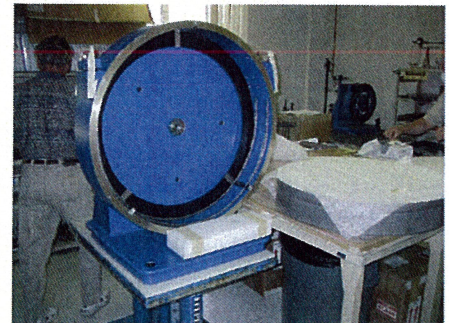


## INSTALLING LARGE MIRRORS INTO THEIR MOUNTS

1. Mirrors should be handled with gloves and mask on to minimize fingerprints and saliva on the optical surface.
2. The mounting is usually done with the surface vertical (i.e.) optical axis horizontal.
3. The mirror will have fiducial marks on the front surface bevel which indicate the mirror's plane of symmetry, and the edge toward the vertex will be marked for correct orientation (i.e.) 3 o'clock or 9 o'clock.
4. The front plate of the mirror mount should be removed. The two sliding blocks which support the mirror edge should be installed in the appropriate slots (they are marked left and right) so that they protrude out of the ends of the slots slightly. The top block is installed after the mirror has been loaded.

**Note:** The pressure ring should be correctly oriented (i.e. Top, Left and Right). Make sure the pressure ring is not stuck in the narrow cross-slots at the back of the large support block slots, but is resting on the cell casting behind the cross-slots.

5. The large height adjustment bolts on the front of the mount should be removed during mirror installation.
6. A large support block should be placed on the mirror mount in front of the mirror cell opening. The height of the block should be adjusted to bring the bottom edge of the mirror to the correct height relative to the sliding support blocks in the mirror cell. The support block should be made of wood, plastic or teflon – (i.e.) not metal.
7. The mirror should be carefully stood up on its edge, on a hydraulic lift table. It is best to use a foam padded surface (or other suitable compliant material) to reduce the chance of edge fractures. The fiducial marks should be approximately level and the vertex should be on the correct side.
8. Use the hydraulic lift table to bring the mirror to the proximity of the support block on the front of the mirror mount. Two 'STRONG' people should then "WALK" the mirror off the table onto the support block and then along the support block into the mirror mount opening.



**Note:** This is the critical stage. One must be careful to get the edge of the mirror off the large support block, onto the two small support blocks in the mirror mount, without cocking the mirror in the mirror opening. The mirror mount cell can be tilted up or down, by means of the large adjusting screw at the back, to get the edge support blocks to line up exactly with the edge of the mirror.

Once the mirror is in the vertical orientation, it can be rolled onto the support block and positioned in the opening of the mirror cell. The mirror cell can now be tipped to bring the support pads to the proper height to slide the mirror into the cell. During all steps of this procedure, great care should be taken to not "load" the front surface of the mirror. That is, do not let the front surface of the mirror bear the weight of the mirror at any time, either by leaning the mirror forward onto the surface or allowing the cell to be oriented such that the front edge of the mirror is angled into the support block. The best way is to have the mirror cell tipped down, so the two support pads in the mirror cell are lower than the edge of the mirror cylinder, slide the mirror part way in (more than half way), and then "raise" the mirror cell by turning the threaded adjuster on the back of the mount so that the two support pads lift the mirror off of the large support block. Once the mirror is clear of the support block, it can be slid the rest of the way into the mirror cell. During this process, care should be taken not to let the "pressure ring" at the back of the mirror fall into the grooves behind the two support pads, as this will prevent the mirror from sliding all the way back in the cell.



9. Once the weight of the mirror is being supported by the edge blocks, the mirror can be slid into the mount until it stops against the pressure ring. Be careful not to clock the mirror in the mount.
10. The mirror can now be "clocked" by means of the finger access openings on the front/side of the mirror mount. Using strong fingers the mirror should be rotated (clocked) until the two edge fiducial marks line up exactly with the front plate mounting screw holes at 3 o'clock and 9 o'clock.. The top block should now be inserted. Put it in as far as possible.
11. The front ring should now be installed such that the "mouse bite" lines up with the reference mirror mount (if so equipped). All the front ring mounting screws should be tightened.
12. The three pressure plate push screws at the back of the mirror should now be employed to push the mirror up against the front ring. The actual pressure employed to hold the mirror against the front ring should be very small (i.e.) finger tight at the most.
13. The last screws to be tightened are the two anti-clocking screws on the top block. They should also be only finger tight.
14. Put the big height adjusting bolts back in the front of the mount, and the mirror is now ready for use.

**TABLE 1**

Approximate Support Block Dimensions for various mirror sizes.

**SUPPORT BLOCKS**

<b><u>MIRROR DIAMETER</u></b>	<b><u>Length</u></b>	<b><u>Width</u></b>	<b><u>Height</u></b>
14"	10"	3"	2 1/2"
16"	10"	3"	1 1/2"
18"	12"	4"	4 1/2"
20"	12"	4"	3 1/2"
22"	12"	4"	2 5/8"
24"	12"	4"	6"
26"	20"	5 1/2"	5 1/4"
28"	20"	5 1/2"	4 1/4"
30"	20"	5 1/2"	3 1/4"