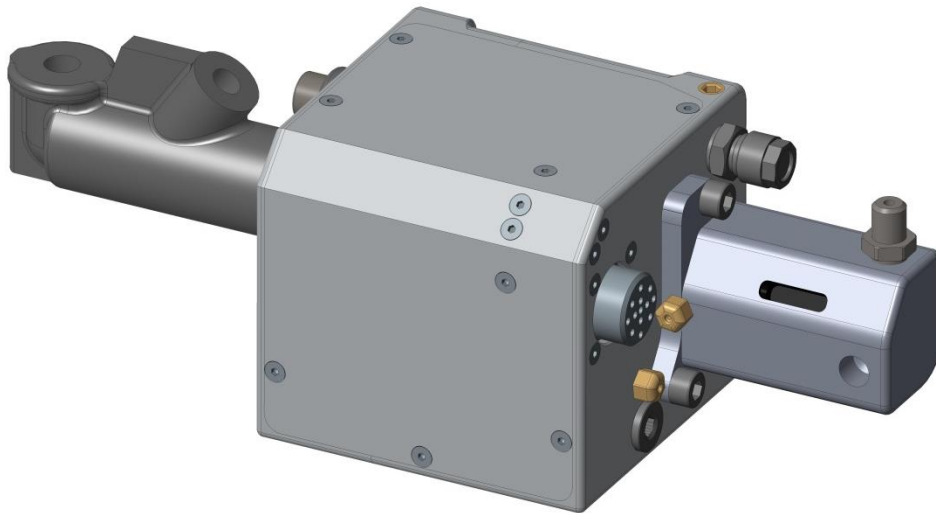


Clutch Actuator With Master Cylinder



Features

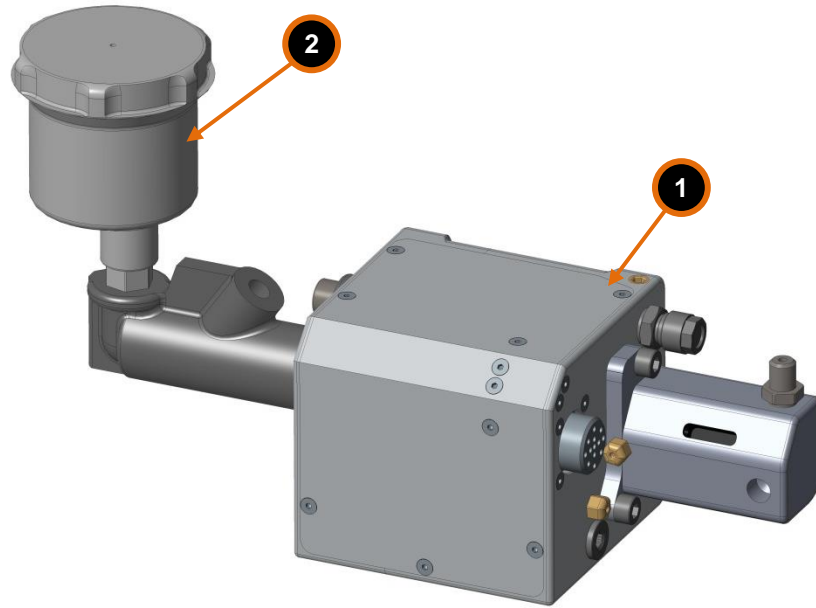
- Pneumatically operated clutch actuator
- Valves integrated in the actuator
- No need for extra valve block
- Inline connection to existing clutch line
- Integrated position sensor
- No need for stroke adjustment
- Very light (only weights 1900 g)

