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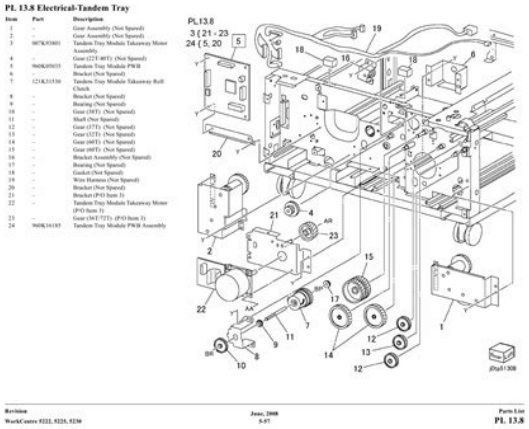
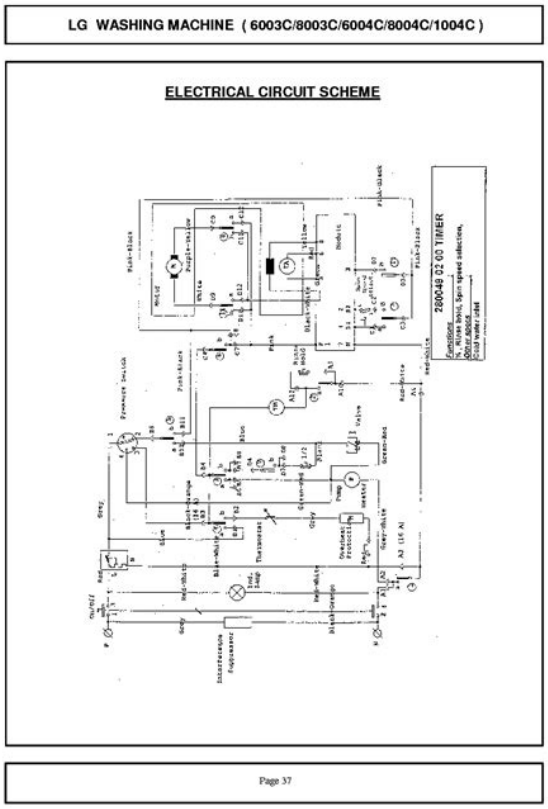


Instead, our system considers things like how recent a review is and if the reviewer bought the item on Amazon. It also analyzes reviews to verify trustworthiness. Please try again later. DonGiovanna 5.0 out of 5 stars I tried it for my Blackberry I let it run down as low as it would go without it shutting off and it charged my Blackberry enough for a whole days use, and then some. It was still able to charge my 80GB iPod. I use my iPod for music AND videos and, with the charge from Pocket Power, I even had enough battery power to watch my videos, which is energyintensive. I have even tried charging my Canon EOS camera battery and it extended my use of the camera. I am buying another one for my trips to Europe not every hotel room there is equipped with as many outlets as we enjoy here and a travelling family can only stay up so long in the evenings vying for outlets to charge their electronics. Its not that heavy or bulky to take. However, despite all my accolades, remember that the sole function of this is as a BACKUP note the emphasis on backup!; you should keep it fully charged when you have the opportunity to because it does take many hours to charge for those times in a pinch when you need it to charge something else that you forgot or didnt have the opportunity to. Hey, lifes a juggling act it would be remiss of me to say that a little 5x3x1 box will end all our electronics charging woes!IME the problem has been with inferior Chinesemade lead acid batteries failing. Oh, BTW, this one does work well.I will try from time to time. I figured this would be just what I need. It charged up well and worked the first time I used it but doesnt seem to work now. There is a button you depress to turn it on after you plug in your device. This product is discontinued, it was a risk to purchase.Sent it back.Now it is dead too. No warranty because manufacture Black and Decker wont cover it. Total waste of money. Dual pumps and controls offer redundancy.http://eurolift.com/userfiles/flight-design-ct-maintenance-manual.xml

