

**SETUP PROCEDURE AND OPERATOR'S INSTRUCTIONS**  
**FOR CORETECH MODEL 11 CORECUTTER**

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## INITIAL SETUP PROCEDURE

- REMOVE CORECUTTER AND CORELOADER/INCLINED TABLE ASSEMBLIES FROM THEIR RESPECTIVE SKIDS BEING CAREFUL NOT TO DAMAGE ANY ELECTRICAL OR PNEUMATIC LINES THAT RUN ALONG THE FRAMEWORK.
- REMOVE ANY BANDING OR PACKING MATERIALS USED TO SECURE THE MACHINES. WIPE ANY EXCESS OIL USED IN SHIPPING PROTECTION, PARTICULARLY ANY OIL ON THE 1 1/2" DIAMETER AUTO CORE ADVANCE AND CORE LOAD SHAFTS.
- IN ORDER TO PROPERLY ALIGN THE CORECUTTER AND CORELOADER FRAMES, AIR AND ELECTRICAL SERVICE WILL NEED TO BE INSTALLED. POSITION THE CORECUTTER AT ITS APPROXIMATE FLOOR LOCATION AND RUN A 1/2" MINIMUM AIR LINE TO THE MAIN AIR DUMP VALVE CONNECTION. ALSO DROP AN APPROPRIATE ELECTRICAL SERVICE OF THE VOLTAGE AS NOTED ON THE PRIMARY ENCLOSURE DOOR. IF THERE IS ANY QUESTION REGARDING THE SERVICE REQUIRED, PLEASE CONTACT THE FACTORY.
- IF ANY ELECTRICAL COMPONENTS(KNIFE COLUMN DC MOTOR, HYDRAULIC PUMP MOTOR AND SOLENOIDS, ETC.) HAVE BEEN REMOVED FOR SHIPPING, CONNECT THEM AS LABELED AT THIS TIME. THE TWO YELLOW CONTROL CABLES THAT CONNECT THE CORECUTTER TO THE CORELOADER SHOULD BE ATTACHED INTO THEIR RESPECTIVE PLUGS ON THE SIDE OF THE LOADER JUNCTION BOX.
- THE CORECUTTER AND CORELOADER FRAMES SHOULD BE ALIGNED AT THIS TIME, EVEN IF THERE WILL BE A CORE RECEPTACLE AND/OR OFFLOAD TABLE AS PART OF THE SYSTEM. IT WILL BE EASIER TO MOVE THE FRAMES INTO ALIGNMENT BEFORE THESE OTHER UNITS ARE ATTACHED.
- ALIGN THE MACHINE CONNECTOR TO THE EYE BRACKET AND SLIDE THE 1/2 PIN THROUGH THE HOLE. THIS WILL SET PROPER SPACING AND ALIGNMENT AT THIS POINT BUT IT DOES NOT ENSURE THAT THE ENTIRE LOADING TROUGH IS IN LINE WITH THE CORECUTTER.
- THE ACTUAL ALIGNMENT PROCEDURE SHOULD BE DONE WITH 3" OR 6" I.D. CORES OR WHATEVER SIZE IS BEING RUN IF THESE SIZES DO NOT APPLY. INITIALLY, AFTER THE ALIGNMENT PROCESS, A RANGE OF SIZES SHOULD BE TRIED TO CHECK THE ALIGNMENT. WHEN THESE HAVE RUN SUCCESSFULLY, THE MACHINE **MUST BE BOLTED TO THE FLOOR TO MAINTAIN CONSISTENCY.**
- **PROPER ALIGNMENT IS ACHIEVED BY MOVING THE FRAMES** - NEVER BY ADJUSTING THE TROUGH OR DUMP ANGLES. IF THERE IS ANY QUESTION ABOUT THIS PROCESS, PLEASE CONTACT THE FACTORY SINCE THIS INITIAL SETUP IS CRITICAL TO THE OPERATION OF THE CORECUTTING SYSTEM.



## MACHINE ALIGNMENT PROCEDURE

- VERIFY THAT THE MACHINE IS SETUP FOR 3" OR 6" CORES AND THAT THE MANDREL RAISER, MANDREL LIFTER, AND CORELOADER ASSEMBLY HEIGHTS ARE CORRECT FOR THAT SIZE CORE AS SHOWN IN THE CORE CHANGEOVER CHART.
- PULL UP THE E-STOP BUTTON SO THAT THERE IS AIR PRESSURE AND ELECTRIC TO THE CONTROLS. WITH THE CORE ADVANCE CARRIAGE AT THE FRONT OF ITS TRAVEL, THE MANDREL LIFTER SHOULD RAISE AND THE CUTTING ANVIL WILL BE SUSPENDED ABOVE THE DRIVE ROLLERS AT A DISTANCE OF SLIGHTLY MORE THAN THE WALL THICKNESS OF THE CORE. PULL THE TRIM EJECT RING FORWARD TO ITS LIMIT.
- PLACE A FULL LENGTH CORE INTO THE LOADING TROUGH. OPEN THE DOUBLE DOOR ELECTRICAL ENCLOSURE AND FIND THE TWO POTENTIOMETERS MARKED CORE LOAD SPEED HIGH AND LOW. NOTE THEIR PRESENT SETTINGS AND THEN TURN THEM TO ZERO.
- PUSH THE CORE LOAD BUTTON. THE STAINLESS DISCHARGE FLAPS SHOULD FORM A "V" AND THEN THE ENTIRE ASSEMBLY SHOULD PIVOT UPWARD. AT THIS POINT THE MACHINE IS TRYING TO LOAD A CORE BUT SINCE THE LOADING RAM SPEEDS ARE AT ZERO, NOTHING WILL HAPPEN. PULL THE FULL LENGTH CORE IN THE LOADING TROUGH UP NEXT TO THE ANVIL AND IT WILL BE EASY TO SEE WHICH WAY THE LOADING ASSEMBLY MUST MOVE TO ACHIEVE PERFECT ALIGNMENT. LOOSEN THE MACHINE CONNECTOR AND USE THE SLOTTED ADJUSTMENT TO MOVE IT SIDE TO SIDE. IF THE MISALIGNMENT IS NOT SIMPLY SIDE TO SIDE BUT VERTICAL AS WELL, RECHECK THE CHANGEOVER SETTINGS FOR THAT CORE SIZE.
- AFTER A PERIOD OF TIME(10 SECONDS TYP.) THE MACHINE WILL SHUT DOWN IN A LOAD FAULT MODE. TO RESET, SIMPLY PUSH THE JOYSTICK TO RESET AND REPEAT THE CORE LOAD PROCESS IF NECESSARY TO CONTINUE ALIGNING.
- ONCE ALIGNMENT HAS BEEN ACHIEVED, RETURN THE SPEED POTS TO THEIR ORIGINAL SETTINGS. IT MAY BE A GOOD IDEA TO MARK THE FLOOR AROUND THE FOOTPADS IN CASE THE UNITS ARE NOT SECURED IN A TIMELY FASHION.



## FINAL SETUP

WITH THE CUTTING AND LOADING FRAMES ALIGNED, THE REMAINING UNITS CAN BE POSITIONED.

- IF AN OFFLOAD TABLE IS INCLUDED, IT WILL BE LOCATED IN FRONT OF THE CORECUTTER WITH THE LEFT EDGE OF THE FOLD-UP SECTION JUST BEYOND THE STAINLESS DISCHARGE CHUTE. USE THE STRAIGHT CONNECTING BARS TO ACHIEVE PROPER SPACING FROM THE DUMP FLAPS. THE HEIGHT ADJUSTING HANDWHEEL IS ASSEMBLED BY SIMPLY SLIDING THE FLEX COUPLING ONTO THE PINS OF THE MATING PIECE UNDER THE CORE LOAD ASSEMBLY. THE PILLOW BEARING IS THEN BOLTED TO ITS PEDESTAL. THE OFFLOAD TABLE SHUT DOWN PHOTOEYE/BACKET FROM THE LOADER JUNCTION BOX MUST BE ATTACHED UNDER THE TABLE BELOW THE SIGHT HOLE.

- IF A CORE RECEPTACLE IS INCLUDED WITH THE CONVEYOR SYSTEM, IT WILL ATTACH TO THE CONVEYOR FRAME WITH THE OFFSET CONNECTOR PLATES PROVIDED. IF A GATE LIFTER CYLINDER IS PRESENT, AIR AND ELECTRICAL CONNECTIONS MUST BE MADE AS LABELED. THERE MAY BE SPECIAL BAFFLES OR GUARDING THAT BOLT TO THE RECEPTACLE AND/OR THE CONVEYOR FRAME. IF ONE SET OF CONVEYOR PADDLES HAS BEEN REMOVED FOR SHIPPING, THEY CAN BE MOUNTED ONTO THE ATTACHMENT LINKS OF THE CONVEYOR CHAIN AT THIS TIME.

