

# Magna Kit - L

(EL400 DRO and S1/S2 Scales)



**DRO PROS**

## Scale Dimensions

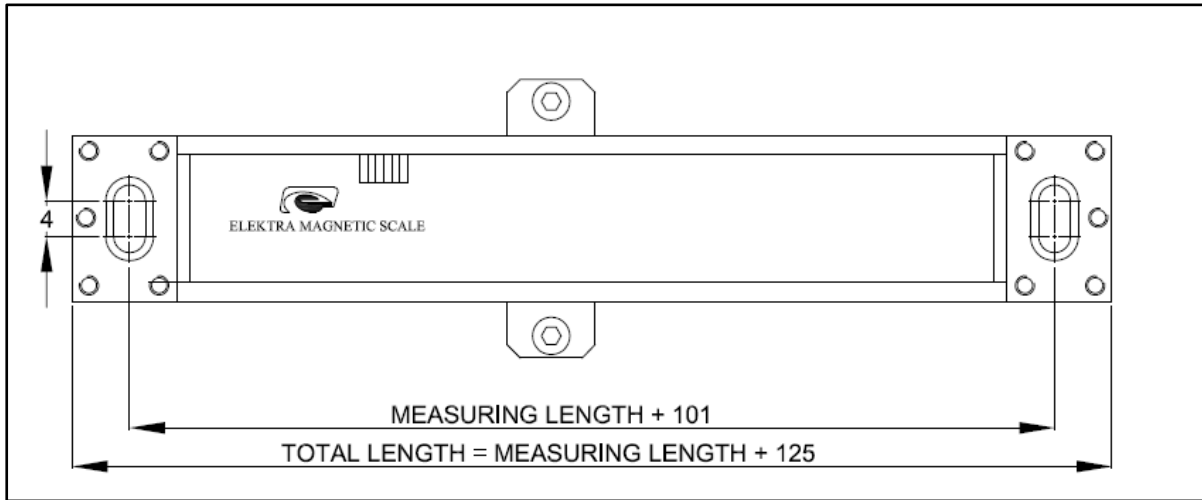


Figure 1

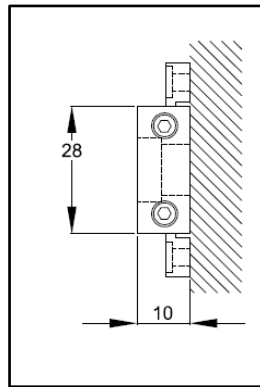


Figure 2

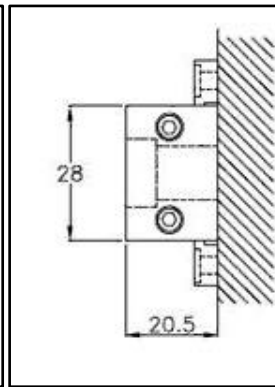


Figure 3

Figure 2: Elektra Magnetic Scale for lengths up to 1 meter  
Figure 3: Elektra Magnetic Scale for lengths above 1 meter