Engineered to meet customer requirements Please try again. Privacy Policy. Website Design by Engage. Discover everything Scribd has to offer, including books and audiobooks from major publishers. Start Free Trial Cancel anytime. Report this Document Download Now Save Save CP120B160B For Later 0 ratings 0% found this document useful 0 votes 49 views 2 pages CP120B160B Uploaded by Carlos Oliva Minilo Description Full description Save Save CP120B160B For Later 0% 0% found this document useful, Mark this document as useful 0% 0% found this document not useful, Mark this document as not useful Embed Share Print Download Now Jump to Page You are on page 1 of 2 Search inside document Browse Books Site Directory Site Language English Change Language English Change Language. The system is capable of collecting 2D xradiographs on whole round and section half cores. Theory of Operation Users should review the Xray Imager.pptx powerpoint from LeVay, 2019 for background on xray radiograph acquisition before operating the system. Hardware The IODP xray system is composed of a 120 kV, 1 mA constant potential xray source and a detector unit. The source is a Teledyne ICM CP120B portable xray generator with a 0.8 by 0.5 mm focal spot. The beam angle is 50 by 50 degrees generating a directional cone onto the detector, which is distanced 65 cm from the source. The detector is a GoScan 1510 HR unit composed of an array of CMOS sensors with an active area of 102 by 153 mm and a resolution of 99 microns. Manual Configuration You must manually configure Teledyne ICM CP120B prior to closing the shielding. This needs to be done whenever you replace the source. From the control panel on the source do Insert Key and turn on power. Wait for system to initialize. The Source Shield houses the xray source and detector. It is constructed with 6mm of lead with an internal baffle on the unload side of the box. The exterior corners are covered with 6mm lead strips and lead vinyl mm covering the sides.

The GRAMS shield section is constructed with 2mm of lead with an internal baffle on the load side. The starboard load end of the track and the port unload end of the track are shielded by lead vinyl mm Figure 2 . Take care when handling the load and unload doors, they are heavy. On the load side, we have counterweighted the door to hold it open and to take some of the weight. On the unload door we have mounted magnets to hold it open. Keep in mind that the vinyl lead shielding is held in place with Velcro and can be dislodge compromising the shielding. Figure 1 Xray Image Logger Shielding Figure 2 Xray Image Logger from starboard left and port right. Safety Systems The xray imager has multiple safety systems in place to ensure a user does not operate the system in an unsafe configuration. Never attempt to operate the xray source without the proper shielding in place. The safety systems include 1 Visual Light Indications 2 Door Switches 3 Active Area Monitor 4 Emergency Stop Switch These switches and monitors are wired into one fail safe circuit. Failsafe Circuit In order to generate xrays, a series of safety switches must be closed to complete the circuit

between the CP160’s ground pin 2 and xray trigger pin 4 of the 6pin external connector. All switches must be closed before the command from the software to generate xrays will be performed. Figure 3 Fail safe circuit diagram. Visual Indicators A tricolor tower light mounted on the lead shielded xray box acts as a visual indicator of the xray source status. Amber light is lit when the xray source is connected to power. Green light is lit when the load and unload doors are closed, FPD access door is closed, and the emergency shut off switch is not engaged. amber must be lit before the green is illuminated Red light is lit when xrays are generated. The light will blink quickly as it powers on and then slowly once the kV and mA are stable.



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When both the amber and green lights are lit, the system is powered and ready to generate xrays. When all three lights are lit, Xrays are on. Figure 4 Tricolor tower light mounted on the lead shielded xray box. This light acts as a visual indicator of the xray source status Door Switches Mechanical door switches have been installed on both the port and starboard doors, as well as on the small hatch in the lead lined box Figure 5 . If any of these switches are open, the communications with the source will be interrupted and the source will not be able to generate xrays. Figure 5 Safety switch inside the port door left, starboard door middle, and the hatch where the third mechanical switch is located right. Active Area Monitor The purpose of the Active Area Monitor is to provide an independent means of insuring the system’s overall safety. The monitor consist of two scintillators mounted at either end of the track so that they view the shielding except for the top and bottom Figure 6 . Two alarms levels can be set. The lowlevel alarm will sound a warning beep while the highlevel will trigger the strobe light and shut down the xrays as part of the failsafe circuit. The alarm levels are set as follows Lowlevel 1kcps 1000cps above background Highlevel 1.2kcps 1200cps above background Background radiation levels will change with latitude. The goal is to set the alarms high enough so that it does not go off during normal operations with shielding in place; but low enough to immediately sound if the shielding is compromised. The JR

XRay Imaging System Safety Inspection and Radiation Survey Forms provides the procedures for setting and testing the area monitor alarm level. Figure 6 Active area monitor display left, high level alarm warning light and port side scintillator middle, starboard scintillator right. Emergency Stop Switch An emergency stop switch is located over the starboard side shielding Figure 7 .

