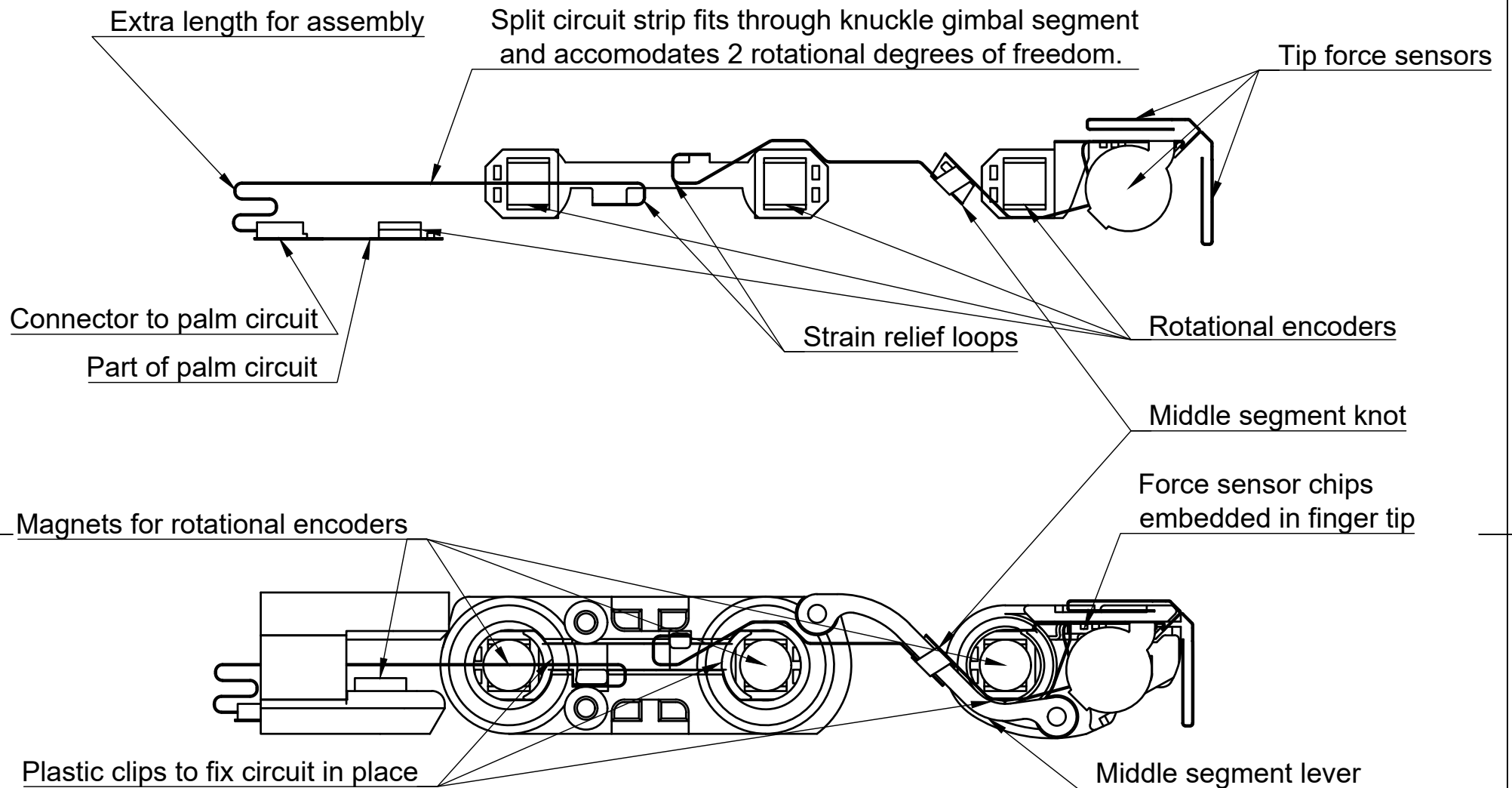
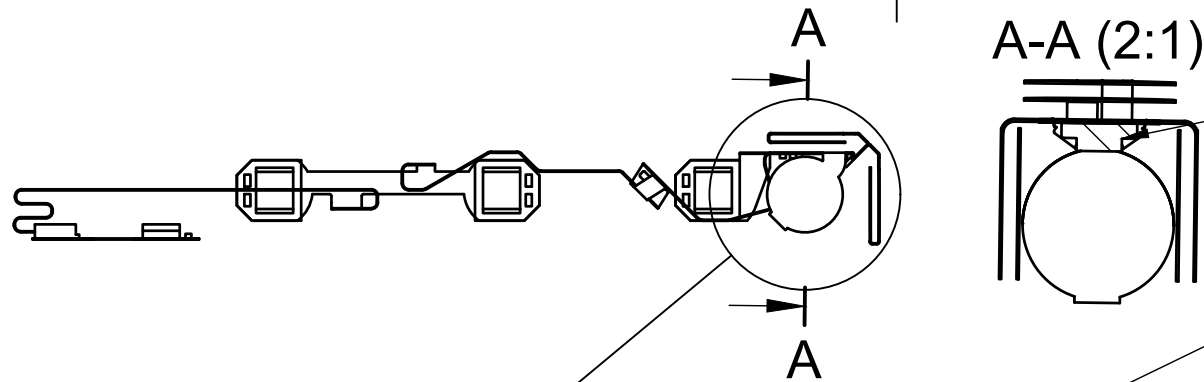


