

On board devices of Meccanica 42



Products

- Meccanica 42 provides:
- on board devices that give you the power to interact with traditionally inaccessible systems, by enabling you to design every functional concept on actual vehicles.
 - Simulation Station, that interconnects vehicle devices to a virtual simulation environment

Services & Integration

Every device under test has different requirements; hence why in addition to our standardized products, we offer a personalised service tailored to your needs and requests. Our service package includes hardware and assistance from our experienced and competent engineers.

Special projects

It's part of our mission, and it is also one of our core values to be a dynamic company, hence why if you need assistance on building a project from scratch we can be your co-makers.

According to your requirements and working closely with you, we are able to find the perfect solution.

Products

On board devices

Meccanica 42's on board devices are extremely versatile, integrable and their use is easily accessible.

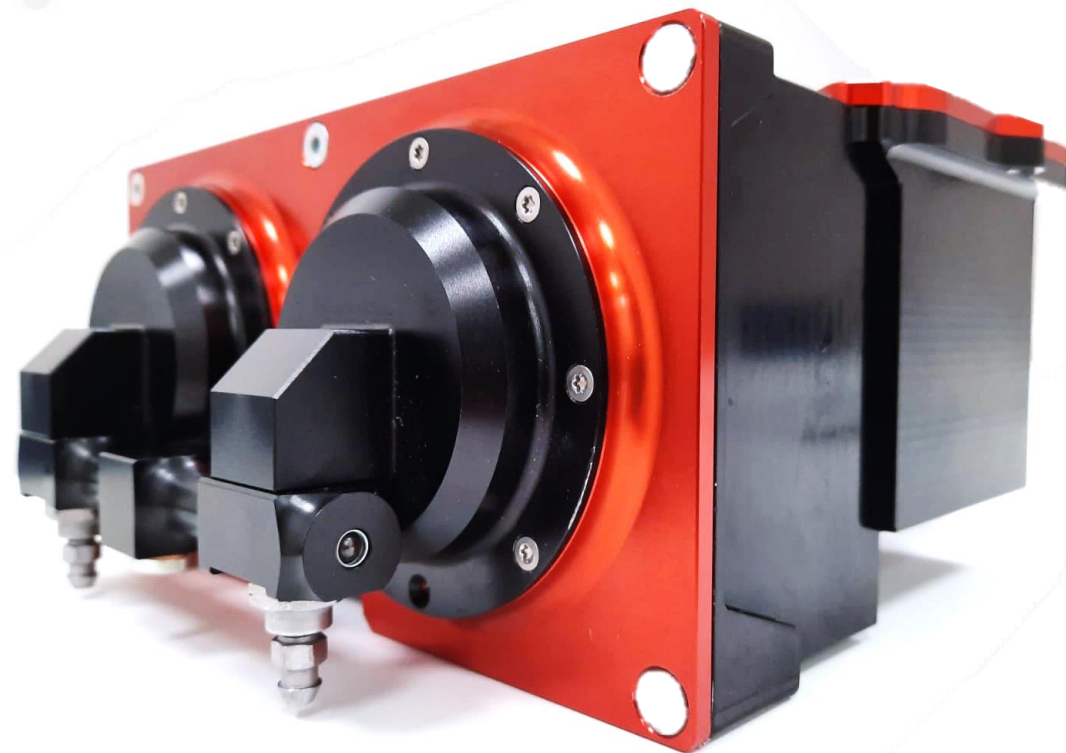
When choosing our on board devices, you are dealing with a more rapid and controllable system that allows you, not only to implement standard procedures, but also to perform other functionalities that could not be executed when using non by-wire devices.

Corner Brake Actuator

CBA is a high-performing on board device, that opens the access to any brake-based function and calibration.

CBA ensures a precise and independent management of the four wheels pressure and is able to accurately and rapidly obtain any pressure requested by users.

With a focus on safety, the implementation of a fall-back strategy allows to confidently face emergency situations.



