Instruction Manual

MODEL # ATC-20

20" Automatic On-Line Reeler

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ECTION 1 GENERAL SPECIFICATIONS

1.0 - GENERAL

The Conair / Gatto On-Line Reeler has been developed for those applications where winding tension is required to be maintained at minimum levels. The two position Turret unit employs ultrasonic pulses to maintain a loop or sag in the product tubing as it is fed to the reeler. With the automatic cut and transfer feature, the unit will, upon receipt of a signal from the total length counter, index the full package to the unload position and then cut and transfer at the winding position. Cut, transfer, and start-up of the empty spindle occurs in approximately six seconds.
The Spindle Drive is a 2 h.p. DC-SCR regenerative system.
The Turret Drive is a 1/2 h.p. A.C. gear motor.

The Traverser is a precise cam action - variable pitch transmission. The pitch is adjustable over a wide range, wherein the minimum pitch is equal to the maximum pitch divided by 15. The maximum traverse is 12 inches. The traverser slows down proportionally with the spindle as the coil package builds up. Traverse motion is stopped for one complete coil revolution to ensure a complete wrap at the coil ends.

Loop detection is by Ultrasonic Position Detector making no contact with the product. The sensor determines the loop position by reflection of time sequenced ultrasonic tones.

The Product Guide System provides for precise lay-on with minimal tension.

The control and electrical system consist of start and stop push buttons, enable push button, rapid take-up speed push button, rapid take-up speed potentiometer, turret drive push button, reset push button, shift production display, line speed display, low air p.s.i. indicator, coil length counter, internal programmable controller, SCR and regenerative drive. Automatic cut and transfer feature is also included.

The product size range which may be coiled with the Conair / Gatto ATC-20 Reeler ranges from a minimum of .070 O.D. to a maximum of .500 O.D..
The coiling speed range is 70 to 500 linear F.P.M..

The spools available are 7 1/4" dia. collapsible to 6 3/4" and 4 1/4" collapsible to 3 3/4", continuous wrap or segmented ss core.

SECTION 2 INTRODUCTION

2.0 - GENERAL

This manual familiarizes the user with the Conair / Gatto ATC-20 Reeler. It describes assembly and installation procedures, gives a general overview of operation, and contains information on diagnostics, installation,maintenance,spare parts recommendation, and manufacturers' specification.

This manual should be read before performing installation or start-up activities. There are also certain fundamental warnings and precautions which must be kept in mind at all times. These are :

CAUTION

DISCONNECT ALL ELECTRICAL POWER TO THIS MACHINE AT THE POWER SOURCE AND ENSURE THAT ALL MOTION HAS STOPPED BEFORE OPENING OR REMOVING OPENING CONTROL BOX OR REMOVING PANELS, DOORS OR GUARDS !!!

DANGER

ELECTRICAL AND ELECTRONIC CONTROLLER EQUIPMENT IS AT LINE VOLTAGE WHEN A.C. POWER IS CONNECTED. THEREFORE, A.C. POWER MUST BE DISCONNECTED BEFORE IT IS SAFE TO TOUCH INTERNAL COMPONENTS OF THIS EQUIPMENT. PERSONAL INJURY MAY RESULT UNLESS POWER IS REMOVED.

SECTION 3 PRE-INSTALLATION INSTRUCTIONS

3.0 FACILITY REQUIREMENTS

Electrical : 230 V.A.C./1 Phase/60 Hz/@ 1.8 K.V.A.

Air Supply : A dedicated, oil free, compressed air air line is required of 1/2 inch diameter or larger. The supply pressure should be a minimum of 80 P.S.I..

3.1 SKID REMOVAL AND INSPECTION

Upon receiving unit, inspect for any damage that may have occurred during shipping.

Remove skid from under machine frame.

Unlock castors prior to moving the machine.

3.2 PREPARATION FOR INSTALLATION

Map the intended installation area, allowing for operator and servicing access to front and rear panels. (See assembly drawing for strategic positioning of peripheral equipment and coiler with respect to product line)

Install proper electrical (3) wire female Twist-Lock Connector 230 V @ 30 Amperes.

Install flexible compressed air line hose of minimum 3/8" inside diameter and matching quick-disconnect to fitting supplied with machine.

SECTION 4 INSTALLATION INSTRUCTIONS

4.0 GENERAL

This section outlines the procedures that are to be followed in order to properly install the ATC-20 On Line Reeler.

There are certain general warnings and cautions that should be kept in mind before continuing with the installation. They are :

DANGER !!!

THIS MACHINE SHOULD BE INSTALLED, ADJUSTED AND SERVICED BY QUALIFIED TECHNICAL PERSONNEL, FAMILIAR WITH THE CONSTRUCTION AND OPERATION THIS TYPE OF EQUIPMENT. THEY SHOULD ALSO BE FAMILIAR WITH THE POTENTIAL HAZARDS INVOLVED IF THIS WARNING IS NOT OBSERVED. PERSONAL INJURY OR EQUIPMENT DAMAGE MAY RESULT.

DANGER !!!

BE ABSOLUTELY CERTAIN THAT A GROUND WIRE FROM THE INCOMING A.C. POWER LINE IS PROPERLY CONNECTED TO THE CHASSIS GROUND TERMINALS PROVIDED. WITHOUT PROPER GROUNDING, PERSONAL INJURY MAY OCCUR.

WARNING !!!

THIS EQUIPMENT REQUIRES A SINGLE PHASE POWER SUPPLY THAT PROVIDES 230 V.A.C.. IF CORRECT SUPPLY IS NOT AVAILABLE, IT WILL BE NECESSARY TO INSTALL A TRANSFORMER BETWEEN THE POWER SUPPLY AND THE MACHINE. DO NOT OPERATE EQUIPMENT AT POWER OTHER THAN THAT SPECIFIED, DAMAGE TO EQUIPMENT AND PERSONAL INJURY MAY OCCUR.

4.1 PHYSICAL INSTALLATION

Transport equipment to designated area and securely locate to floor utilizing (2) previously installed floor sleeves. Adjust level pad and pin lift screws as required to obtain desired height and proper leveling.

4.2 POWER WIRING

Single phase power to this machine is supplied through a three wire power cord terminating with a single phase three prong, 30 ampere NEMA Twist-Lock plug. Inter-connection to users power supply should be through a fused disconnect switch, in accordance with the National Electric Code and any applicable state and local codes. Final connection to machine should be through a matching female Twist-Lock type receptacle or connector.

4.3 COMPRESSED AIR

Connect previously installed air line (hose and and female quick disconnect) to matching connector located at air inlet port of machine.

4.4 PERIPHERAL EQUIPMENT

An ultrasonic positioning detector has been supplied in conjunction with the ATC-20 reeler. This unit should be placed equidistant from the reeler and the puller. The product flow line should be positioned in the center of the sensor guide bars when viewed from the top. The product height should be the same at the entrance and exit sides of the guide bars.

Connect the signal cable of the positioning detector to the (7) pin female Amphenol connector located at the bottom panel of the control box.

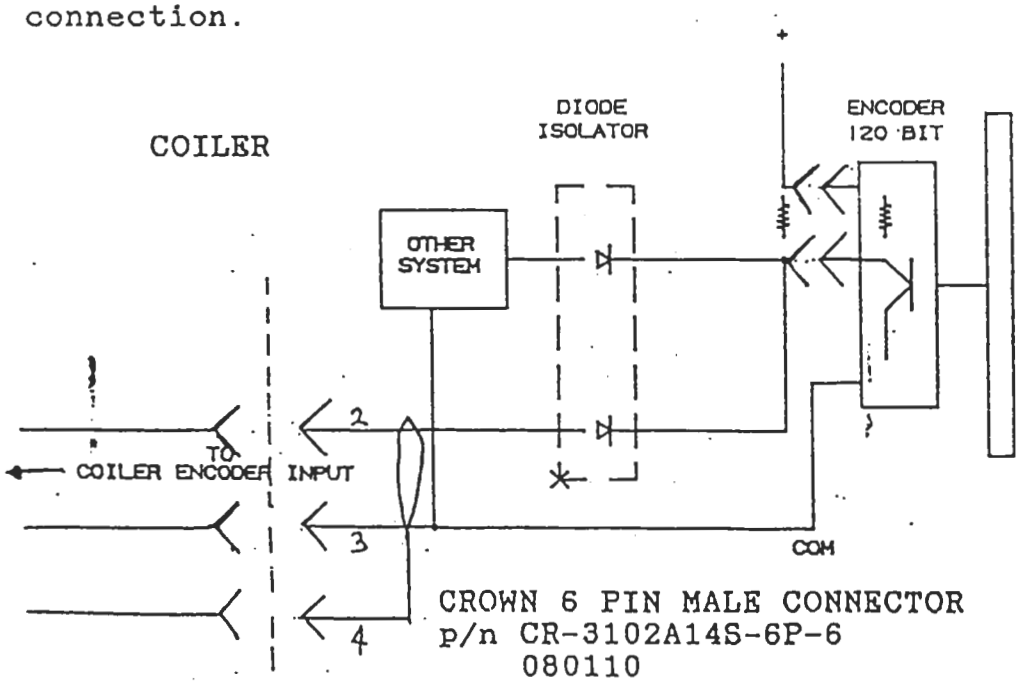
DISCONNECT POWER WHEN MAKING ABOVE CONNECTIONS !

SECTION 4 INSTALLATION INSTRUCTIONS

4.4 PERIPHERAL EQUIPMENT

Connect the supplied external encoder and cable to the mating (4) pin female Switch Craft connector, located at the bottom panel of the control box. Install the encoder onto processing equipment as required to obtain an accurate measurement of product travel.

Although it is not always recommended, because of the possibility of signal noise contamination, the coiler has the capability to share a signal generated from a compatable existing encoder in use with other equipment. However, a diode isolation circuit must be installed between the coiler signal input and the other system. Additionally, the encoder must generate 120 pulses per revolution, and the signal voltage or Encoder Output must be source or sink. Please refer to the integration diagram below for proper connection.



CROWN 6 PIN MALE CONNECTOR
p/n CR-3102A14S-6P-6
080110

DIODE ISOLATOR
p/n 1N4148

DISCONNECT POWER WHEN MAKING ABOVE CONNECTIONS !

SECTION 5 SET-UP AND CALIBRATION

5.0 GENERAL

This section provides start-up and adjustment procedures to be followed after the assembly and installation of equipment is complete.

5.1 SAFETY PRECAUTIONS

1) NEVER OPERATE COILER WITH GUARDS OFF

2) DISCONNECT ELECTRICAL POWER AND AIR SUPPLY BEFORE REMOVING GUARDS OR ATTEMPTING TO SERVICE MACHINE

3) KEEPS HANDS AND FINGERS OUT OF THE TURRET AREA DURING OPERATION OF MACHINE.

4) ENSURE PROPER GROUNDING OF MACHINE FRAME.

5) ALL SERVICE TO THIS MACHINE IS TO BE PERFORMED BY QUALIFIED TECHNICAL PERSONNEL ONLY.

6) KEEP HANDS AND FINGERS AWAY FROM CUTTER HEAD.

7) DO NOT EXTEND CUTTER UNLESS SPINDLE IS COMPLETELY STOPPED.

8) DO NOT OPERATE MACHINE WITH SPOOLS' FLANGE UNATTACHED OR UNLOCKED.

5.2 POWER OFF INSPECTION

With all power disconnected, physically inspect all electrical components for proper tightness of connections, pin alignment, grounding and etc. Also inspect all mechanical components and tighten as may be necessary where any component may have become loosened during shipment.

6) The Ultrasonic Positioning Detector provided with this machine is set up at the factory and does not require adjustment. Refer to sect. 4.4 for proper positioning of product from puller through gage and to coiler.

8) The cutter extension location is fixed and should not require adjustment. To test operation and to confirm position, depress the " Power Enable " push-button (blue light will go out), then depress the extend cutter push-button located on the turret above the spool. Hand rotate the spool until detent is engaged. The cutter will automatically extend to position.

