INSTRUCTIONS

for

PROFESSIONAL MILLING AND MACHINING

of

US manufactured

Group Industries

UZI

Style

 Receivers

These instructions require that you possess a technical level of knowledge and competence in the repair, service and maintenance of firearms. They also require a highly competent level of skill at machining and metal working.

If you do not possess these skills, we do not recommend that you attempt this process without skilled professional assistance.
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Thank you for your recent purchase of our Receiver Alignment Kit and/or Receiver Parts Kit. This means that you have already purchased or that you intend to purchase a Group Industries UZI style receiver or other equivalent receiver.

These instructions are exclusively for the application and use of this Receiver Alignment Kit to install D & D, U.S. manufactured receiver parts on properly milled Group Industries Receivers.

You have made a wise choice that will save you hours of work. It would be difficult, if not impossible, to complete your receiver without this alignment kit. This kit will permit you to complete your receiver, with precision, in a fashion that will be virtually identical to an IMI UZI model A or B carbine.

STEP #1: RECEIVER PREPARATION: This literature does not deal with the machining or milling of your receiver.

The Group Industries receivers are not finished and require substantial pre-assemble milling and machining. You must first prepare your receiver or have it prepared by finishing the milling not completed by Group Industries.

MILLED (Group Industries) RECEIVER
(Finished and ready to install receiver parts)

Here are illustrations of four views of the finished receiver after final milling and processing.

SIDE VIEW (right)

left

TOP VIEW

BOTTOM VIEW
STEP #2: STAMPING THE BOTTOM OF YOUR RECEIVER:
This creates the pocket that holds the front end of your fire control in place on the receiver.

You must first stamp the pocket that receives and secures the front projection of the fire control assembly.

Follow the instructions and illustrations below:

Step #2-A
Remove the four parts shown in the illustration below from your alignment kit.

1. Stamping die alignment bar. (Aligns receiver and die)
2. Female stamping die.
3. Male stamping die.
4. Support block for rear of receiver while stamping.

GROUP INDUSTRIES RECEIVER
(Unmilled and unstamped)

Step #2-B
1. Take the die alignment bar (#1 above), and insert it into the slot in the female die (#2 above):
   See illustration below:
2. Place Receiver and the female die with the insert installed on the table as shown in the illustration Step #2-B figure 1 & 2 below:

Place the receiver rear support bar (Item #4 from Step #2-A on page 5) on the table as shown in the illustration Step #2-B figure 3 below):

Step #2-B figure 1

Step #2-B figure 3

Step #2-B figure 2

3. Place the receiver on top of the die with the bottom down. Orient the die and the receiver precisely like the illustration below. Slide the die alignment bar up through the slot in the receiver exactly as shown in the illustration below:

4. The narrow side of the female die must be at the front of the receiver:
4. Take the male stamping die (item #3 page 5) and insert it in front of the stamping die alignment bar exactly as pictured below: The beveled bottom goes down.

5. In order to complete your stamping, you must insert this configuration into a shop press and press the male die down until it presses the bottom of the receiver to the surface of the female die. A six (6) to twelve (12) ton shop press is more than adequate to complete your stamping. KEEP THE DIE VERTICAL WHILE STAMPING. Shop presses have a tendency to shift to one side while stamping. Shim the sides if necessary.

If a shop press is not available, it is possible to press your receiver with a large vise.

6. After you finish stamping your receiver in accordance with these directions, the bottom will look like this: (See Illustration below)

   ![Bottom view](image1)
   ![Side view](image2)

   This area, around the rear hand guard post hole, may recess inward slightly. It is not necessary, but you may choose to tap it back out from the inside. It does not effect the operation, but it may leave a slight space between the hand guard post and the receiver.

The finished stamping is indistinguishable from an original UZI stamping if these instructions are followed precisely.
STEP #3: FRONT HAND GUARD POST, REAR HAND GUARD POST AND TRIGGER HOUSING LUG; Installation and welding:

Complete Step #3A before proceeding to Step #3-B

STEP #3-A INSTALL THE EXPANSION BLOCK/ (HEAT SINK) PRIOR TO BEGINNING STEP #3-B

This helps prevent the receiver from shrinking during welding in step #3B5. Very good heat control is critical in the next stage of welding. You must keep the heat to a minimum or the receiver can shrink too small to permit the bolt to slide freely. See Items 1, 2 & 3 and Illustration #3A figures 1, 2 & 3 below for the parts and tools required.

1. Clamp
2. Expansion block
3. Receiver

Illustration #3A-figures 1, 2 & 3

Place the block as close to the slots for the trigger housing lug as possible without interfering with the placement of or the welding of the trigger housing lug. (See Illustration #3-A-1 below)

Leave a small amount of the ejector slot showing. This allows the trigger housing lug to come as far forward as possible.