- IF "FULL PANEL" PLEXI AND ALUMINUM GUARDING HAS BEEN SUPPLIED, IT SHOULD BE ASSEMBLED **AFTER** THE MACHINE IS SETUP AND RUNNING. DUE TO FLOOR VARIANCES, SOME HOLES IN THE GUARDING MAY NEED TO BE ENLARGED SLIGHTLY TO ATTACH TO EXISTING HOLES.

THE MODEL 11 AUTOMATIC CORECUTTER REQUIRES CARE IN OPERATION IF QUALITY RESULTS ARE TO BE OBTAINED. IT IS IMPORTANT TO FOLLOW THE GUIDELINES PRESENTED WHEN MAKING THE ADJUSTMENTS BETWEEN CORE SETUPS. THE CHANGEOVER IS PRESENTED IN CHECKLIST FORM AS WELL AS DESCRIPTIVE TEXT AS AN AID IN ACHIEVING THE BEST RESULTS.

FOLLOWING WILL BE VARIOUS SECTIONS DETAILING PROCEDURES FOR CHANGING CORE DIAMETER AS WELL AS ADJUSTMENTS FOR IMPROVING CUTTING OPERATION SHOULD IT BECOME NECESSARY TO DO SO. IF AFTER READING THROUGH THIS MANUAL AND FOLLOWING THE STEPS PROBLEMS CONTINUE TO OCCUR, PLEASE CALL THE FACTORY FOR FURTHER ASSISTANCE.

## SECTION 1 TOOLING CHANGEOVER

**IMPORTANT: WHENEVER CHANGING TO A DIFFERENT SIZE CORE (I.D. OR O.D.) IT IS IMPORTANT TO RAISE THE KNIFE WELL ABOVE THE EXPECTED CORE SURFACE. IF THE KNIFE WERE ALLOWED TO CYCLE, IT COULD STRIKE THE CUTTING ANVIL AND DAMAGE COULD RESULT. WHEN SETTING UP FOR A NEW SIZE CORE, ALWAYS ADJUST THE KNIFE TO A POSITION WHERE IT MUST BE ADJUSTED DOWN TO MAKE THE FIRST CUT. TO RAISE THE KNIFE ASSEMBLY, PRESS THE KNIFE UP PUSH BUTTON ON THE CONTROL PANEL. THE KNIFE WILL CONTINUE TO RAISE UNTIL THE JOYSTICK IS RESET OR THE UPPER TRAVEL LIMIT SWITCH IS MADE.**

SETTING THE KNIFE HEIGHT WILL BE COVERED IN A LATER SECTION.

### 1-1 CUTTING ANVIL

THE KNIFE CUTS AGAINST THE CUTTING ANVIL RESULTING IN A BURR FREE CUT. THE ANVIL IS HELD TO THE END OF THE MANDREL BY EITHER AN ANVIL BOLT OR A STRIPPER BOLT. NOTE THAT THE ANVIL IS TAPERED TO ALLOW CORES TO LOAD EASILY AND FALL AWAY AFTER BEING CUT THROUGH. A DIFFERENT ANVIL MUST BE USED FOR EACH CORE DIAMETER.

### 1-2 CORE CHUCK/TRIM EJECT RING

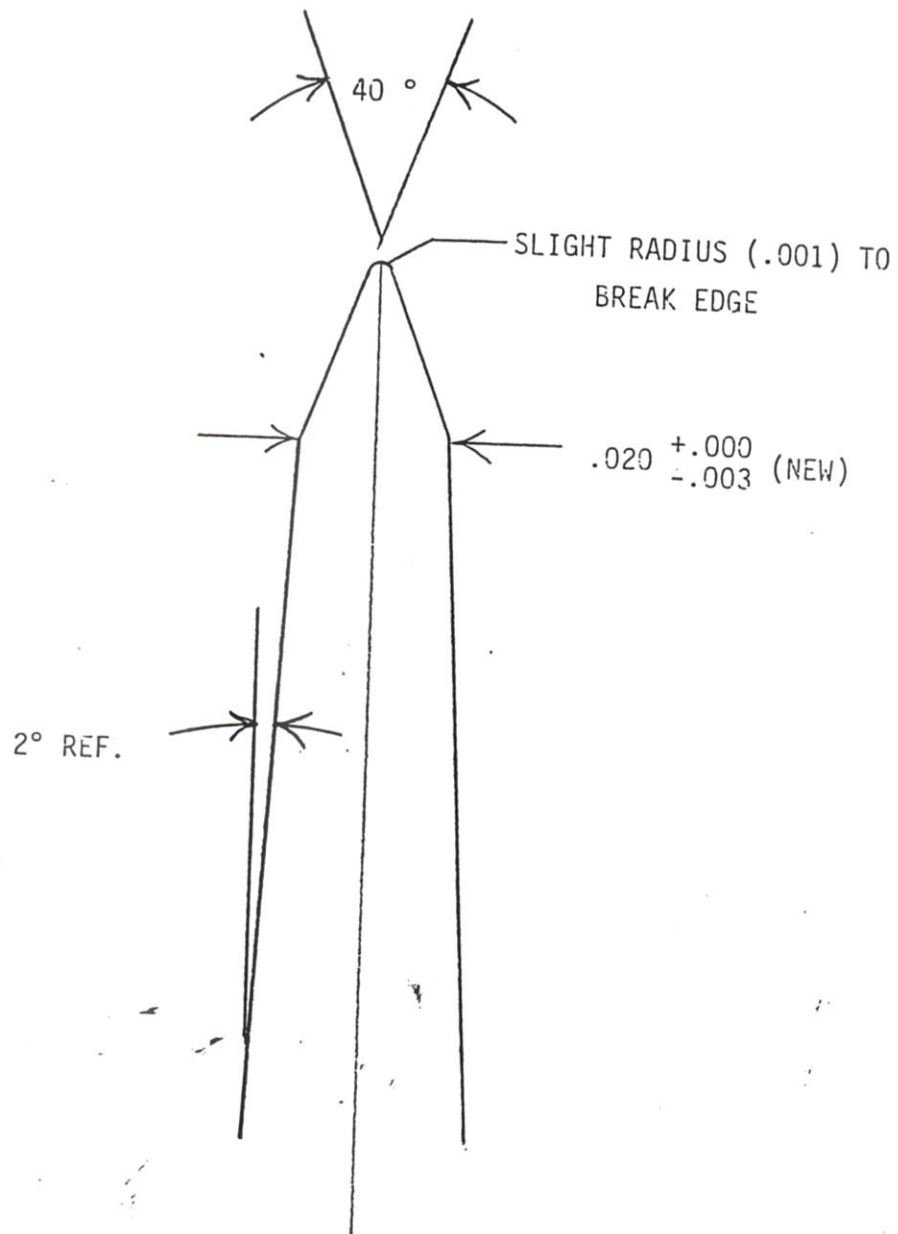
THE CORE CHUCK/TRIM EJECT RING PAIR ARE FOUND ON THE PUSHER ASSEMBLY LOCATE ON THE CORE MANDREL. LARGER CORE CHUCKS ARE HELD TO THE PUSHER BODY WITH TWO 1/4-20 X 1/2" SOCKET HEAD SCREWS WHILE SMALLER CHUCKS MAY USE 10-32 FLAT HEAD SCREWS. THE TRIM EJECT RING IS SECURED TO THE CYLINDER CLEVIS BY TWO 1/4" QUICK RELEASE PINS. ON 3" AND SMALLER SIZES, THE TRIM RINGS MAY BE REMOVED FROM THE SYSTEM FOLLOWED BY THE CORE CHUCKS. ON LARGER CORES, THE CORE CHUCK MUST BE REMOVED PRIOR TO THE TRIM RING. IT IS A GOOD IDEA TO CLEAN THE TRIM RING AND APPLY A SMALL AMOUNT OF WHITE GREASE TO THE INSIDE SURFACES EACH TIME THE TOOLING IS CHANGED.

### 1-3 KNIFE

THE KNIFE IS HELD IN PLACE ON THE KNIFE AXLE WITH (2) 5/16 - 18 SOCKET HEAD CAP SCREWS. THE KNIFE IS REMOVED BY HOLDING ONE SCREW WITH A 1/4" ALLEN WRENCH WHILE TURNING THE OTHER SCREW. REMOVE ONE SCREW AND PUSH THE AXLE THROUGH THE OTHER SIDE, RELEASING THE KNIFE FROM THE YOKE. BE SURE THE CARBON BRUSH IS IN ITS HOLDER WHEN INSTALLING THE KNIFE.