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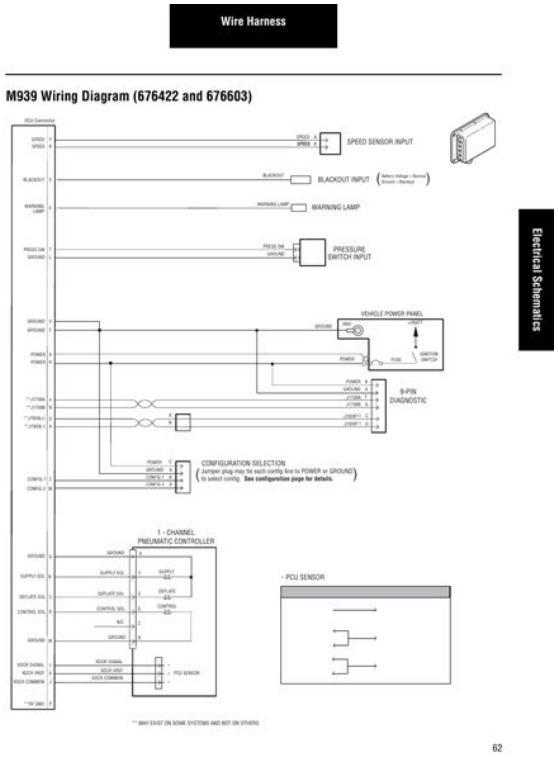

When activated, this switch will interrupt the power to the source and stop the source from generating xrays as part of the fail safe circuit. Figure 7Xray logger Emergency Shut Off Switch. Thermal Management With continuous running, the CP160 can overheat. The user may abort at any time by clicking the ABORT button. Figure 8 Cool Down Wait window. This window will appear if the IMS software detects an xray source temperature of 45 degrees C or higher. Launching the IMS Xray Imager application The IMS XMSL software can be launched from the Windows Start menu or from the desktop icon Figure 9 . Figure 9 XMSL Desktop Icon At launch, the program begins the following initialization process Testing instrument communications Homing the pusher arm of the motion control system Verifying Dark and Light Calibration images. If the calibration images are not found, the program will ask the user to run a calibration. After successful initialization, the main IMSXMSL window will appear Figure 10 . Figure 10 XMSL IMS Main Window A Quick Introduction to the IMS Program Structure IMS is a modular program. Individual modules are as follows INST plugin code for each of the instruments MOTION plugin code for the motion control system DAQ Engine code that organizes INST and MOTION plugins into a track system The XMSL system, specifically, is built with one INST module XMSL, one MOTION module, and one DAQ Engine module. The IMS Main User Interface IMSUI calls these modules, instructs them to initialize, and provides a user interface to their functionality. Each module manages a configuration file that opens the IMS program at the same state it was when previously closed and provides utilities for the user to edit or modify the configuration data and calibration routines. Figure 11 IMS Control Panel Drop down Menus Initial Instrument Setup XMSL Configuration Configuration values should be set during initial setup and configuration by the technician or scientists.

