

PDI Protective Door Industries Sonicbar Hinges

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SH-460 and SH-461 6-WAY ADJUSTABLE HINGES INSTALLATION / ADJUSTMENT PROCEDURES

Right or Left, In or Out, Up or Down, these are the adjustments possible with PDI's **Sonicbar SH-460 half-mortise or SH-461 full surface hinges** utilized on the mid to high range blast and acoustical door units.

Proper door and frame alignment are a **MUST** for effective field performance, particularly for sound retarding, blast and pressure resistant door units. Too often frames are set out-of-plumb, making door contact with the seals (when required) or proper engagement of the latch bolts extremely difficult. Sound retarding and pressure / air-tight door units are particularly susceptible to this problem because of the necessary close tolerances at the head, jambs and sill where gaps are held to a minimum to assure specified door performance.

With PDI's SH-460 / 461 series hinges, only Allen wrenches are needed to shift the door in or out, or right or left by $\pm \frac{5}{32}$ ". When a high or uneven sill or a sag in the frame head interferes with proper alignment, the door can be raised or lowered by $\pm \frac{3}{16}$ ".

A unique feature of these hinges is a Teflon self-aligning bearing assuring free-swinging doors, long life and no need for lubrication. Other competitors hinges require shimming to correct for frame installation errors, causing their hinge pintles to be plumb when the door is in the closed position but misaligned when the door swings to a 90° open position. PDI's self-aligning Teflon bearing automatically compensates for this condition (without shimming) and allows proper door operation with less effort and unnecessary wear on the hinges.

SH-460 / 461 series hinges are 'handed' and **MUST** be installed with the removable rubber end cap DOWN (covering the main hinge shaft vertical adjustment access). Left hand reverse bevel (LHRB) and right hand (RH) doors use right hand (RH) hinges, and right hand reverse bevel (RHRB) and left hand (LH) doors use left hand (LH) hinges.

INSTALLATION / ADJUSTMENTS:

1. The attached drawing shows hinges of both types with 'right or left' and 'in or out' adjustment screws identified as 'A / B' and 'C / D'. To prepare for the adjustments to compensate for field conditions, the installer should relieve the factory 'zero' setting by loosening all four (4) screw $\frac{1}{4}$ turn counter-clockwise with an $\frac{1}{4}$ " Allen wrench.
2. Measure the distance the door must move 'left or right' or 'in or out' and further loosen the corresponding screw in the direction of movement (one complete screw rotation = approx. $\frac{1}{16}$ "). Tighten the opposite screw the same number of rotations.
3. For a RH Right Hand Hinge:
 - a. To move the door to the right, loosen screw 'A' and tighten screw 'B'.
 - b. To move the door to the left, loosen screw 'B' and tighten screw 'A'.
 - c. To move the door outward, loosen screw 'C' and tighten screw 'D'.
 - d. To move the door inward, loosen screw 'D' and tighten screw 'C'.
4. For a LH Left Hand Hinge:
 - a. To move the door to the right, loosen screw 'B' and tighten screw 'A'.
 - b. To move the door to the left, loosen screw 'A' and tighten screw 'B'.
 - c. To move the door outward, loosen screw 'C' and tighten screw 'D'.
 - d. To move the door inward, loosen screw 'D' and tighten screw 'C'.

Note: For Items 3 and 4: Tighten all screws after each adjustment so that they are snug.

Caution: Extreme tightening will crush the Teflon bearing and make the hinge inoperative.

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5. To Raise the Door: Loosen both the top and bottom hinge shaft locking set screws and then start with the bottom hinge. Remove the end cap from the bottom of the hinge barrel and using a $\frac{5}{16}$ " Allen wrench, turn the main hinge shaft clockwise $\frac{1}{2}$ revolution to properly balance the dead load of the door leaf. After adjustments are complete, tighten both the top and bottom hinge shaft locking set screws and replace the protective end caps (using finger pressure only).
6. To Lower the Door: Loosen the top and bottom hinge shaft locking set screws and then start with the top hinge. Remove the end cap from the bottom of the hinge barrel and using a $\frac{5}{16}$ " Allen wrench turn the main hinge shaft counter-clockwise 4 to 5 complete revolutions. Adjust the bottom hinge counter-clockwise 4 to 5 complete revolutions. Adjust the bottom hinge counter-clockwise until the desired height decrease is achieved. Turn the main top hinge shaft clockwise until the door starts to rise, then counter-clockwise $\frac{1}{2}$ revolution to properly balance the dead load of the door leaf. After adjustments are complete, tighten both the top and bottom hinge shaft locking set screws and replace the protective end caps (using finger pressure only).
7. Under most operating conditions, PDI's SH hinges require no scheduled maintenance or lubrication. If there is any question or problem concerning hinge installation, adjustment or unusual operating conditions, please contact the factory:

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Properly adjusted, PDI's Sonicbar SH-460 / 461 series hinges will provide smooth and reliable door operation for many years of trouble-free service.