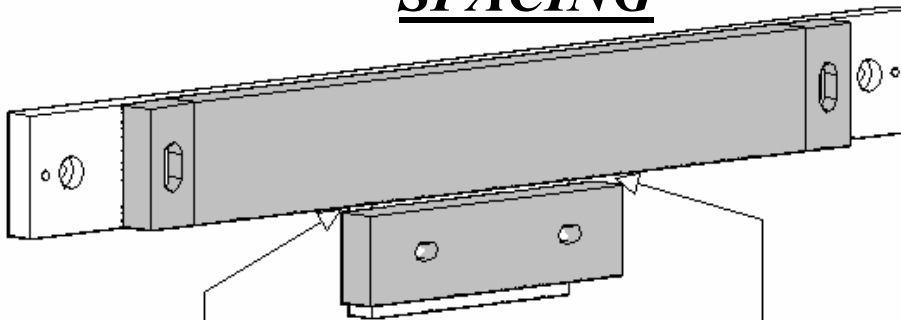


**** (ENGLISH SCREWS ARE SUPPLIED IN THE HARDWARE KIT TO MOUNT THE READER HEAD. THE METRIC SCREWS ARE NOT NECESSARY.) ****

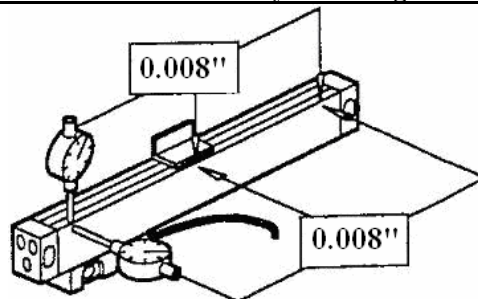
SPACING



For M Series scales, the spacing between the scale and the reader head **MUST** be 0.040 inches (1mm) \pm 0.02 inches (0.5mm)

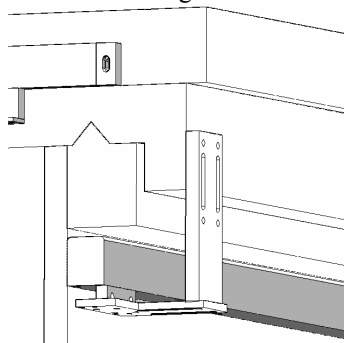
For C Series scales, the spacing between the scale and the reader head **MUST** be 0.060 inches (1.5mm) \pm 0.024 inches (0.6mm)

ALIGN THE SIDES OF THE SCALE by indicating the ends and the center.

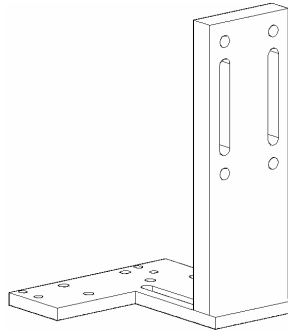


The following instructions are to be used with the instructions supplied with the scales.

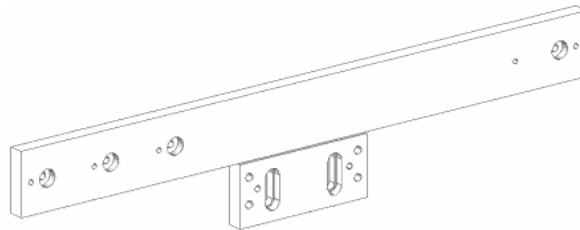
1. Determine the best location for mounting the scale and the reader head on the back of the machine bed. Check to make sure the machine still has full travel without over traveling the scale.
2. Mount the Z scale to the back of the machine bed by tapping two holes for 10-32 SHCS. Make sure to use oval washers with SHCS. Adjust the scale parallel and square to the carriage travel per scale manual specifications for the scale alignment.



