



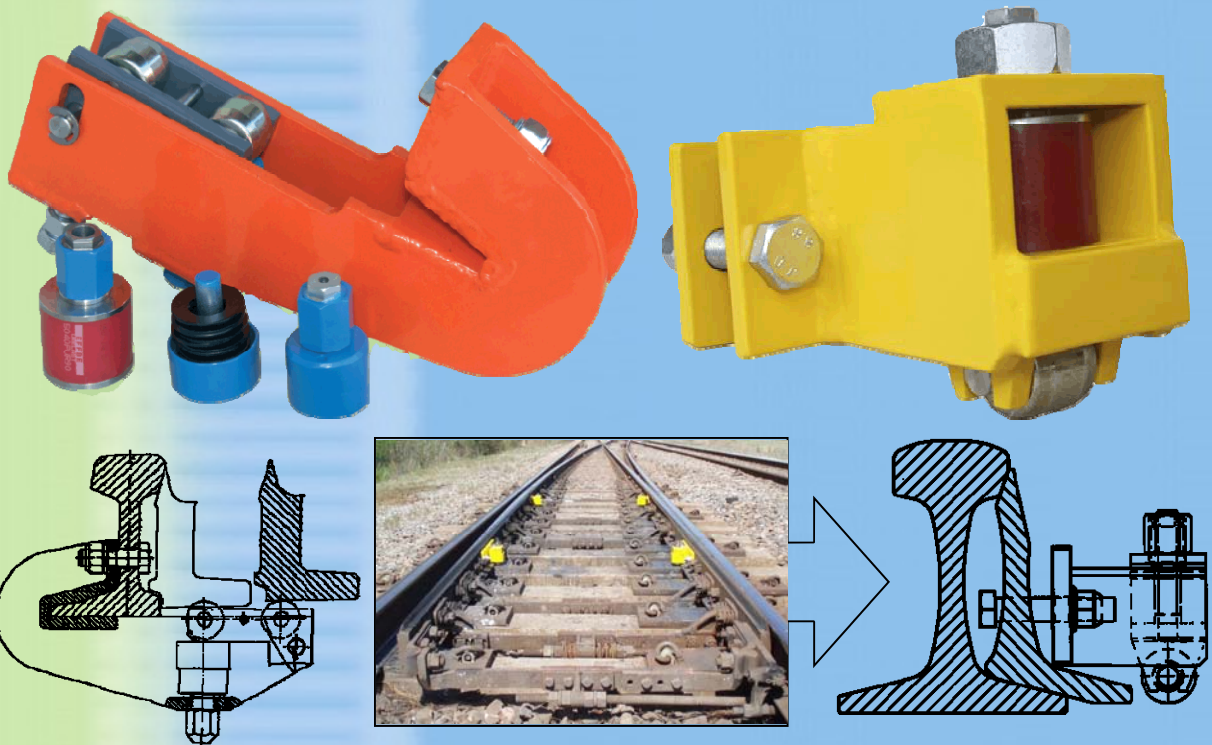
IAT INTERNATIONAL, INC

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<http://www.IATint.com/>

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EKOSLIDE

**ENSURES THE SMOOTH MOVEMENT OF SWITCHES
WITHOUT THE NEED FOR TIE PLATE LUBRICATION**



Why Use Ekoslide?

- Almost **MAINTENANCE FREE**
- No lubrication of the tie plates
- Quick installation without closing railway traffic
- Reduce labor costs
- Simple install with only wrenches
- No changes of switch construction
- Reliable switch function in **ANY** weather or environment
- No drilling required

Economic Benefits

- **Savings on Lubrication**
 - Lubricant, Tools, Labor, & Clean-Up
- **Savings on Switch Failures**
 - Prevents Train Delays & Labor Cost
- **Savings on Switch Motors**
 - Greatly reduces strain on motors
- **Savings on Traffic Errors**
 - Speeds up & improves switch throws
- **Savings on Electricity**
 - Decreases power needs for switches



