Hillmar

Hillmar Industries Ltd.

RAIL CLAMPS
CXHV-LH-ALL
POWER POINT PRESENTATION
SLS & MKTG
ENGLISH

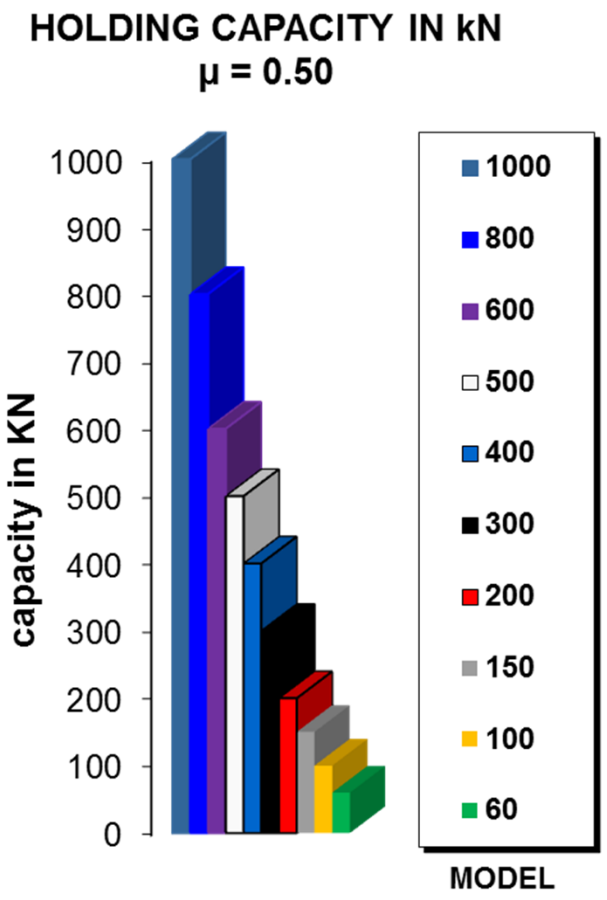
DOC NO.: 200-112-64606

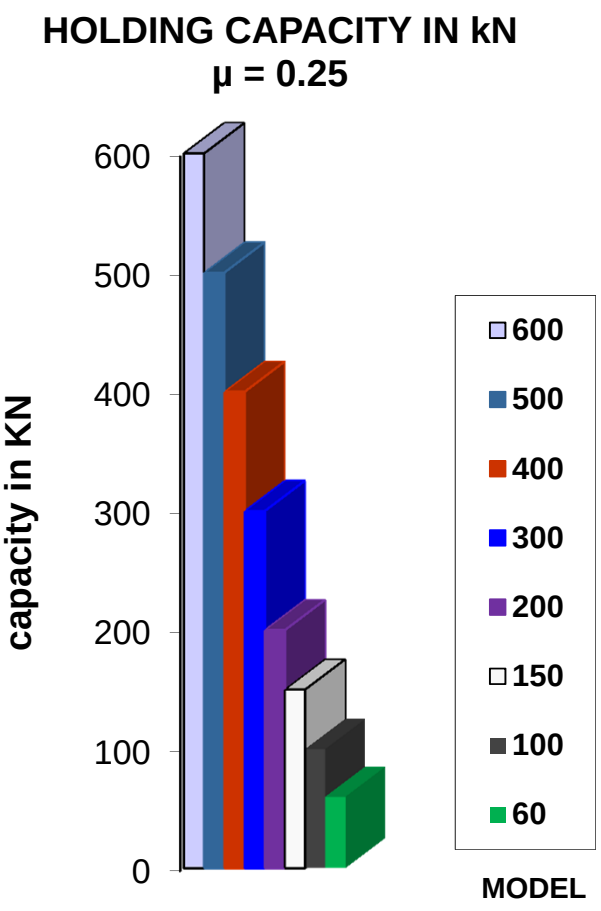
2 RAIL CLAMPS

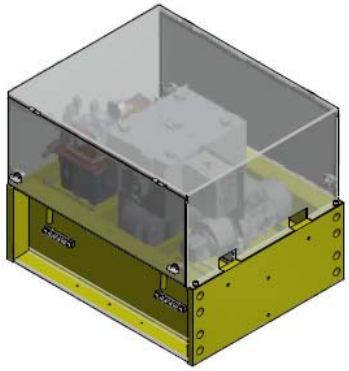
INTERNATIONAL PATENTS APPLY