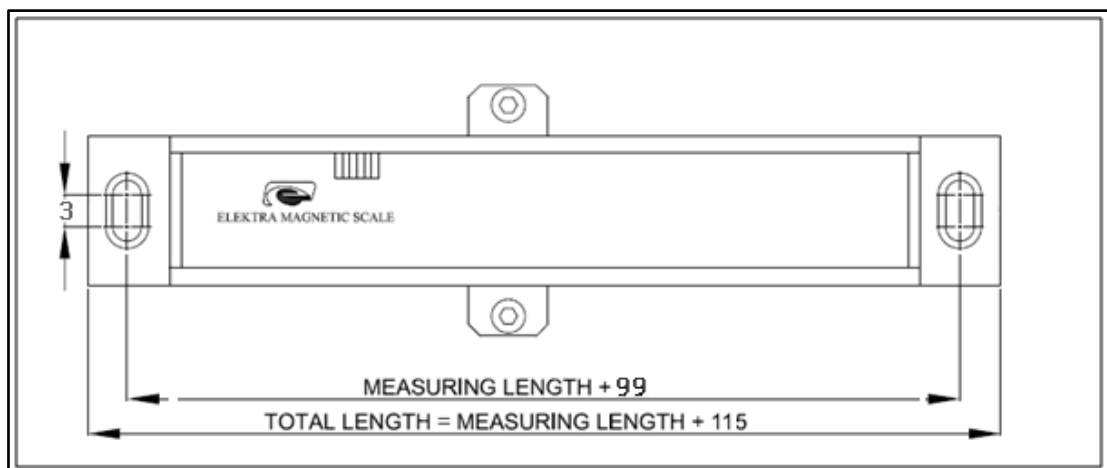


Figure 4

## Mounting tolerances

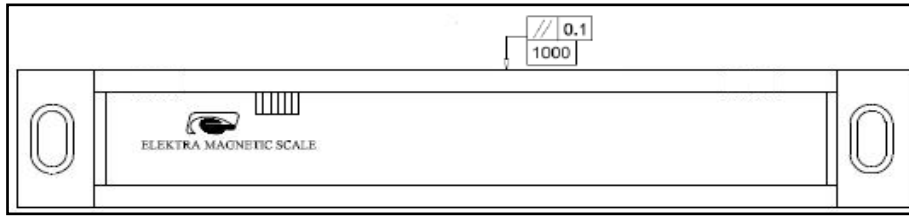


Figure 5

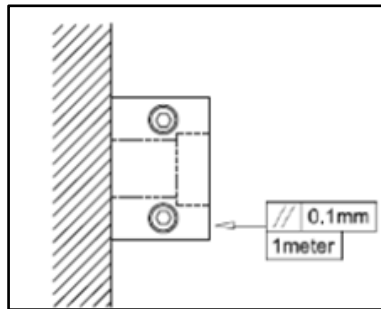


Figure 6

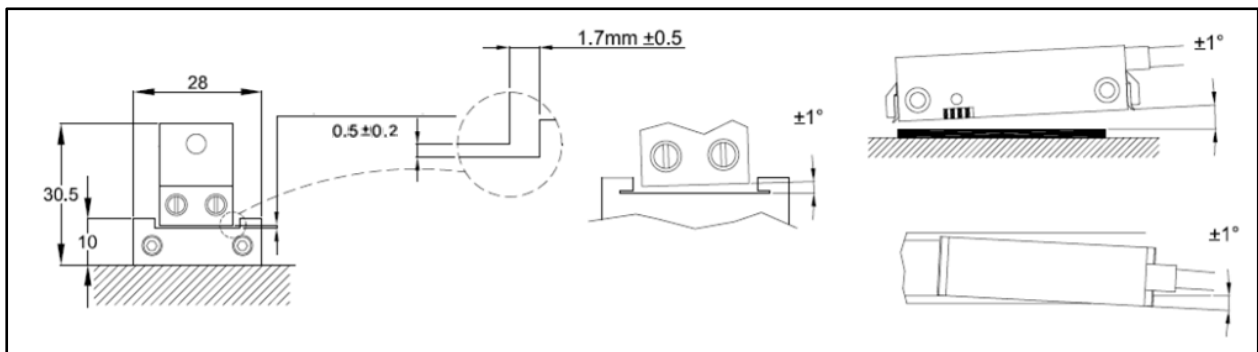


Figure 7

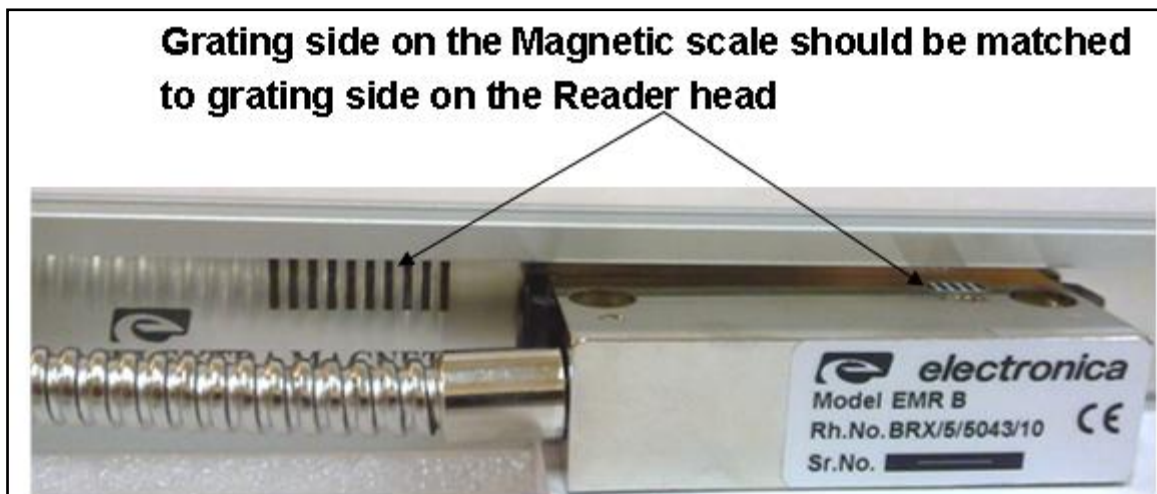


Figure 8

## X Axis Scale mounting instructions

1. Clean the right side of the saddle of machine where the X axis scale is to be fitted.
2. The best location for mounting the scale is as near to the centre line of the slide, or as close to the guide-ways of the machine as possible.
