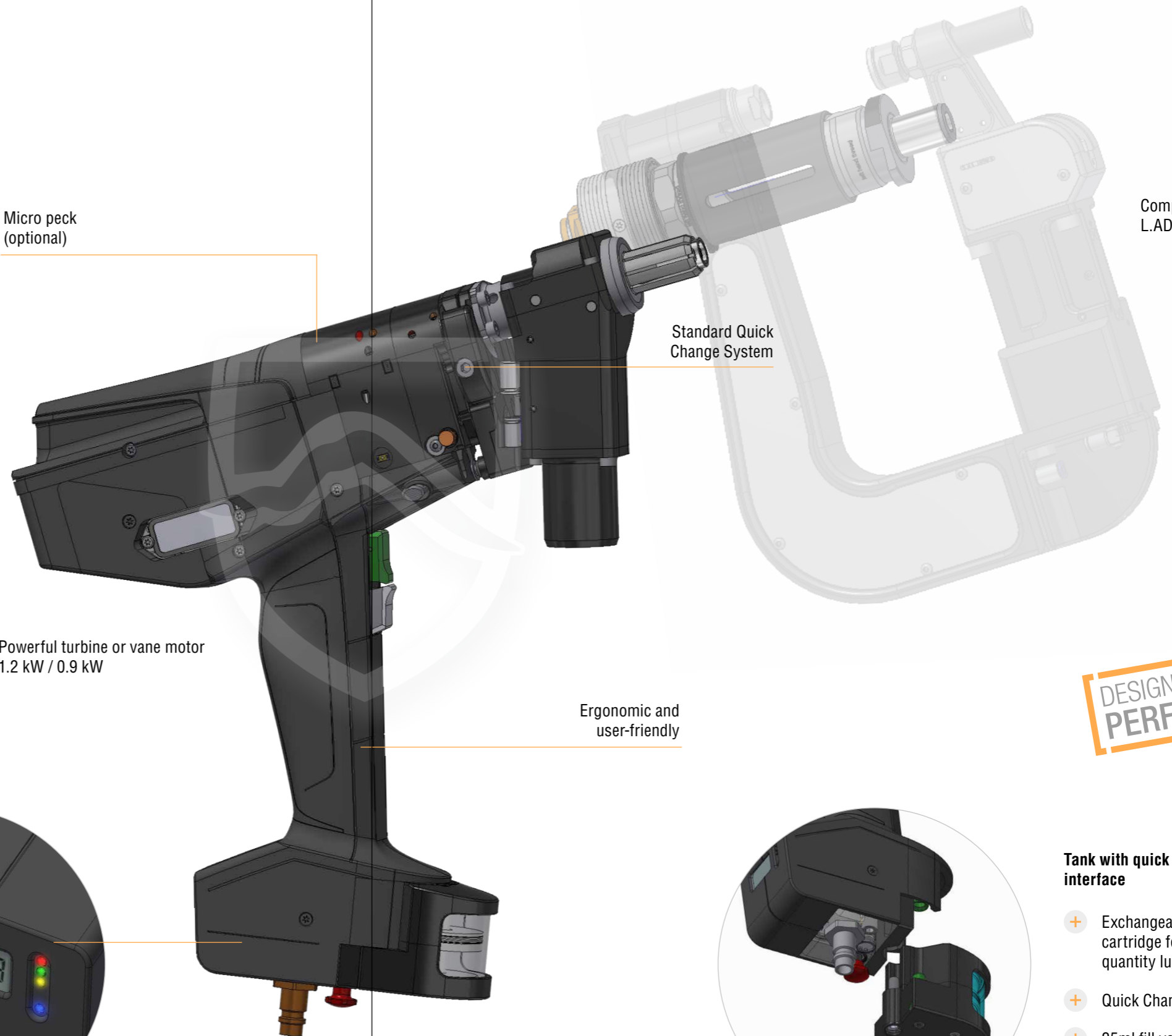
- + Life cycle counter
- + Service counter
- + Number of holes counter
- + Count up | Count down free programmable
- + Long battery lifetime
- + LED status display



Micro peck (optional)

Powerful turbine or vane motor
1.2 kW / 0.9 kW

Ergonomic and user-friendly



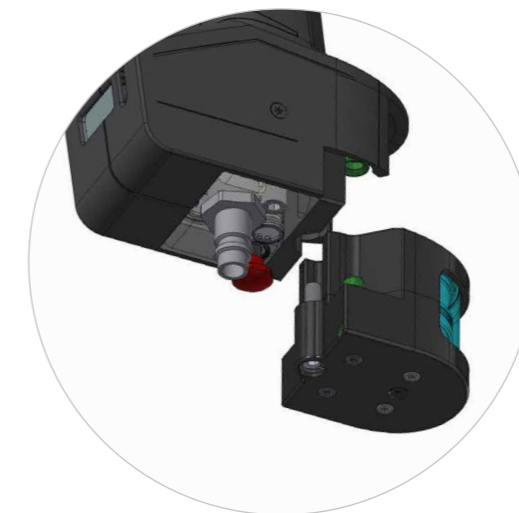
Standard Quick Change System

Compatible with all L.ADU locking systems



Tank with quick change interface

- + Exchangeable tank cartridge for minimum quantity lubrication
- + Quick Change System
- + 25ml fill volume
- + Maintenance-friendly

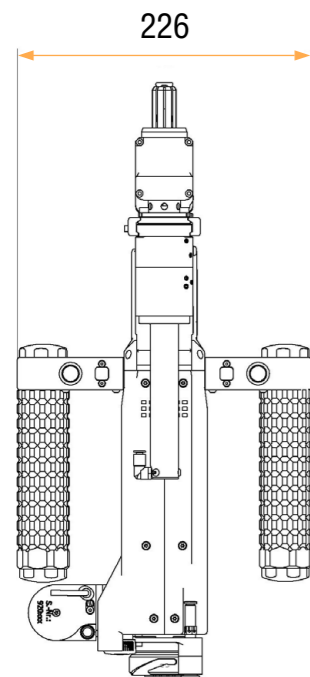


THE SMARTEST WAY OF DRILLING.