Illustration #3-A-1
Step #3B: Front hand guard post, rear hand guard post and the trigger housing lug; Installation, securing and welding: Step #3A must be completed and left in place until all of Step #3 is completed.

Select the following parts listed and numbered below from your kit:

1. Front hand guard post
2. Rear hand guard post
3. Trigger housing lug
4. Nail (#8 penny); not inc.
5. Milled and stamped receiver:
6. Three pieces of tie wire 8” long (not shown); not inc.

Follow the Illustrations below: #3B1 thru #3B6

B. 1. Insert the above listed parts, #1 thru #4, as shown below in Illustration #3B1 and #3B2, and in Illustration #3B3 and #3B4 on page 10:
   a. Secure the parts into the slots by tying into place with the tie wire specified:
   b. The front hand guard post or bayonet lug must be flush with the front of the receiver.
   c. If the receiver is milled correctly, the slot is correctly placed without milling or filing.
   d. Insert the rear hand guard post; then insert the nail to visually ascertain that the hole is aligned perpendicular (90 degrees) to the sides of the receiver.
   e. Remove the nail and secure the post through the hole with the tie wire if required.
   f. Be sure that the trigger housing lug is pushed as far forward as possible. In most cases, the slots are correctly positioned from front to back without filing. Be sure that they are centered from left to right

Illustration 3B1

Illustration 3B2.
2. Sight down the bottom of the receiver to be sure that the three parts are FLAT, PRESSED IN COMPLETELY & LEVEL (from left to right and front to back). The parts must also be perfectly parallel to the receiver. Visually sight from the front to the rear and from the rear to the front as shown in Illustration #3B3 and #3B4 below:

Illustration #3B3

Illustration #3B4

After inserting, leveling and visually aligning these three parts you are ready to weld all three parts from the top. The finished product will look like #3B5 and #3B6 below:

The alignment must be done visually. You must carefully visually align and level the parts by sight. The dimension measured from the center of the front hand guard post are specified below. The center of the front hand guard post hole is the reference point for all these measurements.

Illustration #3B5

This dimension may vary substantially due to variations in the original G.I. stampings. The rear sight ears should be maintained at 1.5" in order to match the rear sight base dimensions. The dimensions listed are important. Maintaining the listed dimensions may cause this dimension and the overall length to vary substantially. This should not affect the proper operation.

These dimensions are not to scale: They reflect precise measurements from working G.I. and model A style carbines. They are included only as a reference to assist you in your assembly.

Illustration #3B6

WARNING: Gunsmithing skills and a thorough knowledge of the UZI style carbine are essential to the proper and safe assembly of these receivers.
STEP #4: Trunnion, front sight base and feed ramp; Installation & Welding:
Follow the instructions and illustrations below:

First remove the following list of parts from your kits: Alignment Kit (Illustration #4A figure 1 & 2); and the Receiver Parts Kit: (Illustration #4A-figures 1, 2 & 3)

Alignment Kit:
Illustration #4 figure 1 & 2

1. Alignment guide bar:
   figure 2
2. Rear alignment jig:

Receiver Parts Kit: Illustration #4A figure 1, 2 & 3

1. Front sight base:
   figure 1
2. Feed ramp:
   figure 2
3. Trunnion:
   figure 3

You will require three C clamps. 2” long by 1.5” wide or similar size:

Step #4-A Requires that your receiver have Step #3 completed:

1. Grind and polish the welds smooth before proceeding to step #4. It is not necessary to grind the front hand guard weld as it is under the trunnion and does not interfere with the assembly.
Step #4 B: Insert the trunnion and front sight base; follow Illustration #4-B-figures 1 & 2:
1. Insert the sight base and trunnion at the same time:

![Figure 1](image1)

Illustration #4B- figure 1 & 2

![Figure 2](image2)

Step #4 C: Clamp the sight base into place; place the 1st clamp at the bottom of the front sight base.
See Illustration #4-C-figures 1, 2, 3 & 4 below:

1. Press the sight base firmly and flat onto the top of the trunnion.
   (a). Simultaneously hold the trunnion in place while installing the first clamp.
2. Make certain that the notch on the front sight base is aligned with the notch in the trunnion.
   The notch on the trunnion is slightly wider than the notch in the sight base to be certain that
   there is clearance for the barrel retaining latch to slide in freely. See Illustration #4C-figure 3.
3. The rear of the sight base must be flush and square on top of the trunnion. See #4C-figure 4
4. Insure that the sight base is set properly: If necessary, temporarily use a clamp to gently press the
   sight base down from the top after installing the first clamp. Refer to Illustration #4-C figure 4
   below and Illustration #4F figure 2 on page 14 for correct height dimensions. Remove this clamp
   before welding. Then “insert and remove” the barrel retaining latch into the notch before welding.
   These checks to make sure you haven’t over compressed the sight base or compressed it at an angle.
   If the notch is too tight, you may have to file the opening a slight amount.
5. Place the second clamp on the sight base into the place shown: See Illustration #4C- figure 2, 3 & 4.
   (a). This insures that the receiver sides and the upper sight base are in close contact prior to welding.

