

INSTALLATION INSTRUCTIONS FOR STUCKI® HYDRASHOX™ PLATINUM

The Stucki HydraShox™ Platinum is a single-acting hydraulic damper that fits into the freight car spring nest and operates as the truck springs are compressed. One unit is installed in each spring group in the space normally occupied by one of the outboard truck springs. The stabilizer is designed so that it functions only when the car is loaded (no damping occurs when the car is empty).

The standard HydraShox Platinum is designed for 100-ton freight cars equipped with D-5 springs. For other applications, units are:

HydraShox Platinum-B	70 ton Car
HydraShox Platinum-C	100-ton car (D-3 springs) or 125-ton car

The model is identified on the unit serial number plate and outer housing (Fig. 1). When a HydraShox unit is replaced, it is important that it be replaced by a unit of equal capacity rating.

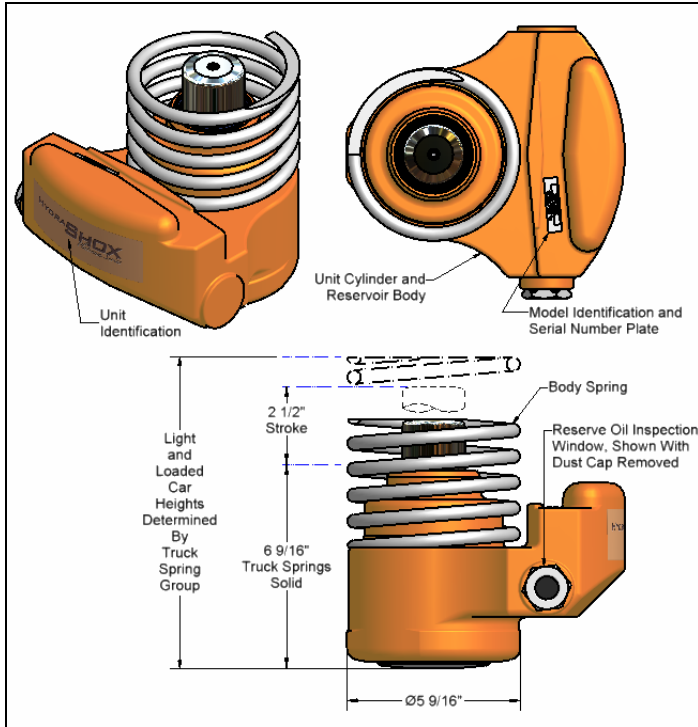


Figure 1. HydraShox Platinum

STORAGE PRECAUTIONS

A Hydrashox Platinum, as received, consists of three separate elements which are packaged in a polyethylene bag containing a vapor-phase inhibitor to dispel moisture to help prevent corrosion of the chrome-plated piston rod, but units should not be stored outdoors longer than necessary. Incoming stock should be rotated so that those first received are first used. Do not remove units from bags until ready to use. Contact Stucki before applying units which have been in prolonged storage unprotected from moisture. The body spring and retainer assembly are normally shipped in the same cartons as the units. These must be assembled onto the stabilizer (Fig. 1) prior to installation of the unit into the spring nest.

PREPARATION OF TRUCK FOR APPLICATION

Figure 3 shows a HydraShox Platinum in a typical 100-ton spring nest. When the truck spring nest has three outboard positions, the stabilizer should be installed in the center outboard position. If there are only two spring positions in the outer row, as on the 6x11 Ride Control® truck, the stabilizer is usually located in the right-hand position when looking at the spring nest from the side of the car, then diagonally opposed in each truck.

Before installation, the bolster-end arrangement and side frame spring seat must meet the following conditions:

1. Bolster Truck Spring Retainer

The truck spring retainer on the bolster at the stabilizer location must be of the outboard lug type (Fig. 3). This arrangement is widely used in the ASF Ride Control®. This lug should be at least 1-1/2" wide, 1/2" thick, and project below the bolster undersurface not less than 3/4", but not more than 1-3/16". An internal centering spud is used on many Barber® trucks, cast on the underside of the truck bolster. The one at the stabilizer location must be removed (Fig. 2). An outboard (fence-type) lug, available from A. Stucki Co., must then be added for stabilizer retention (Fig. 2). The bolster surface where the centering spud has been removed must be ground smooth. Bolsters with integrally cast or retrofit lugs designed for the Stucki HS-6 will accept the HydraShox Platinum with no additional modifications.

