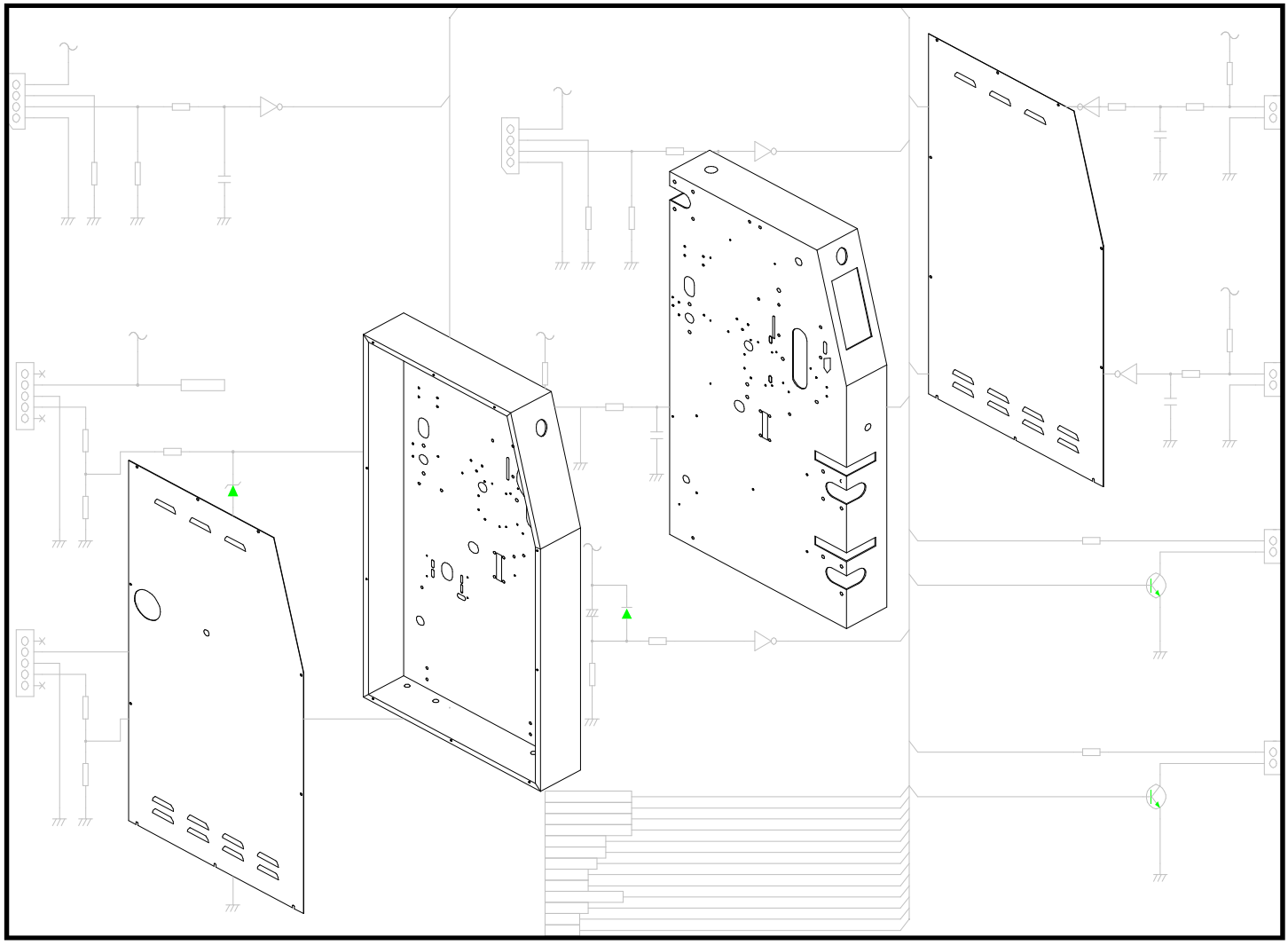
GBC FALCON 60+ (-1) ILLUSTRATED PARTS AND SCHEMATICS BOOK



Illustrated Parts

Electrical Schematics

07/07/03

ILLUSTRATED PARTS

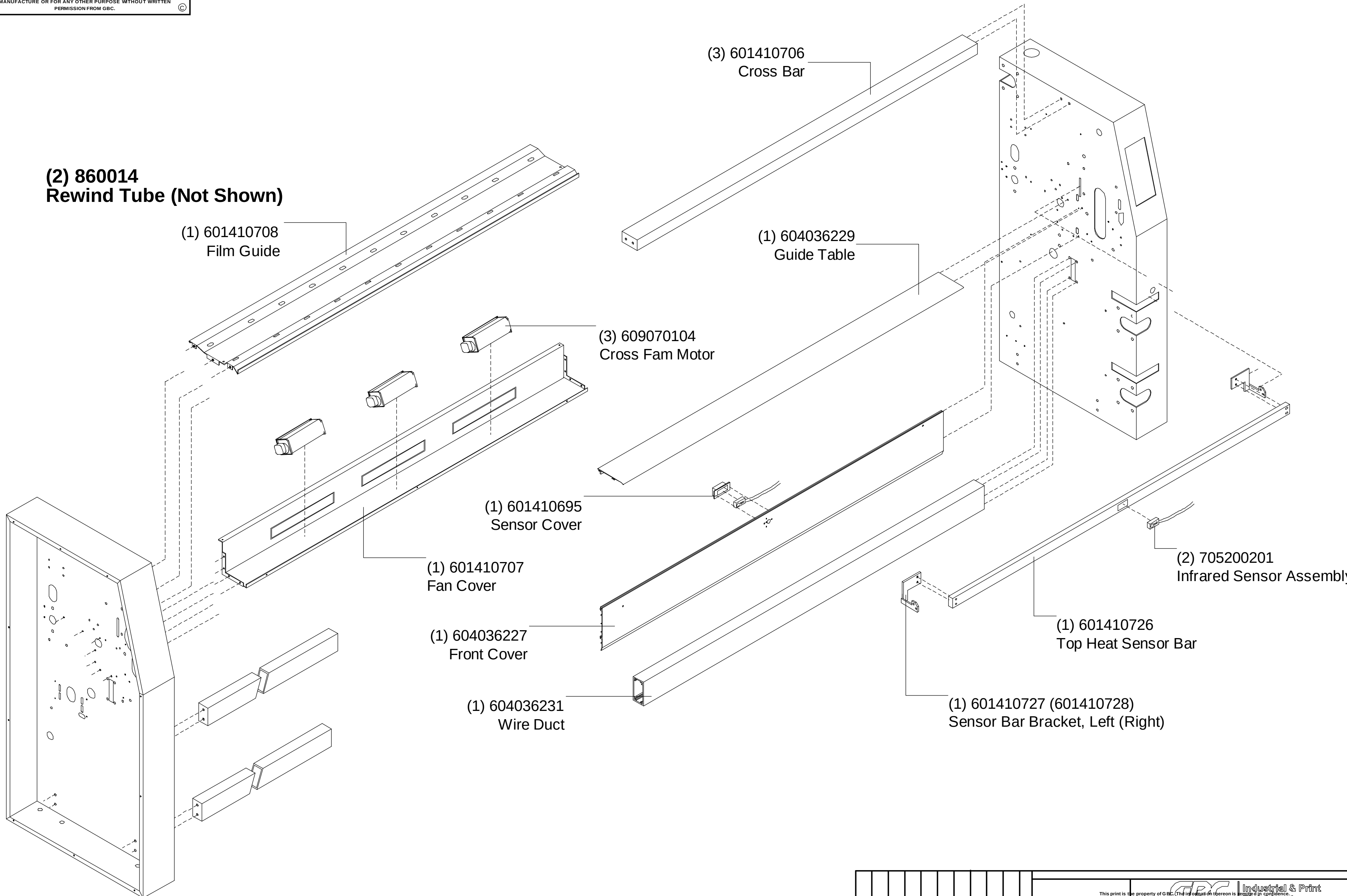
F60+1 - 001	Bridge Assembly
F60+1 - 002	Roller & Heaters Assembly
F60+1 - 003	Idlers & Unwinds Assembly
F60+1 - 004	Drive Assembly
F60+1 - 005	Roller Housing Assembly
F60+1 - 006	Main Roller Lift Assembly
F60+1 - 007	Pull Roller Lift Assembly
F60+1 - 008	Clutch Assembly
F60+1 - 009	Unwind Brake Assembly
F60+1 - 010	Control Panel & Electrical Assembly
F60+1 - 011	Safety Shield & Tables Assembly
F60+1 - 012	Cabinets & Covers Assembly
F60+1 - 013	Rear Slitter Assembly
F60+1 - 014	Separator Bar Assembly

ELECTRICAL SCHEMATICS

F60+1 - 015	Falcon 60+ (-1) Wire Diagram
F60+1 - 016	Main Board Power Control Unit
F60+1 - 017	Main Board MCU Control Unit
F60+1 - 018	Main Board Sensor Interface Control Unit
F60+1 - 019	Display Board FND/ LED Control Unit
F60+1 - 020	Display Board Key Control Unit
F60+1 - 021	Pressure Detect Control Unit

REVISION SUMMARY

DATE	DWG #	REV.	REASON	BY:
07/07/03	F60+1 - 002	A	Heater connection wire part numbers added	SNF



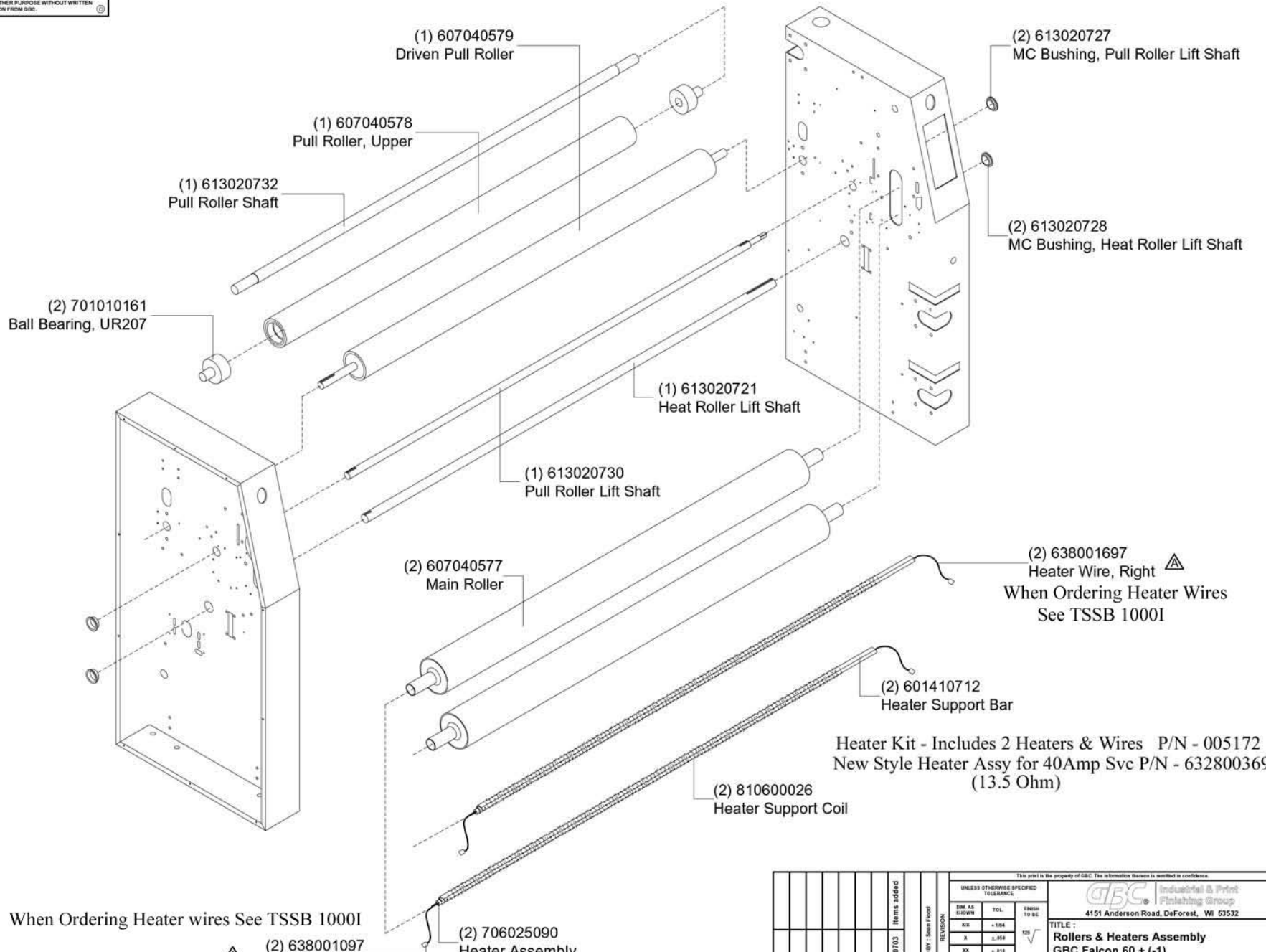
GBC Industrial & Print Finishing Group

4151 Anderson Road, DeForest, WI 53532

UNLESS OTHERWISE SPECIFIED TOLERANCE		FINISH TO BE
DIM. AS SHOWN	TOL.	125
X/X X.XX	± 1/64	
XXX	± .050	
	± .010	
	± .020	ANGLES ± 1D
XXXX	± .005	

TITLE : **Bridge Assembly GBC Falcon 60 + (-1)**

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 001



REVISION			
A	070703	Items added	

CHECKED BY : Sean Frost

This print is the property of GBC. The information thereon is remitted in confidence.