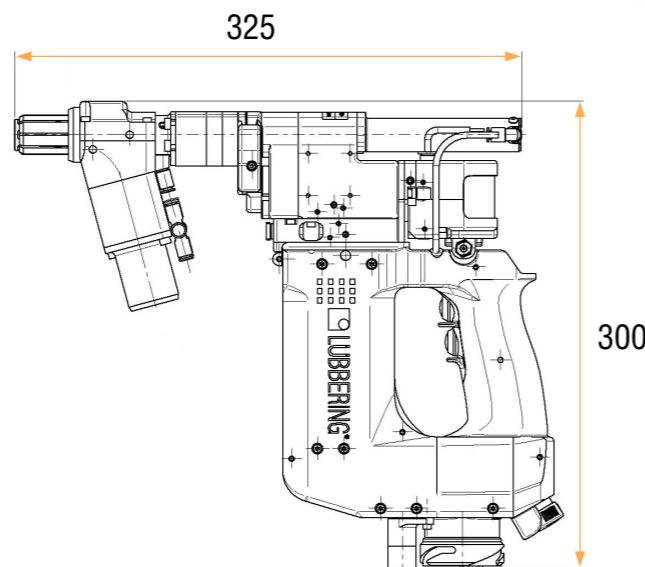
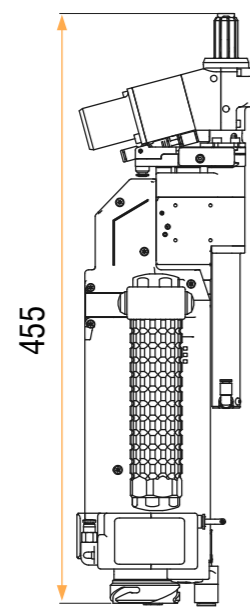


L.ADU ELECTRONIC 256 / 257:

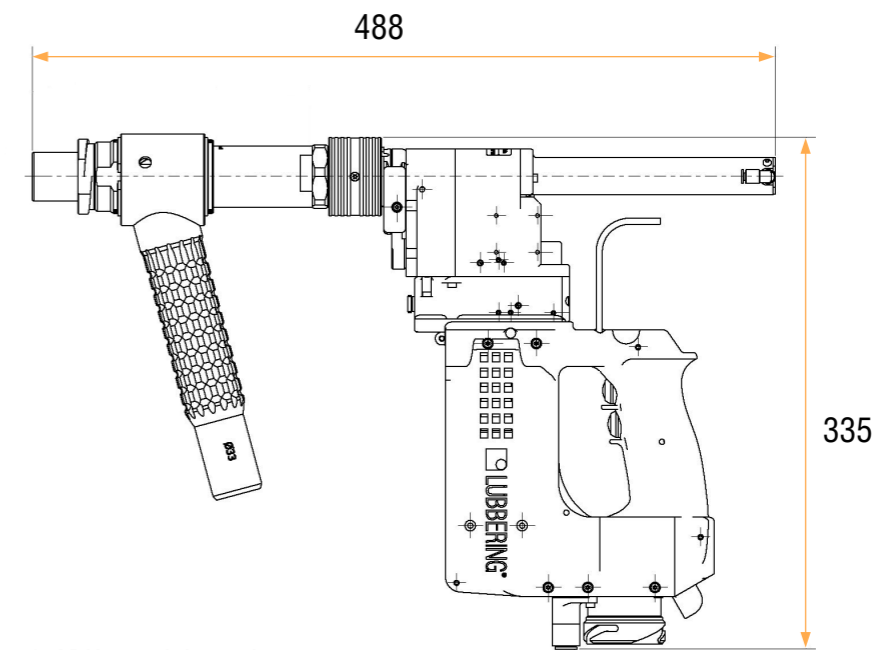
- + **L.ADU ELECTRONIC 256: hole diameter: $\leq \frac{1}{2}$ "**
L.ADU ELECTRONIC 257: hole diameter: $\frac{1}{2}$ " – 1"
- + **Very short process times through programmable speeds**
- + **Economical by saving up to 90% energy**
- + **Ergonomic design ensures easy handling**
- + **Environmentally friendly: The amount of cooling lubricant is regulated automatically by the machine due to material detection**
- + **Modular and compatible to L.ADU pneumatic**
- + **Robust and long-lasting**



L.ADU 256 inline



L.ADU 256 right angle



L.ADU 257 right angle

TECHNICAL DATA

	L.ADU electronic 256	L.ADU electronic 257
L.ADU locking systems	Concentric Collet, Twist Lock and C-Frame (special solutions on request)	Concentric Collet, Twist Lock and DASA (special solutions on request)
Motor power	3kW peak	3kW peak
Weight	3.3 kg without locking unit	3.8 kg without locking unit
Feedrate	fix 0.02mm/rev – 0.2mm/rev depending on gear-set	fix 0.02mm/rev – 0.2mm/rev depending on gear-set
Micro peck	LÜBBERING sine feed system as an option	LÜBBERING sine feed system as an option
Spindle	M12	M14
Spindle speed	50 – 6000 rpm programmable	100 – 800 rpm programmable
Nominal drilling performance	up to $\frac{1}{2}$ " in Ti; up to $\frac{3}{16}$ " in Alu	up to $\frac{3}{4}$ " in Ti; up to 1" in Alu
Lubrication	onboard tank as an option	external, onboard tank as an option
Programming	LÜBBERING adaptive drilling mode	LÜBBERING adaptive drilling mode
Chip extraction	programmable remote vacuum gate as an option	programmable remote vacuum gate as an option
User interface	onboard LCD screen and start/stop trigger	onboard LCD screen and start/stop trigger
Process control	data acquisition through LÜBBERING smart box	data acquisition through LÜBBERING smart box
Modularity	fits full range of LÜBBERING locking systems, cutting tool interfaces etc.	fits full range of LÜBBERING locking systems, cutting tool interfaces etc.
Connectivity	compatible to harmonized LÜBBERING smart box	compatible to harmonized LÜBBERING smart box



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HIGH END IN ITS FINEST FORM.