DETAIL SHOWING CUTTING EDGE OF 3" (#707) AND 4" (708)  
CORECUTTING BLADES



BLADES MAY BE RESHARPENED UNTIL HUB INTERFERES  
WITH CORE SURFACE

#### 1-4 MANDREL CHANGEOVER – DOES NOT APPLY.

IN SOME INSTANCES A COMPLETE MANDREL CHANGE IS NEEDED WHEN SETTING UP FOR A DIFFERENT ID CORE. EACH MANDREL IS EQUIPPED WITH A SEPARATE PUSHER ASSEMBLY. SOME CHUCKS AND TRIM EJECT RINGS MAY BE COMPATIBLE ON MORE THAN ONE MANDREL. TO CHANGE MANDRELS, FIRST BREAK THE ELECTRICAL AND PNEUMATIC LINES TO THE PUSHER ASSEMBLY AT THE QUICK DISCONNECTS PROVIDED. THEN REMOVE THE 1/4" SCREWS HOLDING THE LINK BEARING BLOCK TO THE PUSHER AND THE 1/4" SCREWS HOLDING THE MANDREL TOPS TO THE ELEVATING POSTS. LIFT THE MANDREL/PUSHER ASSEMBLY UP OFF THE MACHINE.

## SECTION 2 SET-UP ADJUSTMENTS

THE FOLLOWING SECTIONS DETAIL ADJUSTMENTS NECESSARY TO THE MACHINE IN ADDITION TO THE TOOLING CHANGEOVERS. A CHART HAS BEEN PROVIDED WITH A PICTURE OF THE APPROPRIATE AREA ALONG WITH DIMENSIONS USED SUCCESSFULLY IN TESTING THE MACHINE USING THE CUSTOMERS CORES. SOME ADJUSTMENTS HAVE BEEN SCRIBED ON THE MACHINE ITSELF TO SIMPLIFY THE PROCESS.

### 2-1 MANDREL CENTERLINE HEIGHT

THE CORE MANDREL IS GENERALLY SET TO HEIGHT OF LEVEL OR SLIGHTLY ABOVE LEVEL WHEN THE CORE IS RESTING ON THE DRIVE ROLLERS. THIS HEIGHT IS ADJUSTED BY USE OF THE HANDWHEEL AT THE REAR OF THE CORECUTTER FRAME. THE SHAFT CLAMP MUST FIRST BE LOOSENED BEFORE TURNING THE HANDWHEEL.

### 2-2 HOPPER HEIGHT ADJUSTMENT

HEIGHT ADJUSTMENT FOR THE CORELOADING TROUGH AND INCLINE TABLE ASSEMBLY IS MADE WITH THE HANDWHEEL LOCATED AT THE FRONT AND CENTER OF THE LOADING ASSEMBLY OR THE FRONT OF THE UNLOAD TABLE IF ONE IS PRESENT. HEIGHT OF THE LEG AS SHOWN IN THE SETUP CHART IS TAKEN AT THE LEFT FRONT LEG UNLESS THERE IS AN UNLOAD TABLE - THEN IT IS MADE AT THE RIGHT FRONT LEG. AS SHIPPED, THE LEG GIBBS ARE SET TO BE SNUG YET MOVEABLE. IF ONLY ONE SIZE CORE IS BEING RUN, THESE GIBBS MAY BE LOCKED IN PLACE. WHEN TURNING THE HANDWHEEL, IT IS HELPFUL TO NOTE THAT THERE ARE APPROXIMATELY 100 TURNS TO THE INCH OF TRAVEL.

### 2-3 MANDREL LIFTER

THE MANDREL LIFTER IS USED TO RAISE THE CUTTING ANVIL OFF THE DRIVE ROLLERS TO ALLOW THE CORE TO TRIM EJECT AND LOAD PROPERLY. THE TOP IS SLOTTED TO ALLOW POSITIONING TO THE PROPER DIMENSION AS OUTLINED BY THE SETUP CHART. THE POSITION MAY ALSO BE SCRIBED. TO ADJUST THE TOP LOOSEN THE TWO 1/4 -20 SCREWS THAT LOCK THE TOP IN PLACE. THESE SHOULD BE TIGHTENED SECURELY ONCE THE ADJUSTMENT IS MADE.

### 2-4 CORE DRIVE ROLLERS

TO PROVIDE SUPPORT FOR VARIOUS DIAMETER CORES, THE ROLLERS CAN BE ADJUSTED TO ANY ONE OF THREE POSITIONS. TO CHANGE THE ROLLER POSITION, LOOSEN THE TWO 1/2-13 BOLTS THAT HOLD THE ARMS AND REMOVE ONE AT A TIME, SWINGING THE ARM TO THE NEW POSITION. BOTH ROLLERS MUST BE IN THE SAME POSITION!



THE FOLLOWING ROLLER POSITIONS GENERALLY APPLY.

CORE ID SIZE	ROLLER POSITION
1" - 3"	# 1
4" - 6"	# 2
7" - 12"	# 3

## 2-5 KNIFE HEIGHT ADJUSTMENT

AS STATED EARLIER, WHEN CHANGING CORE ID SIZES, IT IS IMPORTANT TO TAKE THE KNIFE WELL ABOVE ITS INTENDED HEIGHT BEFORE RESETTING IT FOR CUTTING. ASSUMING THIS HAS BEEN DONE AND A CORE IS IN PLACE WITH ALL CHANGEOVER ADJUSTMENTS COMPLETED, THE FOLLOWING PROCEDURE WILL SET THE KNIFE HEIGHT.

AUTOMATIC: THE AUTOMATIC KNIFE OPTION USES A LOW VOLTAGE CONTACT BETWEEN THE KNIFE ASSEMBLY AND THE CUTTING ANVIL TO SET THE KNIFE POSITION FOR CUTTING. THERE IS ALSO A MANUAL OVERRIDE HANDWHEEL IF THE MOTORIZED SYSTEM SHOULD FAIL. THE KNIFE HEIGHT WILL AUTOMATICALLY BE SET WHEN THE FIRST TRIM OR AUTO CUT IS MADE. MAKE SURE THAT APPROXIMATELY  $\frac{1}{2}$ " OF CORE EXTENDS BEYOND THE CUTTING ANVIL. AFTER STARTING THE CORE DRIVE MOTOR, USE EITHER TRIM CUT OR AUTOMATIC TO PLACE THE MACHINE IN "CUTTING MODE". THE KNIFE CYLINDER WILL EXTEND AND THEN THE KNIFE ASSEMBLY WILL LOWER. AS THE KNIFE IS LOWERED, IT WILL CUT THROUGH THE CORE AND MAKE CONTACT WITH THE ANVIL. AT THIS POINT, THE KNIFE WILL STOP LOWERING AND THE ASSEMBLY WILL BE CLAMPED IN PLACE. (SEE TROUBLESHOOTING SECTION FOR MORE DETAILS)

### SECTION 3 MACHINE OPERATION

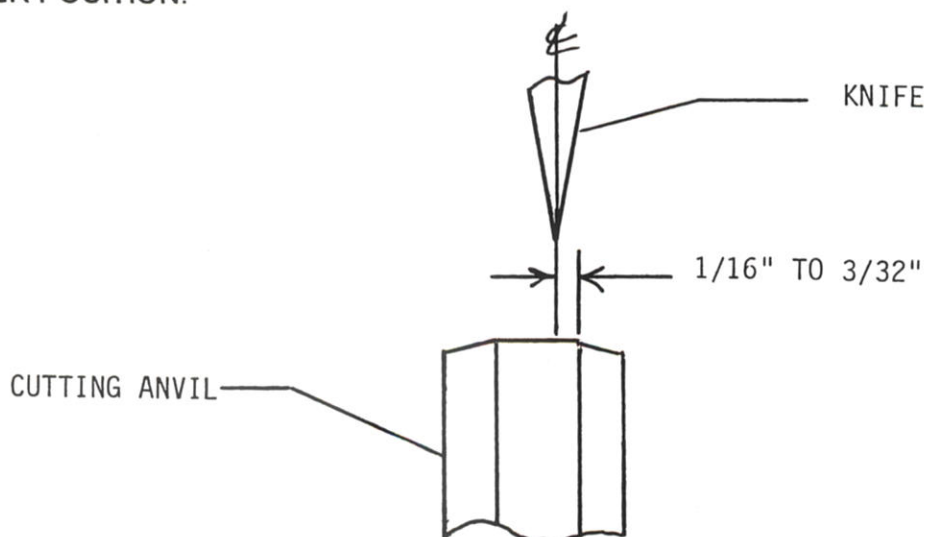
FOR A DESCRIPTION OF THE MACHINE CONTROLS, DATA LENGTH AND COUNT ENTRIES, AND OPERATION PROCEDURES, PLEASE CONSULT THE MACHINE OPERATIONS MANUAL WHICH IS BOUND AS A SEPARATE BOOK FOR CONVENIENCE.

