# ‘Seat & Lid’

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Manufactured & installed by
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Fig 1

Fig 1 shows a valve chamber in Mogale City where the 600 x 600mm steel lid was stolen. A 100mm thick concrete lid for such an opening would weigh 100kg, while for a 900mm x 900mm opening a concrete lid would weigh 230 kg! Such lids are too heavy for maintenance crews to remove. The solution in the case of a large manhole therefore is to provide a ‘seat & lid’ combination, as in fig 2, where the seat is large enough to overlap the manhole on all sides, and at the same time provide a ‘seat’ for a smaller and lighter ‘hand lid’, e.g. 500 x 400mm, that *can* be lifted out of the seat manually (see fig 7) with relative ease, allowing human access for such tasks as cleaning, inspections, operating valves & minor maintenance.

The advantage of this arrangement is that the seat may also be removed in the event that a large valve needs replacing, and hence the original manhole size of 600 x 600mm or 900 x 900mm or even 1200 x 1200mm for example can be exposed until the job is done. To remove the seat the brackets that connect the seat to the walls of the valve-chamber (fig 3) are unbolted. (Note that these brackets are required to ensure that no attempt to push/pull the seat off the roof-slab will succeed). With the brackets removed, the seat may be removed by means of attaching slings to the lifting points indicated in fig 2.


Fig 2


Fig 3

The removal of the hand lid is described in the sequence illustrated in fig 4 to fig 7. In fig 4, the magnet at the one end of the ‘opening tool’ is used to lift out the ‘steel plug’ from the ‘access tube’. This opens the way for the opening tool to be inserted into the access tube (see fig 5), until such time as the tool’s pinion engages the rack-levers below (see fig 8 and fig 9). Now upon turning the tool (see fig 6), the rack levers will retract and the lid may be lifted out manually – fig 7. The locked/extended position of the levers is indicated in fig 8, while fig 9 shows their unlocked/retracted positions.


Fig 4


Fig 5


Fig 6

Fig 10 shows another ‘seat & lid’ arrangement used on a series of valve chambers for a City of Tshwane pipeline.

The ‘seat & lid’ is easy to retrofit to an existing valve chamber.

*Note that other lid designs are also available, depending on the application, as well as various concrete doors and vaults for securing pump stations, sub-stations, transformers, borehole installations, stand alone control panels - see www.concretedoorsandvaults.com.*


Fig 7

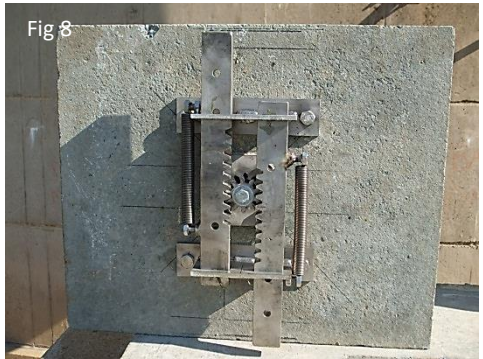
Fig 8


Fig 9


Fig 10