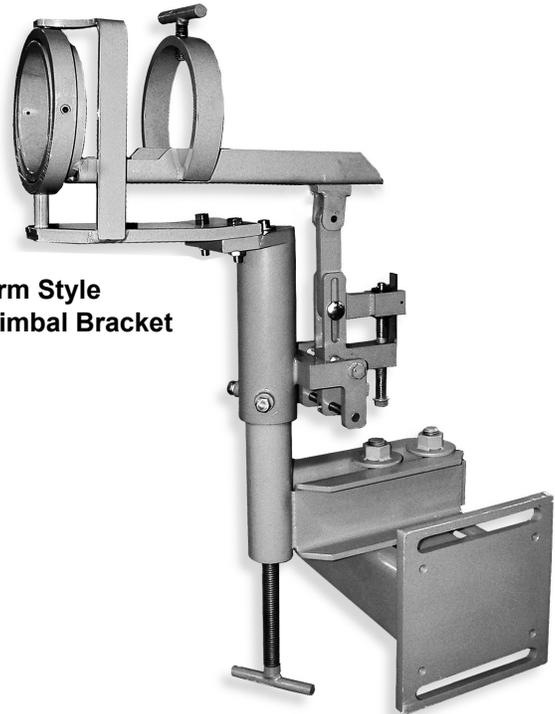


Eclipse Gimbal Mounting Bracket

Version 1



**Pedestal Style
Gimbal Bracket**



**Arm Style
Gimbal Bracket**

The burner mounting bracket is one of the most essential items in a good combustion system. It must provide the capability to align a burner on the proper and the desired firing axis. The alignment must be repeatable, easily adjustable, and permit easy removal and placement of the burner. All these requirements are important for good flame coverage and heat transfer to the glass without impingement on furnace refractory. Eclipse's gimbal bracket meets all of the requirements to promote effective burner handling and firing conditions. Adjustment of the burners while utilizing Eclipse's sealed-in firing principle requires maintaining a good seal to the furnace, which has proven essential for fuel savings. For this reason, Eclipse burners are designed with a burner ball end tip which has a specific outside radius uniformly machined to be compatible with the socket plate.

The gimbal bracket has also been specifically designed to allow angular adjustment of the burner about the horizontal and vertical axis without repositioning the bracket. This is done while maintaining a seal, utilizing the

gimbal pivot point principle. This capability has been proven to yield an average 5% fuel savings. The arm style gimbal bracket is particularly adaptable for through side-of-port firing positions where a compact design and superior stability can be set to maintain a critical burner firing axis. The pedestal style gimbal bracket is used for underport firing.

Uniform bolt sizes throughout the bracket permit easy adjustment with two ratchet wrenches. Oversized taps prevent thread seizures, and brass locking bolts hold positions firm against vibration. Assembly bolts can be tightened to resist stress placed upon the bracket by various connecting lines, especially a stiff gas hose.

The bracket has a vertical adjustment of ± 1 inch, an axial rotation of 360° , and angular adjustments of $\pm 7^\circ$ on both the vertical and horizontal axis. Since positioning the bracket in reference to the socket plate is essential for proper use of the bracket, an alignment tube is supplied to accurately simulate the burner position, see Figure 2.

Optional Features

Different furnaces, due to construction and flame length requirements, can have different nominal firing angles based on the start position. Hence, the reference for zero settings can be adjusted depending on these firing conditions.

The extension forks, for placement of the gimbal mechanism close to the furnace for adjustment requirements, can be extended for special requirements due to refractory or steel considerations.

Adjustment and Installation Instructions

NOTICE

- **Combustion equipment can be dangerous to personnel and property if incorrectly installed or operated. Eclipse urges customers to comply with Insurance Underwriters recommendations, national safety standards, and to exercise proper care and maintenance in the use of combustion equipment, limit controls, and other safety devices.**

To utilize the gimbal pivot point principle, the bracket and burner must be installed properly. The burner is held in place with a locking "T" bolt or split ring clamp ❶.

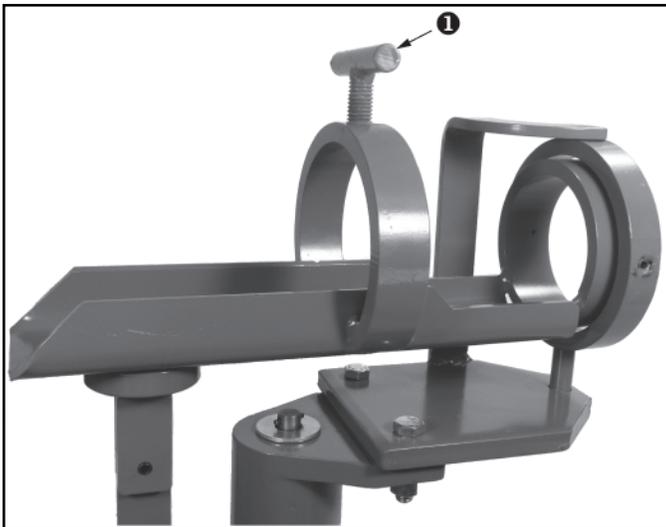


Figure 1.

