OPERATOR'S INSTRUCTION MANUAL

MODEL CM 10 CORECUTTER

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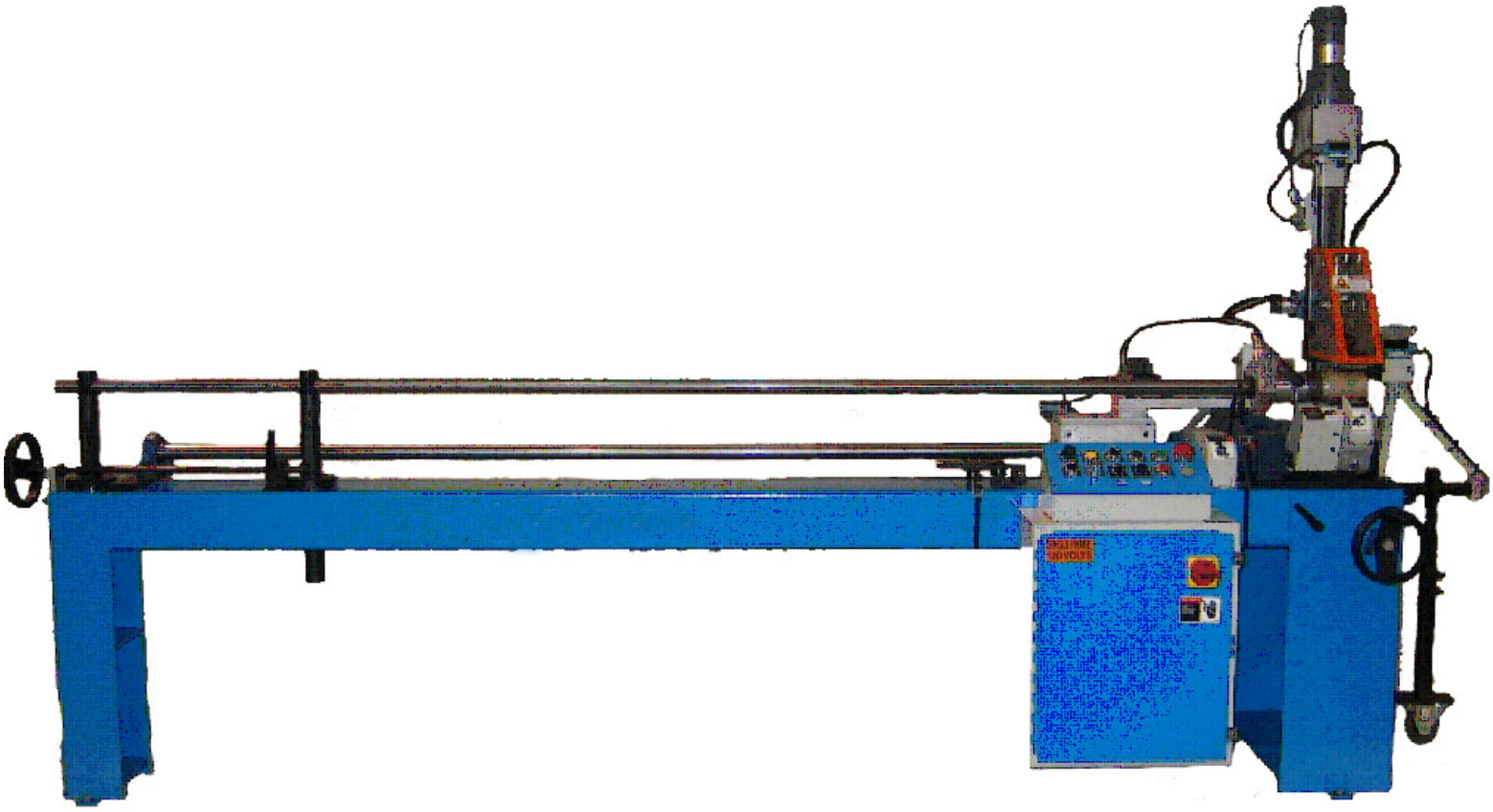


OPERATOR SAFETY

FOLLOWING IS A LIST OF GENERAL SAFETY GUIDELINES WHEN OPERATING THIS CORECUTTING MACHINE. THIS LIST IS NOT INTENDED TO REPLACE COMMON SENSE OR PLANT SAFETY PRACTICES BUT TO ENFORCE SAFETY PRECAUTIONS THAT MAY NOT BE COMMON TO ALL LOCATIONS.

- DO NOT OPERATE MACHINE UNLESS FULLY TRAINED
- DO NOT WEAR LOOSE FITTING CLOTHES WHILE OPERATING
- DO NOT WEAR HANGING JEWELRY
- WEAR SAFETY GLASSES WITH SIDE SHIELDS
- DO NOT OPERATE MACHINE UNLESS ALL GUARDS ARE IN PLACE
- DO NOT OPEN CONTROL PANELS WITHOUT REMOVING POWER
- PRESS EMERGENCY STOP BEFORE CLEARING ANY JAMS
- REPORT OPERATIONAL PROBLEMS TO SUPERVISOR
- FOLLOW ALL SAFETY LABELS POSTED ON THE MACHINE
- KEEP HANDS AWAY FROM MOVING PARTS DURING OPERATION
- DO NOT STORE OR PLACE ARTICLES ON MACHINE
- USE CAUTION WHEN REPLACING OR HANDLING KNIFE BLADES

MACHINE CONTROLS

(FOR ANY CONTROLS NOT LISTED - CONSULT SUPPLEMENTS AT END)

E STOP: DROPS POWER TO THE 110 VOLT PORTION OF THE MACHINE. DOES NOT RELEASE AIR PRESSURE.

POWER ON LIGHT: WHEN LIT, INDICATES THERE IS PRIMARY VOLTAGE THROUGH THE DISCONNECT.

START P.B.: BEGINS THE CORE DRIVE MOTOR. **ROLLERS MUST ROTATE CW !**

TRIM CUT P.B.: WITH MACHINE IN LOAD AND CORE DRIVE MOTOR SPINNING, TRIM CUT WILL ACTIVATE THE KNIFE TO EXTEND AS LONG AS THE BUTTON IS DEPRESSED.

2 POSITION SELECTOR:
LOAD: PLACES END STOP IN A RETRACTED POSITION SO CORE CAN PASS BY AS IT IS BEING LOADED ONTO THE MACHINE.

RUN:PLACES END STOP IN AN OUTWARD POSITION. MACHINE WILL AUTO CYCLE IF CORE DRIVE MOTOR IS STARTED AND CORE STRIKES THE TARGET.

POTENTIOMETER: ADJUSTABLE KNOB THAT ACCESSES TIMER TO CONTROL HOW LONG KNIFE DWELLS DURING CUTTING. THE MAXIMUM VALUE OF THIS RANGE CAN BE FOUND ON THE TIMER ITSELF.

THE FOLLOWING ARE INCLUDED IN THE CONTROLS PACKAGE EVEN IF NO MECHANICAL CORE SUPPORT IS PRESENT ON THE MACHINE.

CORE SUPPORT OFF/ON: DETERMINES IF MACHINE WILL AUTO CYCLE.
OFF: MACHINE WILL AUTO CYCLE AND CUT EACH TIME CORE STRIKES THE END STOP TARGET.
ON: AFTER CORE STRIKES TARGET AND CUT IS COMPLETED, END STOP DOES NOT RETURN OUTWARD AND/OR CORE WILL NOT FEED UNTIL MACHINE IS RESET.

CORE SUPPORT RESET P.B.: USED TO RESET AUTO CYCLE WITH CORE SUPPORT OPTION "ON". WHEN RESET, MACHINE WILL AUTO CYCLE **ONCE** AND AWAIT ANOTHER RESET.

NOTE: THE ABOVE CORE SUPPORT FEATURES ARE USEFUL EVEN IF NO MECHANICAL CORE SUPPORT IS INSTALLED. USE THE CORE SUPPORT "ON" MODE WHEN INITIALLY ADJUSTING DWELL TIME. THIS WAY, IF THE TIME IS TOO SHORT, THE END STOP WILL NOT RETURN AND STRIKE THE CORE. SLOWLY INCREASE OR DECREASE THE DWELL TIME BEFORE RESETTING UNTIL THE CUT DROPS OFF JUST BEFORE THE TARGET RETURNS. THEN SWITCH TO CORE SUPPORT "OFF" FOR AUTO CYCLING.

MODEL 10 SET UP

THE MODEL 10 SET-UP IS EASY AND CAN BE DONE QUICKLY. CARE SHOULD BE TAKEN DURING SET-UP AS THE KNIFE LIFE AND QUALITY OF CUT IS DEPENDENT ON PROPER ADJUSTMENTS.

SECTION 1

CORE I.D. CHANGE

IMPORTANT: WHENEVER CHANGING TO A DIFFERENT SIZE (I.D.-O.D.) CORE, IT IS IMPORTANT TO RAISE THE KNIFE ASSEMBLY TO PROVIDE 1"-2" CLEARANCE BETWEEN THE BOTTOM OF THE KNIFE GUARD AND THE CORE. THIS IS MOST IMPORTANT WHEN CHANGING TO A LARGER SIZE CORE. IF THE KNIFE IS ALLOWED TO CYCLE, IT MAY STRIKE THE CUTTING ANVIL TOO HARD AND DAMAGE COULD RESULT.TO RAISE THE KNIFE ASSEMBLY, PROCEED AS FOLLOWS:

MANUAL: LOOSEN THE CLAMPING HANDLE LOCATED ON THE RIGHT SIDE OF THE COLUMN. TURN THE HANDWHEEL ON TOP OF THE COLUMN CLOCKWISE TO RAISE THE ASSEMBLY.

AUTO-KNIFE: PUSH AND HOLD THE KNIFE UP BUTTON ON THE CONTROL PANEL.