5.4 CORE DIAMETER SET-UP

The"Diameter control" potentiometer, is located in an equipment box to the rear of the entrance end of the machine. The dial is directly calibrated in inches. To set a empty core diameter of 7 inches set the dial to 7 or to desired value.

5.5 BLADE REPLACEMENT

1) Servicing of the blade is done in the wind position with the cutter extended.

2) DISCONNECT THE AIR SUPPLY FROM THE MACHINE ! .

3) Extend cutter head manually (see section 5.5 item #8)

4) Remove blade cover.

5) Loosen set-screw located at the side of the cutter cutter head

6) Remove the old blade.

7) Insert the new blade into slot until it bottoms.

8) Tighten set-screw, Note : do not over-tighten as blade may be damaged.

9) Replace the blade cover.

5.3 POWER ON SET-UP AND ADJUSTMENT

1) Power machine by turning the main disconnect to the on position.

2) No adjustment of the ultrasonic positioning sensor is required other than the proper physical positioning as discussed in section 4.4. Note, with no product in the gauge, or if the product is less than 2 inches from the floor, the red l.e.d. on the sensor head will strobe. As the product moves up toward the sensor the led will stop flashing.

3) Transverser reversing stop position is adjusted by turning of the corresponding right and left stop positioning knobs. Adjust should be made so that the center of the guide shoe on the transverser travels to the sides of the spool, but clearing the flanges to the desired product position.

4) The lay-on arm should be adjusted so that it rides about 1/16 inch above the empty reel core. To adjust the height of the lay-on arm, loosen the setscrew in the "clamp collar" assembly (draw CX559-683) and place the clamp so the arm is at the correct height. To adjust the height of the arm in the raised position the blue light on the operator control panel must be lit. This indicates that there is no air pressure supplied to the machine. If the blue light is not lit, depress the "All Stop" push button. Push the "pusher assembly" , item 10, (Draw DX559-693) forward until the arm is in its' upper most position. In this position the arm must clear the fully wound coil. To set the position, loosen the set screw in the block, item 5, and adjust screw, item 7. Re-tighten the set screw when adjustment is completed.

5) Adjustment of the lead pitch of the traverser should be made during start-up to suite the size of the product being coiled. (Refer to section 5.5 for specific instructions)

5.6 OPERATIONAL START-UP

BEFORE ATTEMPTING TO START MACHINE, REVIEW ALL SAFETY WARNINGS AND PRECAUTIONS LOCATED IN SECTION 5.1 OF THIS MANUAL !

1) Review section 4 to ensure proper connection of facilities, and peripheral equipment. Review all adjustments made for proper operation.

2) Ensure that empty reels are in place and locked to spindles.

3) Power unit by turning main disconnect to the on position.

4) Depress the " Machine Enable " push-button (The blue light should go out, indicating sufficient air pressure is available to operate the machine)

5) Reset the " Footage/Shift " counter by depressing the "reset" touch pad.

6) Set the " Footage/Reel " counter using the following procedure:

   Depress the"arrow down" V touch pad twice observe pst #2 to left of the digits.

   Depress the "arrow right" ---> touch pad.
   The first digit will be high-lighted. To increase the value of the first digit depress the "Inc" touch pad. To reduce the value of the first digit depress the "Dec" touch pad.
   To shift to the next digit depress the right arrow touch pad.
   Use the above procedure to set the total product length required per reel.
   Upon completion, depress the "arrow down" touch pad.

7) Obtain free end of product tubing from puller. Feed tubing through the Ultrasonic Positioning Unit. Guide end of tubing between the flanges of the lead spool and onto the cutter arm trap jaw.

WARNING KEEP HANDS AND FINGERS CLEAR OF ROTATING AND AND CUTTING MACHINE COMPONENTS

8) Depress start push-button.

9) Depress quick pick-up push-button and hold while guiding tubing manually so that it remains parallel to the ultrasonic gauge head. Should the rate of pick-up be inadequate increase the quick pick-up speed control as necessary. When the tubing slack has been reeled so that its' level forms a loop at the lower range of the Ultrasonic Positioning Detector, release the quick-pick up push-button.

10) Once the reeling rate is constant, back feed the product tubing through the Lay On Arm Guide, Guide Pulley and Vertical Guide Rollers.

SHOULD TANGLING OCCUR DURING ANY OF THE ABOVE PROCEDURES IMMEDIATELY DEPRESS THE EMERGENCY STOP PUSH-BUTTON

If the Emergency Stop push-button is depressed,it will be necessary to depress the "machine Enable" push-button before the run push-button has any effect.
If the machine is stopped because of a "tangle", (Tangle light is lit), the reset Push-button will have to be depressed before the start push-button has any effect.
If the machine is stopped because of "Loss length pulses", (Loss length pulses light is lit) the reset push-button will have to be depressed before the start push-button has any effect.

11) Once controlled reeling is active , the pitch of the traverser may be changed by adjustment to the indicator dial of the Graham Transmission. Rotate the indicator dial in a counterclockwise direction to increase the distance between each wrap of product. Inversely rotate the indicator dial in a clockwise direction to decrease the product wrap distance.

13) When adjustments are satisfactory in holding the coil loop constant and the desirable wrap distance has been obtained, then, depress the cutter extend push button, located above the lag spool. Next, depress the turret rotate push button. The machine will automatically cut the product tubing, transfer, and begin reeling a new spool.

14) Remove the lag spool flange and discard the unwanted product roll. Replace the flange and depress cutter extend push button located above the lag spool. Rotate the spool by hand until engaged. This completes initiation for the next automatic cycle.

15) Once the automatic sequence of operation is in effect, crossover from the full to empty spool is dependent upon the operator to remove the full spool from the lag spindle following each cycle, replace it with an empty spool, and depressing the cutter extend push-button, upon completion of the exchange. Failure to perform these operations will result in automatic shut-down following reeling of the lead spool.

SECTION 6 DIAGNOSTICS

6.0 GENERAL

This section details diagnostic information for the ATC-20 Automatic Reeler. Its' organization is as follows:

* General diagnostic concepts and referral to corresponding sections.
* Specific cause and remedy procedures
* Schematic drawings and manufacturer instructions, specification and diagnostic information where applicable.

6.1 ELECTRICAL/ELECTRONIC SYSTEM

Should it become necessary to diagnose an electrical or electronic wiring, control, component or interconnection related problem; Please refer to the electrical schematic drawing located in section 6.4 and the manufacturers instructions and specification for electrical/electronic components located in section 6.5.

6.2 MECHANICAL/PNEUMATIC SYSTEM

For information detailing mechanical system or component specification; Please refer to the mechanical assembly drawings in section 9.4 and the manufacturers' specifications located in section 6.8.

For information detailing the pneumatic system; Please refer to the pneumatic system schematic drawing in section 6.6 and the manufacturers' specifications located in section 6.7.

6.3 FUNCTIONAL DIAGNOSTICS INDEX

PROBLEM DESCRIPTION	PROBABLE CAUSE	REMEDY
No response after depression of Machine Enable Push-button	Failure to connect or improper connection of Power Supply	Confirm proper connection. Confirm Power Supply is on.
	Main Disconnect OFF	Turn to ON
Blue Air Pressure Indicator fails to extinguish after the Machine Enable is active.	Insufficient or no Air Supply to the Machine.	Confirm that Compressed Air Supply is active. Adjust regulator 40 - 60 P.S.I.
	Pressure Sensor is defective, or adjusted improperly.	Check or adjust Sensor
	Failure of Main Air Solenoid.	Replace Solenoid
Tachometer fails to display Reel speed.	If "Ft Coil" and and "Total Ft" Counters are OK	Check Diode (34) in Tach. Circuit
	Tachometer failure	Replace Tach.
Ft.Coil and/or Total Ft. Counters do not function	If Tachometer is functioning then Diode Failed	Check Diode (34) in the Counter Circuit
Ft. Coil Counter fails to start Turret rotation	If Turret rotates when the Push-button is depressed then "Ft/REEL" Counter has failed	Failure of Relay Interface Board (36)
	Failure of Micro-Processor Input Module	Replace Counter Replace Input Module.
Machine keeps stopping and "Loss of Ft. Pulses" Indicator is lighted	Machine is being run at less 50 Ft./MIn.	Set Low Speed Alarm on Tach to a lower set-point, refer to Dynapar Manual.

6.3 FUNCTIONAL DIAGNOSTICS INDEX

PROBLEM DESCRIPTION	PROBABLE CAUSE	* REMEDY
Coiler does not run following depression of Run Push-button but Enable is active	Puller not running	Start Puller.
	Defective electronic related component F/V Converter	Refer to section 6.4, 6.5, 6.3 replace if req'd
	Mechanical Drive component failure	Inspect Belt, Gearbox, etc.
Coiler stops running and Loss of FT. Pulse Light is on	Failure of Line Speed Proximity Sensor	Adjust- gap between sensor and screw Replace Sensor
Coiler speed too fast (product taught) or too slow (product slack)	Wrong Core Diam. selection	Correct Core Diam. setting
	Encoder incorrect or malfunctioning	Replace Encoder
	Drive Controller is malfunctioning	Repair or repl. Drive Control. Refer to section 6.5
	PID Loop is out of calibration	Calibrate PID Loop.See section 6.3 - PID Loop Calibration
	PID Control System component defective	Locate, replace defective components.Refer to section 6.3, 6.4, 6.5
	Ultrasonic Position Unit malfunction	Check for proper inter-connection Replace Sensor
	Run/Test Switch is not in the "run" position.	Place switch in "run"position

6.3 FUNCTIONAL DIAGNOSTICS INDEX

PROBLEM DESCRIPTION	PROBABLE CAUSE	* REMEDY
Depression of Quick-Pick-up Push-button fails to increase the reeling speed	Quick Pick-up Push-button failure	Replace Push-button Switch
	Circuit failure	Test Circuit, refer to section 6.4
	Quick Pick-up Speed Pot. incorrectly set	Re-set to an appropriate value
Machine fails to stop when Stop Push-button depressed	Push-button failure	Replace P.B.
	Program Cont. Output Module failure	Replace output module.
Machine fails to stop when "All STOP" P.B. is depressed.	P.B. failure	Replace P.B.
	Relay failure	Replace Relay 1 CR, refer to section 6.4
Turret fails to rotate when Rotate Turret Push-button depressed	Operate failed to "Extend Cutter"	Extend Cutter refer to section 5.6
	Push-button Switch failure	Replace Push-button Switch
	Turret Motor failure	Replace Turret Motor
	Turret Overload	Test Overload Test Motor Refer to section 6.4,6.5
	Mechanical Turret Drive component failed	Test Turret Drive parts for binding Test Clutch for slippage
	Shot Pin failed to retract	Test Pneumatic Solenoid, Cyl. Refer to section 6.6

6.3 FUNCTIONAL DIAGNOSTICS INDEX

PROBLEM DESCRIPTION	PROBABLE CAUSE	* REMEDY
Turret keeps turning	Failure of "Turret IN POS" limit switch #44 DX559-877	Replace Limit switch.
	Low Air Pressure	Raise Air PSI
Traverse fails to operate when drive is active	Drive Chain or Belt failure	Replace, refer to section 9.5, 9.1
	Reel Speed Proximity Proximity Switch (50) DX559-877	Adjust gap between Sw. and disk if req'd Replace Sw.
	Traverse Solenoid failure	Repl. Solenoid
	Traverse to Start Proximity Sensor Failure	Check flag to sensor gap Repl. Sensor
	Traverse From End Proximity Sensor Failure	Check flag to sensor gap Repl. Sensor
Traverse speed too fast or slow	Incorrect speed ratio	Re-adjust Graham Transmission Refer to section 5.6, 6.8
Traverse fails to hold correct start position	Traverse From Start Prox. Sw. requires re-positioning	Adjust Prox.Sw.
	Poor or incorrect connection to above Sw. or circuit	Refer to section 6.4
	Traverse From Start Prox. Sw. defective	Replace, refer to section 9.0