UNLESS OTHERWISE SPECIFIED TOLERANCE

DIM AS SHOWN	TOL.
XX	± 1/64
X	± .050
XX	± .010
XXX	± .020
XXXX	± .005

FINISH TO BE 125 √

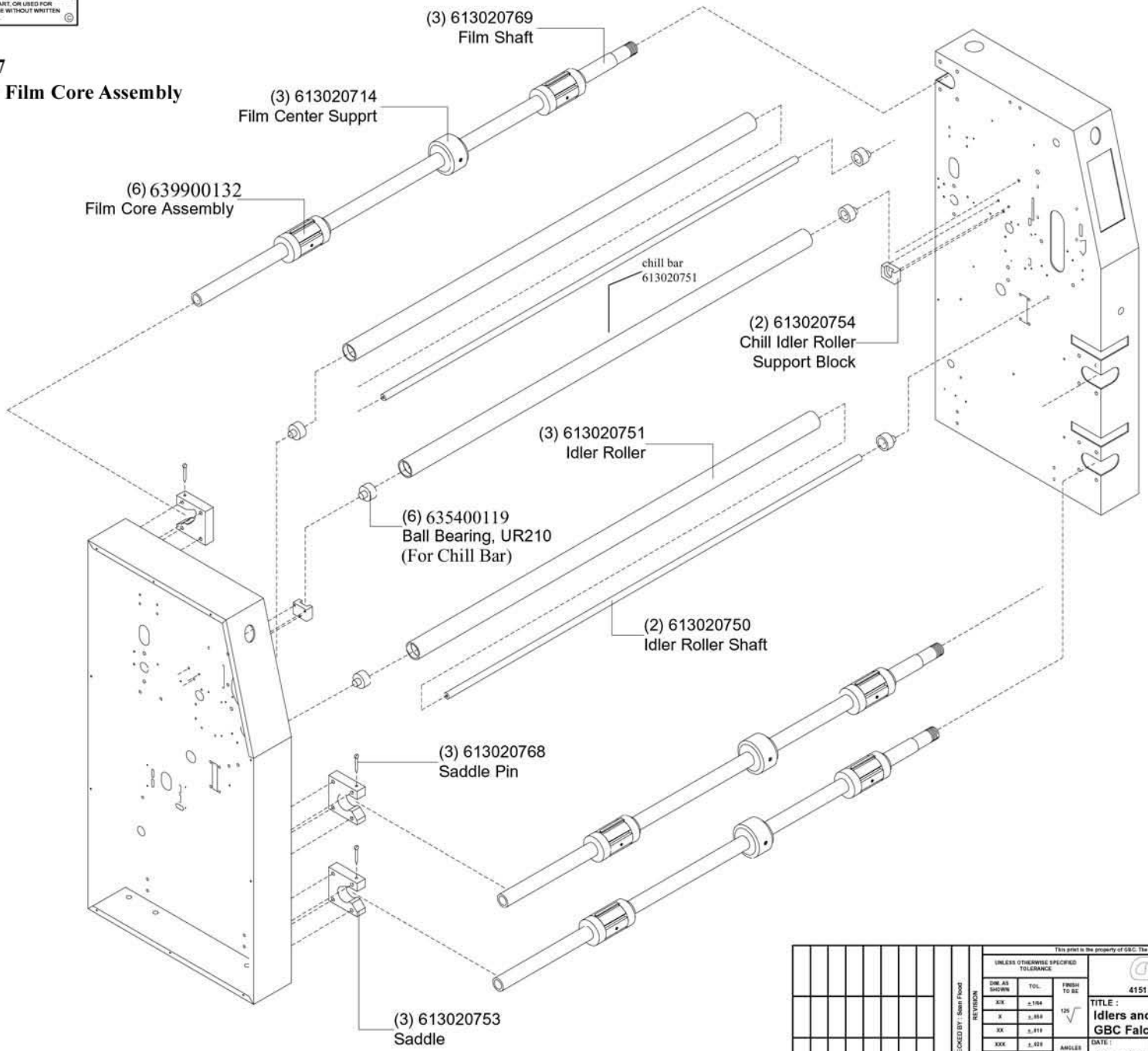
ANGLES ± 1D

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Rollers & Heaters Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 002

(6) 634300057
O-RING For Film Core Assembly



UNLESS OTHERWISE SPECIFIED TOLERANCE

DIM. AS SHOWN	TOL.
XX	±.164
X	±.059
XX	±.010
XXX	±.025
XXXX	±.005

FINISH TO BE 125 √

ANGLES ±1°

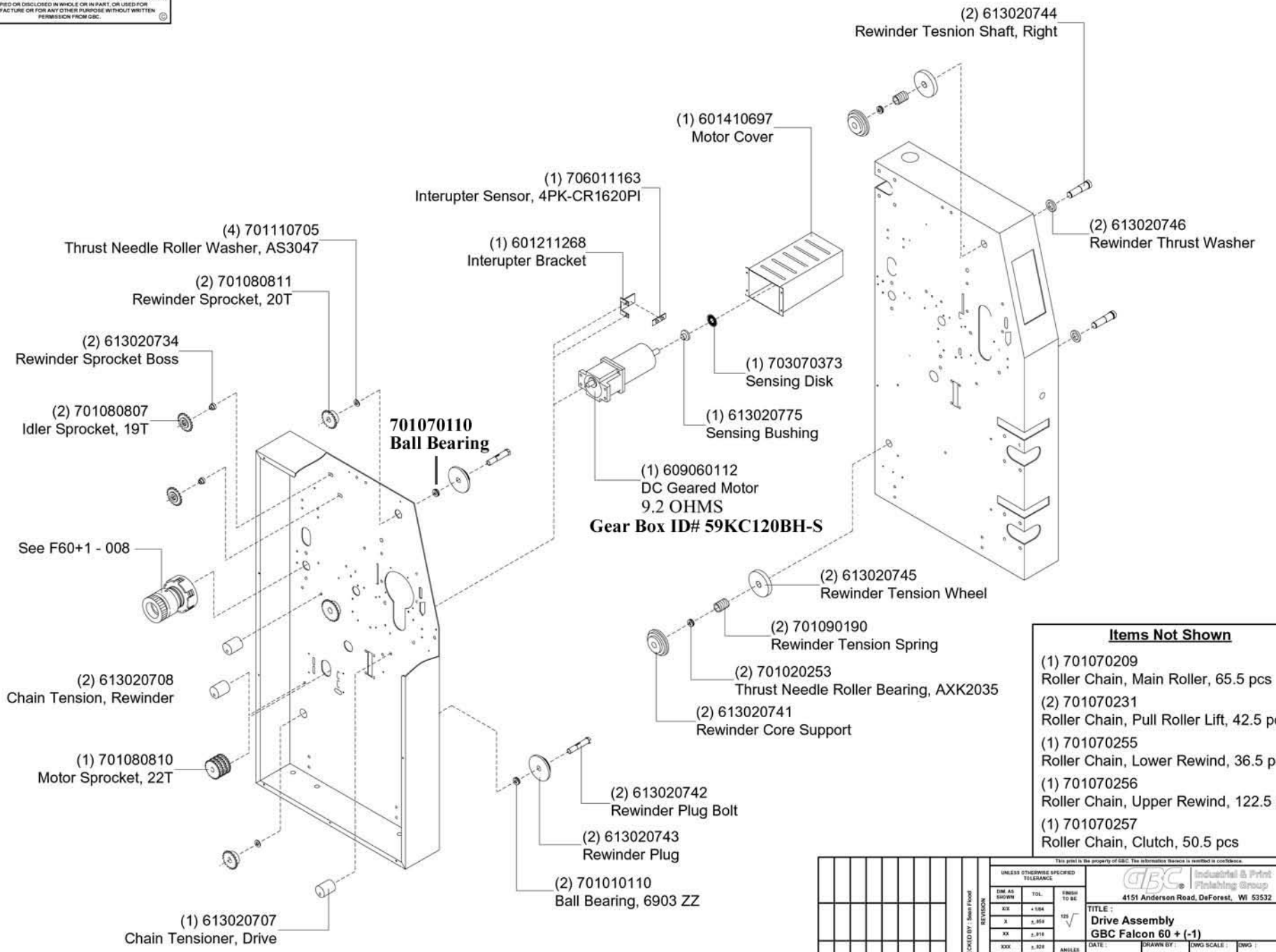
CHECKED BY : Stan Flood

REVISION

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Idlers and Unwinds Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 003



Items Not Shown

(1) 701070209
Roller Chain, Main Roller, 65.5 pcs

(2) 701070231
Roller Chain, Pull Roller Lift, 42.5 pcs

(1) 701070255
Roller Chain, Lower Rewind, 36.5 pcs

(1) 701070256
Roller Chain, Upper Rewind, 122.5 pcs

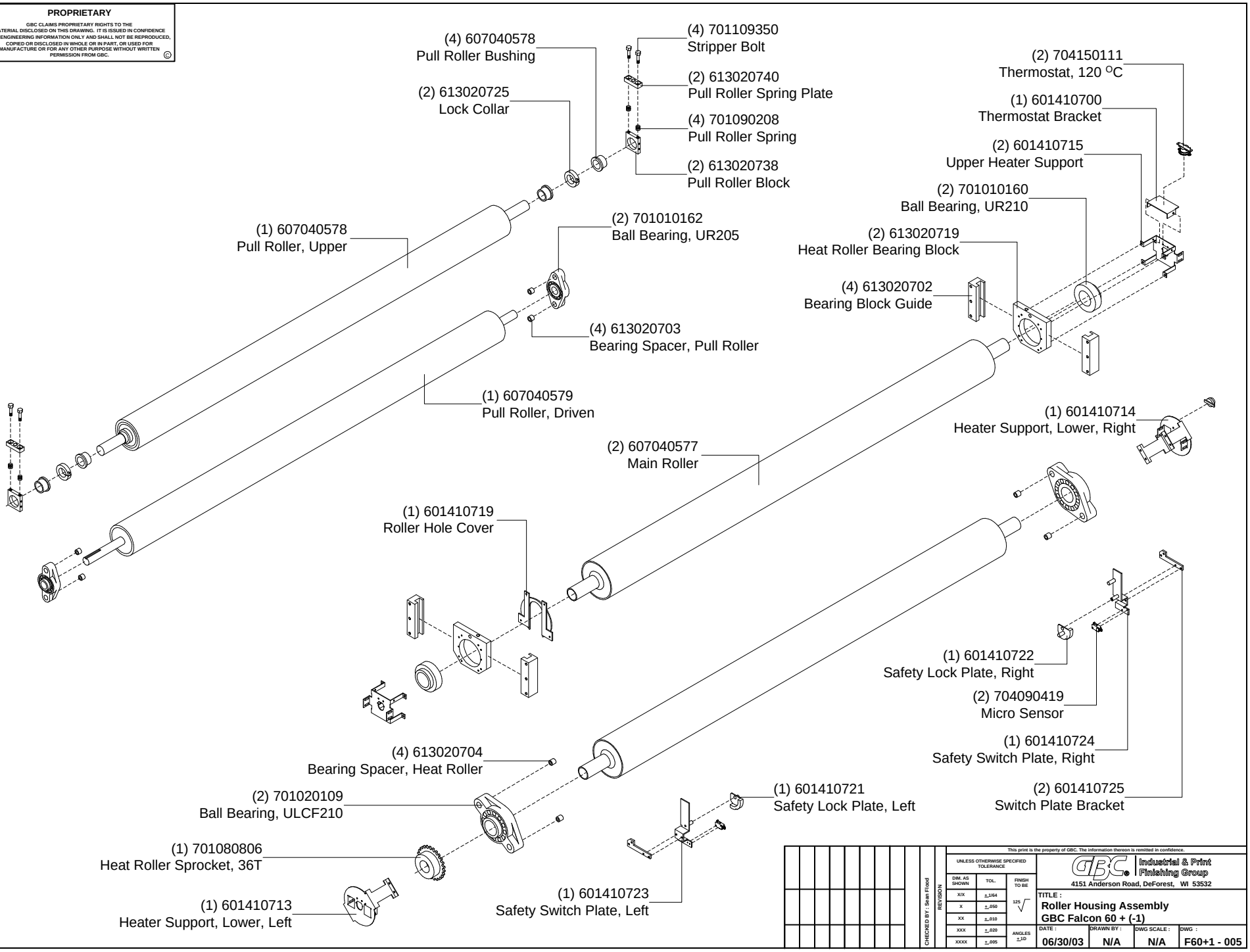
(1) 701070257
Roller Chain, Clutch, 50.5 pcs

