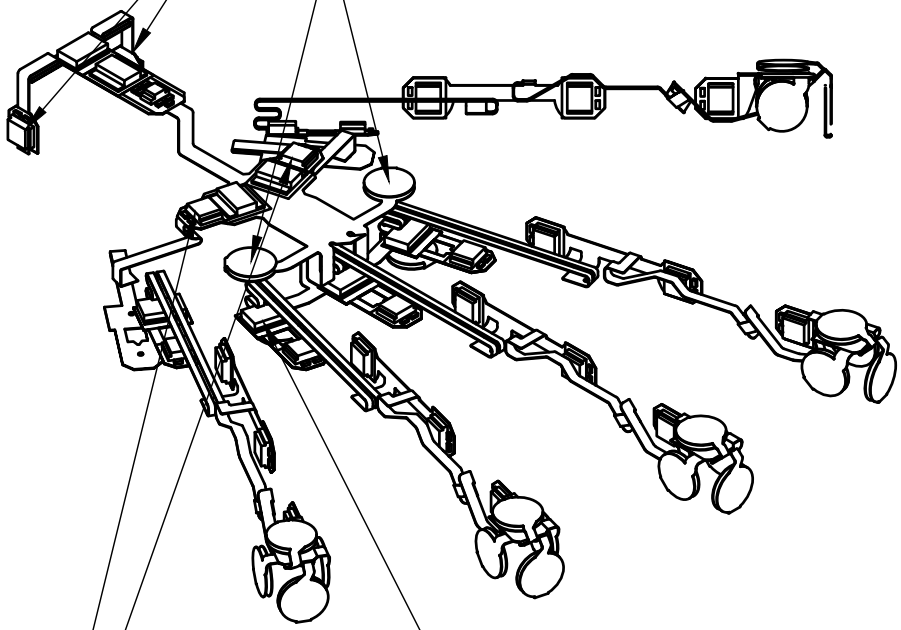

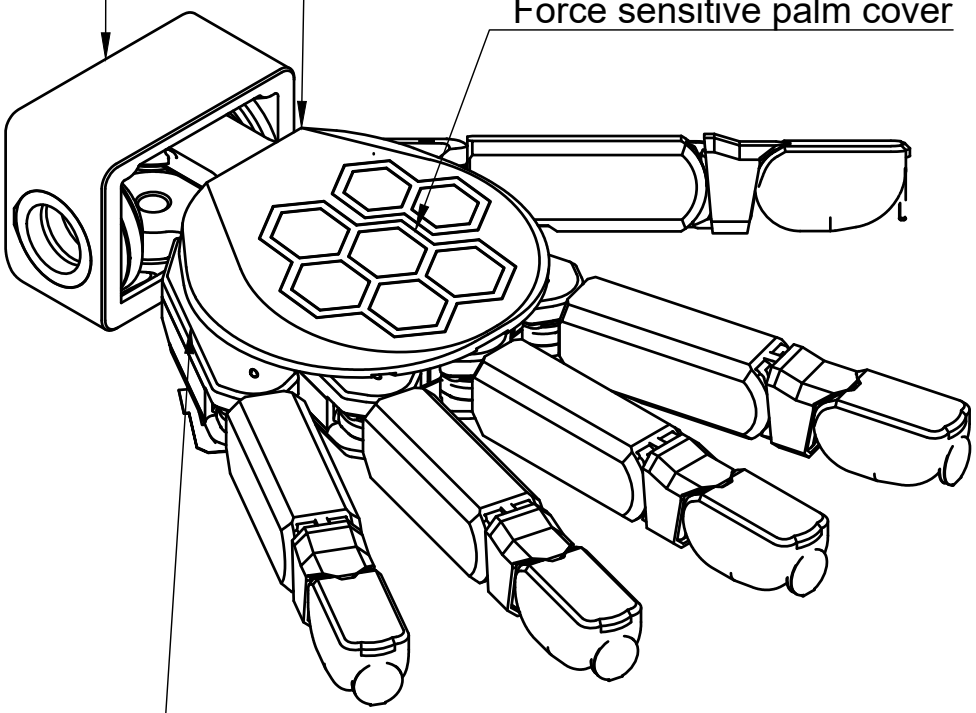

Created by: Calin Mocanu 2022-03-05	Project Name: Hextech mechahand mk 11
Title: 3D palm view: left - flexible palm circuit right - palm structure	DWG Name: Palm circuit diagrams
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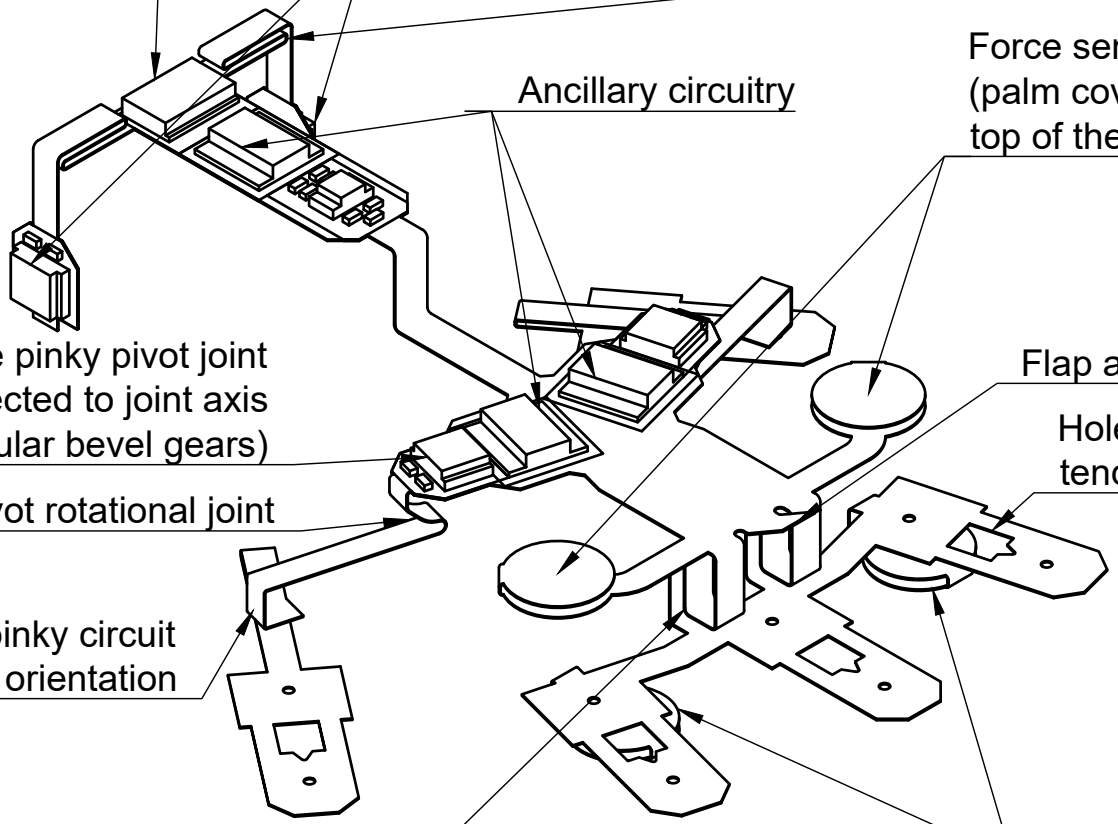

Created by: Calin Mocanu	2022-03-05	Project Name: Hextech mechahand mk 11	
Title: 3D palm circuit		DWG Name: Palm circuit diagrams	
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Pinky pivot joint is inline with ring finger and protected below the palm cover

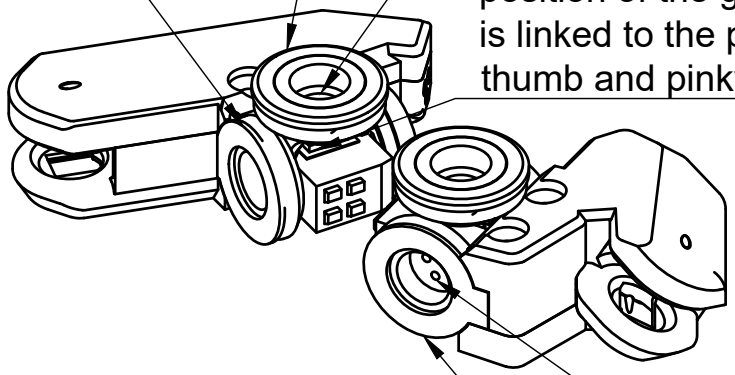
Thumb pivot enables the opposable thumb pose