6.3 FUNCTIONAL DIAGNOSTICS INDEX

PROBLEM DESCRIPTION	PROBABLE CAUSE	* REMEDY
Traverse fails to hold correct end position	Traverse From End Prox. Sw. requires re-positioning	Adjust Prox. Sw.
	Poor or incorrect connection to above sw. or circuit	Refer to section 6.4
	Traverse From End Prox. Sw. defective	Replace, refer to section 9.0
Quick Traverse fails to operate when Turret is rotated	Check output of Micro-Processor term. (13) wire #61 for 115v	Replace output module of Micro Processor, refer to section 6.5
	"NEXT HOME" or "Cutter Home" Optical Sw. or reflector out of adj.	Adjust as needed
	Quick Traverse Solenoid failure	Replace solenoid Refer to section 9.3, 9.6
Lay-on Arm fails to lift	Check output of Micro Processor term (16) wire# 64 for 115v	Replace output module of Micro Processor, refer to section 6.5
	Lift lay-on arm solenoid failure	Replace solenoid
	Improper flow setting	Re-adjust flow Refer to section 9.3, 9.6
	Mechanical component binding	Check Lay-on Arm mechanical parts
Lay-on Arm Fails to lower	115v continuously supplied to solenoid	Microprocessor OUT Module fail Replace module, refer to section 6.5, 6.4
	Adjustment of Cylinder Stroke Stop Block is incorrect.	Adjust Stop Block
	Improper flow setting	Re-adjust flow Refer to section 9.3, 9.6

6.3 FUNCTIONAL DIAGNOSTICS INDEX

PROBLEM DESCRIPTION	PROBABLE CAUSE	* REMEDY
Lay-on Arm lifts and/or lowers to the incorrect position	Lay-on Arm Cylinder Stop Block adjusted incorrectly	Re-adjust Stop Block, refer to section 9.5,
Cutter fails to extend	Faulty pneumatic part	Test pneumatic valves,solenoids Refer to section 6.6
Cutter fails to retract	"Cutter Home" Optical Sensor or Reflector incorrectly adjusted defective	Re-adjust Replace Sensor Refer to section 6.4, 6.5
Cutter extends or retracts to improper position	Mechanical component binding	Check Cutter mechanical parts Refer to section 9.5
Machine fails to stop during product tangle	Mercury Switch adjusted improperly Circuit failure Mercury Switch failure Microprocessor input module failure.	Re-adjust Check electrical Replace Mercury Switch (43) Replace Input Module Refer to section 6 .5, 6.6
When tubing is taught Alarm fails to sound.	Wrong spacing between Taught Tube Prox. Sensor and Flag Microprocessor Input Module failure	Adjust gap Replace Module
Alarm fails to re-set when Re-set button depressed	Push-button Switch failure Microprocessor Input Module failure	Replace push-Push-button SW. Replace Input Module

6.3 FUNCTIONAL DIAGNOSTICS INDEX - POSITION LOOP CALIBRATION

Please note that the PID Loop Control System has been calibrated and tested at the factory. Under normal circumstances calibration of this control should not be necessary. However, in the unlikely event that such calibration is required the following instructions will allow such adjustment, without the actual flow of product.

6.3.1 SONA-TROL SET-UP REF.DRAW.DX559-1071

1. Apply power to the machine and depress the "Enable" push-button.

2. Tie a length of tubing diagonally between the vertical bars of the Ultrasonic Measuring Stand. The tubing should be placed approximately 3 inches from the base of the stand.

3. The Position Control System is located in a box to the rear at the entrance end of the machine. Loosen the latch screws, and swing the door to expose the Position Control Assembly.

4. The Sonatrol Assembly (item 2), is the pc board, located in the center of the panel #5. Note the "Time Filter" Indicators, located in the lower right hand corner of the board. These indicators should be strobing at this time. This strobing effect indicates that the gauge no longer senses the tubing. The Time Filter has been adjusted at the factory to indicate a tube loss, when the tubing is 3 inches, or less, from the base of the stand.

6. If the "Time Filter Indicators" are not strobing, adjust P5 on the Sonatrol Board until the lamps begin to strobe.

7. Shift the tubing in the gauge up, approximately, 1 inch from the position it is now in. The strobing should stop, with only the first indicator, to the left, remaining on.

8. Place the tubing 25 inches from the base of the gauge. Connect an oscilloscope to test point "POS", the common of the scope is connected to "com".

9. Place the "Run/Test" switch (item 14) to the Run position.

10. Adjust P1 on the Sonatrol Board for zero volts. This adjustment sets the tube position into the Control System. Tubing will maintain when the machine is running.

(Less than 10 mVolts IS OK!)

6.3 FUNCTIONAL DIAGNOSTICS INDEX - POSITION LOOP CALIBRATION

11. Place the tubing 26 inches from the base of the gauge. Adjust P2 on the Sonatrol Board for+100Mv.

GAIN ADJUSTMENT OF THE PID SYSTEM (Ref. Draw DX559-1071)

1. To adjust the PID system for gain, the Sonatrol Ultrasonic Detector must be set up, as above, to yield a 100Mv signal when the tubing is 26 inches from the base of the gauge stand.

2. Place the "Run/Test" Switch (item 14)in the Run position. Connect an oscilloscope to the PID test terminal. The common terminal lead of the scope is connected to the COM test terminal. Adjust the LAG control on the PID Assy.(item 7), completely CCW. Place the" PID Enable/Disable" Switch to the "Disable" position. Depress the Drive Start push-button. The Reel will begin to turn very slowly. If the Puller is running, the Reel will turn at a speed determined by the puller Speed. Place the " PID Enable/Disable" Switch in the "Enable" position. Adjust the "Gain" Control on the PID Assembly so that the scope indicates a 5volt signal, each time the PID Switch is moved from the Disable to Enable position.
You will notice that the Reel will stop turning periodically. This is due to the automatic stopping of the machine when the computer senses loss of "Length" pulses. When the Reel stops, due to the loss of length pulses, depress the Start push-button and continue the test.

LAG ADJUSTMENT OF THE PID CONTROL SYSTEM (Ref draw.DX559-1071)

1) Check that the "LAG BREAK" Control on the PID Assembly is in the fully CCW position.

2) Place the "RUN/TEST" Switch in the "DC TEST" position.

3) Connect an oscilloscope lead to the "PID TEST TERMINAL". The common lead of the scope is connected to the "COM" test point.

4) Start the Reel Drive System by depressing the Start Push-button.

5) Place the "PID ENABLE/DISABLE" in the "ENABLE" position.

6.3 FUNCTIONAL DIAGNOSTICS INDEX - POSITION LOOP CALIBRATION

6) Adjust the "LAG" Control on the PID Assembly so that the signal at the test point "PID integrates to 10 volts in 10 sec. each time the "PID Enable/Disable" Switch is shifted from the "Disable" to "Enable" position. You will notice that the reel will stop turning periodically. This is due to the automatic stopping of the machine whenthe computer senses loss of "Length" pulses. When the Reel stops, due to the loss of "Length" pulses, depress the Start Push-button and continue test.

LEAD ADJUSTMENT OF THE PID CONTROL SYSTEM (Ref Draw. DX559-1071)

1) The PID Gain adjustment must be made befire the Lead Gain is set.

2) Check that the "Lead Break" Control on the PID Assembly is set fully CCW.

3) Connect the scope test lead to the "POS" test terminal. The common lead of the scope is connected to the "COM" test point. Place the "RUN/TEST" Switch to the "AC Test" position. Measure and record the 60hz set-up signal observed. The signal will measure aproximately 2.4 volts Peak to Peak.

4) Shift the scope lead to the "PID" Test Point. Place the "PID Enable/Disable" Switch to the "Enable" position. Depress the Drive Start push-button. Adjust the "LEAD" Control so that the signal at the "PID" test terminal is 1.5 times the signal at the "POS" terminal.

ADJUSTMENT OF THE FREQUENCY TO VOLTAGE CONVERTER (Ref.Draw.DX559-1071)

1) Apply power to the Coiler, depress the "Enable" push-button.

2) Apply power to the Puller. Set the Speed Control to zero.

3) Connect the test lead of an oscilloscope to test terminal "F/V". The common terminal of the scope is connected to the "COM" terminal.

6.3 FUNCTIONAL DIAGNOSTICS INDEX - POSITION LOOP CALIBRATION

LEAD ADJUSTMENT OF THE PID CONTROL SYSTEM (Ref. Dwg. #DX559-1071)

4. Adjust the P1 Trim Potentiometer on the F/V Assembly (item 4) for zero volts.
5. Increase the puller speed to 500 ft./min. Adjust the P2 Trim Potentiometer until the voltage at the F/V test point equals 10 volts.
6. Stop the puller, re-adjust the P2 Potentiometer for zero volts.
7. Run the puller at 500 ft./min. and if necessary, re-adjust P1.

REEL SPEED TEST OR SET-UP (Ref. Dwg. #DX559-1071)

The diameter control (Item 10) is set at the factory to provide the correct reel speed for the diameter of the reels ordered with the coiler. To test the reel speed control system for the original reels, or if new reels of a different diameter are used, the following procedure is required:

1. Run the puller at the required line speed.
2. Set the "diameter control" to the diameter o the reels used.
3. Place the "PID Disable/Enable" switch to the "Disable" position.
4. Start the coiler.
5. Measure the reel speed.

The reels should run at a speed determined by the following equation.

$$\frac{(\text{Line Speed Ft./Min.})\ (12)}{(\quad)\ (\text{Dia. of reel core})}$$

For example: Line Speed - 400 Ft./Min.
Core Dia. - 4.5"

$$\frac{(400)\ (12)}{(3.14)\ (4.5)} = 339.7 \text{ RPM}$$

The reel speed should be set to run 10% faster than the required speed, therefore:

339.7 + 10% = 374 RPM

If the reel runs faster than the required speed, adjust the "MAX" Pot (Item 13) CCW.

If the reel runs slower than the required speed, adjust the "MIN" Pot (Item 12) in a CW direction.

6.3 FUNCTIONAL DIAGNOSTICS INDEX - POSITION LOOP CALIBRATION

TESTING THE FREQUENCY DIAMETER MULTIPLIER

The "FxD" Multiplier Assembly (item 5) receives two input signals. The first input is a dc voltage which indicates the speed of the Puller. This (0 to 10 volt) signal appears on terminal F/V. The second signal is derived from the setting of the "Coil Core Diameter" Potentiometer. The level of the diameter signal is 3 to 15 volts. This signal appears on the "DIA" test point.

1. To test the "FXD" Assembly, measure and record the voltage on terminal "F/V" (puller running at 250 ft./min), voltage should measure 5 volts.

2. Set the "Coil Core Diameter" Control to 5 (5inches). The voltage on test terminal "DIA", should measure 6 volts. The signal on the "FXD" test terminal should be equal to : F X D /10, or 3 volts.

