

EUREKA®

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TRUE SPEED BUCKY

Installation
Operation
and Maintenance

00-02-1529
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TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION.....	1-1
1.1	Operation.....	1-3
1.2	Model Configuraions.....	1-3
1.3	Specifications	1-4
2.0	INSTALLATION AND SET UP.....	2-1
2.1	Unpacking.....	2-2
2.2	Equipment Supplied.....	2-2
2.3	Interconnect Wiring.....	2-3
2.4	Cassette Size Sensing.....	2-4
2.5	Switch Settings.....	2-5
2.6	Initiation of Exposure Switch.....	2-5
2.7	Grid Stroke Length.....	2-6
2.8	Setting Grid Travel Speed.....	2-7
2.9	Tray Track Position.....	2-7
2.10	Conversion Between Left-Hand and Right-Hand Configurations.....	2-8
2.11	Radiographic Grid.....	2-11
3.0	MAINTENANCE, CALIBRATION, AND SERVICE.....	3-1
3.1	Lubrication.....	3-2
3.2	Cleaning.....	3-2
3.3	Removal and Installation of the Grid.....	3-2
3.4	Removal and Installation of the Grid Carriage.....	3-2
3.5	Calibration of the Optical Encoder.....	3-3
3.6	Removal and Installation of the Drive Mechanism.....	3-5
3.7	Removal and Installation of the Electronic Printed Circuit Board.....	3-7
3.8	Mechanical Alignment for Bucky Flag	3-8
4.0	DESCRIPTION OF OPERATION.....	4-1
4.1	General Description.....	4-2
4.2	Power Supply.....	4-2
4.3	Optical Sensors.....	4-2
4.4	Start Signal.....	4-2
4.5	Exposure to Hold Relay.....	4-2
4.6	Motion System.....	4-3
5.0	RENEWAL PARTS LIST.....	5-1
5.0	MECHANICAL REPAIR OF THE GRID FRAME	5-3
6.0	SCHEMATICS, DIAGRAMS, AND BOM.....	6-1

LIST OF ILLUSTRATIONS

FIGURE	Title	PAGE
2-1	Component Identification.....	2-2
2-2	Terminal Block Wiring.....	2-3
2-3	Size Sense Cassette Tray Terminal Connections.....	2-4
2-4	SW2 Dip Switch Settings.....	2-5
2-5	JP4 – Set to Select Super Speed.....	2-7
2-6	PBL Bracket.....	2-10
2-7	PBL Bracket Terminal Strip Warning.....	2-10
3-1	Optical Encoder and Sensors.....	3-3
3-2	Calibration of Grid Center of Oscillation.....	3-4
3-3	Electro-Mechanical Motion System.....	3-6
3-4	Bucky	3-8
3-5	Motor Subassembly	3-9

LIST OF TABLES

TABLE	Title	PAGE
2-1	Switch Setting for Exposure Start Delay.....	2-6
2-2	Setting Stroke Length for Super Speed.....	2-6
2-3	Setting Stroke Length for Par Speed	2-7

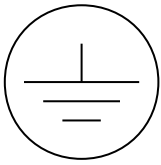
SECTION 1.0

INTRODUCTION

This product has been tested by Underwriter's Laboratories in conformance with standards set forth by UL 2601-1 and CAN/CSA C22.2 No. 601.1-M90. It has been found to comply with these standards, and therefore, bears the above "Recognized Component" symbol for UL and UL-C.

UL File No. E181750

SYMBOLS



Protective Earth Ground (IEC Publication No. 417-5019)



Alternating Current (IEC Publication No. 417-5032)



Class I, Type B Equipment (IEC Publication No. 878-02-02)

1.1 OPERATION

The True Speed Bucky is designed to provide improved radiographic image quality by utilizing a radiographic grid to reduce the effects of scatter radiation. The True Speed Bucky employs state of the art brushless DC motor technology to oscillate a radiographic grid at high speed over a pre-determined stroke length.

The Bucky has two modes of operation:

AUTOMATIC MODE

The automatic mode is utilized by applying power to the bucky with no additional signals. The bucky begins oscillating and remains in motion until power is removed or for a maximum time limit of approximately 15 seconds.

ACTIVATED MODE

The bucky is commanded to operate by a system generated start signal. After activation, the bucky begins the motion cycle. After an initial start up delay, the bucky provides a signal to the system enabling X-Ray exposure to begin.

1.2 MODEL CONFIGURATIONS

The True Speed Bucky comes in the following 4 different models:

Model KLB10-08010, Non PBL, Non-AEC
Model KLB10-08011, Non PBL, AEC
Model KLB10-08012, PBL, AEC, Left Hand Load
Model KLB10-08013, PBL, AEC, Right Hand Load

All models are compatible with 120 or 230 VAC by setting a switch to the proper applied voltage.

Non PBL models do not have a cassette size sense tray mounting bracket with electrical connector. PBL models do have this cassette size sense tray interface.

All models having the Tray Tracks Lowered indication also come with the optional ion chamber mounting brackets assembled into the Bucky above the tray tracks.

1.3 EUROPEAN REPRESENTATIVE

Progeny, Inc. has contracted with the following company to act as a European Authorized Representative relative to the requirements of EN46001 and the Medical Device Directive:

CE Partner 4U
Esdoornlaan 13
3951DB Maarn
The Netherlands
Phone: +31.343.442.524
Fax: +31.343.442.162

European customers should direct any customer complaints or requests for product technical files to CE Partner 4U.

1.4 SPECIFICATIONS

Mechanical

Width:	22.50 ± 0.02 inches
Depth:	23.00 ± 0.02 inches
Height:	2.70 ± 0.02 inches
Weight:	Without Grid - 26.5 lbs. With Grid - 31.5 lbs.

Operating Environment

Line Voltage: 115 VAC ± 10% 50/60 Hz $\frac{3}{4}$ Amp
220-240 VAC ± 10% 50/60 Hz $\frac{1}{4}$ Amp

Relative Humidity: 0-80%

Temperature Range: 32 to 104 deg. F (0 to 40 deg. C)

Operating Performance

Maximum Operating Duty Cycle:

5 seconds of operation per minute

Exposure Start Position:

In fast response mode, bucky can be set to remove exposure hold signal within a maximum of 25 milliseconds of receiving the exposure start signal.

In position mode, exposure hold can be removed anywhere in the first half of the grid stroke length, beginning exposure with grid in the X-Ray centerline focus point.

Grid Travel Speed:

Par Speed: 4.0 inches per second ± 10%
Super Speed: 7.4 inches per second ± 10%

Grid Stroke Length:

Selectable from 0.8 inch to 1.1 inch ± 0.08 inch.

SECTION 2.0

INSTALLATION AND SETUP

2.1 UNPACKING

Carefully unpack the equipment and check for damage incurred during shipment. Any damage should be referred to the agency that delivered the product. All packing material should be retained for reuse in the event that the system needs to be returned to the factory.

2.2 EQUIPMENT SUPPLIED

Refer To Figure 2-1 for component identification.

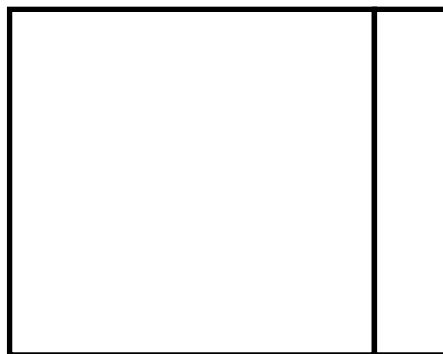
- True Speed Bucky without Grid
- Optional rear panel bracket with cassette size sense tray connector.
- Packet containing instruction manual.
- Bag containing Stop tabs.



Optional Cassette Size
Sense Connector Bracket



Manual



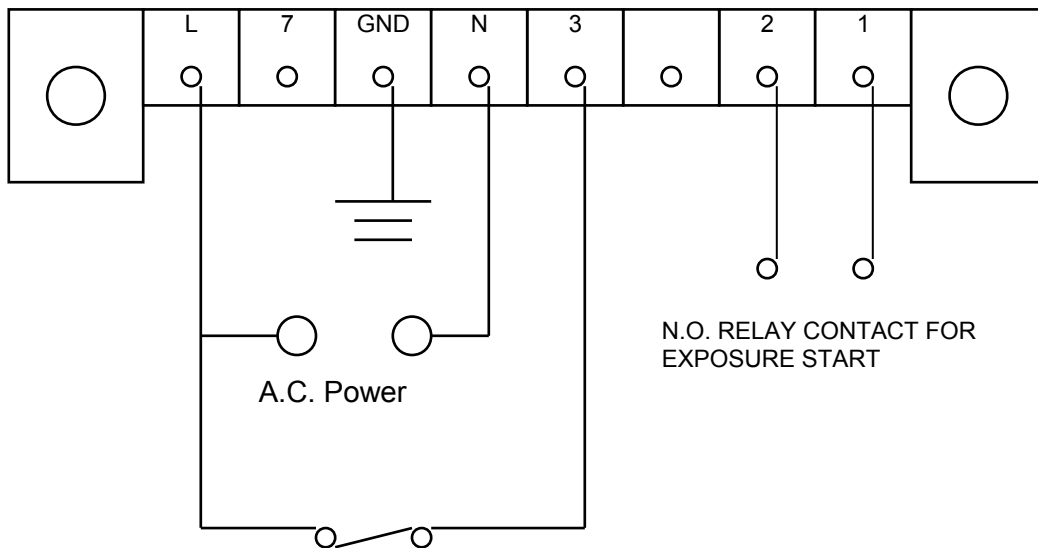
Bucky

**COMPONENT IDENTIFICATION
FIGURE 2-1**

2.3 INTERCONNECT WIRING

CAUTION: YOU WILL BE WIRING 120 VAC INTO THE POWER CONNECTOR. BE SURE THAT THE X-RAY GENERATOR POWER AND THE SYSTEM POWER IS OFF BEFORE PROCEEDING.

Refer to Figure 2-2 for a pictorial view of the terminal block connections.



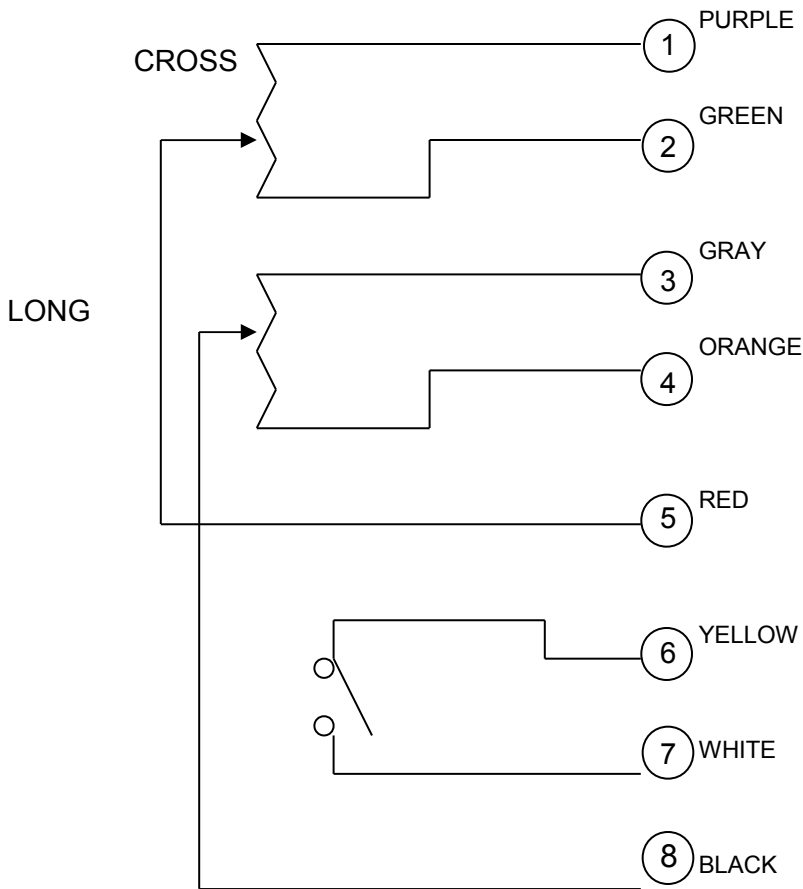
**TERMINAL BLOCK WIRING
FIGURE 2-2**

Please ensure that the AC power connected to the terminal block across connections 8 and 5 is correctly matched with the voltage for the device listed on the serial label. For 220-240 VAC devices, connect 220-240 VAC across the connections. For 120 VAC devices, connect 120 VAC across the connections.

2.4 CASSETTE SIZE SENSING

The True Speed Bucky provides mounting capability for standard cassette trays. An optional size sense cassette tray bracket and connector is available for attachment to size sense cassette trays.

Refer to the Cassette Tray installation manual and the Collimator installation manual to ensure proper connection of the cassette size sense tray to the collimator PBL circuit. Refer to Figure 2-3 for the terminal connections used on the Bucky for connection to the cassette size sense connector.