1.0 Rail Clamp

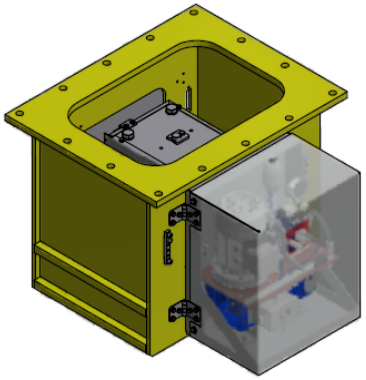
Low Height Models







CTHV – TRUCK MOUNT

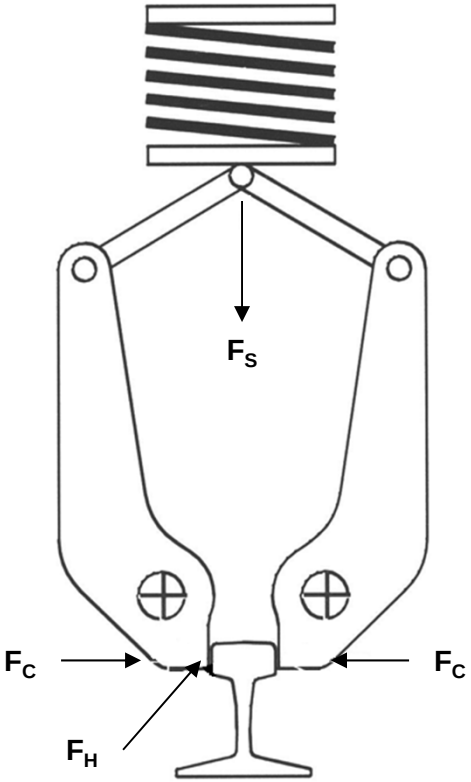


CBHV – BEAM MOUNT

LE = Internal Hydraulic Power Unit
RP = Remote Hydraulic Power Unit
TS = Toggle style (clamping principle)
LH = Wedge style (clamping principle)