![Figure 3](image3)

Illustration #4C

![Figure 4](image4)

Measurement from Top of trunnion to the top of the sight base 0.770"
Step #4-D  Remove the feed ramp from your Kit: See Illustration #4-figure 2 page 11

Slide the feed ramp into place: See item #1 and #4D-figure 1 below:

1. Feed ramp:

2. Install the feed ramp exactly as shown in figure 1 above:
   a. The feed ramp should be flush with or about 1/32” forward of the magazine hole.
      This allows the end of the barrel to protrude past the edge of the feed ramp by about 1/32” to 1/16”.
      See #4D figure 2 above:

3. The barrel must be inserted to be certain that it protrudes past the feed ramp before welding.
   (a) Make any necessary adjustment at this time and remove the barrel for the next step.

Step #4E  Insert the Alignment guide bar through the trunnion and feed ramp and into the rear alignment Jig: (See illustration #4-figure 1 & 2 on page 11 for parts). See #4E figure 1 below:

2. Insert the guide bar into the rear alignment jig before clamping.
   A. Installing the end of the bar into the jig before sliding the jig into the end of the receiver is easier when there is a tight fit. See #4E-figure 2 & 3 below:
      1. If the bar and jig don’t line up; file the side of the feed ramp slot in the receiver to permit some lateral movement. The bar sets the correct relative positions of the three parts during installation.
   B. Clamp the jig onto the rear of the receiver as shown in figure 2 & 3.
      1. Lightly tighten the clamp and tap the jig down so that there is a tight fit all around.

3. Secure the clamp tight and you are now ready to weld the trunnion, front sight base and feed ramp.
STEP #5: BOLT GUIDE BAR; Installation and welding

The following are a list of the parts you will require.

1. Bolt guide bar spacer:
2. Bolt guide bar:
3. Back plate
4. Three clamps

Step #5A: Take your prepared receiver with Steps #1 thru #4 of this manual completed; see Illustration #5A-figure 1

Step #5B: Insert the Bolt guide bar spacer into the receiver; see Illustration #5B-figure 2
1. Place the beveled edge against the side and bottom of the receiver.

Step #5C: Place the guide bar on top of the spacer with the rounded edges facing out and to the front of the receiver. See Illustration #5C figure 3:
Step #5D: Clamp the back plate onto the back of the receiver as if you were going to install it:
(a) Make certain that the back plate is secured firmly against the back of the receiver.
1. Slide the spacer and the guide bar back against the back plate. See Illustration #5D- figure 4

Step #5E: Place two clamps on the guide bar to secure it to the receiver: See Illustration #5E-figure 5

1. Press firmly down on the guide bar as you tighten the clamps:
2. The clamps will have a tendency to slide either up or down as you tighten. It may take several attempts to get the bar properly positioned.
3. Tighten the clamps just enough to hold the bar in position.
4. Additional tightening shifts the bar out of position.

Step #5F: Remove the back plate before welding: See Illustration #5F figure 6 & 7

1. The guide bar spacer should slide freely, without any friction, in and out.
2. The bar must not be too high. It must not bind in any way. (See #5G- figure 8 & 9 page 17):
**Step #5G:** Take your model A or B bolt and place it into the receiver. Move the bolt toward the back until it touches the first clamp. (See figure 8 and figure 9 below.)

![figure 8](image)

![figure 9](image)

1. Sight down the rear of the receiver, in good lighting, to be certain that the bar hasn't slipped and that it aligns with the bolt guide bar slot. The bolt can only be moved back to the clamp, but you can see from the rear if there is approximately equal clearance on the top and bottom of the bolt guide bar. (See illustration #5G-figure 10 & 11 below.)

![figure 10](image)

![figure 11](image)

2. Look for equal clearance at both points indicated: (between the bolt and guide bar, “top & Bottom”).

3. When you are certain that the guide bar is properly aligned, you are ready to weld the bar into place. Weld the bar to the receiver through the three holes already provided in your receiver. Be careful to limit the heat as much as possible to prevent warping the receiver.

