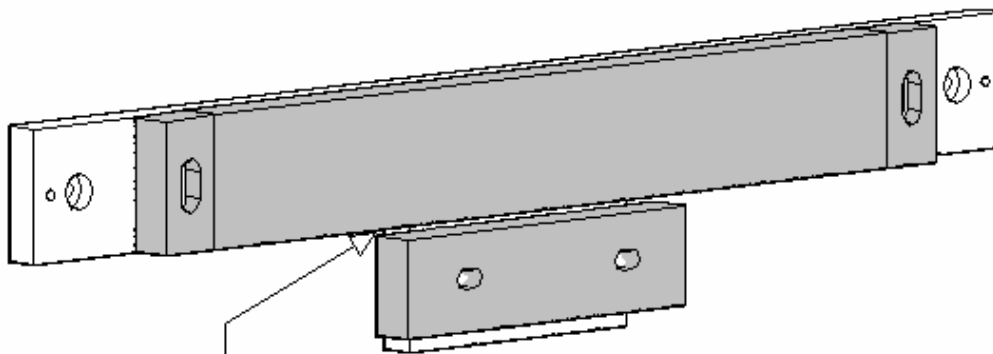




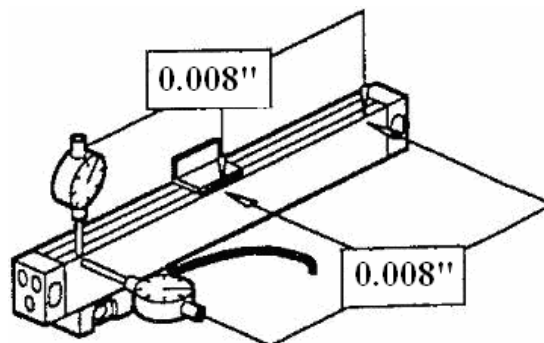
**** (ENGLISH SCREWS ARE SUPPLIED IN THE HARDWARE KIT TO MOUNT THE READER HEAD. THE METRIC SCREWS ARE NOT NECESSARY.) ****

SPACING



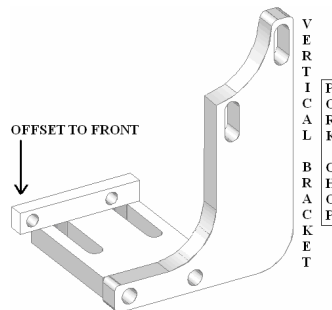
For M Series scales, the spacing between the scale and the reader head **MUST** be 0.040 inches (1mm) \pm 0.02 inches (0.5mm)

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

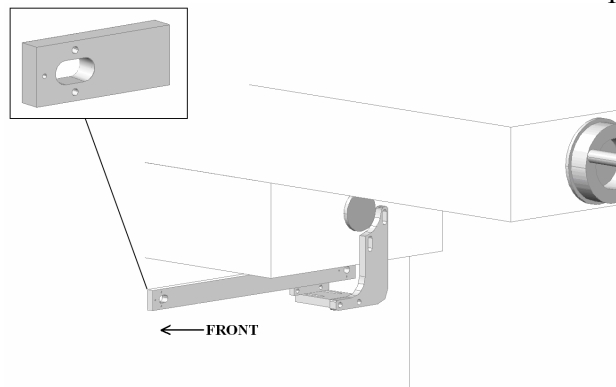


Y-AXIS MOUNTING INSTRUCTIONS

1. Assemble 3-pieces Vertical (Pork-Chop) Bracket, Horizontal Bracket, and Reader Head Bracket. Offset the front using 1/4-20 SHCS, washers, and lock washers loosely for now and bolt to side of the saddle.



2. Clean right side of knee and saddle. If no holes are provided they will need to be drilled and tapped. Use the Vertical (Pork-Chop) Bracket to locate the holes by pre-assembling brackets and holding them to the side of the machine. Keeping in mind the relationship between the scale and the reader head.
3. Mount Scale Backer Bar with slotted mounting hole toward front parallel and square to the saddle travel either by using the .200 spacers and arbor shims or by using the set screws. You can use either 3/8-16 SHCS or 1/4-20 SHCS with Step Down Collars.

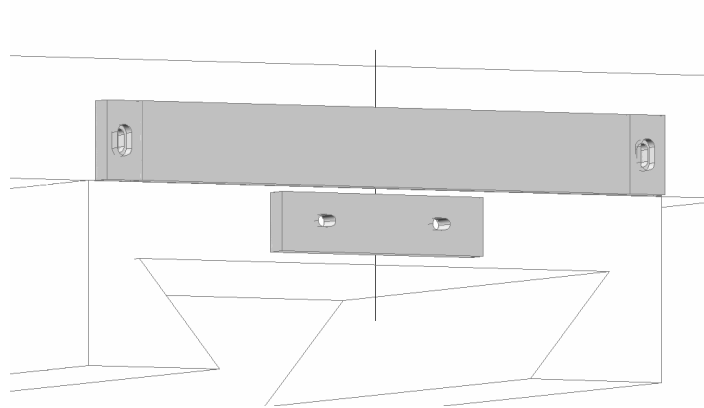


4. Install the scale onto Scale Backer Bar per specifications on page 1.
5. Set this assembly to the scale reader head per specifications on page 1. Using the slots provided in the brackets for adjustments making sure to tighten all bolts. Remove red spacer from reader head.
6. Carefully move the machine to its full travel in both directions checking that you don't over travel the scale and reader head which will cause damage to the scale and reader