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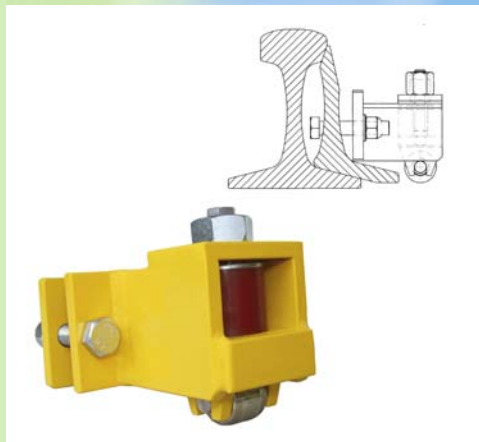
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Ekoslide: Ensuring Smooth Movement without Oil



Ekoslide Types A & B

- Ekoslide Types A & B are installed in the center line of the rail with a bolt
- Type A was developed in 1986 in Czech Republic and installed that year in Czech Republic, Germany, & Slovakia
- Type B was developed in 1997 and installed that year in Spain, France, Great Britain, and Hungary
- Weight of Type B: 18 lbs (8 kg)



Ekoslide Type C

- Ekoslide Type C is installed on the tongue and attached with bolts using the existing holes
- Ekoslide Type C rolls on the tie plate and need NOT be removed for tamping
- Proven in Switches #8, 10, 15, & 20
- First Developed for use in Austria
- Weight of Type C: 5.5 lbs (2.5 kg)

Ekoslide Types A, B, & C are installed in: Austria, Belgium, Canada, Czech Republic, France, Germany, Great Britain, Hungary, Italy, Netherlands, Poland, Russia, Spain, Switzerland, Turkey, USA, & MORE!!

Ekoslide Type CX Installation at a North American Site



Switches without Oil, Nature without Contamination

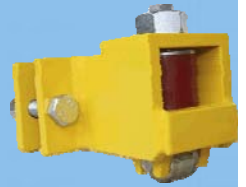


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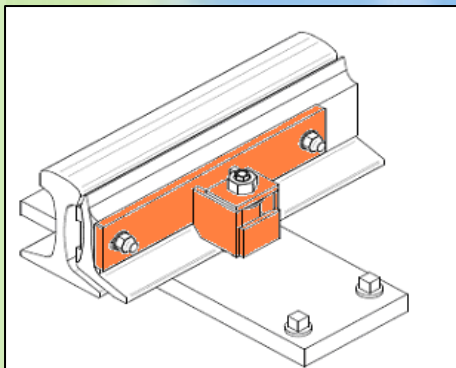
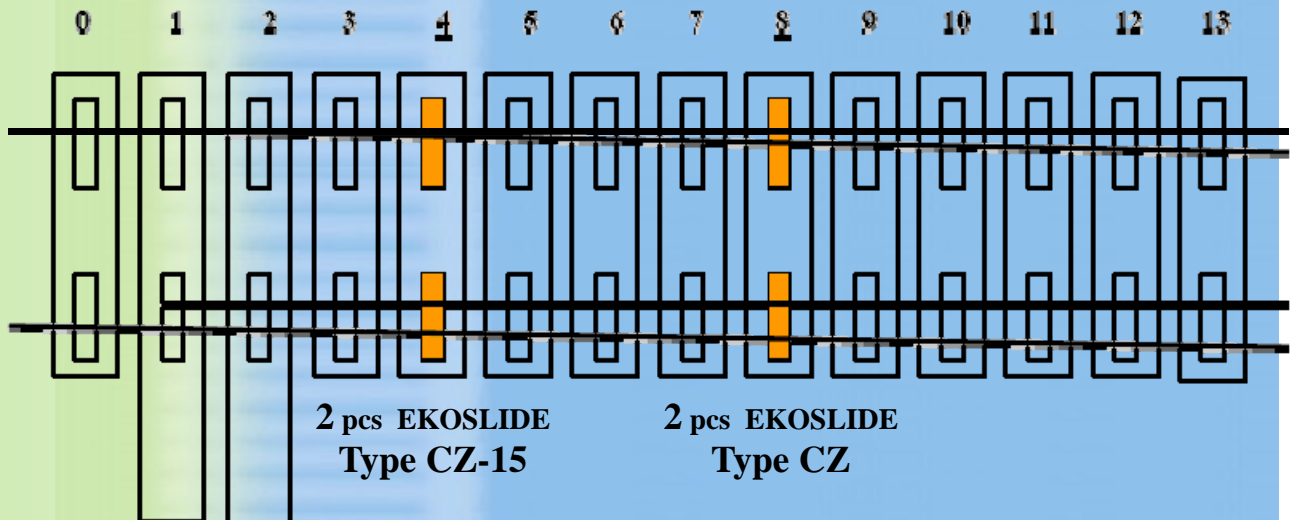
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Sample Installation - Short Switch Switches #8 and #10 (Ekoslid in Orange)