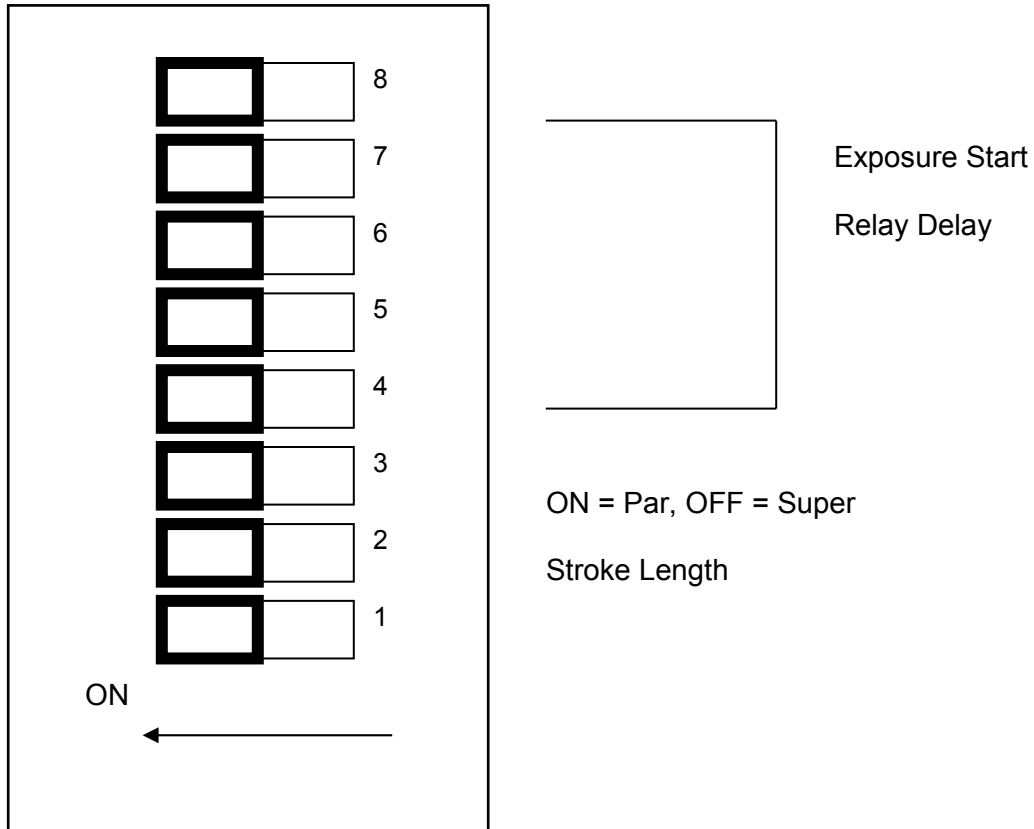
Cassette Tray

Connector

**SIZE SENSE CASSSETTE TRAY TERMINAL CONNECTIONS
FIGURE 2-3**

2.5 SWITCH SETTINGS

To preset the adjustable features of Exposure Start Delay, Grid Stroke length, and Grid Travel speed, SW2 on the printed circuit board is provided. SW2 is a 16 pin DIP micro switch providing 8 individual switches, SW2-1 through SW2-8. A diagram of SW2 is shown in Figure 2-4.



**FIGURE 2-4
SW2 DIP SWITCH SETTINGS**

2.6 INITIATION OF EXPOSURE SWITCH

The Exposure Start relay can be set by SW2 switches 4 through 7. The 4 switches can be set in 16 different combinations. These settings represent how many millimeters from the end of stroke home position have to be traveled before the relay is engaged.

Since the True Speed Bucky is at full speed when leaving the HOME position, it is recommended to leave these switches in the minimal delay, with all switches off.

If the stroke length is set to one inch, then an exposure delay setting of 13 would start the exposure at mid point of grid travel, which places the centerline of a focused grid in the center of X-ray exposure field. These switch settings are listed in the following table:

SW2-4	SW2-5	SW2-6	SW2-7	Exposure Delay (mm)
OFF	OFF	OFF	OFF	16
ON	OFF	OFF	OFF	15
OFF	ON	OFF	OFF	14
ON	ON	OFF	OFF	13
OFF	ON	ON	OFF	12
ON	OFF	ON	OFF	11
OFF	ON	ON	OFF	10
ON	ON	ON	OFF	9
OFF	OFF	OFF	ON	8
ON	OFF	OFF	ON	7
OFF	ON	OFF	ON	6
ON	ON	OFF	ON	5
OFF	OFF	ON	ON	4
ON	OFF	ON	ON	3
OFF	ON	ON	ON	2
ON	ON	ON	ON	1

**TABLE 2-1
SWITCH SETTING FOR EXPOSURE START DELAY**

2.7 GRID STROKE LENGTH

The grid stroke length is adjustable by using 2 of the 8 switches of SW2, SW2-1, and SW-2. These are used in four different combinations. Select the grid length according to the following table:

If Super Speed is selected (described below):

SW2-1	SW2-2	Stroke Length
ON	ON	0.925 inches
OFF	ON	0.965 inches
ON	OFF	1.005 inches
OFF	OFF	1.045 inches

**TABLE 2-2
SETTING STROKE LENGTH FOR SUPER SPEED**

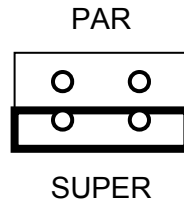
If Par Speed is selected (described below):

SW2-1	SW2-2	Stroke Length
ON	ON	0.80 inches
OFF	ON	0.88 inches
ON	OFF	0.96 inches
OFF	OFF	1.04 inches

**TABLE 2-3
SETTING STROKE LENGTH FOR PAR SPEED**

2.8 SETTING GRID TRAVEL SPEED

Grid Travel Speed is selected by a switch setting on SW2 as well as a jumper setting on JP4. The SW2 switch to be selected for speed is SW2-3. It should be in the ON position to select Par Speed and in the OFF position to select Super Speed. In addition, JP4 must have a 2-circuit shunt jumper in on the side labeled "PAR" or "SUPER" as desired. This is shown pictorially as follows in figure 2-5:



**JP4 – SET TO SELECT SUPER SPEED
FIGURE 2-5**

The selection of JP4 connects one of 2 potentiometers which set the grid travel speed. The potentiometers are labeled 'PAR' AND "SUPER". These potentiometers can be measured with a voltmeter on test point 5 (use the lead of R19 as a ground reference). This voltage will be in the range of 2.7 to 4.0. It is permissible to adjust the selected potentiometer to obtain a speed in between PAR and SUPER if desired.

2.9 TRAY TRACK POSITION

The True Speed Bucky comes with two different model configurations regarding how the cassette tray tracks are assembled into the unit. Models KLB10-08011, KLB10-08012, KLB10-08013 come assembled with the tray tracks in the lowered position and with ion chamber tracks mounted above the tray tracks.

Model KLB10-08010 comes assembled with the tray tracks in the raised position for use in systems without an ion chamber pick up.

Models are interchangeable. The tray tracks on models having the tracks in the lower position may be used by removing the ion chamber tracks and assembling the tray tracks in the raised position. Alternatively, models having the tracks in the raised position may utilize the optional ion chamber mounting brackets and disassemble the tray tracks from the upper position, mount the ion chamber tracks and reassemble the tray tracks in the lowered position.

2.10 CONVERSION BETWEEN LEFT-HAND AND RIGHT-HAND CONFIGURATIONS

The True Speed Bucky chassis is divided into two sections: the Pocket Section and the Grid Section. The “left hand” and “right hand” configuration refers to the location of the Pocket Section with respect to the Grid Section.

The Pocket Section contains the grid motion system and the electronics, which control the mechanism.

The cassette tray and the grid are installed in the Grid Section. This section consists of a grid carriage to mount the grid and tracks to install cassette tray and the ion chamber.

- In the left-hand configuration, the Pocket Section is to the left side of the cassette tray entry slot in the Grid Section.
- In the right-hand configuration, the Pocket Section is to the right side of the cassette tray entry slot in the Grid Section.

PREPARATION

Remove the film cassette tray, the ion chamber and the grid carriage before converting the True Speed Bucky to either left-hand or right-hand configuration. The procedure for removal of the grid carriage is explained in *Chapter 3: Maintenance, Calibration and Service*.

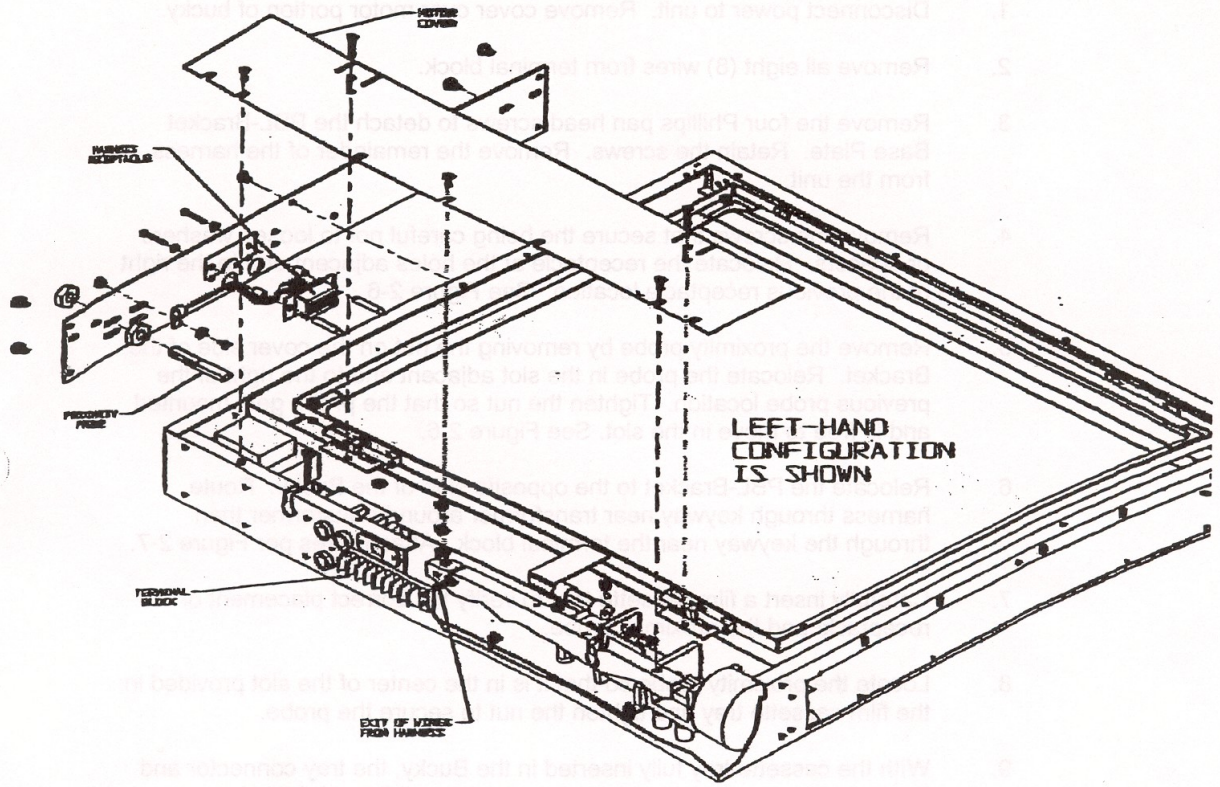
LEFT-HAND TO RIGHT-HAND CONVERSION

1. Disconnect power to unit. Remove cover over motor portion of bucky.
2. Remove all eight (8) wires from terminal block.
3. Remove the four Phillips pan head screws to detach the PBL-Bracket Base Plate. Retain the screws. Remove the remainder of the harness from the unit.
4. Remove the screws that secure the receptacle being careful not to loose washers or spacers. Relocate the receptacle at the holes adjacent and to the left of the previous receptacle location. See Figure 2-6.
5. Remove the proximity probe by removing the nut on the cover side of the Bracket. Relocate the probe in the slot adjacent and to the left of the previous probe location. Tighten the nut so that the probe gets mounted and is free to move in the slot. See Figure 2-6.
6. Relocate the PBL-Bracket to the opposite side of the Bucky. Route Harness around the motor assembly and through the keyway near the terminal block. Attach the wires per Figure 2-7.

7. Carefully insert a film cassette tray to verify the correct placement of the receptacle and the proximity probe.
8. Locate the proximity probe so that it is in the center of the slot provided in the film cassette tray and tighten the nut to secure the probe.
9. With the cassette tray fully inserted in the Bucky, the tray connector and the Bucky receptacle should be separated by 1/32 to 1/16 inch.

RIGHT-HAND TO LEFT-HAND CONVERSION

1. Disconnect power to unit. Remove cover over motor portion of bucky.
2. Remove all eight (8) wires from terminal block.
3. Remove the four Phillips pan head screws to detach the PBL-Bracket Base Plate. Retain the screws. Remove the remainder of the harness from the unit.
4. Remove the screws that secure the being careful not to loosen washers or spacers. Relocate the receptacle at the holes adjacent and to the right of the previous receptacle location. See Figure 2-6.
5. Remove the proximity probe by removing the nut on the cover side of the Bracket. Relocate the probe in the slot adjacent and to the right of the previous probe location. Tighten the nut so that the probe gets mounted and is free to move in the slot. See Figure 2-6.
6. Relocate the PBL-Bracket to the opposite side of the Bucky. Route harness through keyway near transformer around transformer then through the keyway near the terminal block. Attach wires per Figure 2-7.
7. Carefully insert a film cassette tray to verify the correct placement of the receptacle and the proximity probe.
8. Locate the proximity probe so that it is in the center of the slot provided in the film cassette tray and tighten the nut to secure the probe.
9. With the cassette tray fully inserted in the Bucky, the tray connector and the Bucky receptacle should be separated by 1/32 to 1/16 inch.



**PBL BRACKET
FIGURE 2-6**

NO TEXT

SECTION 3.0

**MAINTENANCE,
CALIBRATION,
AND SERVICE**

WARNING! SHOCK HAZARD!

When working on the True Speed Bucky when it is connected to its power source, there is line voltage present. Avoid serious injury and equipment damage by disconnecting power before implementing service.

3.1 LUBRICATION

Lubrication is recommended only for the cassette size sense connector. Lubricate the electrical contacts and the connector guideposts with a suitable contact cleaner and lubricant.

3.2 CLEANING

It is necessary to have the optical encoder and the HOME and POSITION sensors clean of dirt and dust. Ensure that the optical encoder has clean and distinct black bars. Clean it with a moist wipe of alcohol, or water. The sensors may be wiped with a Q-Tip or pipe cleaner, moistened with alcohol or water, by rubbing inside the open slot of the sensor.

3.3 REMOVAL AND INSTALLATION OF THE GRID

Removal of the grid

There is a grid hold down bracket in each of the 4 corners of the grid carriage holding the grid in place. Each bracket is held in place by a nut tightened onto a permanent stud. To remove the grid, loosen the nuts on two adjacent corners of the grid. Then remove the remaining two nuts and hold down brackets on the opposite side. The grid itself is then lifted out of the grid carriage.

Installation of the grid

There is a grid hold down bracket in each of the 4 corners of the grid carriage holding the grid in place. Each bracket is held in place by a nut tightened onto a permanent stud. To install the grid, loosen the nuts on two adjacent corners of the grid. The grid itself is slid under the two hold down brackets and placed flat on the grid carriage. Then install the remaining two nuts and hold down brackets on the opposite side.

3.4 REMOVAL AND INSTALLATION OF THE GRID CARRIAGE

To remove the grid carriage:

Remove the protective cover which fits over the True Speed Bucky motion system and electronics.

