

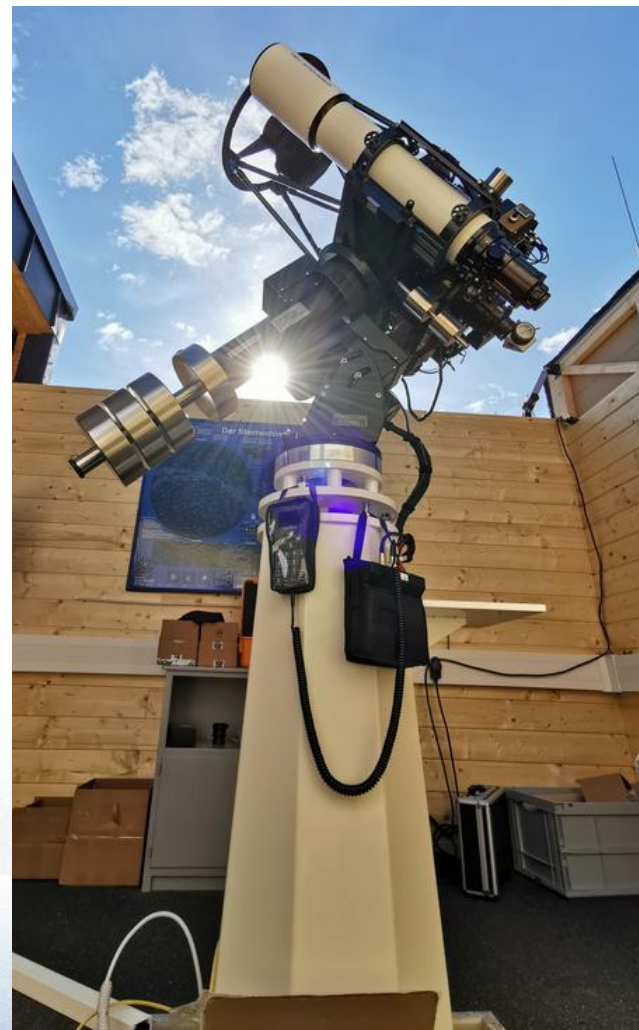


>60 YEARS OF EXPERIENCE



# Installing a BHP or BMP Pillar

by Baader Planetarium



LaserCOM Groundstations



SSA Groundstations



SLR Groundstations



Turnkey-Observatories



Dome Enclosures

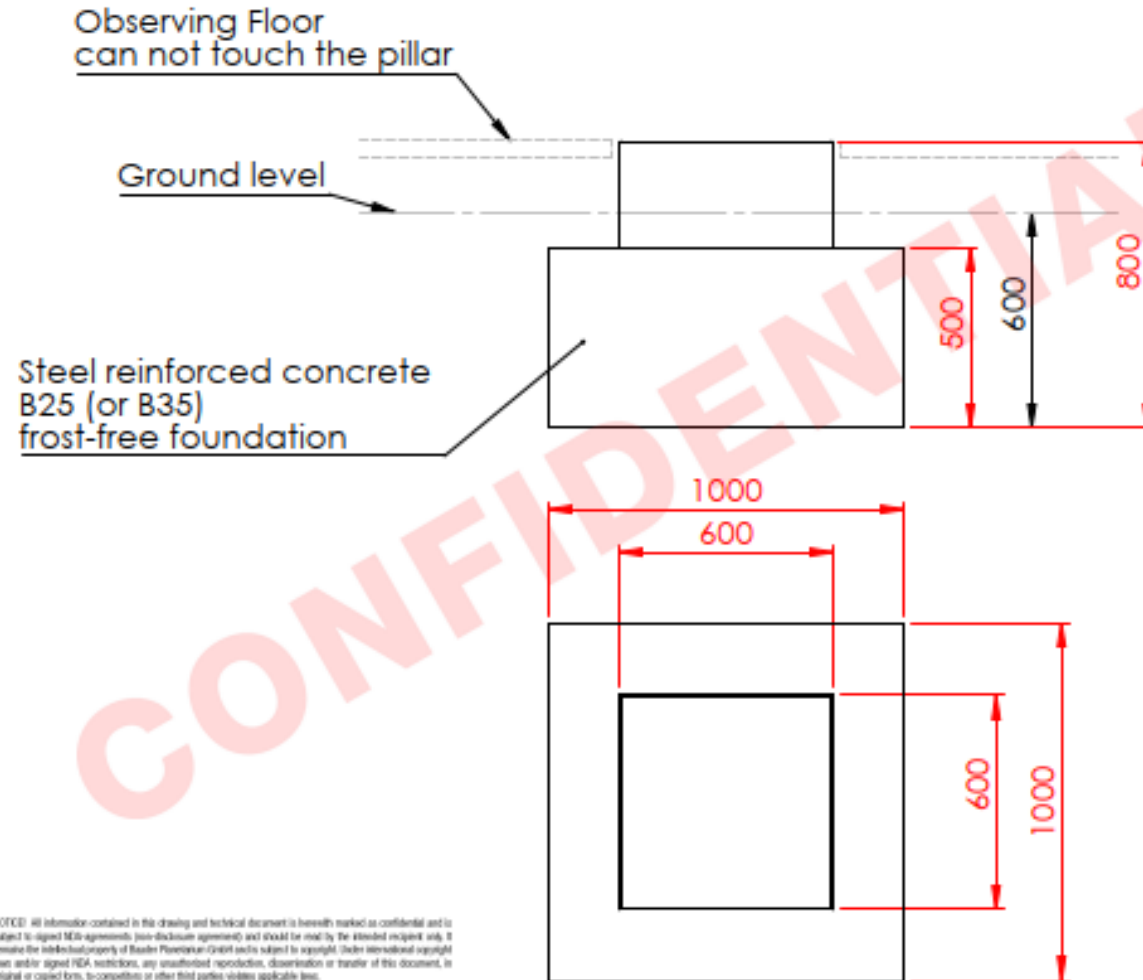


### Additional material needed:

- Impact drill
- Concrete drill D10mm
- Hammer
- 2 Buckets appr. 5-10l
- Fast drying cement or tile glue
- Bricklayer's trowel
- Cleaning towel or paper
- 25 kg bags of quartz sand (depending on your pillar height)
- Precision bubble level

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# Foundation suggestion



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# Mounting the Pillar



1. Placing the pillar in the right orientation onto the ground (North is marked at the top of the pillar and needs to be aligned with the real north by  $\pm 5^\circ$ )
2. Drill holes in the concrete through the holes in the metal of the pillar (make sure holes suit the anchor bolt supplied or used)
3. Add the anchor bolt to the holes, make sure they stick out of the upper pillar surface at minimum 20mm above the steel plate of the pillar. (The read mark on the bolt need to be flush with the concrete, if possible.)
4. Lift the pillar from the place and clean the ground around the anchor bolts properly
5. Add a layer of minimum 5mm fast drying cement or tile glue to the ground and distribute it equally on the surface beneath the steel plate . (Spare the inner 150x150mm section where the pillar has a hole)
6. Immediately place the pillar again on its final position onto the cement. Use the bolts as guidance (make sure not to damage the threads)
7. Lower the pillar onto the cement. Fasten the M10 nuts until the cement got squeezed out on the circumference of the pillar equally and check if possible to level the pillar roughly.
8. Remove the excess of cement and clean the plate with water and towels
9. Let the cement dry.
10. Once the cement has cured, fasten all anchor nuts with the final torque of 45Nm according to its datasheet to ensure the pillar is fully fastened.



# Filling the Pillar with Sand



- Adding dry quartz sand to the pillar is mandatory for optimal operations.
- In order to distribute the mass optimal, you should **not fill the pillar more then 2/3**.