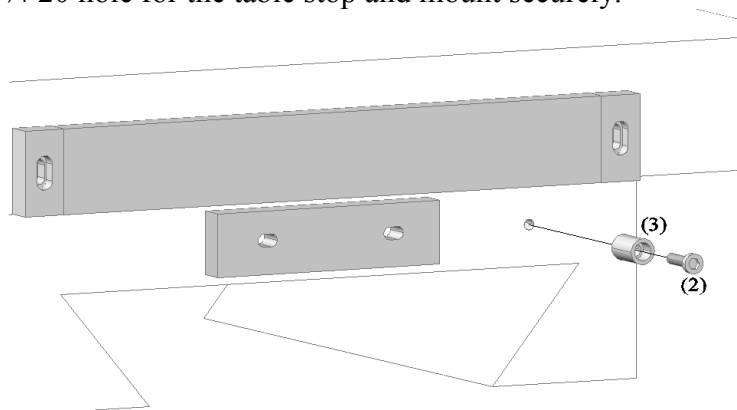
- head.
7. Tie up cables with cable clamps and cable ties so they travel with the machine, but won't get caught up anywhere.

X-AXIS MOUNTING INSTRUCTIONS

1. Clean the back side of the table and saddle.
2. Find centerline of the table travel in relationship to the centerline of the saddle. Use the scale to locate mounting holes for scale and reader head. Drill and tap for 8-32 SHCS.



3. Mount the scale per specifications on page 1.
4. Mount the reader head to the saddle per specifications supplied with the scale. Use the laminated shim supplied for any necessary adjustment. Remove red spacer from reader head.
5. Drill and tap $\frac{1}{4}$ -20 hole for the table stop and mount securely.



6. Carefully move the machine to its full travel in both directions checking that you don't over travel the scale and reader head which will cause damage to the scale and reader head.

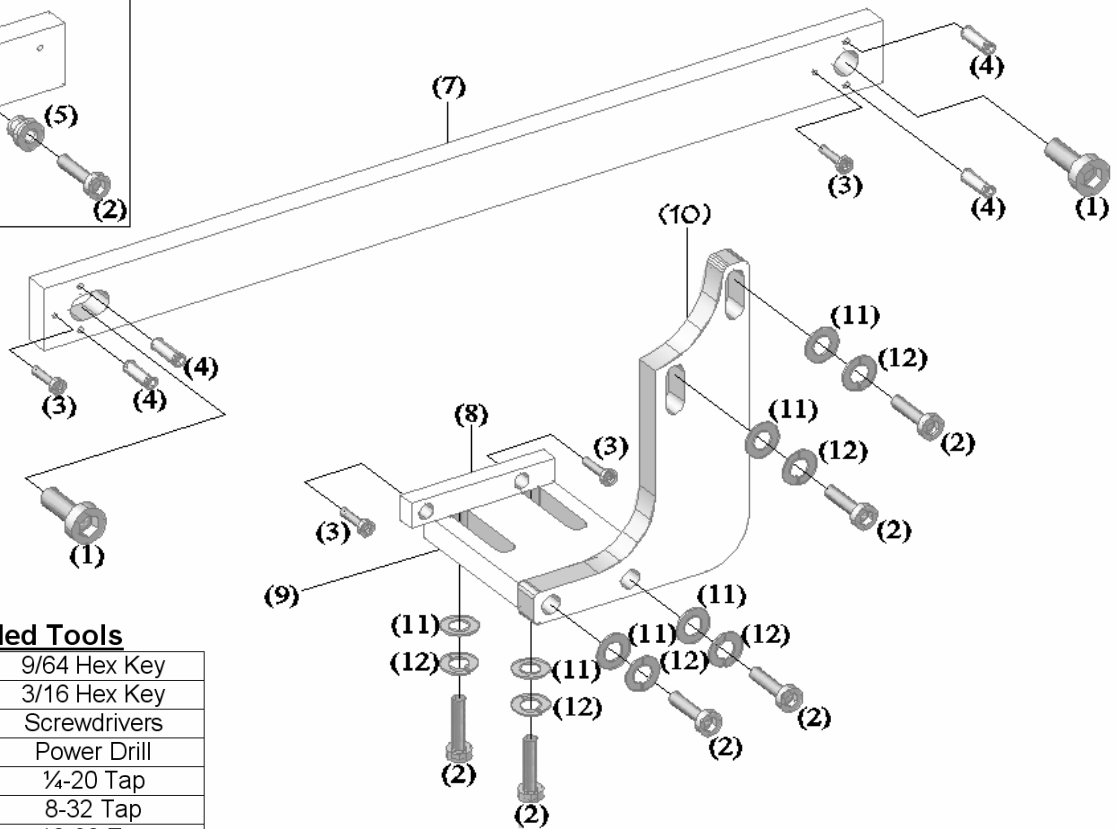
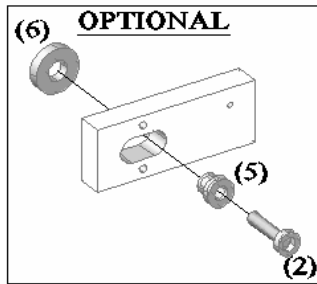
7. Tie up cables with cable clamps and cable ties so they travel with the machine, but won't get caught up anywhere.