## SECTION 4 SPECIAL ADJUSTMENTS

THE FOLLOWING ADJUSTMENTS ARE FACTORY SET AT THE TIME OF MANUFACTURE AND SHOULD NOT NEED CHANGING. DO NOT ATTEMPT TO MAKE ANY OF THESE ADJUSTMENTS UNTIL THE NEED TO DO SO IS POSITIVELY IDENTIFIED.

### 4-1 CUTTING ANVIL POSITION

THE KNIFE MUST CUT AGAINST ONLY ON THE FLAT SURFACE OF THE CUTTING ANVIL. IF THE KNIFE DOES NOT MAKE CONTACT WITH THE ANVIL AT THE PROPER LOCATION, CUT CORES MAY NOT DROP OFF OR BURRS MAY DEVELOP ON THE CORE ID. THE KNIFE POSITION ON THE CUTTING ANVIL IS ADJUSTED BY LOOSENING THE SPLIT BLOCK MANDREL SUPPORTS AT THE REAR OF THE MACHINE AND SLIDING THE MANDREL IN/OUT TO ACHIEVE THE PROPER POSITION.



### 4-2 SURFACE DRIVE ALIGNMENT

WITH A FULL LENGTH OF TUBE ON THE MACHINE AND THE MOTOR RUNNING, THE CORE SHOULD IDLE IN POSITION AND NOT WALK OR TRACK BACK AND FORTH. IF THE TUBE IS TRACKING, ATTEMPT TO ELIMINATE THIS CONDITION BY ADJUSTING THE MANDREL HEIGHT PER SECTION 2-1. IF THE TRACKING PERSISTS AND IS AFFECTING THE CUT QUALITY, THE SURFACE DRIVE MUST BE RE-ALIGNED.

THE SURFACE DRIVE ALIGNMENT IS ACCOMPLISHED BY LOOSENING THE 1/2 - 13 HEX HEAD BOLTS THAT HOLD THE DRIVE BASE TO THE FRAME. WITH A TUBE ON THE MACHINE AND THE MOTOR SPINNING, SLOWLY ROTATE THE DRIVE ASSEMBLY IN ITS OVERSIZE MOUNTING SLOTS TO OBSERVE WHICH ROTATION SLOWS THE WALK. CONTINUE TO ROTATE IN THAT DIRECTION UNTIL THE CORE REMAINS IN POSITION WHILE SPINNING. RE-TIGHTEN THE BOLTS AND CHECK THAT THE CORE IS NOT TRACKING. (SEE TROUBLESHOOTING SECTION)



## **TROUBLESHOOTING SECTION**

**THE FOLLOWING SECTION COVERS SOME OF THE MORE COMMON AREAS WHERE PROBLEMS CAN OCCUR OR THERE IS UNFAMILIARITY WITH THE SYSTEM BEING USED. SOME OF THE TOPICS THAT CAN BE FOUND IN THE TROUBLESHOOTING SECTION INCLUDE:**

- AUTOMATIC KNIFE ADJUST SYSTEM**
- CUT SKIP AND CORE WALKING**
- CUT LENGTH VARIATIONS**
- PNEUMATIC SOLENOIDS**

## **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 AUTOMATIC KNIFE HEIGHT 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 POT 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 SETUP, THE KNIFE ASSEMBLY IS RAISED TO A HEIGHT WELL ABOVE THE CUTTING POSITION BY USING THE KNIFE UP PUSHBUTTON. THE MACHINE IS PUT 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 CUTTING ANVIL. ON CONTACT WITH THE CUTTING ANVIL, THE "VDR" WILL DISPLAY A RED SIGNAL, THE 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 PREMATURE KNIFE WEAR IS A PROBLEM, THIS LIST SHOULD BE CONSULTED.

- CHECK TO MAKE SURE CARBON BRUSH IS INSTALLED IN HOLDER AND WIRE IS ATTACHED. BRUSH SHOULD HAVE SOME SPRING PRESSURE AGAINST SIDE OF KNIFE.



- 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 COULD VARY SLIGHTLY DEPENDING ON MOISTURE IN THE CORE, ETC. - THE KNIFE ADJUSTMENT MOTOR SPEED MUST NOT BE SET TOO HIGH. A RANGE OF 50% TO 60% SETTING ON THE SPEED POTENTIOMETER IS RECOMMENDED. THE REASONING FOR THIS CAN BE FOUND IN THE INITIAL HEIGHT ADJUSTMENT. IF THE SPEED IS EXCESSIVE, THE KNIFE CYLINDER ROD WILL ACTUALLY BE PUSHED BACK INTO THE CYLINDER AS THE KNIFE 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 ANVIL - SEVERELY AFFECTING BLADE LIFE. A SECOND FACTOR IS THAT THERE IS SLIGHT MOTOR COAST AFTER THE SIGNAL TO SHUT OFF HAS BEEN GIVEN. THE FASTER THE DOWNSPEED THE MORE OVERTRAVEL OF THE SYSTEM RESULTING IN EXCESSIVE KNIFE PRESSURE ON THE CUTTING ANVIL.

- THE "VDR" LIGHT SHOULD BE A SOLID, STRONG, RED SIGNAL THE INSTANT THE KNIFE TOUCHES THE ANVIL. ANY FLICKERING OR WAVERING COULD INDICATE A BAD CONTACT SITUATION. THIS COULD BE CAUSED BY A BAD BRUSH CONNECTION 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 IS IN 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 IS FOUND IN SECTION 4-1.

- THE DWELL TIME THAT THE KNIFE STAYS ON THE ANVIL AFTER THE CUT IS COMPLETE (IE "VDR" SIGNAL MADE) SHOULD BE KEPT TO MINIMUM. THIS IS GENERALLY ADJUSTED VIA A POTENTIOMETER KNOB ON THE CONTROL PANEL. THE STANDARD TIMER RANGE IS 0 TO 2 SECS SO THE ADJUSTMENT IS IN TENTHS OF A SECOND.

- IN SOME CASES THE AIR PRESSURE TO THE KNIFE CYLINDER CAN BE LOWERED WITHOUT SEVERELY AFFECTING THE QUALITY OR TIME REQUIRED FOR 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 LIFE WILL RESULT. WHEN MAKING AN AIR PRESSURE REDUCTION, IT IS IMPORTANT THAT IT BE MADE ON THE SECONDARY REGULATOR THAT SUPPLIES THE KNIFE AND NOT THE PRIMARY REGULATOR THAT SUPPLIES THE ENTIRE MACHINE.



## **TROUBLESHOOTING CUT SKIP AND CORE WALKING**

### **DEFINITION OF SYMPTOMS**

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

**CUT SKIP :** WHEN THE KNIFE ENTERS THE CORE FOR A CUT, AFTER ONE ROTATION THE CUT GROOVE DOES NOT LINE UP WITH THE INITIAL ENTRY POINT OF THE KNIFE. ON THE SECOND ROTATION, THE KNIFE CREATES A COMMON GROOVE AND CONTINUES CUTTING THROUGH THE CORE.

**CUT THREADING :** A SEVERE CASE OF CUT SKIP WHERE THE KNIFE NEVER CREATES A COMMON GROOVE AND CONTINUES TO CUT A NEW PATH THROUGH THE CORE CREATING A SPIRAL OR THREADLIKE GROOVE.

