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# **Portable Boring Bar Alignment System User Guide**

## **TABLE OF CONTENTS**

- 1. Introduction
- 2. Alignment System Components
- 3. Installation Procedures
- 4. Installing the 795-SS Open Wire Target
- 6. Focusing the 2062 Alignment Scope
- 7. Exploded View and Parts List

Thank you for purchasing a Brunson Alignment System. Remember that our customer support does not stop after shipment of a product — we are here to help you with any measurement challenges that you may have.

5. Installing the 509-B Backlight on the 795-SS Open Wire Target

#### INTRODUCTION

The Brunson Alignment System for the Portable Boring Bar is a precision measurement tool kit that was developed to assist in bearing alignment during maintenance procedures by establishing an optical reference line through the center of the spherical bearings. This precision alignment system will allow you to align the alignment scope and the alignment target to within 2 arc seconds of each other. The system utilizes precision machined components to make the alignment procedures accurate and repeatable, thus making it easy for operators and maintenance personnel to get maximum precision from their boring tools and reduce equipment wear and tear caused by bearings being out of alignment.

#### **ALIGNMENT SYSTEM COMPONENTS**

The following components make up the Alignment System for the Portable Boring Bar:

- 1 Brunson Model 2062 Alignment Scope
- 1 Scope Adjusting Fixture with focus knob guide, 2 adjustable handles (for securing the ring to the bearing flange), and 4 adjustment screws (for making scope position adjustments)
- 2 #795-SS 2.25-in. Open Wire target with a stepped reticle pattern
- 1 #509 DC (battery-powered) LED Light source
- 1 #509-B Backlight for 2.25-in. Open Wire targets
- 1 Custom-fitted weatherproof protective case (not shown)
- 1 Alignment System User Guide



Alignment fixture with adjustment screws





Right: 509-B Target Backlight & DC Light Source



Left: 795-SS 2.25" Open Wire Target



#### **INSTALLATION PROCEDURES**

Before installing the alignment fixture, make sure the spherical bearing is inserted with the "alignment flange" facing outward. (NOTE: The spherical bearing flange should be visually square to the bearing housing.)



Above: Spherical bearing Right: Close-up of bearing flange



- 1. Make sure that the adjustable handles are loose.
- 2. Orient the fixture in front of the spherical bearing so that the focus knob guide is at the top of the fixture, and the split between the two halves at approximately a 45° angle.
- 3. Slide the fixture onto the bearing. The top and bottom adjustment screws should be in line with each other vertically.

NOTE: For demonstration purposes, we show the installation in a way that suggests your movements will be up and down and side to side. You can always orient the scope in whatever position you require.



shoulder on the spherical bearing when the ring is tightened.



0.D. of the alignment scope and the I.D of the alignment bearing are a very tight fit.



upward.



1. A few turns with the adjustment handles will attach the fixture securely enough that it will still be loose on the bearing, but will not slide off if pulled on. NOTE: Be sure that the adjusting fixture collar seats behind the flange

2. At this point, you are ready to install the 2062 Alignment Telescope. Simply slide the telescope into the bearing through the center of the adjustment fixture with the focus knob guide at the top of the scope. Use Caution: the

3. With the 2062 Alignment Telescope fully installed in the fixture and bearing, lower the safety strap down over the focus knob. This will prevent the telescope from sliding out of the fixture and bearing should it be pointed

- 4. With the 2062 telescope installed, tighten the adjustable handles until the adjusting fixture is locked to the bearing flange. Use Caution: The adjustable handles do NOT require more than 20 ft/lbs of torque.
- 5. Once targets are installed into a spherical bearing at the opposite end of the boring bar, you can easily align the telescope reticle to the target using the four adjustment screws on the fixture. (NOTE: Make sure the target and scope are clocked in the same orientation.) Refer to Section 6: Focus of Telescope for additional instructions if necessary.

To move the telescope reticle to match the target, work the opposing adjustment screws simultaneously as shown below. In this example, tightening the top while loosening the bottom moves the instrument reticle up. Follow the same rule for the horizontal adjustment screws. Be sure all adjustment screws are snug when the telescope reticle is precisely aligned to the target.



#### **INSTALLING THE 795-SS OPEN WIRE TARGET**

To insert the 795-SS Open Wire target into the spherical bearing, simply slide it into the bearing like the alignment telescope. (In this process, the Alignment Bearing has the alignment flange facing inward.) NOTE: The 795-SS target is designed with a "clocking" wire so you can distinguish one target from the other.



#### INSTALLING THE 509-B BACKLIGHT ON THE 795-SS OPEN WIRE TARGET

To install the 509-B Backlight and light source onto the 795-SS Open Wire Target, simply mate the narrower and notched end of the backlight body into the wider, back of the target body.

Once the backlight is mounted, insert the light source into the receptacle on the opposite end of the backlight. When the light source is turned on, the backlight will illuminate the reticle when viewed in the telescope.







#### FOCUSING THE 2062 ALIGNMENT TELESCOPE

To focus the telescope, turn the eyepiece focusing knob until the reticle cross lines appear sharp when the instrument is aimed at a well illuminated white surface.

With the telescope installed in the spherical bearing and aimed at the target, focus on the target using the focusing knob. Refine the aim of the telescope at the target by turning the adjusting screws on the alignment fixture as indicated in the previous section.

### **EXPLODED VIEW AND PARTS LIST**



Item No.	Part No.	Description	QTY
1	71-2062	Alignment Telescope	1
2	16154	Split Ring	1
3	16158	Focus Knob Guide	1
4	16157	Adjustment Screw	4
5	1589-1-OT	Adjustable Handle	2
6	795-SS	Target	1
7	509-B	Backlight Fixture	1
8	16155	Bellview Washer	4
***	16159	Case (not shown)	1