MT PRODUCT INFORMATION

DOCUMENT	**EPIROC MACHINE SOFTWARE LOAD**
MACHINE/ GROUP	**ALL SIMBA**
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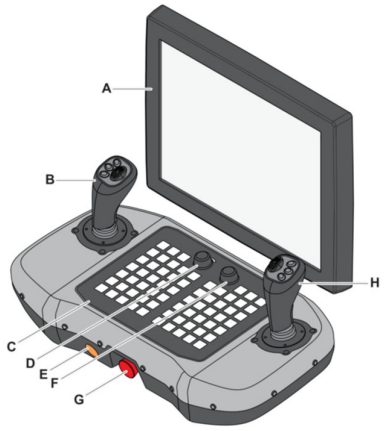

Background

Rig control systems require a software load process to be completed whenever changing a hardware component, such as a module, resolver, screen ets.

There are several methods available, and various problems which can be encountered if the process is not followed correctly

Only load parameters and software if a Module has been replaced
Never interrupt the software load, or App and screen may fail.

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LOAD SOFTWARE PROCEDURE

Enter the service code – select SYSTEMS – Select ADMINISTRATION
(write down electric motor hours, percussion hours and drilled meters. As a precaution)
1.Install your machine access USB and enter the code (UDUD)
2. Insert the USB parameter card and SAVE parameters
3. Shut of system and put in the boot software USB. If boot software is not available use Recover load. See steps 4.1.
4. Turn the system on and wait until you are able to select the option **CODE LOAD,**
(SOME SYSTEMS MAY TAKE 5 MIN OR MORE TO CYCLE THROUGH TO THE CODE LOAD PAGE)
A message then asks if you have saved the Parameters, YES? Only proceed if you have saved the parameters, then Select code load and wait until the system displays 'Reboot the System'.
5. Shut off the system and remove the software USB.
6. Turn the system on and wait until it is running.
7. Enter the service code, fit the Parameter USB and Load parameters.
8. Check that the machine hours and meters were retrieved.
9. Rigs equipped with ABC R/T must reload rigconfig.
Caution- if (F2) is pressed whilst RCS is loading, all current parameters will be lost
4.1 Turn the system on and wait until you are able to select the option to load**,** (SOME SYSTEMS MAY TAKE 5 MIN OR MORE TO CYCLE THROUGH TO THE LOAD PAGE)
SELECT UNCONDITIONAL LOAD
A message then asks if you have saved the Parameters, YES? Select code load and wait until the system displays 'Reboot the System'. Continue to step 5.

4.1 – RECOVERY LOAD

1. Start the RCS, save the parameters
2. Restart the RCS with **ANY** software key in.
3. Remove the key
4. On the code load master page select the recover tab, it will bring up a list of the last 4 software loads with details.
5. Select which software you want to revert to, press enter
6. follow onscreen prompts, when the load is completed, restart the RCS and re load parameters

RCS FAULT FINDING AND GENERAL DIAGNOSTICS

New resolver or IO module is offline after load.

Check for coms to the module - Are the modules downstream from the new module functioning, if so, the CAN is passing through the new module.

Check for 24v, Is the status light flashing on the module, this indicates control power. Is the 24v light active on the module, this indicates main power (i/o only)

Check the address plug is correct and functioning.

After load and retrieve parameters, restart the system and press F1 on start up when the screen shows the F1 option. Check which modules are OK or dead, and the address of each module.

A boot version may be required - Some new RCS5 modules require a boot version loaded prior to software for them to function on RCS4 or 5. Some RCS4 machines require new software to run RCS5 modules.

Contact Epiroc for more information.

Software/screen won't begin the load process.

Once you have inserted the (BV4 self loading) software USB and turned the system on, give the RCS at least 5 minutes to pass its normal boot up process and begin to read the BV4 file, this pause between start and load can vary depending on the system config. Once the system recognises the bv4 file it will progress to load options. If the USB adapter or USB are damaged the RCS won't recognise the new software file. Also check that a BV4 file is present on the software USB and not in a folder or zip file.

Alternately, attempt to retrieve load from the app module

Black screen/fatal error –

This is normally caused by a fault in the CAN1 network or loss of 24v power to a module. Ensure the screen and app module have 24v power/status light flashing.

The screen must be able to communicate with the App module to boot up, a short in the CAN 1 line, or break between the screen and app is the likely cause. Remove all coms cables (not power) from the screen and app apart from the CAN cable connecting the screen to the APP module, fit end plugs to the disconnected CAN1 lines. Restart the system. If the system starts, reintroduce more cables and modules one at a time to locate the fault.

Module coms fault, blown fuse or output/input fault –

Before condemning a module as U/S, first remove all cables from the module apart from coms and power. Restart the system and check for fault. Check status and power lights, check module status in the RCS module screen.

If the fault was an input or output error, connect the faulty function only and restart/retest. A power short or sensor fault/short on an input or output can cause a wide range of coms or output issues which can be mistaken as a module fault. If a module input/output/connection fault is confirmed, scratch U/S into the module face next to the connection and tag the module. Replace the module and reload software.

End plugs - a CAN system should have a 120ohm end plug at each end of the coms line. Often a system will function normal or sporadically when missing one end plug. When both end plugs are missing or damaged, the network will generally fail completely.

The CAN2 network has one end plug inside the APP module, the other is external at the end of the line.

A normal system measures 60 to 70 ohms when tested with the system shut down.

Address plugs - each module requires an address plug to know its location and function. The address plug is a bridge plug connecting various pins depending on which number it is, as per the RCS circuit diagram. The module recognises which pins are bridged on start up to ascertain its address and only processes commands sent to that address. If a module cannot see an address plug it will be offline, press F1 at rcs start up to search modules and addresses found in the system. Ie fig 2 show address 1

Power Supplies – RCS4/5 power supply modules contain 5x24v outputs, however have 6 fuses and 6 LED to indicate fuse condition, fuse and light 6 indicate control power suppy to each output.

Each 24v output supplies 24v+, 24v- and 24v control power. Fig3 shows power input to the i/o

RCS4 /5 CAN and Power connections