The L.ADU 260 provides drilling process data: Diagram with real-time data in digital form.

L.ADU electronic combines all the advantages of a pneumatic drilling machine with the efficiency, robustness and programmability of an electronic drilling machine.

Technologically mature, it provides you with all the functions of the drilling process digitally and is particularly fast. The L.ADU electronic can be seamlessly integrated into the modular system of the L.ADU pneumatic.

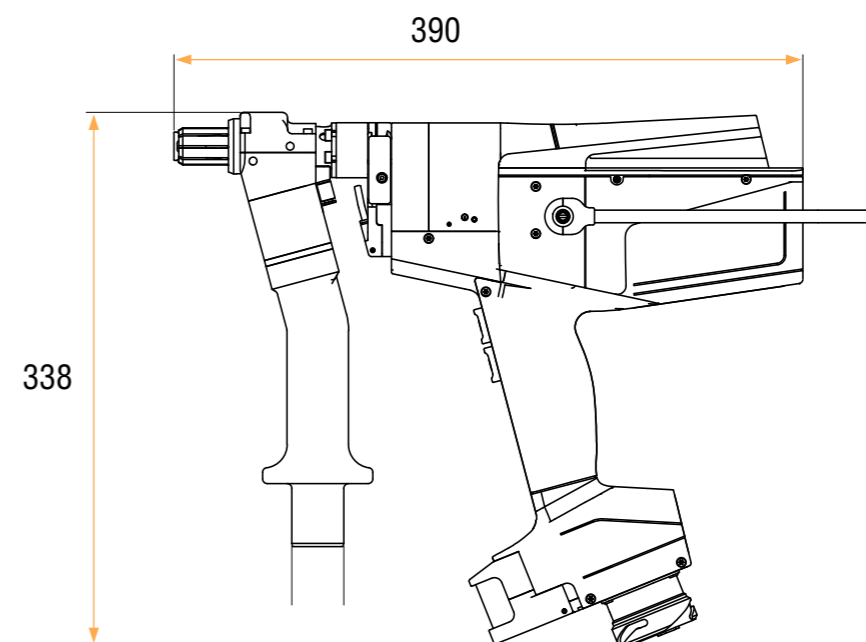
- + **Hole diameter:** ≤ 1/2"
- + **Very short process times** through programmable speeds
- + **Adaptive drilling:** Automatic recognition of the materials when drilling mixed packages
- + **Modular and compatible** to L.ADU pneumatic locking systems
- + **For further analysis and optimisation** of the drilling process, process data record for each individual drilling in XML format
- + **Update functions** for the server and the web interface via remote maintenance



Experience L.ADU digitally – [click here for the video](#)