3. Mount the scale and the reader head as per the tolerances given above. The mounting should be as shown in the figure below. The grating symbol on the scale should be matched to the grating symbol on the reader head. Refer Figure 8.

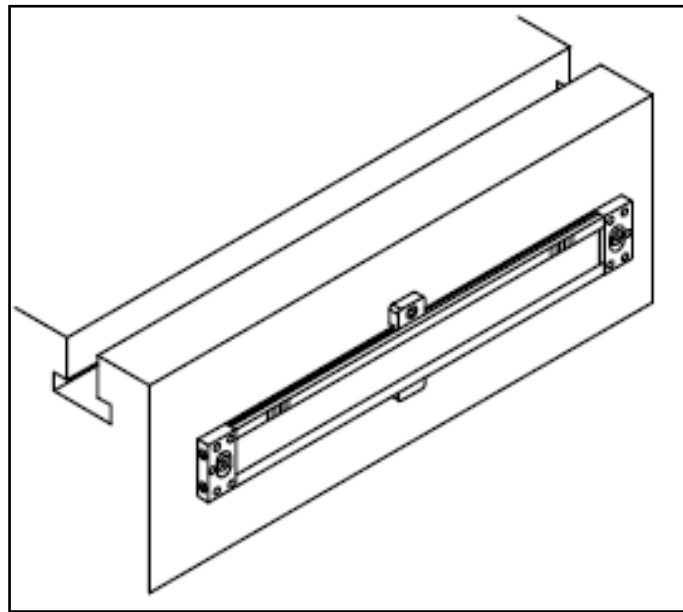


Figure 9

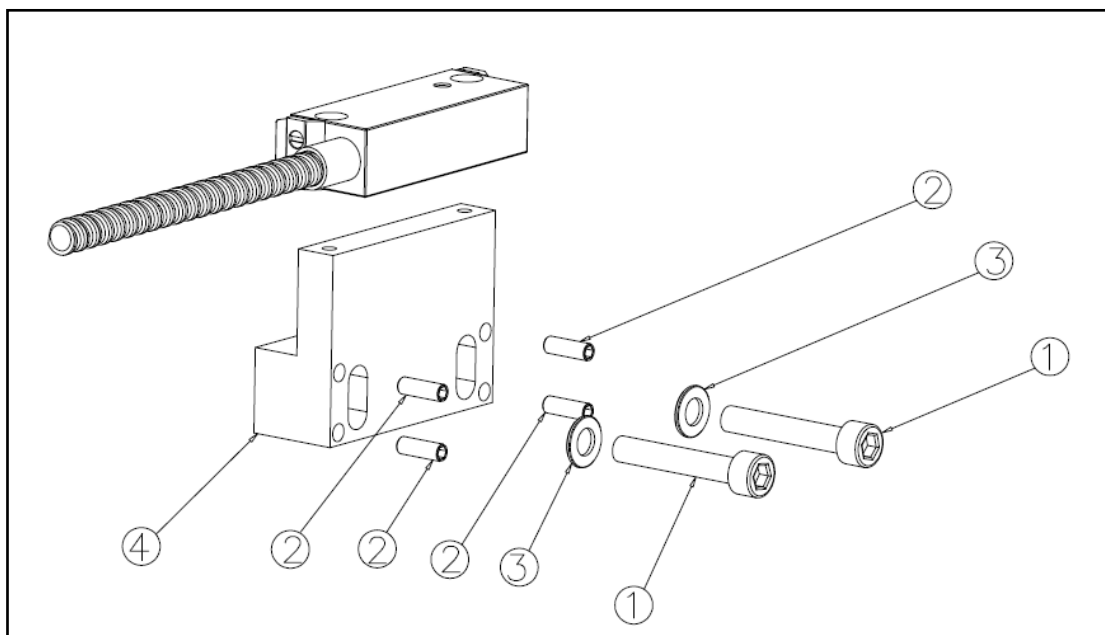


Figure 10

4. Mount the middle support provided with the scale. The scale should be supported by the middle support after every 500mm.
5. Move the slide over the full machine travel carefully to make sure that full machine travel is obtained. Do not over travel as it may damage the scale.
6. Mount the scale cover supplied with the scale as shown in the figure below.