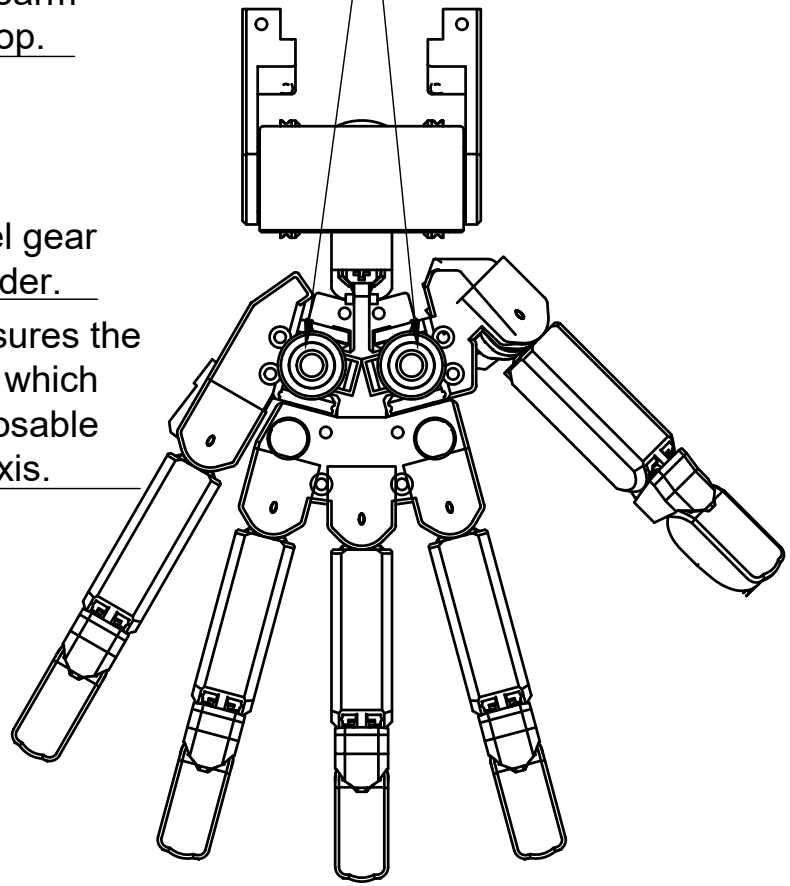
Tendons connected to motors in the forearm engage with the guiding bevel gear on top.

Bevel gear pairs translate the movement from the tendons to the opposable thumb axis and pinky pivoting axis.

Magnet embedded inside the bevel gear is the reference for rotational encoder.

Rotational position encoders measures the position of the guiding bevel gear; which is linked to the position of the opposable thumb and pinky pivot rotational axis.





Opposable thumb rotation axis is directly in line with index finger, allowing tendons to pass through the center of the bearing.