2.0 Principles of Operation

2.1 Toggle Style (TS)



F_S = SPRING FORCE

F_C = CLAMPING FORCE

F_A = APPLIED FORCE

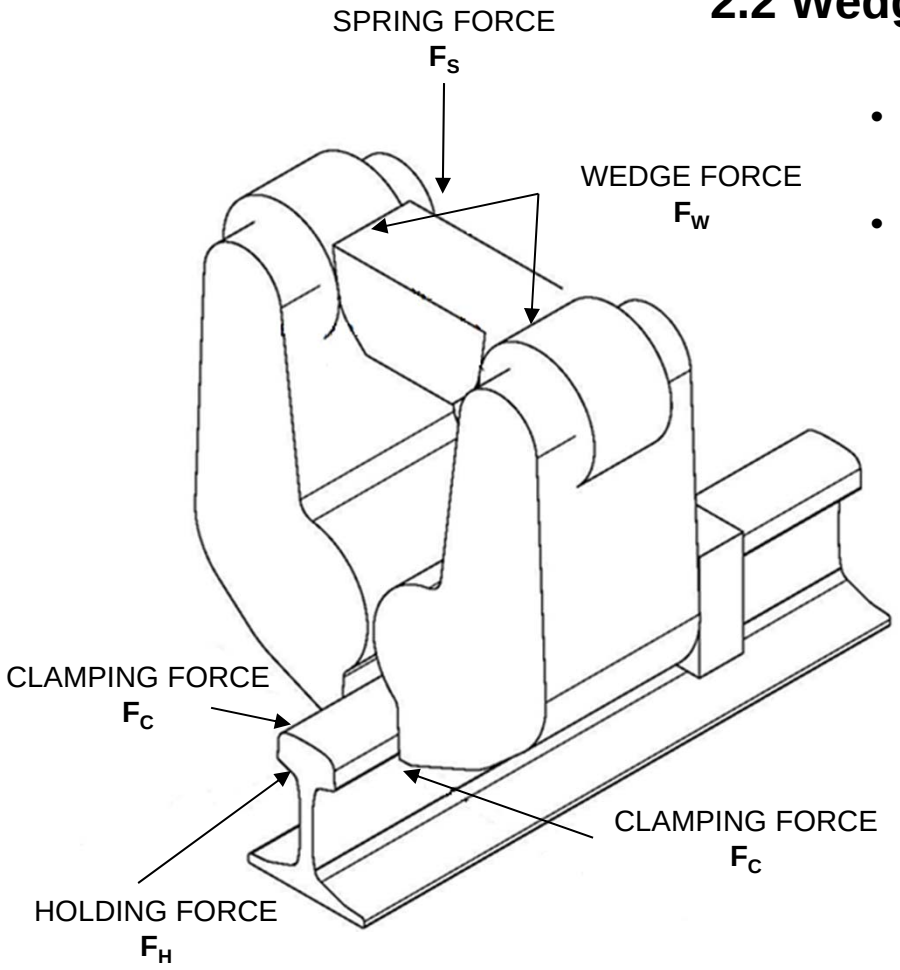
$F_A = 2 \times F_C$

F_H = HOLDING FORCE

$F_H = F_A \times \mu$

2.0 Principles of Operation

2.2 Wedge Style (LH)



- ***International patents apply***
- *Wedge is designed and profile machined to (spring compensated wedge) provide constant clamping force Fc.*

F_S = SPRING FORCE

This would apply force to the wedge.