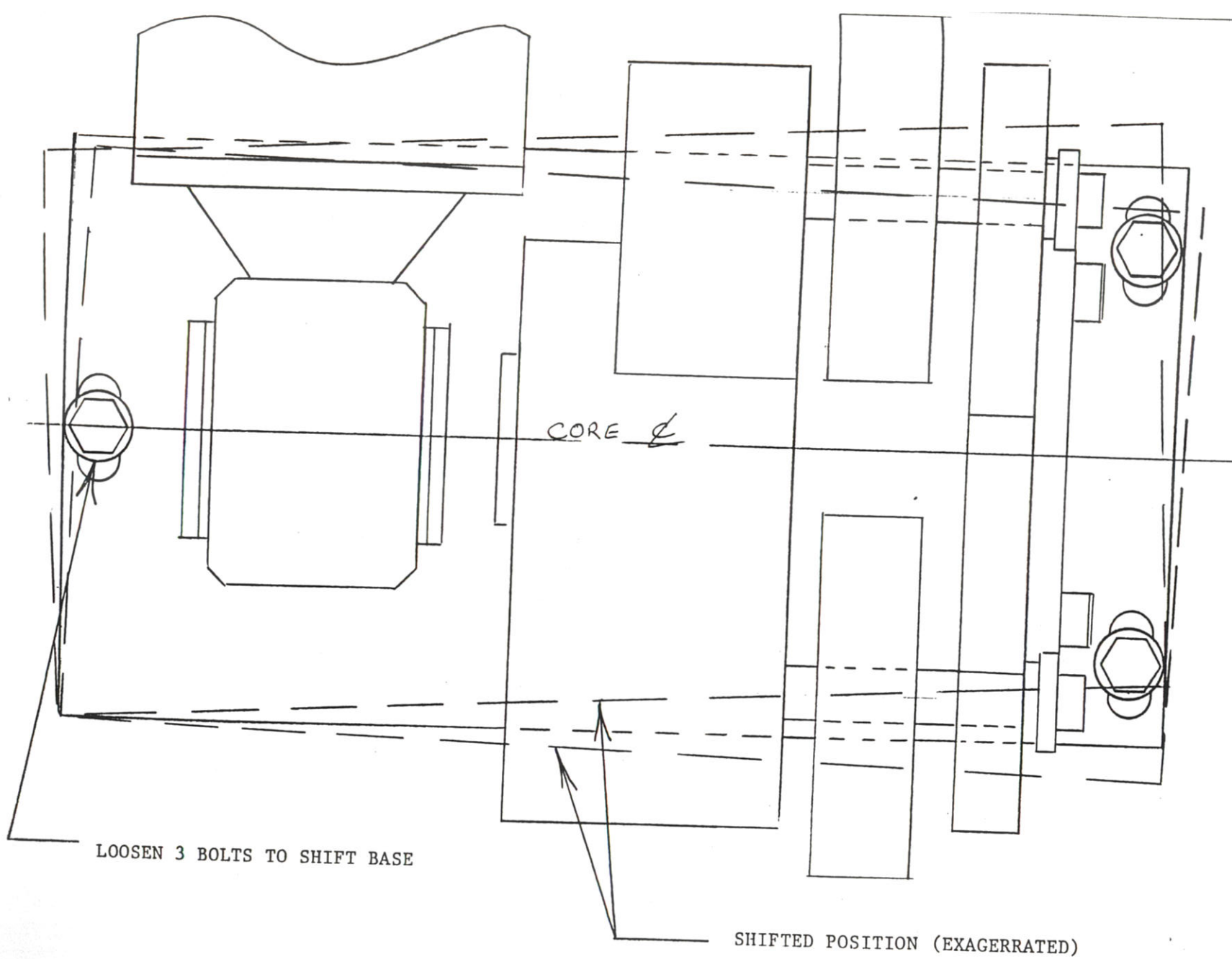
### **PROCEDURES**

IN ALL CASES, BEFORE TRYING TO CORRECT THE PRECEDING CONDITIONS, IT IS IMPORTANT THAT THE FOLLOWING ARE CHECKED.

- THE DRIVE ROLLERS MUST BE ADJUSTED TO THE PROPER POSITION AS DETAILED IN SECTION 2-4. - THE MANDREL HEIGHT MUST BE SET SO THAT THE CORE IS LEVEL OR SLIGHTLY RAISED AT THE REAR OF THE MACHINE - THE ANVIL AND CHUCK MUST NOT BE UNDERSIZED. TYPICAL VALUES ARE .015" UNDER THE CORE FOR THE ANVIL AND .030" UNDER FOR THE CORE CHUCK.
- THE KNIFE BLADE SHOULD BE IN REASONABLY GOOD CONDITION.

### **CORE WALKING**

THE IDEAL CONDITION IS TO HAVE THE CORE REMAIN STATIONARY WHILE ROTATING. A SLIGHT BACKWARD WALK IS ALSO ACCEPTABLE SINCE THE CORE WILL GO UP AGAINST THE STEP ON THE CORE CHUCK. FIRST, NOTE THE LOCATION OF THE BOLTS IN THE SLOTS ON THE RIGHT SIDE OF THE DRIVE BASE. WITH THE CORE ROTATING, LOOSEN THE THREE (3) BOLTS HOLDING THE DRIVE BASE TO THE FRAME AND TWIST(ROTATE) IT WITH RESPECT TO THE FRAME CENTERLINE. (SEE FIG. 1) TRY EACH DIRECTION AND OBSERVE THE REACTION OF THE CORE. FIND THE POSITION WHERE THE CORE DOES NOT WALK BUT AS THE BASE IS ROTATED, TRY TO KEEP THE BOLTS ON THE RIGHT SIDE IN THE SAME POSITION IN THEIR SLOTS AS BEFORE THEY WERE LOOSEN. THIS KEEPS THE ROLLERS ON THE SAME BASE CENTERLINE AS THE ORIGINAL SETUP. TIGHTEN THE BOLTS AND VERIFY THAT THE CORE IS STILL STATIONARY WHILE ROTATING.



DRIVE BASE POSITION

FIG. 1



## CUT SKIP/THREADING

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

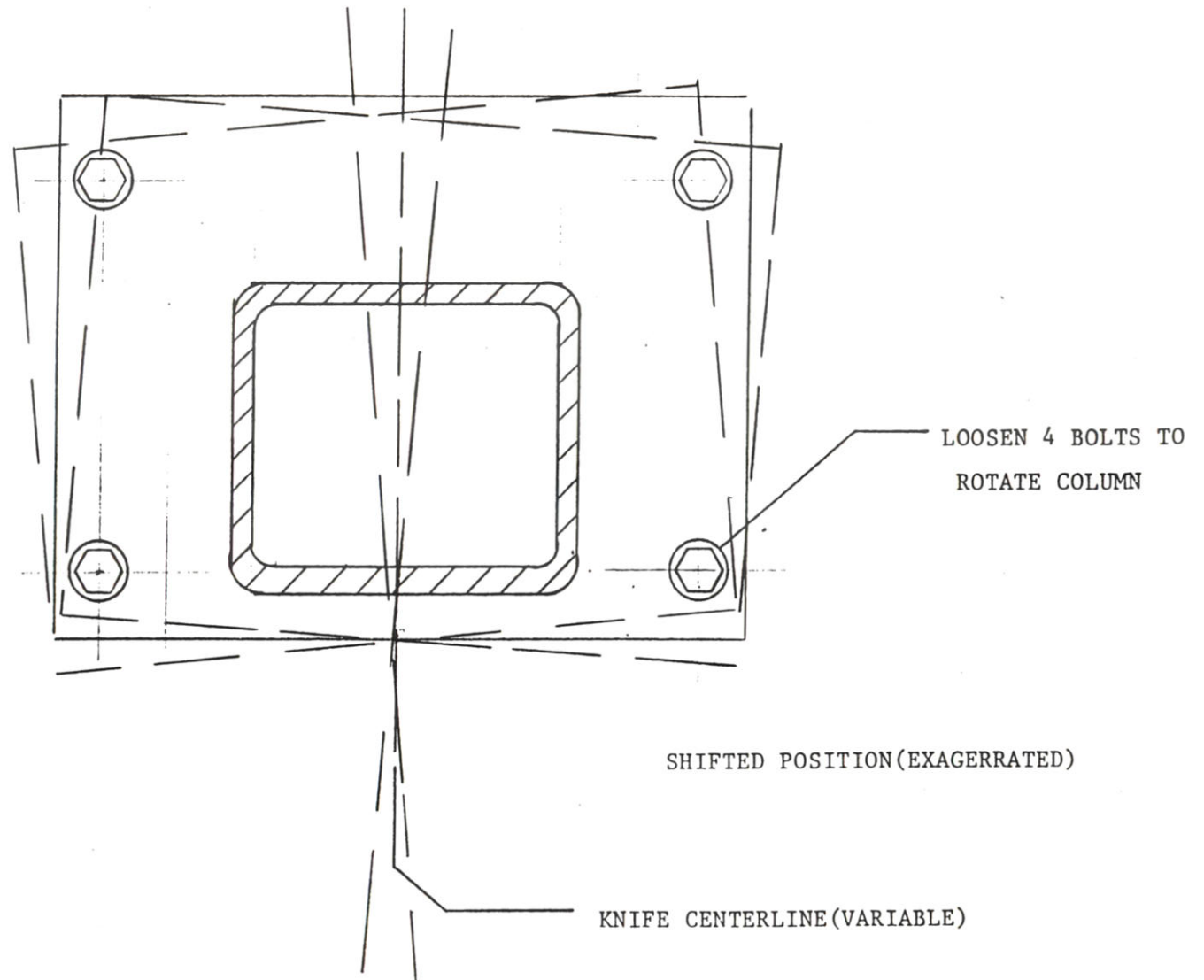
THE KNIFE SPEED IS CONTROLLED BY AN INLINE FLOW CONTROL LOCATED ON THE REAR OF THE KNIFE COLUMN(ON HYDRAULIC KNIFE MACHINES THE FLOW CONTROL IS ON THE HYDRAULIC VALVE). TURNING THE FLOW VALVE CLOCKWISE WILL LIMIT THE FLOW AND SLOW THE KNIFE SPEED. OPEN THIS FLOW TO INCREASE KNIFE SPEED BEFORE ADJUSTING THE COLUMN SINCE IT WILL ACCENTUATE THE CONDITION. THE KNIFE COLUMN ADJUSTMENT IS A ROTATION SIMILAR TO THE DRIVE BASE. LOOSEN THE FOUR (4) BOLTS HOLDING THE KNIFE COLUMN AND ROTATE IT. (SEE FIG. 2) A PRECISION SQUARE PLACED ON THE FRONT OF THE COLUMN TUBING AND ALIGNED ACROSS THE CUTTING ANVIL FACE IS A GOOD STARTING POINT. EACH TIME THE COLUMN IS ROTATED, MAKE CUTS AFTER TIGHTENING THE BOLTS TO SEE IF THE CUT SKIP IMPROVES OR WORSENS. IT WILL SOON BE APPARENT WHICH DIRECTION THE ROTATION MUST BE TO GET BETTER RESULTS.