Created by Calin Mocanu		2022-02-07		Project Name Hextech mechahand mk 11	
Title 3D finger view: left - flexible finger circuit right - finger structure				DWG Name Finger circuits diagrams	
				Rev. 2	Date of issue 2022-03-04



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Title Side view of finger: top - flexible finger circuit bottom - partial assembly			DWG Name Finger circuits diagrams	
			Rev. 1	Date of issue 2022-03-04



Ancillary sensor circuitry nestled within finger tip cavity

"Nail" force sensor

Folds needed to place the sensors in the correct orientation in space

FORCE SENSORS

Ancillary sensor circuitry

Distal tip force sensor

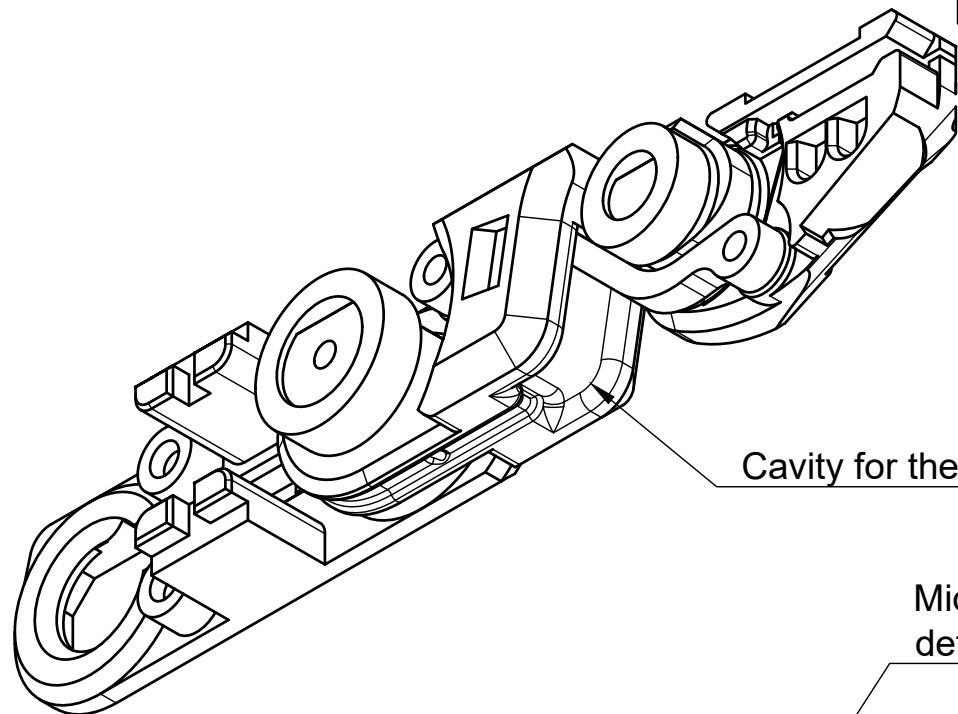
Ground electrode facing the outside and shielding the active electrode

Double sided adhesive tape or other soft material sandwiched between electrodes

Active capacitive electrode

Side force sensors
(one on each side)

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Title Force sensor closeup				DWG Name Finger circuits diagrams	
				Rev. 1	Date of issue 2022-03-04



The tip is driven by a tendon actuated joint and a second passive joint linked to the former through the flexible middle segment lever.

