



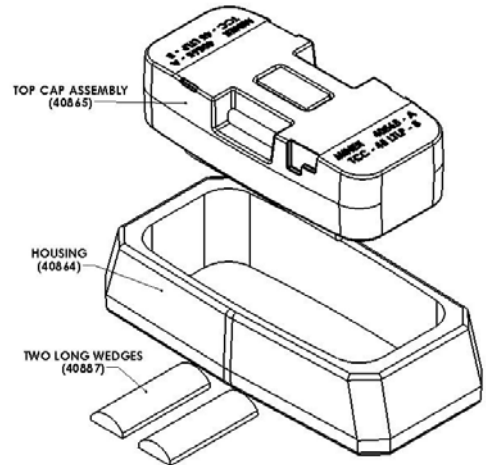
INSTALLATION INSTRUCTIONS MINER TCC-45 LTLP-B

The **Long Travel Miner TCC-45 LTLP-B** (patent pending) constant contact side bearing is designed to retrofit into existing "low profile" block style side bearing pockets.

Included in each assembly are:

- A metal top cap attached to a TecsPak® spring
- A housing
- Two long wedges

The TCC-45 LTLP-B is designed to operate at an installed height of 2-5/8" and provide 4,500 lbs. of preload and 5/8" of travel.



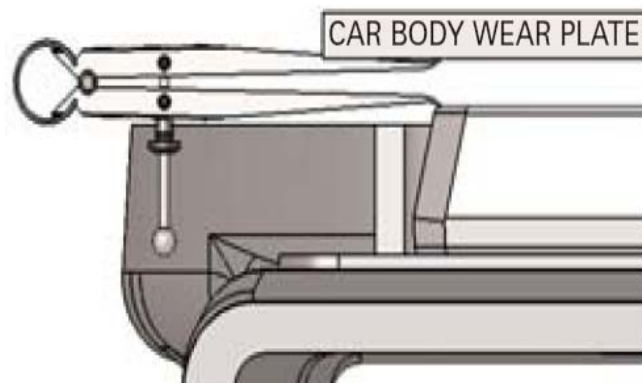
Step 1 - Preparation

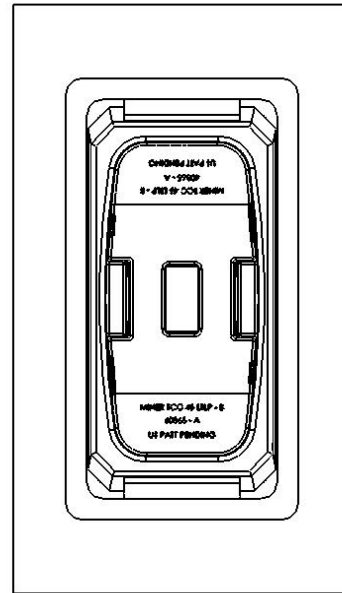
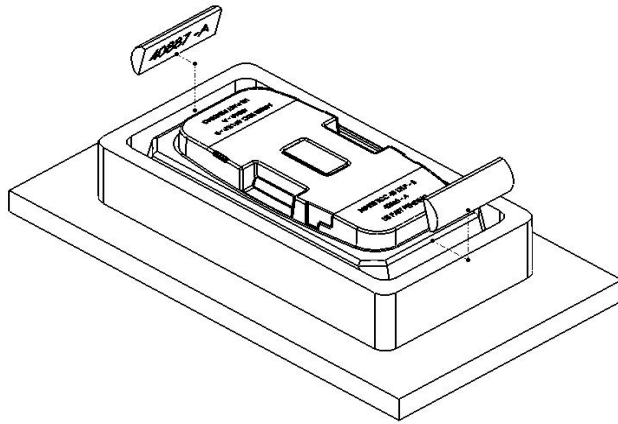
Pocket - Remove the metal block and clean the pocket of any foreign material. Inspect the pocket for cracks or any other damage, and repair if necessary. Insure that the pocket bottom and end walls are relatively smooth and free of any weld spatter, bumps, etc.

Car Body Wear Plate - The car body side bearing wear plate surface must be smooth. Any weld spatter, heavy rust or surface projections must be removed by grinding. Fastener heads must be smooth and not protruding below wear plate surface, and the fasteners securely tightened. Plates with surface variations between fastener holes greater than 1/8", or greater than 1/16" over any 4" space between the fastener holes, must be replaced. Surface must be reasonably parallel to side bearing mounting surface. Variations should not exceed 1/16" across width or 1/8" end to end.

Step 2 - Set-Up Height Adjustment

1. The TCC-45 LTLP housing is 2" tall and acts as the solid stop. Therefore, the housing must extend a minimum of 1/16", up to a maximum of 3/8", beyond the top of the pocket wall around the entire perimeter. **If the pocket wall is taller than the housing, either**
 - a. add shims under the bottom of the housing covering the entire pocket floor
 - b. or remove enough material from the top of wall to insure the 1/16" minimum extension.
2. The set-up height should be adjusted by measuring between the top of the housing and the underside of the car-body wear plate with an empty car positioned on level track before installing the top cap assembly or applying solid center plate lube.
3. Adjust shims as necessary to achieve 5/8" +/- 1/16".