TESTING THE SUMMING ASSEMBLY

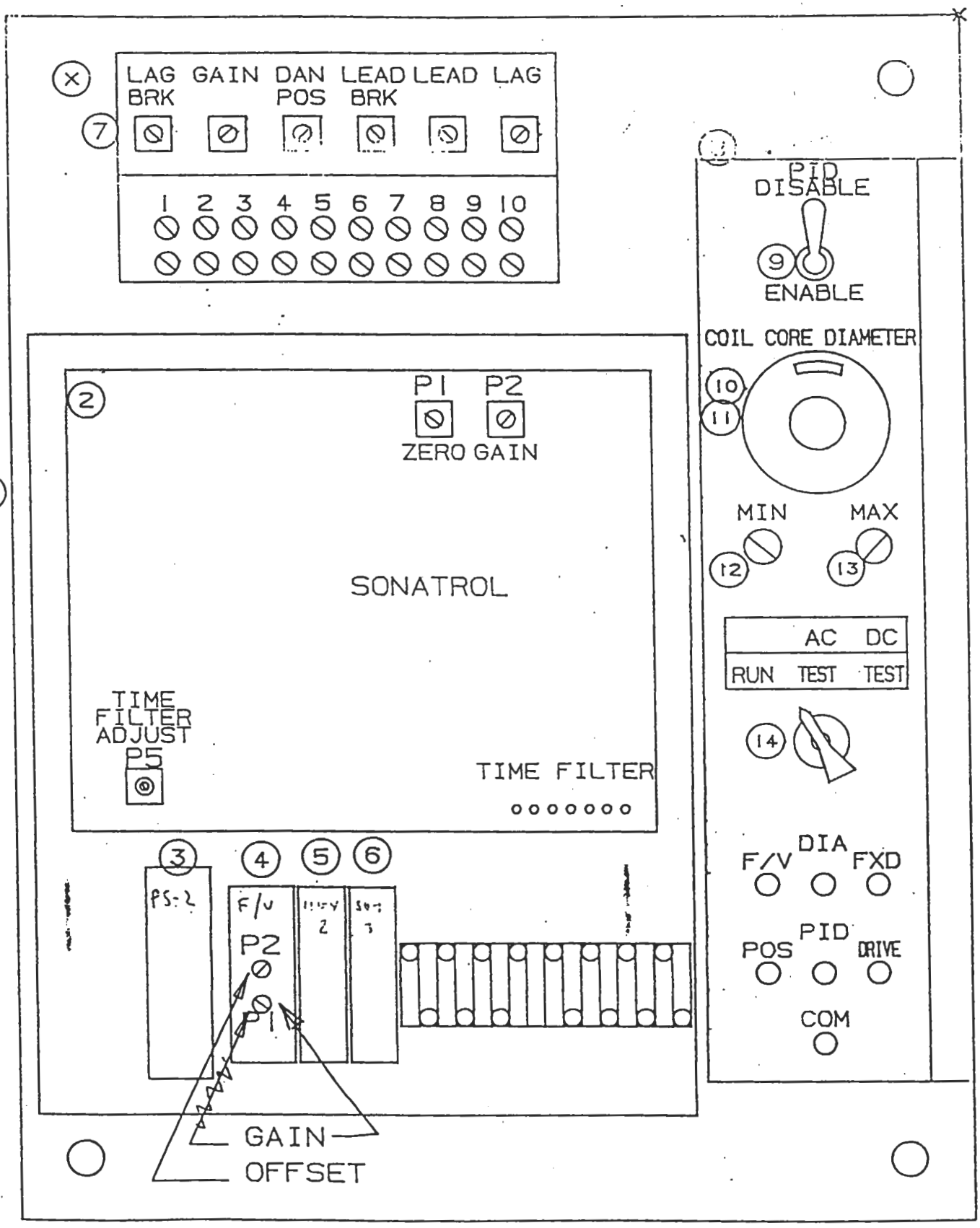
The Summing Assembly (item 3) is supplied with two inputs. The first input is the signal from the "FXD" assembly. The second input is the signal generated by the PID Assembly. The two signals are algebraically summed together to provide the drive signal, appearing on the Test Terminal marked "DRIVE". The gain of the "Summing" Circuit is one.

1. Place the "RUN/TEST" Switch (item 14) in the " TEST DC" position. Run the Puller at 250 ft./min.

2. Start the Coiler by depressing the "Run" push-button.

3. Connect an oscilloscope lead to the test terminal marked "DRIVE". Place the "PID ENABLE/DISABLE" Switch in the Enable position. The signal at the "DRIVE" test point will start at some level and slowly decrease, until it reaches a level where the Coiler will stop turning.

4. Return the switch to the "PID DISABLE" position. Wait a few seconds then place the switch to the "DISABLE" position. The process of starting initially at a high speed and slowly decreasing will be repeated. The gain of the "Summing" Assembly is one.


LAG BRK
GAIN
DAN POS
LEAD BRK
LEAD
LAG
1 2 3 4 5 6 7 8 9 10
PID DISABLE
ENABLE
COIL CORE DIAMETER
MIN
MAX
AC DC
RUN TEST TEST
P1 P2
ZERO GAIN
SONATROL
TIME FILTER ADJUST
P5
TIME FILTER
F/V DIA FXD
POS PID DRIVE
COM
F/V
P2
P1
GAIN
OFFSET

Part# 0814-30064
DX559-877
(SHEETS 1 & 2)

6.4 SCHEMATIC DRAWINGS - ELECTRICAL/ELECTRONICS

CONAIR GATTO
Part of The Conair Group

CONAIR MACHINERY DEVELOPMENT

SECTION 8 REPLACEMENT PARTS RECOMMENDATION

* L/R - The part indicated may be used with either a left or right configuration Model ATC-20 On Line Reeler.

* L-R - The part indicated may be used only with a left to right configuration Model ATC-20 On Line Reeler.

* R-L - The part indicated may be used only with a right to left configuration Model ATC-20 On Line Reeler.

8.0 SPARE PARTS MECHANICAL

MACHINE CONFIGURATION	*QUANTITY REQUIRED*	*PART DESCRIPTION*	*CONAIR GATTO PART NO.*
(Recommended replacement parts for the Upper Traverse Assy.)			
R/L	1	Prod. Guide Roller Assy.	0814-05798
R-L	1	Pusher Assy.	0814-05992
L-R	1	Pusher Assy.	0814-06018
R/L	3	Bearings, Jilson	3558-01126
R-L	1	Vertical Roller Assy.	0814-05429
L-R	1	Vertical Roller Assy.	0814-05437
R/L	1	Vertical Roller Assy. #2	0814-05496
R/L	1	Spring, Lee	4542-01009
(Recommended replacement parts for the Detector Assembly)			
R/L	1	Bearing, Jilson	3558-01169
(Recommended spare parts for the Lower Traverse Assembly)			
R/L	1	Air Cylinders, Festo	5503-02568
R/L	2	Bearings, Flange	3561-00319
R/L	1	Rodless Cylinder, Festo Repair Kit	5503-02576

CONAIR GATTO

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CONAIR MACHINERY DEVELOPMENT

MACHINE CONFIGURATION	*QUANTITY REQUIRED*	*PART DESCRIPTION*	*CONAIR GATTO PART NO.*
		(Recommended spare parts, for Turret Assembly)	
R-L	1	Clutches, Horton	3552-00888
R-L	1	Bearing, Pillow Block	3507-00494
R-L	1	Chain Conn. Link #40	3525-00019
		(Recommended spare parts for cuting tool assembly)	
R-L	1	Bearing, Oilite	3560-01664
R-L	1	Sleeve, Oilite	3560-01672
		(Recommended spare parts for detent assembly)	
R-L	1	Detent	0814-08894
R-L	1	Ball Bearing	3558-01185
R-L	1	Bearing, Bronze	3560-01753
R-L	1	Switch, Actuator	0814-08843
R-L	1	Cylinder, 2x, Festo Repair Kit	5503-02584
R-L	1	Bearing, Bronze	3561-00343
		(Recommended spare parts for the Shot Pin Assembly)	
R-L	1	Positioner, Arm Assy.	0814-09068
R-L	1	Bushing, Oilite	3560-00013
R-L	1	Positioners, Turret	0814-09033
R-L	1	Bearing, Rod End	3509-00122
R-L	1	Follower Cam, McGill	3501-00131
R-L	1	Air Cylinder, DSW, Festo Repair Kit	5557-00277

CONAIR GATTO
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CONAIR MACHINERY DEVELOPMENT

MACHINE CONFIGURATION	QUANTITY REQUIRED	PART DESCRIPTION	CONAIR GATTO PART NO.
(Recommended spare parts for the Lower Traverse Assembly)			
R/L	2	Ball Bearings, Boston	3558-00227
R/L	2	Bearings, McGill	3501-00069
R/L	1	Bearing, McGill	3501-00387
R/L	1	Belt, Timing	3512-01164
R/L	1	Torque Limiter, OSD	3576-00064
R/L	1	Chain Con. Link, #40	3525-00019
R/L	1	Belt, Timing	3512-01318
R/L	1	Belt, Timing	3512-00672
R/L	1	Belt, Timing	3512-00133
(Recommended spare parts for Collapsible Core Assys.)			
* Parts based on customer experience with Gatto & Vulcan units			
(Recommended spare parts for the ATC Frame Assy.)			
R-L	1	Stud, Leveling	0814-08614
R-L	1	Fastener, Southco	4504-00384
R-L	6	Clips, Panel	0814-07871
(Recommended spare parts for Turret Assembly)			
R-L	1	Bearings, Flange	3505-00691
R-L	2	Ball Bearings, MRC	3558-00049
R-L	1	Bearings, Flange	3505-00187
R-L	1	Bearings, Flange	3505-00098
R-L	2	Wheel Guides	3556-00262
R-L	2	Adapters, Bushing	3556-00289

CONAIR MACHINERY DEVELOPMENT

MACHINE CONFIGURATION	*QUANTITY REQUIRED*	*PART DESCRIPTION*	*CONAIR PART NO.*
		(Recommened spare parts for miscellaneous)	
R/L	1	Actuator, Turrent Sensor	0814-09246

CONAIR MACHINERY DEVELOPMENT

MACHINE CONFIGURATION	QUANTITY REQUIRED	PART DESCRIPTION	CONAIR PART NO.
8.1 SPARE PARTS - ELECTRICAL			
(Recommended spare parts for motor control system)			
R-L	1	Motor Control	1531-01431
(Recommended spare parts for programmable control system)			
R-L	1	EE Prom, A.B.	1590-00279
(Recommended spare parts for sensors and components)			
R-L	1	Footage Counter, (present)	1540-00634
R-L	2	Proximity Detectors	1616-00108
R-L	1	Mercury Switch	1627-00029
R-L	1	Limit Switch	1613-00603
R-L	1	Ultrasonic Loop Control	0814-08851
R-L	1	Encoder	1545-00527
R-L	1	Power Supply 24 VDC	1650-00133
R-L	1	Pressure Sensor	1615-00066
R-L	1	Fuse	1552-02039
R-L	1	Relay Interface	1601-01019
R-L	1	Transistor	1608-00727
R-L	1	Relay	1601-00241
R-L	1	Photo Detector	1583-00255

CONAIR GATTO
Part of The Conair Group

CONAIR MACHINERY DEVELOPMENT

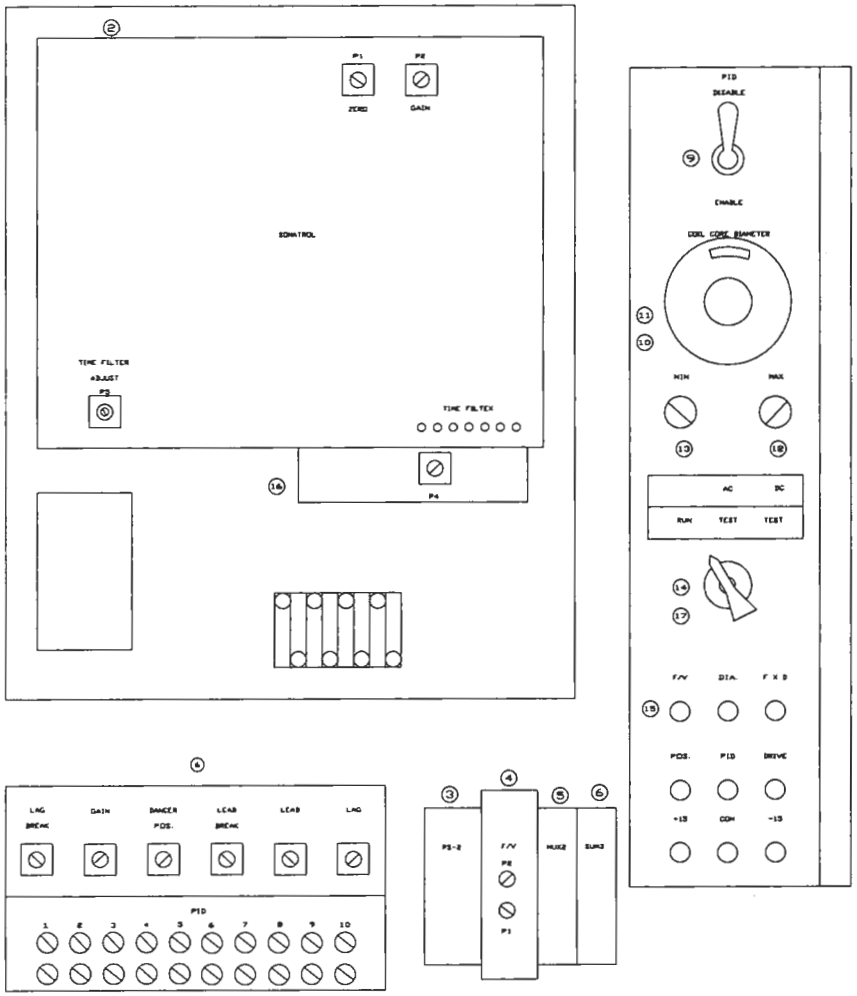
MACHINE CONFIGURATION	QUANTITY REQUIRED	PART DESCRIPTION	CONAIR GATTO PART NO.