ONCE THE SKIP HAS BEEN ELIMINATED OR MINIMIZED AT BEST, THE FLOW CONTROL CAN BE ADJUSTED TO SLOW THE KNIFE AND REMOVE ANY REMAINING SKIP.

**IMPORTANT :** IF THE COLUMN IS ROTATED CONSIDERABLY, THE KNIFE POSITION ON THE CUTTING ANVIL WILL CHANGE. THE MANDREL MUST BE MOVED IN OR OUT TO POSITION THE CUTTING ANVIL UNDER THE KNIFE. SEE SECTION 4-1

FOR VERY FINE ADJUSTMENT, BRING THE KNIFE DOWN WITH THE CORE ROTATING AND WHEN THE KNIFE JUST KISSES THE CORE SURFACE, LOWER THE KNIFE SPEED POT TO ZERO OR STOP TURNING THE KNIFE ADJUST HANDWHEEL. OBSERVE IF THE KNIFE TRACKS IN THE SAME SMALL GROOVE AS IT ROTATES. IF THREADING IS OBSERVED, ADJUST KNIFE COLUMN AS ABOVE AND REPEAT UNTIL KNIFE TRACKS IN ORIGINAL GROOVE. MAKE CUTS PER NORMAL PROCEDURES AND OPEN FLOW UNTIL SKIP OCCURS - THEN DECREASE SLIGHTLY TO FINAL SETTING.





KNIFE COLUMN POSITIONING

FIG. 2

## **TROUBLESHOOTING CUT LENGTH VARIATIONS**

THERE ARE MANY REASONS WHY THE CUT LENGTHS FROM A CORE MAY NOT APPEAR TO BE CORRECT. THESE CAN RANGE FROM INCORRECT DATA ENTRY, METHOD OF MEASUREMENT, MECHANICAL OR ELECTRICAL PROBLEMS, OR CORE ISSUES. THE MOST IMPORTANT FACTOR IN THIS AREA IS TO DETERMINE IF PARTICULAR CUTS ARE AT FAULT OR IF THE CUTS IN QUESTION APPEAR TO BE TOTALLY RANDOM IN NATURE. SOME BASIC POSSIBILITIES ARE OUTLINED BELOW.

CUTS ARE INCORRECT BUT CONSISTENT - CHECK JOB SETUPS

- CUT LENGTH DATA IS NOT ENTERED CORRECTLY
- DATA IS NOT OPERATING UNDER CORRECT CONVERSION - INCH/MM
- MEASUREMENT DEVICE OR METHOD IS FAULTY

CUTS ARE MOSTLY LONG - CORE IS NOT HELD SECURELY ON CHUCK

- CORE IS WALKING OFF CHUCK EACH TIME IT IS IN POSITION.
- CHECK CORE CHUCK SIZING & SEE SECTION ON CORE WALKING

CUT LENGTHS ARE ERRATIC(BOTH LONG & SHORT)

- PLAY IN AUTO FEED LINKAGE AREA. CHECK PIVOT BOLT/TAPER BEARING TAKEUP IN LINK ARM AND ALL BOLTS IN HORIZONTAL AND VERTICAL ARMS.
- PLAY IN KNIFE YOKE ASSEMBLY OR IN KNIFE MOUNTING. CHECK SET SCREWS IN YOKE PIVOT PIN. KNIFE SHOULD SPIN BUT NOT WOBBLE WHEN AXLE BOLT IS TIGHT.
- TRIM EJECT ASSEMBLY IS NOT BEING PUSHED BACK TIGHT AGAINST CORE STOP DURING CORE LOADING. ANY SPACE ALLOWS CORE TO UNSEAT FROM CORE CHUCK. LOOSEN TWO LOCKING SCREWS AND SLIDE STOP FORWARD AGAINST CLAMP BODY AT MOMENT LOAD RAM IS AT FULL EXTENSION.
- SKIP CUT CONDITION EXISTS AND CORES ARE NOT CONSISTENT IN WIDTH AS MEASURED AT 4 PLACES 90 DEGREES APART AROUND THE DIAMETER. A CUT SHOULD BE SQUARE - THAT IS MEASURE THE SAME WIDTH ALL AROUND (WITHIN .005) OR ELSE CUTS AS A GROUP WHEN MEASURED WILL VARY. IF SKIP CUT EXISTS, CORRECT AS DESCRIBED IN THAT SECTION.
- CORES ARE WARPED SEVERELY RESULTING IN WOBBLY CUT. CUT LENGTH WILL NOT BE ACCURATE SINCE LENGTH WITHIN EACH PIECE VARIES.

NOTE: WHEN DETERMINING THE CAUSE OF CUT INACCURACIES, IT IS HELPFUL TO NUMBER THE CUTS AS THEY COME OFF THE MACHINE. IF A PATTERN CAN BE FOUND IN TERMS OF SPECIFIC CUT POSITIONS, THIS CAN BE AN AID IN SOLVING THE LENGTH PROBLEM.

## **TROUBLESHOOTING PNEUMATIC SOLENOIDS**

MOST OF THE STANDARD AIR SOLENOIDS USED ON THE MODEL 11 ARE OF THE 4 WAY SPRING RETURN TYPE. ALL THESE SOLENOIDS CONTAIN A SMALL 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 PROBLEMS LIES WITH THE VALVE/ELECTRICS OR THE CYLINDER/PIPING.

FOR REPLACEMENT, THE VALVES HAVE AN EXTERNAL PLUG IN FEATURE FOR THE WIRING. IF A VALVE DOES NEED TO BE REPLACED, SIMPLY TURN THE SMALL SCREW IN THE PLUG BODY UNTIL THE PLUG CAN BE SEPARATED FROM THE SOLENOID BODY. TO REMOVE A VALVE FROM THE VALVE STACK, REMOVE THE TWO 10-32 CAP SCREWS FROM THE END PLATE AND SLIDE VALVES OFF THE LOCATING RODS UNTIL THE SPECIFIC VALVE IS LOCATED. WHEN REASSEMBLING THE STACK, MAKE SURE THAT THEW SMALL SEALING RINGS ARE PROPERLY POSITIONED IN THEIR POCKETS.

BOTH INDIVIDUAL AND STACKING BODY TYPE VALVES HAVE BUILT IN INTEGRAL EXHAUST FLOW CONTROLS. THESE CONSIST OF A SLOTTED THREADED STUD AND A LOCKING NUT. BY LOOSENING THE NUT AND TURNING THE SCREW INWARD, THE EXHAUST FLOW FROM THAT PORT IS RESTRICTED AND THE CYLINDER SPEED IS SLOWED. THESE FLOWS ARE PRESET DURING MACHINE TESTING AND SHOULD NOT NEED TO BE ADJUSTED.



## **MODEL 11 CORECUTTER**

### **PREVENTATIVE MAINTENANCE**

#### **DAILY**

- BLOW OFF MACHINE WITH AIR GUN

#### **WEEKLY**

- WIPE DOWN 1.5" AND 1.25" HARDENED SHAFTS WITH A CLEANING SOLVENT. THEN APPLY A LIGHT OIL TO A RAG AND WIPE THE 1.5" SHAFT(AUTO FEED SHAFT THAT LINEAR BEARINGS TRAVERSE). THIS OIL PREVENTS WIPER SEALS ON BEARINGS FROM WEARING OUT.
- APPLY A GREASE(LUBRIPLATE FOR EXAMPLE) TO INSIDE SURFACE OF TRIM EJECT RING WHERE IT CONTACTS THE CORE CHUCK AND TRIM EJECT BODY.
- DRAIN WATER FROM FILTER REGULATOR SYSTEM USING MANUAL DRAIN FEATURE AT BOTTOM OF POLYCARBUNATE BOWL.