**IMPORTANT NOTE**

This is one of the most difficult procedures to set up because of the low clearance between the bolt and the guide bar. It will set up easily if you do not over tighten the clamps. Tighten the minimum necessary to hold the bar in place while you weld. Over tightening will also cause the top edge of the receiver above the bar to warp when welded. Tighten the minimum necessary to hold the bar firmly in place.
Step #5H  Welding the guide bar

1. Guide bar just before welding: See Illustration #5H-1

   Illustration #5H-1

2. Guide bar after welding: Illustration #5H-2 for outside and Illustration #5H3 for the inside:

   Illustration #5H-2
   Illustration #5H-3

3. IMPORTANT: Use a dremmel cut-off wheel to grind any excess on the top and bottom of the guide bar before proceeding with the assembly.
Step #51: Checking the guide bar after welding:

Get your UZI model A or B bolt: See Illustration #51-1 below:

Illustration #51-1

See Illustrations #51-2 and #51-3 below:

1. Remove the clamps.
2. Clamp the back plate back onto the receiver. (Very important step)
3. Insert your model A or B bolt.
4. Slide the bolt back and forth to be sure it slides freely over the bar all the way to the back of the rear of the receiver.
5. If there are any restrictions, this is the time to adjust them.
6. There are variations in the G.I. Stamping. You may have to file the top and bottom of the inside rear of the receiver because of irregularities in the receivers.
7. You must make any adjustments now if there are any restrictions. If you do not, it will be much more difficult later.
STEP #6: BACK PLATE; Installation and welding:

You will need your receiver with steps #1 thru Step #5 completed, and the following list of parts:

1. Back plate:
2. Clamp

Step #6A: Place the back plate on the rear of the receiver:

1. Clamp the back plate securely in place: See illustration #6A-figure 1

2. Make sure that the back plate fits tight inside and outside; tighten the clamp and tap the back plate down until it fits tightly against the receiver, bottom and sides. See #6A figure 2 & 3 below.

3. Figure 3 is shown with the bolt guide bar removed to provide a clear picture of how the back plate must fit. The guide bar must be installed before the back plate is welded into place.
Step #6 Welding the back plate continued

See Step #6B: Completed welds Illustrations #6B-figures 1 & 2

Step #6C. After completing the welding; insert your model A or B bolt to insure that it moves freely.

1. Make any adjustments necessary after each operation by using the bolt as a guide for shaping your GI receiver:
2. There are some minor variations in the stamping of the group industries receivers that can only be adjusted by hand filing as you assemble your carbine.
STEP #7: REAR SIGHT BASE; Installation and Welding:

This is the final part of your project that requires welding on your receiver. You will need four things listed below and illustrated in (Step #7A, figure 1,2,3 & 4):

If spot welding: go to STEP #7A now. If Tig welding go to STEP #7-G (page 24) before proceeding.

STEP #7A:
1. Receiver with Step 1 thru 6 complete:
2. Rear sight base
3. Rear sight base height spacer.
4. Five (5) 2" X 1 1/2" clamps

STEP #7-B
1. Insert the height spacer (item #2) in the rear of the receiver with the (T) on top.

STEP #7-C
1. Put the rear sight base on top of the spacer with the small tabs at the rear of the receiver. Be sure that the rear of the sight base maintains contact with the back plate during welding. (Refer to Illustration-3)
STEP #7 Continued:

STEP #7-D

1. Clamp the rear sight base into place using one clamp in the center of the top of the rear sight base. If it fits tight all the way around, then no additional clamps are needed. If additional clamps are needed go to STEP #7-E. If additional clamps are not needed proceed to STEP #7-F.

Illustration 4

Step #7-E

1. If the rear sight base has large spaces between it and the receiver frame, you may be required to clamp the sight base into place at all four corners to close any gaps. Refer to Illustration 5.

If additional clamps are needed, you must clamp all four corners to prevent the sight base from tilting in any direction. Leave the clamp in the center while placing the clamps into the corners. Then

Illustration 5
1. REMOVE the height spacer before welding.
2. Slide the spacer in and out being sure that it moves freely. Readjust the sight base by tapping it up or down until you get the spacer to move freely. There should be just very mild friction as the spacer slides in and out.
3. Insert your model A or B bolt into the receiver to insure that it slides freely. There will be more clearance on the top of the bolt than on top of the spacer. This is correct.
4. You are now ready to weld the sight base into place. The method and preparation should have already been chosen, either TIG or spot weld.