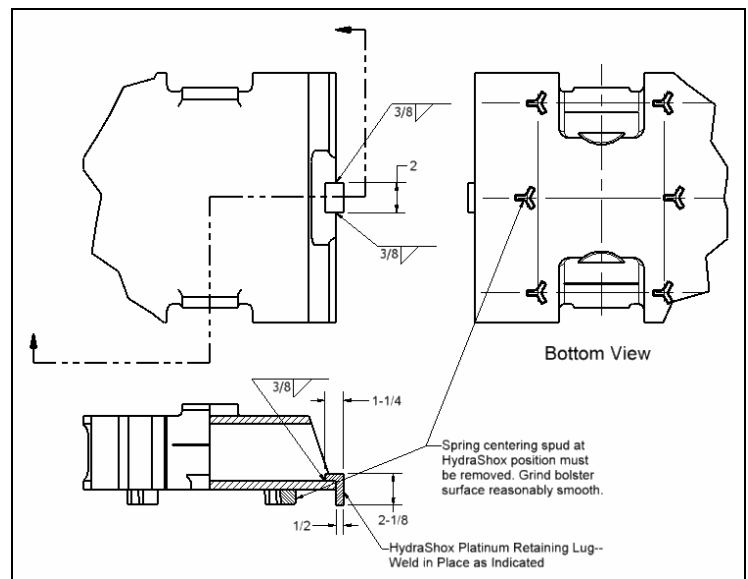


Figure 2. Bolster Modification

2. Side Frame Spring Seat

The position the HydraShox Platinum will occupy on the spring seat must be reasonably flat. Retention of the unit at the lower end must be provided by outboard lugs (Fig. 3). The stabilizer will not fit in a spring nest where the side frame has an outer rim or "fence" around the spring seat that is higher than 1-1/2" from the seat surface.

Certain trucks have unconventional spring arrangements. In some cases, the centering lugs on the side frame spring seat interfere with the HydraShox Platinum body. The stabilizer must be positively seated on the spring seat. If a HydraShox Platinum application is to be made to trucks of unconventional design, please contact our Engineering Department for assistance.

3. Spring Groups

For optimum performance, the stabilizers must be applied with the proper combination of truck springs. A. Stucki Company's general truck arrangement drawings list the recommended groups for conventional applications. In special cases where the cars in question are used in assigned service for loads which will be consistently and significantly greater than or less than their rated capacity, Stucki should be contacted for a compatible spring group recommendation. When stabilizers are being applied on a retrofit

basis to older cars, the existing truck springs, if reused, should be checked for height or load according to AAR specifications.

INSTALLATION

If the bolster end and spring seat conditions have been met, the stabilizer can be installed as follows with the bolster raised to its maximum height in the side frame transoms:

1. Place all accompanying truck springs into position.
2. Remove the stabilizer from its shipping bag and remove the cardboard sleeve from the piston rod. Do not remove the yellow plastic cap which is a dust cover for the reservoir sight glass.
3. Place a body spring over the top of the unit (Fig. 1).
4. With the body spring and upper end of the unit angled outward, seat the unit in its proper position on the spring seat.