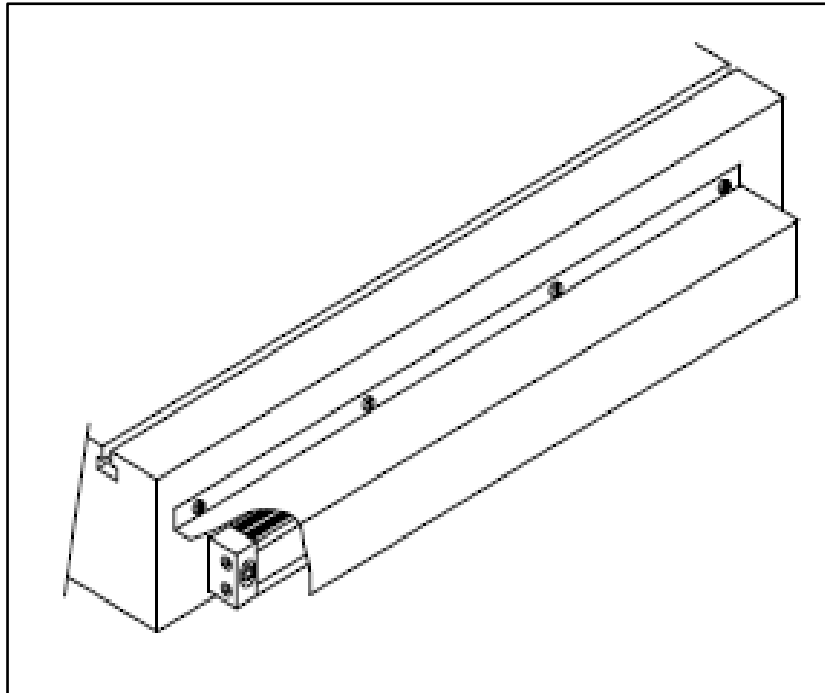


Figure 11

7. Clamp the cables with the cable ties provided so they do not come in between the machine moving parts.

### **Z Axis Scale mounting instructions**

1. Clean the back side of the machine where the Z Axis scale is to be fitted.
2. Mount the scale using the brackets as shown in the figure. Tolerances should be maintained as given above.

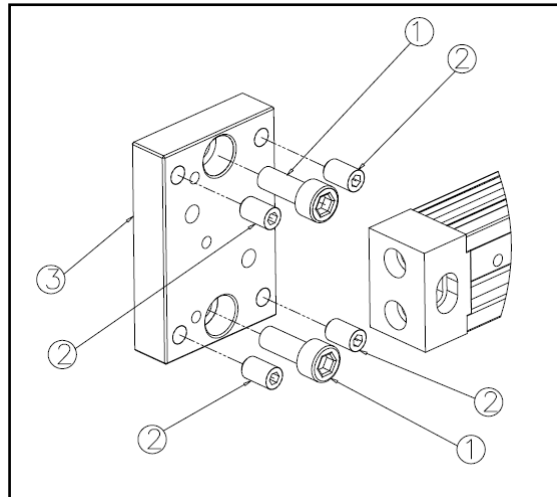


Figure 12

3. Mount the reader head using the brackets as shown in Figure 13. Ensure mounting tolerances as mentioned above. The grating symbol on the scale should be matched to the grating symbol on the reader head. Refer Figure 8.