BE SURE THE E STOP IS DEPRESSED WHEN ACTUALLY REMOVING THE TOOLING. ALSO, IT IS EASIER TO PERFORM THIS OPERATION WITH THE MANDREL LIFTER RAISED.

1-1 CUTTING ANVIL

THE KNIFE CUTS AGAINST THE CUTTING ANVIL SURFACE. THE ANVIL IS MADE .010 TO .015 LESS THAN THE I.D. OF THE TUBE TO BE CUT. THE CUTTING ANVIL IS MOUNTED TO THE MANDREL VIA A BOLT. TO CHANGE THE ANVIL ON MOST MANDRELS, A 3/4" OPEN-END WRENCH OR A 5/16" ALLEN HEX KEY ARE NEEDED. ON 7/8 AND SMALLER MANDRELS, A 1/4" ALLEN KEY IS NEEDED. THE BOLT IS TURNED COUNTER-CLOCKWISE TO REMOVE THE ANVIL. THIS BOLT SHOULD NOT BE OVER-TIGHTENED.

1-2 CORE CHUCK

SUPPLIED WITH EACH CUTTING ANVIL IS A MATCHING CORE CHUCK. THE CHUCK MUST BE CHANGED WHEN CHANGING CUTTING ANVILS. THE CORE CHUCK IS MOUNTED TO THE PUSHER VIA TWO 1/4-20 SCREWS. NOTICE THE CHUCK MAY ONLY BE REMOVED/INSTALLED ON THE PUSHER ONCE THE CUTTING ANVIL IS REMOVED.THE CORE IS HELD ON THE CHUCK BY EITHER BALL PLUNGERS OR A MEDIUM KNURL. THE BALL PLUNGERS MAY BE ADJUSTED IN OR OUT TO PROVIDE VARIOUS HOLDING FORCES. A BALL PLUNGER TOOL IS BEST SUITED FOR THIS PURPOSE.

SECTION 2

SET-UP ADJUSTMENTS

WHEN RUNNING A NEW CORE WITH A DIFFERENT I.D. OR WALL THICKNESS THAN PREVIOUSLY CUT, THE FOLLOWING ADJUSTMENTS MUST BE MADE.

2-1 MANDREL CENTER-LINE HEIGHT

TO OBTAIN OPTIMUM PERFORMANCE, THE CORE MANDREL SHOULD BE ADJUSTED TO BE FAIRLY LEVEL WITH THE FRAME. ON SOME CORES, PARTICULARLY HEAVY TUBES, IT IS DESIRABLE TO HAVE THE MANDREL SLIGHTLY ELEVATED AT THE REAR OF THE MACHINE TO PERMIT EASY LOADING AND TUBE ADVANCEMENT.

WITH THE POWER OFF,PLACE A FULL LENGTH TUBE ON THE MACHINE. BE SURE THE TUBE FULLY ENGAGES THE CORE CHUCK. BE SURE AT LEAST 1/4" OF THE TUBE EXTENDS BEYOND THE CUTTING ANVIL. TO MAKE THE MANDREL LEVEL, IT WILL BE NECESSARY TO RAISE OR LOWER THE REAR OF THE MANDREL. THIS IS ADJUSTED BY THE USE OF THE HANDWHEEL AT THE REAR OF THE MACHINE AFTER THE CLAMPING HANDLE IS LOOSENED.

ON A 120" OR LONGER MACHINE, IT MAY BE NECESSARY TO RAISE THE MANDREL CONSIDERABLY TO COMPENSATE FOR MANDREL BOWING. CORRECT PROCEDURE IS TO RAISE THE MANDREL WITH A TUBE ON THE MACHINE UNTIL THE CORE IS NOT TOUCHING THE DRIVE ROLLERS. TURN THE MOTOR ON AND SLOWLY LOWER THE MANDREL UNTIL THE CORE JUST BEGINS TO REVOLVE. IT IS BEST TO SET THE MANDREL HEIGHT AS HIGH AS POSSIBLE WHILE STILL GETTING GOOD DRIVE WHEN CUTTING. SET TOO LOW, THE TUBE WILL BE DIFFICULT TO ADVANCE AND LOAD.

ONCE THE MANDREL IS SET, THE MANDREL LIFTER HEIGHT MUST BE ADJUSTED. THIS IS DONE BY LOOSENING THE TWO 1/4-20 SCREWS AND SLIDING THE TOP PORTION TO ITS NEW POSITION. THE PROPER SETTING FOR THIS DEVICE SHOULD LIFT A CORE ABOUT 1/8" TO 1/4" ABOVE THE DRIVE ROLLERS WHEN IT IS RAISED.

SECTION 2-2 KNIFE ADJUSTMENT - MANUAL

WHEN ADJUSTING THE KNIFE FOR CUTTING, THE POWER SHOULD BE ON AND THE SELECTOR SWITCH IN THE LOAD POSITION. INITIALLY THE MOTOR SHOULD BE OFF.

PLACE A FULL TUBE ON THE MACHINE. BE SURE THE TUBE EXTENDS 1/2" TO 1" BEYOND THE CUTTING ANVIL AND IS SEATED SECURELY ON THE CORE CHUCK. LOOSEN THE KNIFE HEIGHT CLAMPING HANDLE. BE SURE THE KNIFE IS WELL ABOVE THE CORE SURFACE. START THE CORE DRIVE MOTOR AND DEPRESS AND HOLD THE TRIM CUT BUTTON. THIS WILL CYCLE THE KNIFE TO ITS DOWN POSITION. HOLDING THE TRIM BUTTON, TURN THE KNIFE HEIGHT ADJUSTMENT WHEEL TO LOWER THE KNIFE ASSEMBLY UNTIL THE KNIFE CUTS THROUGH THE CORE AND MAKES **LIGHT** CONTACT WITH THE CUTTING ANVIL. RELEASE THE BUTTON, ADVANCE THE CORE ANOTHER 1" AND TRY TO TRIM CUT AGAIN. IF THE CORE CUTS CLEANLY, TIGHTEN THE CLAMPING HANDLE. IF THE TUBE DOES NOT CUT OFF, TURN THE HEIGHT ADJUSTMENT 1/8 OF A TURN AND TRY AGAIN. WHEN THE KNIFE IS NEAR TO ITS CORRECT SETTING, NEVER ADJUST DOWNWARD BY MORE THAN 1/8 TURN AT A TIME. ONCE THE CORRECT SETTING IS ACHIEVED, LOCK THE CLAMP HANDLE SECURELY.

IF THE KNIFE IS SET TOO LOW, KNIFE LIFE WILL BE SERIOUSLY SHORTENED. IT IS POSSIBLE TO DESTROY THE KNIFE IN CASES OF EXTREME MISADJUSTMENT. SETTING THE KNIFE DWELL TO THE SHORTEST POSSIBLE TIME WILL ALSO HELP TO PROMOTE LONG KNIFE LIFE.

SECTION 2-2 KNIFE ADJUSTMENT - AUTOMATIC

PLACE A FULL UNCUT TUBE ON THE MACHINE. POSITION THE TUBE TO EXTEND 1/2" TO 1" BEYOND THE CUTTING ANVIL. BE CERTAIN THAT THE KNIFE IS WELL ABOVE THE ANVIL SURFACE. START THE CORE DRIVE MOTOR AND PRESS TRIM CUT. THE KNIFE WILL EXTEND AND AFTER A SHORT DELAY THE ENTIRE KNIFE ASSEMBLY WILL BEGIN TO ADJUST DOWNWARD. WHEN THE KNIFE HAS CUT THROUGH THE CORE, IT WILL CONTACT THE ANVIL AND AFTER A SHORT DWELL THE KNIFE WILL RETRACT. THE TIME OF THIS DWELL WILL VARY AND IS CONTROLLED BY A POTENTIOMETER LOCATED ON THE CONTROL BOX. THE RANGE IN TIME IS FROM .05 TO 1 SECOND WITH THE MOST COMMON VALUES USED BEING BETWEEN .1 TO .3 SECONDS.

ANOTHER SPEED CONTROL IS THE RATE AT WHICH THE KNIFE ASSEMBLY TRAVELS. THIS SPEED IS ADJUSTED BY A POTENTIOMETER LOCATED WITHIN THE CONTROL ENCLOSURE. GENERALLY THIS SHOULD BE SET IN THE 50% RANGE FOR MAXIMUM KNIFE LIFE. IF THIS SPEED IS SET TOO HIGH, MOMENTUM WILL CAUSE THE ASSEMBLY TO OVERTRAVEL AND PUT UNDO PRESSURE ON THE BLADE.

2-3 END STOP ANGLE ADJUSTMENT

THE END STOP TARGET MUST BE POSITIONED SO THAT THE TUBE STRIKES THE TARGET WHEN ADVANCED. FOR THIS ADJUSTMENT, THE POWER SHOULD BE ON, THE MOTOR OFF, AND THE SELECTOR SWITCH SET TO THE RUN POSITION. THE END STOP ANGLE IS VARIED BY LOOSENING THE CLAMP HANDLE ON THE STOP MEASURE BAR. POSITION THE ANGLE TO ALLOW THE CORE TO STRIKE THE TARGET SQUARELY. BE SURE TO RETIGHTEN THE CLAMP HANDLE SECURELY.

2-4 CUT CORE WIDTH ADJUSTMENT

TO SET THE REQUIRED CUT CORE WIDTH, LOOSEN THE END STOP ASSEMBLY CLAMP HANDLE AT THE FRONT OF THE MACHINE AND CRANK THE ENTIRE ASSEMBLY IN OR OUT. THERE IS A BUILT IN REFERENCE SCALE LOCATED ON THE STOP/MEASURE TUBE. SET THE CUT WIDTH BY ALIGNING THE INDICATOR EDGE WITH THE SCALE POSITION AND TIGHTENING THE CLAMP HANDLE.

