

WE DON'T LIKE RESTRICTIONS: LOCKING SYSTEMS FOR EVERY APPLICATION.

L.ADU pneumatic is used in almost every area of aircraft production. The right choice and configuration of the machine with the matching locking system can be achieved by respecting the following parameters:

- Drilling, reaming or countersinking (or a combination)
- Drilling diameter
- Template type (milled metal template with locking bushings or a stripped metal or synthetic template)
- Access to the component
- Positioning and locking or positioning and gripping

The main function of the locking system is to clamp the L.ADU into a designated template, which is attached to the component (aircraft structure). Here the vertical positioning to the component is very important. Furthermore, the locking system serves to absorb the feed force. This means that L.ADU is designed to provide greater clamping force than the required drilling force and so even if higher drilling force is needed, it cannot be pushed out of the template.

- + Available for all standard applications
- + Integrated channel for the extraction of chips and dust
- + Optimum clamping and gripping force ensure high process reliability
- + Precise positioning to the component

The three most common L.ADU locking systems in the aerospace industry are:

Concentric Collet

This is mostly used for drilling and countersinking of different material combinations within one working step. It's highly adjustable in gripping and pressing force and almost 100% chip and dust extraction is impressive. The attachment onto the front side of the component, means that no chip or dust can escape from the container which is being vacuumed. Moreover, the system exerts an axial strength on the component by locking on after clamping is activated. For this reason, air gaps are closed between the components, which is important especially for thinner metal stacks and so burrless drilling is possible.

Twist Lock

This is probably the most popular locking system in the world. It is used for locking drilling units and performing simple cylindrical drillings. The system, which is designed like a bayonet can be locked by a quarter turn in the locking bushing. Its robust style and its great feed drive allow even very large drillings.

C-Frame

A very efficient locking system for drilling and countersinking. It determines the position of the machine, presses together the components through the clamping force (ca. 1,200 N) of the C-Frame and creates the right position between unit and the component. It is ideal for requiring small medium-sized drilling diameters. This is mostly used in the assembly on the fuselage.

EACH APPLICATION IS DIFFERENT. SO ARE OUR LOCKING SYSTEMS. BUT ALL ARE PERFECTLY PRECISE – SUCH AS OUR CONCENTRIC COLLET.



L.ADU locking system Concentric Collet

THE IDEAL SOLUTION. FOR EVERY CASE.

Concentric Collet (CC)



- **Material stacks:** CFRP, Aluminium, Titanium
- **Process:** One-shot drilling and countersinking
- **Chip/dust exhaust:** nearly 100%
- **Clamping force:** up to 1.600 N

Twist Lock (TL)



- **Material stacks:** CFRP, Aluminium, Titanium
- **Process:** One-shot drilling and reaming
- **Chip/dust exhaust:** optional
- **Clamping force:** –

C-Frame (CF)



- **Material stacks:** CFRP, Aluminium, Titanium
- **Process:** One-shot drilling and countersinking
- **Chip/dust exhaust:** nearly 100%
- **Clamping force:** 1,000 N - 1,200 N

Taperlock (TPL)



- **Material stacks:** CFRP, Aluminium, Titanium
- **Process:** One-shot drilling and countersinking
- **Chip/dust exhaust:** nearly 100%
- **Clamping force:** adjustable

Vacuum Traverse (VT)



- **Material stacks:** CFRP, Aluminium
- **Process:** One-shot drilling and countersinking
- **Chip/dust exhaust:** nearly 100%
- **Clamping force:** up to 1,000 N

Geared Offset (GO)



- **Material stacks:** CFRP, Aluminium, Titanium
- **Process:** One-shot drilling
- **Chip/dust exhaust:** optional
- **Clamping force:** –



“As an engineer at LÜBBERING I like the challenge of improving consistently our drilling units. Even after 20 years, this is still as exciting for me as on the first day.”

Johannes Stafflage, Design Engineer