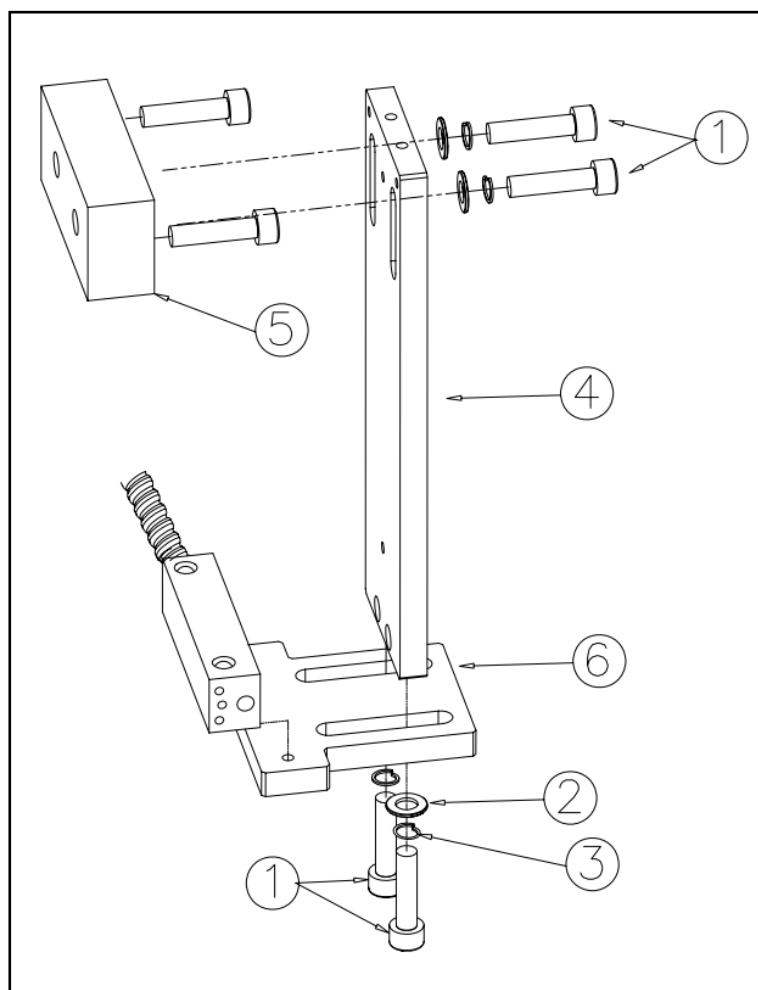


Figure 13

4. Move the slide over the full machine travel carefully to make sure that full machine travel is obtained. Do not over travel as it may damage the scale.
5. Mount the scale cover supplied with the scale.
6. Clamp the cables with the cable ties provided so they do not come in between the machine moving parts.

### **X Axis Hardware details**

- Scale

Description	Quantity
Allen (Hex) Screw M4 X 16mm	2
Slotted (Cheese) Head Screw M4 X 10mm	3
Plain (Flat) Washer M4	3

- Reader Head

Sr. No.	Description	Quantity
1	Allen (Hex) Screw M6 X 35mm	2
2	Grub (Hex) Screw M4 X 12mm	4
3	Plain Washer M6 S.S.	2
4	Reader Head Mounting Bracket for "X" Axis	1
-	Allen (Hex) Screw M4 X 20mm	2
-	Plastic Shim	1
-	Cable Tie mount	2
-	'P' Clip for cable Routing	3

### **Z Axis Hardware details**

- Scale up to 1 meter

Item No.	Description	Quantity
1	Allen (Hex) Screw M6 X 16mm	4
2	Grub Screw (Set Screw) M6 X 10mm	8
3	Support Bracket (Bracket No. 2)	2
-	Allen (Hex) Screw M4 X 16mm	2
-	Slotted (Cheese) Head Screw M4 X 10mm	3
-	Plain (Flat) Washer M4	3



- Scale above 1 meter

Item No.	Description	Quantity
1	Allen (Hex) Screw M6 X 16mm	4
2	Grub Screw (Set Screw) M6 X 10mm	8
3	Support Bracket (Bracket No. 2)	2
-	Allen (Hex) Screw M6 X 30mm	2
-	Slotted (Cheese) Head Screw M4 X 10mm	3
-	Plain (Flat) Washer M4	3

- Reader Head

Item No.	Description	Quantity
1	Allen (Hex) Screw M6 X 20	6
2	Plain (Flat) Washer M6	6
3	Spring (Lock) Washer M6	6
4	Bracket No. 37	1
5	Bracket No. 9	1
6	'T' Bracket for Reader Head	1
-	Allen (Hex) Screw M4 X 25mm	2
-	Shim Set	1
-	Cable Tie mount	2
-	'P' Clip for cable Routing	3

### **Recommended Tools**

5.2mm Drill
3.5mm Drill
Power Drill
Center Punch
Hammer
M6 Tap
M4 Tap
Tap Wrench
5mm Hex Key
3mm Hex Key
Screw Drivers
Dial Indicator with base
Adjustable spanner



**Note:**

1. Connect the Scale connectors to their respective connectors on the DRO and tighten the locking screw using a screw driver.
2. The hardware mentioned in the manual are all Metric standard.
3. Refer to the installation manual for the scale and DRO for specifications and additional information.
4. Refer to the calibration procedure in the DRO user manual for the system calibration.