CHECKED BY : Sean Frost	
REVISION	
UNLESS OTHERWISE SPECIFIED TOLERANCE	
DIM AS SHOWN	TOL.
XX	± .010
XXX	± .005
FINISH TO BE	125
ANGLES ± 1D	

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Drive Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 004



UNLESS OTHERWISE SPECIFIED TOLERANCE

DIM. AS SHOWN	TOL.
X/X	±.1/64
X	±.050
XX	±.010
XXX	±.020
XXXX	±.005

FINISH TO BE 125 √

ANGLES ±1D

CHECKED BY : Sean Flood

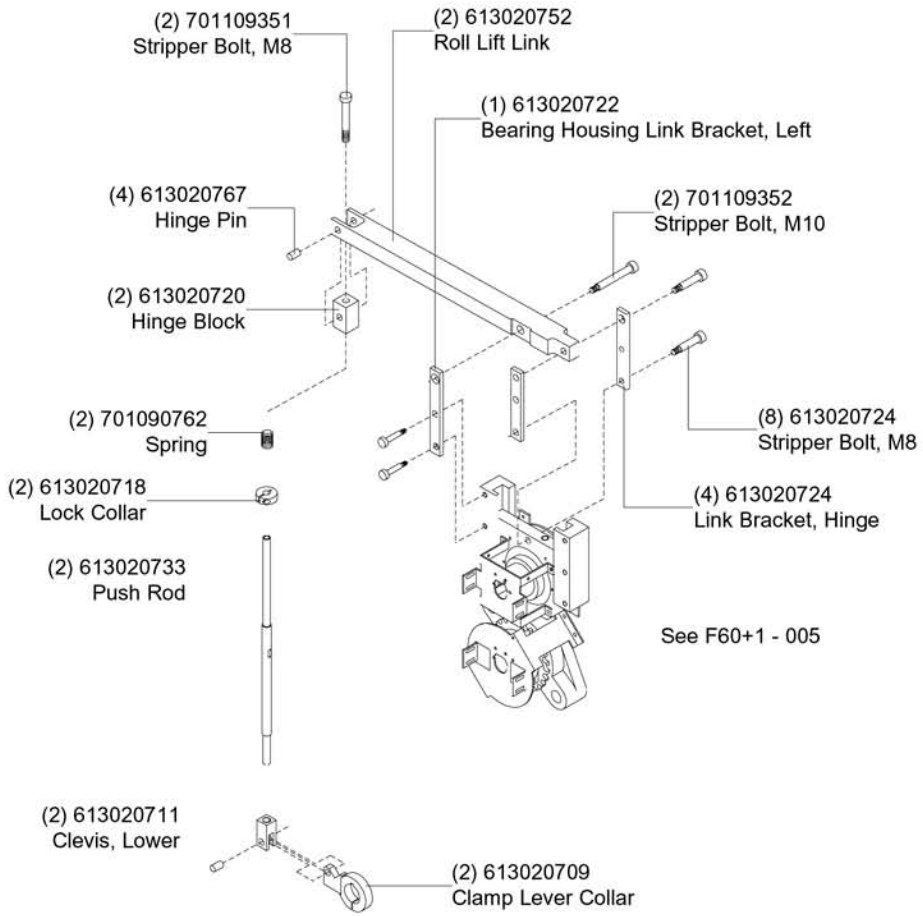
REVISION

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

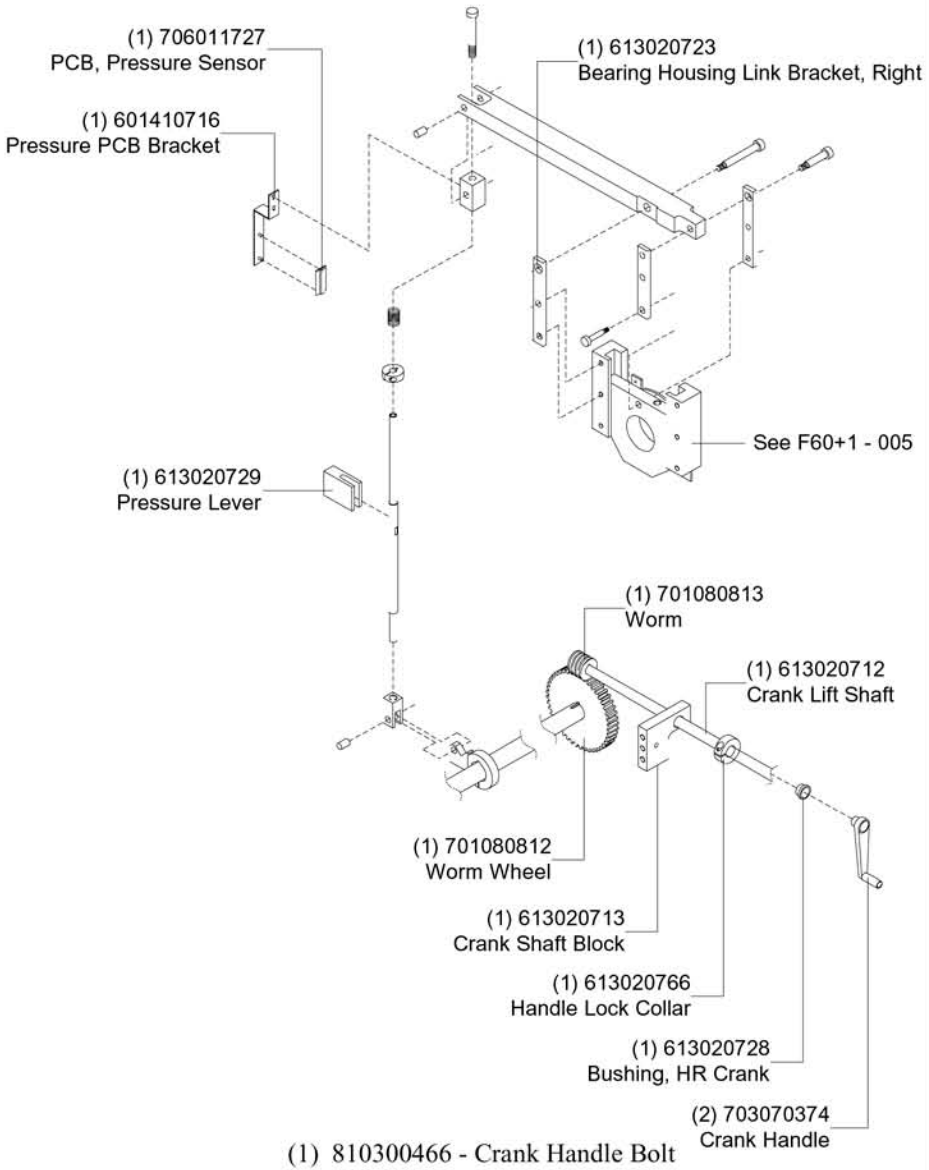
TITLE :
Roller Housing Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 005

Left Assembly



Right Assembly



(1) 810300466 - Crank Handle Bolt

UNLESS OTHERWISE SPECIFIED TOLERANCE

DIM. AS SHOWN	TOL.
XX	± .060
X	± .030
XX	± .010
XXX	± .020
XXXX	± .005

FINISH TO BE 125 √

ANGLES ± 1D

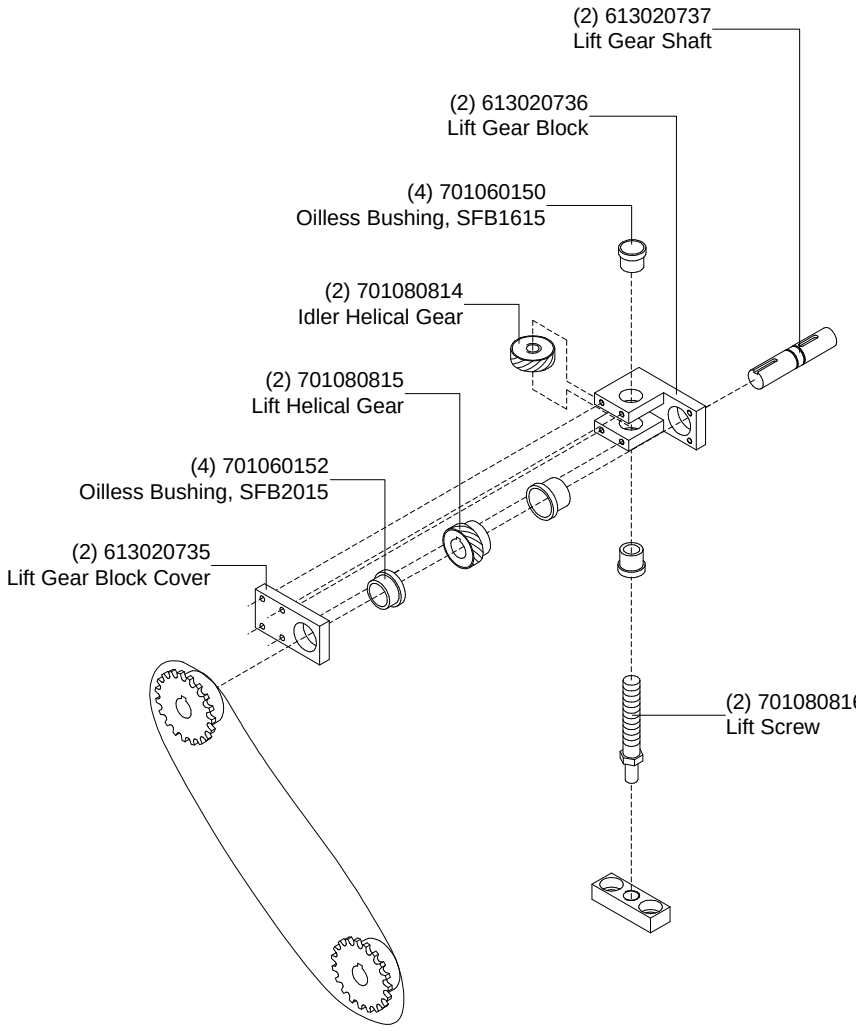
CHECKED BY : Sean Flood

REVISION

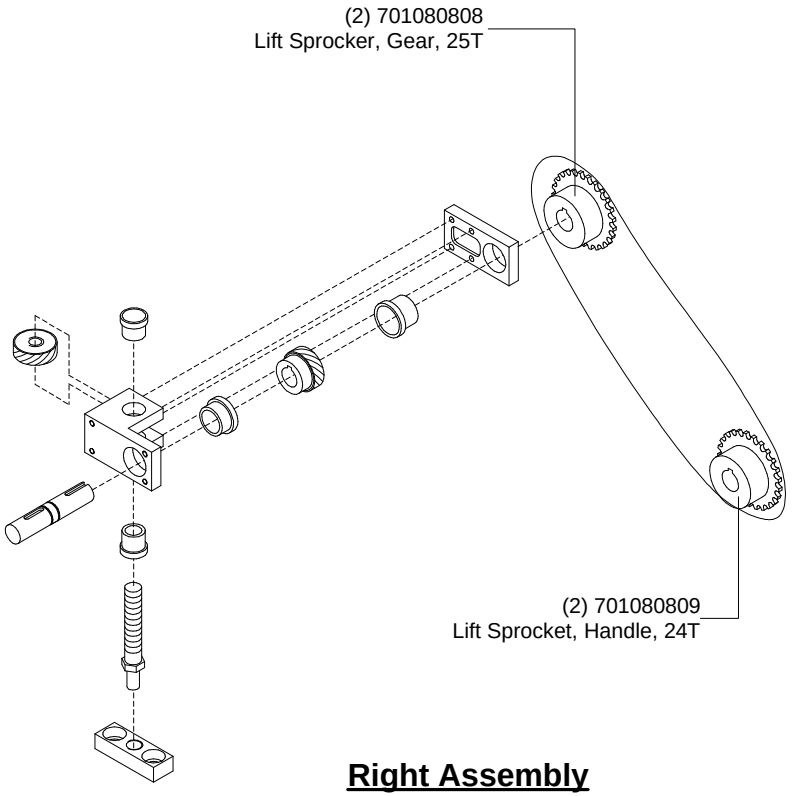
GBC® Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Main Roller Lift Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 006