8.1 SPARE PARTS - PNEUMATIC

(Recommended spare parts for the Shot Pin Assembly)

R-L	1	Flow Control, Festo	5557-00188
R-L	1	Flow Control, Festo	5557-00234
R-L	1	Flow Control, Festo	5557-00285
R-L	1	Valve, Solenoid	5557-00285
R-L	1	Valve, Solenoid	5557-00099
R-L	1	Regulator/Filter Gauge	5501-00363
R-L	1	Regulator	5501-00355
R-L	1	Switch, Limit, Festo	5557-00536
R-L	1	Switch, Micro, Festo	5557-00196
R-L	1	Push-button, Festo	5557-00587
R-L	1	Valve, Pilot	5557-00153
R-L	1	Union, Rotating	5526-00139
R-L	1	Tubing Section (10')	5557-00374
R-L	1	Tubing Section (10')	5557-00382

REV	DESCRIPTION	DATE	BY	APP
A	POSITION CONTROL WAS IN SEPERATE BOX	12/17/89	RJC	



DRAWING	ITEM	PART No.	QTY	MATERIAL	DESCRIPTION
	17	2539-00023	1		KNOB
	16	1542-00682	1		TOP LIMIT ASS'Y
	15	1625-00668	6		TEST POINT
	14	1619-00818	1		SWITCH
	13	1585-00074	1		POT
	12	1585-00287	1		POT
	11	1543-00015	1		DIAL
	10	1586-00035	1		POT
	9	1622-00039	1		SWITCH
CX559-1099	8	0814-12247	1		BRACKET
	7	1531-01253	1		PID ASSY.
	6	1542-00666	1		SUMMING CKT.
	5	1542-00658	1		MULTIPLIER
	4	1542-00631	1		F TO V CONV.
	3	1650-00214	1		POWER SUPPLY
	2	1542-00674	1		ULTRASONIC DET.
	1	SUPPLIED	1		PANEL

NOTES:
EXCEPT AS NOTED FINISH ALL OVER TO 125
BREAK ALL CORNERS UNLESS OTHERWISE NOTED
DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE NOTED
FRACTIONS ± 1/64
DECIMALS ± .005
ANGLES ± 1/4°
WELDMENTS ± 1/16

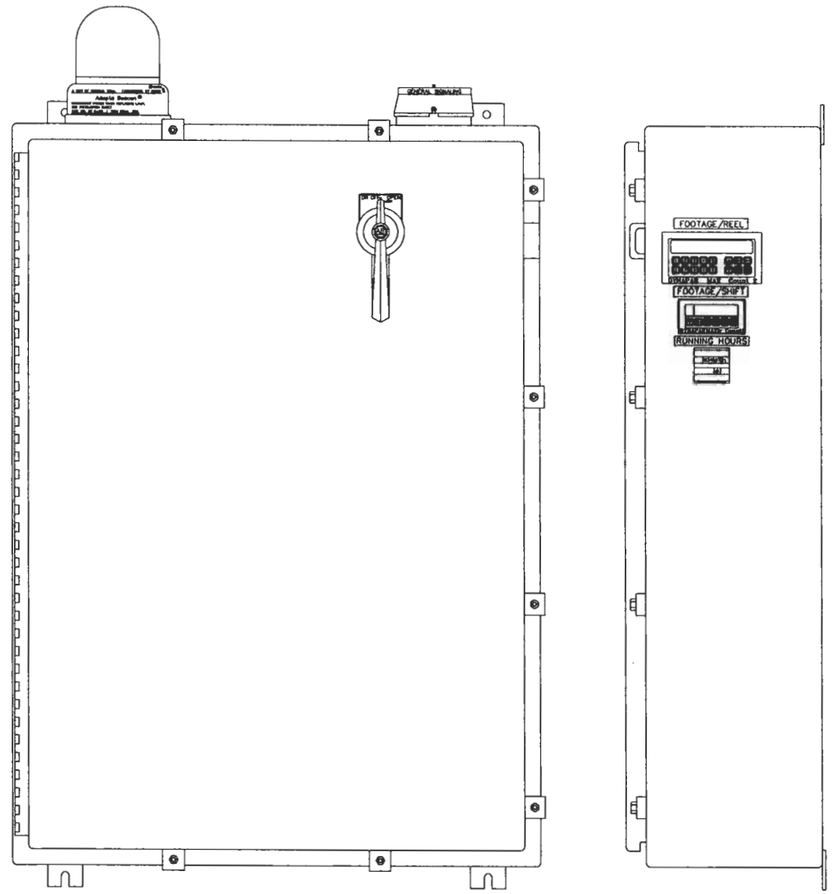
GATTO MACHINERY DEVELOPMENT CORP

DESIGNED BY | DATE | NEXT ASSEMBLY
DRAWN BY RJC | DATE 11/28/88

TITLE: LOOP CONTROL LAYOUT

PART NO. 0814-11925

SCALE | D | X559-1071 | REV A



1	1	2504-02732	HOFFMAN BOX A42H3010SSLP
SYM	QTY	PART NUMBER	DESCRIPTION

DRAWING NUMBER 0814-30048

NOTES:
EXCEPT AS NOTED FINISH ALL OVER TO √
BREAK ALL CORNERS UNLESS OTHERWISE NOTED
DO NOT SCALE PRINT.

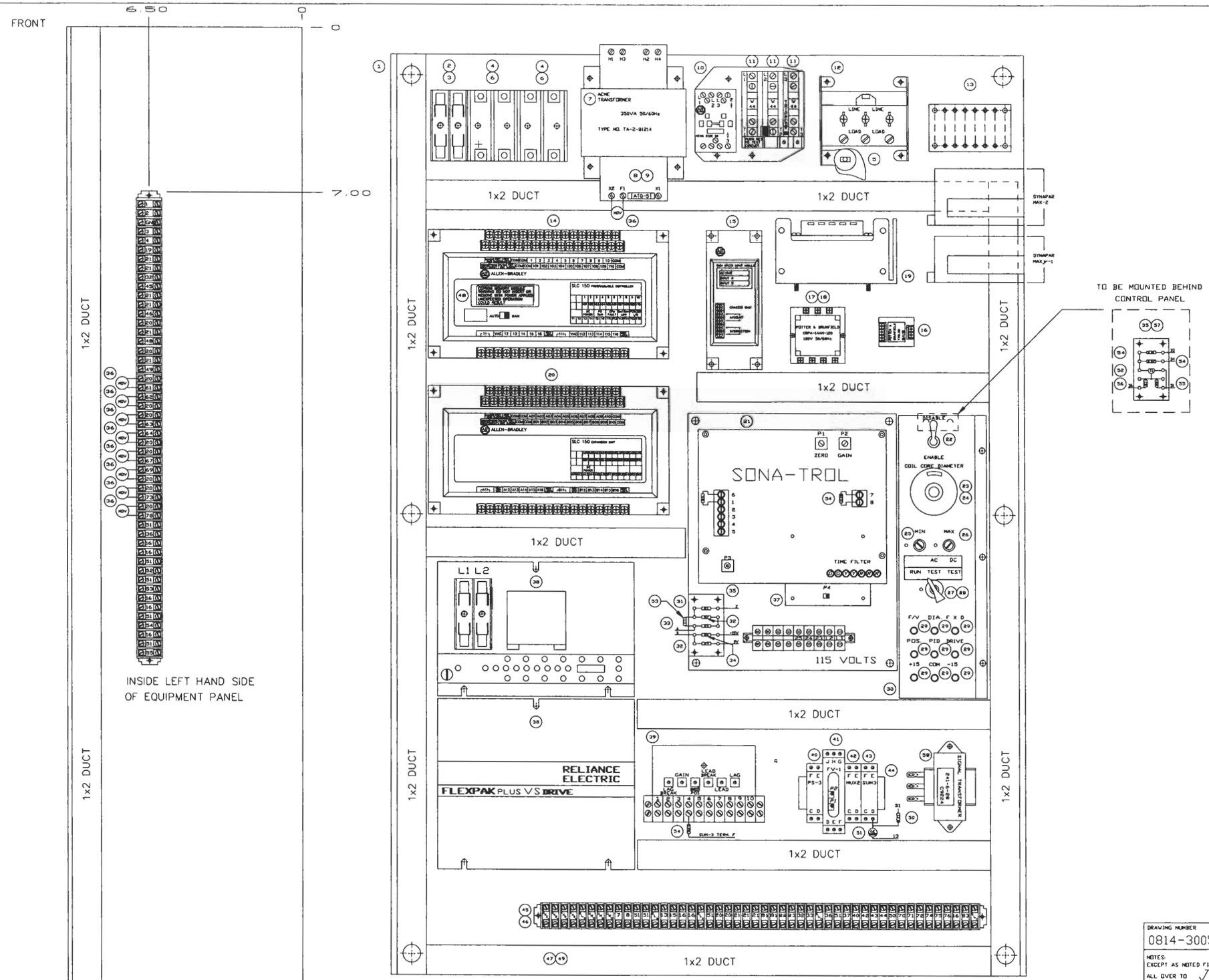
TOLERANCE UNLESS OTHERWISE NOTED.
XX = ± 0.010
XXX = ± 0.005
ANGLES ± 1/2°

CONAIR
GATTO MACHINERY DEVELOPMENT CORP.

TITLE
COILER EQ. BOX LAYOUT R-L MACH.