Tendon holes

Created by: Calin Mocanu	2022-03-05	Project Name: Hextech mechahand mk 11	
Title: Thumb and pinky pivot joints		DWG Name: Palm circuit diagrams	
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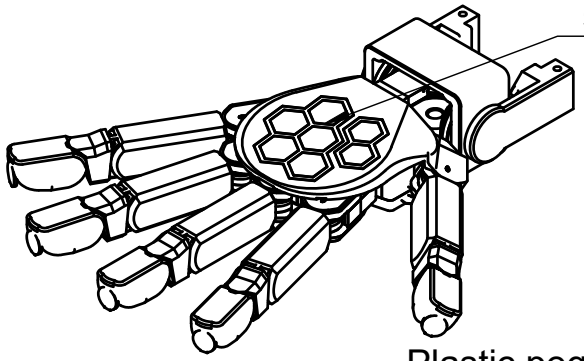
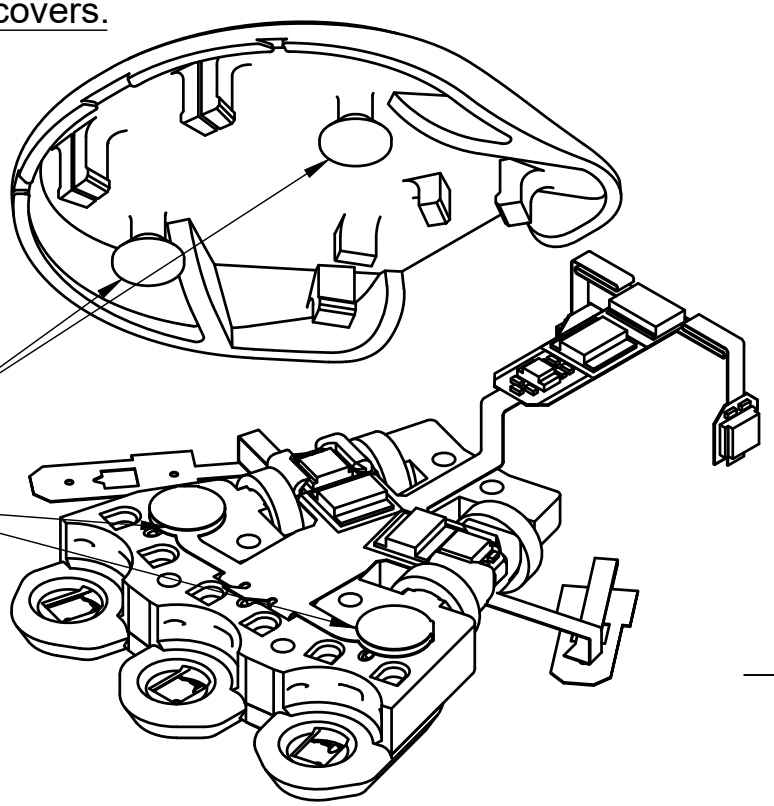
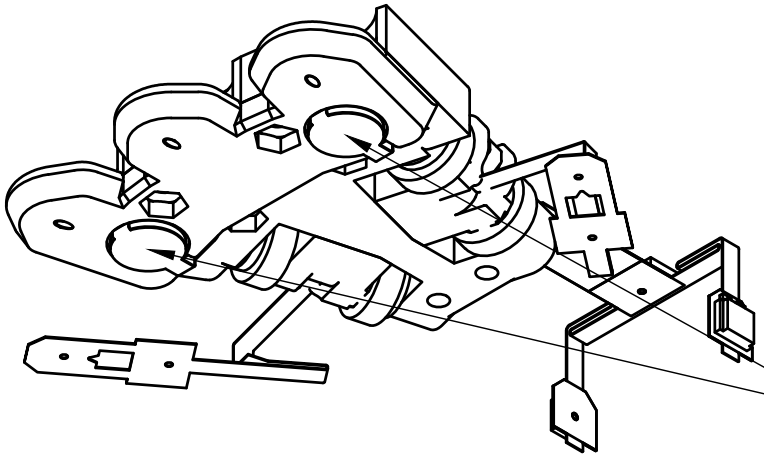
The palm circuit contains capacitive force sensors under the top and bottom covers.





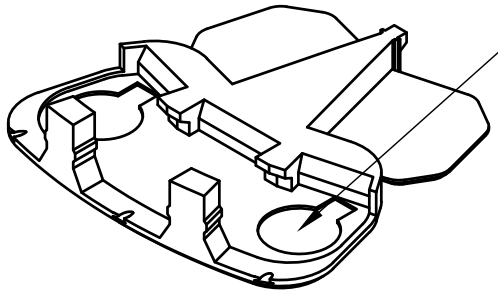
Plastic pegs on the palm cover transmit forces directly to the force sensors.

Top facing capacitive force sensors.



Bottom facing capacitive force sensors.

Recess in the bottom cover for the force sensor.