THE POINTER IS ACCURATE TO WITHIN 1/64". TO PRODUCE THE REQUIRED CUT WIDTH WITH A TOLERANCE OF PLUS/MINUS .010" IT MAY BE NECESSARY TO READJUST THE STOP AFTER MAKING A FEW SAMPLE CUTS AND MEASURING THEM WITH A CALIPER. READJUST AS NECESSARY ACCORDING TO THE CALIPER MEASUREMENT. ONCE THE WIDTH IS SET AND LOCKED, IT WILL NOT CHANGE.

SOME MACHINES ARE SUPPLIED WITH A SPECIAL TARGET ADAPTER TO CUT 1/4" LONG CUTS. WHEN THIS ADAPTER IS ON THE MACHINE, THE LENGTH READ ON THE END STOP SCALE MUST BE SET TO READ 1" LONGER" THAN THE CUT WIDTH REQUIRED.

2-5 DRIVE ROLLER ADJUSTMENT

TO PROVIDE PROPER SUPPORT FOR VARIOUS DIAMETER CORES, THE DRIVE ROLLERS CAN BE ADJUSTED TO ANY ONE OF THREE POSITIONS. TO ADJUST THE ARMS, LOOSEN THE 1/2" BOLTS HOLDING THE ARMS AND REMOVE ONE AT A TIME, SWINGING THE ARM TO ITS NEW POSITION AND REPLACING THE BOLT. DO NOT OVER-TIGHTEN THESE BOLTS.

IMPORTANT:BOTH ARMS MUST BE IN THE SAME POSITION.

THE FOLLOWING ROLLER POSITIONS GENERALLY APPLY FOR THE CORE SIZES NOTED. SEE DATA SHEET FOR SPECIFIC RECOMMENDATIONS.

CORE SIZE	ROLLER POSITION
1 - 3"	#1
4 - 6"	#2
6 -12"	#3

2-6 TUBE STOP COLLAR

LOCATED ON THE CORE MANDREL IS AN ADJUSTABLE STOP COLLAR. THIS COLLAR SHOULD BE LOCATED SO THAT WHEN A FULL LENGTH TUBE IS PLACED ON THE MACHINE, THE STOP COLLAR WILL LIMIT THE TUBE TRAVEL WHEN LOADING SO AS TO POSITION IT FOR THE INITIAL TRIM CUT.

2-7 KNIFE CHANGE

THE KNIFE BLADE SHOULD BE CHANGED WHENEVER THE QUALITY OF THE CUT DETERIORATES TO AN UNACCEPTABLE LEVEL OR THE TIME TO CUT THROUGH THE CORE INCREASES GREATLY. GENERALLY THE BLADE CUTTING EDGE WILL "ROLL OVER" AFTER A TIME LEADING TO A LESS THAN DESIRABLE CUT. THIS ROLL OVER MAY BE REMOVED WITH A STONE WHILE THE KNIFE IS REVOLVING IN A FIXTURE. IN THIS WAY THE BLADE USE CAN BE EXTENDED PRIOR TO ITS TRUE RESHARPENING.

TO REMOVE THE BLADE FROM THE MACHINE, USE TWO ¼" HEX KEY WRENCHES AND INSERT THEM INTO THE 5/16 S.H.C.S. WHICH PROTRUDE FROM EACH SIDE OF THE KNIFE AXLE. ROTATE THE WRENCHES IN OPPOSITE DIRECTIONS UNTIL ONE BREAKS FREE. THEN CONTINUE TO REMOVE ONE SCREW AND WASHER UNTIL THE AXLE CAN BE PUSHED OUT THROUGH THE YOKE BEARINGS, FREEING THE KNIFE. INSTALLATION IS THE REVERSE OF THESE STEPS. ON MACHINES WITH AUTO-ADJUST CAPABILITY, CARE MUST BE TAKEN SO THE CARBON CONTACT BRUSH IS NOT DAMAGED.

SECTION 3

MACHINE OPERATION

THE MODEL 10 IS A VERY EASY MACHINE TO OPERATE. OPTIMUM PERFORMANCE WILL BE OBTAINED BY FOLLOWING THE INSTRUCTIONS BELOW. THESE SHOULD BE READ AND APPLIED AFTER THE SET-UPS ON THE PRECEDING PAGES ARE COMPLETED.

CAUTION: NEVER PLACE YOUR HAND DIRECTLY UNDER THE KNIFE GUARD. NEVER ATTEMPT TO HANDLE ANY CORE STOCK ON THE MACHINE WITH THE MOTOR RUNNING.

SEMI-AUTOMATIC OPERATION

3-1 TUBE LOADING

TURN THE POWER ON AND APPLY AIR PRESSURE TO THE MACHINE. RAISE THE MANDREL LIFTER SO THE CUTTING ANVIL IS HELD ABOVE THE DRIVE ROLLERS. TURN THE SELECTOR SWITCH TO THE LOAD POSITION. SLIDE THE TUBE OVER THE CUTTING ANVIL FULLY ENGAGING THE CORE CHUCK UNTIL THE PUSHER IS AGAINST THE STOP COLLAR. NOTICE THE MANDREL LIFTER IS KNOCKED OVER AS THE CORE IS BEING LOADED.

3-2 CORE CUTTING

TURN THE MOTOR ON AND DEPRESS THE TRIM BUTTON TO MAKE THE INITIAL TRIM CUT. SWITCH THE SELECTOR TO THE RUN POSITION. UTILIZING THE PUSHER, ADVANCE THE TUBE WITH STEADY PRESSURE UNTIL IT ENGAGES THE STOP TARGET. THE KNIFE WILL CYCLE AND CUT THE CORE WHICH SHOULD FALL AWAY INTO THE DISCHARGE CHUTE. WHEN THE CYCLE IS COMPLETE, THE KNIFE WILL RETRACT AND THE END STOP TARGET WILL RETURN OUTWARD. ADVANCE THE TUBE AGAIN TO INITIATE ANOTHER CUT CYCLE.

ONCE THE ENTIRE TUBE IS CUT INTO LENGTHS THERE WILL BE 1" TO 2" OF TRIM LEFT ON THE MACHINE THAT MUST BE REMOVED BEFORE LOADING THE NEXT TUBE.TURN THE MOTOR OFF, PLACE THE SELECTOR TO LOAD, AND RAISE THE MANDREL LIFTER BEFORE ATTEMPTING TO REMOVE THE WASTE PIECE.

MACHINE OPERATION

AUTOMATIC CORE FEED OPERATION

3-1 TUBE LOADING

TURN POWER ON TO THE MACHINE AND APPLY AIR PRESSURE. RAISE THE MANDREL LIFTER SO THAT THE ANVIL IS HELD ABOVE THE DRIVE ROLLERS. TURN THE SELECTOR SWITCH TO THE LOAD POSITION. WHILE STEPPING ON THE OUTBOARD FOOT PEDAL TO LOCK THE MANDREL CLAMP, SLIDE THE RAW TUBE OVER THE CUTTING ANVIL FULLY ENGAGING THE CORE CHUCK. RELEASE THE PEDAL AND CONTINUE TO LOAD THE TUBE ONTO THE MACHINE - PUSHING BACK THE AUTOMATIC CORE FEED CARRIAGE AND KNOCKING OVER THE MANDREL LIFTER UNTIL THE MANDREL CLAMP IS AGAINST THE MANDREL LOCKING COLLAR.

3-2 CORE CUTTING

PRESS START TO TURN THE MOTOR ON AND DEPRESS AND HOLD THE TRIM CUT BUTTON TO MAKE THE INITIAL TRIM CUT. MOVE THE SELECTOR SWITCH TO THE RUN POSITION AND THE CORE WILL ADVANCE TO THE END STOP AND THE CUTTING CYCLE WILL BEGIN. ADJUST THE DWELL TIMER IF NECESSARY SO THAT THE CUT PIECE FALLS AWAY JUST BEFORE THE KNIFE RETRACTS AND THE STOP RETURNS. WHEN THE TUBE IS DEPLETED A LIMIT SWITCH IS MADE AND THE MACHINE WILL SHUT DOWN. TURN THE SELECTOR TO LOAD, RAISE THE MANDREL LIFTER, AND REMOVE THE WASTE PIECE REMAINING. REPEAT THE TUBE LOADING PROCEDURE AS DESCRIBED ABOVE.

SECTION 4

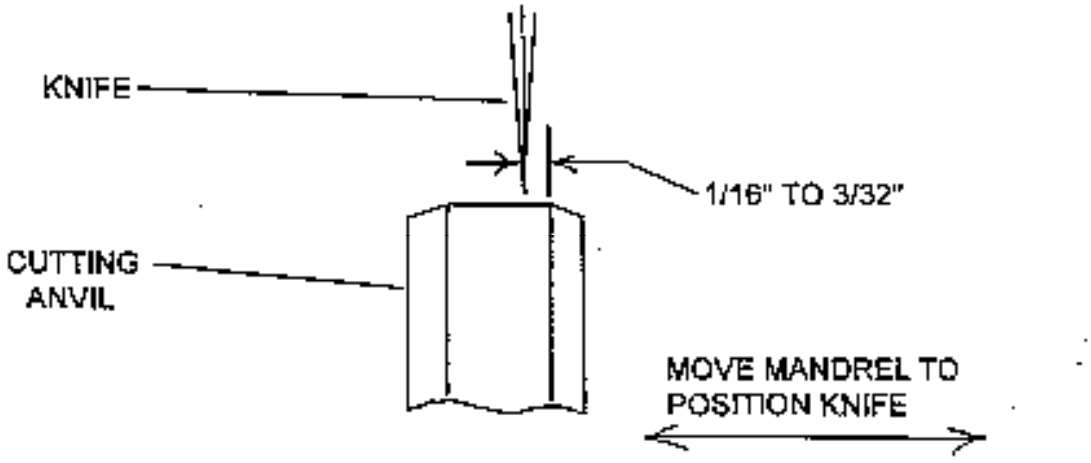
SPECIAL ADJUSTMENTS

THE FOLLOWING ADJUSTMENTS ARE FACTORY SET AT TIME OF MANUFACTURE AND GENERALLY SHOULD NOT NEED CHANGING. REASONS THEY MAY NEED CHANGING INCLUDE A NEW TYPE CORE MATERIAL BEING USED OR A GREATLY DIFFERENT I.D. CORE IS BEING CUT. DO NOT ATTEMPT THESE ADJUSTMENTS UNTIL THE NEED TO DO SO HAS BEEN POSITIVELY IDENTIFIED.