Left Assembly



Right Assembly

UNLESS OTHERWISE SPECIFIED TOLERANCE		
DIM. AS SHOWN	TOL.	FINISH TO BE
X/X	±.1/64	125
X	±.050	
XX	±.010	
XXX	±.020	ANGLES ±1D
XXXX	±.005	

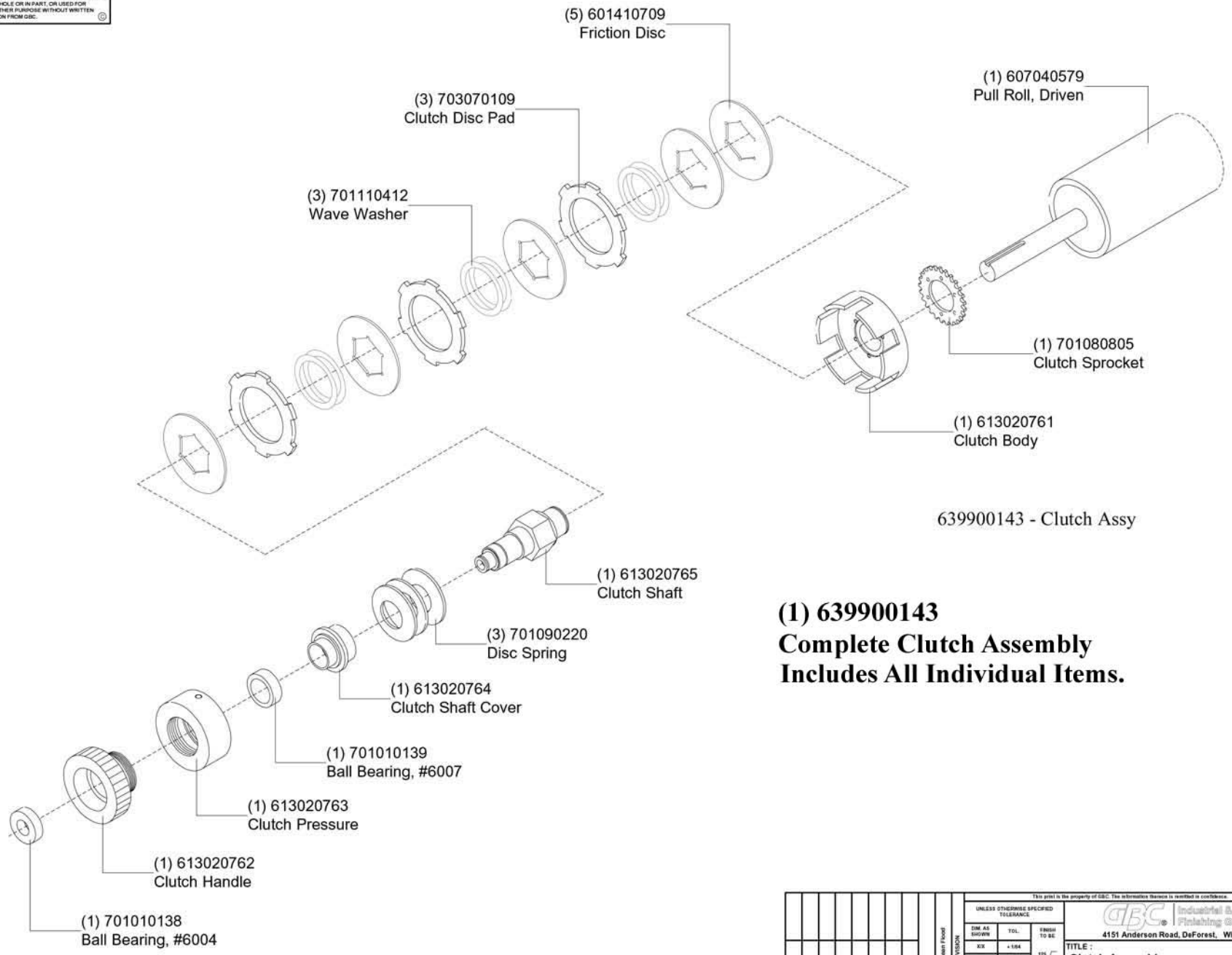
CHECKED BY : Sean Flood

REVISION

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Pull Roller Lift Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 007

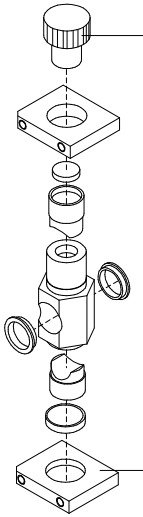


639900143 - Clutch Assy

(1) 639900143
Complete Clutch Assembly
Includes All Individual Items.

UNLESS OTHERWISE SPECIFIED TOLERANCE	
DIM. AS SHOWN / TOL.	XX ±.064 · X ±.050 · XX ±.010 · XXX ±.020 · XXXX ±.005
FINISH TO BE	125 √
ANGLES ± 1D	
CHECKED BY : Sean Frost	
REVISION	
GBC Industrial & Print Finishing Group	4151 Anderson Road, DeForest, WI 53532
TITLE :	Clutch Assembly GBC Falcon 60 + (-1)
DATE :	06/30/03
DRAWN BY :	N/A
DWG SCALE :	N/A
DWG :	F60+1 - 008

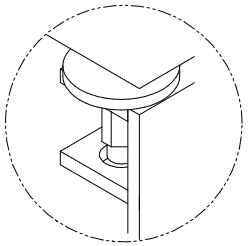
Upper Assembly

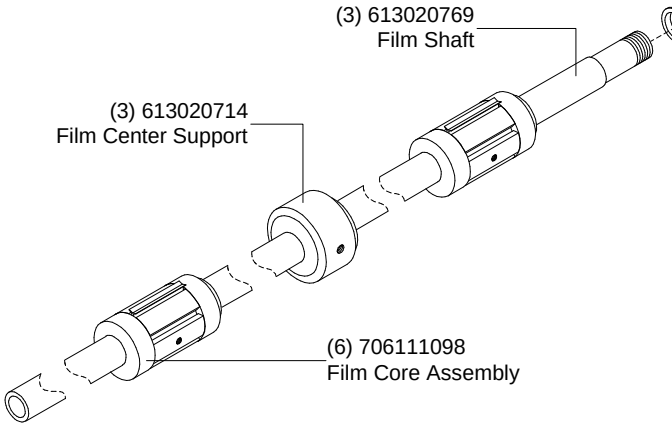


(1) 703070375
Grill Knob

(1) 613020759
Unwind Clevis, Upper, Lower Unwinds

Lower Assembly





(2) 613020756
Tension Wheel

(3) 613020760
Unwind Clevis, Upper

(3) 613020755
Tension Washer

(3) 613020706
Brake Block, Upper

(3) 613020716
Film Shaft Brake Block

(3) 613020715
Film Pipe Collar

(6) 613020717
Film Shaft Bushing

(3) 613020769
Film Shaft

(3) 613020705
Brake Block, Lower

(3) 613020714
Film Center Support

(3) 701110717
Thrust Needle Roller Bearing Washer, AS5578

(2) 613020758
Unwind Clevis, Lower, Lower Unwinds

(6) 706111098
Film Core Assembly

UNLESS OTHERWISE SPECIFIED TOLERANCE

DIM. AS SHOWN	TOL.
X/X	±.1/64
X	±.050
XX	±.010
XXX	±.020
XXXX	±.005

FINISH TO BE 125 √

ANGLES ±1D

CHECKED BY : Sean Flood

REVISION

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Unwind Brake Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 009

Items Not Shown

(1) 704110256
Power Cord Receptacle, 50A

(1) 704110257
Power Cord Plug, 50A

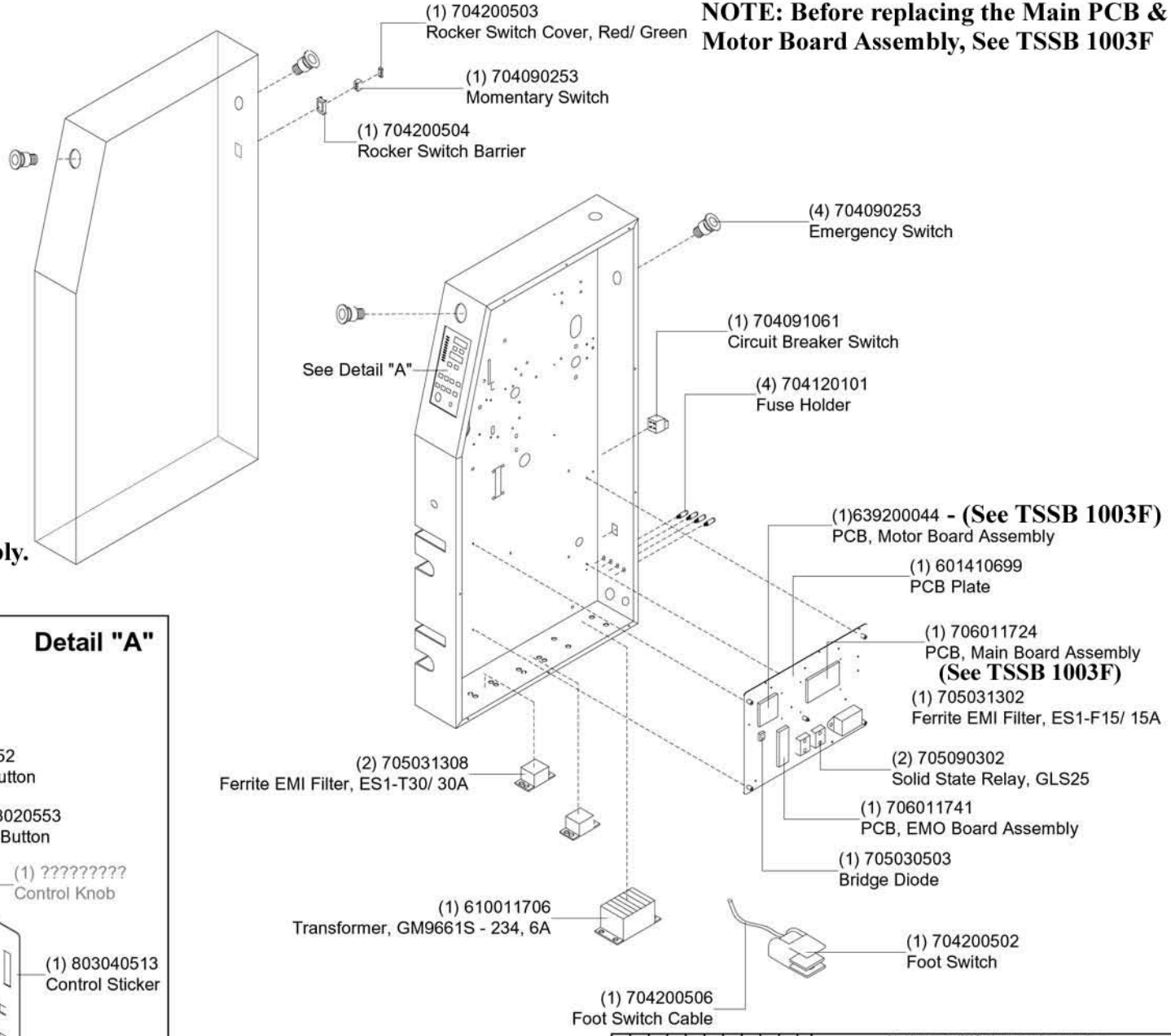
(1) 704140406
Strain Relief, Foot Switch, PG11

(1) 704140415
Strain Relief, Power Cord, PG29

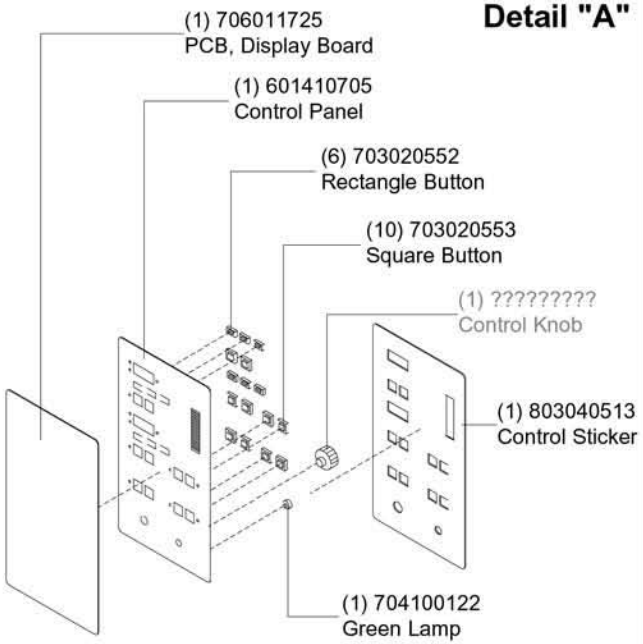
(1) 704166336
Ribbon Cable From Display PCB To Main PCB.