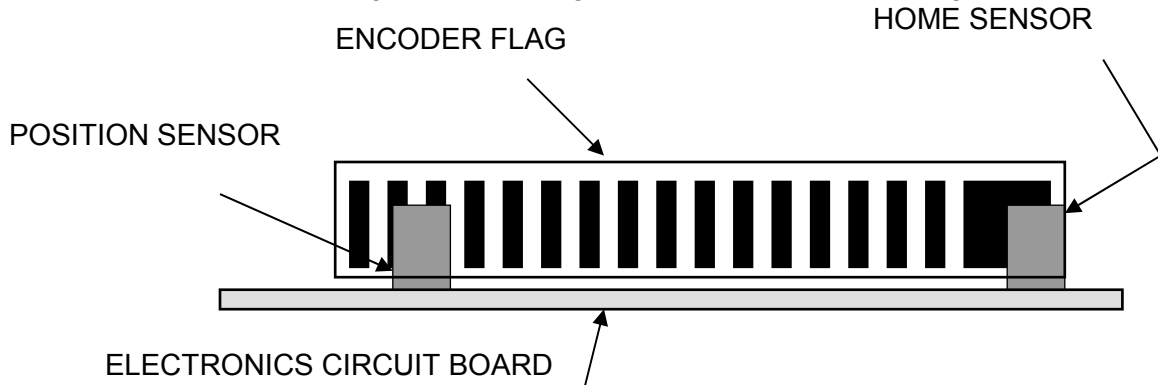
Remove the single slotted screw that attaches the grid carriage to the arm of the motion mechanism.

Remove the grid carriage.

To install the grid carriage, reverse the removal procedure.

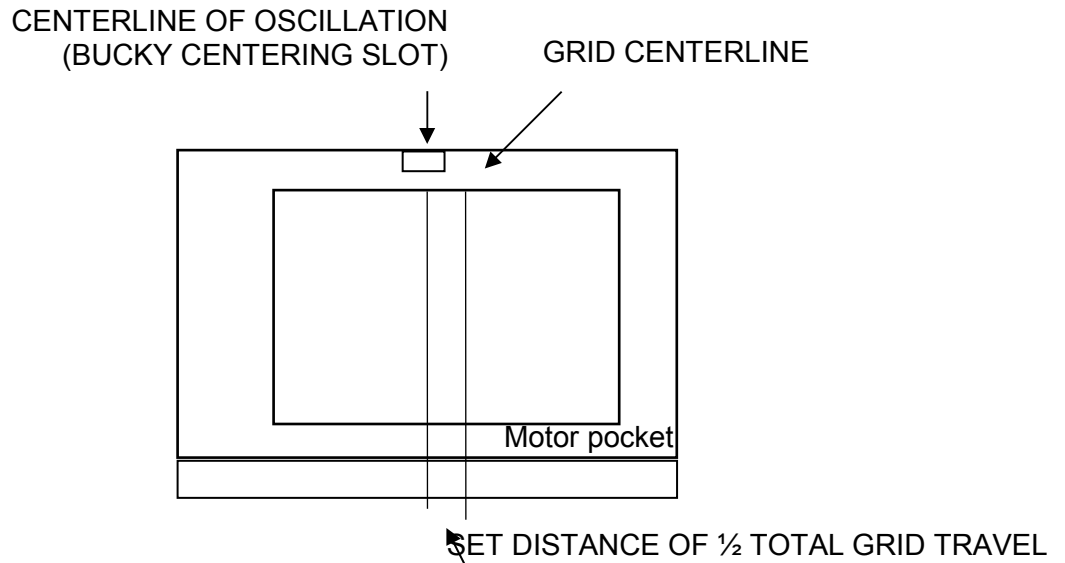
3.5 CALIBRATION OF THE OPTICAL ENCODER

The True Speed Bucky electro-mechanical motion system is controlled by an optical encoder mounted on the motion system which is sensed by two optical sensors. The encoder travels with the grid motion. The encoder triggers the HOME sensor when the grid is at one end of its travel. The POSITION sensor is triggered when the bars of the encoder pass through the sensor during its travel. In this way, the position sensor detects each millimeter of grid travel during motion. This is shown in Figure 3-1.



**OPTICAL ENCODER AND SENSORS
FIGURE 3-1**

The grid motion control system is to be calibrated so that the grid centerline is co-incident with the Bucky centerline when the grid is in the center of its travel length. This is verified by manually turning the motion system so that the home flag of the optical encoder is co-incident with the far end (farthest from the bucky center) of the HOME position sensor. The grid centerline must now be $\frac{1}{2}$ of the total travel distance from the Bucky centerline. This is shown pictorially in Figure 3-2.



**CALIBRATION OF GRID CENTER OF OSCILLATION
FIGURE 3-2**

Example for 1 inch stroke length

For stroke length of one inch total grid travel, the grid centerline should oscillate $\frac{1}{2}$ inch on either side of the Bucky centerline. This is calibrated by the following steps:

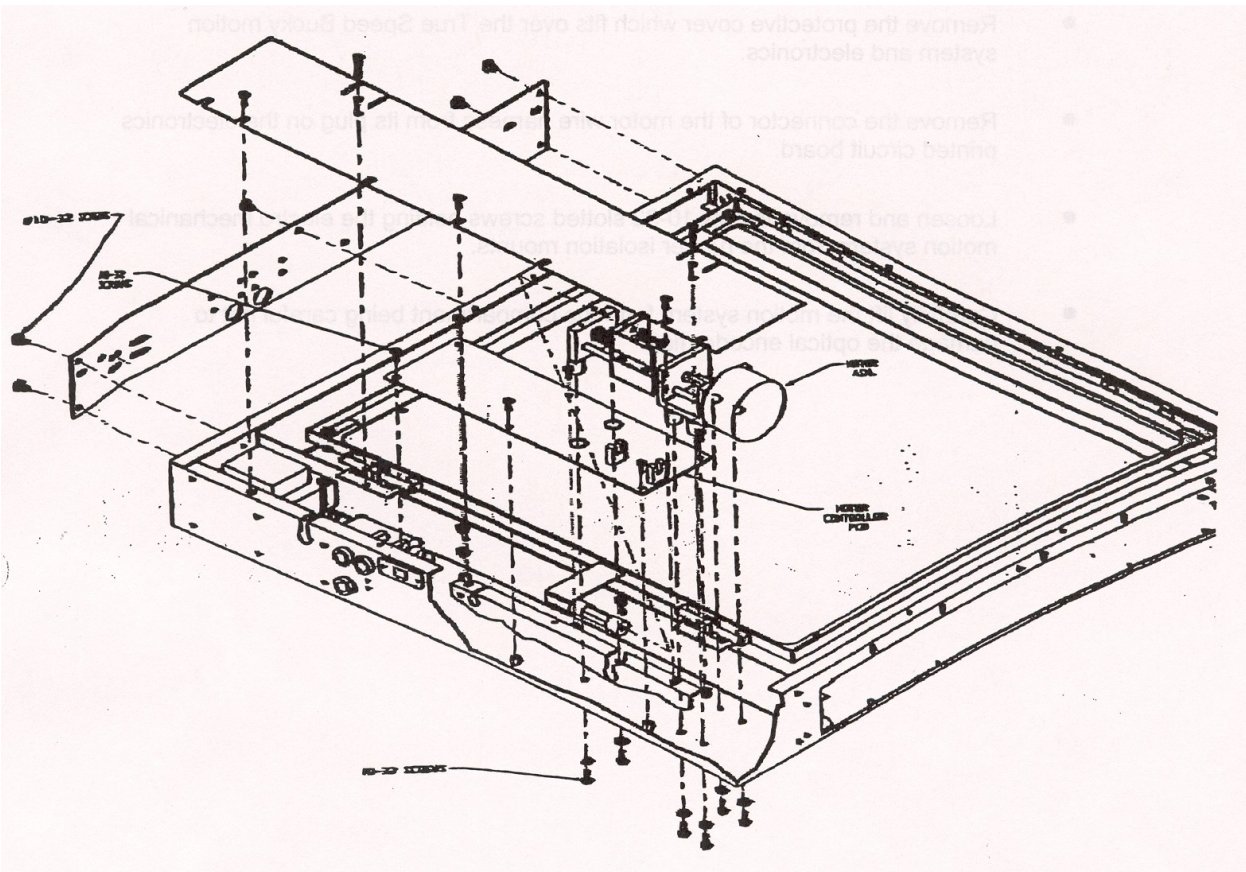
- Manually rotate the grid motion mechanism until the optical encoder flag is coincident with the center of the HOME position sensor.
- Measure the distance between the grid centerline and the Bucky center.
- If the distance measure is $\frac{1}{2}$ inch ($\frac{1}{2}$ of desired stroke length) then calibration of the encoder flag is complete.
- To set the desired distance, loosen the 4 brackets holding the grid in place and adjust the grid such that the grid centerline is $\frac{1}{2}$ inch from the bucky centerline. Measure the bucky centerline from the middle of the bucky centering slot.
- Manually rotate the encoder $\frac{1}{2}$ inch to place the grid centerline in the bucky center. Verify the grid centerline is within the slot marking the bucky center.
- Repeat the grid adjustment as necessary.
- Tighten the 4 grid holding brackets.

3.6 REMOVAL AND INSTALLATION OF THE DRIVE MECHANISM

Removal of the Drive Mechanism

Refer to Figure 3-3.

- Remove the protective cover which fits over the True Speed Bucky motion system and electronics.
- Remove the connector of the motor wire harness from its plug on the electronics printed circuit board.
- Loosen and remove the six 10-32 slotted screws holding the electro mechanical motion system from the rubber isolation mounts.
- Carefully lift the motion system from the compartment being careful not to damage the optical encoder flag.



**ELECTRO MECHANICAL MOTION SYSTEM
FIGURE 3-3**

Installation of the Drive Mechanism

Installation of the drive mechanism is the reversal of the removal procedure.

3.7 REMOVAL AND INSTALLATION OF THE ELECTRONIC PRINTED CIRCUIT BOARD

CAUTION! PROTECT THE PRINTED CIRCUIT BOARD ELECTRONICS FROM THE ELECTRO STATIC DISCHARGE (ESD) DAMAGE! THE ELECTRONICS PRINTED CIRCUIT BOARD IS STATIC SENSITIVE AND MUST BE PROTECTED WHILE HANDLING. ESD PROTECTIVE PROCEDURES MUST BE USED WHILE HANDLING THE ELECTRONICS CIRCUIT BOARD.

REMOVAL OF THE ELECTRONIC PRINTED CIRCUIT BOARD

- Ensure Power is removed from the system before proceeding.
- Before the circuit board can be removed, follow the above procedure for removal of the electro-mechanical motion system.
- Remove the wire harness connectors.
- Remove the six nuts attaching the circuit board to the mounts.
- Carefully lift the circuit board from the compartment, ensuring proper ESD protection.

INSTALLATION OF THE ELECTRONIC PRINTED CIRCUIT BOARD

Installation of the Electronics Printed Circuit Card is the reversal of the removal procedure.

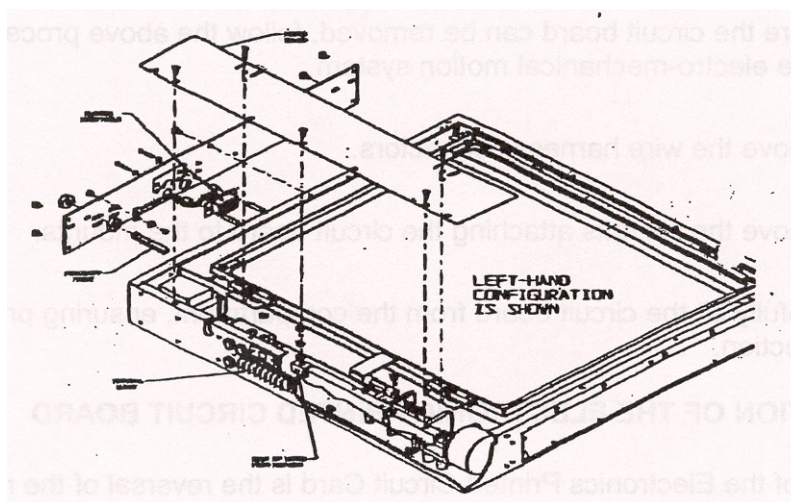
3.8 MECHANICAL ALIGNMENT FOR BUCKY FLAG

Due to transportation, assembly or impact, we have learned that in some buckys the flag is not completely aligned with the optical sensors. When this happens the following problems may occur:

- The motor drives past the home position and becomes jammed
- Fuse F1 blows
- The system presents intermittent driving problems

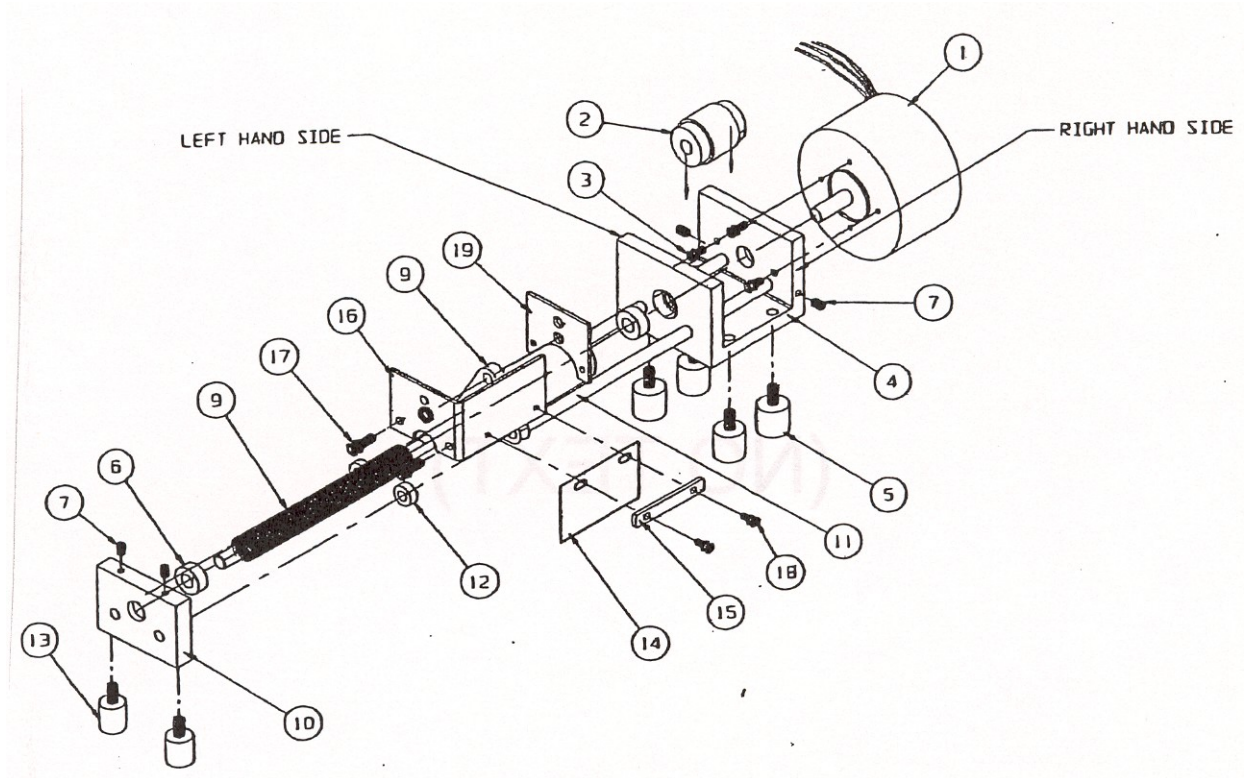
The following procedure explains how to solve the problem:

- Place bucky in a horizontal position.
- Remove cover as shown in Figure 3-4.