F_W = WEDGE FORCE

F_C = CLAMPING FORCE

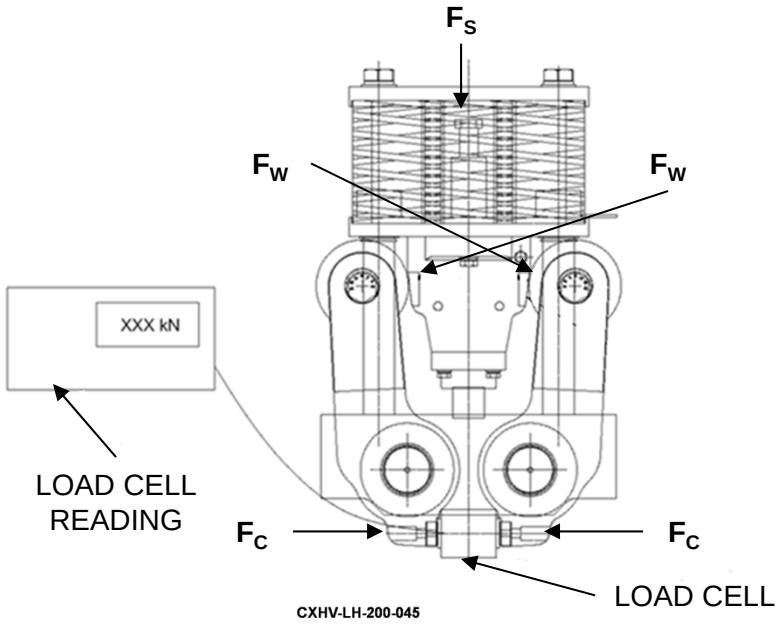
F_A = APPLIED FORCE

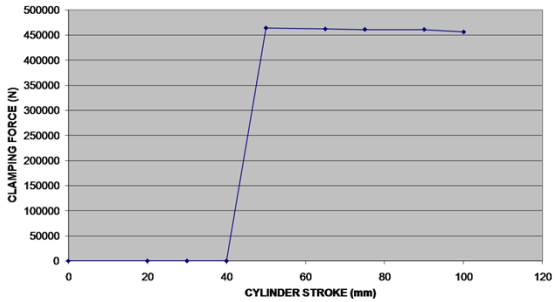
$F_A = 2 \times F_C$

F_H = HOLDING FORCE

$F_H = F_A \times \mu$

3.0 Design Highlights

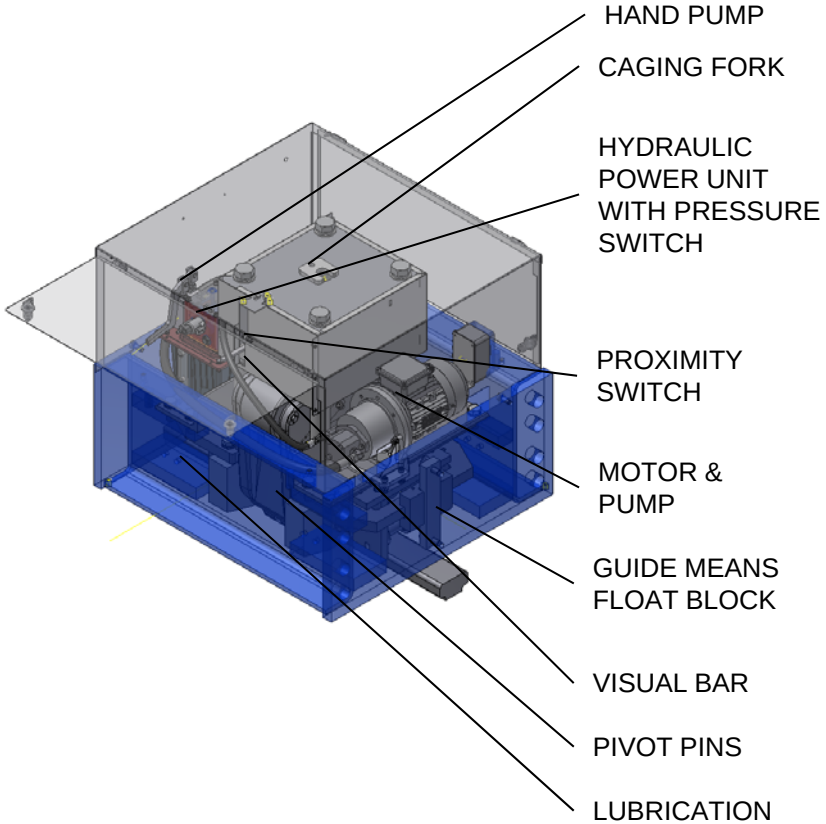




CLAMPING FORCE FC DIAGRAM

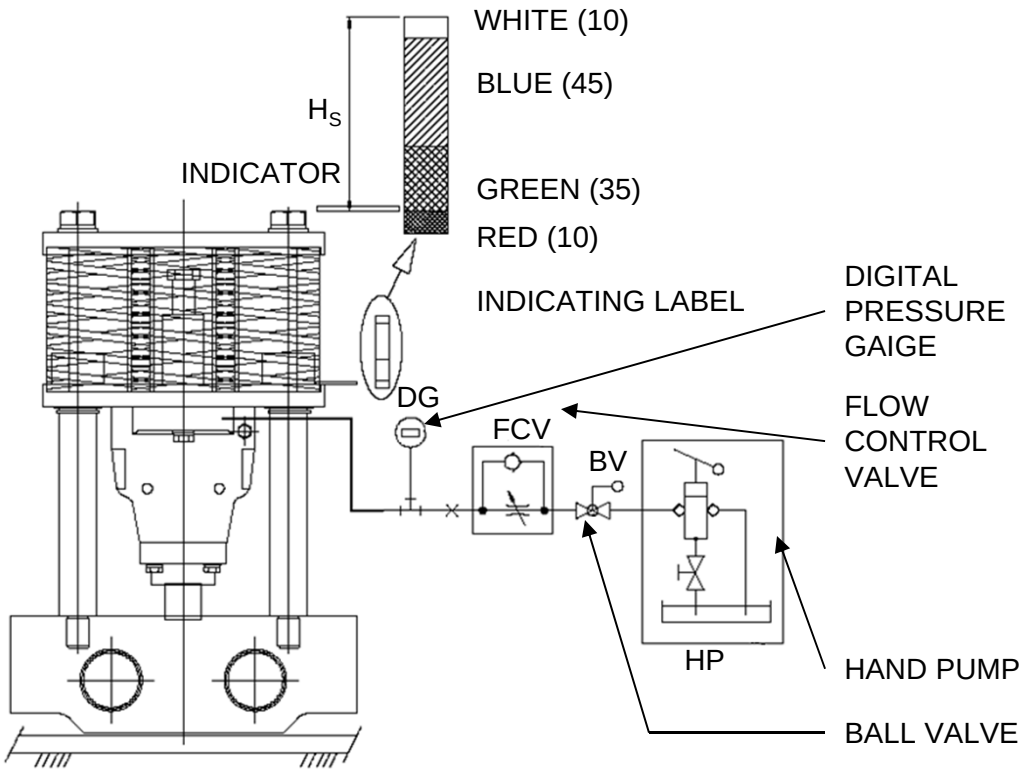
- ***International Patents Apply***
- *Spring compensated* wedge
- Wedge is designed to compensate spring as the spring force decreases. *Thus Fc clamping force is constant. Refer to diagram below.*
- Compact, light weight & low height designed to fit into restricted space.
- Easy to service
- All coil springs designed for maximum life. fully protected with rust inhibiting grease & spring chamber protection cover.
- All covers and rail clamp enclosure 304 SS.

4.0 Standard Features



- Flow control valve for controlled setting time.
- Integrally mounted hydraulic power unit.
- Mechanism caging post & fork to lock clamp mechanically in released position.
- Manual release via integrally mounted hydraulic hand pump.
- Visual bar for clamp out of adjustment or worn shoe.
- Hardened tool steel serrated shoes.
- Guide means – standard
  - Vertical float ±25mm
  - Horizontal float ±25mm
- Fully integral lubrication system.
- Self lubricating du bearings installed for all pivot pins.
- All guide rollers fitted with lubricated bearings.
- Precision machined levers & guide wheels to fit rail.
- All mechanisms fully shop tested to contract specific rail section.
- Additional installation float caging feature for beam mount rail clamp.
- Paper test procedure to verify shoe condition.
- Crane traverse sensed by clamp release proximity switch. Power unit stopped by pressure switch.