4-1 CUTTING ANVIL POSITION

THE KNIFE MUST CUT AGAINST THE FLAT SURFACE OF THE CUTTING ANVIL, APPROXIMATELY 1/16" TO 3/32" FROM THE BEVEL. (SEE FIGURE 4-1) IF THE KNIFE DOES NOT MAKE CONTACT WITH THE CUTTING ANVIL AT THE PROPER LOCATION, THE CUT CORES WILL NOT DROP OFF QUICKLY. FIRST DETERMINE THAT THE KNIFE POSITION ON THE ANVIL HAS NOT BEEN AFFECTED BY IMPROPER SETTING OF THE MANDREL HEIGHT. (SEE SECTION 2-1) TO ADJUST THE CUTTING ANVIL POSITION THE ENTIRE CORE MANDREL MUST BE SHIFTED. THIS MANDREL IS HELD IN PLACE VIA SCREWS ON EACH MANDREL SUPPORT. LOOSEN THE SCREWS AND ADJUST THE MANDREL IN OR OUT AS NECESSARY TO LOCATE THE CUTTING ANVIL UNDER THE KNIFE AS SHOWN. THIS IS BEST DONE WITH A CORE IN PLACE WITH THAT PART OF THE ANVIL EXPOSED AS BEFORE.

FIGURE 4-1



4-2 SURFACE DRIVE ALIGNMENT

WITH A FULL LENGTH OF TUBE ON THE MACHINE AND THE MOTOR RUNNING, THE TUBE SHOULD IDLE IN POSITION AND NOT WALK IN OR OUT. IF THE TUBE IS WALKING, ATTEMPT TO ELIMINATE BY FIRST ADJUSTING THE MANDREL HEIGHT. (SEE SECTION 2-1) IF THE TUBE STILL WALKS WITH THE MANDREL LEVEL, THE SURFACE DRIVE MUST BE REALIGNED. REFER TO THE TROUBLESHOOTING SECTION HEADED "CORE WALKING" FOR THIS PROCEDURE.

MODEL 10

MAINTENANCE SCHEDULE

DAILY:

- BLOW DUST FROM MACHINE
- WIPE MANDREL (AUTO FEED SHAFT IF APPLICABLE)
- APPLY VERY LIGHT OIL TO ABOVE SHAFTS

WEEKLY:

- DRAIN WATER FROM FILTER REGULATOR ASSEMBLY

MONTHLY:

- LUBE ALL GREASE FITTINGS

YEARLY:

- CHANGE GEAR REDUCER OIL. FILL TO SECOND PLUG WITH A QUALITY SAE 85/140 GEAR OIL.

MODEL 10

RECOMMENDED SPARE PARTS LIST

SEMI-AUTOMATIC AND AUTOMATIC FEED MACHINES

KNIFE YOKE BEARINGS	4 PC.	010-50201
ANVIL BEARING	1 PC.	010-50702
PUSHER BEARING	1 PC.	010-50701
DRIVE ARM BEARING	4 PC.	010-50414
MANDREL REST	2 PC.	010-31103
KNIFE CYLINDER	1 PC.	010-60201
TIMER	1 PC.	010-70206
RUBBER DRIVE ROLLER	1 PC.	010-30431
KNIFE 3" (4")	6 PCS.	707 (708)
KNIFE CYCLINDER	1 PC.	010-60201

CONTROL VALVES

KNIFE VALVE	1 PC.	010-60204
END STOP VALVE	1 PC.	010-60302
BLOW OFF VALVE	1 PC.	010-60205

AUTOMATIC FEED ONLY

CONTROL VALVE	2 PC.	010-60903
LINEAR BEARING 1.5 DIA.	2 PC.	010-50904

AUTOMATIC KNIFE HEIGHT ADJUSTMENT

VOLTAGE DETECTOR (VDR)	1 PC.	011-70161
BRUSH CONTACT	1 PC.	011-70207
90 VDC MOTOR DRIVE	1 PC.	011-70157

TROUBLESHOOTING

AUTOMATIC KNIFE ADJUST SYSTEM

THE FOLLOWING INFORMATION WILL BE HELPFUL WHEN SOLVING PROBLEMS WITH THE AUTOMATIC KNIFE HEIGHT ADJUSTING SYSTEM.

OPERATION

OPERATION OF THE SYSTEM IS BASED ON THE ELECTRIC ISOLATION OF THE KNIFE COLUMN ASSEMBLY FROM THE REST OF THE CORECUTTER. FOR THIS REASON, THIS ASSEMBLY SITS ATOP A PLASTIC PLATE AND ITS MOUNTING SCREWS PASS THROUGH ISOLATING BUSHINGS. ELECTRICAL INTERFACE IS MADE THROUGH A VOLTAGE DETECTION RELAY OR "VDR" WHICH IS A PLUG IN UNIT LOCATED IN THE MAIN ELECTRICAL ENCLOSURE. THE "VDR" SENSITIVITY CAN BE ADJUSTED VIA A POTENTIOMETER KNOB ON THE UNIT. A WIRE ATTACHED TO A CARBON BRUSH PROVIDES A POSITIVE CONTACT FROM THE ELECTRICAL CIRCUIT TO THE ROTATING KNIFE.

AT INITIAL SET-UP, THE KNIFE ASSEMBLY IS RAISED TO A POINT WELL ABOVE THE CUTTING POSITION BY USING THE KNIFE UP PUSHBUTTON. THE MACHINE IS PLACED INTO A CUTTING CYCLE PER STANDARD OPERATING PROCEDURE. AFTER A SLIGHT DELAY, THE KNIFE CYLINDER WILL EXTEND THEREBY CLOSING A REED OR LIMIT SWITCH. ONCE THIS SWITCH IS CLOSED, THE MOTOR ON TOP OF THE KNIFE COLUMN BEGINS TO ROTATE AND THE ENTIRE KNIFE ASSEMBLY WILL START TO TRAVEL DOWNWARD. AS THE SYSTEM LOWERS, THE KNIFE WILL CUT THROUGH THE CORE UNTIL IT CONTACTS THE STEEL CUTTING ANVIL. ON CONTACT WITH THE CUTTING ANVIL, THE "VDR" WILL DISPLAY A RED LED, THE KNIFE MOTOR WILL STOP LOWERING THE ASSEMBLY, AND THE KNIFE DWELL TIMER WILL BEGIN. WHEN THE DWELL TIMER HAS EXPIRED, THE KNIFE WILL RAISE AND THE CORE WILL ADVANCE FOR THE NEXT CUT.

IF AN ERROR HAS BEEN MADE AND THE KNIFE ASSEMBLY IS NOT RAISED BEFORE AN AUTO-ADJUST CYCLE IS PERFORMED, THE KNIFE MAY CONTACT THE CUTTING ANVIL BEFORE FULL KNIFE CYLINDER EXTENSION. IN THIS CASE THE CYLINDER SWITCH WILL NOT BE CLOSED WHEN THE "VDR" IS MADE SO THE MACHINE WILL COMPENSATE BY RAISING THE KNIFE ASSEMBLY. THIS IS SIMPLY A METHOD TO AVOID DAMAGING COMPONENTS AND DOES NOT RESULT IN A PROPER HEIGHT SETTING. IF THIS SITUATION OCCURS, THE KNIFE SHOULD BE RAISED AND AN AUTO ADJUST PROCEDURE PERFORMED.

THE FOLLOWING IS A LIST OF SETTINGS OR ADJUSTMENTS THAT ARE CRITICAL TO ENSURING MAXIMUM KNIFE LIFE. IF KNIFE WEAR IS A PROBLEM, THIS LIST SHOULD BE CONSULTED.