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There should be no need to change these values unless the configuration file is corrupted or the hardware setup is changed. These settings are related to the detector only. Ensure the values in the window are set as shown in Figure 12. The instrument Xoffset is measured from the home switch to the center pixel of the detector Figure 13 . This value must be updated should the detector position change or if the home switch on the track is modified. 2 Click ACCEPT to save the changes and write them to the configuration file. Click Cancel to revert to previous values. Figure 12 XMSL Parameters Window Figure 13 Position of detector center from the tracks home switch XMSL DAQ Parameters Prior to collecting xradiographs on whole rounds or section halves in the XMSL, the user must set the imaging parameters voltage, exposure, current. For explanation on how to test exposure parameters prior to imaging, see the Image Utility section. For explanation on how to test image processing parameters, see the Image Process Utility section. This window allows the user to view and adjust the XMSL DAQ parameters. Interval Number of centimeters the core will move between each image. This value is hardcoded in the IMS software and cannot be changed in this window. This interval guarantees image overlap, but maximizes system efficiency. Width This is the fixed length of the image produced. This value is dependent on the detector and hardware setup. Each image is 15 cm in length, but due to projection, we see less than 15 cm of the core section in the image. For example, with 12 cm of motion, we are seeing 12 cm of core in a 15 cm image. Stack The number of xradiographs to take at each position. These images are stacked and averaged to produce the final raw image. Twenty images is the standard as stacking more images does not appear to improve the image quality further. See Image Stacking section for more explanation. Exposure Time The duration of each exposure in milliseconds.

Maximum voltage for the source is 120 kV. Lowering the voltage while maintaining the number of xrays penetrating the core longer exposure or higher current will increase image contrast.Maximum current for the source is 1 mA. Increasing the current will increase contrast if voltage is kept constant. Each of the stacked images is taken with the exposure time, kV, and mA set in this window. To estimate the length of time it takes for each image at specific settings, multiply the exposure time by the number of stacked images. Figure 14 XMSL Measurement Editor Window Starting Measurements Prior to imaging cores, especially at the start of an expedition, the user must Perform a detector calibration. Detector Calibration Section Test the exposure parameters in the imaging utility Imaging Utility Section Set the exposure parameters in the Measurement Editor

XMSL DAQ Parameters section Adjust the automatic image processing settings. Image Processing Section Note Recalibrate the detector if the detector grid pattern becomes visible in the images. Once these steps are complete, the user may begin imagin. Sample Information Window Click START on the IMS panel Figure 10 to open the sample information window Figures 15 . This is where the user enters the sample ID for a section and initiates the measurement. There are three tabs available on the sample information screen. Each provides a different method for entering the sample ID information. Sample Entry Tabs Scanner Scan the IODP barcode to enter the sample's Text ID and Label ID values. LIMS Select expedition, site, hole, core, and section values from a series of list boxes that are populated with data from the LIMS database. Manual Manually enter the sample's Text ID and Label ID values and a length. The name fields will accept any name, so the user must be careful to enter the name properly. If the name is incorrect a file will be created, but it may not upload properly.

User the section ID for whole round images and the section half ID for section half images. Figure 15 Sample Information Window Scanner entry left, LIMS entry middle, and Manual Entry right. Taking Xradiographs Select START on the IMS panel Figure 11 to open the sample information window Figure 15 . Enter the Sample ID Information Scanner mode Place cursor in the scan box; scan the IODP barcode from the whole round or the section half label from the end cap. LIMS mode Select a section using the hierarchy columns. Manual entry mode Type in the sample label ID i.e., 362U1480A1H1A and LIMS Text ID i.e., SHLF7851761 and length of section. Use the whole round id when imaging whole rounds. Any entry will be accepted, but that does not guarantee the data will upload. The green and yellow light on top of the lead box should be illuminated 5. Select MEASURE The motion control pusher will move until the section breaks the top of core switch beam. The xray source will ramp up and a window with the xray source status will appear Figure 16 . Once the mA and kV are stable, the window will close and image acquisition will begin. The user may abort at any time by clicking the Abort button. Once the top of core is located, the pusher will automatically move the section to the proper location over the detector and begin imaging. The user interface will have a display as shown in Figure 17. The system will automatically take images along the section until the actuator reaches its limit switch, at which time it will return to the home position and the source will ramp down. Figure 16 Xray Status Window left. As the source ramps up, the measured values will update. Xray system not ready window right. If the source is not ready to ramp up this window will be displayed. Normally, this indicates that a door is open. If the doors are not open, look at the values in the status displays and refer to the vendor's manual to determine the issue.

