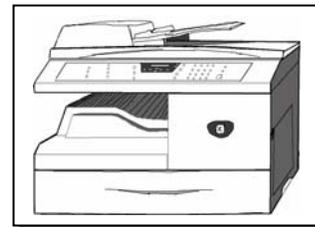The Parts DROP

www.partsdrop.com

Pro412 *style*
Workcentre: WC312, Pro412, M15, M15i, F12
Also: C20, M20, M20i
TECHNICAL INFORMATION

ERROR MESSAGES:

This style of machines use "Error Messages" rather than Status Codes… Most of them are pretty self-explanatory although a few warranted some extra notes:

"Bypass Jam"… Paper failed to feed from the bypass tray.

"Document Jam"… A document has jammed in the ADF.

"Door Open"… Right Side Door interlock is open

"Drum Warning"… 1000 copy warning before Drum Cartridge count expires.

"Duplex Jam"… Jam detected in the middle of the machine during a Duplex job.

"Memory Full"… Overload of memory for outgoing or incoming faxes. You may need to split a large fax into more than one operation.

"No Cartridge"… Toner Cartridge not seated properly or not present

"No. Not Assigned"… The speed dial number tried has no number assigned to it.

"Overheat"… Fuser overheated (it should reset on its own when the fuser cools off)

"Paper Jam 0"… Jam in pick-up unit

"Paper Jam 1"… Jam in exit unit

"Paper Jam 2"… Jam before exit but after pick-up unit

"Replace Drum"… Drum count expired (15,000 copies), you'll need to reset the count from the control panel (read below for details).

USER MODE:

To enter User Mode, you need only press 'Menu'… You'll find a Main Menu which includes "System Data", "System ID", "Date & Time", "System Setup", "Memory Clear", and "Maintenance". Using the 'up' and 'down' arrows, scroll through the Main Menu options till you find the Menu you wish to access. Then press 'Enter' or 'Select'… we have seen two different machines with the button labeled differently (one said 'Enter', the other said 'Select')… either way, the button is just to the right of the up, down, left, and right arrows. Then you can scroll through the available functions within the Menu which you selected, again pressing 'Enter' to get into the chosen function. Generally, you then use the up, down, left, or right arrows to select the setting you want and press 'Enter' again to lock in your choice. A complete listing of the available functions can be found below (after an explanation of the Tech Mode).

The Tech Mode, as you will read below, has the same basic Main Menu with some extra functions added in. The Menu options and the available Functions are listed below along with the "Tech Mode" functions (Tech Mode functions are marked with a 'T').

Important User Mode Functions:

Drum Count Reset: Press 'Menu' and then scroll down to "Maintenance" and press 'Enter' (or 'Select'). Then scroll down to "New Drum" and press 'Enter' again. Finally, press the left arrow to select "1 : Yes" and press 'Enter' again.

Checking Counters:… The easiest way is to press the "Reports" button and scroll down to "System Data", then press 'Enter'. The machine will print up a report which tells Total Page Count, and CRU (Drum) Prints. This also will show you how many times the Drum Cartridge and the Toner Cartridge have been replaced in the machine.

Pro412 style (continued):

TECH MODE:
To Enter Tech Mode: Press the following sequence: 'Menu',#,1,9,3,4… the LCD will display a "T" to the right of the words "READY TO COPY" to indicate that you're in Tech Mode.
To Exit Tech Mode: Either press the same sequence again or unplug and re-plug in the machine.
To use various functions in Tech Mode: Tech Mode actually follows the same Main Menu as the User Mode Menus only with some additional functions available (Read the "User Mode" information above for details of how to use the menus).

USER MODE & TECH MODE Menus:

System Data Menu:

- Paper Size	- Bypass Size	- Message Confirm	- Auto Journal
- Receive Code	- Power Save	- ECM Mode	- RX Reduction
- Discard Size	- Redial Interval	- Redials	- Answer on Rings
- Send from Memory	- Local I.D.	- Clock Mode	

System Data Menu (in Tech Mode only): When in Tech Mode, there is an additional choice in the 'System Data Menu' which is labeled "Tech Mode". If you choose that option by pressing 'Select' and then press 'Select' a second time, you can scroll through the following sub menu:

- Dial Mode	- Modem Speed	- Error Rate	- Set TX Level
- Silence Time			

System ID Menu:
Fax (sets the fax number)
I.D.

Date & Time Menu:
Sets the date and time.

System Setup Menu:

- Receive Mode	- Prefix Dial No.	- Ringer Volume	- Alarm Sound
- Key Sound	- Speaker Control	- Select Language	- Toner Save Mode
- USB Mode	- Fax Duplex	- Image Quality	- Orientation
- Timeout			

Memory Clear Menu:

- System ID	- System Data	- Phonebk / Memory	- Tx-Rx Journal

Memory Clear Menu (in Tech Mode only):
- CLEAR ALL (necessary to do if you replace the Main Board)
Beware… this resets ALL Memory… to the factory defaults… all customer settings and fax information will be lost. If you must do this, first go into "Reports" and print out the customer's phonebook so that it can be re-entered later. From the Tech Mode, select "Memory Clear" from the Main Menu, press "Enter". Select your country and press 'Enter' again…

Pro 412 style - USER MODE & TECH MODE Menus (continued):

Maintenance Menu:
- **Clean Drum**: When copy quality gets dirty, this function helps clean off the drum thoroughly. Place clean white paper on the platen glass before running this. The machine will run a plain sheet of copy paper effectively printing out any excess toner onto the blank paper.
- **New Drum**: As explained earlier, this function is used to reset the Drum Count when a new drum cartridge is installed.
- **Notify Toner**: Sets the machine up to send a fax to a number which you program which notifies the service center that toner is low. If you select 'On', the LCD will prompt you for the name and the number of the contact point (service center).