(1) 639900144
Complete Control Panel Assembly. Includes All Individual Items.

NOTE: Before replacing the Main PCB & Motor Board Assembly, See TSSB 1003F



Detail "A"



UNLESS OTHERWISE SPECIFIED TOLERANCE

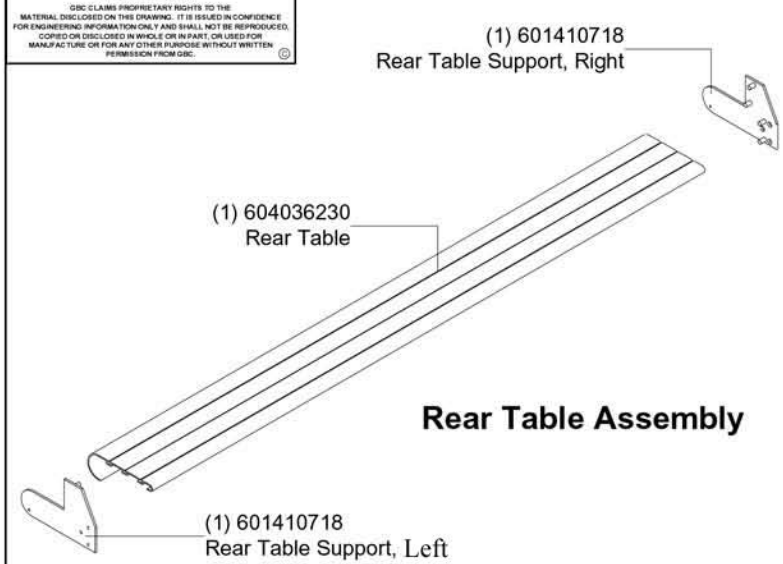
DIM AS SHOWN	TOL.
XX	± .064
X	± .064
XX	± .010
XXX	± .020
XXXX	± .005

FINISH TO BE 125 √
ANGLES ± 1D
CHECKED BY : Sean Frost
REVISION

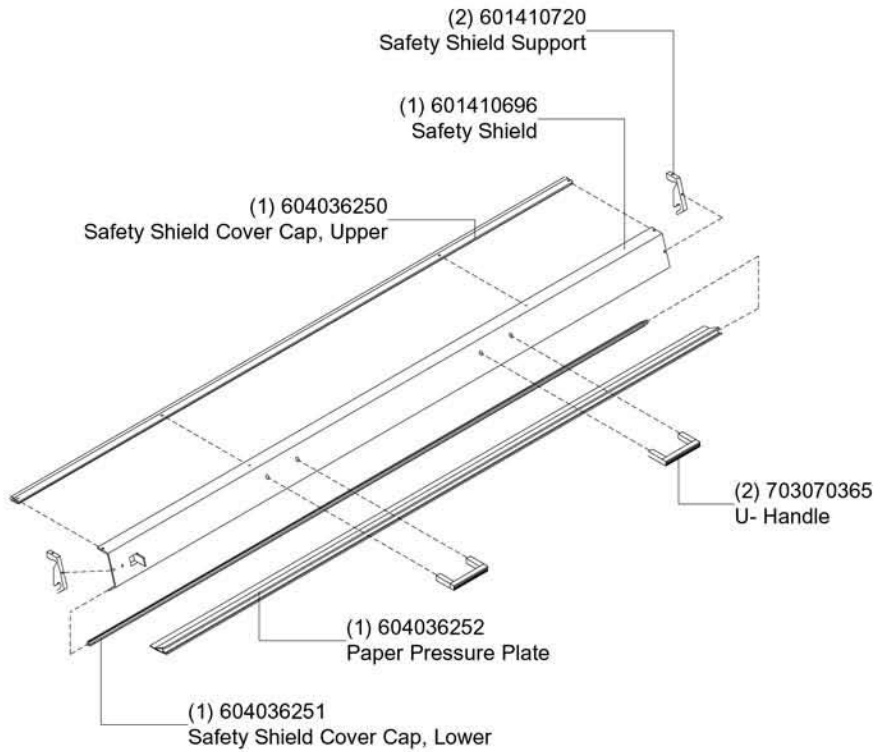
GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Control Panel and Electrical Assembly GBC Falcon 60 + (-1)

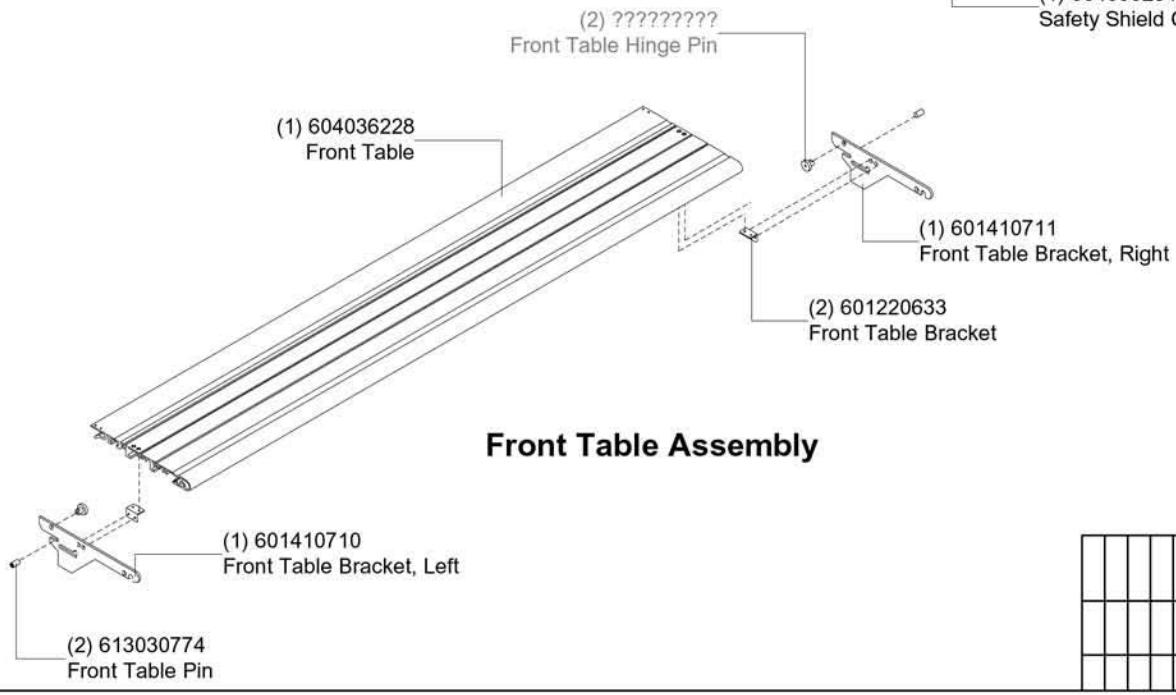
DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 010



Rear Table Assembly



(1) 639900142
Complete Safety Shield Assembly



Front Table Assembly

UNLESS OTHERWISE SPECIFIED TOLERANCE		
DIM. AS SHOWN	TOL.	FINISH TO BE 125 √
XX	± 1/64	
X	± .050	
XX	± .010	
XXX	± .020	ANGLES ± 1D
XXXX	± .005	

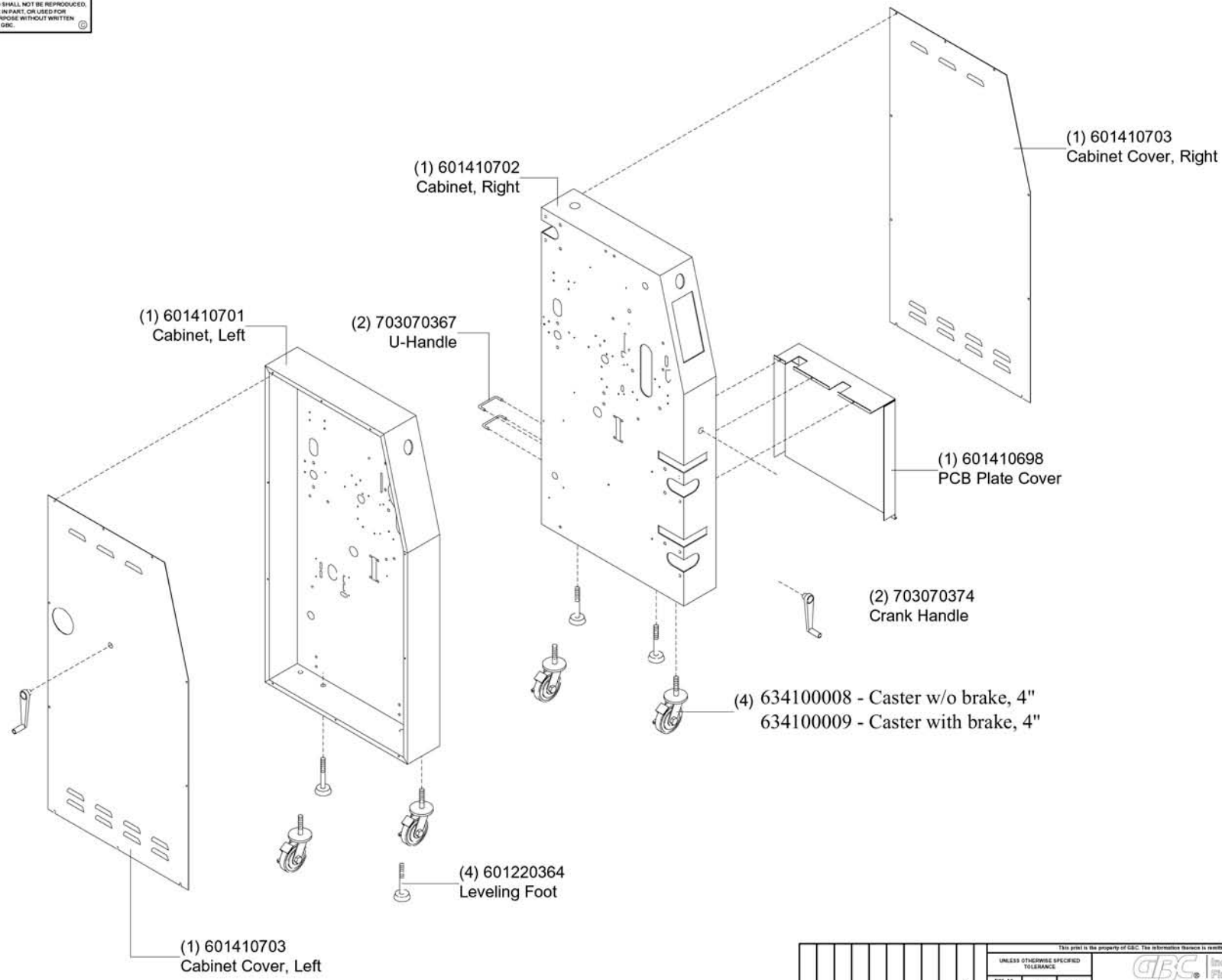
CHECKED BY : Sean Frost

REVISION

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Safety Shield and Tables Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 011