CHECKED BY	DRAWN BY	DATE	PART NUMBER	REV
	KM	04/18/94		
SHEET 1 OF 1	SCALE 1/4	D	PART NUMBER 0814-30048	REV

File Name: WFF004E.DWG Plotted 04-18-94 14:47



SYM	QTY	PART NUMBER	DESCRIPTION
58	1	1635-01565	TRANSFORMER 241-6-28
57	1	0202-06507	FLYWHEEL SPD INTERFACE MTG BRACKET
56	1	1607-01037	RESISTOR 18K OHMS
55	1	1607-00995	RESISTOR 1,000 OHMS
54	4	1608-00387	DIODE DT3 1N4148
53	1	1518-00612	SPRAGE 1MFD CAP. 15VDC
52	1	1608-00727	TRANISTOR 2N4400 NPN
51	1	1595-00218	GE DIODE 1N5060
50	1	1608-00778	ZENER DIODE ECG5126A
49	20'	2507-00072	1x2 WIRE CHANNEL COVER
48	1	1590-00279	AB EE-PROM 1745-M1
47	20'	2507-00013	1x2 WIRE CHANNEL
46	4	1505-00052	END SECTION BUCH-630
45	97	1505-00044	TERM BLOCK BUCH-625
44	1	1542-00704	WADDINGTON MOUNTING TRACK
43	1	1542-00666	WADDINGTON SUMMING SUM-3
42	1	1542-00658	WADDINGTON MULTIPLIER MUX-2
41	1	1542-00631	WADDINGTON F/V CONVERTER F/V-1
40	1	1650-00214	WADDINGTON POWER SUPPLY PS-3
39	1	1531-01253	REFLEX MOD204 PID ASSY.
38	1	1531-01431	RELIANCE 2HP DC REGEN DRIVE 14C108
37	1	1542-00682	LBI TOP LIMIT SENSOR
36	9	1608-00018	GE VARISTOR V130LA2
35	2	1588-00407	KEYSTONE PC BOARD 15032
34	1	1607-01541	RESISTOR 1,500 OHMS
33	1	1607-00219	RESISTOR 100K OHMS
32	2	1607-00553	RESISTOR 100 OHMS
31	1	1607-00804	RESISTOR 1,800 OHMS
30	1	0814-12247	POSITION CONTROL BRACKET
29	9	1625-00668	KULKA SMITH JACK 1507-103
28	1	2539-00023	ALCO KNOB
27	1	1619-00818	SEL. SWITCH 22F837
26	1	1585-00074	CLAROSTAT 5K POT.
25	1	1585-00287	CLAROSTAT 2K POT.
24	1	1543-00015	BECK DIAL RB-15DUO
23	1	1586-00035	BECK 5K POT. AR5KL25
22	1	1622-00039	TOGGLE SWITCH
21	1	1542-00674	SONA-TROL SPEED CONTROL
20	1	1590-00252	AB PROG. EXPANSION UNIT 1745-E153
19	1	1650-00133	TAMUPA POWER SUPPLY OLS24N
18	1	1647-00394	P&B 11-PIN SOCKET
17	1	1601-00241	P&B RELAY KRPA-14AN-120
16	1	1601-01019	DYNAPAR RELAY PM-31
15	1	1590-00325	AB HIGH SPEED COUNTER 1745-E155
14	1	1590-00244	AB PROG. SLC-150 1745-LP151
13	1	0814-13294	GROUND BUSS
12	1	1611-00096	AB DISCONNECT SWITCH 1494R-N30
11	3	1563-00216	AB OL HEATER W-44
10	1	1609-00224	AB STARTER 509-TOD
9	1	1552-02039	FUSE FNQ-5
8	1	1503-00063	ACME FUSE BLOCK 112601
7	1	1634-00077	ACME TRANSFORMER 350VA
6	4	1552-02004	FUSE FRN-25
5	1	1611-00134	AB DIS. SWITCH SHAFT KIT 1494R-N4
4	1	1502-00361	AB FUSE BLOCK 1491-N122
3	1	1502-00078	BUSS FUSE BLOCK BM603-2SQ
2	2	1552-01962	FUSE FNQ-3 2/10
1	1	A-42P30	HOFFMAN PANEL A-42P30

DRAWING NUMBER 0814-30056

NOTES:
EXCEPT AS NOTED FINISH ALL OVER TO √
BREAK ALL CORNERS UNLESS OTHERWISE NOTED.
DO NOT SCALE PRINT.

TOLERANCE UNLESS OTHERWISE NOTED.
XX = ± 0.010
.XXX = ± 0.005
ANGLES ± 1/2°

CONAIR
GATTO MACHINERY DEVELOPMENT CORP.

TITLE: COILER EQ. PANEL LAYOUT W/MAX-2

CHECKED BY	DRAWN BY	DATE	PART NUMBER	REV
	[illegible]	04/18/94		

SHEET 1 OF 1 | SCALE 1/2 | D | PART NUMBER 0814-30056 | REV

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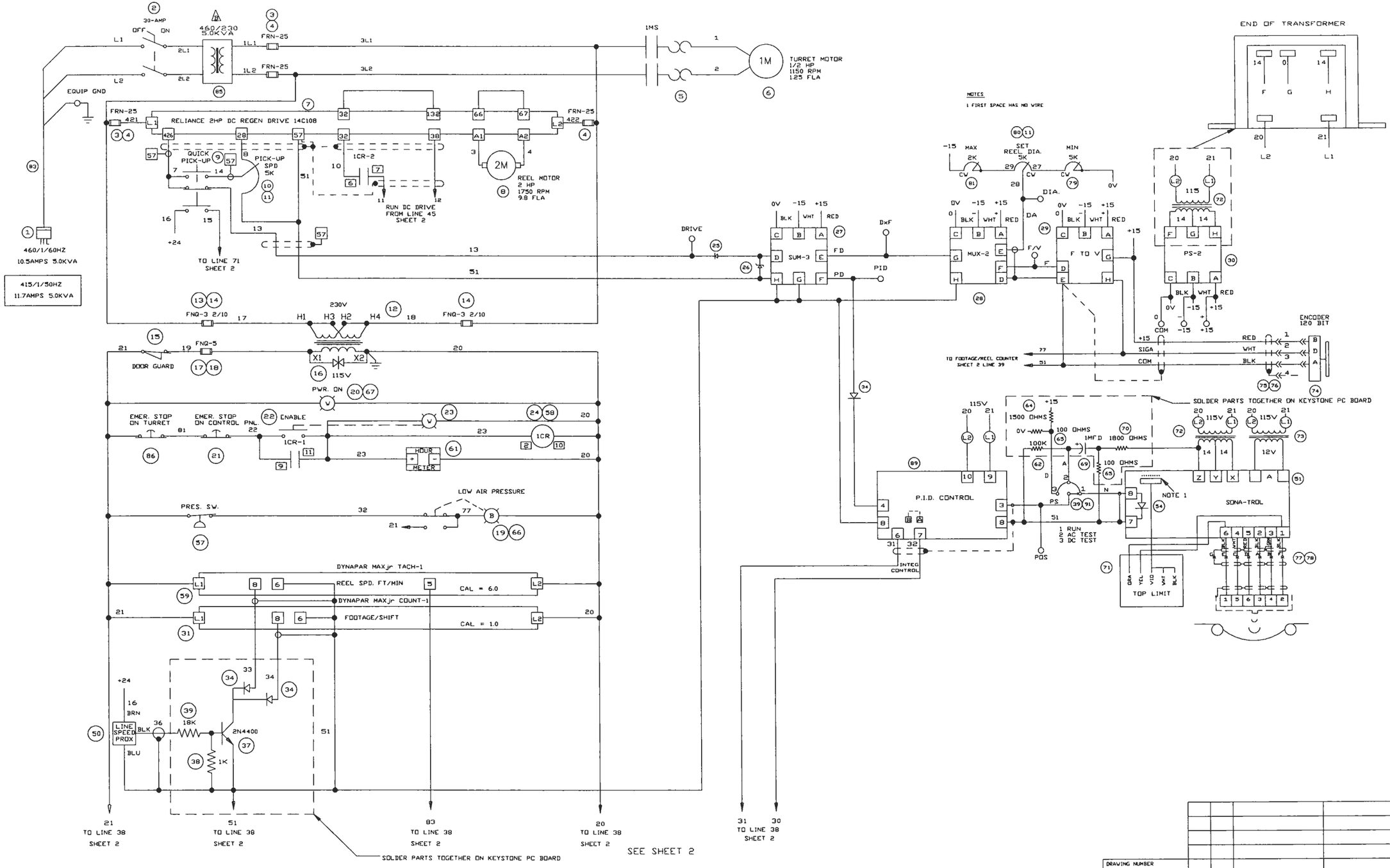


SYM.	REVISION	BY	DATE
B	LOCATED TRANS. BEFORE DISCONT. SWITCH.	SJB	01/20/97
A	SWAP MIN AND MAX POT.	DH	12-13-95

File Name: WFF006E.DWG Plotted 07-13-94 12:36

SYM	QTY	PART NUMBER	DESCRIPTION

DRAWING NUMBER 0814-30064

NOTES: EXCEPT AS NOTED FINISH ALL OVER TO √ BREAK ALL CORNERS UNLESS OTHERWISE NOTED. DO NOT SCALE PRINT.

TOLERANCE UNLESS OTHERWISE NOTED. XX = ± 0.010 XXX = ± 0.005 ANGLES ± 1/2°

CONAIR
GATTO MACHINERY DEVELOPMENT CORP.