Y-Axis Hardware

| Code # | Quantity | Size | Description |
|--------|----------|-------------------------|------------------------------|
| 1 | 2 | 3/8-16 x 1 1/2 | S.H.C.S. |
| 2 | 8 | 1/4-20 x 1 | S.H.C.S. |
| 3 | 8 | 8-32 x 1 | S.H.C.S. |
| 4 | 4 | 1/4-20 x 3/4 | S.S.S. |
| 5 | 2 | - | STEP DOWN COLLAR |
| 6 | 2 | 0.200 | SPACER |
| 7 | 1 | - | SCALE BACKER BAR |
| 8 | 1 | - | READER HEAD BRACKET |
| 9 | 1 | - | HORIZONTAL BRACKET |
| 10 | 1 | - | VERTICAL BRACKET (PORK-CHOP) |
| 11 | 6 | 1/4-20 | FLAT WASHERS |
| 12 | 6 | 1/4-20 | LOCK WASHERS |
| - | 1 | 0.350 O.D. X 0.130 I.D. | WASHERS |
| - | 2 | 0.310 O.D. X 0.180 I.D. | WASHERS |
| - | 5 | - | CABLE TIES |
| - | 1 | - | CABLE CLAMP1 |
| - | 1 | 8-32 x 1/4 | S.H.C.S. FOR CABLE CLAMP |
| - | 6 | 0.010 | ARBOR SHIMS |

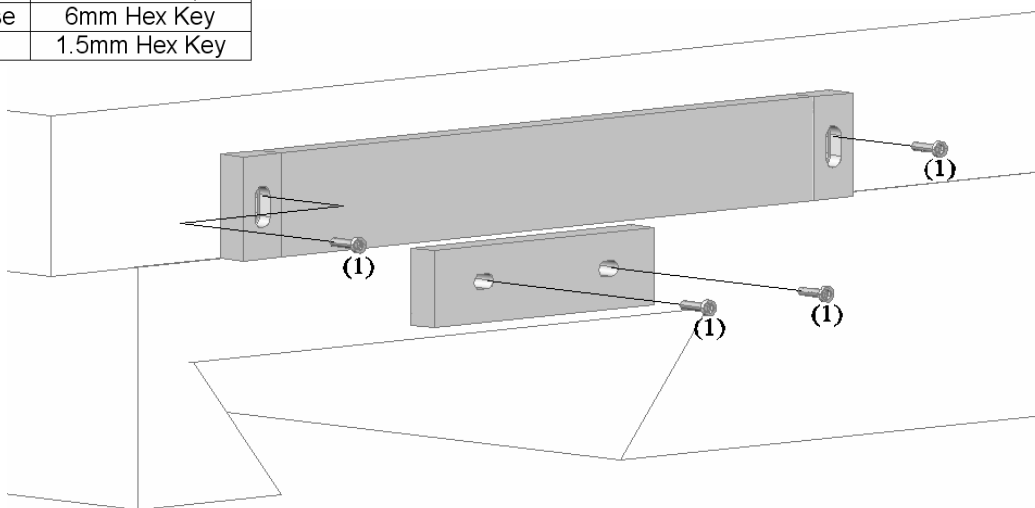
X-Axis Hardware

| Code # | Quantity | Size | Description |
|--------|----------|-------------------------|--------------------------|
| 1 | 4 | 8-32 x 1 | S.H.C.S. |
| 2 | 1 | 1/4-20 x 1 | S.H.C.S. FOR TABLE STOP |
| 3 | 1 | - | TABLE STOP |
| - | 1 | - | LAMINATED SHIM |
| - | 1 | 0.350 O.D. X 0.130 I.D. | WASHER |
| - | 2 | 0.310 O.D. X 0.180 I.D. | WASHER |
| - | 1 | - | ARBOR SHIM |
| - | 1 | 8-32 x 1/4 | S.H.C.S. FOR CABLE CLAMP |
| - | 1 | - | CABLE CLAMP |
| - | 5 | - | CABLE TIES |



Recommended Tools

| | |
|---------------------|---------------|
| 7/64 Hex Key | 9/64 Hex Key |
| 5/32 Hex Key | 3/16 Hex Key |
| 1/4 Hex Key | Screwdrivers |
| Wire Snips | Power Drill |
| No. 7 Drill | 1/4-20 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.