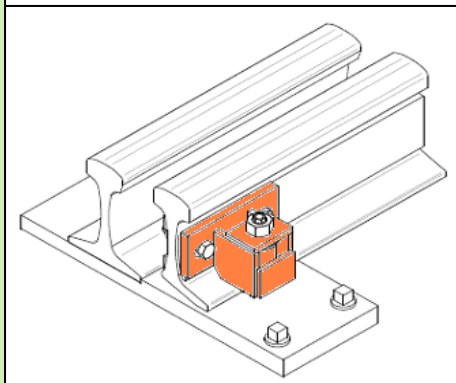


Step 1: Location



EKOSLIDE Type CZ-15

- Installation on 4th tie
- Uses the existing holes in the tongue
- Bolts => 1" Diameter
- Holes => 3¼" Wide, 14¾" Apart (center-to-center)
- Ekoslid color is orange in drawing



EKOSLIDE Type CZ

- Installation on 8th tie
- Uses the existing holes in the tongue
- Bolts => ¾" Diameter
- Holes => 1⁵/₈" Wide, 5³/₁₆" Apart (center-to-center)
- Ekoslid color is orange in drawing

Switches without Oil, Nature without Contamination

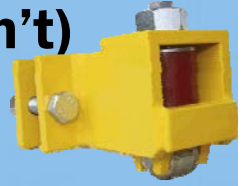


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Ekoslide: Installation of Type C (con't) Switches #8 and #10 (Ekoslide in Orange)

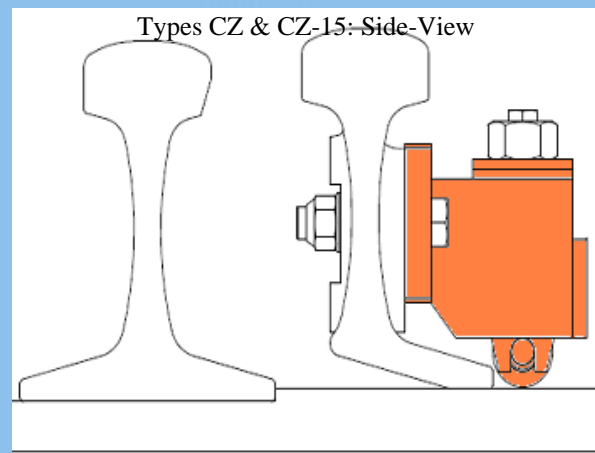
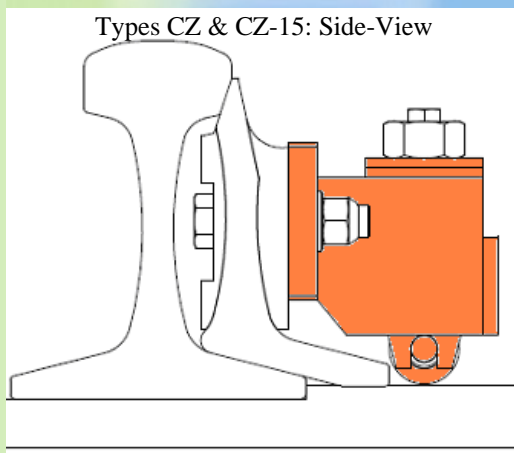