As soon as the issue is cleared, this window will close and the xray start process will resume. Figure 17 IMS Display During Imaging. Main features of this window include Abort button, raw image display, imaging parameters display, Xray source temperature graph, histogram of pixel value and displays of the pixel values along the length and width of the image. 6. The Sample ID information window will reappear on the screen Figure 18 . Place the Pusher section onto the track. The pusher should be an empty liner with tape along the top and bottom edges, not the water core from the WRMSL track. Close the load end door. Select Pusher end sequence in the Sample ID window. The source will ramp back up and the motion control system will continue to push the section through the xray system. These are not the primary processed images, but are available for quick image evaluation. For more information on IMS image processing, see the Automatic Image Processing section. XRays OFF Figure 19 will be displayed when the Xray Off command is sent to the CP120. The window will be displayed until the kV has been confirmed to be at zero. You will also see this window flash on during XRay START when the CP120 fails to respond to the start command. The Xray off will reset communications with the CP160 and bring it to a known state which will clear any

communication issue. Figure 19 Xray Off Status Window NOTE During imaging, the user can use the software abort button to end the imaging process and ramp down the source. The abort button is available when the xray source is ramping up and during the imaging process. If the abort button is used, a dialog window will appear Figure 20 . Once pressed, imaging will end and the user will need to start imaging the section from the beginning. Dialog window options are Return to Load Position Actuator returns to the home position. User will need to manually remove core Stop and Do Nothing Actuator will remain in place.

Use this option if the section had jammed in the XMSL or is there is a hardware issue. Figure 20 Dialog when after user selects abort during imaging. The xray source will automatically ramp down once abort is selected. The section in the imager will need to be restarted from the beginning once abort is selected. Detector Calibration Detector calibration should be done at the beginning of the expedition and whenever the exposure settings are changed significantly integration time especially. If the detector grid becomes visible in any images, calibrate the detector and reimage the core. The flat panel detector FPD calibration utility window will open Figure 21 . The purpose of this utility is to collect images that will be used to perform offset and gain corrections for all images acquired with the FPD. The calibration process requires two images Dark Offset and White Gain. Figure 21 Detector Calibration user interface window. From this utility a user may take necessary calibration images and test the corrections prior to applying them to images. The offset and gain correction are applied to the raw image according to this formula Calibrating the Detector Dark Image Calibration The DARK image is normally made with the xrays off to capture the electrical background noise of the detector. Material used in the detector's construction causes a grid to imprint on the images Figure 22 ; therefore, it is necessary to take the dark image with the xrays on at minimal level to capture the imprint. Figure 22 Example of detector grid appearing in image. If this is noted in an image, immediately stop imaging and recalibrate the detector. To capture the DARK image Select the tab labeled DARK1 Figure 21 . The default exposure values are automatically displayed and are the recommend values, but you may set other values. Be aware that the dark saturation image intensity saturation must be 7% or lower and you need to capture at least 100 images for stacking.

Default values are Image stack 100, kV 80, mA 0.7, Integration Time 1 ms Click the Take DARK Image button. The XRay Image Acquisition window will open Figure 23 . During acquisition, the image window appears black but you will see values in the histogram and in the image line profile. Once acquisition is completed, you will be return the FPD Calibration Utility window. 3. Check the saturation value and confirm that is less than 7% Figure 21 . If not, adjust the exposure values and repeat. The Dark Max value is used during normal acquisition to warn the user that additional exposure is needed. Ignoring this warning means that image acquired will have some data clipped at zero. Figure 23Dark Image Acquisition Window White Image Calibration The WHITE image is used for the gain correction after the offset correction with the dark image is completed. To capture the WHITE image Select the tab labeled WHITE2 Figure 24 . Just be aware that the maximum intensity cannot exceed 99%. Default values are Image stack 20, kV 112, mA 1.0, Integration Time 120 ms Click the Take WHITE Image button. The XRay Image Acquisition window will open Figure 25 . During acquisition, the image window appears white shading to darker grey on the left and right edges. Once acquisition is completed, you will be return to the FPD Calibration Utility window. 3. Check the saturation value and confirm that it is in the target range of 9498%. If not, adjust the exposure values and repeat Figure 24 . Figure 24 White Image tab in the detector calibration window Figure 25 White Image Acquisition Window Validating the Calibration To confirm that the offset and gain calibration have been done correctly, follow this procedure. Do they appear flat grey. Are the images highly eroded.Then return to the Calibration Utility. 7.