- CHECK TO MAKE SURE THE CARBON BRUSH IS INSTALLED IN THE HOLDER AND THE WIRE IS ATTACHED. BRUSH MUST BE SPRING LOADED AGAINST KNIFE SIDE.
- THE "VDR" SETTING SHOULD BE IN THE 2-4 SENSITIVITY RANGE. THE SETTING SHOULD BE AS LOW AS POSSIBLE YET NOT BE SO SENSITIVE THAT THE SIGNAL IS PASSED WHEN THE KNIFE TOUCHES THE CORE SURFACE. THIS MAY VARY DEPENDING ON MOISTURE IN THE CORE, ETC.
- THE KNIFE ADJUSTMENT MOTOR SPEED MUST NOT BE SET TOO HIGH. A RANGE OF 40% TO 60% ON THE SPEED POT IS RECOMMENDED. THE REASONING FOR THIS CAN BE FOUND IN THE INITIAL HEIGHT ADJUSTMENT. IF THE MOTOR SPEED IS EXCESSIVE, THE KNIFE CYLINDER ROD MAY ACTUALLY BE PUSHED BACK INTO THE CYLINDER AS THE ASSEMBLY IS LOWERED AND THE KNIFE CONTACTS THE CORE. THEN WHEN THE MOTOR STOPS TURNING, THE CYLINDER WILL NOT BE SET WITH ITS TRAVEL AT FULL STROKE. ON SUBSEQUENT CUTS, THE CYLINDER WILL BE FORCING THE BLADE AGAINST THE CUTTING ANVIL AFFECTING BLADE LIFE. A SECOND FACTOR IS THAT THERE IS SLIGHT MOTOR COAST AFTER THE SIGNAL TO SHUT DOWN IS GIVEN. THE FASTER THE DOWNSPEED, THE MORE OVER-RAVEL OF THE SYSTEM RESULTING IN EXCESSIVE KNIFE PRESSURE ON THE ANVIL.
- THE "VDR" LIGHT SHOULD BE A STRONG, SOLID SIGNAL THE INSTANT THE KNIFE TOUCHES THE ANVIL. ANY FLICKERING OR WAVERING INDICATES A BAD CONTACT SITUATION. THIS COULD BE CAUSED BY A BAD BRUSH CONTACT OR LOSS OF CONTINUITY BETWEEN THE ANVIL AND THE MACHINE(LOOSE BUSHING OR ANVIL BEARING). CHECK TO SEE IF THE ANVIL HAS A GROOVE WHERE THE KNIFE MAKES CONTACT. A SMALL BUILDUP OF DUST IN THIS GROOVE CAN BECOME EMBEDDED – ESPECIALLY IF A DULL KNIFE IS BEING USED. IF THIS APPEARS TO BE THE CASE, THE MANDREL CAN BE MOVED SLIGHTLY SO THAT THE KNIFE CUTS ON THE ANVIL AT A NEW LOCATION. THIS PROCEDURE CAN BE FOUND IN SECTION 4-1.
- THE DWELL TIME THAT THE KNIFE STAYS ON THE ANVIL AFTER THE CUT IS COMPLETE(IE THE "VDR" SIGNAL IS MADE) SHOULD BE KEPT TO A MINIMUM. THIS TIME VALUE IS ADJUSTED VIA A POTENTIOMETER KNOB ON THE CONTROL PANEL. THE STANDARD TIME RANGE IS 0-2 SECONDS SO THE ADJUSTMENT IS IN TENTHS OF A SECOND.
- IN SOME CASES THE KNIFE AIR PRESSURE CAN BE LOWERED WITHOUT SEVERELY AFFECTING THE QUALITY OR TIME OF THE CUT. IF THE PRESSURE CAN BE LOWERED AT THE DEDICATED KNIFE REGULATOR, THIS WILL RESULT IN LESS KNIFE FORCE ON THE CUTTING ANVIL AND LONGER KNIFE LIFE WILL RESULT. IF MAKING A PRESSURE REDUCTION, IT IS IMPORTANT THAT IT BE DONE ON THE SECONDARY REGULATOR THAT SUPPLIES THE KNIFE AND NOT THE PRIMARY REGULATOR THAT SUPPLIES THE MACHINE.

TROUBLESHOOTING PROCEDURE

CUT LENGTH TOLERANCE

SYMPTOMS:

THE FOLLOWING AREAS SHOULD BE LOOKED AT WHEN THE CUT LENGTH TOLERANCE ON THE MODEL 10 VARIES BY MORE THAN THE ADVERTISED AMOUNT. BEFORE PROCEEDING, IT IS IMPORTANT TO NOTE IF THE PROPER SIZE TOOLING IS INSTALLED ON THE MACHINE. CUTTING ANVILS SHOULD BE .015" LESS THAN THE CORE I.D. AND CHUCKS SHOULD BE .030" LESS THAN THE CORE. IMPROPER CORE LENGTHS CAN OCCUR WITH INCORRECT TOOLING, ESPECIALLY WITH SMALLER THAN PROPER SIZE CHUCKS SINCE THE CORE IS NOT HELD SECURELY. ALSO, INSTALL A NEW KNIFE IF POSSIBLE SINCE RAGGED CUT QUALITY PROHIBITS ACCURATE CORE MEASUREMENT.

PROCEDURE:

IF CORES ARE LONG: CHECK TO SEE IF CORES ARE MOVING OFF THE CHUCK. THIS WOULD HAPPEN WITH UNDERSIZED TOOLING.TRY ADJUSTING THE BALL PLUNGERS ON THE CHUCK OUTWARD TO APPLY MORE PRESSURE ON THE CORE. THE CORE MAY BE WALKING OFF THE CHUCK BETWEEN THE TIME IT STOPS ADVANCING AND THE MOMENT THE KNIFE BEGINS TO CUT INTO THE CORE. THE SOLUTION TO "CORE WALKING" IS COVERED IN A SEPARATE SECTION.

IF LENGTHS ARE ERRATIC: CHECK ALL AREAS OF THE AUTO FEED TO PUSHER LINKAGE, THAT IS ALL BOLTS IN THE HORIZONTAL AND VERTICAL ARMS TIGHTENED. THE PUSHER LINK SHOULD HAVE ONLY ROTATIONAL MOVEMENT IN RELATION TO THE VERTICAL ARM. THE TWO 1/2" NUTS THAT SECURE THIS ARM SHOULD BE SNUGGED ON THE BOLT TO ALLOW ONLY A SWIVEL MOTION OF THE LINK. LUBRICATE AND ADJUST THIS AREA AS NEEDED.

PLACE THE MACHINE IN LOAD CYCLE AND MOVE THE AUTO FEED CARRIAGE BACK AND FORTH BY HAND. IS THERE ANY BINDING? LOOSEN V RAIL WELDMENT TO ALLOW IT TO ALIGN WITH CARRIAGE AS IT TRAVELS. LOAD A FULL LENGTH CORE ON THE MACHINE AND ALLOW IT TO FEED OUT ITS ENTIRE LENGTH. IT SHOULD FEED SMOOTHLY AND REQUIRE SOME EFFORT TO HOLD BACK. IF THIS IS NOT THE CASE CHECK AIR PRESSURE TO THE REGULATOR. THERE SHOULD BE A MINIMUM OF 80 PSI. CHECK THAT THE ROH'LEX UNIT IS CLAMPING SECURELY AND ALL ROLLERS ARE CONTACTING THE HARDENED SHAFT.

CHECK SIDE TO SIDE PLAY IN THE KNIFE YOKE ASSEMBLY. THERE SHOULD BE VERY LITTLE PLAY WITH THE LOCKING HANDLE TIGHT OR THE AUTO KNIFE CLAMP CYLINDER ENGAGED.

TROUBLESHOOTING PROCEDURE

ERRATIC CUT CYCLING

SYMPTOMS:

KNIFE DOES NOT CYCLE DOWN PROPERLY OR END STOP DOES NOT OPERATE CORRECTLY. KNIFE DWELL IS ERRATIC.

PROCEDURES:

BEGIN BY CHECKING THE FOLLOWING ITEMS:

- MAKE CERTAIN THAT THE DWELL POTENTIOMETER IS SET TO A SUFFICIENT VALUE.

- THE END STOP LIMIT SWITCH MUST BE ACTIVATED WHEN HIT BY A CORE. THERE SHOULD BE A SLIGHT TRAVEL OF THE STOP BEFORE THE CLICK IS HEARD, INDICATING THE SWITCH IS BEING TRIPPED. IF NO CLICK IS HEARD, THE GUARD MUST BE REMOVED AND LOCK COLLAR ADJUSTED PER STEPS A-G IN END STOP TARGET SET-UP PROCEDURE.

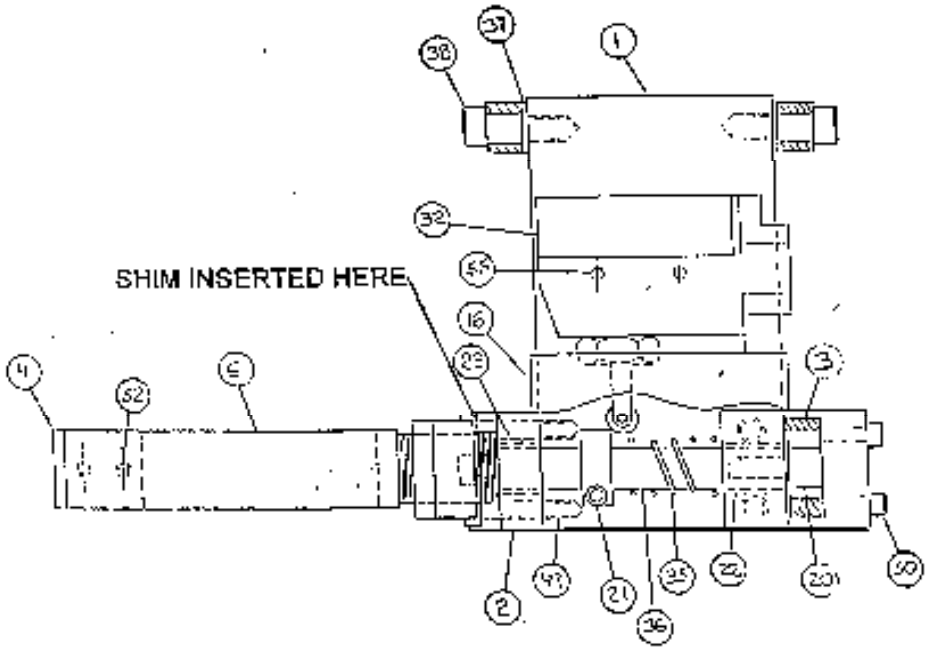
- THE KNIFE CYLINDER LIMIT SWITCH MUST BE DEPRESSED WHEN THE YOKE CYLINDER IS IN THE UP POSITION. THE BUTTON ON THIS BOOT SHOULD NOT BE PUSHED IN MUCH MORE THAN 1/16" AFTER THE CLICK IS HEARD. TO RESET THIS SWITCH, TURN THE POWER OFF TO THE MACHINE BUT KEEP AIR ON. THIS LOCKS THE CYLINDER IN THE UP POSITION. LOOSEN THE TWO 1/4" SCREWS AND SLIDE SWITCH/MOUNT UPWARD. THEN BRING SWITCH/MOUNT DOWNWARD SLOWLY UNTIL A CLICK IS HEARD AS THE SWITCH CONTACTS THE KNIFE YOKE. RETIGHTEN THE SCREWS.