TITLE: COILER 460V W/MAX COUNT-2

CHECKED BY

DRAWN BY KKM DATE 04/18/94 PART NUMBER REV

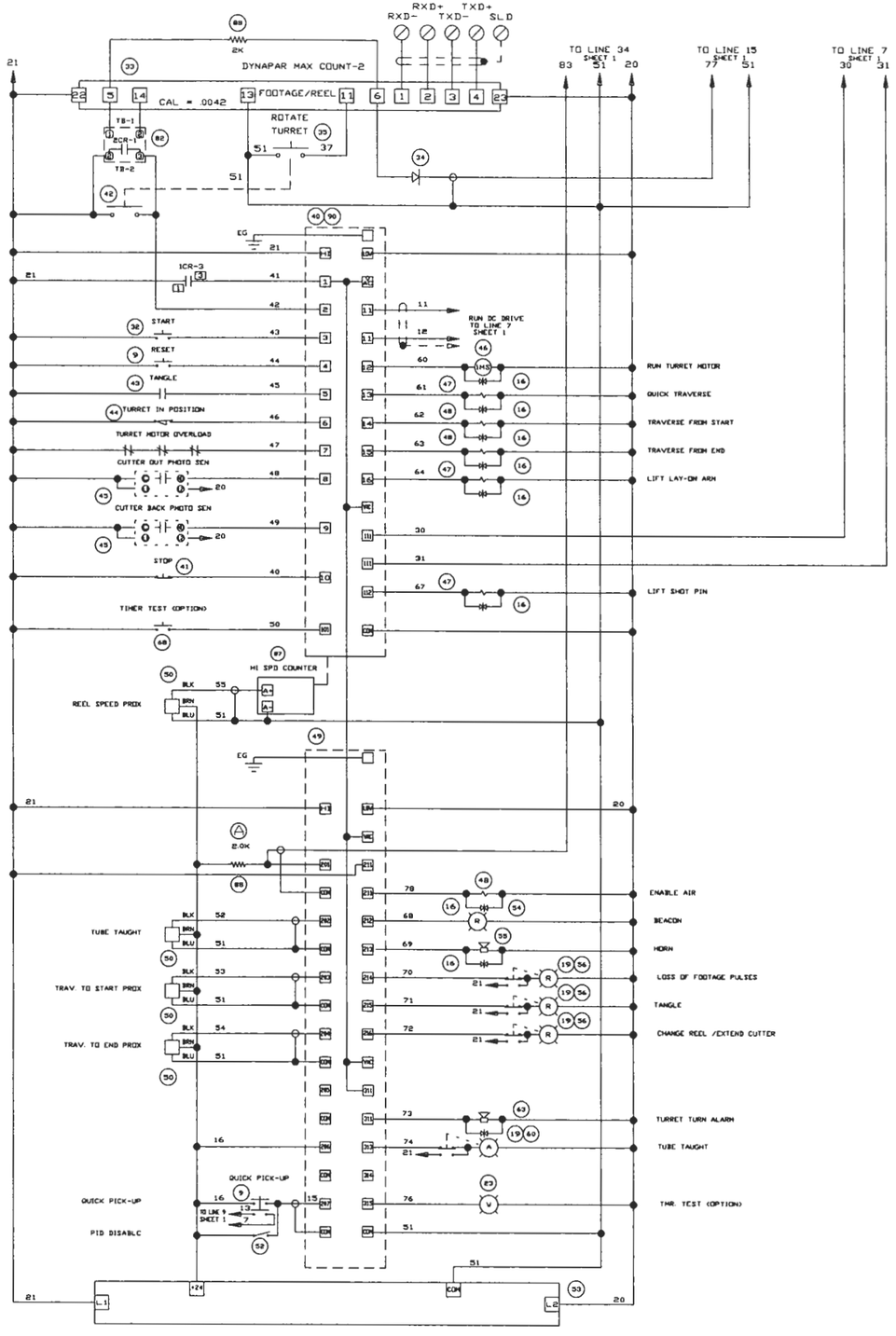
SCALE NONE D PART NUMBER 0814-30064 REV

SHEET 1 OF 2

Date: 1/17/2005

Time : 01:50:42 PM

SYM.	REVISION	BY	DATE
A	CHANGE 10K TO 2.0K	RL	01/95



SYM	QTY	PART NUMBER	DESCRIPTION
65	2	1607-00553	RESISTOR 100 OHMS
64	1	1607-01541	RESISTOR 1.5K OHMS
63	1	1564-00074	MALLORY SONALERT HORN 30-120V
62	1	1607-00219	RESISTOR 100K OHMS
61	1	1632-00134	REDINGTON TIMER 711-00107 120VAC
60	1	1519-00047	AB PILOT LIGHT CAP N42 (AMBER)
59	1	1540-00499	DYNAPAR MAXγ TACH-1
58	1	1647-00394	P&B 11-PIN SOCKET
57	1	1615-00066	BARKSDALE PRESSURE SWITCH D1H-A80
56	3	1519-00012	AB PILOT LIGHT CAP N40 (RED)
55	1	1564-00015	EDWARDS HORN 874-N5
54	1	1584-00208	EDWARDS BEACON-RED47R-N5
53	1	1650-00133	TAMURA POWER SUPPLY OLS24N
52	1	1622-00039	TOGGLE SWITCH 110-S-73
51	1	1542-00674	SONA-TROL SPEED CONTROL
50	5	1616-00108	TURCK PROX. SWITCH BI5-G18-AP6X
49	1	1590-00252	AB PROG. EXPANSION UNIT 1745-E153
48	3	5557-00099	FESTO-SINGLE SOL. VALVE 10836MFH
47	3	5557-00102	FESTO-SINGLE SOL. VALVE 9765 MFH
46	1	1609-00224	AB STARTER 509T00
45	2	1583-00255	PHOTO SWITCH 42 LRC-5010
44	1	1613-00603	MICRO LIMIT SWITCH BZE6-2RQ2
43	1	1627-00029	DURAKOOL MERCURY SWITCH A1-002
42	1	1593-00245	AB PUSH BUTTON CONTACT 800T-XA
41	1	1593-00148	AB PUSH BUTTON 800T-B602
40	1	1590-00244	AB PROG. SLC-150 1745-LP151
39	1	1607-01037	RESISTOR 18K OHMS
38	1	1607-00995	RESISTOR 1K OHMS
37	1	1608-00727	TRANISTOR 2N4400 NPN
36	1	1619-00818	SEL. SWITCH 22F837
35	1	1593-00091	AB PUSH BUTTON 800T-A9D1
34	5	1608-00387	DIODE DT3 1N4148
33	1	1540-00774	DYNAPAR MAX COUNT-2
32	1	1593-00059	AB PUSH BUTTON 800T-A1D1
31	1	1540-00669	DYNAPAR MAXγ COUNT -1
30	1	1650-00214	WADDINGTON POWER SUPPLY PS-3
29	1	1542-00631	WADDINGTON F/V CONVERTER F/V-1
28	1	1542-00658	WADDINGTON MULTIPULER MUX-2
27	1	1542-00666	WADDINGTON SUMMING SUM-3
26	1	1608-00778	ZENER DIODE ECG5126A
25	1	1595-00218	GE RECTIFIER DIODE 1N5060
24	1	1601-00241	P&B RELAY KRPA-14AN-120
23	1	1519-00063	AB PILOT LIGHT CAP N44 (WHITE)
22	1	1594-00036	AB PILOT LIGHT 800T-PA16
21	1	1593-00679	AB PUSH BUTTON 800T-D6D2
20	1	1519-00136	AB PILOT LIGHT CAP N26W (WHITE)
19	5	1584-00178	AB PILOT LIGHT 800T-PT16
18	1	1552-02039	FUSE FNQ-5
17	1	1503-00063	ACME FUSE BLOCK 112601
16	9	1608-00018	GE VARISTOR V130LA2
15	1	1613-00603	MICRO LIMIT SWITCH BZE6-2RQ2
14	2	1552-01962	FUSE FNQ-3 2/10
13	1	1502-00078	BUSS FUSE BLOCK BM603-2SQ
12	1	1634-00077	ACME TRANSFORMER 350VA
11	2	1543-00015	BECK DIAL RB-15DUO
10	1	1586-00035	BECK 5K POT. AR5KL25
9	2	1593-00067	AB PUSH BUTTON 800T-A201
8	1	1579-01042	RELIANCE DC 2HP MT56H1058 MOTOR
7	1	1531-01431	RELIANCE 2HP DC REGEN DRIVE 14C108
6	1	1577-01215	RELIANCE AC 1/2HP 115/230V MOTOR
5	3	1563-00216	AB O.L. HEATER W-44
4	4	1552-02004	FUSE FRN-25
3	2	1502-00361	AB FUSE BLOCK 1491-N122
2	1	1611-00096	AB DISCONNECT SWITCH 1494R-N30
1	1	1644-00067	HUBBELL PLUG
91	1	2539-00023	ALCO KNOB
90	1	1590-00279	AB EE-PROM 1745-M1
89	1	1531-01253	REFLEX MOD204 PIO ASSY.
88	1	1607-00502	RESISTOR 2.0K OHMS
87	1	1590-00325	AB HIGH SPEED COUNTER 1745-E155
86	1	1593-01446	SQ-D PUSH BUTTON XAL-B164
85	1	1635-00348	ACME TR. 5 KVA TF-2-52520-S 415V
84	1	1635-00119	ACME TR. 5 KVA T-2-53014-4S 460V
83	15'	1517-00015	10-3 SO CORD
82	1	1601-01019	DYNAPAR RELAY PM-31
81	1	1585-00287	CLAROSTAT 2K POT.
80	1	1586-00035	BECK POT. AR5KL25
79	1	1585-00074	POT. 1 TURN JA1L040S502U
78	1	1645-01172	AMPHENOL CONNECTOR 3102A 18-9
77	1	1644-00938	AMPHENOL PLUG 3106A 18-9P
76	1	1648-00587	CANNON RECEPTACLE AXR-4-31
75	1	1644-00555	CANNON PLUG AXR-4-12R
74	1	1545-00527	ENCODER ENC711
73	1	1635-01573	SIGNAL TRANSFORMER 241-6-12
72	2	1635-01565	SIGNAL TRANSFORMER 241-6-28
71	1	1542-00682	LBI TOP LIMIT SENSOR
70	1	1607-00804	RESISTOR 1.8K OHMS
69	1	1518-00612	SPRAGE 1MF0 CAP 15VDC
68	1	1593-01179	AB PUSH BUTTON 800T-PB16
67	1	1584-00127	AB PILOT LIGHT 800T-P16
66	1	1519-00055	AB PILOT LIGHT CAP N43 (BLUE)

DRAWING NUMBER 0814-30064

NOTES:
EXCEPT AS NOTED FINISH ALL OVER TO √
BREAK ALL CORNERS UNLESS OTHERWISE NOTED
DO NOT SCALE PRINT.

TOLERANCE UNLESS OTHERWISE NOTED.
XX = ± 0.010
XXX = ± 0.005
ANGLES ± 1/2°

CONAIR
GATTO MACHINERY DEVELOPMENT CORP.

TITLE: COILER 460V W/MAX COUNT-2

CHECKED BY	DRAWN BY	DATE	PART NUMBER	REV
	[illegible]	04/18/94		

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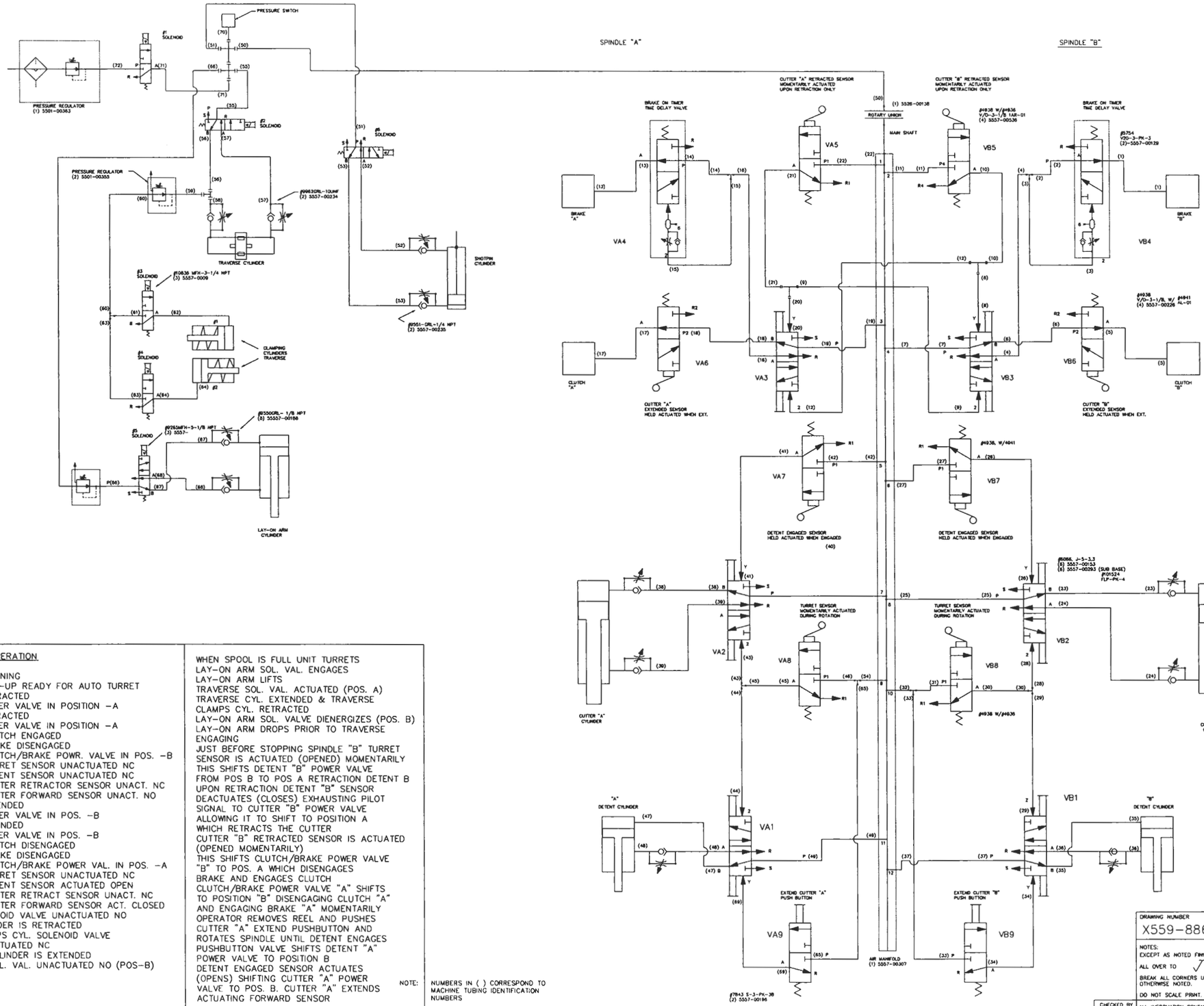
SHEET 2 OF 2

SCALE		PART NUMBER	REV
NONE	D	0814-30064	A

File Name: WFF007E.DWG Plotted 01-06-95 11:47

Title: M:\Documents and Settings\bshreffler\Desktop\081430064_B_Sht2.dwg



SEQUENCE OF OPERATION

START POSITION
SPINDLE "A" RUNNING
SPINDLE "B" SET-UP READY FOR AUTO TURRET
CUTTER "A" RETRACTED
CUTTER "A" POWER VALVE IN POSITION -A
DETENT "A" RETRACTED
DETENT "A" POWER VALVE IN POSITION -A
SPINDLE "A" CLUTCH ENGAGED
SPINDLE "A" BRAKE DISENGAGED
SPINDLE "A" CLUTCH/BRAKE POWR. VALVE IN POS. -B
SPINDLE "A" TURRET SENSOR UNACTUATED NC
SPINDLE "A" DETENT SENSOR UNACTUATED NC
SPINDLE "A" CUTTER RETRACTOR SENSOR UNACT. NC
SPINDLE "A" CUTTER FORWARD SENSOR UNACT. NO
CUTTER "B" EXTENDED
CUTTER "B" POWER VALVE IN POS. -B
DETENT "B" EXTENDED
DETENT "B" POWER VALVE IN POS. -B
SPINDLE "B" CLUTCH DISENGAGED
SPINDLE "B" BRAKE DISENGAGED
SPINDLE "B" CLUTCH/BRAKE POWER VAL. IN POS. -A
SPINDLE "B" TURRET SENSOR UNACTUATED NC
SPINDLE "B" DETENT SENSOR ACTUATED OPEN
SPINDLE "B" CUTTER RETRACT SENSOR UNACT. NC
SPINDLE "B" CUTTER FORWARD SENSOR ACT. CLOSED
TRAVERSE SOLENOID VALVE UNACTUATED NO
TRAVERSE CYLINDER IS RETRACTED
TRAVERSE CLAMPS CYL. SOLENOID VALVE ALTERNATELY ACTUATED NC
LAY-ON ARM CYLINDER IS EXTENDED
LAY-ON ARM SOL. VAL. UNACTUATED NO (POS-B)