UNLESS OTHERWISE SPECIFIED TOLERANCE

DIM. AS SHOWN	TOL.
XX	± 1/64
X	± .050
XX	± .010
XXX	± .020
XXXX	± .005

FINISH TO BE 125 √

ANGLES ± 1D

CHECKED BY : Sean Frost

REVISION

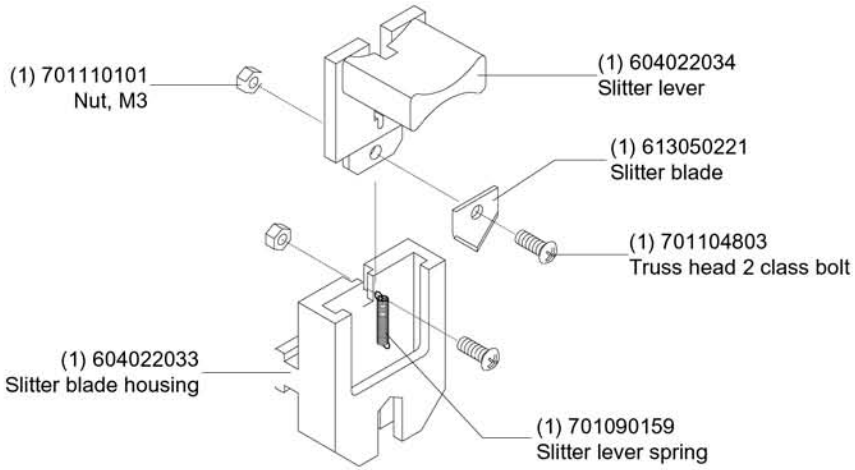
GBC® Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

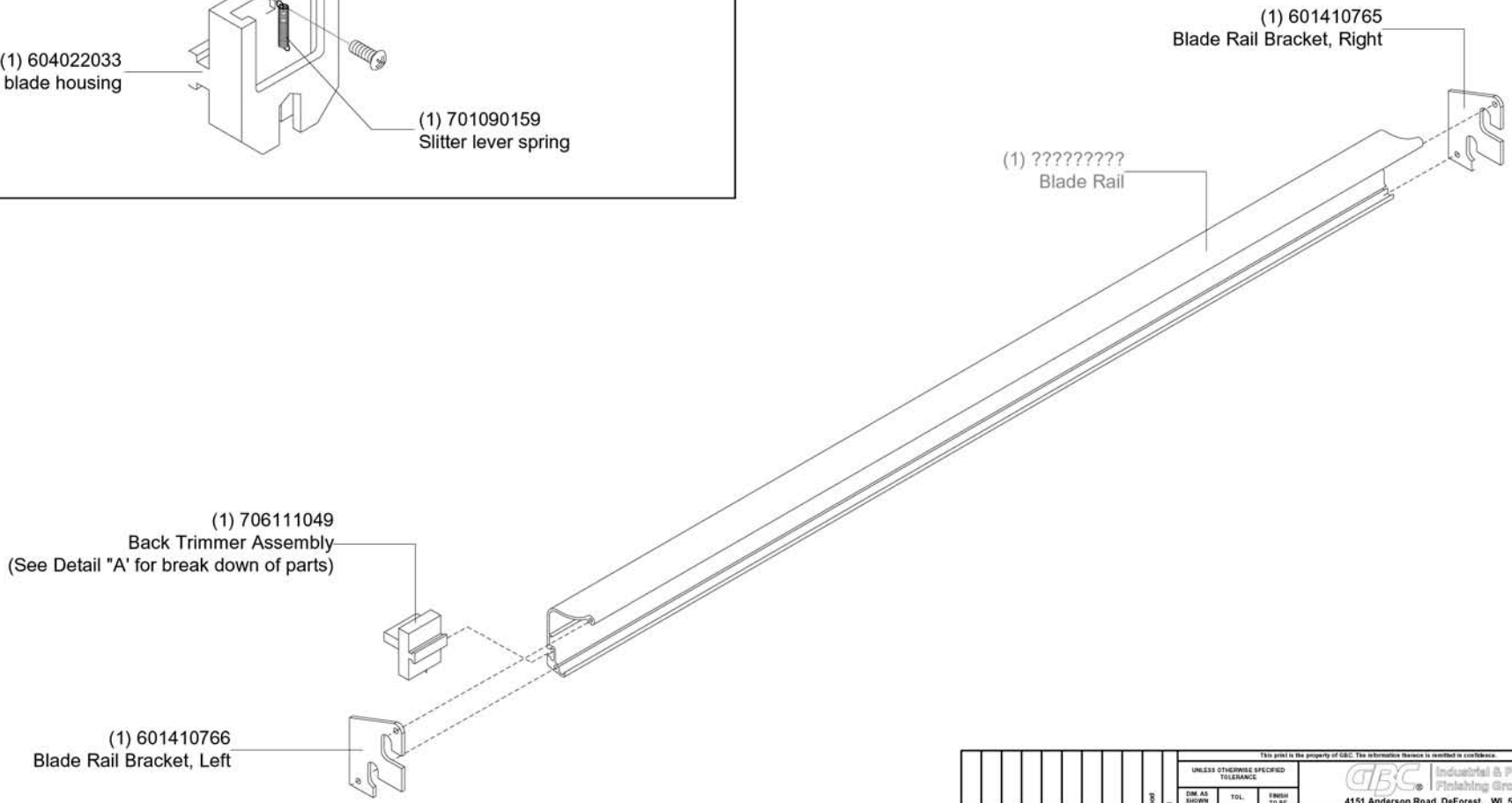
TITLE :
Cabinets and Covers Assembly
GBC Falcon 60 + (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 012

Detail "A"

706111049 - Slitter Assy.





CHECKED BY : Sean Flood

REVISION

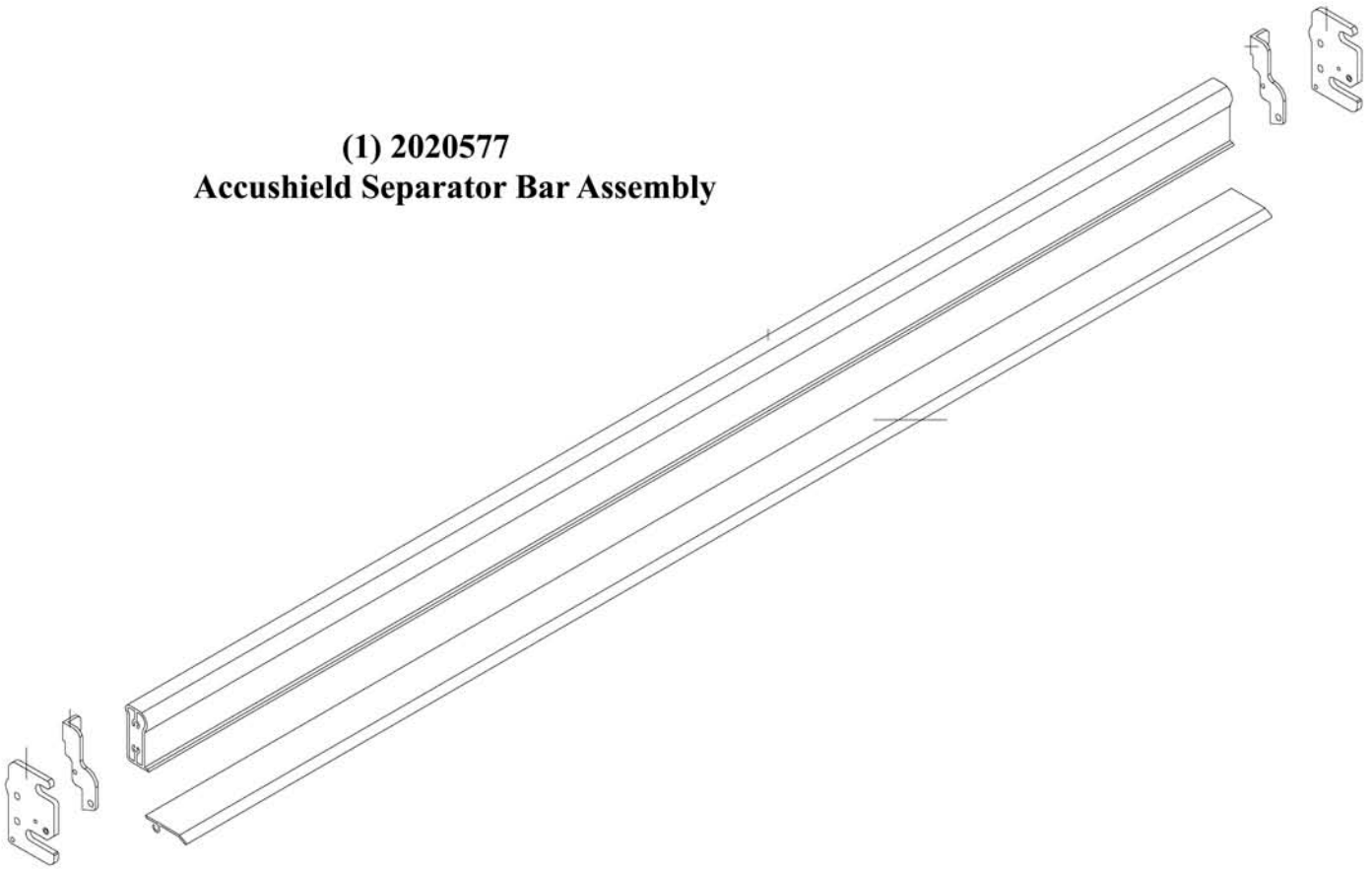
UNLESS OTHERWISE SPECIFIED TOLERANCE		
DIM. AS SHOWN	TOL.	FINISH TO BE 125
X/X	± 1/64	
X	± .050	
XX	± .010	
XXX	± .020	ANGLES ± 1D
XXXX	± .005	

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Rear Slitter Assembly
GBC Falcon 60+ (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 013

(1) 2020577
Accushield Separator Bar Assembly



UNLESS OTHERWISE SPECIFIED TOLERANCE			
DIM. AS SHOWN	TOL.	FINISH TO BE	
X/X	±.1/64	125	
X	±.050		
XX	±.010		
XXX	±.020	ANGLES ±1D	
XXXX	±.005		

CHECKED BY : Sean Flood

REVISION

GBC Industrial & Print Finishing Group
4151 Anderson Road, DeForest, WI 53532

TITLE :
Separator Bar Assembly
GBC Falcon 60+ (-1)

DATE :	DRAWN BY :	DWG SCALE :	DWG :
06/30/03	N/A	N/A	F60+1 - 014

TECHNICAL SERVICE & SUPPORT BULLETIN

T.S.S.B. NO.	1000I	DATE:	10/12/05
MODEL:	**VARIOUS MODELS**		
SUBJECT:	**HEATER WIRES WITHOUT BRASS CONNECTORS**	PAGE:	1 Of 1

Here is a list of part numbers for heater wires without brass connectors for various laminators. The brass connectors are separate from the heater wires. When ordering heater wires you will need to order the brass connectors under part number 637500017.

P/N# 638001093, Required Qty (2) right side for Orca 64 (Top & Bottom)
P/N# 638001097, Required Qty (2) left side for Orca 64 (Top & Bottom)

P/N# 638001093, Required Qty (1) right side for Orca 64-TH (Top)
P/N# 638001097, Required Qty (1) left side for Orca 64-TH (Top)

P/N# 638001097, Required Qty (2) left side for Falcon 60+ (Top & Bottom)
P/N# 638001697, Required Qty (2) right side for Falcon 60+ (Top & Bottom)

P/N# 638001697, Required Qty (1) right side for Talon 44 & 64 (Top)
P/N# 638001698, Required Qty (1) right side for Talon 44 & 64 (Bottom)
P/N# 638001705, Required Qty (2) left side for Talon 44 & 64 (Top & Bottom)

P/N# 638001697, Required Qty (1) right side for Talon 80 (Top)
P/N# 638001705, Required Qty (1) left side for Talon 80 (Top)

P/N# 638001093, Required Qty (2) right side for Titan 110/165 (Top & Bottom)
P/N# 638001097, Required Qty (2) left side for Titan 110/165 (Top & Bottom)

NOTE: When you order heater wires, you have to order the brass connectors under part number 637500017. The brass connectors can be crimped on the heater wires by using a standard wire crimping tool. The heater wire and brass connector can now be attached onto the end of the heater.