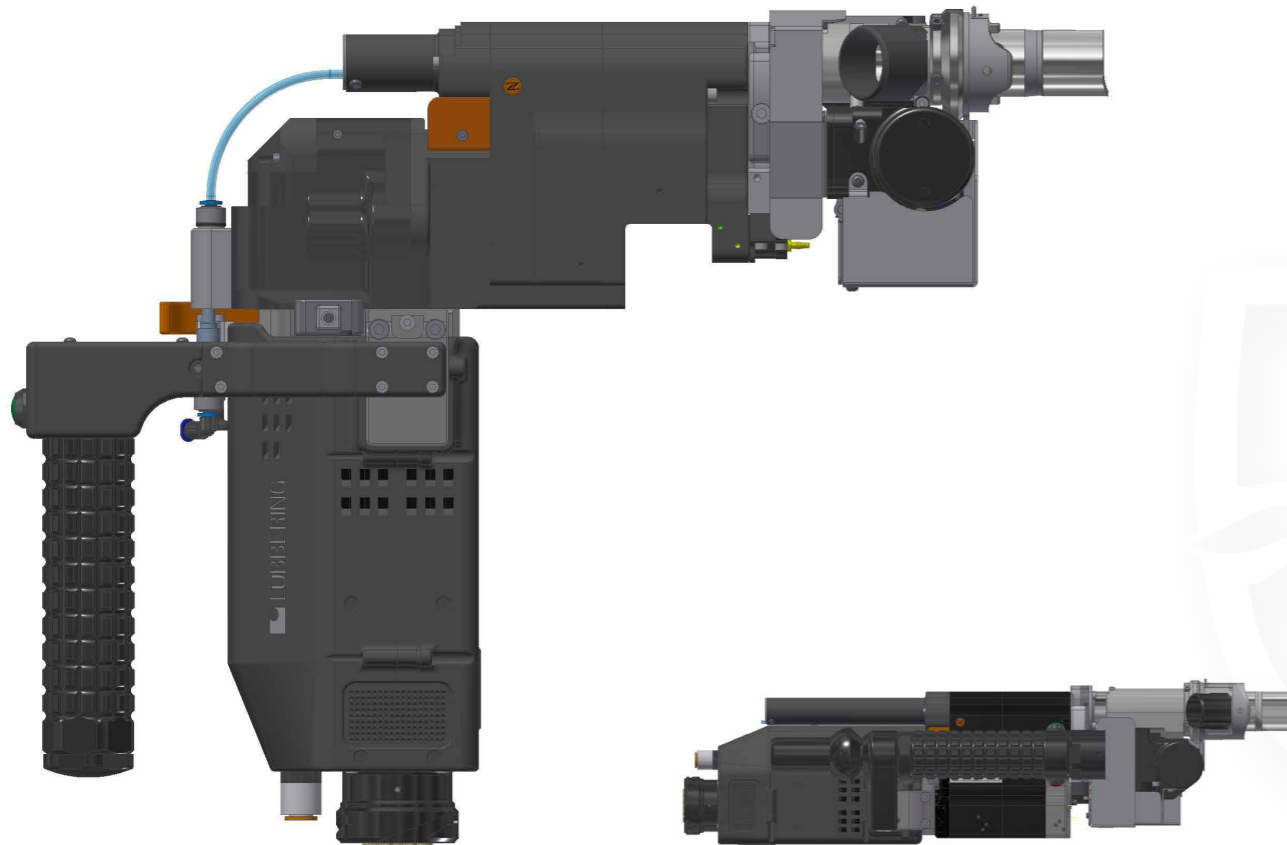
TECHNICAL DATA

L.ADU electronic 260	
L.ADU locking systems	Concentric Collet, Twist Lock and C-Frame (special solutions on request)
Motor power	3kW peak
Weight	3.4 kg without locking unit
Feedrate	fix 0.02mm/rev – 0.2mm/rev depending on gear-set
Micro peck	LÜBBERING sine feed system as an option
Spindle	M12
Spindle speed	50 – 6000 rpm programmable
Nominal drilling performance	up to 1/2" in Ti; up to 3/16" in Alu
Lubrication	onboard tank as an option
Programming	LÜBBERING adaptive drilling mode
Chip extraction	programmable remote vacuum gate as an option
User interface	onboard LCD screen and start/stop trigger
Process control	data acquisition through LÜBBERING smart box
Modularity	fits full range of LÜBBERING locking systems, cutting tool interfaces etc.
Connectivity	compatible to harmonized LÜBBERING smart box



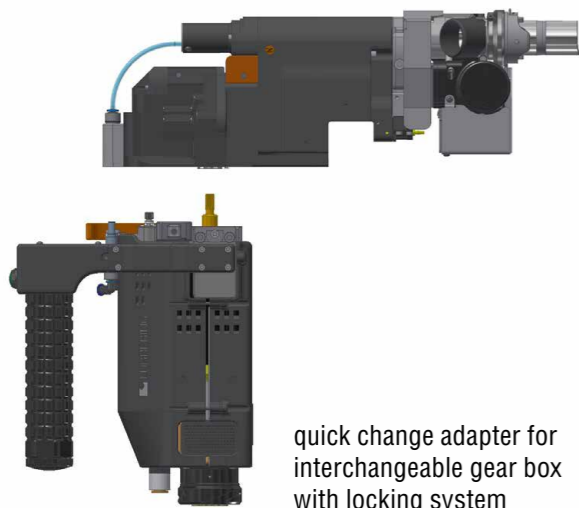
L.ADU 260

DUAL MOTOR MACHINE L.ADU 357 WITH INTERCHANGEABLE GEAR BOX



L.ADU 357 right angle

L.ADU 357 inline

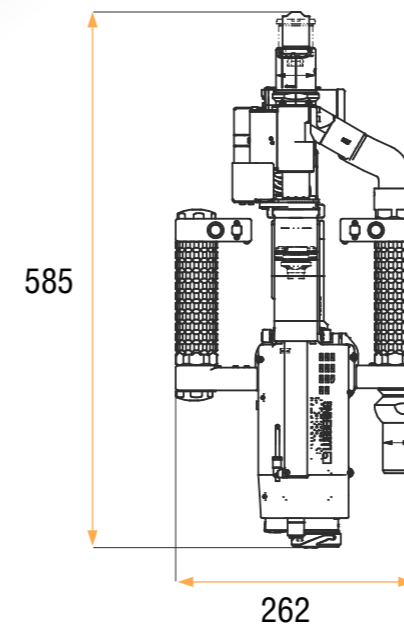


quick change adapter for interchangeable gear box with locking system

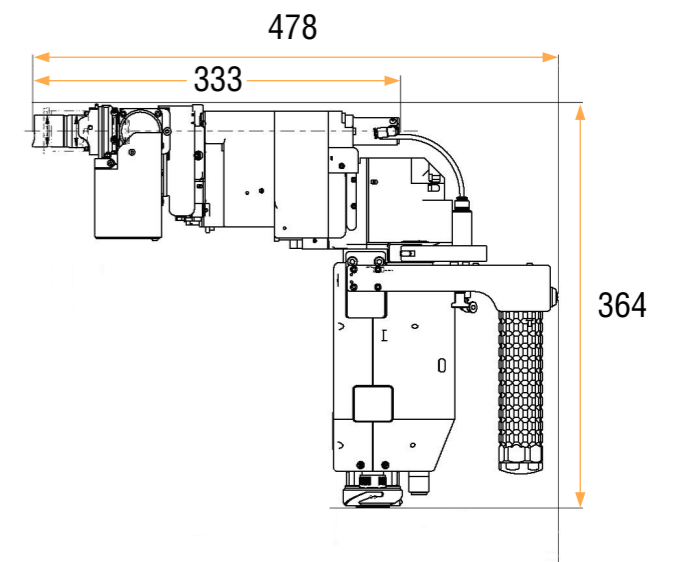
- + Precise electronic controlled countersinking to depth
- + Quick Change Adapter prevents unintended release of drill head
- + NFC contactless data and signal transmission
- + Drill head without any air hoses, plugs and contact pins
- + Two stage gear box for high and low torque drilling
- + Web based user interface

