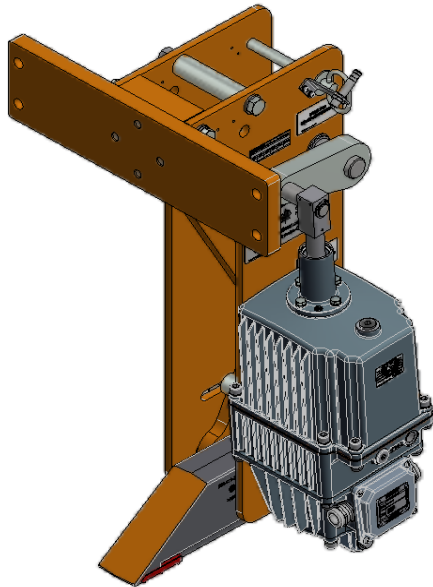


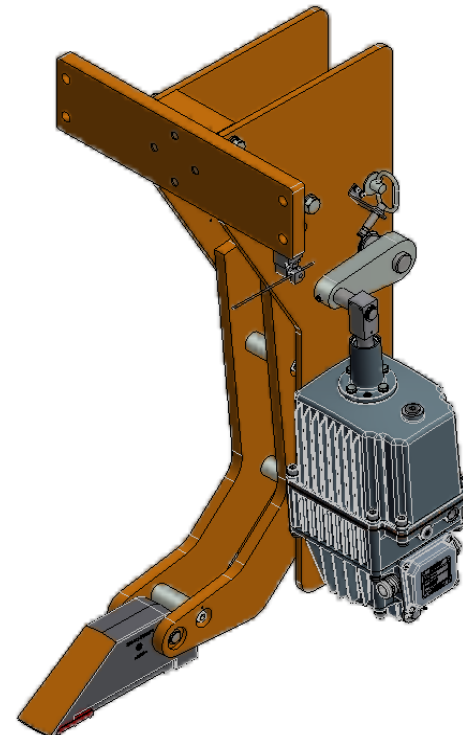
2 THRUSTER WHEEL CHOCKS

INTERNATIONAL PATENTS APPLY

1.0 Wheel Chock Models



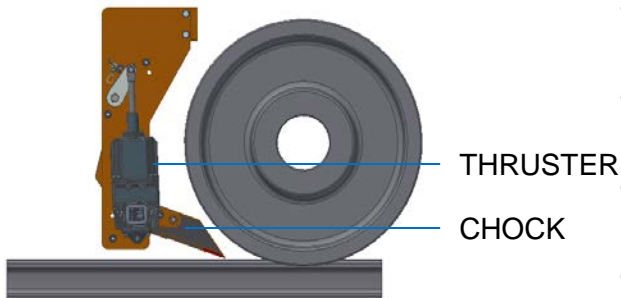
TWCS-100-0380-0710-LH
TWCS-100-0380-0710-RH



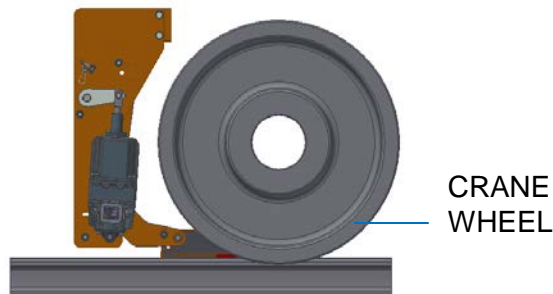
TWCS-100-0711-1040-LH
TWCS-100-0711-1040-RH

2.0 Principles of Operation

International patents apply



RELEASED POSITION



SET POSITION

- The wheel chock is a self energizing device that prevents the movement of the crane idler wheels in one direction.
- The wheel chocks are used in pairs and are designed for static braking only.
- The thruster sets the wheel chock shoe under the wheel and on top of the rail.
- When the crane movement is in the direction of the wedge of the wheel chock, the friction shoe bites into the rail thus ensuring that the wedge does not move, this prevents the crane from moving.
- The wheel chock holding capacity is limited by the crane wheel loads, wedge angle and wedge insert and the rail.