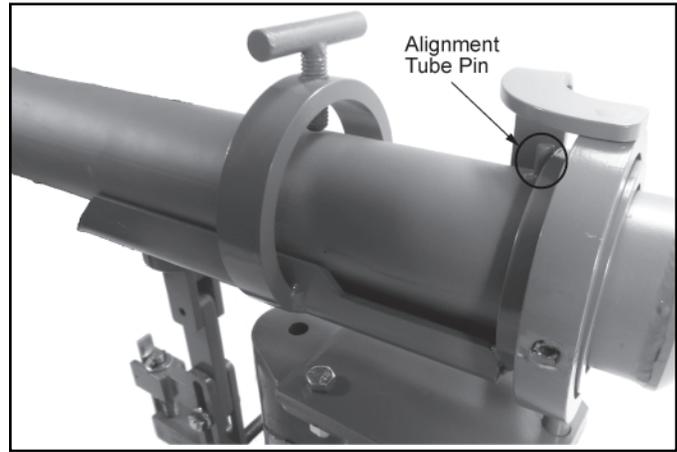


Figure 2.

The bracket is supplied with an alignment tube to help align it which ensures the correct distance is achieved between the socket plate and the gimbal pivot point. This is essential since it determines the accuracy with which the burner can be adjusted while maintaining a sealed-in firing condition.

The bracket has height and rotational adjustments for initial setup, as well, to help align the burner on its intended firing axis. The "T" handle (arm style) or vertical adjustment screw (pedestal style) ❷, is used to adjust the height. The lock bolts ❸ lock the rotational and vertical adjustments.

Installation

NOTE: If possible, do the following work before (or in the very early stages of) furnace heatup.

1. Set all angle adjustments to zero using the scale and the pointer.
2. Loosely attach the bracket to the furnace steel and roughly align it with the centerline of the burner block opening.
3. Install the alignment tube in the bracket ensuring that the alignment tube pin (see Figure 2) is in contact with the gimbal ring of the bracket. This will replicate the burner position and allow the proper working distance needed for the burner ball tip and the socket plate to maintain contact throughout the range of angle adjustments experienced when the burner is installed.
4. Place socket plate in the recess of the burner block. With the alignment tube in place, push the bracket assembly forward to hold the socket plate in place.

5. Once this is complete, look through the alignment tube and adjust the bracket locations to match the centerline of the tube to the centerline of the burner block opening.
6. Tighten the mounting bolts of the bracket (slight adjustments may be required after heatup due to expansion). Using the jack bolts of the bracket (pedestal style), or other customer supplied means (arm style), secure the socket plate to the block.
7. Seal the block opening with the refractory fiber blanket for heatup. Make any necessary final adjustments and then tighten the mounting bolts.

Adjustment

Due to furnace design, the flame geometry during actual firing conditions may require adjustment to maintain uniform and symmetrical flame coverage. Good flame coverage is important to increase the efficiency of heat transfer to the glass. The brackets are equipped with a zero reference setting to match the intended firing axis. There are angular indication scales to be used as a reference when realigning the firing axis to improve flame coverage.

Angular adjustment about the horizontal axis is accomplished by loosening item 4 and adjusting item 5 below. Angular adjustment about the vertical axis is accomplished by loosening item 6 and adjusting item 7 below. Both locking bolts, items 4 and 6, should be tightened after adjustments are made.

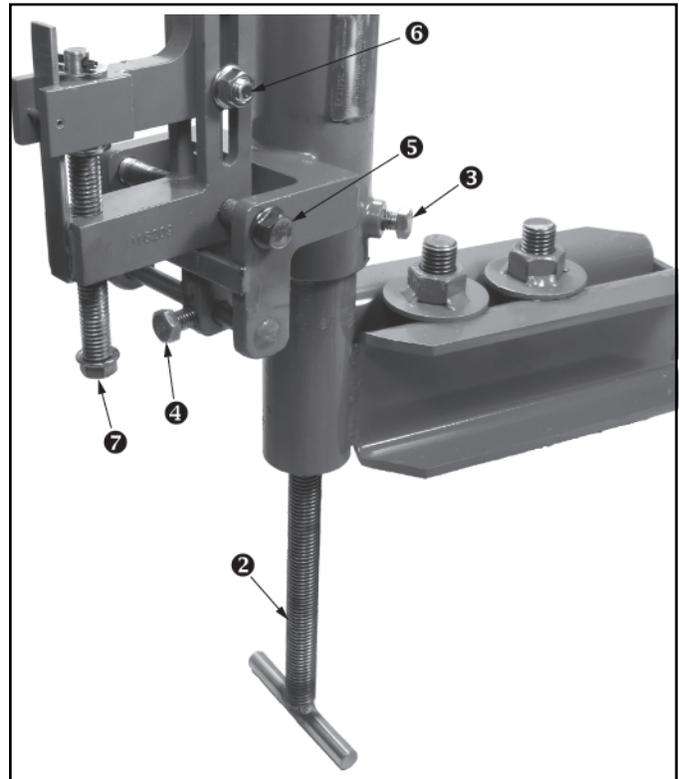


Figure 8.

If you need additional information or have any questions, please contact Eclipse, Inc.