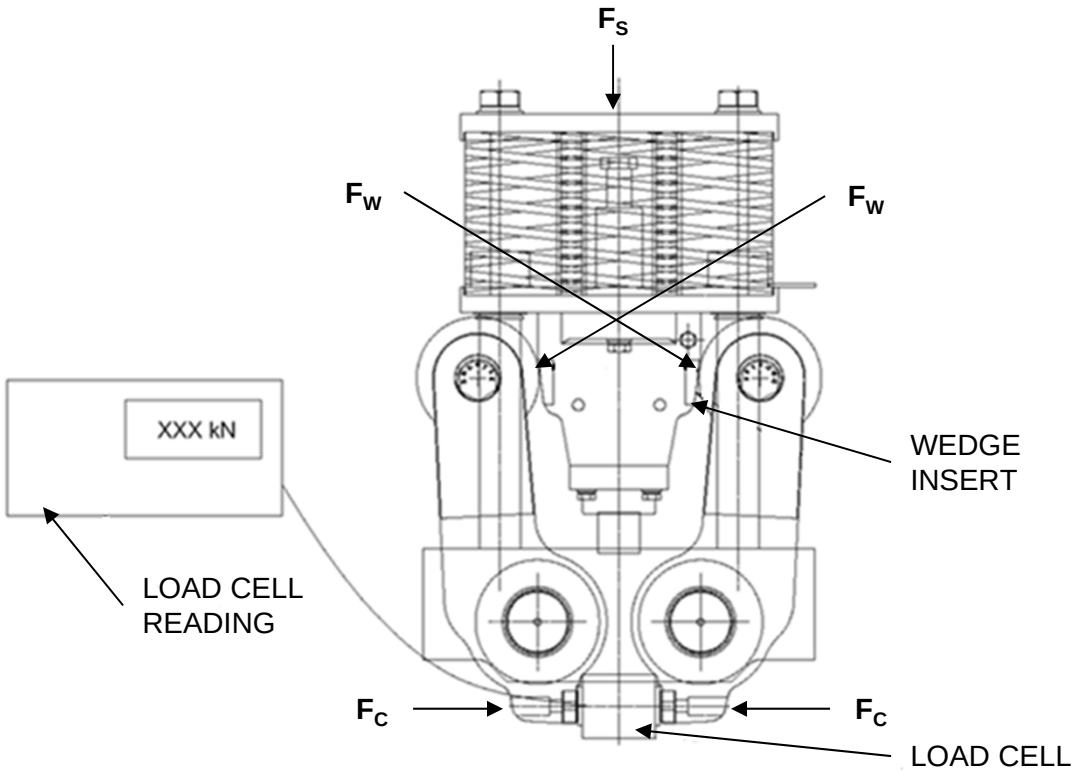
4.1 Spring Force test



- To verify spring force by measuring the back pressure of the cylinder

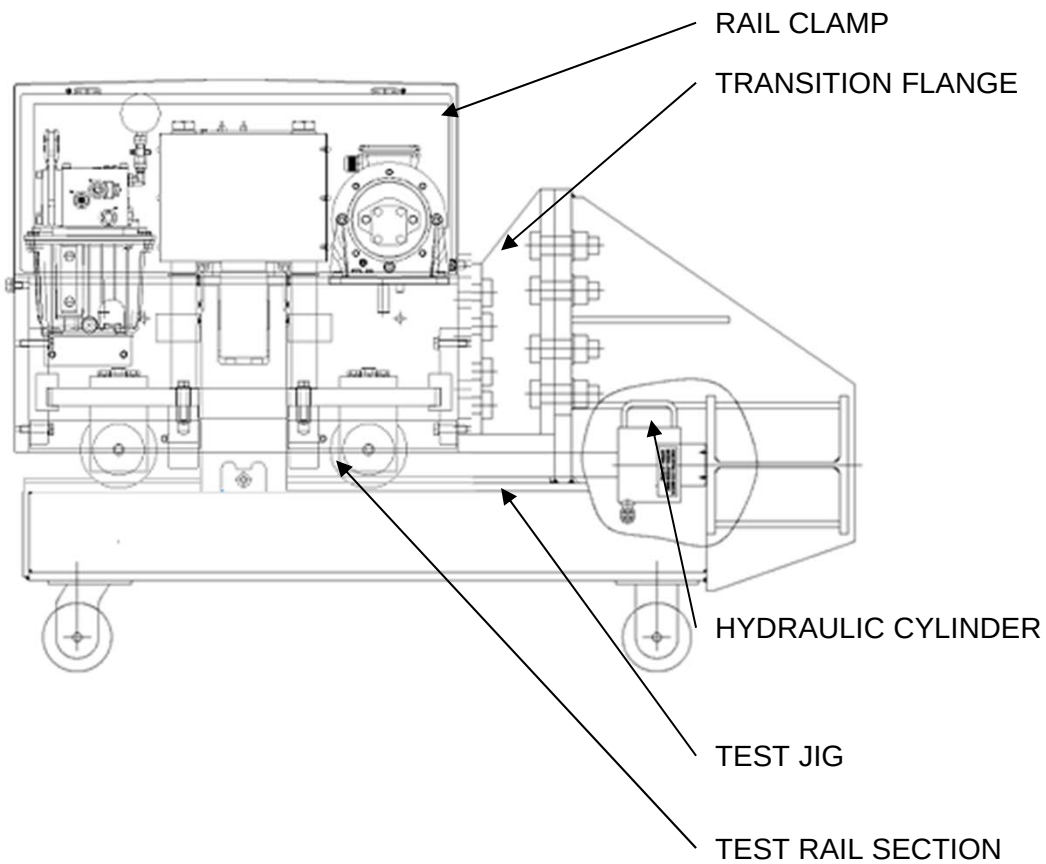
- ***Fully certified load tests on all models***