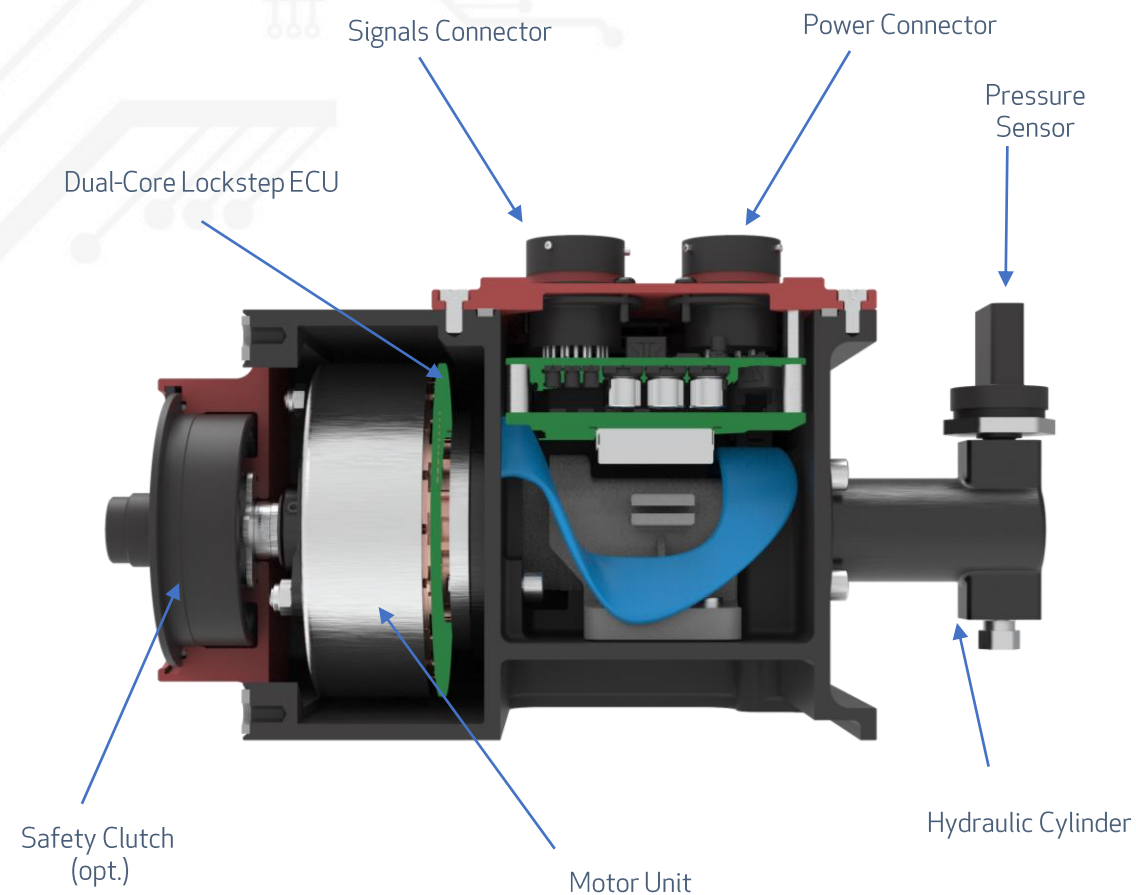
Technical features

FEATURE	VALUE	UNIT
Nominal Pressure	100	bar
Max Working Pressure	150	bar
Allowable Pressure	200	bar
Maximum Pressure Gradient ⁽¹⁾	1600	bar/s
Minimum Time to Lock @80bar ⁽²⁾	75	ms
Typical Dimensions ⁽³⁾	200 x 100 x 110	mm
Typical Weight ⁽³⁾	2.2	kg
Voltage	12-48	V
Nominal Current Consumption ⁽¹⁾	12	A
Max Current Consumption	28	A
Rated Power	260	W

(1) Competitors' typical values: 900 bar/s

(2) Competitors' typical values: 130 ms



(3) Varies with requested capacity (reference: 7200mm³)



When to choose a single or twin output?

The twin CBA has two working units, independently able to operate two wheels, the single CBA only has one.

Every working unit is composed of an electromechanical piston and a patented safety system, that allows to achieve exceptional braking performances, without losing any braking force and pedal travel in the event of electrical failures.

APPLICATION	SINGLE	TWIN
Need for proximity to the caliper	 ✓	
Need for optimized size		 ✓
In the case of non-differential pressures among the calipers	✓	

Configurations

- **Protection level:**

- » IP67

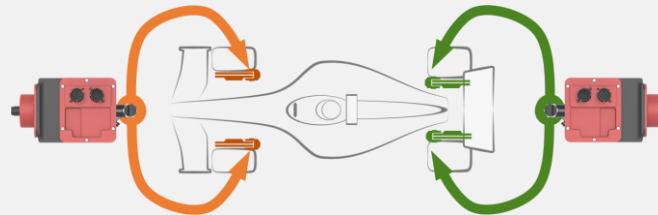
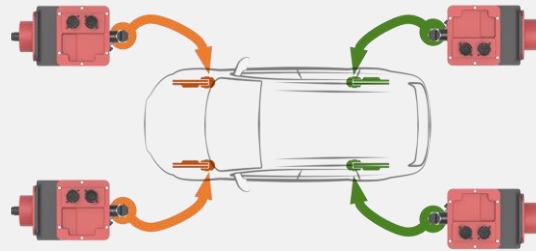
- **Typical use:**

