RETRACTABLE RAIL CLAMPS BROCHURE
WHERE TO USE (APPLICATIONS)
Storm Brakes are parking and safety devices which provide friction forces on the crane rails. They prevent a crane from uncontrolled moving along the rail in case of sudden bursts (micro burst) of wind. Rail Clamps are Storm Brakes which are designed to apply (bite) on both sides of a rail. Rail Clamps are vital for outdoor cranes, including Ship to Shore cranes, Automated Stacking Cranes, Rail Mounted Gantry cranes, Shiploaders and other rail mounted material handling equipment in order to prevent a crane runway incident from happening.

RAIL CLAMP DEFINITION
Rail Clamps are spring set and hydraulically released. Spring force pushes levers with serrated shoes to the sides of a crane rail thus providing a friction forces which prevent a crane from moving. In general rail clamps ride above the rail with a guiding means being guide rollers, wheels or blocks which continually make contact with the rail. Until now this has been required to provide designed shoe to rail side clearance in order for brake shoes to make positive contact with the rail. When crane comes to the full stop position the clamps are engaged.

B R E L X Rail Clamps are designed to release and retract fully from the rail head. This entirely eliminates mechanical guiding means at rail level. There is no wear and tear to guide means, brake shoes as well as rail head itself. Also the effect of the vibrations on the rail clamp mechanism during crane travel are minimized. Simple lift mechanism design for reliability and low maintenance. Single top mount cylinder with no connection hardware to mechanism, makes for fast simple repair or replacement.
When in set position, B R E L X provide a designed holding force (capacity) with a patent pending spring force change, compensating feature.
All of the new features simply make B R E L X Retracting Rail Clamps the choice for new and replacement applications, especially where machine speeds are higher.

OPERATIONAL DESCRIPTION
The solenoid valve SV1 is normally open when de-energized to allow setting of the rail clamp when control power is lost. The hydraulic oil can flow from the cylinder to tank under spring pressure. To release the rail clamp, the solenoid valve is energized allowing the hydraulic pump flow to be blocked to the tank and sent to the hydraulic cylinder, thus compressing the rail clamp springs, opening the clamp jaws and retracting the rail clamp.
MOST IMPORTANT FEATURES

- Rail Clamp jaws retract completely above the rail head when in a released position.
- A single ram-type cylinder to carry out spring release compression, shoe retraction and mechanism lifting.
- The ram cylinder is top mounted with no rod connections and can be easily removed for maintenance or replacement in minutes, by undoing four bolts
- Clamp release, positioning on the rail for proper shoe to rail engagement and reserve stroke monitored by proximity switches.
- There are no mechanical guiding means at rail level at any speed
- Rail clamp shoes protected during crane traversing
- Clamp mechanism parks in a central position when fully retracted and locates on rail head when lowering or setting
- Vertical guiding fork is custom machined in accordance to a rail head profile for precise shoe / rail head engagement
- Controlled setting time by a flow control valve (adjustable from 2 to 30 sec).
- Provisions to allow caging of rail clamps in open position (released).
- Mechanism compensates spring force change – **patent pending**.
- Standard horizontal rail float is +/-30 mm. Vertical rail float +/-25 (+/-40 mm optional)
- Modular design for power unit to be under same enclosure with clamping mechanism.
- Stainless Steel removable cover comes with hinged inspection doors located on both sides of a rail clamp.
- Rubber gaskets on inspection doors.

BENEFITS

Rail Clamp jaws fully released and retracted above the rail means that there are no mechanical guiding means at rail level at any speed which is a paramount for high speed, modern cranes. Serrated shoes are fully protected from hitting the sides of the rails contributes to less wear and tear.

A unique efficient mechanism compensates for a spring stroke force loss due to rail width variation, shoe wear or mechanism out of adjustment.
AVAILABLE MODELS AND HOLDING CAPACITIES

Models with holding capacities calculated with friction factor 0.25 available upon request. RRC-350/600 models shown with D=50 mm rail to enclosure clearance. Dimensions and capacities subject to change without notification.
QUALITY

Reliability through Quality and Innovation

All products are quality inspected as per BRELX standard quality policy. Our brakes are hydraulic proof-tested before shipment. Standard 12 / 18 months warranty applies for all braking systems.

PERFORMANCE TEST

All rail clamps are static devices which employ hardened tool steel serrated shoes. Hardened tool steel shoes with razor sharp edges “bite” the rail which provides friction factors 0.5 static; 0.5 – 0.9 under load.

Brelx provides factory performance test for all sizes of Rail Clamps. So called “Push Test” is completed in our factory on the actual rail clamp. It consists of applying a longitudinal force equivalent to the rated capacity of an individual rail clamp. The force applies to the rail in order to push it through a rail clamp with the jaws in the set position. If serrated shoes which grab the rail do not slip, and the rail does not move, rail clamp has holding capacity as specified.