4.2 Clamping Force test



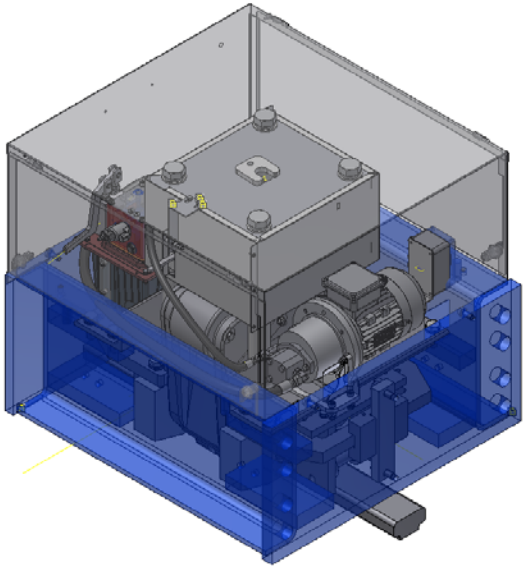
- To verify clamping force by measuring with load cell between levers.
- Fully certified clamping force tests on all models.
- Clamping force Fc must be verified to confirm coefficient of friction product specification meet $\mu = 0.50$ or $\mu = 0.25$

4.3 Holding Force test



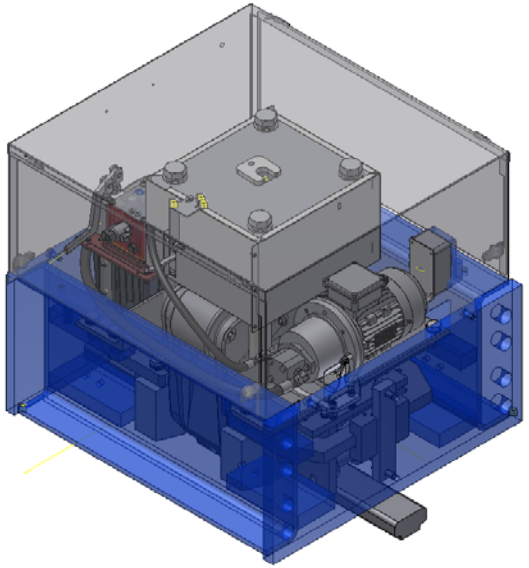
- Holding force is verified by pushing the test rail with hydraulic cylinder.
- Test certificate available for:
  - Water,
  - Oil,
  - Coal,
  - Other Potash,
  - Sulphur.
- Tests may be done at customer request.

5.0 Design Options



- 5 year paint system.
- Corrosion protection package.
- Tapered rail shoes.
- Left hand option.
- High speed guide wheels.
- Transition flanges.
- Rail sweepers.
- Bumper mounting pads or holes.
- Other options available by request.
- High speed release option.

6.0 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 9001:2008 certified company.