- THE KNIFE WILL NOT CYCLE PROPERLY IF THE FLOW CONTROL FOR THE DOWNWARD KNIFE MOTION IS TOO RESTRICTED. THIS IS APPARENT IF AFTER THE CORE STRIKES THE END STOP, IT STARTS TO RETRACT BUT THEN CYCLES BACK OUT BEFORE THE KNIFE CYCLES DOWN. OPEN THE FLOW CONTROL VALVE FOUND IN THE CYLINDER RETRACT AIR LINE TO ALLOW THE KNIFE YOKE TO CYCLE DOWNWARD IMMEDIATELY AFTER THE END STOP TARGET IS STRUCK BY THE TUBE.

ANY IRREGULAR OPERATION THAT IS NOT CORRECTED BY THE ABOVE ADJUSTMENTS SHOULD BE INVESTIGATED AS ELECTRICAL - PERHAPS A FAULTY LIMIT SWITCH OR IN RARE CASES A BAD TIMER.

ALSO REMEMBER THAT IF THE MACHINE CUT CYCLES ONCE PROPERLY BUT THEN WAITS BEFORE CYCLING AGAIN, THE CORE SUPPORT SELECTOR IS PROBABLY IN THE "ON" MODE. PUSH THE "RESET" AND SEE IF THE CYCLE REPEATS PROPERLY. SEE THE CONTROLS DESCRIPTION FOR AN EXPLANATION OF THIS OPERATION.

END STOP TARGET SET-UP PROCEDURE



SHIM INSERTED HERE

A. TURN THE KNURLED STOPS ALL THE WAY TO THE RIGHT.

B. INSERT A .020-.025 SHIM BETWEEN THE KNURLED STOP AND THE LEFT BLOCK. (ITEM 5)

C. PUSH THE TARGET TO THE RIGHT TO HOLD THE SHIM IN PLACE.

D. WHILE HOLDING THE TARGET TO THE RIGHT, SLIDE THE LOCK COLLAR TO THE RIGHT UNTIL THE SWITCH IS JUST BARELY ACTIVATED. (LISTEN FOR THE CLICK)

E. TIGHTEN THE COLLAR SECURELY IN THIS POSITION.

F. TEST THE SETTING BY REMOVING THE SHIM AND PUSHING THE TARGET TO THE RIGHT. THE SWITCH SHOULD ACTIVATE AND THEN THE TARGET SHOULD TRAVEL AN ADDITIONAL .020-.025 BEFORE HITTING THE STOP. CHECK THAT THE TARGET RETURNS TO THE LEFT CRISPLY BY THE RETURN SPRING.

G. REPLACE THE GUARD.

IF ADDITIONAL TRAVEL IS NEEDED TO CUSHION THE CORE, TURN THE STOP KNOBS TO THE LEFT.

TROUBLESHOOTING PROCEDURE

CORE WALKING

CUT SKIP

CUT THREADING

SYMPTOMS:

- CORE WALKING: WHEN THE MOTOR IS STARTED WITH A CORE PRESENT ON THE MACHINE, THE CORE WILL MOVE BACKWARD OR FORWARD WHILE ROTATING.

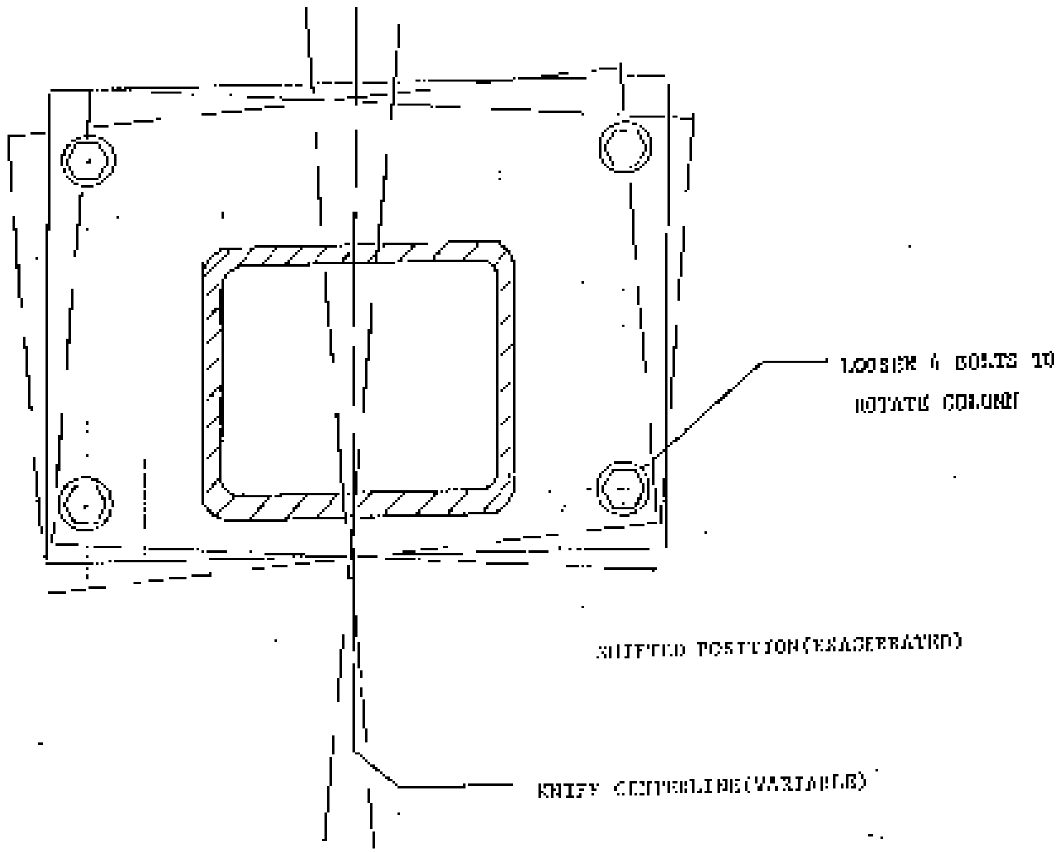
- CUT SKIP: WHEN THE KNIFE ENTERS THE CORE FOR A CUT, AFTER ONE ROTATION THE CUT GROOVE DOES NOT MATCH THE INITIAL ENTRY POINT OF THE KNIFE. ON SUBSEQUENT REVOLUTIONS, THE KNIFE CREATES A COMMON GROOVE AND CUTS THROUGH THE CORE.

- CUT THREADING: A SEVERE CASE OF CUT SKIP WHERE THE KNIFE NEVER CREATES A COMMON GROOVE AND CONTINUES A NEW PATH IN THE CORE - CREATING A THREAD EFFECT.

PROCEDURES:

BEFORE TRYING TO CORRECT THE PRECEDING CONDITIONS, IT IS IMPORTANT THAT THE FOLLOWING CONDITIONS EXIST. SEE SPECIFIC SECTIONS IN THIS MANUAL FOR EACH CASE.
1. DRIVE ROLLERS ARE IN PROPER SETTING
2. MANDREL HEIGHT SET PROPERLY ON MACHINE
3. ANVIL IS SIZED PROPERLY TO CORE AND IS NOT UNDERSIZED.
4. KNIFE BLADE IS IN REASONABLY GOOD CONDITION. ONCE THESE CONDITIONS ARE MET, ADJUSTMENTS CAN BE MADE TO DEAL WITH THE FOLLOWING.

CORE WALKING: THE IDEAL CONDITION IS TO HAVE THE CORE REMAIN STATIONARY WHILE ROTATING. THIS CAN NOT ALWAYS BE ACHIEVED ON ALL SIZES, SO THE FOLLOWING GUIDELINE SHOULD BE OBSERVED. A SLIGHT WALK BACKWARD IS USUALLY PREFERABLE TO A WALK FORWARD. THIS SITUATION CAUSES THE CORE TO BACK-UP AGAINST THE STEP FOUND ON THE CORE CHUCK RATHER THAN WALKING FORWARD OFF OF IT. THE WALK OF THE CORE CAN BE VARIED BY THE FOLLOWING PROCEDURE.WITH THE CORE ROTATING, LOOSEN THE THREE BOLTS HOLDING THE DRIVE BASE TO THE FRAME. TWIST OR ROTATE THE WHOLE BASE ASSEMBLY WITH RELATION TO THE CORE CENTERLINE AS SHOWN IN FIGURE 1. ROTATING THE BASE IN THE OPPOSITE DIRECTION SHOULD CAUSE THE CORE TO WALK THE OTHER WAY -THEREFORE A NEUTRAL POSITION CAN BE FOUND. IF THE MACHINE HAS AN AUTOMATIC CORE FEED, BE CERTAIN THE BELT IS PULLED TIGHT AT THE END OF THIS ADJUSTMENT.



KNIFE COLUMN POSITIONING

FIG. 2

LOCKING 3 MOUNTS TO BULLET BASE
CORE 2
SHIFT-1 POSITION (EXAGGERATED)
NORMAL BASE POSITION

FIG. 1

CUT SKIP AND CUT THREADING: BEFORE ATTEMPTING TO CORRECT THESE CONDITIONS, BE SURE THAT CORE WALKING DOES NOT EXIST. THESE SYMPTOMS CAN BE CAUSED BY A COMBINATION OF KNIFE DOWN SPEED AND KNIFE COLUMN POSITION. THE GOAL IS TO ADJUST THE COLUMN SO THE KNIFE CAN BE BROUGHT DOWN AS QUICKLY AS POSSIBLE WITH NO SKIP OR THREADING. AT SOME POINT THERE IS A SPEED ABOVE WHICH SKIP MAY NOT BE ELIMINATED AND THIS WOULD BE THE MAXIMUM RUNNING SPEED FOR THAT CORE.