The long wedges are designed to install the TCC-45 LTL-P-B into the following pocket dimensions:

Minimum Inside Length = 9-1/4 in.

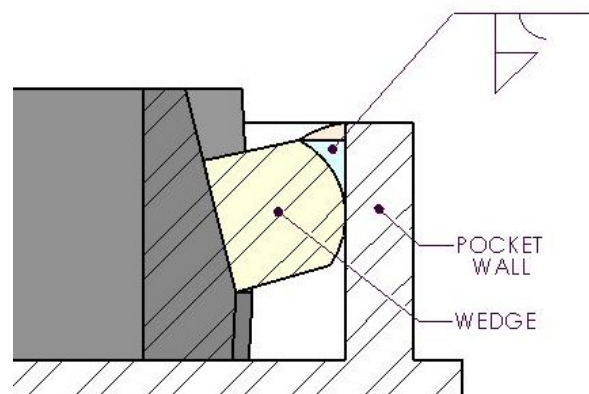
Optimal Inside Length when Shimming = 9-3/8 in.

Maximum Inside Length = 9-5/8 in.

Minimum Inside Width = 4-1/4 in.

(For Larger Pockets, see Pocket Adjustment Instructions on Next Page)

1. Shift the housing in the pocket to the outboard side of the bolster.
2. Center housing along its length in the pocket and insert wedges in both ends.
3. Insure that the flat side of the wedge is against the Miner housing and rounded side is against the pocket wall.
4. Insure that the wedges do not extend beyond the housing top surface.
5. Flare bevel groove weld Wedge to Pocket Wall (2-11/16" minimum length) with 70-ksi minimum tensile strength weld material. If the wedge is below the pocket wall, add reinforcement fillet weld on top. Insure that weld and pocket wall are at least 1/16" below housing wall. All surface preparation and welding must comply with ANSI/AWS D15.1 Railroad Welding Specification – Cars and Locomotives, latest edition, including preheat when required.
6. All welding must comply with ANSI/AWS D15.1 Railroad Welding Specification – Cars and Locomotives, latest edition, including preheat when required. **DO NOT WELD DIRECTLY ON MINER HOUSING.**

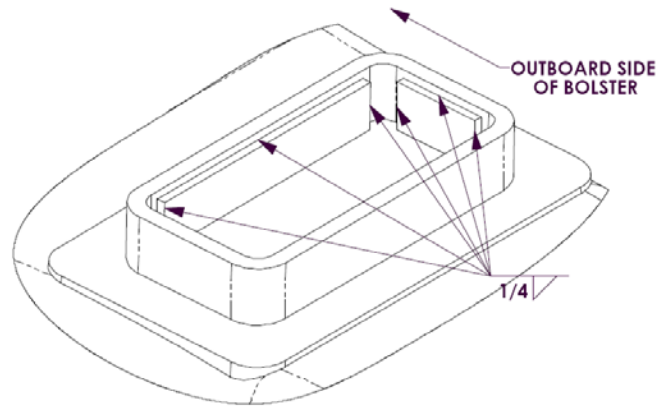


Pocket Size Adjustment

Shim Application Required for Pockets with dimensions:

Inside Length Greater than 9-5/8 in.

Optimal Inside Length when Shimming = 9-3/8 in.



Some pockets may be slightly larger than the TCC-45 LTLP-B is designed for.

- Inside Length - If the wedges hit the pocket floor before contacting the end wall (inside length roughly greater than 9-5/8"), shim application is required. Estimate the shim thickness needed to raise the wedge off the pocket floor. Fabricate the shim so that is 1/4" shorter than the pocket wall and no wider than the flat portion of the end wall. Leave enough room on the shim width for welding. Fillet weld the shim to one end of the pocket using 70-ksi minimum tensile strength weld material.
- If the pocket has oval cut outs at the each end of it, it is recommended, if space is available, that shims be inserted to each end to insure a good surface to weld the wedge too.
- Inside Width – If the inside width of the pocket exceeds 4-5/8", shimming will be required. Estimate the shim thickness needed to reduce the pocket width to between 4-1/4" and 4-1/2". Fabricate the shim so that it is approximately 1/4" shorter than the pocket wall and no longer than the flat portion of the pocket side wall. Leave enough room on the shim length for welding. Fillet weld the shim to the outboard side of the pocket using 70-ksi minimum tensile strength weld material.

Step 4 - Final Assembly

1. After the weld has cooled, place top cap assembly into housing and lower car.
2. The TecsPak® pad must not be exposed to temperature environments higher than 200° F., or 175° F for extended periods of time (2-3 hours).
3. After the side bearings have been installed, and the car body lowered onto the trucks, the set up height will probably be greater than the original set up.
4. Initial set needs to take place and this height will gradually reach the design set-up height.
5. The TecsPak® pads should be maintained at a 40° F. or higher temperature for at least 24 hours before assembly on a car.
6. At temperatures lower than 40° F., the settling time for the setup height may require at least 24 hours.

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