WD = wheel diameter

FW = wheel load

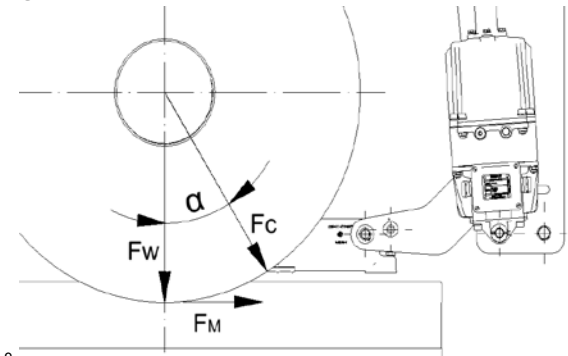
FC = clamping force

$FC = FW / \cos \alpha$

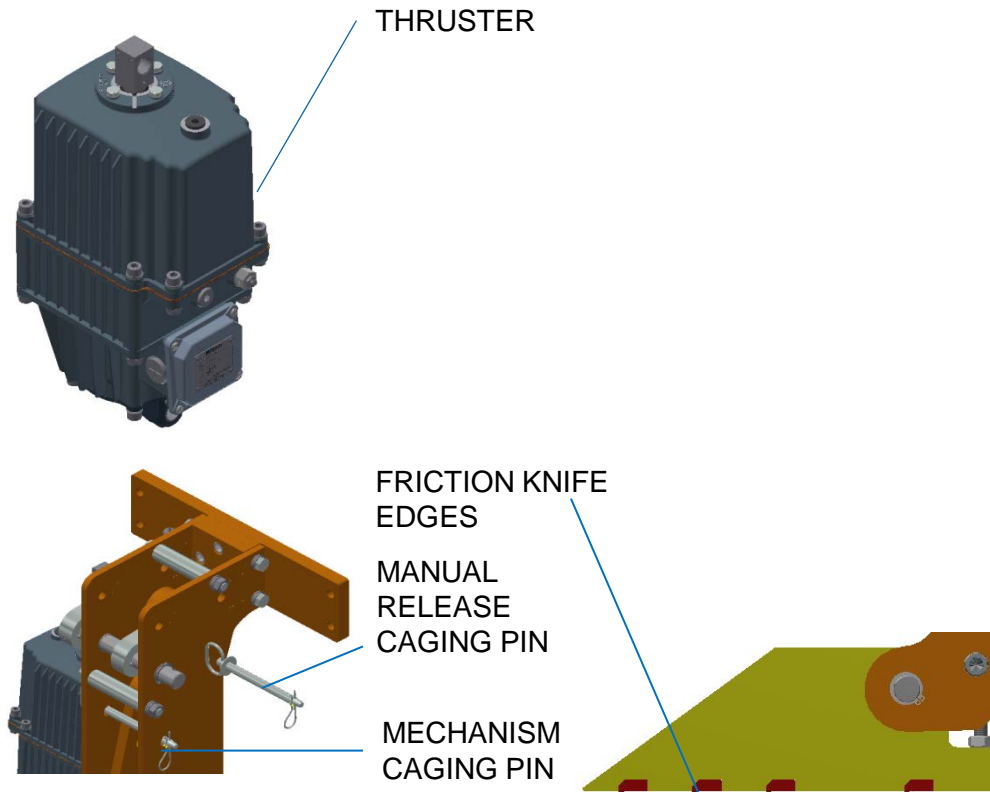
$FH = FC \times \mu$

For WD 380 to 710, $\alpha = 36^\circ$

For WD 711 to 1040, $\alpha = 25^\circ$

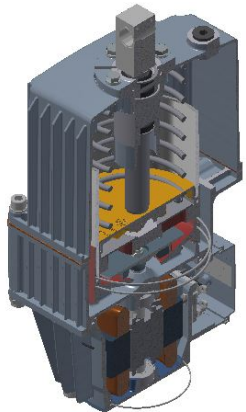


3.0 Design Highlights



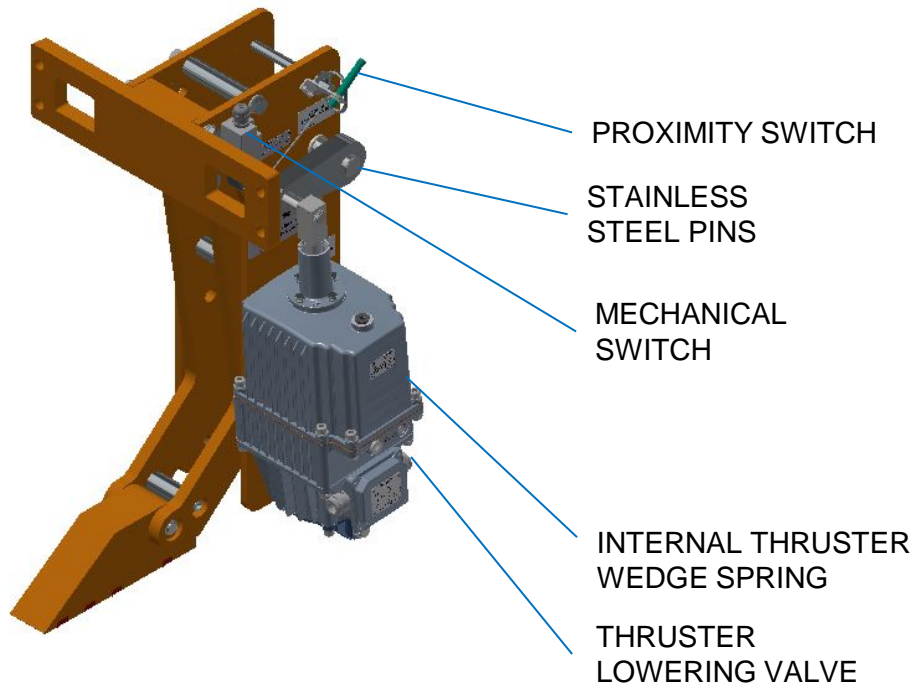
- Each Thruster Wheel Chock comes standard with a specially designed Thruster standard features.
- Manual release lever.
- Manual release caging pin.
- Specially designed friction inserts.
- All shoes specially designed to prevent shoe spitting out when wheel engages the chock.
- Chock profile specially designed to ensure constant force.