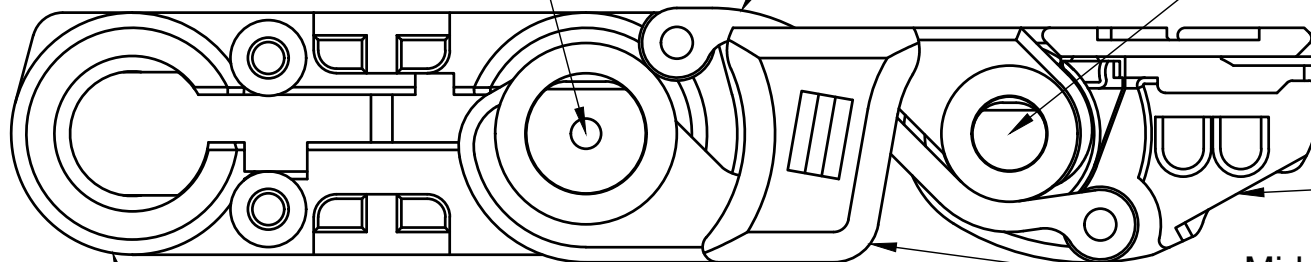
This construction forms a four-bar linkage with a well defined relationship between the 2 rotation positions. By measuring both positions we can infer the elongation of the flexible lever and the force on the finger tip.

Cavity for the lever arm swing.

Middle segment flexible lever (bar no. 4). This lever deforms when there is a force acting on the tip.

Middle rotation joint is actively driven by tendons.

Distal rotation joint is passively driven by the flexible lever.



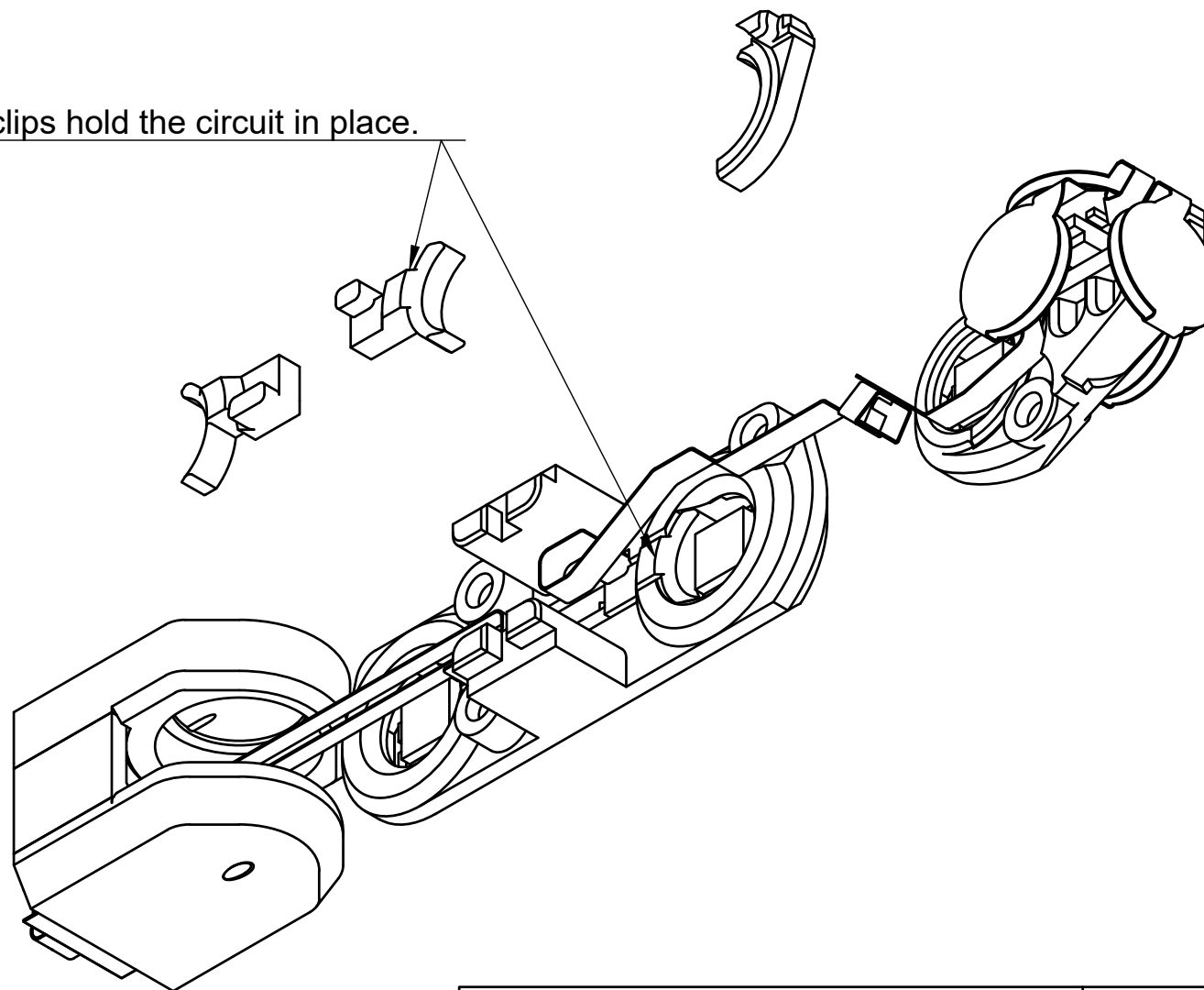
Distal segment (bar no. 3)