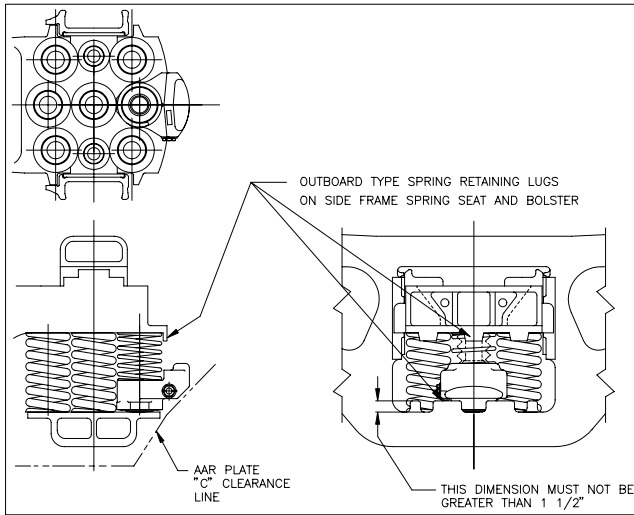


Figure 3. Arrangement in Typical Truck

5. Depress the body spring downward and inward until it passes under the bolster lug. Tilt the top of the spring inward until the spring is completely inside the bolster lug and can extend to meet with the bolster undersurface (Fig. 3). In the case of trucks designed for the shorter 2-1/2" or 3-1/16" travel springs (D-3 and D-4) and particularly the low level style 6x11 trucks, considerable compression of the HydraShox Platinum retaining spring will be required to depress it below and past the bolster lug. Generally a pair of pry bars, one utilized on each side of the lug, may be required for such installations. When using pry bars, avoid striking the exposed area of the piston rod.
6. Check for proper seating of unit on side frame spring seat. Pull lower end of unit outward as far as lugs will allow.
7. When car body has been lowered onto trucks, check for proper clearance of each unit, i.e. unit should have sufficient freedom to allow slight rotation using only manual effort. This is a normal.

If trucks will be painted, the piston rod should be shielded. Heavy paint coatings on the rod can cause seal damage and premature failure.

REMOVAL FROM CAR

If it is necessary to remove a stabilizer from a truck spring group, the following procedure should be followed:

1. Raise truck bolster as high as practical. In most cases, it will not be necessary to remove the trucks from under the car. With the car body raised up from the truck, a small track jack can be used to raise the truck bolster to permit removal of the unit.
2. If the bolster has been raised sufficiently, the stabilizer can be lifted up and out of position manually. If the bolster cannot be raised enough, use a pry bar to lift the bottom of the unit over the side

frame spring retaining lugs. A second pry bar between an adjacent truck spring and the stabilizer body will be helpful in forcing the lower end outward over the lugs.

3. If removing the unit permanently, recycle or dispose of the hydraulic oil in an environmentally safe manner.
4. When replacing a unit, remove any dirt-oil sludge accumulation on the side frame spring seat.

FIELD INSPECTION

The HydraShox Platinum incorporates a high pressure seal on the piston rod which will characteristically pass slight amounts of oil under normal operating conditions. This fluid loss is compensated for by the reserve oil in the unit which comprises about 10 percent of the total oil volume of the 1350 ML. (46 ounces). The reserve oil can be checked by visual inspection of the sight window in the plug on one side of the reservoir (Fig. 1). The window has been located so that the point at which the oil level drops to the bottom of the glass is the point at which the damping rate of the unit may be reduced with further fluid loss.

This window is protected from dust and dirt by a plastic press-in cap which must be removed to make the visual check. If the cap is missing, accumulated dirt in the window recess must be cleaned out. A short narrow piece of wood is good for this task, since it will not scratch the glass. A flashlight is helpful to make the inspection. Do not aim the light directly at the window, as this will create a glare on the glass which may be mistakenly interpreted as an empty window.

When the oil level is above the window, the entire glass area will appear dark (Fig. 4A). Once the oil level has dropped to the window area (Fig. 4B), the portion of two rings on the inside of the glass above the oil level will reflect light back to the viewer and appear as shown. When the oil level recedes below the window, the rings will be totally visible as complete circles (Fig. 4C).

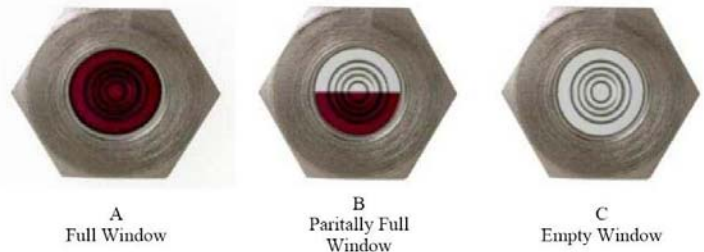


Figure 4. Oil Sight Glass Conditions

When inspecting the sight glass, the unit must be sitting in a normal operating, upright position. If sight glass inspection reveals condition C, the unit should be scheduled for replacement as soon as practical. When the sight glass reveals condition B, the unit should be scheduled for replacement when the car is next shopped. If the sight glass is full (4A), the unit should be left in service regardless of external oil sludge accumulation (Stucki Service Bulletin HS8906).

Do not open units for refilling in the field. This could lead to dirt contamination or overfilling, which will void the warranty.

Damping characteristics of the HydraShox Platinum are identical to those of the HS-7-100 and the HS-6, within a given capacity rating. On the basis of performance, they're interchangeable. If interchange between models is made, the installer must ensure that the retention requirements specified in the installation instructions for the particular design are met. To alleviate future logistics problems, do not mix various models on a given car (Stucki Service Bulletin HS8905).