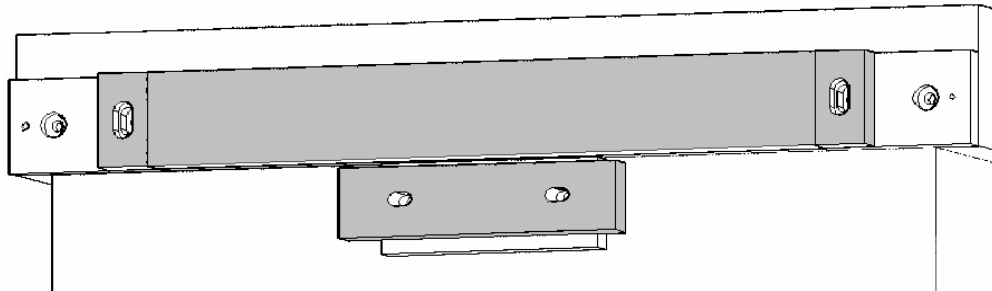
3. The reader head mounts using a two piece bracket assemble having slots for the vertical and horizontal adjustments. The horizontal piece can be turned to the left or right and the vertical piece can be used in the slots in three different positions. The holes in the horizontal piece can accommodate the C or M type reader heads with the cable coming out to the right or left. Use the M5 screws for the C type and the M4 screws for the M type reader heads. Please make sure the Belleville washers provided are used to secure all the screws in this bracket assembly.



4. Always carefully check for scale over travel.
5. Tie up cables properly so they won't be caught by the machine travel.
6. Determine the best location for the cross slide scale and the reader head. This is usually best on the tailstock of the cross slide.



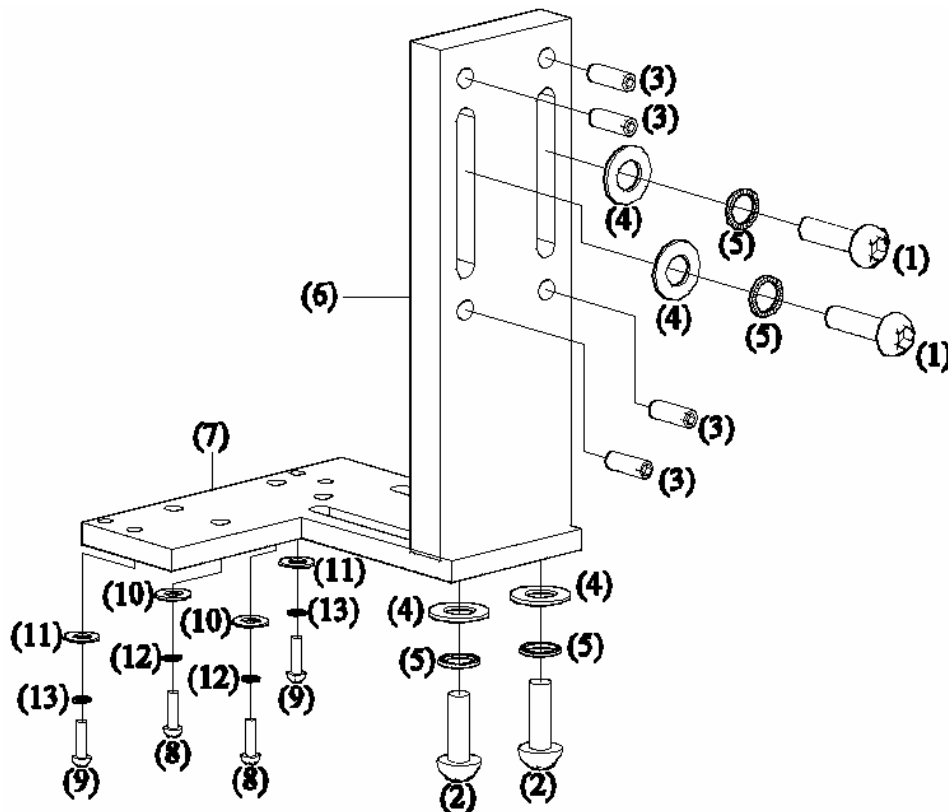
7. Modify the backer bar and scale cover to fit the cross slide scale by sawing between the proper set of holes.
8. Mount the backer bar to the cross slide, and then install the scale parallel and square to the cross slide travel, per the scale manual specifications for the reader head alignment.