Middle segment (bar no. 2)

Proximal segment (bar no. 1)

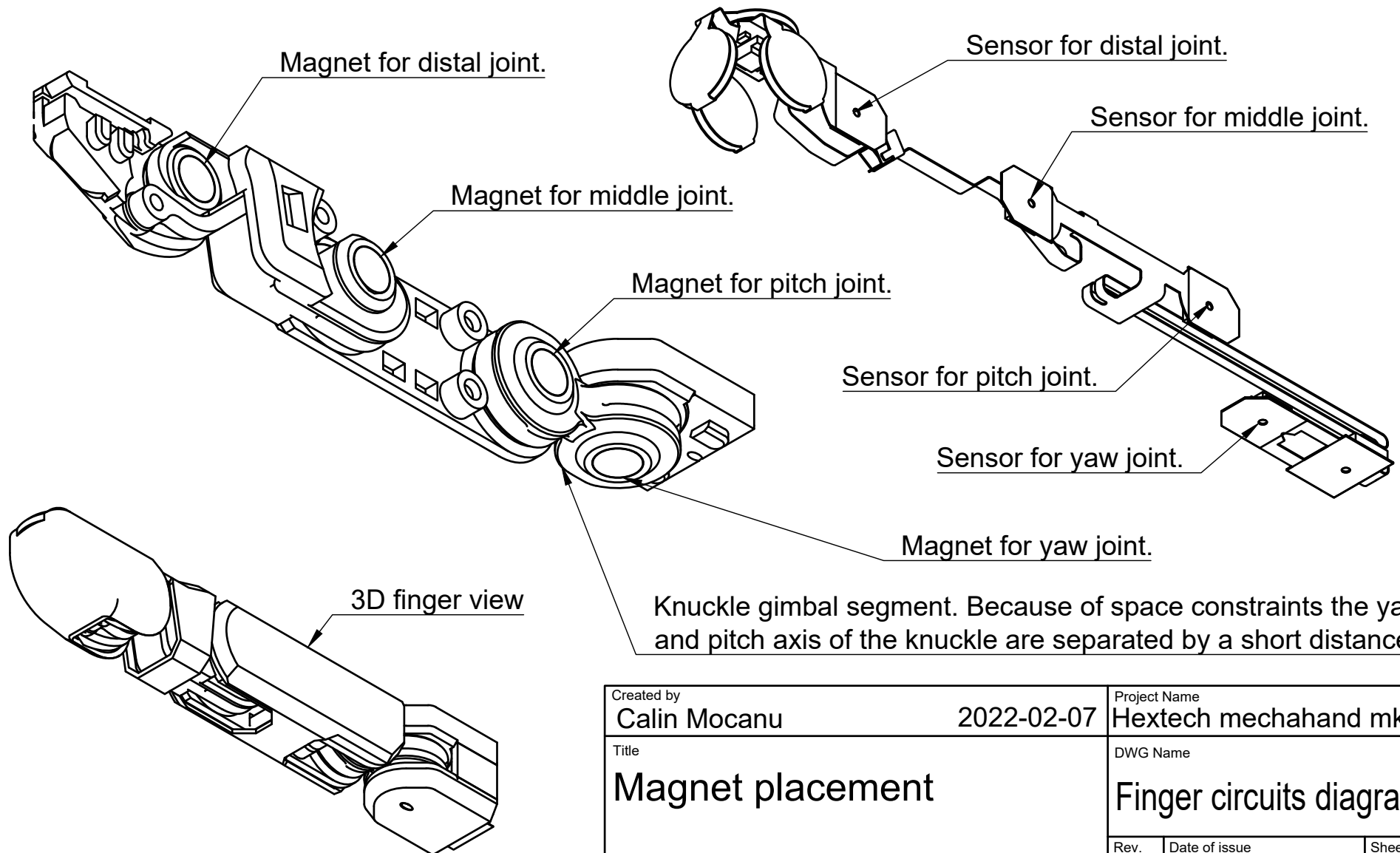
Created by Calin Mocanu		2022-02-07		Project Name Hextech mechahand mk 11	
Title Four-bar linkage force sensor				DWG Name Finger circuits diagrams	
Rev. 1		Date of issue 2022-03-04		Sheet 4/6	

Plastic clips hold the circuit in place.



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Title Circuit clips				DWG Name Finger circuits diagrams	
				Rev. 1	Date of issue 2022-03-04

The magnetic rotational position sensors measure the angle of a diametrically polarized magnet placed in close proximity to the center of the sensor.



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Title Magnet placement				DWG Name Finger circuits diagrams	
				Rev. 1	Date of issue 2022-03-04