- » Independent corner braking
 - » Axle braking

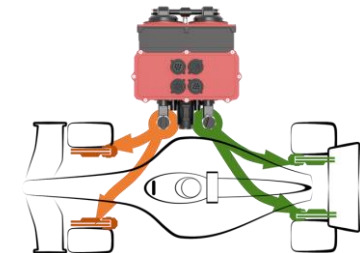
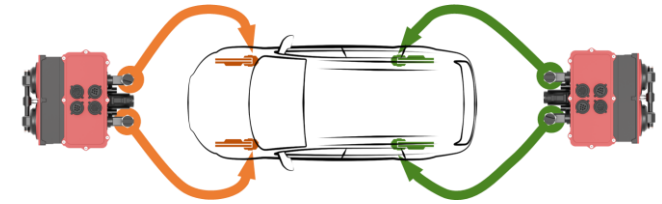
- **Other information**

- » Up to 12000 mm³ per output
 - » ABS/ESC functions available

SINGLE OUTPUT



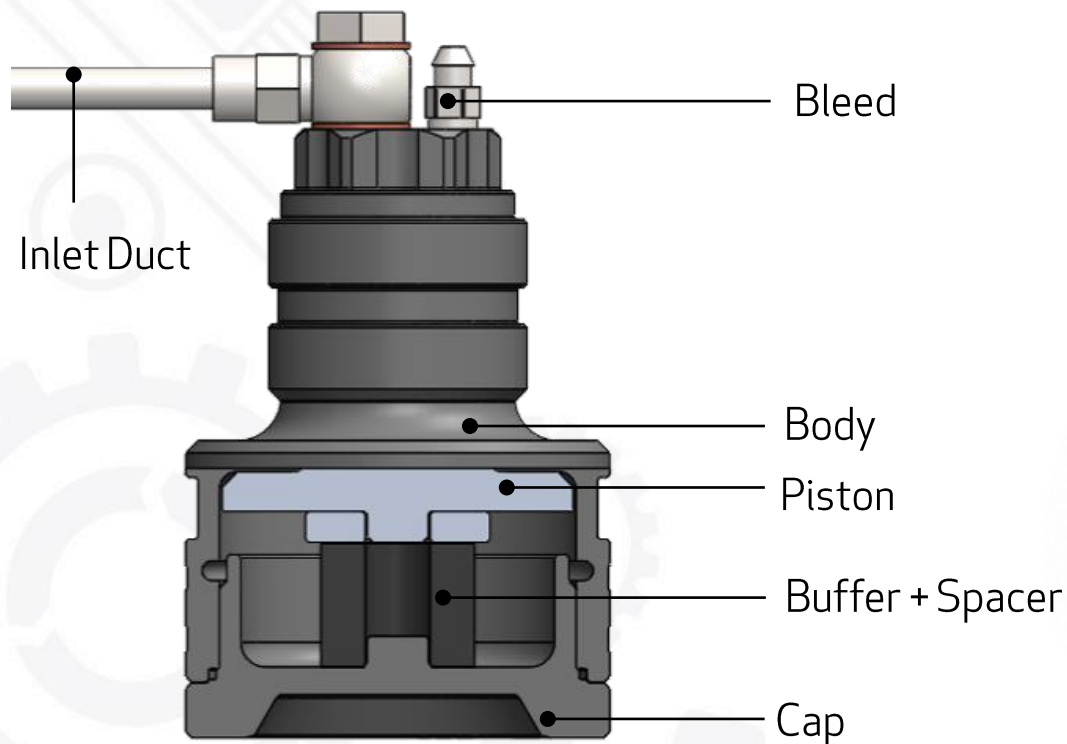
TWIN OUTPUT



Passive feedback unit

This is a light and compact device, that allows a customized pedal feel in brake-by-wire vehicles according to the user's needs; and its management is totally free.

