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Laser Alignment Procedure

In order to complete a proper and successful alignment procedure on the AKAS Laser system, the following items will be needed !

(1) a torpedo level
(2) a set of allen wrenches
(3) a tape measure
(4) a 10mm wrench
(5) a 13mm wrench
(6) a magic marker
(7) a piece of cardboard with a straight edge on at least one edge !
(Cardboard should be at least 4 inches in height and also a minimum of 4 inches in width)
(8) two pieces of upper tooling (punches) of the same height , preferably small !
(Length of upper tooling can vary)

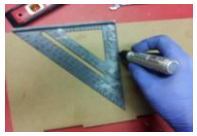
The alignment procedure will always start with transmitting (left) side !
The ideal alignment is to have the laser aimed in a straight line from the transmitter (left) side to the receiver (right) side. (Make sure that the laser **IS NOT** misdirected or incorrectly aimed to the rear or the front or upward or downward !)
(The straighter the aim of the laser from left to right, the better the alignment will be !)

tensioner nuts

Step #1
Make sure the upper beam (The Ram) is fully open.(farthest away from the lower beam)

Step #2
If the transmitter or receiver has a hinged mechanism in place for loading / unloading tooling, insure that the hinge(s) are tightly secured in the closed position.
(If the hinge seems loose while it is in the latched position, you may tighten it with the tensioner nuts located on the latching mechanism)
(Be careful , not to over-tighten !) **(If these hinges are loose, it will cause the alignment to be untrue)**

Step #3
Using the magic marker, mark a straight line down the middle of the piece of cardboard, starting at the edge with the straight edge !



Step #4
Insert the two upper punches, one to the far left of the ram, the other on the far right !
(Make sure the upper tooling clamps holding the punches are the same style and size)

upper tool *upper tool*

Step #5
Place the cardboard with the line down the center against the upper tool on the far right, with the line against the outer edge of the tooling. The line should be visible from the left side of the press and centered on the bending line, up and down !(from top to bottom)
(Bending Line = The imaginary line between the lower tip of the upper tooling and the lowest point of the valley in the lower tooling)
(you may want to secure the cardboard with a magnet or tape, etc… until the transmitter alignment is complete !)

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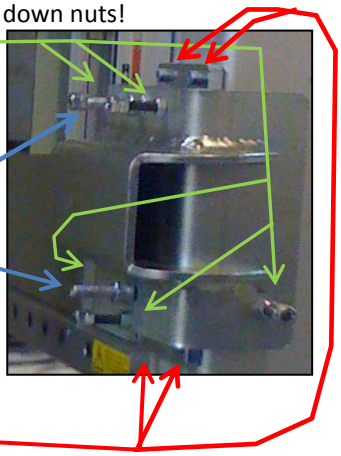
Before you proceed to the next step, it is necessary to understand the basics of the alignment !
On both the transmitter and receiver, you will find five (5) alignment bolts and two (2) lock down nuts!
You will also find four (4) allen head screws !



Starting with the alignment bolts;

These alignment bolts are 10mm and are located on the transmitter and receiver mounting arms! (three are located on the back side and one is on the inside and one is on the outside of each arm)

Next would be the lock down nuts;

These lock down nuts are 13mm and are also located on the back side of both the transmitter and receiver mounting arms!
(one located near the top of the mounting plate and one near the bottom)

And finally, the allen head screws which with the help of slotted nuts, allow the arm to grip the transmitter and receiver base.
(also located on the back side mounting arms on the mounting plate!)
(two at the top edge of the mounting plate and two at the bottom edge)

NOTES *

Before you proceed to step # 6, you must turn the key, located at the top of the receiver base , to the 'on' position!

If you need to move the transmitter head up or down, you may do so using the toggle switch, located at the top of the receiver base.

Step #6

Using the allen head screws with the slotted nuts, position the transmitter to where the calibration movement will accommodate the shortest distance for upper tool and the tallest distance for upper tool to be used in production, and then tighten the allen head screws so the transmitter base will not move.

Step #7

Now, using the five alignment bolts, align the primary laser (laser closest to the rear of the press) The primary laser should be aligned as close to the bending line as possible and slightly below the tip of the upper tooling. (the ideal position is to have the primary laser centered on the bending line = half to the front and half to the rear or just a little more to the rear) As you are aligning the transmitter, be sure to periodically place the torpedo level onto the straight edge part of the base to insure that the unit mounts evenly up and down!

When aligning the primary laser, make sure that the laser DOES NOT aim to the rear, nor to the front, nor upward, nor downward.

(Make sure it is a straight alignment from the transmitter to the receiver)

(Another helpful hint is to have the primary laser light aimed to where it is just touching the very tip of the upper tooling, while performing the alignment procedure as illustrated in the photos above !)

When alignment is complete, secure all locking nuts and recheck alignment!

Step #8

When the primary alignment is complete, remove the cardboard from the right side upper tooling

Step #9

Take a measurement from bottom edge of the transmitter housing to the floor and then using the allen head screws with the slotted nuts, position the receiver to where the distance to the floor is the same as the transmitter and tighten to lock in place !

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Step #10
Using the toggle switch, located at the top of the receiver base, position the transmitter's primary laser to about one (1") inch below the upper tooling!

Step #11
Using one hand to hold the receiver steady, then with other hand, press and hold the black button until the laser lights from the transmitter are surrounding the small receptacles located on the face of the receiver's head! When the laser lights from the transmitter are surrounding the small receptacles, release the black button, while still holding the receiver steady!

Step #12
While still holding the receiver steady, press and release the black button, wait for one (1) second and then push the toggle switch upward and release!
After you release the toggle switch, turn the key switch to the 'off ' position!
When the receiver stops moving and the square indicator lamp, located in the center of the receiver's head, is flashing rapidly and faintly, you can then turn loose of the receiver's base!

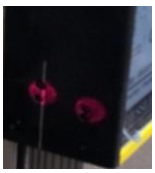
Be sure to hold the receiver steady until this procedure is complete !

Step #13
Turn the key, located at the top of the receiver base , to the 'on' position!

Step #14
Using a straight edge (a flat sided magnet, a piece of tape, one side of a square, the straight edge of the torpedo level are a few examples) Place or attach the straight edge on the upper tooling in a manor to where the straight edge divides the bending line.
(The straight edge should split the bending line, from the tip of the upper tooling to the lowest point of the valley in the lower tooling, with the straight edge blocking the forward portion of the primary laser)

Step #15
Using the five alignment bolts, align the receiver to where the shadowed line of the primary laser lines up with the white line located on the face of the receiver head!
As you are aligning the receiver, be sure to periodically place the torpedo level onto the straight edge part of the base to insure that the unit mounts evenly up and down!
When alignment is complete, secure all locking nuts and recheck alignment!
(When the alignment is complete, all laser recepticles should be located within the laser lights)

Step #16
Refer to 'Calibrating Laser' in the 'Operational Instructions' and calibrate laser!



(Alignment Procedure is complete)

Information provided by ; Smart Services
(www. Safeguardingmachinery.com)

In reference to ; AKAS Laser protection units .
Manufactured by : Fiessler Elektroniks
(www.fiessler.de)

Associated with ; Advanced Manufacturing Solutions (AMS)
(www.pressbrakesafety.com)