BUCKY
Figure 3-4

- Remove Philips screw as indicated in Figure 3-5.
- Move flag holder until you have sufficient space to access Allen screws as indicated in Figure 3-5 (17). Remove/loosen 2 screws.
- Adjust flag position (left/right) until flag is positioned on the center of optical sensors. ISO 1 and ISO 2.
- Provide a start signal shorting L and 3.
- Repeat procedure if necessary.
- Reassemble the bucky paying close attention to maintain the flag alignment.



MOTOR SUBASSEMBLY
Figure 3-5

Should you continue to experience difficulty after completion of the above procedure, please feel free to contact Progeny at (847) 850-3800 x776.

(NO TEXT)

SECTION 4.0

DESCRIPTION OF OPERATION

4.1 GENERAL DESCRIPTION

The True Speed Bucky is designed to provide an oscillating motion system for focused grids. The use of a focused grid implies that the grid is designed to be used in such a way as to keep the grid centerline at the X-Ray field center. For this reason, the Bucky is designed for the grid to oscillate about the Bucky center.

4.2 POWER SUPPLY

The power supply is designed to provide 2 independent DC voltages, one for the motor power, and the other for the electronics. The motor power supply is the 28 volt supply connected to the printed circuit card connector J2-5 and J2-6. The overcurrent fuse protection for this supply is found at fuse F2, panel mounted next to the terminal block.

The electronics power supply is provided by the 12 volt input to J2-7 and J2-8. It should be noted that the two dc supplies are independent and isolated. There is no ohmic connection between digital ground and the motor ground on the electronics.

4.3 OPTICAL SENSORS

The True Speed Bucky electro-mechanical motion system is controlled by an optical encoder mounted on the motion system which is sensed by two optical sensors. The encoder travels with the grid motion. The encoder triggers the HOME sensor when the grid is at one end of its travel. The POSITION sensor is triggered when the bars of the encoder pass through the sensor during its travel. In this way, the position sensor detects each millimeter of grid travel during motion.

4.4 START SIGNAL

The start signal is generated by the X-Ray system generator to tell the Bucky to begin operation. The start signal is a 120 VAC signal which is reduced in voltage by R27 to a 24 VAC level. This lower voltage AC signal is detected by ISO-6 and converted to a logic signal to trigger the electronics. It is recommended, where possible, to replace R27 with a jumper wire and to provide a start signal of 24-30 VAC rather than 120 VAC.

4.5 EXPOSURE HOLD RELAY

The Exposure Hold Relay is designated K1 on the electronics circuit board. This relay provides its normally open contacts to pins 1 and 2 of J2. These two pins are connected via the wiring harness to the terminal block for use by the system. The closure of these contacts is a signal to the X-Ray system that the Bucky is moving.

4.6 MOTION SYSTEM

The motion system consists of a brushless DC motor connected to a lead screw and nut combination. As the lead screw rotates, the nut moves linearly. The nut contains a bracket which connects to the grid chassis as well as to the optical encoder flag.

The use of a brushless DC motor allows for a very rapid acceleration up to the constant speed of motion, and by use of closed loop motor control, the constant speed is maintained throughout the grid stroke travel distance.

(NO TEXT)

SECTION 5.0

RENEWAL PARTS LIST

AND

MECHANICAL REPAIR OF

THE GRID FRAME

TRUE SPEED BUCKY
RENEWAL PARTS LIST

EUREKA P/N	DESCRIPTION
10-10015	Stop Tab
10-20001	Motor Sub-Assemblies
10-08007	Motor and Harness
10-10906	Motor Coupling
10-10907	Stud Bumpers
10-10909	Bearings
10-10000	Lead Screw
10-10006	Proximity Flag
10-10003	Film tray guides
10-10010	Ion Chamber Mounting Bracket
10-10004 / 10-10024	Grid Frame Bushing Mount
70-04782	Fuseholders
70-04602	1 Amp Fuse
70-04609	¾ Amp Fuse
10-10002	Grid Frame
10-10907	Stud Bumpers
10-10007	Grid Retainer Clips
10-10005	Bushing Guide Rod
10-10910	Grid Bearings
10-08000	Motor Controller Printed Circuit Board
10-08014	PBL Conversion Kit

Mechanical repair of the grid frame True Speed Bucky, All versions

Introduction

In the case of handling damage, or excessive wear it may become necessary to adjust the position of the grid frame within the bucky cabinet. Occasionally, bearing components may need cleaning or replacement. The need for this operation becomes apparent if the "F1" fuse frequently opens during normal bucky operation.

To demonstrate the problem is mechanical in nature, remove the single Phillips screw which connects the grid frame to the motor assembly. When activating motor operation, (with this screw removed), the motor continues to run without an "F1" failure. Under this circumstance the grid frame repair will be needed. If the "F1" fuse fails with the grid frame disconnected, the problem is electrical in nature.

In some cases a grid frame misalignment or bearing failure will cause the power transistors: Q1, Q2, Q3, Q4, Q5 or Q6 to short circuit on the 10-08000 motor driver board. The electronic failure must be corrected before repeating the motor drive test.

Once the need for the grid frame repair is proven, the following procedure can be performed.

Tools required:

#2 Phillips screwdriver
Ball head 7/64" hex driver
18 inch straight edge ruler

Parts list

F1 fuse	70-04602
Grid Frame	10-10002
Bushing Bracket	10-10004
Bushing	10-10910
Rod	10-10005

Procedure

1. Beginning with a fully assembled bucky mechanism, spin the drive mechanism by hand, watching for binding on each of the four bearing points. Binding will be evident as incremental rod movements instead of a smooth flow.
2. It may be necessary to remove the grid to see the binding action of the frame.

To adjust the bearings

3. Remove the grid.
4. Disconnect the Phillips screw holding the grid frame to the drive mechanism.
5. Lift the grid frame tab until the frame is lifted out of the bushing brackets on the motor side.
6. Pull the frame in the direction of the motor until it is free from the bucky cabinet.
7. Inspect the condition of each bushing and rod assembly. The bushing should move freely over the rod. Bushings which are not round, nor can bind or rods which are contaminated or bent must be replaced.

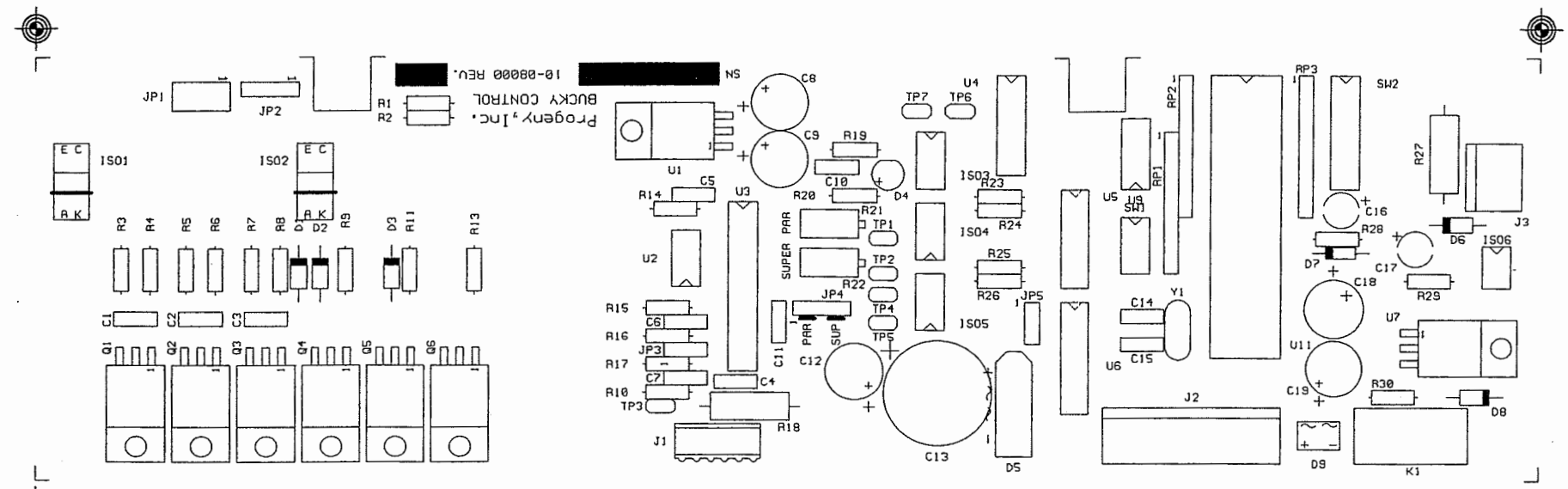
8. Each bushing bracket must hold the bushing without allowing the bushing to shift its position during frame movement. The bushing bracket may be tightened by compressing the wings of the bracket. Please note: If the bushing bracket is over-tightened, the bushing will grip the rod causing excessive friction.
9. Each rod and bushing must move in a parallel pattern.
10. Rods on the motor side are mounted to the frame on slots for the purpose of allowing parallel alignment between all four bushings and rods. The rods mounted away from the motor have fixed positions but must still be proven to be parallel with a straight edge ruler.
11. If the rods mounted away from the motor can not be positioned in a parallel condition, inspect the grid frame for bends and other distortions. Replace the grid frame if necessary.
12. After damaged components are replaced or bearing positions are adjusted, lightly oil the bushing and rod.
13. Insert the frame into the bushing brackets.
14. Adjust the motor side rods for parallel movement by repositioning the rod fastening screws.
15. A properly assembled and parallel frame will move by gravity alone when tilted from side to side.
16. Re-attach the grid frame to the motor assembly.

SECTION 6.0

**SCHEMATICS,
DIAGRAMS,
AND BOM**

(NO TEXT)

REVISIONS			
REV	DESCRIPTION	DATE	APP'D
B	Production Release	6/24/1999	AK
C	C13: BOM Change	7/21/1999	AK
D	BOM Change	8/23/1999	AK
E	Remove R12	8/13/2001	AK
F	BOM Change	8/22/2001	DD
G	Add U2 ECN P0731	11/14/2001	DD



Progeny, Inc.
ARTWORK

Fails	
COMPONENT	A30J02
Legends	
COMPONENT	Solder Masks
WHITE	Miscellaneous
COMPONENT	A30J02
GREEN	GREEN
DRILL DRAWING	
minimum trace: .012 total layers: 2	
space: .010 gold fingers: NONE	
BOARD size: 10.500 x 3.000	
corner radius: .052 maximum inside	
thickness: .052 +/- .007	
material: FR-4 NEMA (NATURAL)	
copper weight: 2 ounce after plating	

10-06301 REV. E

- NOTES:
1. SCHEMATIC 10-08001
 2. FABRICATION 10-06301
 3. MANUFACTURER TO ADD SERIAL NUMBER AND CURRENT REVISION

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APPROVALS	DATE
DRN	
APP	
CHK	
CHK	

PROGENY, Inc.	
Title	Bucky Control PCB Assembly
Size	B
Document Number	10-08000
Date:	Sheet 1 of 1

BILL OF MATERIAL

Bill of Material No. 10-08000

Rev. G ECN: P0731

ITEM NO.	QTY	DWG SIZE	PART NO.	ITEM CLS	DESCRIPTION	Vendor Part No.	Ref. Designator
.Ref	0	B	10-08001		Schematic, Bucky Motor Controller PCB		
0001	1	B	10-06301		Fab., Bucky Motor Controller PCB		
0002	6	A	70-02010		Capacitor, 50 WVDC	0.1 uF	C1-3, C7, C10, C11
0003	2	A	70-02012		Capacitor, 100 WVDC	0.01 uF	C4, C6
0004	1	A	70-02021		Capacitor, 50 WVDC	220 nF	C5
0005	3	A	70-02524		Capacitor, Aluminum 63 WVDC	100 uF	C8, C9, C19
0006	2	A	10-02000		Capacitor, Electrolytic	330 uF	C12, C18
0007	1	A	70-02508		Capacitor, Aluminum, 1000 uf, 500 VDC	1000 uF	C13
0008	2	A	70-02031		Capacitor, Mica, 300 WVDC	20 pF	C14, C15
0009	2	A	70-02511		Capacitor, Tantalum, 35 WVDC	10 uF	C16, C17
0010	3	A	10-03000		Diode	1N5819	D1, D2, D3
0011	1	A	70-03062		Diode, Light Emitting, Green		D4
0012	1	A	10-03001		Bridge Rectifier, 100 V 1 Amp		D5
0013	2	A	70-03012		Diode, Rectifier	1N4004	D6, D8
0014	1	A	70-03001		Diode	1N914	D7
0015	1	A	70-03030		Bridge Rectifier, 200 V 1 Amp		D9