Maintenance Menu (in Tech Mode only):
- **Switch Test** (console switches): Allows you to test the switches on the control console… each time you press a button, the display will change.
- **Modem Test:** The machine will produce audible tones for you to see if the modem part of the Main Board is working.
- **SRAM Test** If memory is working, the LCD will show "TESTING OK!".
- **DRAM Test** If memory is working normally, the LCD should show <<OK>>.
- **ROM Test** Displays the current ROM level in the machine.
- **Pattern Test:** Runs a Test Pattern from memory (4 different choices).
- **Image Registration**
- **Clear Counts:** From here you can clear the counts of # of Drum Ctgs used, and # of Toner Ctgs. used as well as the Total Prints made. Password is 1934. The current drum count can not be cleared from here (read above about how to reset the drum count).
- **Answer on CNG**
- **Adjust Shading:** Runs a test which shows comparisons on the sheet which prints out, between what the CIS (Contact Image Sensor) sees and what the machine generates… if they are way off, the CIS is probably not functioning right. (make sure platen is closed).
- **Flash Upgrade**

REPORTS:
Press 'Reports' button (found on far left), then scroll down till you see the Report you'd like to print out. Press 'Enter'(or 'Select')… the machine will print from memory for you.
- MSG. Confirm   - Schedule Job   - Phone Book
- System Data   - Transmission   - Reception
- Help List (lays out the 'User Mode' Main Menu and all functions on a print-out for you)

ENGINE TEST MODE (Component Tests):
Press the following sequence : 'Menu, #,1,9,3,1'.
The display will show ENGINE TEST, [Diagnostics]"… press 'Enter' (or 'Select') and the display will show "ENGINE TEST, No>0-5". There are 5 menus to choose from… each offers a scrollable list of tests. If you press '0', the first test available in the '0' menu will be displayed … in this case, Main Motor… if you press the 'up' button you can scroll through the other tests in the menu which include the PTL (Pretransfer lamp), the Fan test and the Fuser test. With the component shown on the display , if you press '1', the component will come on, if you press '2', the component should shut off. (note that the fuser will shut off when it reaches it's running temperature of 180 degrees Celsius even in the test mode). When you're finished with the Engine Test Mode, you'll enter the 'Menu,#,1,9,3,1' sequence again or unplug the machine and then plug it back in.

Pro412 style - ENGINE TEST MODE (continued):

Component Tests:
'0'Menu: Read above about how to use the '0'menu functions.
> Main Motor
> PTL Test (Pre-Transfer Lamp)
> Fan Test
> Fuser Test

'1' Menu: Use the same method as the '0' menu to run these functions.
> LSU (Laser Unit) Motor
> LSU Hsync Test

'2' Menu: For these tests, the machine will report if the Sensor is 'On' or 'Off'… you'll want to read the status of the sensor at rest, then actuate the sensor and test it again to see if a change in state is seen.
> Feed Sensor
> Exit Sensor
> Platen Cover Sensor
> Tray 1 Empty Sensor
> Bypass Paper Present Sensor
> Bin Full Sensor

'3' Menu: Use the same method described for using the '0'menu functions.
> Tray 1 Feed Solenoid
> Bypass Feed Solenoid
> Duplex Feed Solenoid

'4' Menu: MHV Test (Charge High Voltage)
> DevBias Test (Developer Bias)
> THV Test (Transfer High Voltage)

COPY QUALITY TROUBLESHOOTING:
Copy Quality issues are much the same as they are on most digital copiers. It is often helpful to run a test pattern from the Tech Mode… if the copy quality issue is not present on the Test Pattern, then the problem is likely to be related to the optics up top. If the copy quality issue is still present, then you can rule out the optics.
Black Vertical Lines (lead to trail edge) tend to be cleaning blade failures or loss of charge.
Blank or Light Vertical Lines (lead edge to trail edge) are usually dirt on the Laser Unit's lens or contamination of the Transfer Roll…
Ghosting of the Image can be caused by the PTL lamp not working properly.
Nearly Blank Copies can be caused by a bad Drum ground.
Light copies can be a result of a loss of Developer Bias.
Dark copies with lots of background will occur if the charge to the drum is lost.
Recurring Spots on the Copies can be a number of different roller with defects, damage or contamination. Knowing the diameters of each of the rollers in the machine can be helpful…
94.3 mm = Drum   **82.5 mm** = Heat Roller   **69.1 mm** = Pressure Roller
57.8 mm = Transfer Roller   **44.8 mm** = Developer Roller **37.7 mm** = Charge Roller
35.8 mm = Toner Supply Roller

PREVENTIVE MAINTENANCE: Here are the expected life cycles of some of the parts:
ADF Rollers, Feed Rollers, Transfer Rollers, & Fuser Module: 50,000 pages.
Toner Cartridge: 6,000 pages (assuming 5% coverage)
Drum Cartridge: 15,000 pages.