#### **SIX MONTHS**

- CHECK GEAR OIL IN CORE LOAD, DRIVE BASE, AND CONVEYOR REDUCERS
- REMOVE AUTO FEED SHAFT FROM CORE FEED CARRIAGE AND INSPECT AND GREASE LINEAR BEARINGS. AT THIS TIME, ALSO INSPECT ROLLER BEARINGS ON ROH'LI'X ASSEMBLIES ON BOTH CORE FEED AND CORE LOAD SYSTEMS. (IF MACHINE INCLUDES FLOATING BLOCK SHAFT SUPPORT ASSEMBLIES, THESE BEARINGS SHOULD BE INSPECTED AT THIS TIME AS WELL)
- INSPECT "V" WHEELS AND RAILS ON CORE FEED AND CORE LOAD SYSTEMS FOR LOOSENESS AND/OR BROKEN WELDS
- CHECK ADJUSTMENT OF TAPER BEARING ASSEMBLY AT PUSHER LINK. THERE SHOULD BE NO SIDE TO SIDE PLAY IN THIS ASSEMBLY.
- CHECK POSITION OF ALL FLEX COUPLINGS ON CORE FEED AND CORE LOAD SHAFTS. COUPLING HALVES SHOULD BE CENTERED EQUALLY ON EACH SHAFT WITH SET SCREWS TIGHT.
- INSPECT CONDITION OF RUBBER COATED DRIVE ROLLER. RUBBER SURFACE SHOULD BE SMOOTH WITH NO GOUGES OR DEEP DEPRESSIONS.

## MAINTENANCE PROCEDURE

### INSPECTION OF LINEAR BEARINGS IN CORE FEED

THE FOLLOWING PROCEDURE SHOULD BE USED TO GAIN ACCESS TO THE LINEAR BEARINGS IN THE AUTOMATIC CORE FEED ASSEMBLY. IT IS RECOMMENDED THAT SPARE BEARINGS (PT. NO. 010-50904) BE ON HAND BEFORE ATTEMPTING THIS PROCEDURE SINCE REMOVAL OF THE SHAFTING COULD CAUSE THE COLLAPSE OF A FAILED BEARING RESULTING IN THE SHUT DOWN OF THE MACHINE.

- REMOVE ANY CORE FROM MACHINE AND POSITION CORE FEED CARRIAGE NEAR THE FRONT OF ITS TRAVEL (LIMIT SWITCH END)
- SHUT DOWN MACHINE USING E-STOP BUTTON
- REMOVE THE FOUR BOLTS HOLDING THE SERVO MOTOR TO ITS MOUNTING PLATE. ONCE THE MOTOR IS UNBOLTED, IT CAN BE SEPARATED FROM THE SHAFT AT THE FLEX COUPLING AND SWUNG DOWNWARD ON ITS FLEXIBLE SEALTITE CONNECTION UNTIL IT IS ON (NEAR) THE FLOOR AND OUT OF THE WAY.
- LOOSEN THE TWO SHAFT SET SCREWS IN EACH PILLOW BEARING.
- PREPARE TO SLIDE THE SHAFTING TOWARD THE REAR OF THE MACHINE OUT OF THE CARRIAGE. **BEFORE DOING THIS HOWEVER, PLACE A SMALL PIECE OF WOOD JUST BEHIND THE CARRIAGE ON TOP OF THE "V" RAIL.** PULL THE SHAFT TOWARD THE REAR OF THE MACHINE SO IT CLEARS THE FIRST BEARING, ROH'LIX ASSEMBLY, AND FINALLY THE REAR BEARING. CAREFULLY PLACE THE END OF THE SHAFT ON THE PIECE OF WOOD SO AS NOT TO DAMAGE THE SONY SCALE WHICH IS LOCATED BETWEEN THE RAILS.
- EXAMINE THE LINEAR BEARINGS, ESPECIALLY THE INNER RACE RETAINERS FOR SIGNS OF CRACKING. ALL BEARING RUNS SHOULD HAVE THE FULL COMPLEMENT OF BALL BEARINGS. LOOSE OR MISSING BALLS IS A SIGN OF BEARING FAILURE AND THEY SHOULD BE REPLACED.
- TO REPLACE A LINEAR BEARING, USE A SNAP RING PLIER TO REMOVE THE OUTER SNAP RING AND THEN THE RING SPACER FROM THE BEARING ASSEMBLY. PULL THE ROH'LIX ASSEMBLY FORWARD ON ITS SLIDE TO ALLOW ENOUGH ROOM INSIDE THE CARRIAGE TO PUSH THE LINEAR BEARING/INSERT THROUGH AND OUT OF THE RADIAL BEARING. THE LINEAR BEARING CAN NOW BE PRESSED OUT OF THE INSERT AND REPLACED. BE SURE TO GREASE THE NEW LINEAR BEARING AT INSTALLATION.
- AT THIS POINT IT IS ALSO CONVENIENT TO CHECK THE CONDITION OF THE ROLLER BEARINGS ON THE ROH'LIX ASSEMBLY. IN ADDITION TO THEIR CONDITION, MAKE SURE THAT THE SHOULDER SCREWS THAT HOLD THEM TO THE BLOCK ARE TIGHT.
- TO REASSEMBLE THE UNIT, LINE UP THE ROH'LIX BORE WITH THE LINEAR BEARINGS AND PUSH THE SHAFTING THROUGH THE ENTIRE ASSEMBLY. BOLT THE SERVO MOTOR ONTO ITS MOUNT, CONNECT THE SHAFTING TO THE MOTOR AT THE FLEX COUPLING, AND TIGHTEN THE SHAFT SET SCREWS ON EACH PILLOW BEARING.



## **MAINTENANCE PROCEDURE**

### **DISASSEMBLY OF TRIM EJECT/PUSHER ASSEMBLY**

THE FOLLOWING PROCEDURE IS USED TO GAIN ACCESS TO EITHER THE LINEAR BEARINGS OR THE PUSHER BEARING FOR THE PURPOSE OF REPLACEMENT OR LUBRICATION. ALTHOUGH THE REPLACEMENT OF THESE BEARINGS IS INFREQUENT, IT IS RECOMMENDED TO HAVE SPARES ON HAND BEFORE ATTEMPTING EVEN A LUBRICATION PROCEDURE.

- ADVANCE THE TRIM EJECT/PUSHER ASSEMBLY TO ITS FORWARD TRAVEL LIMIT. THE MANDREL LIFTER SHOULD BE ENGAGED, LIFTING THE ANVIL OFF THE DRIVE ROLLERS.
- E-STOP THE MACHINE.
- REMOVE THE CUTTING ANVIL AND CORE CHUCK. PULL THE QUICK RELEASE PINS FROM THE TRIM RING CLEAVISES AND REMOVE THE RING.
- REMOVE THE TWO SCREWS HOLDING EACH TRIM EJECT CYLINDER AND REMOVE THE CYLINDERS FROM THE TRIM EJECT BODY – LEAVING THE AIR LINES AND REED SWITCH WIRES CONNECTED. CAREFULLY LAY THESE PARTS BACK ON THE CARRIAGE.
- LOOSEN THE 10-32 SET SCREW AND THEN REMOVE THE 1/4-20 SCREW HOLDING THE MANDREL CLAMP TO THE REAR OF THE TRIM EJECT BODY. SLIDE THE CLAMP BACK ON THE MANDREL AWAY FROM THE MAIN BODY.
- REMOVE THE TWO 1/4-20 SCREWS THAT HOLD THE LINK BEARING BLOCK TO THE TOP OF THE TRIM EJECT BODY. ROTATE THE LINK ARM/BLOCK UPWARD. THE TRIM EJECT BODY SHOULD NOW BE CLEAR OF ALL CONNECTIONS.
- SLIDE THE BODY OFF THE MANDREL. REMOVE THE TWO 1/4-20 NUTS FROM THE STUDS TO SEPARATE THE BODY INTO TWO PIECES. THE REAR PORTION CONTAINS THE LINEAR BEARINGS. THESE CAN BE PUSHED OUT AND REPLACED IF NECESSARY. IF BEARINGS ARE STILL GOOD, CLEAN AND GREASE BEFORE REASSEMBLY.
- THE FRONT PORTION CONTAINS THE PUSHER BEARING. TO ACCESS THIS BEARING, ALTERNATELY TURN TWO 1/4-20 STUDS THROUGH THE HOLES IN THE PUSHER CAP TO "LIFT" THE CAP OFF THE BEARING O.D. THE BEARING CAN NOW BE EXAMINED AND CLEANED. TO REMOVE THE BEARING FROM THE BEARING MOUNT, ALTERNATELY TURN TWO 10-32 SCREWS FROM THE BACK OF THE MOUNT TO PUSH THE BEARING OFF THE MOUNT.
- THE PUSHER BEARING CONSISTS OF THREE PIECES. WHEN REASSEMBLING THE BEARING AFTER CLEANING AND LUBRICATION, MAKE SURE THAT THE TWO SMALL RADII ON THE INNER RACES ARE PLACED TOGETHER. THE BEARING IS PRESSED BACK ONTO THE MOUNT WITH THE SMALL INNER RACE RING GOING ON FIRST. FOR LUBRICATION, A COMBINATION OF WHITE GREASE AND SPINDLE OIL IS BEST. MACHINES THAT ARE RUNNING SMALL CORES(LESS THAN 3") SHOULD USE A LIMITED AMOUNT OF THE GREASE(JUST SMEAR IT ON THE ROLLERS). AN EXCESSIVE AMOUNT OF GREASE WILL LIMIT THE ROTATION OF THE UNIT ONCE IT IS ASSEMBLED. THE SPINDLE OIL HELPS LOOSEN UP THE BEARING AND ENCOURAGE ROTATION.