Step #7-G

1. Step #7-G is **only performed** and required if you are TIG welding the rear sight base.

   (a.) Drill two 5/32 holes on each side of the sight base per illustration below.
   (b) The holes must be drilled before the sight base is inserted.
   (c) proceed to step #7-B page 17.
STEP #8: SLING SWIVEL INSTALLATION

This next step should be performed after you have completed your GI receiver and just prior to bluing or parkerizing your finished receiver.

8A. Your US manufactured sling swivel does not require welding: Follow the instructions outlined below: You will need the parts and tools listed and illustrated below.

1. Sling swivel (from D & D Parts Kit):
2. Sling swivel retaining washer:
3. Punch (wide taper):
4. Needle nose vise grips:
5. Hammer:
6. Receiver, finished and ready for blueing.

8B. Installing the sling swivel:

1. Insert the sling swivel (#1 above) into the sling swivel hole on the receiver. It must fit flush with the surface of the receiver as in figure B-1 below. You may have to lightly file the hole sides to insert the sling swivel all the way.

figure B-1
2. Place the retaining washer (item #2 on page 25 #8A) onto the other side of the sling swivel: See Illustration B2 below.

3. Clamp the sling Swivel and the retaining washer together onto the receiver with the needle nose vise grips as in figure B-1 & B-2

4. Take the punch (Step#8A item 3 page 25) and place the point on the junction of the retaining washer and sling swivel pivot post. See figure B-3 below

5. Place the post on a solid surface, take the hammer (item #5 on page 20) and hit the punch firmly enough to bend the edge of the pivot post over the retaining washer.

6. Rotate the sling swivel until you have peened the sling swivel pivot post over the washer in 4 or 5 places. Hit the edges until you have secured the washer firmly on the post. You should have at least two retaining washers in the event that you are not successful the first time.

7. It is possible to weld the center of the sling swivel retaining post. You must use a .040 or smaller tig welding tip because the retaining washer melts very easily.

**NOTE TO ASSEMBLER/WELDER**

Clamping the washer to the receiver with the vice grips acts as a heat sink and helps to obtain a proper weld without melting the retaining washer.
EJECTOR INSTALLATION
(The last step before finish, touch-up and blueing)

Step #9A Required parts and tools; see list 1 thru 3: Do not weld or heat; The heat will remove the temper

1. Hammer
2. Rivet
3. Ejector

Step #9B: Ejector Installation:

1. Press the ejector all the way back in the slot so that the rear of the ejector butts firmly against the front of the trigger housing lug. The ejector and receiver hole should align See figure #9B-1
2. The ejector hole must line up precisely with the hole in the receiver. The ejector hole is not always precisely placed in the receiver. The hole and slot must be adjusted if necessary to allow the ejector to precisely fit into the groove in the bolt.
3. Insert the ejector in the slot (hold in place), then insert the bolt to see that the ejector is aligned precisely in the ejector slot in the bolt and that it moves freely
4. If the bolt does not move freely, you must file the slot to adjust the position of the ejector until the bolt moves freely. If the ejector hole is not precisely centered on the hole in the receiver, you must file the receiver hole until the ejector hole shows even spacing on both sides of the hole. The hole does not have to be perfectly round, just the same spacing on opposite sides. The rivet expands into the hole and sets the position of the ejector.

figure #9B-1

Step #9C: Securing the ejector with the rivet:

5. Place the rivet into the hole from the inside of the receiver.
6. Place the head of the rivet securely on an elevated flat piece of steel that will fit inside the receiver.
7. Hit the other side of the rivet until it flattens and expands into the hole firmly securing the ejector to the receiver. (Select a hammer size and a piece of back up steel appropriately sized for the job).
8. If you have difficulty hitting the rivet, select a 1/2” or 3/4” steel rod 2 to 3 inches long. Place this on the rivet and hit it with the hammer to flatten the rivet.
9. See Illustration #9C-1 and #9C-2 on page 28 for finished installation.
Stepp#9C continued:

Illustration #9C-1 (top view)

Illustration #9C-2 (bottom view)
Step#10: Three views of a finished Group industries receiver: Illustration #10-1 (top), #10-2 (bottom) & #10-3 (left side).

Illustration #10-1 (top)

Illustration #10-2 (bottom)

Illustration #10-3 (left side)

These dimensions are measurements taken directly from UZI model A style carbines. The dimensions in black should be maintained as precisely as possible. Those in red may vary substantially because of variations in the original group industries receivers. All of these dimensions are included only as a reference sample to assist you in your assembly. The dimensions are referenced from the center of the rear hand guard post hole.

WARNING: Gunsmithing skills and a thorough knowledge of the UZI style carbine are essential to the proper and safe assembly of these receivers.