## BHP

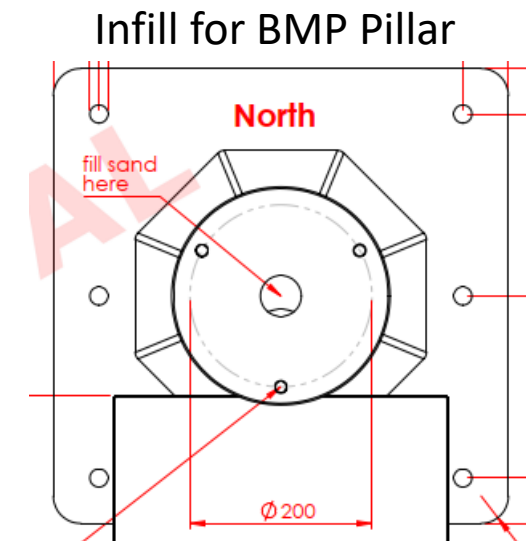
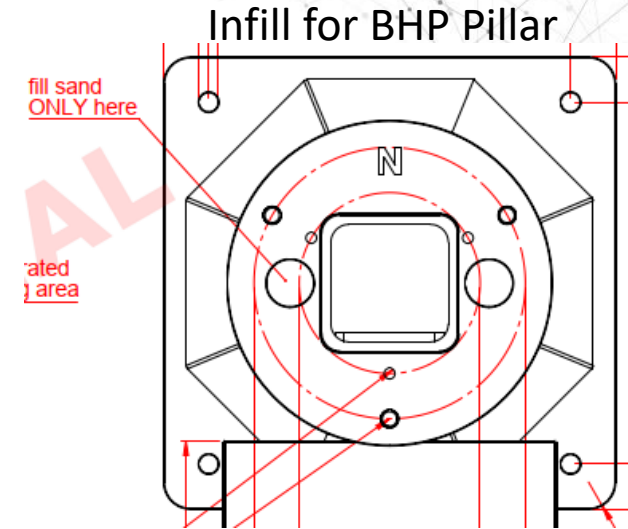
Baader Heavy Pillar

| Pillar height (cm) | Volume (Liters) | 2/3 max. filled |           |
|--------------------|-----------------|-----------------|-----------|
|                    |                 | Sand in kg      | 25kg bags |
| 60                 | 139             | 59              | 2,3       |
| 80                 | 186             | 78              | 3,1       |
| 100                | 233             | 98              | 3,1       |
| 115                | 268             | 113             | 4,5       |
| 125                | 292             | 123             | 4,9       |
| 135                | 315             | 133             | 5,3       |
| 145                | 339             | 143             | 5,7       |
| 155                | 362             | 153             | 6,1       |
| 165                | 386             | 163             | 6,5       |

## BMP

Baader Medium Pillar

| Pillar height (cm) | Volume (Liters) | 2/3 max. filled |           |
|--------------------|-----------------|-----------------|-----------|
|                    |                 | Sand in kg      | 25kg bags |
| –                  | –               | –               | –         |
| 80                 | 55              | 23              | 0,9       |
| 100                | 69              | 29              | 1,2       |
| 115                | 80              | 34              | 1,3       |
| 125                | 87              | 37              | 1,5       |
| 135                | 94              | 40              | 1,6       |
| 145                | 101             | 42              | 1,7       |
| 155                | 107             | 45              | 1,8       |
| 165                | 114             | 48              | 1,9       |



# Installing the levelling flange on a BHP/BMP Pillar



1. Thread one M20/M14 nut plus one washer onto each bolt so that between the washer and the upper plate of the pillar is appr. 30-50mm of space)
2. Thread the M14/M12 set screws into the proper holes in the flange and place the pressure plates between pillar and M14/M12 set screw.
3. Add the flange onto the pillar (North is marked on the flange)
4. Adjust the levelling of the upper plate of the flange by adjustments of the M20/M14 nuts. Make sure your M14/M12 screws don't apply pressure by then)
5. Orient the flange towards north as good as possible to avoid later changes.
6. Add another set of washers and M20/M14 nuts to the thread and tighten them.
7. Only then apply pressure with the M14/M12 screw for fine leveling of the system. Use a precision machining level to adjust the flange uppermost surface to be within 0.2 degree or better.
8. In case of need, repeat the process as long as the whole upper most surface is perfectly fine balanced to ensure the mount can operate to specifications.