WHEN SPOOL IS FULL UNIT TURRETS
LAY-ON ARM SOL. VAL. ENGAGES
LAY-ON ARM LIFTS
TRAVERSE SOL. VAL. ACTUATED (POS. A)
TRAVERSE CYL. EXTENDED & TRAVERSE CLAMPS CYL. RETRACTED
LAY-ON ARM SOL. VALVE DIENERGIZES (POS. B)
LAY-ON ARM DROPS PRIOR TO TRAVERSE ENGAGING
JUST BEFORE STOPPING SPINDLE "B" TURRET SENSOR IS ACTUATED (OPENED) MOMENTARILY THIS SHIFTS DETENT "B" POWER VALVE FROM POS B TO POS A RETRACTION DETENT B UPON RETRACTION DETENT "B" SENSOR DEACTUATES (CLOSES) EXHAUSTING PILOT SIGNAL TO CUTTER "B" POWER VALVE ALLOWING IT TO SHIFT TO POSITION A WHICH RETRACTS THE CUTTER
CUTTER "B" RETRACTED SENSOR IS ACTUATED (OPENED MOMENTARILY)
THIS SHIFTS CLUTCH/BRAKE POWER VALVE "B" TO POS. A WHICH DISENGAGES BRAKE AND ENGAGES CLUTCH
CLUTCH/BRAKE POWER VALVE "A" SHIFTS TO POSITION "B" DISENGAGING CLUTCH "A" AND ENGAGING BRAKE "A" MOMENTARILY
OPERATOR REMOVES REEL AND PUSHES CUTTER "A" EXTEND PUSHBUTTON AND ROTATES SPINDLE UNTIL DETENT ENGAGES PUSHBUTTON VALVE SHIFTS DETENT "A" POWER VALVE TO POSITION B
DETENT ENGAGED SENSOR ACTUATES (OPENS) SHIFTING CUTTER "A" POWER VALVE TO POS. B. CUTTER "A" EXTENDS ACTUATING FORWARD SENSOR

NOTE: NUMBERS IN ( ) CORRESPOND TO MACHINE TUBING IDENTIFICATION NUMBERS

SYM	QTY	PART NUMBER	DESCRIPTION

DRAWING NUMBER X559-886

NOTES:
EXCEPT AS NOTED FINISH
ALL OVER TO √
BREAK ALL CORNERS UNLESS OTHERWISE NOTED.
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TOLERANCE UNLESS OTHERWISE NOTED.
.XX = ± 0.010
.XXX = ± 0.005
ANGLES ± 1/2°

CONAIR
GATTO MACHINERY DEVELOPMENT CORP.

TITLE: ON LINE REELER PNEUMATIC DIAGRAM

CHECKED BY

DRAWN BY M. BURK | DATE 01-20-97 | PART NUMBER | REV

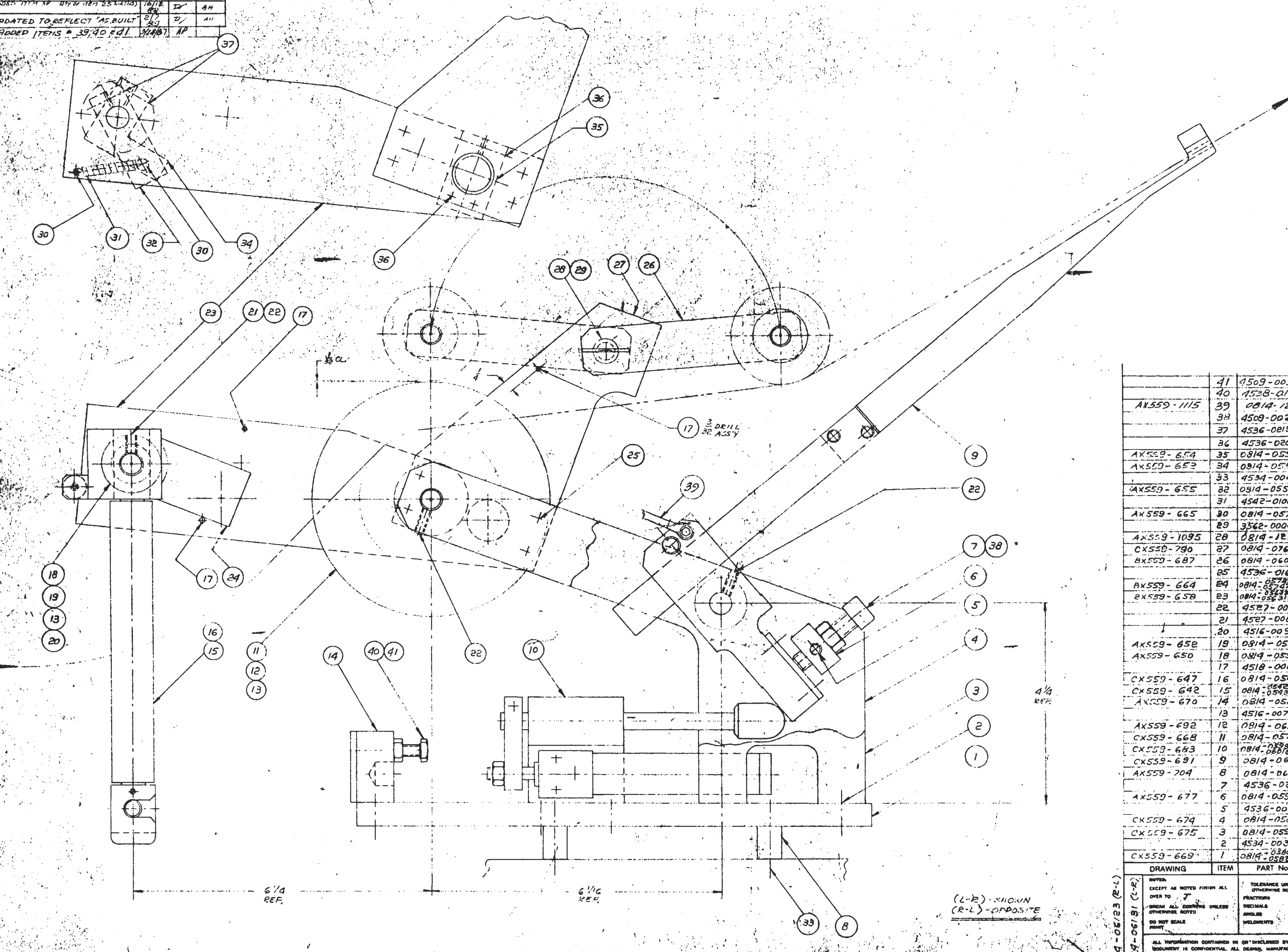
SCALE | D | PART NUMBER 0814-09122 | REV

SHEET 1 OF 1

File Name: WFF048P.DWG Plotted 03-06-97 08:27

Title: \\cadserv\released\eng_drawings\Drawing_File\Current\Autocad\GATTO\MECH\SPECIAL\0814-09122.dwg

REV.	DESCRIPTION	DATE	BY	APP.
A	ADDED ITEM 38 QTY OF ITEM 25 [illegible]	10/12/84	D	AH
B	UPDATED TO REFLECT "AS BUILT"	2/7/89	D/	AH
C	ADDED ITEMS # 39, 40 & 41	9/24/87	AP	



DRAWING	ITEM	PART No.	QTY.	MATERIAL	DESCRIPTION
	41	4509-00544	1	SS-HX-NUT	1/4-20
	40	4538-01908	1	SS-HX.HD.SCR.	1/4-20 x 1" LG
AX559-1115	39	0814-12492	1		LAY ON ARM GRND CABLE
	38	4509-00258	1	SS-HEX NUT	3/8-16
	37	4536-08192	2	SCHD-CAP-SCR	SS #10-32 x 3/4 LG
	36	4536-02095	3	SCHD-CAP-SCR	SS #10-32 x 1" LG.
AX559-654	35	0814-05585	1		SENSOR MTG. BR'KT
AX559-653	34	0814-05577	1		SENSOR MTG. BR'KT.
	33	4534-00419	4	FLHD SC-SCREW	1/4-20 x 1 1/8 LG
AX559-655	32	0814-05593	1		CLAMP
	31	4542-01009	1	SPRING, LEE	ST.ST. # LE-0188-7
AX559-665	30	0814-05755	2		SCR. MODIF.
	29	3562-00043	2	THRUST-WASHER	BOSTON # 18816, # 3/8
AX559-1095	28	0814-12182	1		SHOULDER SCR. MODIFIED
CX559-790	27	0814-07669	1		IDLER MOUNT
BX559-687	26	0814-06069	1		IDLER ROLLER - ASS'Y
	25	4536-01676	5	SCHD-CAP-SCR	SS. 1/4-20 x 1 1/2 LG.
BX559-664	24	0814-05789 (R-L) / 0814-05747 (L-R)	1 (RL) / 1 (LR)		DETECTOR - ASS'Y
BX559-658	23	0814-05624 (RL) / 0814-05631 (LR)	1 (RL) / 1 (LR)		MTG PLATE - WELD
	22	4527-00497	5	SET SCR. SS	1/4-20 x 1/2
	21	4527-00829	1	SET SCR. SS	#10-32 x 3/8 LG.
	20	4516-00924	1	RET. RING	# 5100-87 - WALDES
AX559-652	19	0814-05569	1		SHAFT
AX559-650	18	0814-05534	1		SLEEVE
	17	4518-00611	5	ROLL-PIN, SS	3/32 x 3/4 LG.
CX559-647	16	0814-05496	1		VERT. ROLLER-ASS'Y #2
CX559-642	15	0814-05429 (RL) / 0814-05437 (LR)	1 (RL) / 1 (LR)		VERT. ROLLER - ASS'Y #1
AX559-670	14	0814-05836	1		STOP
	13	4516-00746	3	RET. RING	WALDES # 5100-46
AX559-692	12	0814-06115	1		ROLLER - SHAFT
CX559-668	11	0814-05798	1		PR. GUIDE ROLLER - ASS'Y
CX559-683	10	0814-05998 (RL) / 0814-06018 (LR)	1 (RL) / 1 (LR)		PUSHER - ASSY
CX559-691	9	0814-06107	1		PR. GUIDE - ASSY
AX559-704	8	0814-06898	4		SPACER
	7	4536-02435	1	SCHD. CAP-SCR.	ST.ST. 3/8-16 x 1 1/2 LG.
AX559-677	6	0814-05925	1		BLOCK
	5	4536-00262	2	SCHD. CAP SCR.	ST.ST. 1/4-20 x 1" LG.
CX559-674	4	0814-05895	1		SIDE PLATE #1
CX559-675	3	0814-05909	1		SIDE PLATE #2
	2	4534-00362	8	FL. HD. SOCK SCR.	ST. ST. 1/4-20 x 1" LG.
CX559-669	1	0814-05801 (RL) / 0814-05828 (LR)	1 (RL) / 1 (LR)		BASE PLATE (UPPER TR.)

0814-06123 (R-L)
0814-06191 (L-R)

NOTES:
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BREAK ALL CORNERS UNLESS OTHERWISE NOTED
DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE NOTED
FRACTIONS ± 1/64
DECIMALS ± .005
ANGLES ± 1/2°
WELDMENTS ± 1/16

GATTO MACHINERY DEVELOPMENT CORP.

REVIEWED BY	[illegible]	DATE	2/16/88
DRAWN BY	[illegible]	DATE	2/16/88
MATERIAL			
TITLE	UPPER TRAVERSE - ASS'Y		
SCALE	FULL	D	X559-693
REV.	C		