Step 2: Placement (continued from previous page)



Which Type of EKOSLIDE should you use? Check the following:

- **Distance between Existing Bolt Holes:** $\approx 15''$ spacing between holes requires Type CZ-15 (example #1 above). If distance between holes ($\approx 5.5''$) is within the width of the ties plate (example #2 above), use Type CZ or CX.
- **Diameter of Bolt Holes:** With holes for 1" diameter bolts, use Type CX (or CZ-15). With holes for $\frac{3}{4}''$ diameter bolts, use Type CZ.
- **Distance between switch tongue and clamp/spikes:** If spacing minimal, Type CZ needs less clearance than Type CX. However, $\frac{3}{4}''$ diameter bolts are required for CZ.



EKOSLIDE Units:

- **MUST** be installed on BOTH sides of the switch
- Mounted using a bolt, washer, and nut in existing holes of switch tongue.
- Place bolts between tongue and rail (see above sketch)

Switches without Oil, Nature without Contamination

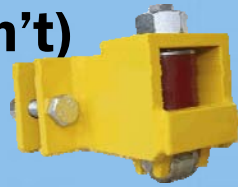


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Ekoslide: Installation of Type C (con't) Switches #8 and #10 (Ekoslide in Orange)



Step 3: Adjustment (continued from previous page)

Adjustment of EKOSLIDE units must be checked:

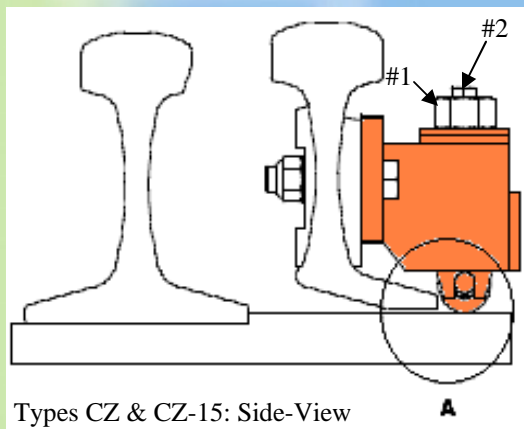
(a) At the time of installation

(b) After tamping

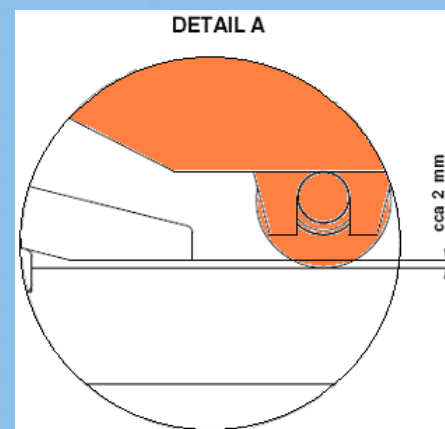
(c) Quarterly to semi-annually depending on use

- 1) Installation of EKOSLIDE is done when side of switch is in fully open position. Adjustment of EKOSLIDE is performed when side is in fully closed position.
- 2) Remove the cover nut (36mm) of the EKOSLIDE (#1 in sketch below), so you will have access to adjust the adjustment bolt (#2 in sketch below).
- 3) Now using the yellow gauge we provided, measure the height between the switch tongue and the tie plate – see detail A in sketch below.
- 4) Adjust the height by turning the adjustment bolt (#2 in sketch below) with a wrench (17mm), so that it lifts the switch tongue minimally 2mm (1 segment on the yellow gauge we provided is 1 mm) – see detail A in sketch below.
- 5) After adjusting all EKOSLIDE units in the switch, make sure there is no friction between the tie plate and switch tongue when throwing the switch (moving from opened to closed position and conversely).
- 6) Check adjustment to verify that it stayed the same after throwing the switch back and forth two or more complete times.
- 7) Finally, put the cover nut (#1 in sketch below) back in place and tighten.

The adjustment process only takes 5-15 minutes per turnout.