TECHNICAL SERVICE & SUPPORT BULLETIN

T.S.S.B. NO.	1003F	DATE:	8/24/05
MODEL:	**FALCON 60+ -1**		
SUBJECT:	**ELECTRONIC UPGRADE KIT**	PAGE:	1 Of 12

GBC Engineering Team has released an Electronic Upgrade Kit, part number **005177** that must be installed on all Falcon 60+ -1's that experience Main P.C. Board or Motor Driver Board failures. This Kit is intended to replace and protect these boards from motor failure utilizing a "Dynamic Brake System". When you order the Electrical Upgrade Kit, you will receive all necessary electrical components and installation instructions.

- **NOTE: The Main P.C. Board with Rev 3.2.0 Chip has been <u>modified</u> to only work with this kit.** If you install the Main P.C. Board without having the Upgrade Kit installed, **<u>it will not work</u>**. **This holds true for the Motor Driver Board as well**, **due to rewiring that is required.** There is no change to the EMO/ Relay Board part number 706011741.

- This is not a mandatory Upgrade Kit, due to the fact that there are machines that have not experienced any board failures. Contact your Regional Manager to determine if the customer should be charged, depending on the amount of Motor Driver Board failures or Main P.C. Board failures on each individual machine.

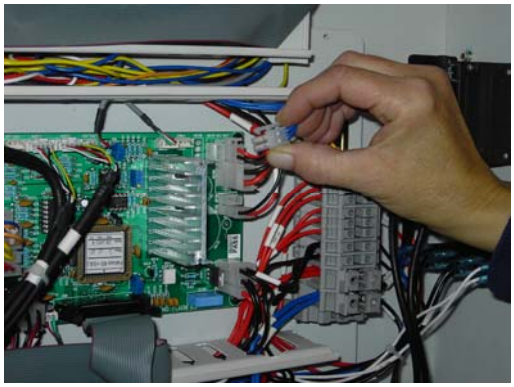
- **After you have installed the Electrical Upgrade Kit** if the Main P.C. Board or the Motor Driver Board becomes defective, you can replace the individual boards. The part number for the modified Main P.C. Board with Rev 3.2.0 Chip is 706011724. Part number for the Motor Driver Board is 638900267. These will be the same boards that were in the Kit.

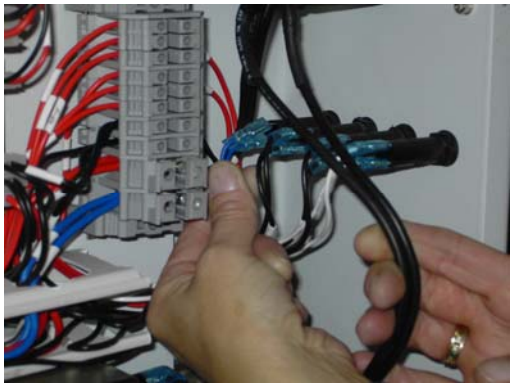
The following pages contain the installation instructions for future reference. Please update your F60+ (-1) Operator/Parts Manual, P/N# 1722885 with this information.

Falcon 60+ Electronic Upgrade Kit.
Part Number 005-177

1. Remove electrical side cover and electrical protective cover.

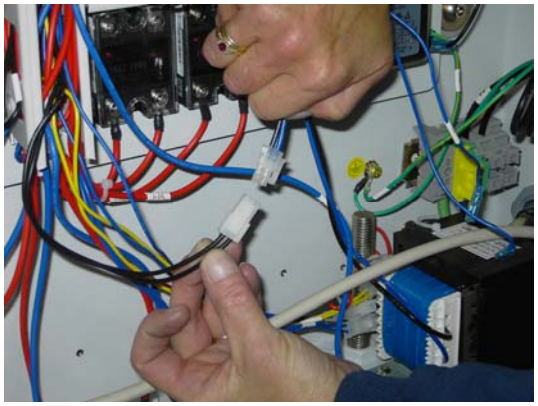
2. Remove the 18VAC plug from the main PCB. Remove the blue wires going to the fuse 250V 3.15 Amp.



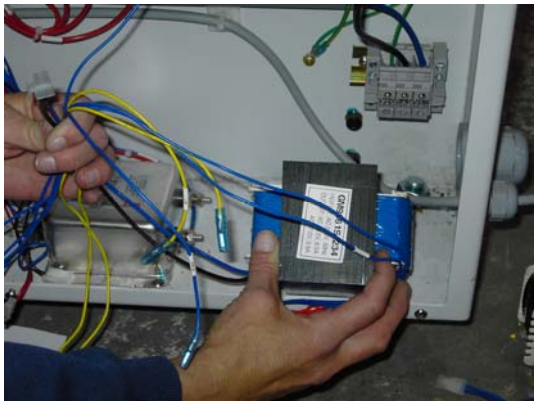


3. Remove and discard wires from the Bridge Rectifier. The Bridge Rectifier can be removed and discarded as well.

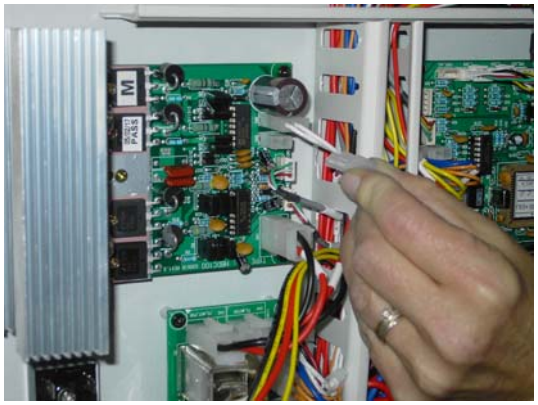
4. Disconnect main AC from Transformer. (Black wires, female plug, coming from Main AC Terminal Block.



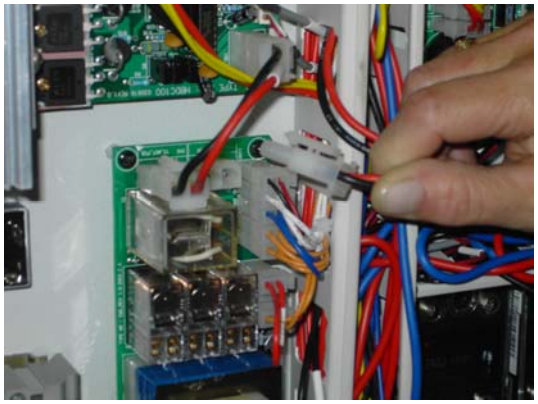
5. Completely remove the Transformer. The Transformer can be discarded at this time.



6. Locate Main Motor Driver PCB. Unplug DC plug from board. Completely remove Black and Red DC wire and discard.

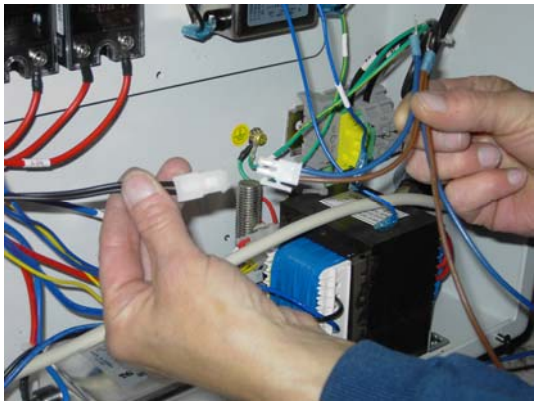


7. Locate Relay PCB. Locate port CN5/TO_MOTOR. Unplug from Relay Board and label “Motor”. Leave labeled Motor wire hang for now.

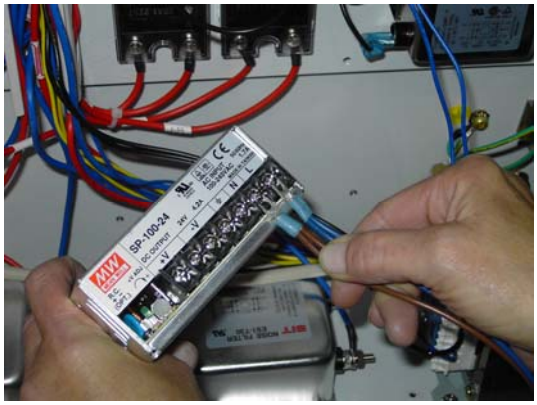


8. Mount power supplies on mounting bracket. Make sure that the 24VDC Power supply is on the top left and the 48VDC one is on the bottom right of the mounting bracket. The In/output side of the Power Supply should be orientated to the right.

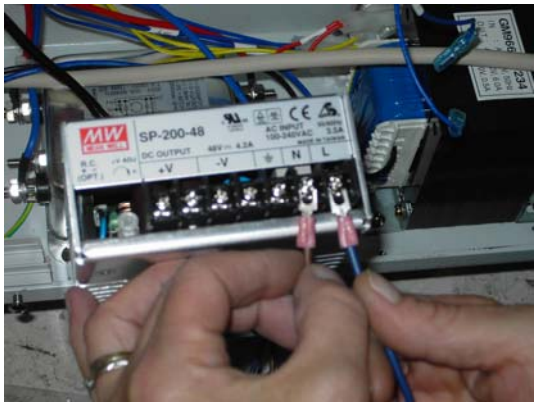
9. Locate Brown and Blue wires from kit labeled “Main AC”. Insert the Male Plug into the Female AC plug. The Female Plug should have two Black wires going into the plug and connect to the Main AC Terminal block.



10. Locate the remaining four wires. Two will be Blue and two will be Brown. Take the longest Brown and the longest Blue and connect them to the 24VDC Power Supply. Brown connects to position “N” Blue connects to position “L”



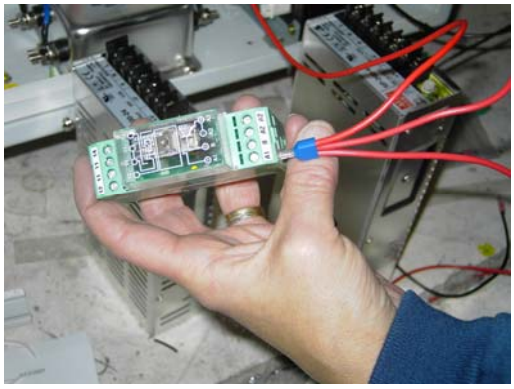
11. The remaining two wires get connected to the 48VDC Power Supply.
Brown connects to position “N”
Blue connects to position “L” Ground the Power Supplies to the main chassis. Complete this step by mounting the Power Supplies to the Side frame.



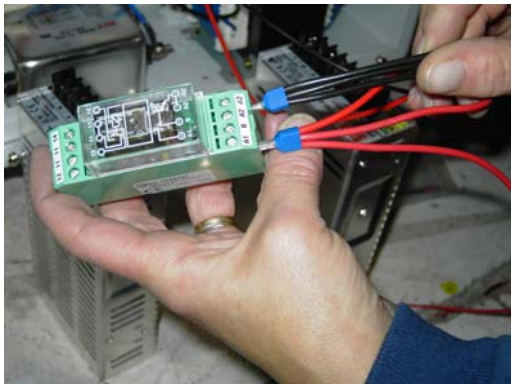
12. Locate the Red and Black wires in kit. They will be labeled “DC Power Supply Wires”. Locate Position LAMP_POR on Main PCB. Remove plug occupying LAMP_POR. Insert new Male plug from kit labeled LAMP_PO.

13. Locate the remaining Female plug. Connect it with the plug we just removed from the LAMP_POR.

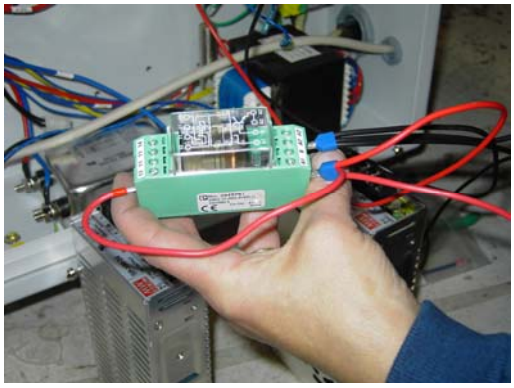
14. Locate the two Blue connectors joining three wires together. Insert the Red group into the Phoenix Relay, Position A1.