SHEET 1 OF 4

ITEM	QTY	DWG	PART	ITEM	DESCRIPTION	Vendor	Ref.
------	-----	-----	------	------	-------------	--------	------

BILL OF MATERIAL

Bill of Material No. 10-08000

Rev. G ECN: P0731

0016	2	A	10-03002		Photosensor	EE-SX-1071	ISO1, ISO2
0017	3	A	70-03094		Opto-Isolator	MCT62	ISO3, ISO4, ISO5
0018	1	A	10-03003		Optical Isolator	H11AV1A	ISO6
0020	2	A	10-04002		Header, 4 x 1 Pin		JP2, JP4
0021	2	A	70-04807		Header, 3 Pin Breakaway, Single Row		JP3, JP5
0022	1	A	70-04289		Connector, Header 12 Pin Straight		J1
0023	1	A	10-04003		Connector, 8 Pin Power		J2
0024	1	A	10-04004		Connector, 3 Pin Power		J3
0025	1	A	70-04014		Relay, DPST 12 V	DS2E	K1
0026	3	A	10-03004		Mosfet, P Channel	MTP2955	Q1, Q2, Q3
0027	3	A	10-03005		Mosfet, N Channel	MTP3055E	Q4, Q5, Q6
0028	3	A	70-00510		Resistor Array, 10 Pin SIP	10 K	RP1, RP2, RP3
0029	6	A	70-00025		Resistor, Carbon Film 1/4W +/- 5%	200	R1, R2, R19, R24-R26
0030	8	A	70-00042		Resistor, Carbon Film 1/4W +/- 5%	1 K	R3-R8, R20, R10
0031	3	A	70-00034		Resistor, Carbon Film 1/4W +/- 5%	470	R9, R11, R13

SHEET 2 OF 4

ITEM NO.	QTY	DWG SIZE	PART NO.	ITEM CLS	DESCRIPTION	Vendor Part No.	Ref. Designator
----------	-----	----------	----------	----------	-------------	-----------------	-----------------

BILL OF MATERIAL

Bill of Material No. 10-08000

Rev. G ECN: P0731

0032	1	A	70-00067		Resistor, Carbon Film 1/4W +/- 5%	15 K	R14
0033	1	A	70-00086		Resistor, Carbon Film 1/4W +/- 5%	100 K	R15
0034	3	A	70-00056		Resistor, Carbon Film 1/4W +/- 5%	4.7K	R16, R23, R30
0035	1	A	70-00108		Resistor, Carbon Film 1/4W +/- 5%	1 M	R17
0036	1	A	10-00001		Resistor, 1 W	.05	R18
0037	2	A	70-00654-7		Potentiometer, 25 Turn	10K	R21, R22
0038	1	A	10-00002		Resistor, 1 W	22 K	R27
0039	1	A	70-00062		Resistor, Carbon Film, 1/4W +/- 1%	8.2 K	R28
0040	1	A	70-00022		Resistor, Carbon Film, 1/4W +/- 1%	150	R29
0041	1	A	70-04202		Dip Switch, 5 SPST		SW1
0042	1	A	70-04205		Switch, 16 Pin Dip, 8 Pos.		SW2
0043	9	A	70-06524		Jumper, Buss Bar, 24 Awg.		TP1-TP5, JP1
0044	1	A	70-03305		12 V - 3 Terminal Pos.	7812	U1
0045	1	B	10-03006		Adaptor, Closed Loop BLDC Motor	MC33039	U2
0046	1	B	10-03007		Controller, BLDC Motor	MC33035	U3
0047	2	B	70-03161		I.C., Inv. Schmit Trigger, DIP 14	CD40106	U4, U5
0048	1	B	70-03146		I.C., 16 Pin DIP	ULN2003	U6
0049	1	A	70-03303		5 V - 3 Terminal Pos.	7805	U7

SHEET 3 OF 4

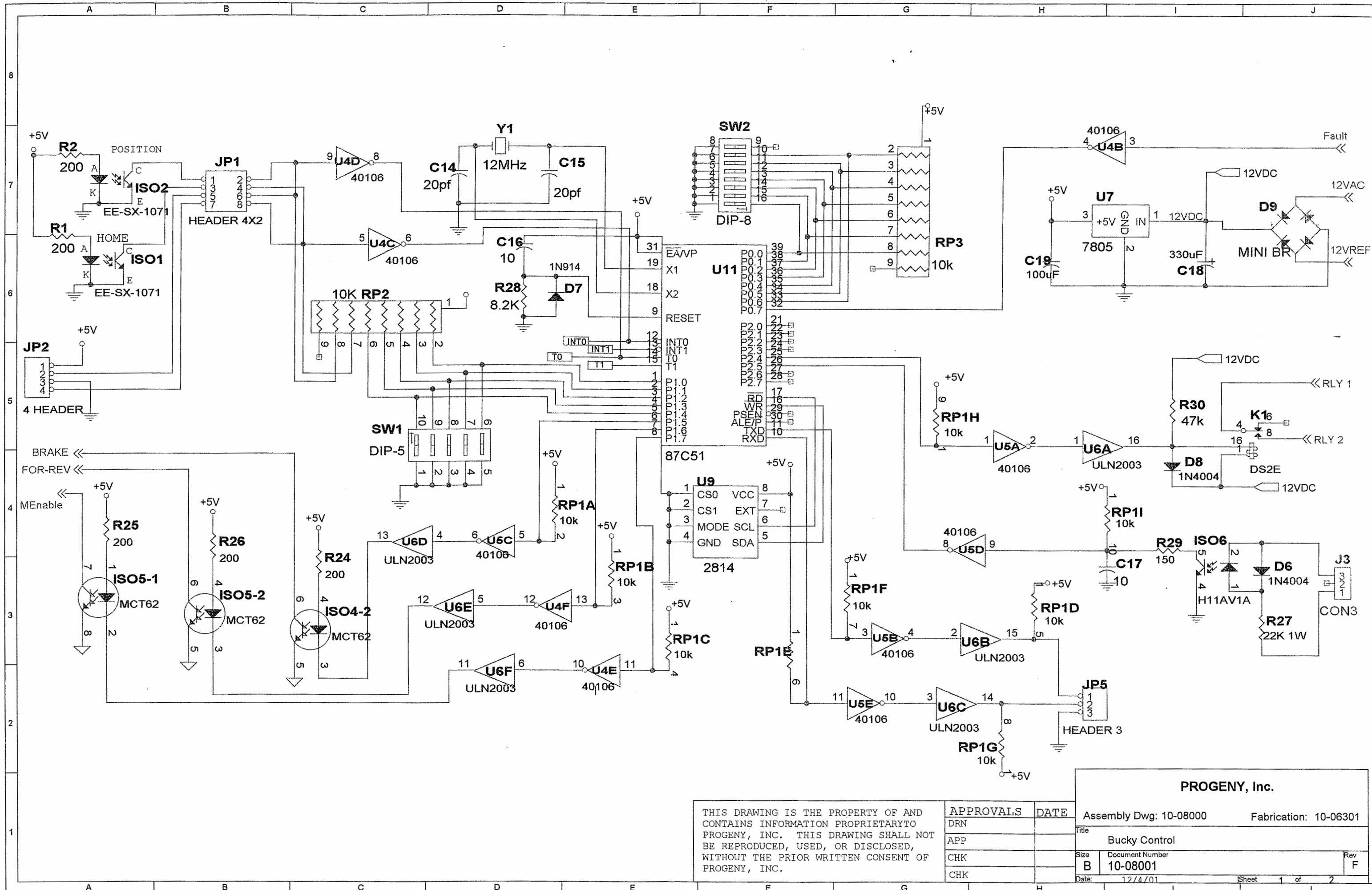
ITEM NO.	QTY	DWG SIZE	PART NO.	ITEM CLS	DESCRIPTION	Vendor Part No.	Ref. Designator
0050	2	B	70-04778		Heat Sink		

BILL OF MATERIAL

Bill of Material No. 10-08000

Rev. G ECN: P0731

0051	1	B	10-08015		Programmed Microcontroller, 40 Pin DIP	87C51	U11
0052	1	A	70-04220		Socket, MACH 40 Pin DIP		U11
0053	1	A	70-03154		Crystal, 10 MHz		Y1
0054	2	A	70-04216		Socket, MACH 14 Pin DIP		U4, U5
0055	4	A	70-04222		Socket, MACH 8 Pin DIP		ISO 3, 4, 5 & U2
0056	1	A	70-04217		Socket, MACH 16 Pin DIP		U6
0057	1	A	70-04506		Socket, 6 Pin DIP		ISO6
0058	2	A	70-04806		2 Pos. Shuts		JP3, JP5
0059	8	A	26-00830		Screw, #6-32 x ¼ Phillips Pan Head		
0060	8	A	70-11166		Nut, Hex #6-32, Thin		
0061	1	A	E1-11000		Socket, Mach. 24 Pin Dip		U3



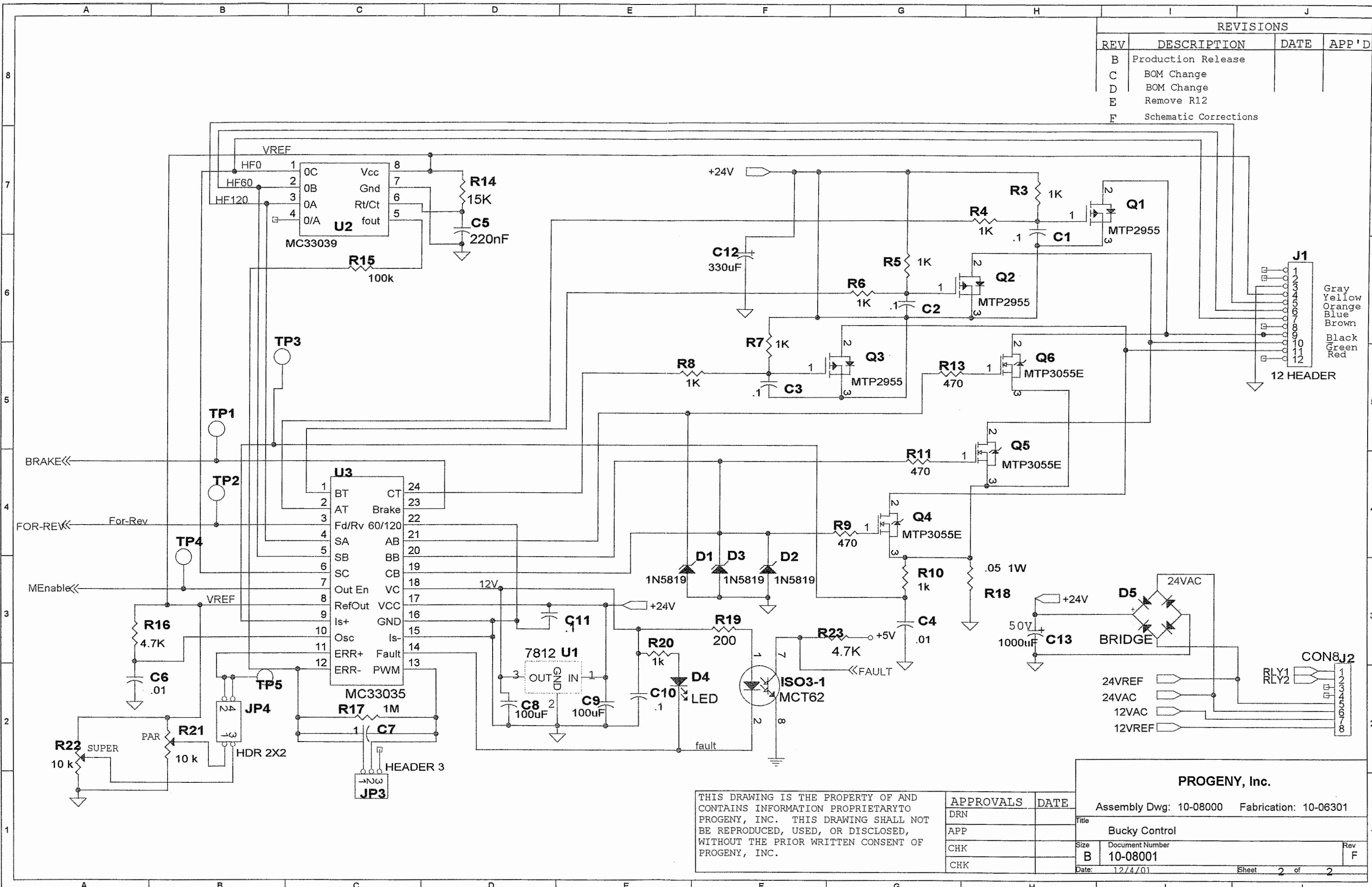
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APPROVALS	DATE
DRN	
APP	
CHK	
CHK	

PROGENY, Inc.	
Assembly Dwg: 10-08000	Fabrication: 10-06301
Title Bucky Control	
Size B	Document Number 10-08001
Date: 12/4/01	Rev F
Sheet 1 of 2	

REVISIONS

REV	DESCRIPTION	DATE	APP'D
B	Production Release		
C	BOM Change		
D	BOM Change		
E	Remove R12		
F	Schematic Corrections		



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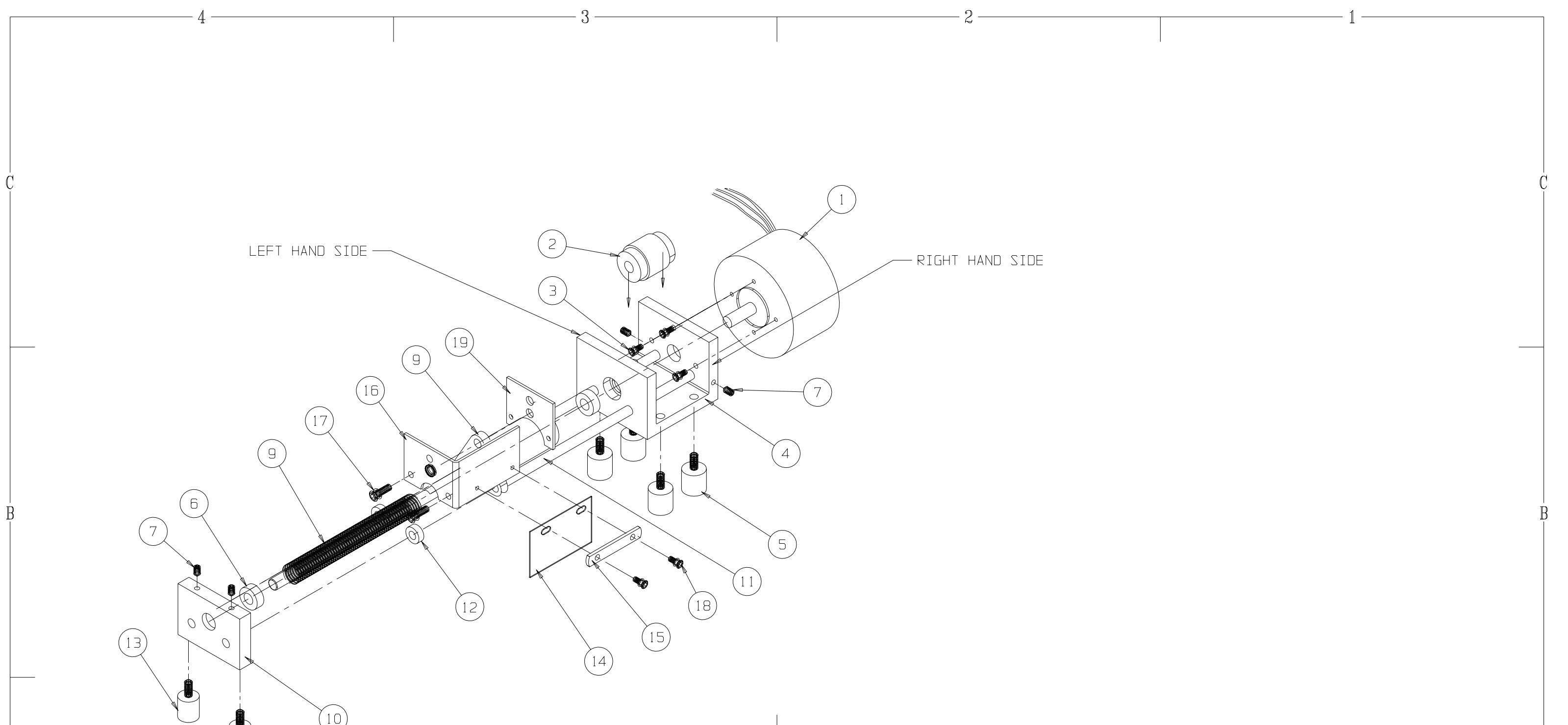
APPROVALS	DATE
DRN	
APP	
CHK	
CHK	

PROGENY, Inc.