Technical specifications

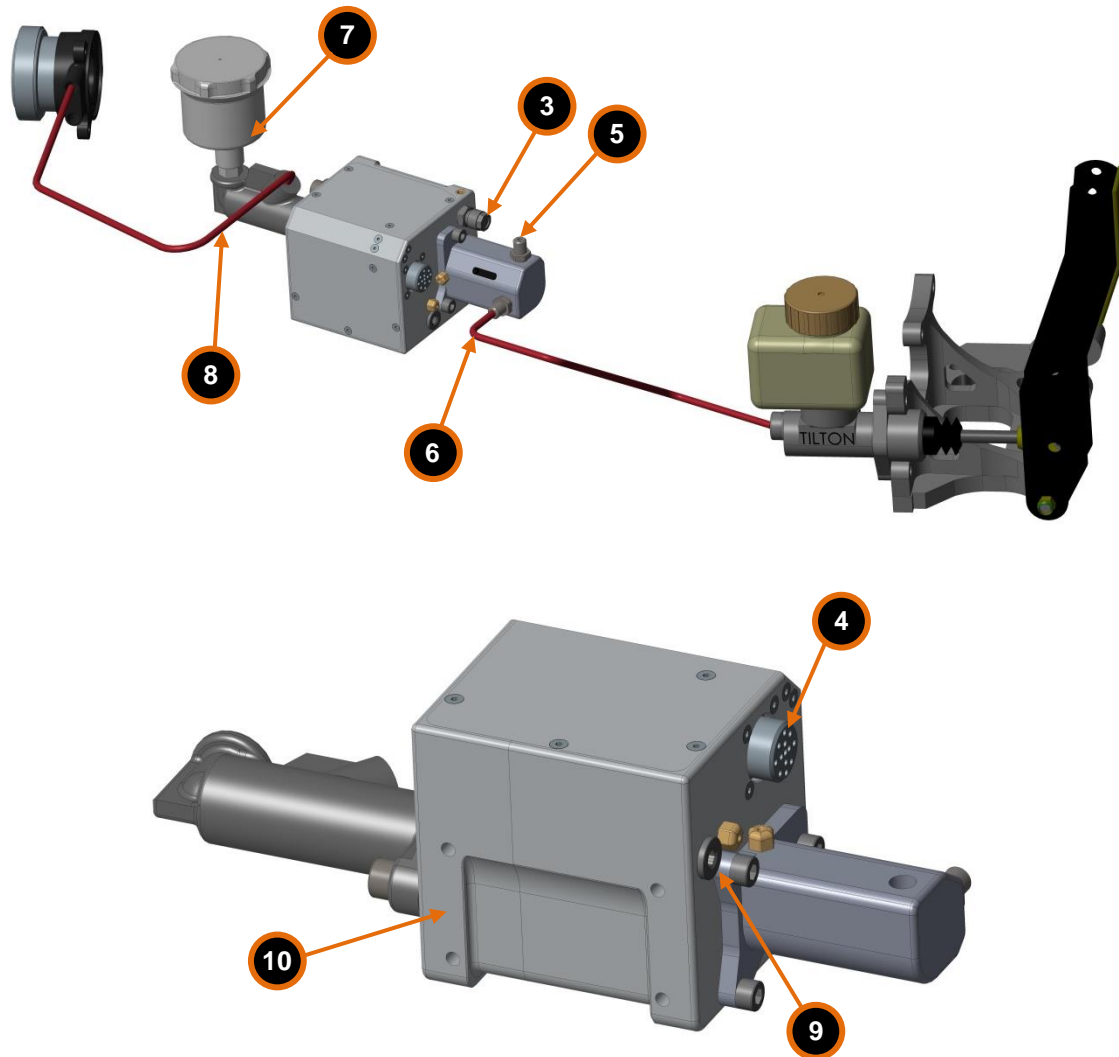
Dimensions L x W x H	270 x 95 x 87 mm	
Weight	1900 g	
Operating temperature	-20 ... 80°C	
Operating pressure	6 ... 9 Bar	
Stroke	32 mm	
Operating force [8 Bar]	Push	1600 N
Pneumatic fitting	Pneumatic tube 8/6 mm	

Included in the kit

- ① Pneumatic clutch actuator
- ② Reservoir
Connector



Connection Diagram



- ③ Air supply (Ø 8 mm pneumatic pipe).
- ④ Electrical connector
- ⑤ Bleeding screw M10x1 (included)
- ⑥ Hydraulic line to foot pedal M10x1 (fitting not included)
- ⑦ Clutch reservoir 7/16-20 (included). Can be mounted separately from actuator
- ⑧ Hydraulic line to clutch slave cylinder 3/8-24 (fitting not included)
- ⑨ Pneumatic plug for clutch bleeding. **Replace with G1/8 silencer if unit is not powered.**
- ⑩ Mounting surface with holes for mounting (for dimensions see technical drawing).

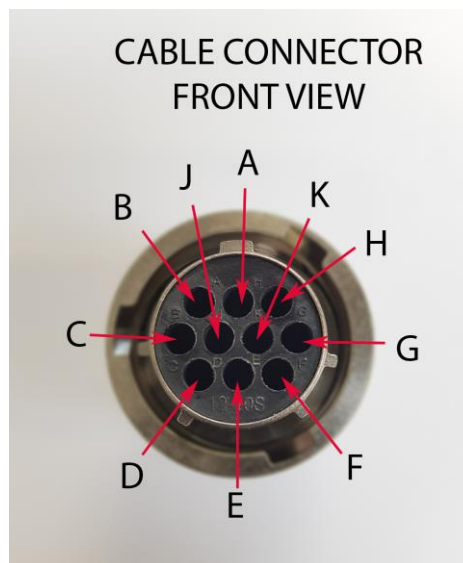
Electrical diagram

Connector pinout:

A	Free
B	CAN-
C	CAN+
D	GND
E	12V
F	SETPOINT 5V
G	SETPOINT GND
H	SETPOINT SIG (0-5V)
J	BLIP (active low switch)
K	FREE

CP-01 Clutch Paddle Connection:

Brown wire - SETPOINT 5V (F)
 Blue – SETPOINT GND (G)
 Black – SETPOINT SIG (H)

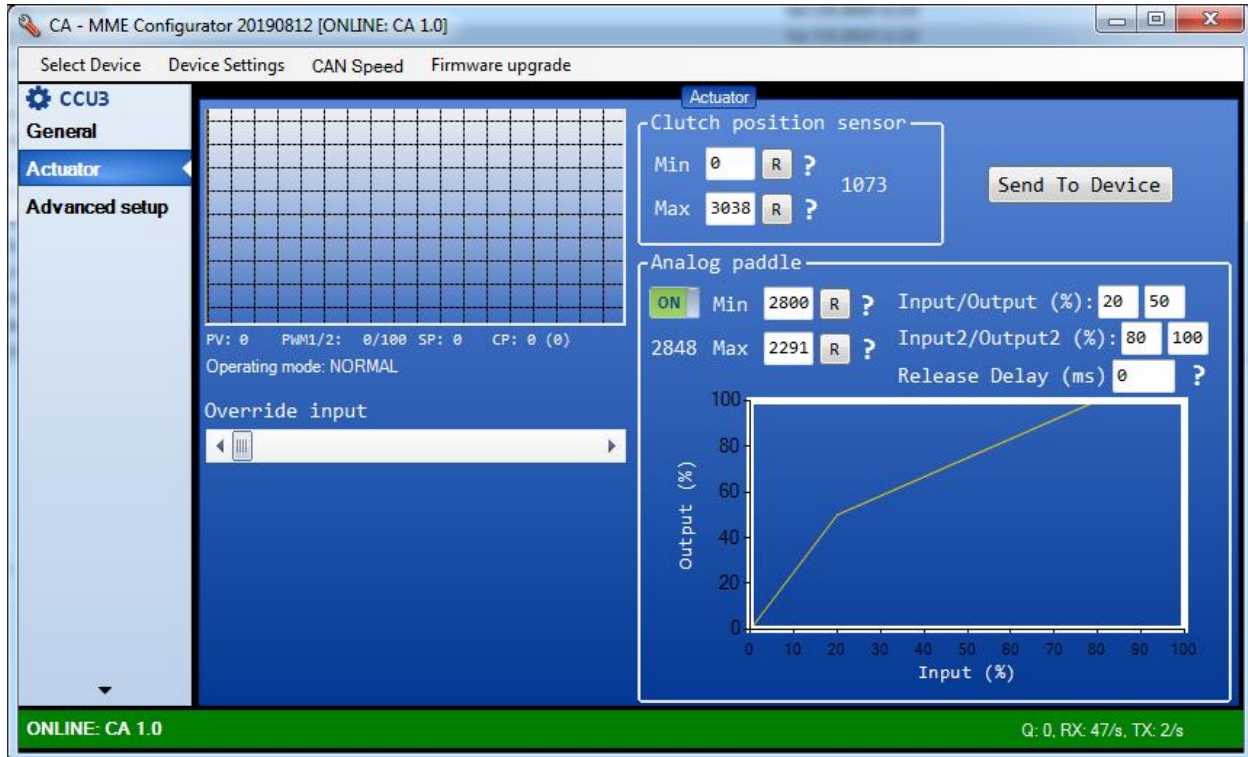


Bleeding the clutch

1. Unscrew pneumatic exhaust for clutch bleeding ⑨.
2. Use bleeding screw ⑤ to first bleed from foot pedal to clutch actuator. It's possible that foot pedal will not return automatically back to position – in this case, move the pedal back to position manually while bleeding. If you do not have a foot clutch, this step can be ignored.
3. Bleed the clutch from clutch actuator to slave cylinder on your car. Use bleeding screw on your car's clutch slave cylinder. If you don't have a foot clutch, you can bleed it using the software using the override slider.