9. Mount the reader head bracket to the carriage and set by shimming or by set screws. Adjust using the scale manual specifications for the reader head alignment.
10. Always carefully check for scale over travel.
11. Mount scale cover using 10-32 BHCS.
12. Tie up cables properly so they won't be caught by the machine travel.

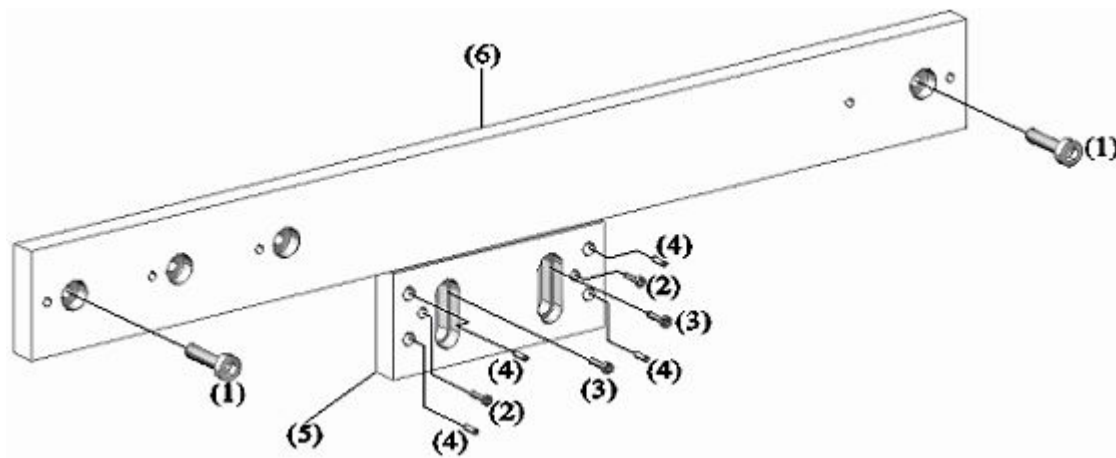
Bracket Hardware

Code #	Quantity	Size	Description
1	2	¼-20 x 1	B.H.C.S.
2	2	¼-20 x ¾	B.H.C.S.
3	4	¼-20 x ½	S.S.
4	4	¼-20	FLAT SS WASHERS
5	4	¼-20	BELLEVILLE WASHERS
6	1	-	VERTICAL BRACKET
7	1	-	HORIZONTAL BRACKET
8	2	M5	B.H.C.S.
9	2	M4	B.H.C.S.
10	2	M5	FLAT SS WASHERS
11	2	M4	FLAT SS WASHERS
12	2	M5	BELLEVILLE WASHERS
13	2	M4	BELLEVILLE WASHERS
-	2	8-32 x 1	S.H.C.S.
-	10	6"	CABLE TIES
-	2	-	CABLE CLAMPS
-	2	8/32 x ¼	B.H.C.S.



Cross Slide Hardware

Code #	Quantity	Size	Description
1	3	¼-20 x ¾	S.H.C.S.
2	4	8-32 x 1	S.H.C.S.
3	2	10-32 x 5/8	S.H.C.S.
4	4	10-32 x ½	S.S.S.
5	1	-	CROSSLIDE READER HEAD BRACKET
6	1	-	SCALE BACKER BAR
-	5	10-32 x 3/8	B.H.C.S. FOR SCALE COVER
-	1	-	SCALE COVER



Recommended Tools

7/64 Hex Key	9/64 Hex Key
5/32 Hex Key	3/16 Hex Key
¼ Hex Key	Screwdrivers
Wire Snips	Power Drill
No. 7 Drill	¼-20 Tap
No. 29 Drill	8-32 Tap
No. 21 Drill	10-32 Tap
F Drill	5/16-18 Tap
Indicator with Base	6mm Hex Key
3mm Hex Key	1.5mm Hex Key

TROUBLESHOOTING: Scale does not count. Verify spacing and alignment.