Created by: Calin Mocanu	2022-03-05	Project Name: Hextech mechahand mk 11	
Title: Palm force sensors		DWG Name: Palm circuit diagrams	
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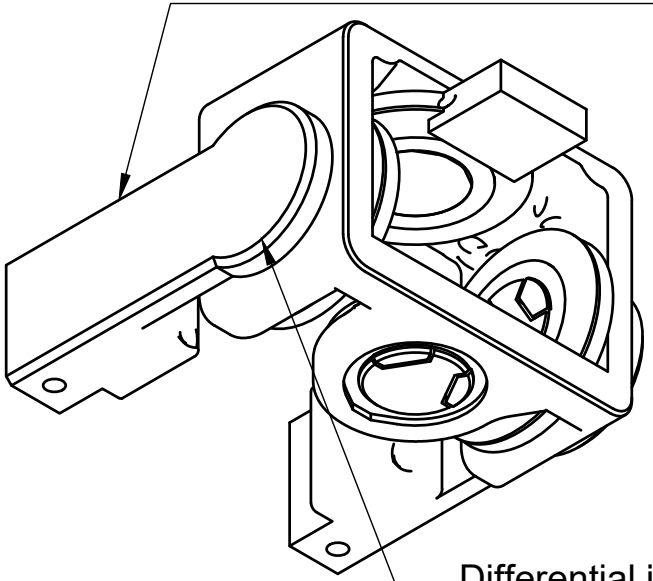
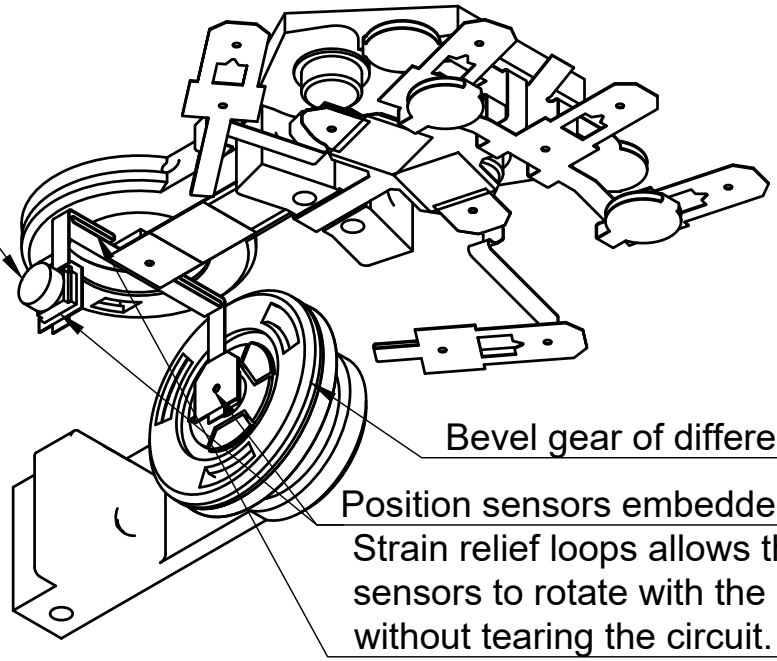
Magnet embedded in wrist braket is the reference for the rotational sensor.

Wrist bracket mounted to the forearm.



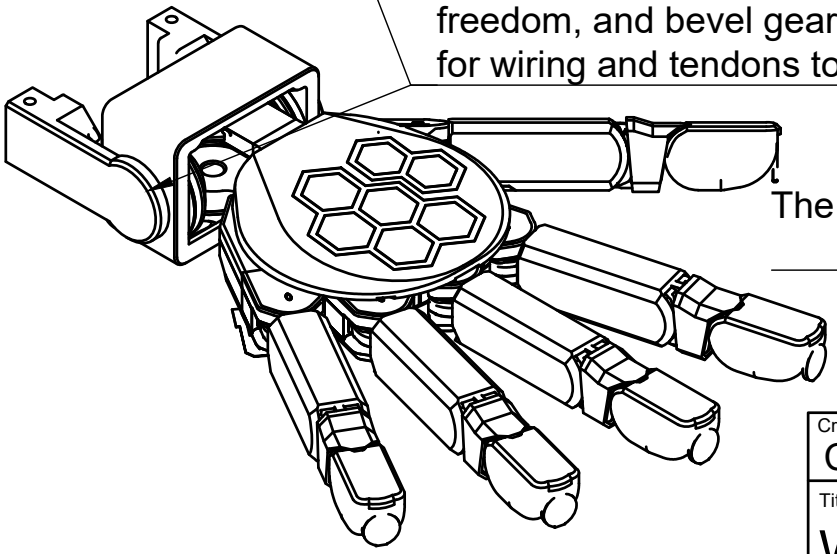


Bevel gear of differential wrist joint.

Position sensors embedded in bevel gear.

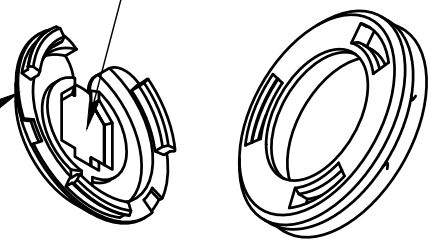
Strain relief loops allows the position sensors to rotate with the bevel gear without tearing the circuit.

Differential joint allows wrist to move with 2 degrees of freedom, and bevel gear configuration leaves room for wiring and tendons to pass through the center.



The position sensor in the bevel gear is held in place by a plastic clip.

Recess for the circuit.



Created by: Calin Mocanu	2022-03-05	Project Name: Hextech mechahand mk 11	
Title: Wrist differential joint		DWG Name: Palm circuit diagrams	
		Rev.: 1	Date of issue: 2022-03-04	Sheet: 5/5