Assembly Dwg: 10-08000 Fabrication: 10-06301

Title		Bucky Control	
Size	Document Number	Rev	F
B	10-08001		
Date:	12/4/01	Sheet	2 of 2

00101111



PACKAGE:
 VENDOR SHALL SUPPLY THE PARTS SUFFICIENTLY PACKAGED TO PROTECT THE FINISH AND INTEGRITY DURING SHIPMENT AND STORAGE. THE OUTSIDE OF THE PACKAGE SHALL BE PROMINENTLY MARKED WITH PART NUMBER AND REVISION.

	A	RELEASE PER PRN001		
ZONE	REV	DESCRIPTION	DATE	APP'D
REVISIONS				

REMOVE ALL BURRS AND SHARP EDGES			
DECIMALS	(MM)	ANGLES	MACHINE FINISH
XX = ±.01	(± 0.25)	1°	..
XXX = ±.005	(± 0.127)		32/
UNLESS OTHERWISE SPECIFIED			

MATERIAL:
 ..

ORIGINAL PRODUCT	
TRUE SPEED BUCKY	
APPROVALS	DATE
DRN. C.M.HARDY	6/22/99
CHK.	
ENG.	
APP.	

PROGENY, INC.

BUCKY MOTOR
SUB-ASSEMBLY

THIS DRAWING IS THE PROPERTY OF AND CONTAINS INFORMATION PROPRIETARY TO EUREKA X-RAY TUBE CORP. THIS DRAWING SHALL NOT BE REPRODUCED, USED OR DISCLOSED WITHOUT THE PRIOR WRITTEN CONSENT OF EUREKA X-RAY TUBE CORP.

FINISH:
 ..

DO NOT SCALE DRAWING

SIZE	ITEM CLASS	DRAWING NO.	REV
B		10-20001	A
SCALE	NONE	FILENAME 1020001	SHEET 1 OF 1

I N D E N T E D B I L L O F M A T E R I A L

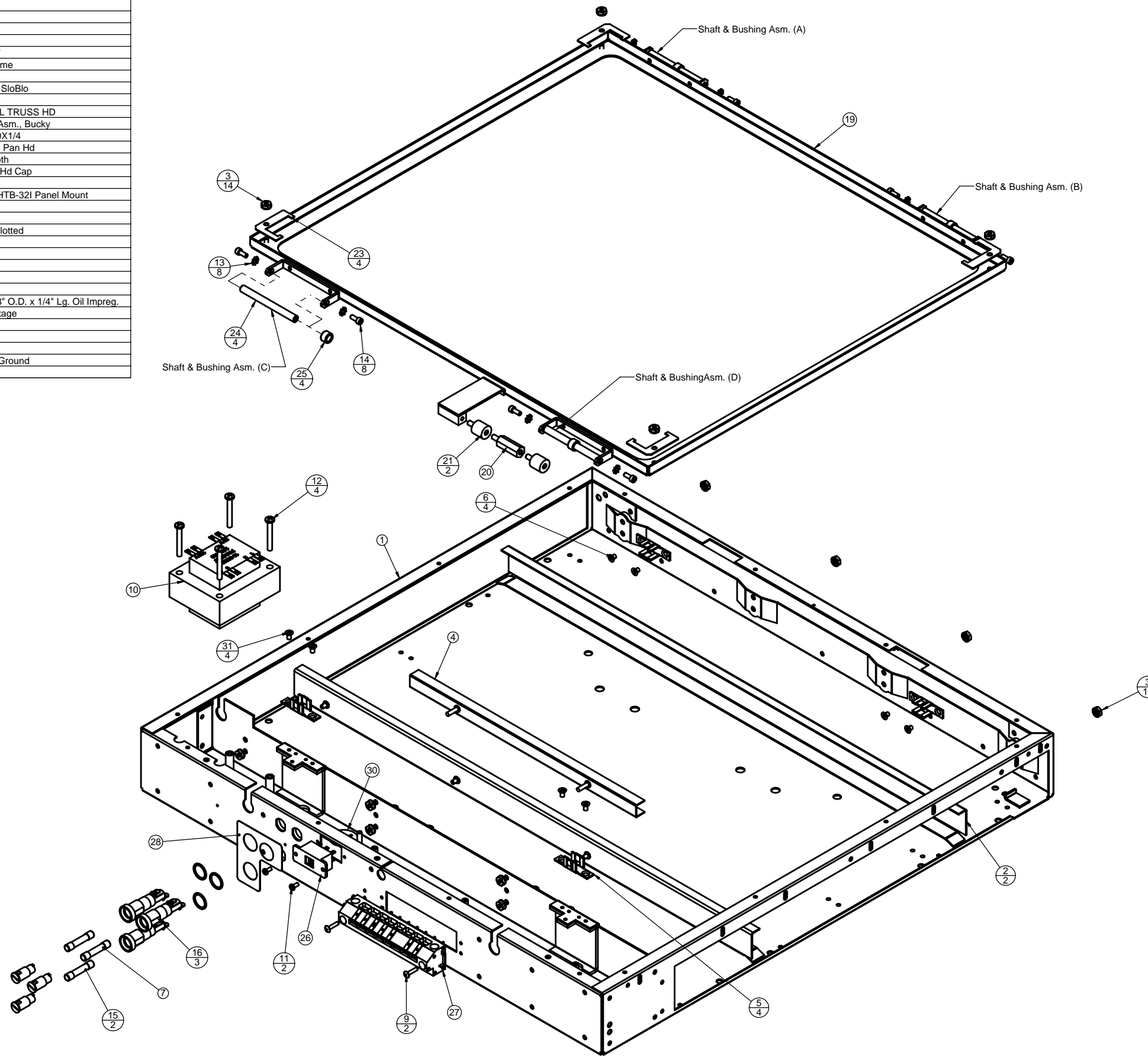
Items: 10-20001 Thru 10-20001 Location: AH ARLINGTON HEIGH
 Activity Codes: Active Items Only
 1 Levels With No Blow Through
 No Selection On Basis Of Effectivity Date No Selection On Basis Of Obsolete Date
 Including: Reference Designators

Level	Seq	Component-Item	Component-Description	Loc	Opr	UOM	Scrap	Act	Stk	B/I	Qty On-Hand	Qty-Per-Parent
					LLC	Engr	REV	P/M	Ctl	B/F	Qty-Allocated	Qty-On-Order
=====												
Parent Item:	10-20001	SUB-ASM., BUCKY MOTOR		Loc:	AH	LLC:	1	Eng	Relse:	PRN001	Rev: A	Item Rev: A
1	1	10-08007	ASM., BUCKY MOTOR & HARNESS		0	EA	.0	A	N	N		1.000000
			WP	2					M	N	N	
1	2	10-10906	COUPLING, MOTOR		0	EA	.0	A	Y			1.000000
		Rev. B	WP	2					P	Y		
1	3	70-10800	SCREW, HEX SOC CAP 4-40X3/8		0	EA	.0	A	N			3.000000
			WP	5					P	N		
1	4	10-10008	MOTOR MOUNTING		0	EA	.0	A	Y			1.000000
			WP	2	P1057		D		P	Y		
1	5	10-10907	STUD BUMPER, 1/2" DIA.		0	EA	.0	A	Y			4.000000
			WP	2	P0834		B		P	Y		
1	6	10-10909	BEARING, 1/4" SHFT x 1/2" DIA		0	EA	.0	A	Y			2.000000
		x 3/16" THK	WP	2	P0676		B		P	Y		
1	7	26-00048	SCREW SET, 6-32X.25, HEX SOCK,		0	EA	.0	A	N			4.000000
		CONE	WP	3					P	N		
1	9	10-10000	SCREW, LEAD		0	EA	.0	A	Y			1.000000
			WP	2	P0693		C		P	Y		
1	10	10-10009	RETAINER, BACKLASH SCREW		0	EA	.0	A	Y			1.000000
			WP	2	P1057		D		P	Y		
1	11	10-10011	ROD, SCREW GUIDE		0	EA	.0	A	Y			2.000000
			WP	2	P0899		B		P	Y		
1	12	10-10913	BUMPER, GUIDE ROD		0	EA	.0	A	Y			2.000000
			WP	2					P	Y		
1	13	10-10918	BUMPER, 7/16" DIA. STUD		0	EA	.0	A	Y			2.000000
			WP	2					P	Y		
1	14	10-10006	PROXIMITY FLAG		0	EA	.0	A	Y			1.000000
			WP	2	P1046		E		P	Y		
1	15	70-10134	SPACER, SPRING LATCH		0	EA	.0	A	Y			1.000000
			WP	3					P	Y		

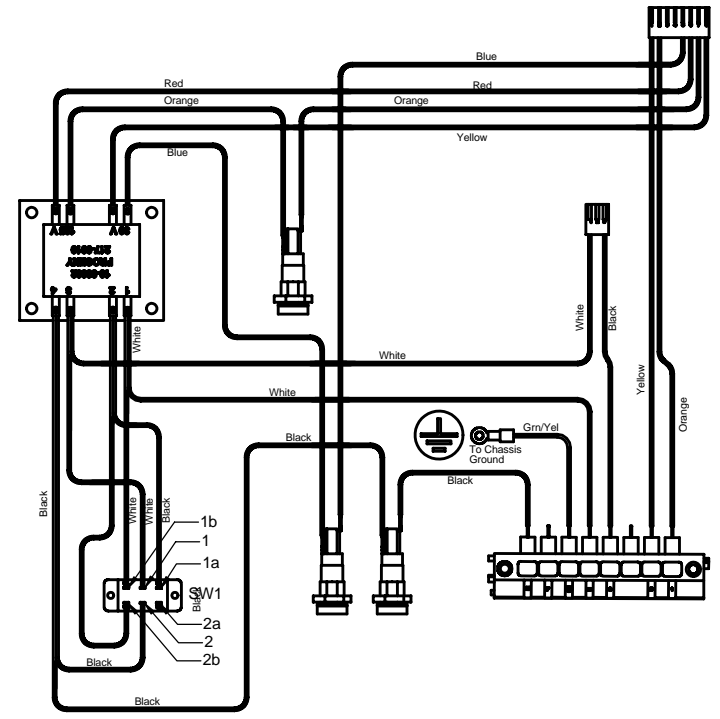
I N D E N T E D B I L L O F M A T E R I A L

Level	Seq Component-Item	Component-Description	Loc	Opr LLC	UOM Engr	Scrap Act	Stk B/I	Qty On-Hand	Qty-Per-Parent
						REV P/M	Ctl B/F	Qty-Allocated	Qty-On-Order
1	16 10-10012	PLATE, SENSOR MOUNT	WP	0	EA	.0	A Y		1.000000
				2	P0648	B	P Y		
1	17 70-11205	SCREW, #6-32 X 1/2" SOC HD CAP	WP	0	EA	.0	A N N		2.000000
				5			P N N		
1	18 70-10995	SCREW, HEX SOC CAP 4-40X1/4	WP	0	EA	.0	A N		2.000000
				5			P N		
1	19 10-10013	PLATE, SENSOR BACKING	WP	0	EA	.0	A Y		1.000000
				2			P Y		
1	22 LABOR	LABOR ASSEMBLY TIME (HRS)	WP	0	HR	.0	A Y N		.167000
				8			P Y N		
1	23 BURDEN	BURDEN COST (HRS)	WP	0	HR	.0	A Y N		.167000
		SAME AS LABOR HRS		8			P Y N		

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	10-10001	Bucky Chassis
2	2	10-10003	GUIDE, FILM TRAY
3	14	26-00239	Nut, Hex, Keps 6-32
4	1	10-10010	ION CHAMBER MOUNT
5	4	10-10004	Bushing Mount, Grid Frame
6	4	26-00442	SCREW, #6-32 X 3/16
7	1	70-04609	Fuse, 3/4 Amp, 250 Volt SloBlo
8	1	XX-XXXX	Item No. 8 Not Used
9	2	1000162	SCREW, #4-40X1/2, PHIL TRUSS HD
10	1	10-08008	Transformer & Harness Asm., Bucky
11	2	70-10905	Screw, Phil Pan HD 4-40X1/4
12	4	10-10903	Screw, #8-32 x 1-1/4 Phil Pan Hd
13	8	26-02027	Lockwasher, #6 Ext. Tooth
14	8	26-30163	Screw 6-32 x 11/32 Soc Hd Cap
15	2	70-04602	Fuse, 1 Amp, 250 Volt
16	3	70-04782	Fuseholder, Bussmann HTB-32I Panel Mount
17	1	XX-XXXX	Item No. 17 Not Used
18	1	XX-XXXX	Item No. 18 Not Used
19	1	10-10002	Frame, Grid Mounting, Slotted
20	1	10-10901	Standoff, 1" Hex
21	2	10-10907	Stud Bumper, 1/2" Dia.
22	4	70-04701	Cable Tie, 4" Long
23	4	10-10007	Retainer, Grid
24	4	10-10005	Rod, Bushing Guide
25	4	10-10910	Bearing, 1/4" SHFT x 3/8" O.D. x 1/4" Lq. Oil Impreg.
26	1	70-04292	Switch 220/110 Line Voltage
27	1	10-08006	Harness Asm., Bucky
28	1	10-10022	Label, Fuse Rating
29	1	XX-XXXX	Item No. 29 Not Used
30	1	10-10030	Label, Protective, Earth Ground
31	4	70-11128	SCREW, #6-32 X 1/4