TECHNICAL DATA

L.ADU electronic 357	
L.ADU locking systems	two motor versions for feed and spindle speed
Motor power	3kW + 150W peak
Gear box	interchangeable positive gear box with locking system
Weight	7.2 kg motor + gear box without locking unit
Feedrate	programmable 0.0mm/rev – 0.3mm/rev
Retract speed	3,5 mm/s
Micro peck	LÜBBERING sine feed system as an option
Spindle	M14
Spindle speed	10 – 300 or 100 – 1500rpm programmable, two gear stages
Torque	up to 65Nm peak
Nominal drilling performance	up to 1.25" in Ti
Lubrication	external
Programming	LÜBBERING adaptive drilling mode
Chip extraction	programmable remote vacuum gate as an option
User interface	onboard LCD screen and start/stop trigger
Process control	data acquisition through LÜBBERING smart box
Modularity	fits full range of LÜBBERING locking systems, cutting tool interfaces
Connectivity	compatible to harmonized LÜBBERING smart box

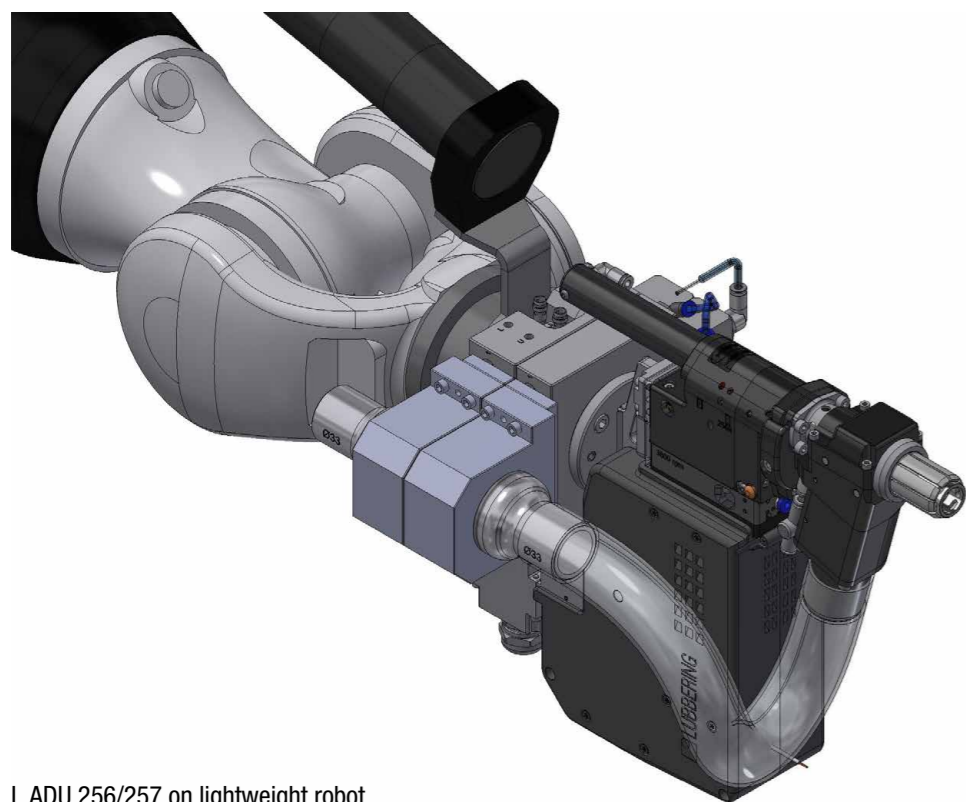


L.ADU 357 inline with DASA 7

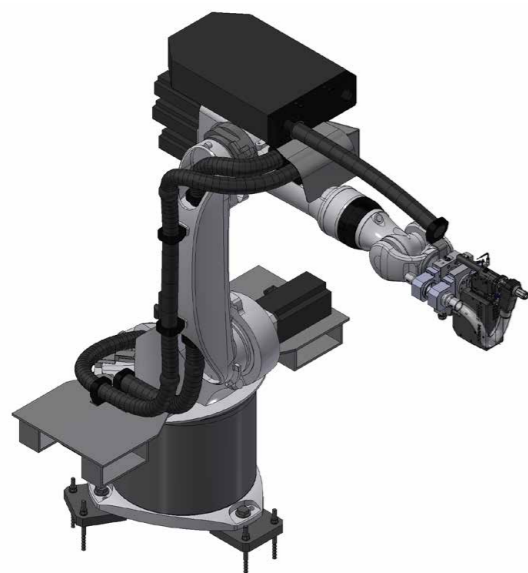


L.ADU 357 right angle with DASA 7

NEXT LEVEL DRILLING WITH L.ADU ROBOTIC ENDEFFECTOR

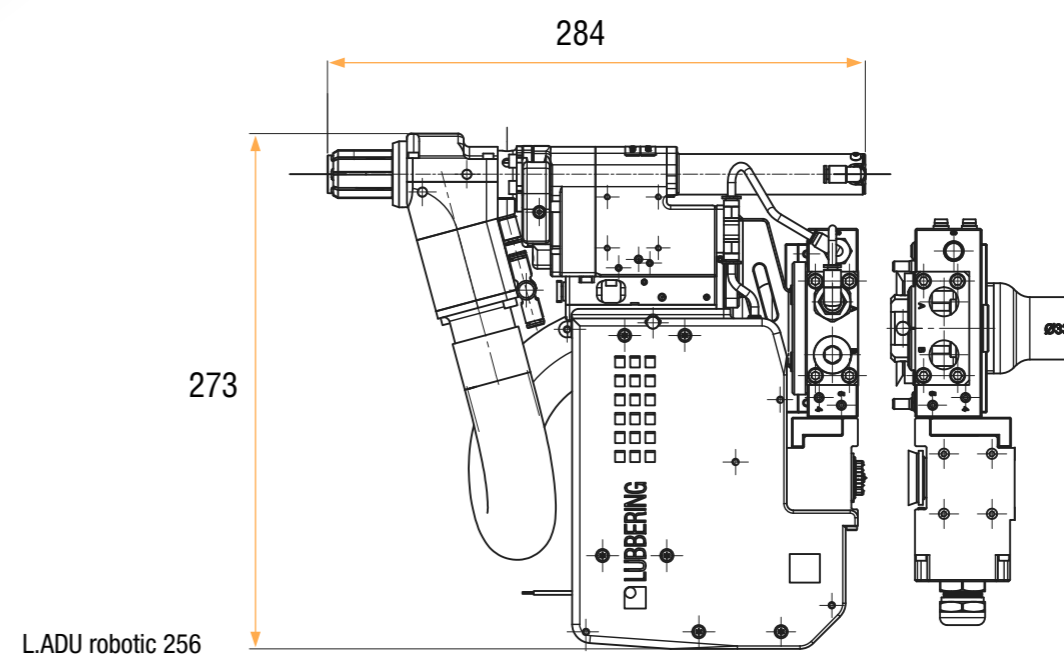
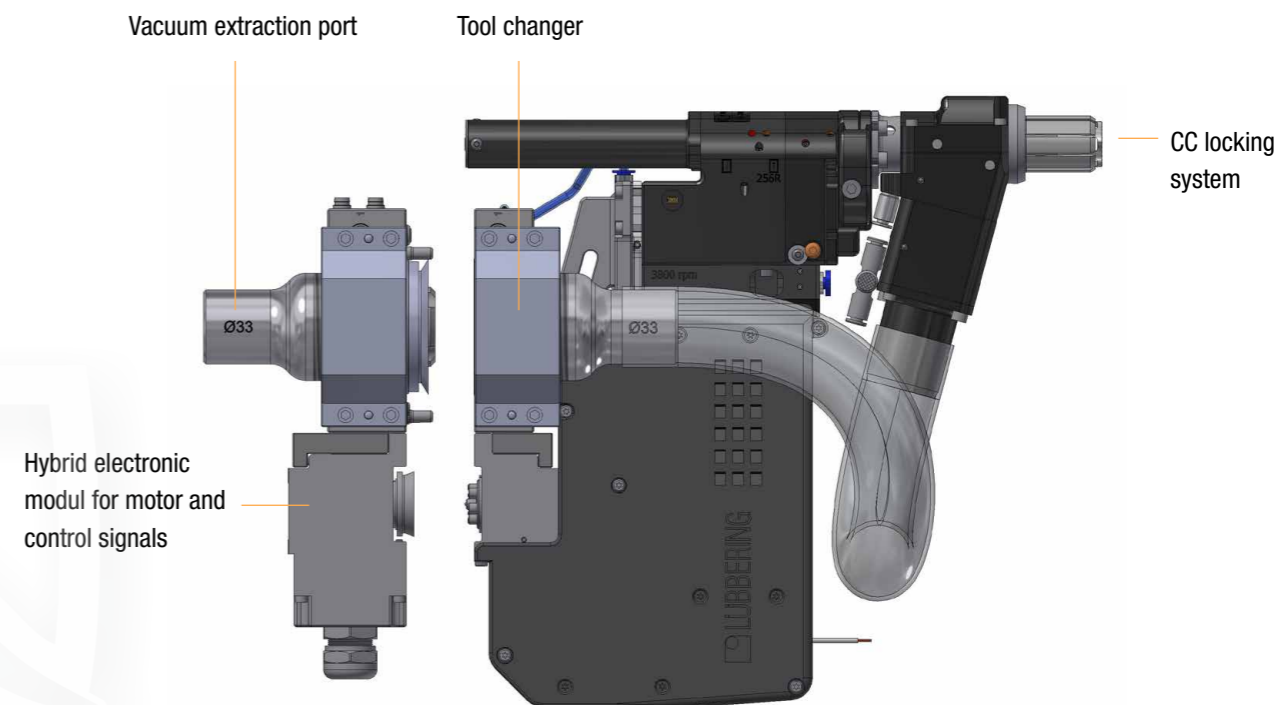


L.ADU 256/257 on lightweight robot



L.ADU electronic for collaborative robot applications

- + Advanced drilling unit L.ADU 256/257 with all features from L.ADU catalogue
- + Remote interface via TCP/IP
- + Integrated vacuum extraction port
- + External MQL port
- + E-Stop circuit
- + Integrated LCD screen for status diagnostic
- + Online access for all ADU data
- + Weight ADU + tool changer approx. 7.5kg