THE KNIFE SPEED IS CONTROLLED BY A FLOW CONTROL, LOCATED ON THE REAR OF THE KNIFE COLUMN ON THE RETRACT SIDE OF THE AIR CYLINDER. TURNING THE KNOB CLOCKWISE WILL LIMIT THE FLOW AND SLOW THE KNIFE. ADJUSTMENT OF THE KNIFE COLUMN IS AGAIN A ROTATION, SIMILAR TO THE DRIVE BASE. LOOSEN THE SCREWS AND ROTATE THE COLUMN AS SHOWN IN FIGURE 2. RETIGHTEN THE SCREWS AND MAKE SOME CUTS - THE SKIP SHOULD EITHER BE LESS OR MORE PRONOUNCED. IF THE SKIP CONDITION IS WORSE, ROTATE THE COLUMN IN THE OPPOSITE DIRECTION UNTIL IT DOES NOT EXIST.

FOR A VERY FINE ADJUSTMENT PROCEDURE, WITH THE CORE ROTATING BRING THE KNIFE DOWN BY HAND TO JUST KISS THE CORE SURFACE AND OBSERVE WHETHER THE BLADE TRACKS IN THE SAME GROOVE. IF THREADING IS OBSERVED, MAKE THE COLUMN ADJUSTMENT AND TRY AGAIN. REMEMBER TO RAISE THE KNIFE BACK UP BEFORE MAKING CUTS.

IMPORTANT: IF THE COLUMN IS ROTATED A LARGE AMOUNT, THE KNIFE WILL NO LONGER BE CUTTING IN THE PROPER POSITION ON THE CUTTING ANVIL. SEE SECTION 4-1 FOR PROPER ADJUSTMENT.

TROUBLESHOOTING PROCEDURE

PNEUMATIC SOLENOIDS

THE AIR VALVES ON THE MODEL 10 ARE ALL OF THE SPRING RETURN TYPE. ALL SOLENOIDS CONTAIN A MANUAL OPERATOR BUTTON. WHEN AIR IS APPLIED TO THE VALVE, THIS BUTTON CAN BE DEPRESSED WITH A SMALL POINTED OBJECT IN ORDER TO MANUALLY SWITCH THE VALVE. THIS PROCEDURE IS USEFUL IN DETERMINING IF A PROBLEM LIES IN THE VALVE/ELECTRICS OR THE CYLINDER PIPING. THE VALVES ALSO HAVE AN EXTERNAL PLUG IN FEATURE. IF A VALVE DOES NEED TO BE CHANGED, SIMPLY TURN THE SMALL SCREW IN THE PLUG BODY UNTIL THE THREE PRONG PLUG CAN BE SEPARATED FROM THE SOLENOID BODY.

BOTH INDIVIDUAL BODY AND STACKING VALVES CAN BE USED. SOME VALVES HAVE INTEGRAL EXHAUST FLOW CONTROLS. THESE CONSIST OF A THREADED STUD WITH A LOCKING NUT. BY TURNING THE SCREW INWARD, EXHAUST FLOW FROM THE CYLINDER IS LIMITED THEREBY SLOWING THE MOTION OF THE CYLINDER. THESE FLOWS ARE PRESET AND SHOULD NOT GENERALLY NEED ADJUSTMENT.

FOLLOWING IS A SUMMARY OF THE VALVES AND THEIR FUNCTIONS ON THE MODEL 10 CORECUTTER. ALL CASES ASSUME AIR PRESSURE TO THE MACHINE. POWER TO THE MACHINE MEANS THE DISCONNECT IS ON AND THE EMERGENCY STOP BUTTON IS PULLED UP.

KNIFE VALVE: CONTROLS THE KNIFE DOWN CYLINDER. CYLINDER IS LOCKED IN UP POSITION WITH BOTH POWER AND NO POWER TO THE MACHINE. CYLINDER EXTENDS ONLY IN TRIM CUT OR CUT CYCLE MODES.

BLOW OFF: PROVIDES AIR TO CORE BLOW OFF JET. JET CYCLES AIR WHENEVER THE KNIFE IS DOWN.

STOP RETRACT(END STOP): CONTROLS MOVEMENT OF TARGET ASSEMBLY DURING LOADING AND CUTTING CYCLES. WITH NO POWER TO THE MACHINE, TARGET IS OUT(CYLINDER EXTENDED). WITH POWER TO MACHINE, END STOP IS RETRACTED IN LOAD POSITION AND EXTENDED IN OFF AND RUN MODES.

OPTIONAL

AUTO ADVANCE(ROH'LEX): CONTROLS THE ACTION OF DRIVE UNIT DURING LOADING AND CUTTING CYCLES. THE ACTION OF THIS VALVE SHOULD PARALLEL THE STOP RETRACT VALVE. WITH NO POWER TO MACHINE, CYLINDERS CLAMP DRIVE TO SHAFTING.WITH POWER TO MACHINE, CYLINDERS UNCLAMP DRIVE IN LOAD POSITION AND CLAMP DRIVE IN RUN MODE.

CLAMP: CONTROLS MANDREL CLAMP LOCATED BEHIND PUSHER BODY. IT SHOULD CLAMP THE MANDREL WHENEVER A CUT IS BEING MADE. A DIVERTER VALVE IS PROVIDED ON THE CLAMP CYLINDER TO RELEASE THE CLAMP FOR LOADING. THE PROPER POSITION FOR THIS VALVE WHEN CUT CYCLING IS TO HAVE THE VALVE HANDLE ALIGNED WITH THE CYLINDER. WHEN THE CORE ADVANCES TO ITS END OF TRAVEL LIMIT SWITCH, THE CLAMP WILL GRIP THE MANDREL. IN ORDER TO LOAD A CORE, THE VALVE MUST BE TURNED PERPENDICULAR TO THE CYLINDER TO RELEASE THE CLAMP. AT THE FINISH OF LOADING A CORE, THE HANDLE SHOULD BE RETURNED TO ALIGN WITH THE CYLINDER SO THE CLAMP WILL GRIP THE MANDREL EVERY CUT.

SUPPLEMENT TO OPERATOR'S MANUAL

CORE SUPPORT

BACKGROUND

A HEAVY DUTY OR LIGHT DUTY CORE SUPPORT IS AVAILABLE AS AN OPTION ON MODEL 10 CORECUTTERS. A CORE SUPPORT IS USEFUL WHEN CUT OFF LENGTHS WILL EXCEED 24". THE HEAVY DUTY MODEL CONSISTS OF SUPPORT ROLLERS WHICH ARE BEARING MOUNTED AND ADJUSTABLE TO COINCIDE WITH THE POSITIONING OF THE CORE DRIVE ROLLERS. THE LIGHT DUTY MODEL CONSISTS OF A TROUGH WHICH CRADLES THE CORE. WHILE INSTALLATION VARIES SLIGHTLY, THE OPERATION OF THE CUTTER ITSELF IS THE SAME IN EITHER CASE.

SET-UP/INSTALLATION

WHEN POSITIONING THE CORE SUPPORT FOR USE ON THE CUTTER, IT IS IMPORTANT THAT THE CENTERLINE OF THE SUPPORT ALIGN WITH THE CORE/MANDREL CENTERLINE. ON THE HEAVY DUTY SUPPORT THIS IS DONE BY MOVING THE WHOLE ASSEMBLY ON THE FLOOR. THIS MUST BE FASTENED TO THE FLOOR ONCE A FINAL POSITION IS FOUND. THE LIGHT DUTY SUPPORT BOLTS TO THE FRAME ITSELF AND HAS A SLOTTED ADJUSTABLE BASE PLATE.

THE HEIGHT OF THE SUPPORT SHOULD ROUGHLY MATCH THE DRIVE ASSEMBLY SO THE CORE HAS A SMOOTH TRANSITION. THE HEAVY DUTY MODEL USES ADJUSTABLE ARMS WHICH SHOULD BE PUT IN POSITION TO COINCIDE WITH THOSE ARMS ON THE CORE DRIVE BASE. THE HEIGHT OF THE TROUGH FOR THE LIGHT DUTY SUPPORT IS ADJUSTABLE BY LOOSENING THE SCREW ON THE VERTICAL TUBE. SLIDE THIS PIECE UNTIL THE TROUGH IS ABOUT 1/8" TO 1/4" BELOW THE CORE. IF A LONGER TROUGH IS REQUIRED, IT MAY BE PLACED ON TOP OF THE SHORTER SECTION AND SECURED WITH NUTS.

OPERATION

WHEN USING THE CORE SUPPORT OPTION, BE CERTAIN THAT THE CORE SUPPORT SELECTOR SWITCH IS "ON". AT THE FINISH OF THE CUT CYCLE, THE END STOP WILL NOT RETURN OUTWARD BUT WILL REMAIN RETRACTED UNTIL THE RESET BUTTON IS PRESSED. AT THAT TIME THE END STOP WILL SWING OUTWARD AND THE MACHINE WILL BE READY FOR ANOTHER CUTTING CYCLE.

THIS FEATURE OF THE CORE SUPPORT IS NECESSARY SO THAT THE END STOP WILL NOT RETURN AND DAMAGE CORES RESTING IN THE SUPPORT. AT THE COMPLETION OF THE CUT, THE OPERATOR IS ABLE TO REMOVE THE CUT CORE FROM THE SUPPORT AND THEN RESET THE CUT CYCLE. IF THE SUPPORT IS NOT BEING USED, SIMPLY TURN THE SELECTOR TO "OFF" AND THE CUT CYCLE WILL BE CONTINUALLY REPEATED.