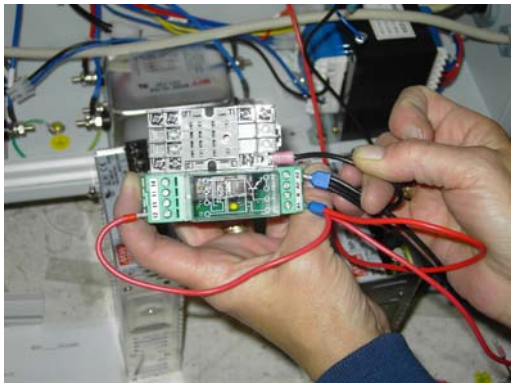
15. Insert the Black group into the Phoenix Relay, Position A2.



16. Connect the short Red wire in the group into the Phoenix Relay, position #11.

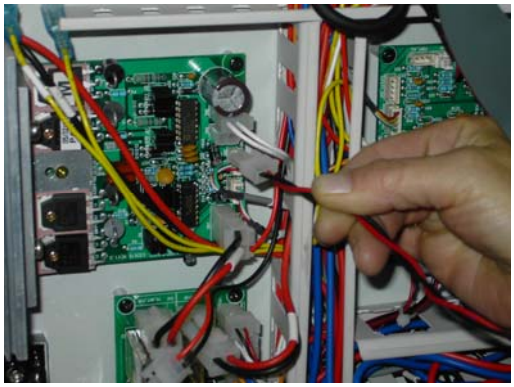


17. Connect the short Black wire from the group to the Omron Relay, Position #14.

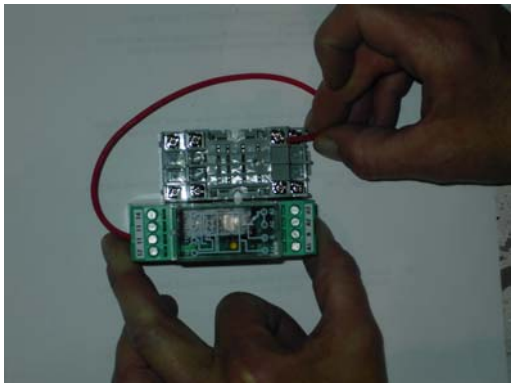


18. Connect the remaining Black and Red wires to the 24VDC Power Supply.
Red Wire to V+
Black Wire to V-

19. Locate the 48VDC Red and Black Power Supply wires. Connect the male plug into the Main Motor Driver board, position CN2/DC. Connect the other ends to the 48VDC Power Supply.
    Red Wire to V+
    Black Wire to V-

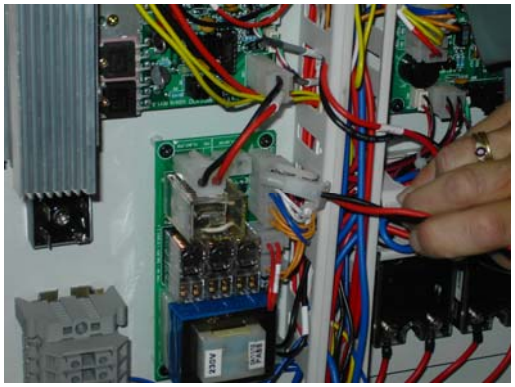


20. Locate Red 8 inch, 22-gauge wire from kit. Connect one end to the Phoenix Relay, position #11. Connect the other end to the Omron Relay, position #13.

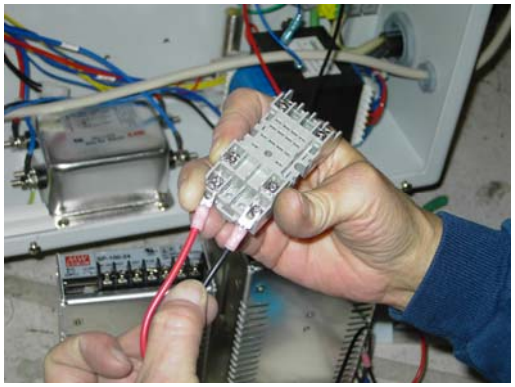


21. Locate CN5 14-gauge wire from the kit. (Black & Red with Male Plug). Insert Male plug into Main Relay Board, position CN2/TO_MOTOR.
    Connect the Black wire to the Omron Relay, position #5.

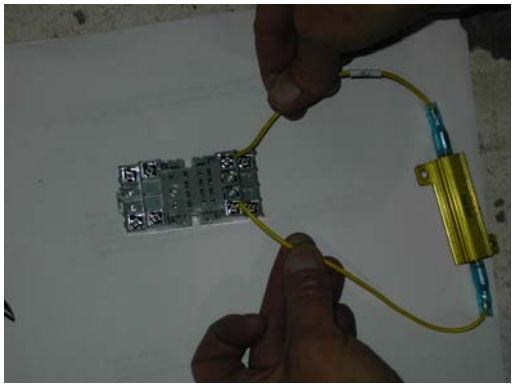
Connect the Red wire to the Omron Relay, position #8.



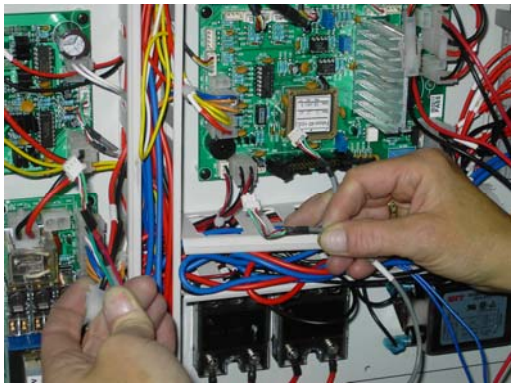
22. Locate the Red and Black Motor wire from the kit. Connect the Female plug directly to the Motor. Wire from Motor should be hanging. (See step #7).
Connect the Black wire to the Omron Relay , position # 9.
Connect the Red wire to the Omron Relay, position #12.



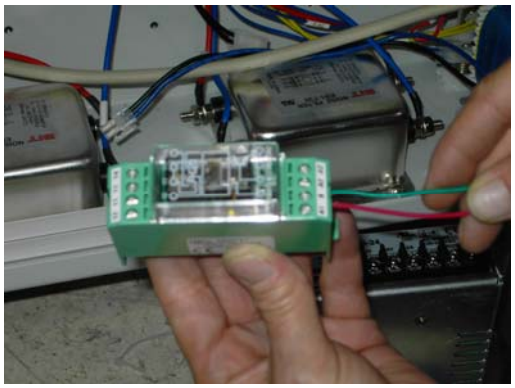
23. Locate the Power Resistor. Connect one side of the Resistor to the Omron Relay, position #1. Connect the other side to the Omron Relay, position #4.



24. Locate main PCB, position SIG. Remove entire cable inserted in position SIG. Replace with Signal Wire provided in kit. One end to Motor Driver position SIG. One end to Main PCB, position ROL_SIG.

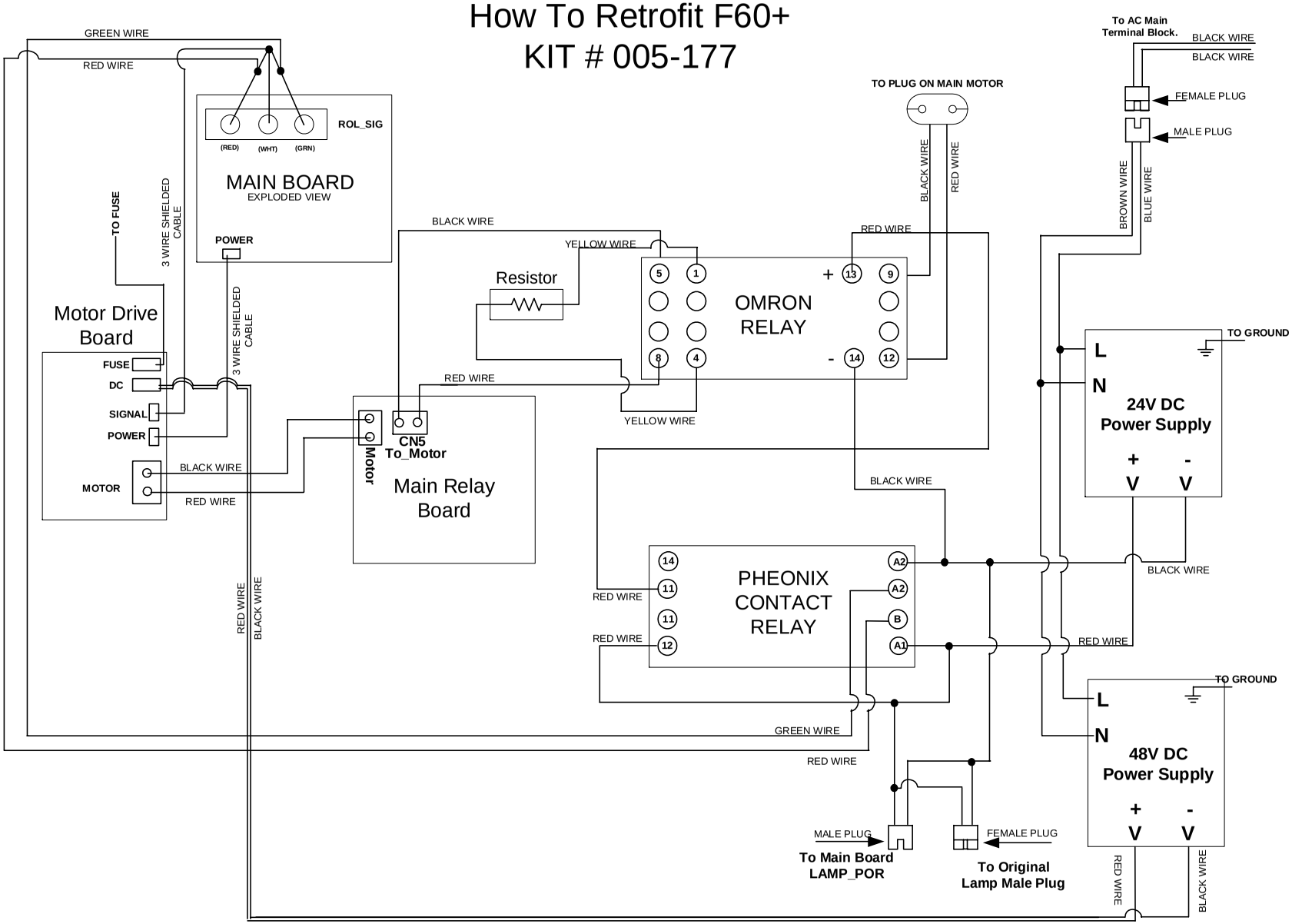


25. Locate the remaining wires of f of cable. One will be Red, one will be green. Connect the Red wire to the Phoenix Relay, position B. Connect the Green wire to the Phoenix Relay, position A2.



26. Locate Spiral Wrap provided in kit. Wrap wires to prevent brake wheel from wearing on the wires.

How To Retrofit F60+
KIT # 005-177



Falcon 60+ Electronic Upgrade Kit #005-177 Wire Assembly
Assembly #280-106

AC Supply-

- 19 Inch Brown 22 Gauge #6 Fork
- 19 Inch Blue 22 Gauge #6 Fork
- 5 Inch Brown #8 Fork
- 5 Inch Blue #8 Fork

Lamp-

- 30.5 Inch Red 22 Gauge 250 Female
- 30.5 Inch Black 22 Gauge 250 Female
- 6 Inch Red 22 Gauge 250 Male
- 6 Inch Black 22 Gauge 250 Male
- 28 Inch Red 22 Gauge #6 Fork
- 28 Inch Black 22 Gauge #6 Fork
- 8 Inch Red 22 Gauge #6 Farro
- 8 Inch Black 22 Gauge #6 Farro

48VDC-

- 23 Inch Red 22 Gauge #6 Fork
- 23 Inch Black 22 Gauge #6 Fork

Relay Jumper-

- 8 Inch Red 22 Gauge #6 Fork-#6 Farro

CN5 Motor-

- 10 Inch Red 14 Gauge #6 Fork-250 Male
- 10 Inch Black 14 Gauge #6 Fork-250 Male

Motor-

- 16 Inch Red 14 Gauge #6 Fork-250 Female
- 16 Inch Black 14 Gauge #6 Fork-250 Female

Grounds-

- 23 Inch 14 Gauge Green/Yellow #10 Ring X 2
- 23 Inch 14 Gauge Green/Yellow #10 Ring X 2

Resistor-

- 9 Inch Yellow 22 Gauge #6 Fork
- 9 Inch Yellow 22 Gauge #6 Fork

Signal Wire-

- 3C, Red, Green, White.24 Inch. Signal connector