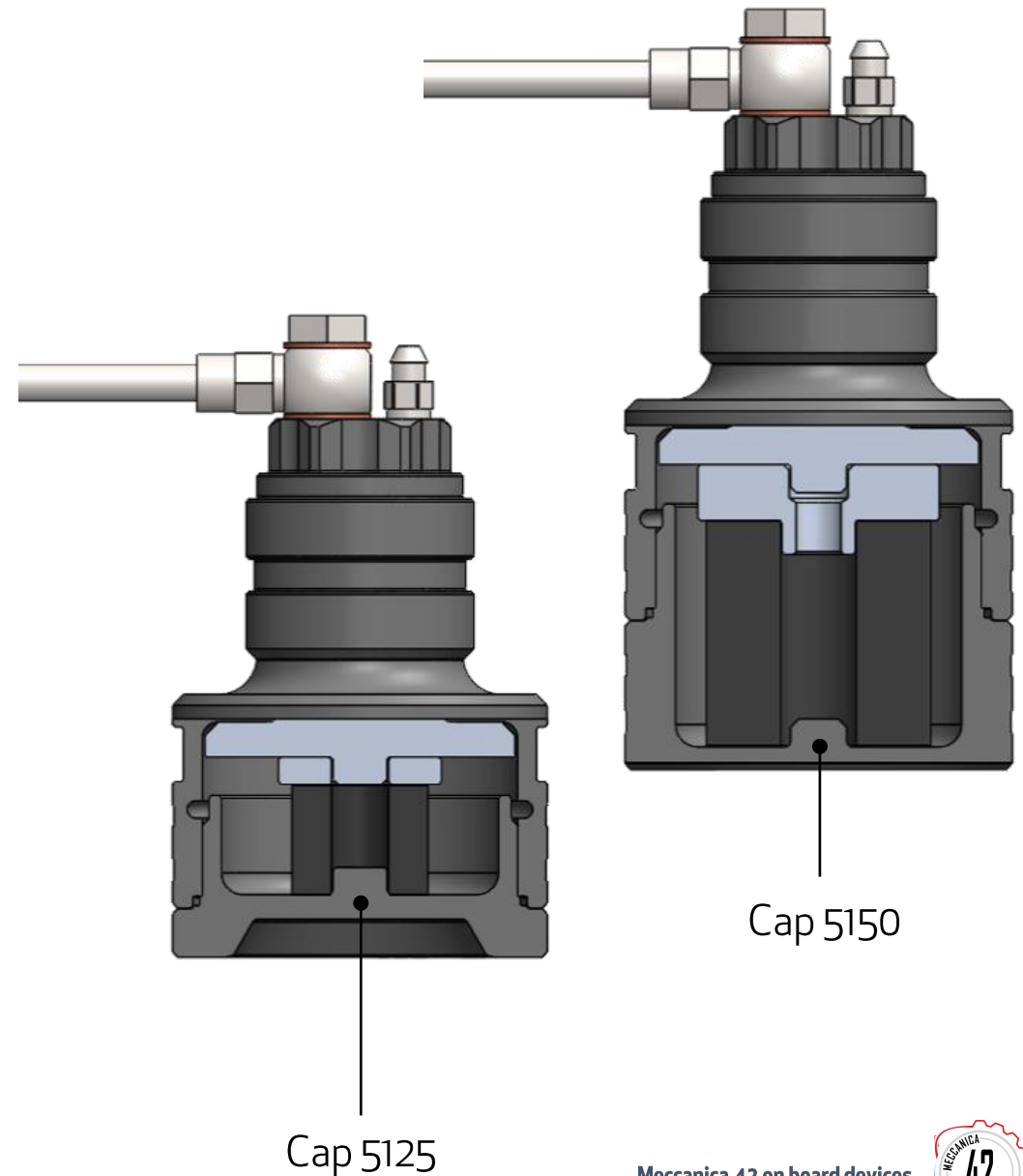
The technology deployed for this device minimizes the friction and enables a more precise pedal feel, according to the user's needs.



Technical features

	FB 3007A + A5125	FB 3007A + A5150	
FEATURE	DIMENSION	DIMENSION	UNIT
Max height (including the bleeder valve)	115	130	mm
Outer diameter	70	70	mm
Internal volume	4950	4950	mm ³
Maximum operating pressure allowable	200	200	bar
Weight*	440	500	g
Hydraulic coupling	M10x1.0	M10x1.0	[-]

* Not including the elastic element



Brake System Unit

The BSU is an open control unit used to manage the brake system, so that the user can freely develop its own logic within, and to integrate it inside the ECU. This allows a rapid and simple management of the vehicle brake system.

The BSU can implement both ABS and ESC logics and can directly read speed values given from wheel speed sensors and the master cylinder pressures.



Feature	Value
Supply Voltage	12 V
IP grade	IP 67
I/O interface	4xWSS, 8xPWM out, 4xCAN, 6x digital out, 4x digital in, 3 x analog in, 4xPWM in
Weight	400 gr
Cycle time	1 ms
Dimension	135x115x48 (connector included)
Connector	AS216-35PN

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