Types CZ & CZ-15: Side-View



Switches without Oil, Nature without Contamination



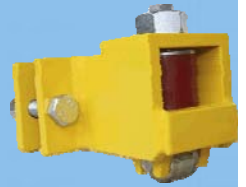
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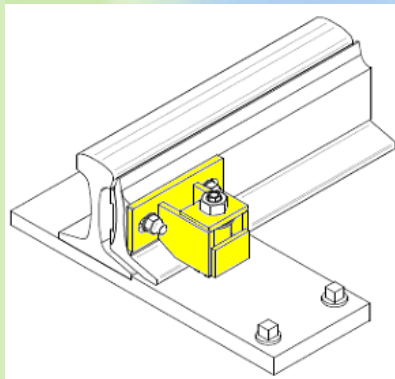
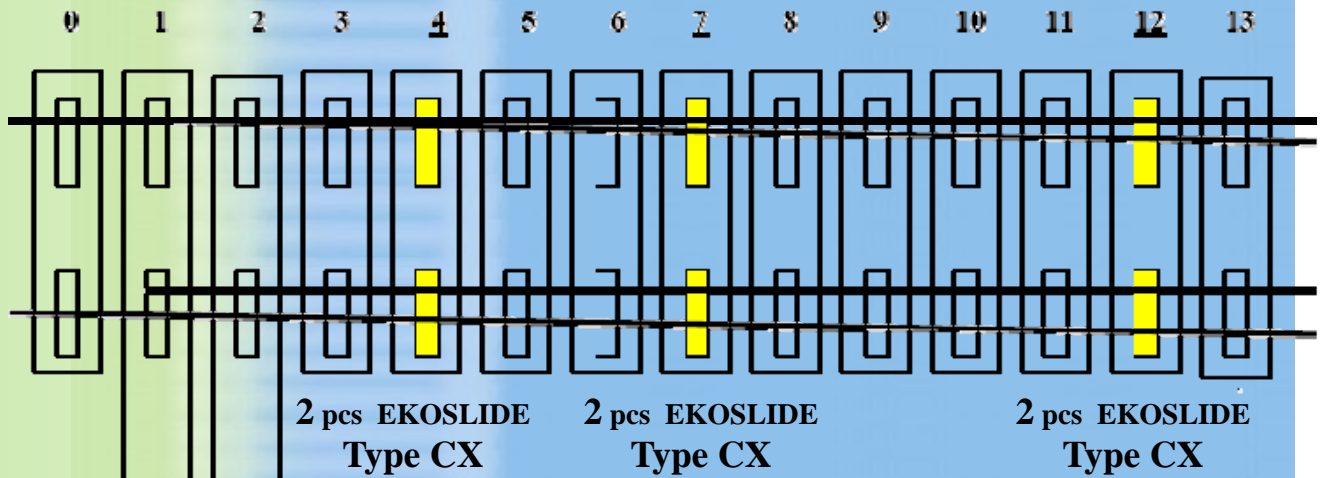
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Sample Installation - Long Switch

Switches #15 and #20 (Ekoslides in Yellow)



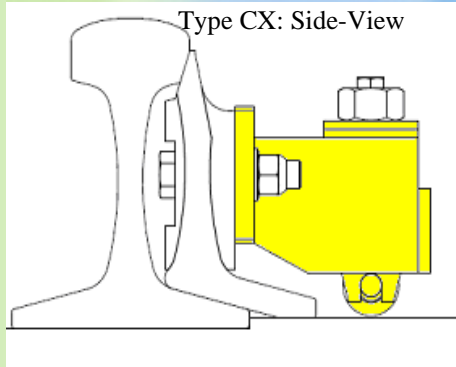
Step 1: Location



EKOSLIDE Type CX Location

- Installation on 4th, 7th and 12th ties
- Uses the existing holes in the tongue
- Bolts => 1" Diameter
- Holes => 1⁵/₈" Wide, 5³/₁₆" Apart (center-to-center)
- Ekoslides color is yellow in drawing