4.0 Special Product Specific Thruster



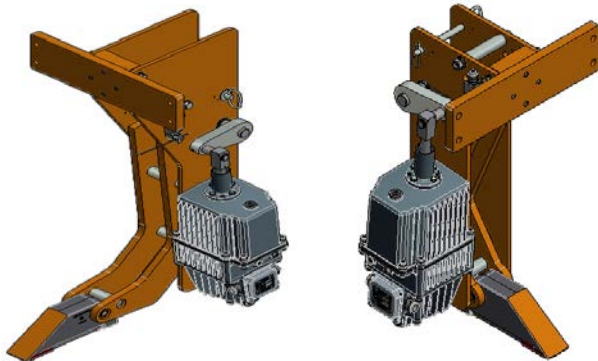
- Artic Oil.
- Spring.
- Lowering Valve.
- Mechanical Valve with bracket.
- Motor Strip Heater.
- Proxy Switch with Bracket.
- Raising Valve.
- 304SS Stroke Kit.
- Special Voltage
- Thruster Stroke – 60mm.
- Thruster Stroke – 120mm.
- Each Thruster Wheel Chock comes standard with a specially designed Thruster standard features.
- Stroke 120mm.
- Coil Spring to ensure positive rail contact.
- Lowering Valve to ensure Crane is stopped before Chock sets.
- 304 SS Stroke Kit – Thruster Piston is made of Stainless Steel.

5.0 Standard Features



- 2D & 3D Standard online for all products.
- Each thruster is provided with wedge setting spring.
- Adjustable thruster lowering valve ensures wheel chock sets after crane stops.
- Proximity release switch.
- Stainless steel pins throughout wheel chock.
- Stainless thruster piston rod.
- Five year paint system standard.
- Complete & comprehensive digital document system.
- All thrusters designed to DIN 15430 Standard
- Mechanism caging pin.
- Manual release mechanism.
- Specially designed friction shoe.
- Fully tested with Hillmar Industry leading test equipment.
- Full load capacity test certificates.
- International patents apply.

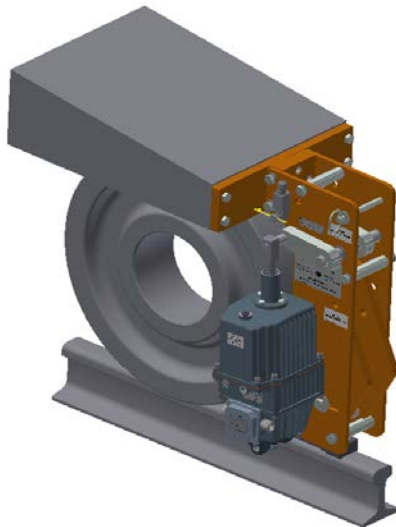
6.0 Design Options



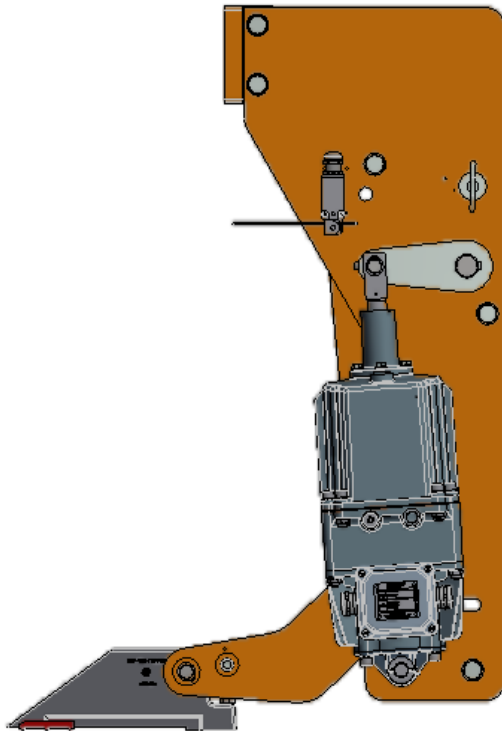
TWCS-100-LH

TWCS-100-RH

- Right hand & left hand models.
- Mechanical switch.
- Product range available to fit wheel dimensions from 380 to 1040.
- Custom mounting flange upon request.



7.0 Standards



All Hillmar products are designed & manufactured in accordance with the following standards.

- 6.1** Design standards.
- 6.2** Performance standards.
- 6.3** Document standards.
- 6.4** Production & Quality standards.
- 6.5** Packaging standards.

All Hillmar products are delivered with Hillmar commitment to customer satisfaction.

All Hillmar products manufactured in accordance with DIN 10204-2.1

Hillmar is an ISO 9001:2015 certified company.