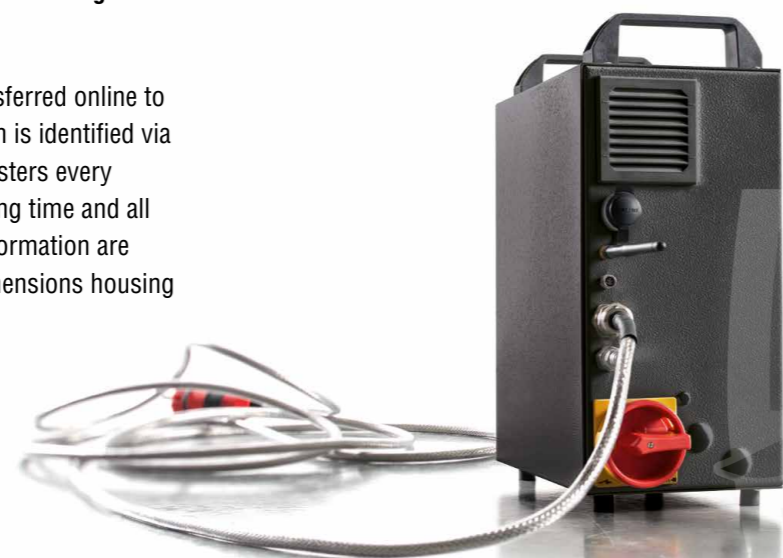


L.ADU robotic 256

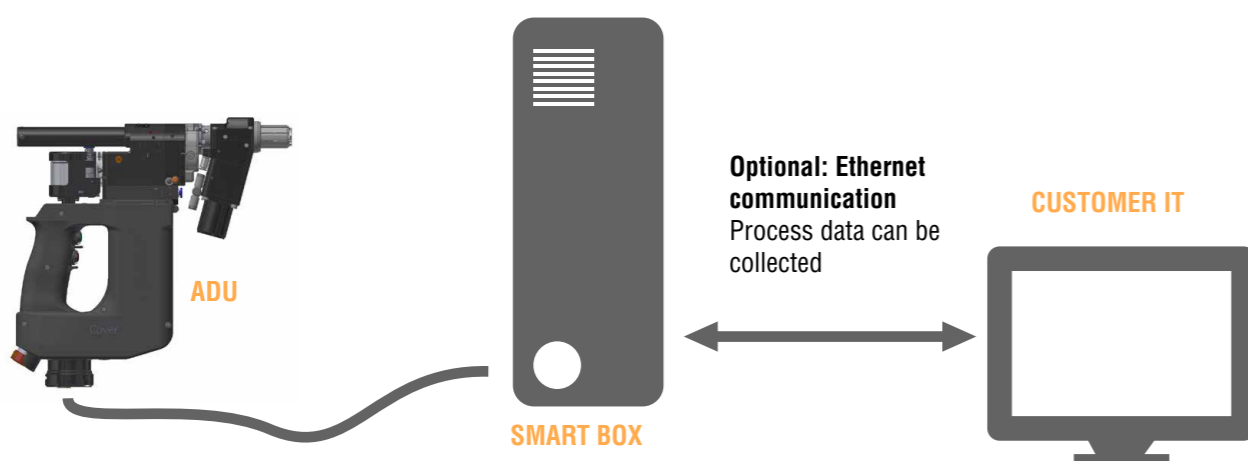
SOME CALL IT BLACK BOX. WE CALL IT SMART BOX.

By linking an L.ADU electronic 256/257/357 to our "smart box", the system meets all demands which are required on modern production devices in the digital world of today and tomorrow.

The current process parameters are transferred online to any L.ADU which is attached and the item is identified via the type of the machine. The system registers every single drilling, and creates a log the drilling time and all relevant parameters. All activities and information are stored chronologically in the log file. Dimensions housing 185mm x 419mm x 310mm.



L.ADU ELECTRONIC – SMART FUNCTIONS



CAN Bus communication:
Data transmission in real time
M(t), V(t)

Preparation and intermediate storage for process data
1x XLSX file per drilling cycle
Continuous log file for all events.
Re-created with each system start.



BAYONET LOCK

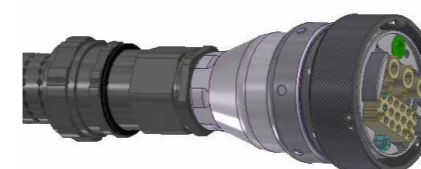
The bayonet lock is the connection between the supply cable and the L.ADU

- + Quick
- + Safe
- + Exact contact position & delivery of compressed air
- + Cable length: 5 m | 7 m | 10 m



LÜBBERING CABLE

- + LÜBBERING Cable 10 meter length
- + Super Flex Cable, bend radius 100 mm
- + Hot plug function
- + Flexible steel conduit




MAKE YOUR PNEUMATIC TOOL SMARTER.

C-TIX offers you the ingenious solution to easily integrate your pneumatic tool into the digital process data acquisition. The combination of digital counter and compressed air shut-off enables you to control the use of your tool.

The integrated counter counts up or down as soon as the tool is activated. When the set limit is reached, C-TIX switches off the compressed air supply with the shut-off valve. In this way, you always have a clear view of operating times and tool life, and can initiate a tool change or the replacement of wear parts in time.

- + **Suitable for all pneumatic tools**
- + **Increasing process reliability**
- + **No loss of quality**
Worn tools are avoided
- + **Process data retrievable via the C-TIX App**



 You want to discover the C-TIX digitally?
[Click here for the video.](#)

C-POINT – THE SECURE INTERFACE IN YOUR NETWORK.

1



Application example L.ADU 150

All relevant data is transferred, e.g. counter readings, operating hours, maintenance intervals or serial number.

2



Via the C-POINT (interface) the data is transferred to the user interface.

3



The data is transferred automatically and can be retrieved via our user interface or imported directly into an Excel file.