SUPPLEMENT TO OPERATOR'S MANUAL

END STOP ENCODER

OPERATION

THIS SYSTEM SUPPLEMENTS THE REFERENCE SCALE FOUND ON THE STOP/MEASURE TUBE WITH ELECTRONIC READOUT THAT DISPLAYS THE POSITION OF THE END STOP MEASUREMENT. BY OBSERVING THE DISPLAY AS THE STOP IS MOVED, SET-UPS ARE QUICKER AND MORE ACCURATE. THE READOUT WILL STORE THE POSITION AT THE TIME POWER TO THE MACHINE IS TURNED OFF. IF THE END STOP IS MOVED WHILE THE POWER IS OFF, THE READOUT WILL NO LONGER DISPLAY THE CORRECT LENGTH. TO CORRECT THIS SITUATION AND RETURN TO THE PROPER SCALING, CRANK THE END STOP IN UNTIL IT CONTACTS THE STOP ADJACENT TO THE CUT LENGTH INDICATOR. THEN RESET THE READOUT BY PRESSING THE BUTTON MARKED RESET. THIS WILL RESET THE READOUT TO ZERO WHILE THE END STOP IS IN A TRUE ZERO CUT LENGTH POSITION. THE WAY TO AVOID THIS IS ONLY ADJUST THE STOP WITH POWER BEING ON THE MACHINE. IN THIS WAY THE END STOP WILL NEVER GET OUT OF SYNC WITH THE READOUT.

MAINTENANCE

THIS READOUT SYSTEM UTILIZES A NON CONTACT READERHEAD THAT GETS PULSES FROM THE MAGNETIC STRIP ALONG THE END STOP TUBE. TO ENSURE ACCURATE READINGS, IT IS IMPORTANT THAT THE MAGNETIC STRIP NOT BE SUBJECTED TO ANY SHOCK LOADINGS THAT COULD CAUSE IT TO CRACK. ALSO, THE STRIP SHOULD NOT COME IN PROXIMITY TO OTHER MAGNETIC FORCES. IF THE UNIT SHOULD BEGIN TO GIVE INACCURRATE READINGS, CHECK THE AIR GAP BETWEEN THE READERHEAD AND THE MAGNET WITH A **PLASTIC** SHIM. THE GAP SHOULD BE .032" TO .062". BOTH THE READERHEAD AND ITS MOUNT ARE SLOTTED TO ALLOW FOR ADJUSTMENTS.

SUPPLEMENT TO OPERATOR'S MANUAL

MANDREL CHANGEOVER

BACKGROUND

IN SOME INSTANCES, IT MAY BE IMPOSSIBLE TO OPERATE ALL SIZES OF TOOLING ON THE SAME DIAMETER CORE MANDREL. IN THIS CASE THE EXISTING MANDREL MUST BE REMOVED AND THE NEW ONE INSTALLED IN ITS PLACE. EACH MANDREL COMES WITH A DIFFERENT PUSHER ASSEMBLY AND FOR THOSE MACHINES WITH AUTOMATIC FEEDS A CLAMPING BLOCK IS ATTACHED TO THIS UNIT. THE CHANGEOVER IS A FAIRLY SIMPLE PROCEDURE BOTH WITH AND WITHOUT THE AUTOMATIC CORE FEED OPTION.

CHANGEOVER

THE FIRST STEP IS TO RAISE THE KNIFE ASSEMBLY A DISTANCE ABOVE THE ANVIL SO THERE IS NO DANGER OF STRIKING THE KNIFE WITH THE MANDREL ASSEMBLY. NEXT, REMOVE THE TWO 1/4-20 BOLTS HOLDING THE MANDREL SUPPORTS TO THE TOP OF THE ELEVATING POSTS AT THE REAR OF THE MACHINE. IF THE MACHINE IS A SEMI-AUTOMATIC MODEL, THE MANDREL MAY BE LIFTED OUT AT THIS POINT. IF THE MACHINE HAS AN AUTOMATIC FEED, THE AIRLINES TO THE CLAMPING BLOCK BEHIND THE PUSHER MUST BE BROKEN AT THE QUICK DISCONNECT POINT SUPPLIED. THE MANDREL ASSEMBLY MAY NOW BE REMOVED BY LIFTING STRAIGHT UP TILL THE MANDREL SUPPORTS BECOME FREE FROM THE POSTS AND THE HARDENED SHAFT IN THE PUSHER LINK BECOMES FREE FROM THE BEARING BLOCK. TO INSTALL THE NEW MANDREL IT IS USUALLY BEST TO SLIDE THE HARDENED SHAFT THROUGH THE BEARING BEFORE INSERTING THE MANDREL TOPS INTO THE POSTS AT THE REAR OF THE MACHINE. FASTEN THE MANDREL TOPS TO THE POSTS AND CONNECT THE AIR LINES AT THE QUICK DISCONNECTS.

NOTE: IN SOME CASES THERE IS ONLY ONE BEARING BLOCK FOR ALL PUSHER ASSEMBLIES. IN THIS CASE REMOVE THE 1/4-20 SCREWS HOLDING THE BEARING BLOCK TO THE PUSHER BODY AND SWING THE ARM/BLOCK UP OUT OF THE WAY. INSTALLATION IS THE REVERSE OF THESE STEPS. BE CAREFUL NOT TO OVERTIGHTEN THE BOLTS IN THE ALUMINUM PUSHER BODY WHEN INSTALLING THE LINK BEARING BLOCK.

SUPPLEMENT TO OPERATOR'S MANUAL

MOTORIZED KNIFE HEIGHT ADJUSTMENT

OPERATION

THIS SYSTEM IS USED ON TALLER KNIFE COLUMNS WHERE IT WOULD BE DIFFICULT TO REACH THE HANDWHEEL TO MAKE HEIGHT ADJUSTMENTS FOR THE KNIFE. UNLIKE THE AUTOMATIC HEIGHT OPTION, THIS SYSTEM IS NOT TIED INTO THE OPERATION OF THE MACHINE; IT SIMPLY PROVIDES CONTROLS TO RAISE AND LOWER THE KNIFE ASSEMBLY.

ALL ADJUSTMENTS ARE MADE ON THE DC MOTOR CONTROLLER LOCATED ON THE SIDE OF THE CONTROLS ENCLOSURE. THE FOLLOWING CONTROLS AND THEIR FUNCTIONS ARE SUMMARIZED HERE.

SPEED CONTROL POT.: VARIES THE RATE OF MOTION IN BOTH UP AND DOWN DIRECTIONS.

UP/DOWN REVERSING SWITCH: CONTROLS THE DIRECTION OF TRAVEL OF THE KNIFE ASSEMBLY. NOTE THAT THE SWITCH CAN NOT BE THROWN DIRECTLY FROM ONE POSITION TO ANOTHER BUT MUST BE RELEASED SLIGHTLY.

PUSH BUTTON SWITCH: INITIATES MOTOR ROTATION WHEN PRESSED. THIS SWITCH MUST BE HELD – IT WILL NOT LATCH.

IN OPERATION, THE SWITCH SHOULD BE THROWN IN THE DIRECTION OF TRAVEL. THEN THE BUTTON IS PRESSED AND HELD UNTIL THE PROPER KNIFE LOCATION IS REACHED. IF A TRIM CUT IS BEING MADE, THE KNIFE SHOULD BE IN THE DOWN POSITION (USING TRIM CUT BUTTON) WHILE THE KNIFE ASSEMBLY IS BEING LOWERED.

WHILE IT SAVES TIME TO RUN THE SYSTEM AT 100% MOTOR SPEED, THE SPEED SHOULD NEVER EXCEED 50% WHEN ACTUALLY MAKING A KNIFE ADJUST. A BLADE SETTING THAT IS TOO LOW WILL SEVERELY AFFECT KNIFE LIFE.

SUPPLEMENT TO OPERATOR'S MANUAL

CUT CORE COUNTER

BACKGROUND

A CUT CORE COUNTER WILL KEEP TRACK OF THE NUMBER OF PIECES BEING CUT. A PRESET NUMBER MAY BE ENTERED IN THE COUNTER AND THE MACHINE WILL AUTOMATICALLY SHUT DOWN WHEN THAT PRESET NUMBER OF CORES HAS BEEN CUT.

OPERATION

ALTHOUGH THE DISPLAY WILL BE LIT WITH NO POWER TO THE MACHINE, THERE MUST BE POWER IN ORDER TO ENTER THE PRESET NUMBER. TO ENTER THE COUNT PRESET, HOLD THE "I" KEY AND PRESS EACH DIGIT TO SCROLL THROUGH UNTIL THE PRESET YOU WANT IS DISPLAYED ON THE SCREEN. A CURSOR APPEARS UNDER THE DIGIT BEING CHANGED. THE DIGIT ADVANCES APPROXIMATELY TWICE PER SECOND WHILE THE KEY IS BEING HELD.

THIS NEW PRESET WILL BE TRANSFERRED WHEN THE "R" KEY IS PRESSED. IF THE PRESET VALUE HAS NOT BEEN TRANSFERRED, A DECIMAL POINT WILL APPEAR ON THE RIGHT OF THE UNIT'S DIGIT. THE RESET KEY WILL CLEAR THE SCREEN AS WELL SO THAT THE CUTS MAY BE OBSERVED "COUNTING UP". THE UNIT WILL COUNT UP TO THE EXISTING PRESET – EITHER FROM THE LAST NUMBER CU OR ZERO IF THE UNIT HAS BEEN RESET.

NOTE: CONSULT THE MANUFACTURERS INSTRUCTIONS FOR MORE DETAILED INFORMATION ON THIS UNIT.

Our Service Department is available to answer any questions you might have.

Service Manager: Mr. John Heater

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