

The Runner is running once again

As some of you may know, the electric supply and motor control system was stolen in July. It is apparent that all electrical supplies must be removable after shooting, so to this end the rebuild of the 3-phase supply and motor control had to be removable, and/or protected from theft.

We did consider using a 3 phase roll up cable the supply the runner but seeing that the major length of cable under the dirt bund was still intact, we decided to join an extension piece onto the existing cable, but to protect the cable and 3-phase plug socket in a strong box, 5mm steel lock box.

We also decided to make the motor removable to protect it from theft, after all it too has a lock of copper in. Pieter Fourie offered to remake the motor mount to allow it to be easily removed and locked away.



The mount is designed such that you place it on the rail, place the coupling rubber (spider) into the coupling and slide the motor into the coupling and then insert the “wing-nuts” (single arm) and tighten the motor in place.

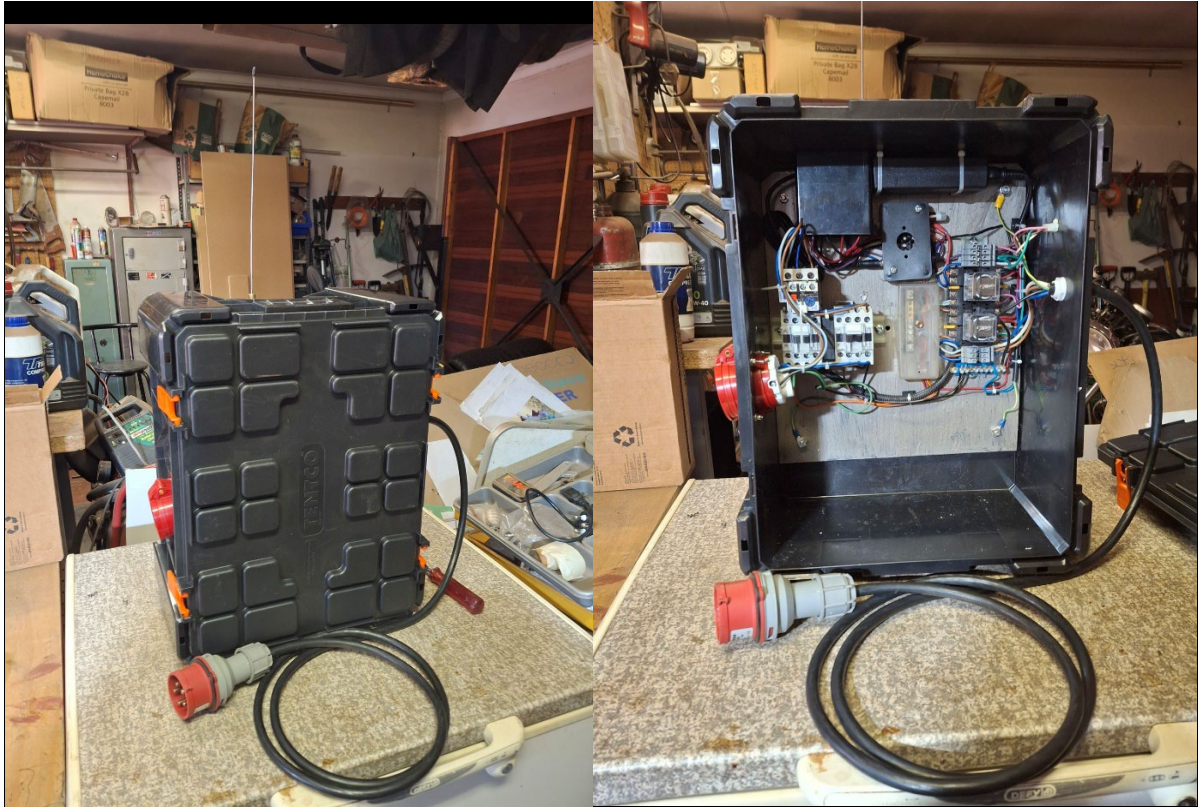
Thanks, Pieter, for this innovative solution so expertly executed.



The whole motor control system had to be rebuilt from scratch but it must be built such that it can be unplugged and stored safely in the clubhouse or containers.

Now the control box plugs into the main 3-phase supply socket, which includes a mechanical interlock which prevents the plug from being energised without the plug properly inserted into the socket and the plug also may not be removed until the socket is switched to the off position. The motor also plugs into the motor control box. The new plug box and cable are embedded in a good deal of concrete to make theft more difficult, and we have assigned angles to stand guard.





Clive and I commissioned the system on Thursday; we experience a few minor issues mainly with loos/bad connections in the control circuitry, but within a few minutes we had the runner moving back and forth.

There are still some mechanical issues that need to be addressed. The carriage needs to be refurbished; there is a spot in the middle of the rail where the carriage bottoms out and gets stuck. If you are in the run, it does run over the spot, but if you stop the carriage at that spot it will not start again.

We also need to install a tensioning pulley just down from the big pulley at the drive end. This will allow for keeping the cable tension constant as well as increasing the cable wrap on the main pulley improving power transmission and decreasing slippage.

We decided to give the runner a full test this past Saturday 30 August. We shot .22 rifle and handgun using the runner. Other than the minor issues of cable slippage, we had a toughly enjoyable shoot. See the Mini 3-gun blog for more details on that.