Step 2: Placement



EKOSLIDE Type CX Placement

- MUST be installed on BOTH sides of the switch (see above "location" diagram)
- Mounted using bolt, washer, and nut in the existing holes of the switch tongue.
- Place bolts between tongue and rail (see sketch on left)

Switches without Oil, Nature without Contamination

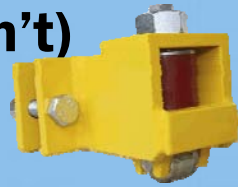


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Ekoslide: Installation of Type C (con't) Switches #15 and #20 (Ekoslide in Yellow)



Step 3: Adjustment (continued from previous page)

Adjustment of EKOSLIDE units must be checked:

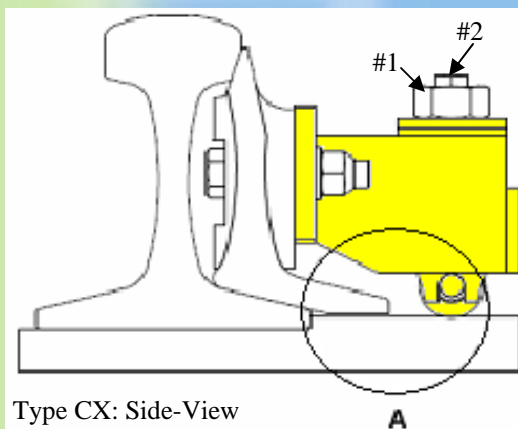
(a) At the time of installation

(b) After tamping

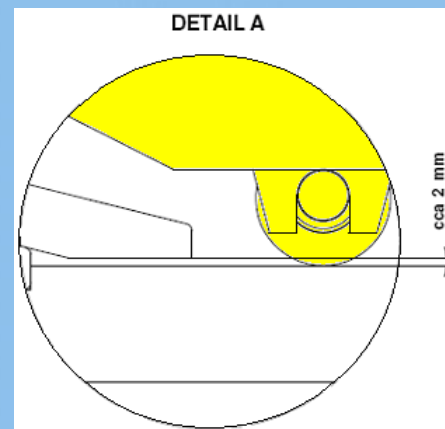
(c) Quarterly to semi-annually depending on use

- 1) Installation of EKOSLIDE is done when side of switch is in fully open position. Adjustment of EKOSLIDE is performed when side is in fully closed position.
- 2) Remove the cover nut (36mm) of the EKOSLIDE (#1 in sketch below), so you will have access to adjust the adjustment bolt (#2 in sketch below).
- 3) Now using the yellow gauge we provided, measure the height between the switch tongue and the tie plate – see detail A in sketch below.
- 4) Adjust the height by turning the adjustment bolt (#2 in sketch below) with a wrench (17mm), so that it lifts the switch tongue minimally 2mm (1 segment on the yellow gauge we provided is 1 mm) – see detail A in sketch below.
- 5) After adjusting all EKOSLIDE units in the switch, make sure there is no friction between the tie plate and switch tongue when throwing the switch (moving from opened to closed position and conversely).
- 6) Check adjustment to verify that it stayed the same after throwing the switch back and forth two or more complete times.
- 7) Finally, put the cover nut (#1 in sketch below) back in place and tighten.

The adjustment process only takes 5-15 minutes per turnout.



Type CX: Side-View



Switches without Oil, Nature without Contamination



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Ekoslide: Ensuring Smooth Movement without Oil

Type C in Switches #8 & #10



Type C in Switches #15 & #20



The Benefits of Ekoslide:

- Eliminates the Need for Lubrication
- Environmentally-Friendly
- Prevents Failure of the Switch
- Stops Rail Traffic Errors
- Extends Life of Switch Motors
- Electricity Savings

Ready for Any Environment:

- Extreme Weather Conditions
- Seaside Applications
- Chemical Plants
- Tunnels/ Underground
- Coal & Mining Industry

US Patent: 5,628,480
EUR Patent: 0700474
PCT Pat: CZ93/00026
CZ Patent: 279264



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