If the Calibration is determined to be acceptable, select Save Calibration Images Figure 26 Test Image Tab after selecting take test image Figure 27 Corrected Image Tab Figure 28 Difference

Image Tab Figure 29 Processed Image Tab Saving the Calibration Images When you have completed acquiring both images and validating the calibration, click Save Calibration Images. These images will be automatically applied to the images. Or select Cancel and revert to the previous calibration images. When the IMS program is initiated, these images are opened and the data is extracted. If these files are missing you will be notified and will have to complete the calibration process before any images can be acquired. Other Utility Features Saving individual images Images shown in the tabs can be saved as TIF image files by selecting Save Image. A file dialog box will open and the user is promted to select the location and name of the file. This does not update the calibration information. Source temperature A graphical temperature display is provided to monitor the temperature of the Xrays source. Comments During and after acquisition of a new DARK image, the DARK image display will be black. But when the utility first opens and displays the previous image, it appears brighter. We have confirmed that the data in the image has not been altered from its initial acquisition and have no explanation as to why the display has been lightened. Never alter the DARK and WHITE image with other programs. The grid pattern is not fully eliminated from the image but is suppressed by the DARK image subtraction. Under certain conditions and processing parameters it may still be detected in the images. This utility is useful for determining the proper voltage, current, and integration exposure time for imaging cores. User can also review the processed images in this utility. Adjust the integration time, number of images to stack, kV, and mA on the right side of the window Figure 30 .

REMEMBER Lower voltage with a longer exposure time may increase image contrast. High voltage does not equal better images. Select Take TEST Image Wait for the xray source to ramp up and collect xradiographs Review the test images Repeat process until image is acceptable Note the settings. Figure 30 General Image Utility User Interface Window. This utility is used test exposure settings before imaging a section. The histogram upper left will be displayed when the ROI box tool is used and the line profile lower left is displayed when the ROI line tool is used. Image Processing The raw.tif IMS images are automatically saved during image collection. IODP provides two methods for processing the raw images. Automatic Image Processing A program written in LabVIEW. Processing is automatically completed by the software after images are collected. User is able to make adjustments using the Image Process Utility under the Instruments menu. The processed image is given a scale bar with the correct offset and the core identification information is overlaid at the top of each image. Manual Image Processing A program written in “GO”. User must initiate and control the image processing settings. Scale bar provided is 1 cm black and white lines along the left side of the image. A stitching guide is also provided on the processed image. Image Processing Utility Automatic Image Processing This utility has the following purpose It allows the user to experiment with the processing parameters to determine the correct setting for the desired processed results. The values can then be saved and use for all subsequent inline image processing. The utility can be used to mass reprocess images. The user interface will open Figure 31 . Figure 31 Image Processing User Interface Window. There screen is divided into 4 main sections. The user may test image processing settings and apply them to any previously collected images or subsequent images.

Note this is the display after an image has been selected. If no raw image has been selected or acquired, this window will by blank. User Interface Layout The user interface window is divided into four areas. On the left is a window that will contain the raw source image for the process testing. This can be load from an existing raw image click Open Raw Image or a new acquired image using the xray source click Acquire Image . The raw image used should be an image taken with the planned exposure parameters. Figure 31 On the righthand side is a tab control that will display either the masked image or the final processed image. All three image displays will allow you to draw a profile line across the image using the ROI image tools. Figure 32 and 33 Any line drawn on one image display will be shown on the others but the content of line profile will only be from the

image where the line was drawn. In the center top of the user interface window is a tab control which allows the user to view the line profile, histogram of the difference image, or the expanded histogram of the processed image. In the bottom center of the user interface window are the controls for image processing. The software provides for two process variable groups. The APC parameters are applied to core types “H” and “F” and ROTARY is applied to all other core types. The Light%, Dark%, Anchor Type and Anchor At controls apply to the histogram expansion and will apply to the images immediately as their values are changed. The other control values apply to the smoothing process and require that you click either Process APC or Process ROTARY buttons to apply the changes to the processed image displayed. How the process parameters work will be discussed later in this document. If you wish to safe a copy of either source or processed image, there is a Save Image button just above the display you can click.