## DRO Installation

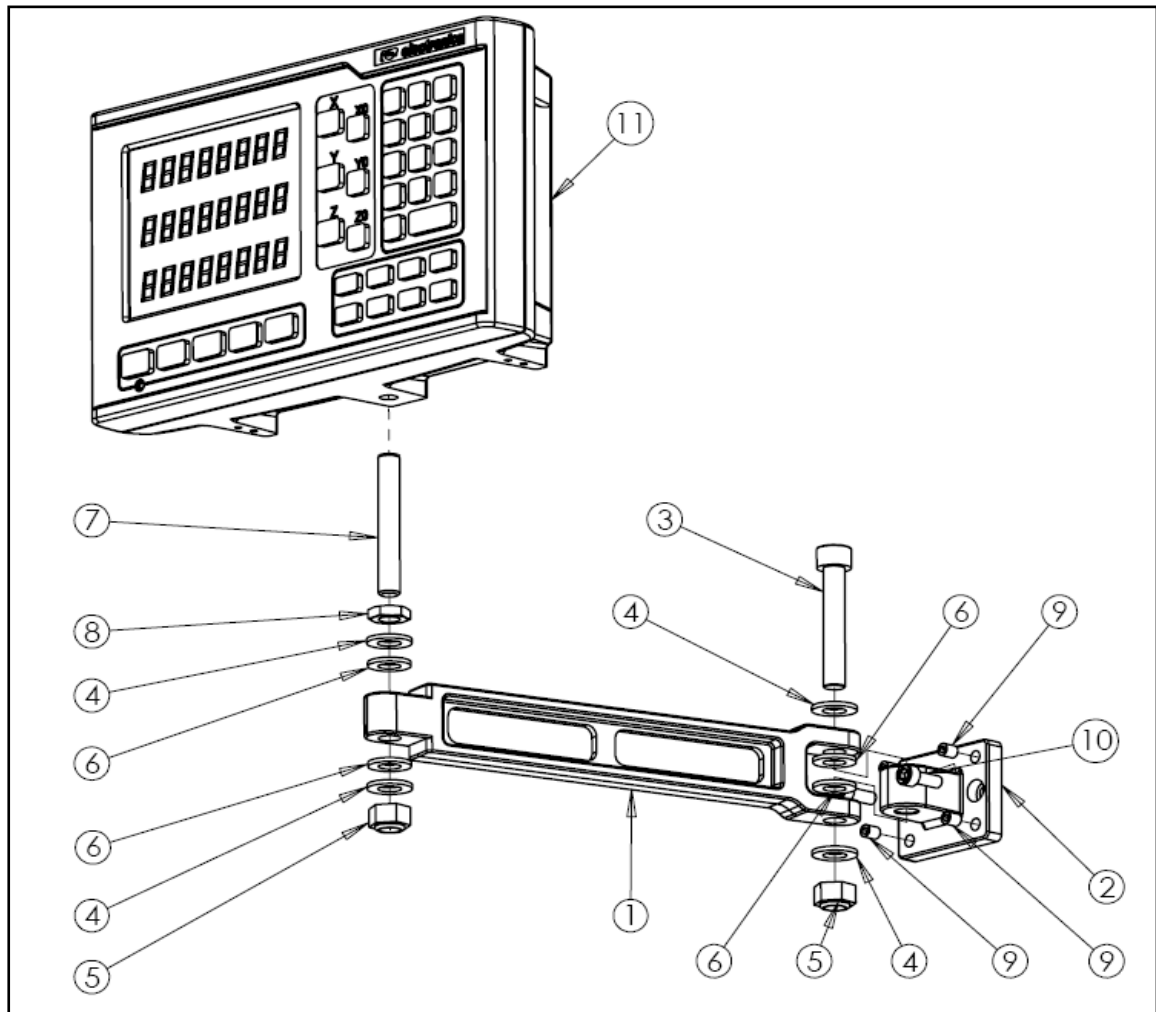


Figure 14

No.	Description	Qty.
1	Fork arm	1
2	Machine mounting Bracket	1
3	M10 X 60mm Allen head Screw	1
4	M10 punched washer	4
5	M10 Nylock nut	2
6	M10 Nylon spacer	4

No.	Description	Qty.
7	M10 X 75mm Stud	1
8	M10 Lock nut	1
9	M6 X 8mm Allen grub screw	4
10	M6 X 16mm Allen head screw	2
11	EL400 Series DRO	1