TITLE		Sub Assembly, Bucky Chassis W/AEC		SH. NO. 1 of 1	
FIRST MADE FOR Bucky		Scale: 1:2		DRG. D	
THIS DRAWING IS THE PROPERTY OF AND CONTAINS INFORMATION PROPRIETARY TO PROGENY, INC.		UNLESS OTHERWISE SPECIFIED		SURF. FINISH	
32		TOLERANCES (DIMENSIONS)		ANGLES	
± .015		± .005		± 1/2°	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED					



Origin	Destination	Wire
P1-1	P2-1	Yellow
P1-2	P2-2	Orange
P1-3	P3-3	Black
P1-N	T1-1	White
P1-Gnd	Chassis Gnd.	Gm/Yel
P1-L1	F1	Black
P2-5	F2	Blue
P2-6	T1-12	Red
P2-7	F3	Orange
P2-8	T1-12	Red
P3-1	T1-3	White
SW1-1	T1-3	White
SW1-1a	T1-2	Black
SW1-1b	T1-1	White
SW1-2	T1-4	Black
SW1-2a	T1-2	Black
T1-4	F1	Black
T1-30	F2	Blue
T1-12	F3	Orange

REV. 01	DATE: 6/24/2004	ETCH NO. P0982	CHANGE DESCRIPTION: Redesigned And Rdrawn in SolidWorks
MADE BY: J. Kleinschmidt		APPROVALS:	
DATE: 6/24/2004		PROGENY, INC.	
COMP. REF. NO. 10-20002_E.SLDRW		SH. NO. 1 of 1	

I N D E N T E D B I L L O F M A T E R I A L

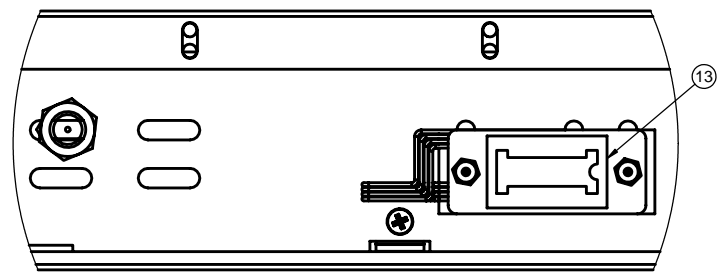
Items: 10-20002 Thru 10-20002 Location: AH ARLINGTON HEIGH
 Activity Codes: Active Items Only
 1 Levels With No Blow Through
 No Selection On Basis Of Effectivity Date No Selection On Basis Of Obsolete Date
 Including: Reference Designators

Level	Seq	Component-Item	Component-Description	Loc	Opr LLC	UOM Engr	Scrap REV	Act P/M	Stk Ctl	B/I B/F	Qty On-Hand Qty-Allocated	Qty-Per-Parent Qty-On-Order

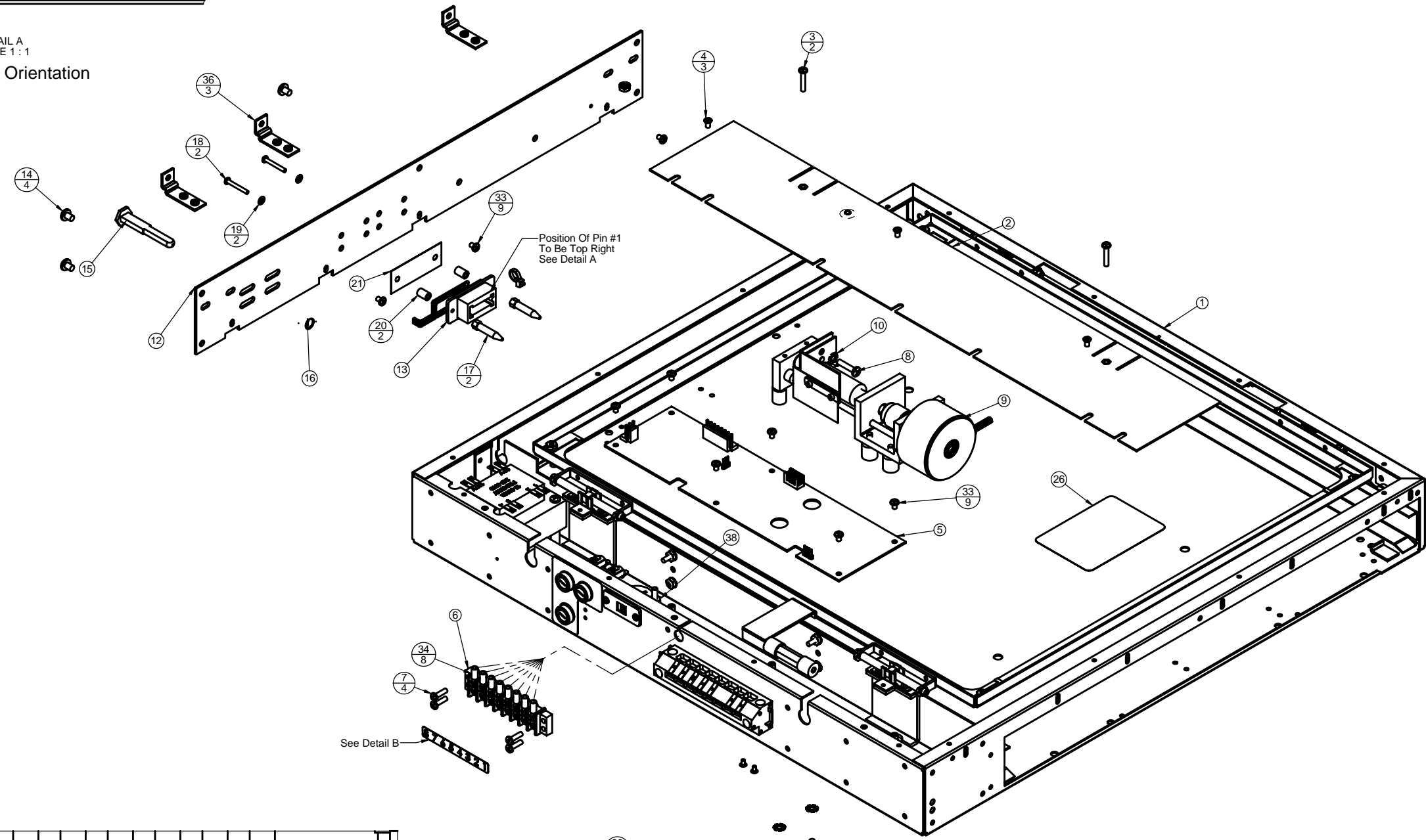
Parent Item:	10-20002	SUB-ASM., BUCKY CHASSIS		Loc:	AH	LLC:	1	Eng	Relse:	P0982	Rev: E	Item Rev: E
1	1	10-10001	CHASSIS, BUCKY	AH	0	EA	.0	A	Y			1.000000
					2	P0982	K		P	Y		
1	2	10-10003	GUIDE, FILM TRAY	AH	0	EA	.0	A	Y			2.000000
					2	P0689	D		P	Y		
1	3	26-00239	NUT, HEX, KEPS 6-32	AH	0	EA	.0	A	N	N		14.000000
					4				P	N	N	
1	4	10-10010	BRACKET, ION CHAMBER MOUNT	AH	0	EA	.0	A	Y			1.000000
					2	P0441	B		P	Y		
1	5	10-10004	BUSHING MOUNT, GRID FRAME	AH	0	EA	.0	A	Y	N		4.000000
					2	P0868	D		P	Y	N	
1	6	26-00442	SCREW, #6-32X3/16, PHIL FL. HD, UC	AH	0	EA	.0	A	N	N		4.000000
					2	P0578	A		P	N	N	
1	7	70-04609	FUSE, 3/4 AMP 250 VOLT SLOBLO	WP	0	EA	.0	A	Y	N		1.000000
					2				P	Y	N	
1	9	1000162	SCREW, #4-40X1/2 PHIL TRUSS HD	WP	0	EA	.0	A	N			2.000000
					2	P0624	B		P	N		
1	10	10-08008	TRANSFORMER & HARNESS ASM.,	WP	0	EA	.0	A	N			1.000000
		BUCKY			2	P0509	C		M	N		
1	11	70-10905	SCREW, PHIL PAN HD 4-40X1/4	WP	0	EA	.0	A	N	N		2.000000
					4				P	N	N	
1	12	10-10903	SCREW, #8-32 x 1-1/4" PHL PN HD	WP	0	EA	.0	A	N			4.000000
					2				P	N		
1	13	26-02027	LOCKWASHER, #6 EXT. TOOTH	WP	0	EA	.0	A	N	N		8.000000
					5				P	N	N	
1	14	26-30163	SCREW 6-32x11/32" SOC HD CAP	WP	0	EA	.0	A	N	N		8.000000
					5				P	N	N	
1	15	70-04602	FUSE, 1 AMP 250 VOLT	WP	0	EA	.0	A	Y	N		2.000000
					3				P	Y	N	

I N D E N T E D B I L L O F M A T E R I A L

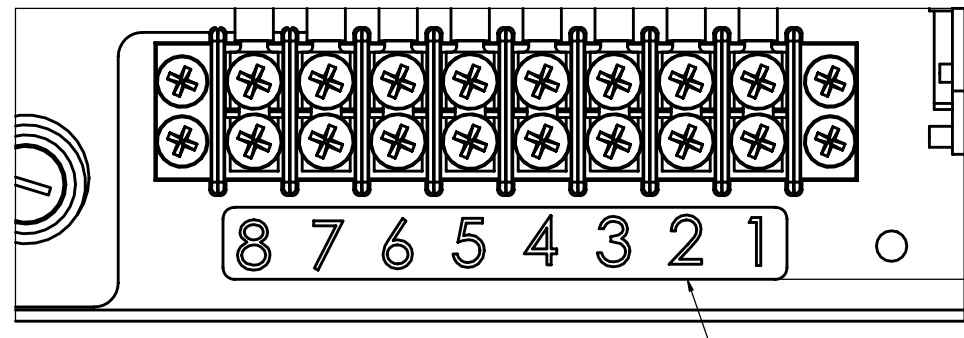
Level	Seq Component-Item	Component-Description	Loc	Opr LLC	UOM Engr	Scrap REV	Act P/M	Stk Ctl	B/I B/F	Qty On-Hand Qty-Allocated	Qty-Per-Parent Qty-On-Order
1	16 70-04782	FUSEHOLDER, BUSSMANN HTB-32I		0	EA	.0	A	Y	N		3.000000
	PANEL MOUNT		WP	2			P	Y	N		
1	19 10-10002	FRAME,GRID MOUNTING		0	EA	.0	A	Y			1.000000
			WP	2 P0982		D	P	Y			
1	20 10-10901	STANDOFF, 1" HEX		0	EA	.0	A	N			1.000000
			WP	2			P	N			
1	21 10-10907	STUD BUMPER, 1/2" DIA.		0	EA	.0	A	Y			2.000000
			WP	2 P0834		B	P	Y			
1	22 70-04701	CABLE TIE, 4" LONG		0	EA	.0	A	Y	N		4.000000
			WP	6		1	P	Y	N		
1	23 10-10007	RETAINER, GRID		0	EA	.0	A	Y			4.000000
			WP	2			P	Y			
1	24 10-10005	ROD, BUSHING GUIDE		0	EA	.0	A	Y			4.000000
			WP	2			P	Y			
1	25 10-10910	BEARING, 1/4" SHFT x 3/8 DIA		0	EA	.0	A	Y			4.000000
	x 1/4" THK OIL IMPREG.		WP	2			P	Y			
1	26 70-04292	SWITCH, 220/120 LINE VOLTAGE		0	EA	.0	A	Y	N		1.000000
			WP	3			P	Y	N		
1	27 10-08006	HARNES ASM., BUCKY		0	EA	.0	A	N			1.000000
			WP	2 P0898		C	M	N			
1	28 10-10022	LABEL, FUSE RATING		0	EA	.0	A	Y	N		1.000000
			WP	2			P	Y	N		
1	30 10-10030	LABEL, PROTECTIVE,EARTH GROUND		0	EA	.0	A	Y	N		1.000000
			WP	2 P0485		A	P	Y	N		
1	31 70-11128	SCRW,PHIL UNDC FT HD 6-32X1/4		0	EA	.0	A	N	N		4.000000
			WP	5			P	N	N		
1	32 LABOR	LABOR ASSEMBLY TIME (HRS)		0	HR	.0	A	Y	N		.500000
			WP	8			P	Y	N		
1	33 BURDEN	BURDEN COST (HRS)		0	HR	.0	A	Y	N		.500000
	SAME AS LABOR HRS		WP	8			P	Y	N		