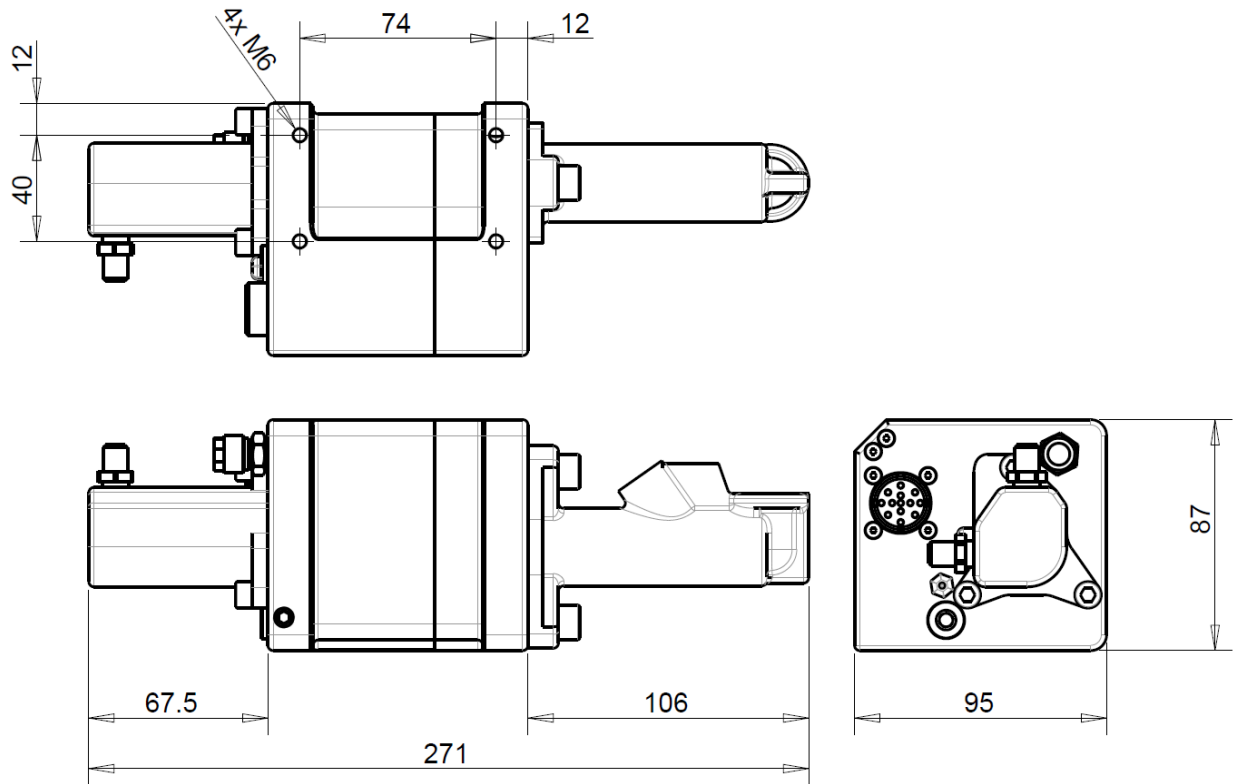
Configuring the clutch

1. Download latest MME Configuration software from the <http://www.mme-motorsport.com/en/download>
2. Plug USB CAN cable and make sure the CAN+ and CAN- are properly connected and wires properly terminated (using 120 ohm resistors in parallel)
3. Open MME Configuration and select Clutch Actuator from the detected devices list.



4. First, you need to set maximum travel for the clutch actuator. Number that defines what the maximum travel is can be found under Clutch position sensor, parameter Max.
 - Put the car in 1st gear (engine not running)
 - Move **Override input** slider to zero
 - Adjust Max value to 4000. Press **Send To Device** to save the value.
 - Slowly slide the slider to the right. Clutch should slowly extract. While doing this, jerk the car so you can see if clutch is pressed enough or not. Once you reach the point where car starts to move freely, go a little bit further to the right and click **R** next to the Max window.
 - Move the slider to zero (completely to the left)
 - Press **Send To Device** to save the settings.
 - Verify that moving the slider completely to the right, extends the clutch to safe max position
5. If you use clutch **Analog paddle** (CP-01 or any other 0-5V device), you first need to enable it (by clicking the OFF/ON button). While paddle is released, click **R** next to the Min window. Press the paddle fully and while holding it fully pressed, click **R** next to the Max window. Press **Send To Device** to save the settings.
6. By setting **Input / Output and Input2 / Output2** you can change the mapping of the input command in regard to output. Input 10%, Output 50% means that when you press the paddle 10%, it's already 50% open, then you have the next 90% of the paddle for the 50 – 100% output.
7. **Release Delay** is how fast does the paddle release react when you release it. Bigger delay will cause clutch paddle to be slower on release to prevent sudden release (by mistake) which is undesirable.

Technical drawing



Servicing

Once a year replace two M5 pneumatic silencers on the actuator with new one.

Check for fluid leaking.