L.MPU BATTERY – MODULAR, CORDLESS, UNIVERSAL



L.MPU Pistol

blue
Drilling Unit 60-560
i=3.778
Max. torque: 10 Nm

black
Drilling Unit 220-2100
i=1
Max. torque: 4 Nm

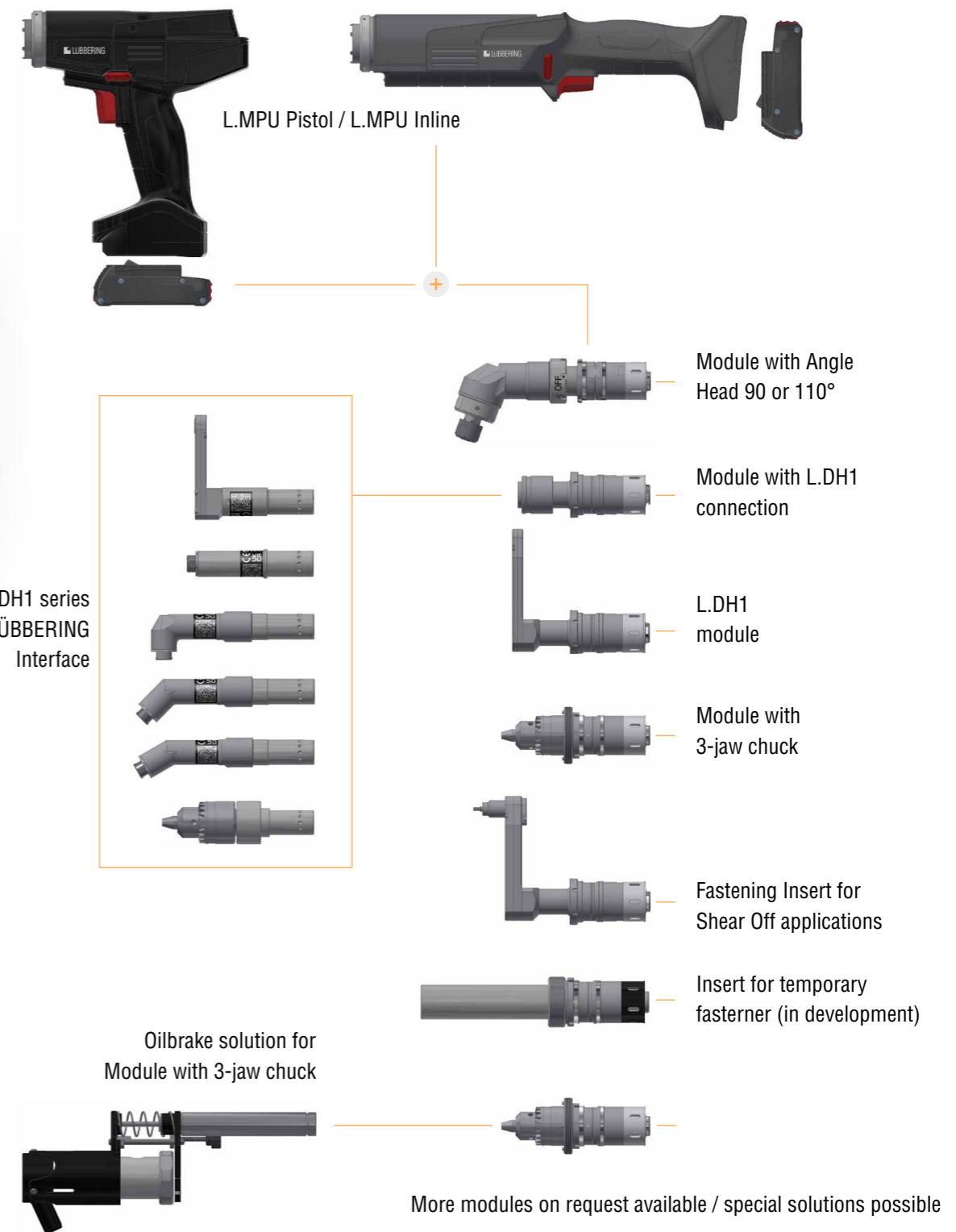
white
Drilling Unit 575-5500
i=0.383
Max. torque: 1.38 Nm

red
Drilling Unit 830-8000
i=0.265
Max. torque: 1.06 Nm

TECHNICAL DATA

Battery Voltage	18V
Battery	Lithium Ion Technology Power: ~600W
Min. speed	60 rpm
Max. speed	8000 rpm
Min. torque	1.5 Nm
Max. torque	10 Nm
Direction of rotation	CW – CCW
Trigger Mode programmable	Potentiometric or Digital

MODULAR SYSTEM



FIRST CHOICE – HIGH PERFORMANCE – BEST PRICE.

Finally, the time has come: With the new L.DH1 series, we now offer you high-precision drilling heads in combination with drive machines of the new LÜBBERING L.MPU series. The new L.DH1 series is based on our many years of experience in developing geared offset heads for our customers worldwide, which meet the highest demands on durability, functionality and precision.

Take advantage of the benefits and choose the right L.DH1 solution. Select your individual drilling applications from a wide range of options:

- + **Pistol- and angle drilling machines with Quick Release**
- + **Drilling gears precisely matched to the speeds of application-specific drive machines**
- + **Suitable for drilling tools up to a diameter of max. 8 mm**
- + **Drill bit interface: Threaded gears or collet chucks in various sizes**



More information and technical details are available in our [L.DH1 product catalogue](#).

HIGH LEVEL – LOW BUDGET.



Our wide-ranging standard programme of the L.LE1 series stands for the highest quality at an attractive price.

- + **Extensive standard programme up to 44 Nm**
- + **Availability of a wide range of output profiles with holders, adapted to the requirements of the aerospace industry (for frangible collars and Hold&Drive)**
- + **Highest quality at an attractive price**
- + **Short delivery times**
- + **L.MPU angle nutrunner in 90° and 110° version with and without quick adjustment adapter**
- + **L.MPU pistol tools with and without quick adjustment adapter**



Our [L.LE1 catalogue](#) will soon be available on our website.



You want to discover L.LE1 digitally? [Click here for the video.](#)





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MEHR ALS EINE IDEE MEHR