DETAIL A
 SCALE 1:1
 Connector Orientation



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	10-20002	Sub Assembly, Bucky Chassis W/AEC
2	1	10-10014	Cover, Pocket
3	2	10-10914	SCREW, #6-32 X 3/4" PHL PAN HD
4	3	70-11128	Screw, Phil Undct Ft Hd 6-32X1/4
5	1	10-08000	Motor Control, PCB Asm.
6	1	10-10930	Terminal Strip, 8 POS. Dual
7	4	26-00634	SCREW, 6-32X1/2 PAN HEAD MS
8	1	10-10912	Screw 8-32 x 3/4" Phl Pan Hd
9	1	10-20001	SUB-ASM., BUCKY MOTOR
10	7	26-02033	Lockwasher, #8 Ext. Tooth
11	6	10-10926	Screw, 8-32 x 3/8 Phl Truss Head
12	1	10-10016	Base Plate PBL Bracket
13	1	10-08005	Harness Asm., Bucky PBL Brkt
14	4	10-10916	Screw, #10-32 X 1/4, Phillips Pan Head
15	1	10-20004	Headed Proximity Probe
16	1	10-10915	Nut, Hex, Jam, 3/8-16
17	2	10-10021	Alignment Pin
18	2	10-10917	SCREW, #4-40 X 7/8" PAN HD
19	2	70-10993	#4 Lockwasher Internal Tooth
20	2	10-10922	Spacer, #4 ID x.25 OD x 3/8
21	1	10-10019	Insulator, Receptacle
22	1	26-00239	Nut, Hex Keps 6-32
23	1	XX-XXXX	Item No. 23 Not Used
24	1	XX-XXXX	Item No. 24 Not Used
25	11	70-04701	Cable Tie, 4" Long
26	1	10-10018	Serial Label, True Speed Bucky
27	1	XX-XXXX	Item No. 27 Not Used
28	1	XX-XXXX	Item No. 28 Not Used
29	1	10-20000	Stop Tab Kit, Bucky
30	1	00-02-1529	Bucky Installation/Service Manual
31	1	10-10025	Insert, Bucky Foam Packaging
32	1	10-10026	Carton, Bucky Shipping
33	9	70-10901	SCREW, PHIL. PAN HD 6-32X3/16
34	8	10-10919	Faston, #6 Spade Flange
35	1	XX-XXXX	Item No. 35 Not Used
36	3	10-10035	Retainer, PBL Bracket Center
37	1	20-46219	Wire, 18 awg. Green Yellow
38	1	70-10986	NUT, STEEL KEPS- 8-32 UNC-2B
39	6	H6-00022	Screw, 4-40 x .19 Lg Ph FH Undercut, Black
40	1	10-10036	Label, Terminal Strip



DETAIL B
 SCALE 2:1
 Label Placement

PBL WIRING INFORMATION	
HARNESS 10-08005 WIRE COLOR	ITEM #6 DESTINATION
PURPLE	1
GREEN	2
GRAY	3
ORANGE	4
RED	5
YELLOW	6
WHITE	7
BLACK	8

- NOTES:
1. CRIMP SPADE FASTONS ITEM # 34 (10-10919), TO EACH WIRE FROM HARNESS ITEM #13 (10-08005), AND INSTALL ON 8 POS. CONNECTOR ITEM #6 (10-10930) PER WIRING CHART.
 2. DRESS WIRES FROM HARNESS ITEM #13 (10-08005), USING 6 CABLE TIES ITEM #25 (70-04701).
 3. PACKAGE FINISHED PRODUCT USING BUCKY CARTON ITEM # 32 (10-10026), AND 2 FOAM INSERTS ITEM #31 (10-00025), PER OPERATION SCHEDULE #27-09-1529.
 4. INCLUDE SPACER KIT ITEM #29 (10-20000), AND SERVICE MANUAL ITEM #30 (00-02-1529) IN BOX.

I N D E N T E D B I L L O F M A T E R I A L

Items: KLB10-08012 Thru KLB10-08012 Location: AH ARLINGTON HEIGH
 Activity Codes: Active Items Only
 1 Levels With No Blow Through
 No Selection On Basis Of Effectivity Date No Selection On Basis Of Obsolete Date
 Including: Reference Designators

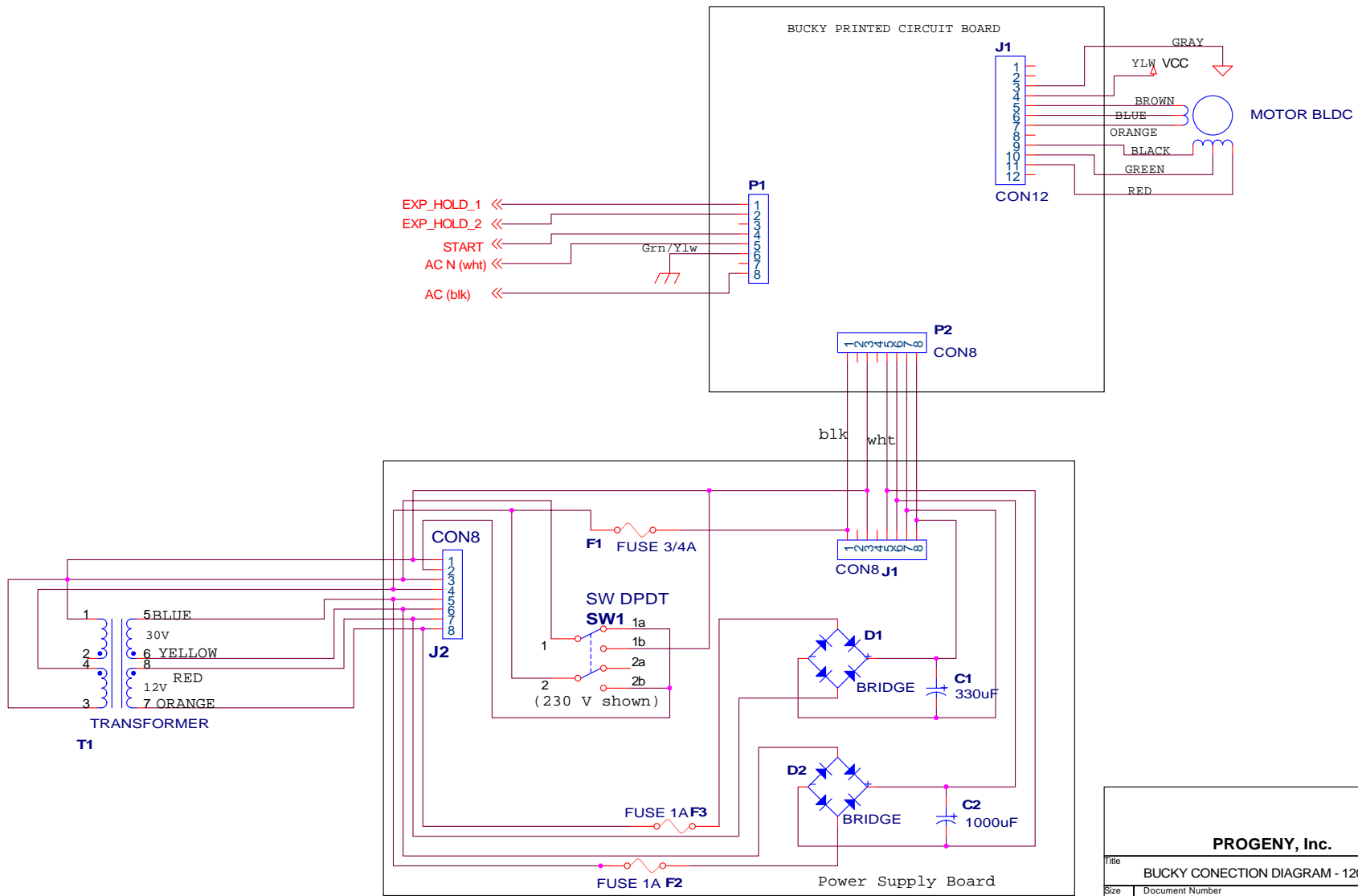
Level	Seq	Component-Item	Component-Description	Loc	Opr	UOM	Scrap	Act	Stk	B/I	Qty On-Hand	Qty-Per-Parent
					LLC	Engnr	REV	P/M	Ctl	B/F	Qty-Allocated	Qty-On-Order
=====												
Parent Item:	KLB10-08012	BUCKY COMP.ASM., 17"x17"		Loc:	AH	LLC:	0	Eng	Relse:	P0982	Rev:	H
		LEFT HAND MOTOR-RT.HAND LOAD										Item Rev: H
1	1	10-20002	SUB-ASM., BUCKY CHASSIS	WP		0 EA	.0	A	N	N		1.000000
					1	P0982	E		M	N	N	
1	2	10-10014	COVER, POCKET	WP		0 EA	.0	A	Y	N		1.000000
					1	P0982	F		P	Y	N	
1	3	10-10914	SCREW, #6-32 X 3/4" PHL PAN HD	WP		0 EA	.0	A	N	N		2.000000
					1				P	N	N	
1	4	70-11128	SCRW,PHIL UNDC T FT HD 6-32X1/4	WP		0 EA	.0	A	N	N		3.000000
					5				P	N	N	
1	5	10-08000	MOTOR CONTROLLER, PCB ASSY.	WP		0 EA	.0	A	Y	N		1.000000
					1	00731	G		M	Y	N	
1	6	10-10930	TERMINAL STRIP, 8 POS. DUAL	WP		0 EA	.0	A	Y	N		1.000000
					1	P0982	C		P	Y	N	
1	7	26-00634	SCREW, 6-32X1/2 PAN HEAD MS	WP		0 EA	.0	A	N	N		4.000000
					3				P	N	N	
1	8	10-10912	SCREW, #8-32 x 3/4" PHL PAN HD	WP		0 EA	.0	A	N	N		1.000000
					1				P	N	N	
1	9	10-20001	SUB-ASM., BUCKY MOTOR	WP		0 EA	.0	A	N	N		1.000000
					1				M	N	N	
1	10	26-02033	LOCKWASHER, #8 EXT. TOOTH	WP		0 EA	.0	A	N	N		7.000000
					3				P	N	N	
1	11	10-10926	SCREW, #8-32 X 3/8 PHL TRUSS	WP		0 EA	.0	A	N	N		6.000000
		HEAD			1				P	N	N	
1	12	10-10033	BASE PLATE PBL BRACKET W/SLOT	WP		0 EA	.0	A	Y	N		1.000000
					1	P0982	A		P	Y	N	
1	13	10-08005	HARNES ASM., BUCKY PBL BRKT.	WP		0 EA	.0	A	N	N		1.000000
					1	P0982	B		M	N	N	
1	14	10-10916	SCREW,#10-32X1/4,PH PAN HD	WP		0 EA	.0	A	N	N		4.000000
					2	P0705	C		P	N	N	

I N D E N T E D B I L L O F M A T E R I A L

Level	Seq	Component-Item	Component-Description	Loc	Opr LLC	UOM Engr	Scrap REV	Act P/M	Stk Ctl	B/I B/F	Qty On-Hand Qty-Allocated	Qty-Per-Parent Qty-On-Order
1	15	10-20004	HEADED PROXIMITY PROBE	WP	0	EA	.0	A	Y	N		1.000000
					1	P0901	A		P	Y	N	
1	16	10-10915	NUT, 3/8-16 HEX JAM	WP	0	EA	.0	A	N	N		1.000000
					1				P	N	N	
1	17	10-10021	ALIGNMENT PIN	WP	0	EA	.0	A	Y	N		2.000000
					1	P0791	B		P	Y	N	
1	18	10-10917	SCREW, #4-40 X 7/8" PAN HD MACHINE SCREW	WP	0	EA	.0	A	N	N		2.000000
					1				P	N	N	
1	19	70-10993	#4 LOCKWASHER INTERNAL TOOTH	WP	0	EA	.0	A	Y	N		2.000000
					5				P	Y	N	
1	20	10-10922	SPACER, #4 ID X .25 OD X 3/8"	WP	0	EA	.0	A	Y	N		2.000000
					1				P	Y	N	
1	21	10-10019	INSULATOR, RECEPTACLE	WP	0	EA	.0	A	Y	N		1.000000
					1				P	Y	N	
1	22	26-00239	NUT, HEX, KEPS 6-32	WP	0	EA	.0	A	N	N		1.000000
					4				P	N	N	
1	25	70-04701	CABLE TIE, 4" LONG	WP	0	EA	.0	A	Y	N		11.000000
					6		1		P	Y	N	
1	26	10-10018	SERIAL LABEL, TRUE SPEED BUCKY	WP	0	EA	.0	A	N	N		1.000000
					1	P0920	C		M	N	N	
1	29	10-20000	STOP TAB KIT, BUCKY	WP	0	EA	.0	A	N	N		1.000000
					1	P0578	D		M	N	N	
1	30	00-02-1529	BUCKY INSTALLATION/SERVICE MANUAL	WP	0	EA	.0	A	N	N		1.000000
					1	P0651	G		P	N	N	
1	31	10-10025	INSERT, BUCKY FOAM PACKAGING	WP	0	EA	.0	A	N	N		1.000000
					1				P	N	N	
1	32	10-10026	CARTON, BUCKY SHIPPING	WP	0	EA	.0	A	N	N		1.000000
					1				P	N	N	
1	33	70-10901	SCREW, PHIL PAN HD 6-32X3/16	WP	0	EA	.0	A	N	N		9.000000
					5				P	N	N	
1	34	10-10919	FASTON, #6 SPADE FLANGE	WP	0	EA	.0	A	Y	N		8.000000
					1				P	Y	N	
1	36	10-10035	RETAINER, PBL BRACKET CENTER	WP	0	EA	.0	A	Y	N		3.000000
					1	P0982	A		P	Y	N	

I N D E N T E D B I L L O F M A T E R I A L

Level	Seq Component-Item	Component-Description	Loc	Opr LLC	UOM Engr	Scrap REV	Act P/M	Stk Ctl	B/I B/F	Qty On-Hand Qty-Allocated	Qty-Per-Parent Qty-On-Order
1	37 20-46219	WIRE, 18 AWG. GREEN/YELLOW	WP	0	FT	.0	A	Y	N		.500000
				5			P	Y	N		
1	38 70-10986	NUT, STEEL KEPS- 8-32 UNC-2B	WP	0	EA	.0	A	N	N		1.000000
				3			P	N	N		
1	39 H6-00022	SCREW, PHILLIPS FLAT HEAD	WP	0	EA	.0	A	N	N		6.000000
	UNDERCUT, 4-40 X .25 LG			1	P0982	A	P	N	N		
1	40 10-10036	LABEL, TERMINAL STRIP	WP	0	EA	.0	A	Y	N		1.000000
				1	P0982	A	P	Y	N		
1	41 LABOR	LABOR ASSEMBLY TIME (HRS)	WP	0	HR	.0	A	Y	N		.700000
				8			P	Y	N		
1	42 BURDEN	BURDEN COST (HRS)	WP	0	HR	.0	A	Y	N		.700000
	SAME AS LABOR HRS			8			P	Y	N		



PROGENY, Inc.			
Title			
BUCKY CONECTION DIAGRAM - 120 / 240 v MODELS			
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Date	Wed. Dec. 16, 1998	Sheet	1 of 1