- ONCE THE BEARINGS HAVE BEEN SERVICED AND THE TWO PORTIONS OF THE BODY HAVE BEEN CONNECTED WITH THE THREADED STUDS, THE TRIM EJECT BODY SHOULD BE SLID BACK ONTO THE MANDREL AND THE CYLINDERS, CLAMP, AND PUSHER LINK BLOCK SHOULD BE ATTACHED. KEEP THE TRIM EJECT CYLINDERS LOOSE UNTIL THE TRIM EJECT RING IS INSTALLED WITH THE QUICK PINS SINCE THIS WILL HELP ALIGN THE CYLINDERS TO ONE ANOTHER. ALSO, WHEN ATTACHING THE CLAMP TO THE REAR OF THE TRIM EJECT BODY, APPLY A LITTLE GREASE TO THE SURFACE OF THE CLAMP THAT TOUCHES THE BODY. TO ADJUST THE CLAMP TO BODY CONNECTION PROPERLY, TURN THE 1/4-20 SCREW IN UNTIL IT IS TIGHT AND THEN BACK IT OFF 1/8 OF A TURN. THE CLAMP SHOULD BE ABLE TO ROTATE ON THE SCREW BUT HAVE NO SIDE TO SIDE PLAY. IF THE ADJUSTMENT IS CORRECT, LOCK THE MOUNTING SCREW IN PLACE WITH THE SET SCREW.
- FINISH BY REINSTALLING THE CORE CHUCK AND THE CUTTING ANVIL.

## **MAINTENANCE PROCEDURE**

### **INSTALLATION/ADJUSTMENT OF ROH'LIX**

THE FOLLOWING PROCEDURE IS USED TO INSTALL A ROH'LIX ASSEMBLY ON A CORE FEED WITH A SERVO SYSTEM. SEE SEPARATE PROCEDURE ON INSPECTION OF LINEAR BEARINGS FOR PROCEDURE ON REMOVING SHAFT FOR ACCESS TO ROH'LIX.

PRIOR TO ITS INSTALLATION, CHECK THAT THE DOVETAIL SLIDE UNIT ON THE ROH'LIX IS ADJUSTED PROPERLY. THE UPPER PORTION SHOULD SLIDE FREELY ON THE TWO LOWER PIECES WHICH ARE BOLTED TO THE ROH'LIX BUT THERE SHOULD BE NO SIDE TO SIDE PLAY. ADJUSTMENT IS MADE BY LOOSENING THE LOCK NUTS ON THE SIDE AND TURNING THE GIBB SCREWS INWARD TO A SLIGHT TOUCH. WHEN ALL SCREWS HAVE BEEN ADJUSTED AND ALL NUTS ARE SECURE, CHECK THAT THE SLIDE MOVES FREELY. IT IS NOW READY FOR INSTALLATION WITH THE ROH'LIX.

- POSITION (4) 10-32 X  $\frac{3}{4}$  SET SCREWS IN HOLES IN CARRIAGE TOP PLATE SO THEY ARE FLUSH WITH BOTTOM OF PLATE.
- POSITION ROH'LIX ASSEMBLY INTO CARRIAGE BY SLIDING ONE PART OF DOVETAIL SLIDE INTO OTHER .
- SLIDE SHAFTING THROUGH ASSEMBLY AND SECURE WITH SET SCREWS.
- APPLY AIR TO ROH'LIX ASSEMBLY SO ROH'LIX IS CLAMPED ON SHAFTING
- START (4) 10-32 X 1" BOLTS THROUGH TOP PLATE INTO SLIDE BUT DO NOT TIGHTEN.
- SQUARE ROH'LIX ASSEMBLY TO CARRIAGE USING A SMALL SQUARE ON TOP PLATE AND A SECOND ACROSS TOP CYLINDER AS SHOWN IN FIGURE 1.
- TURN PREVIOUSLY MENTIONED SET SCREWS IN TO A TOUCH AGAINST SLIDE
- TIGHTEN (4) 10-32 BOLTS

IF THERE IS ACCESS TO AN AMPMETER, THE ADJUSTMENT CAN BE CHECKED BY READING THE AC AMPERAGE ON THE WIRE TO THE SERVO MOTOR WHILE THE CARRIAGE IS IN MOTION. A GOOD READING IS IN THE 4-5 AMP RANGE. A READING IN THE 10 + RANGE WOULD INDICATE THE UNIT IS BINDING AND SHOULD BE READJUSTED.

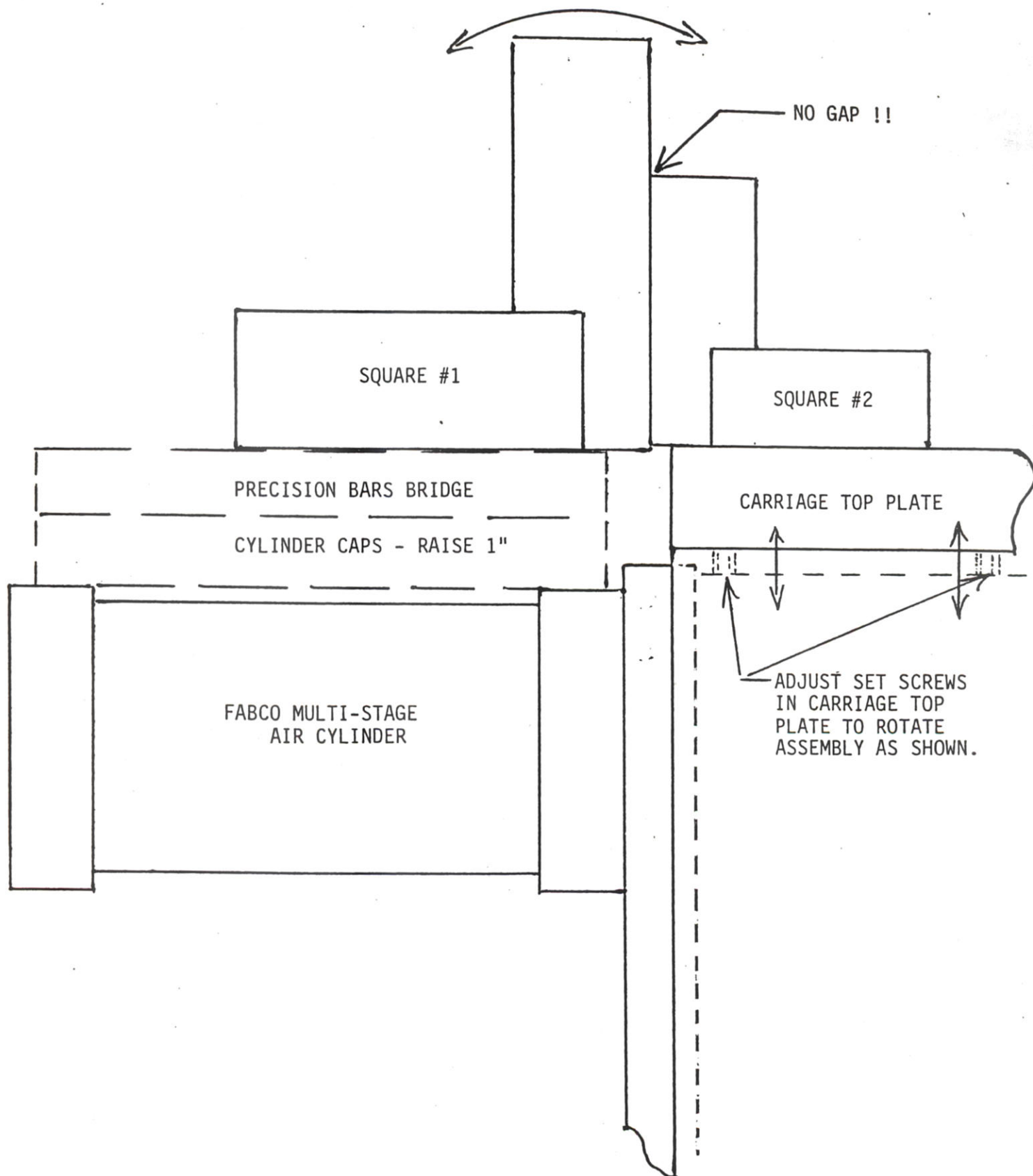


FIGURE 1.

ROH'LIX ASSEMBLY TO TOP PLATE  
SLIDE ADJUSTMENT VIEW



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