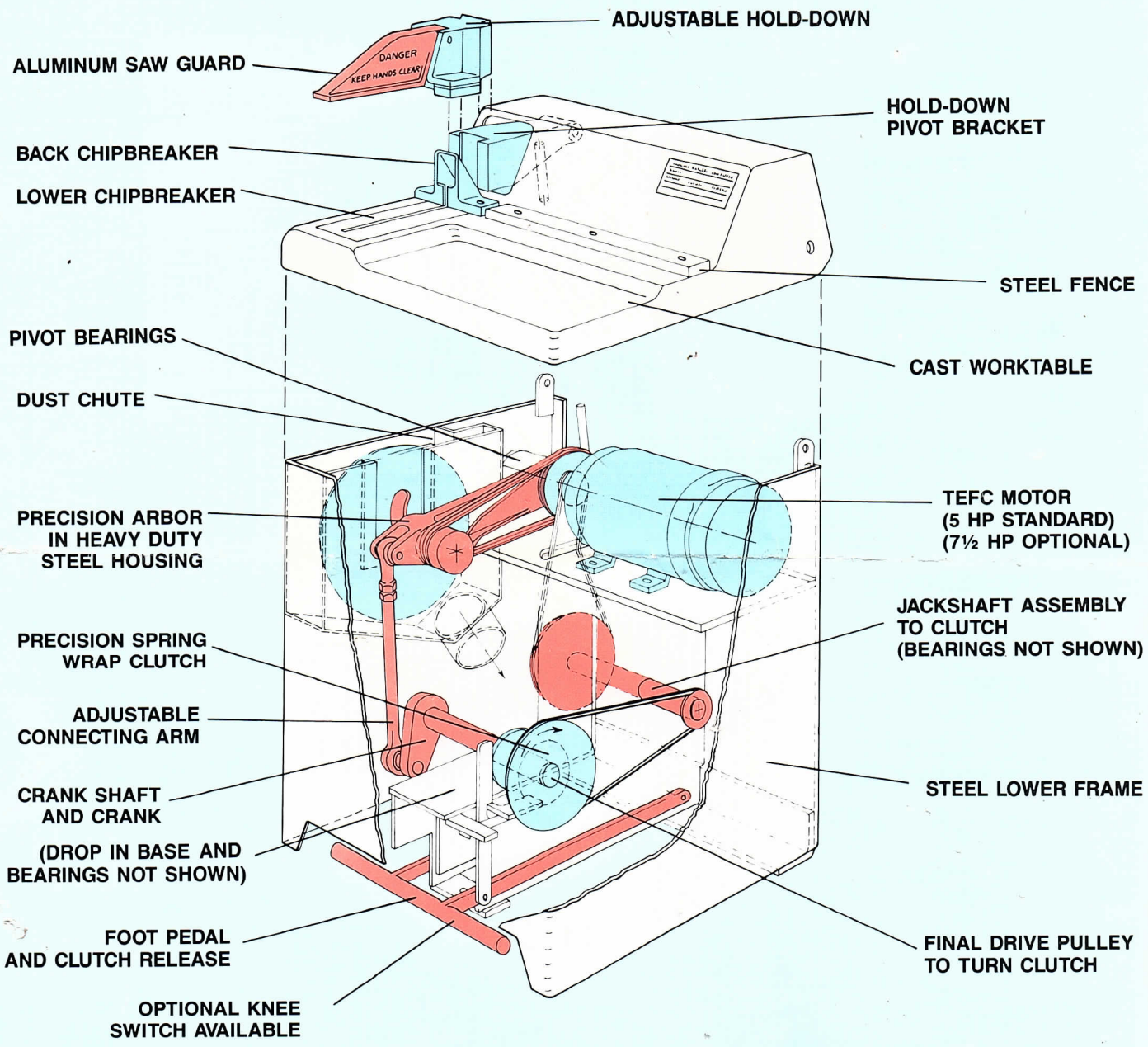
PRECISION PRODUCTS CO.

MECHANICAL CHOP SAW



- ***160 Cycles Per Minute***
  (Other Speeds Available)

THINK ABOUT IT !!

SAFETY INSTRUCTIONS & SERVICE MANUAL

FOR

PRECISION PRODUCTS CUT-OFF SAWS

CAUTION

DO NOT OPERATE THE SAW UNTIL YOU HAVE READ THIS MANUAL AND UNDERSTAND ITS OPERATION THOROUGHLY!!!

PRECISION PRODUCTS DOES NOT ACCEPT LIABILITY CONNECTED WITH THE USE OF THIS SAW. IT IS IMPERATIVE THAT OPERATORS UNDERSTAND NORMAL SAFETY PROCEDURES REGARDING THIS SAW.

THINK ABOUT IT

NEVER PLACE HANDS IN THE PATH OF THE BLADE !!

THIS SAW IS CAPABLE OF CUTTING OFF A HAND IN LESS THAN 1/4 SECOND. NO HUMAN CAN REACT IN LESS TIME.

THINK ABOUT IT !!

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LIMITED WARRANTY,

LIMITATION OF REMEDY AND LIABILITY

AND INDEMNITY AGREEMENT

PRECISION PRODUCTS CO. WARRANTS THAT EQUIPMENT MANUFACTURED BY SAME WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF 90 DAYS FROM DATE OF PURCHASE.

TERMS OF THE WARRANTY ARE LIMITED TO THE REPAIR OR EXCHANGE OF COMPONENTS MANUFACTURED BY PRECISION PRODUCTS CO. UPON INSPECTION BY AUTHORIZED REPRESENTATIVE OF PRECISION PRODUCTS CO. ALL OTHER WARRANTIES, EXPRESS OR IMPLIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE HEREBY DISCLAIMED.

REPAIRS OR REPLACEMENTS OF DEFECTIVE PARTS WILL BE F.O.B. PRECISION PRODUCTS CO. AND RETURNED GOODS MUST BE FREIGHT PREPAID.

THIS WARRANTY DOES NOT APPLY TO EQUIPMENT WHICH HAS BEEN REPAIRED OR ALTERED BY THE USER AND DOES NOT ALLOW FOR REPLACEMENT OF PRECISION PRODUCTS CO. MANUFACTURED COMPONENTS OR PARTS FOR NORMAL WEAR AND TEAR.

PRECISION PRODUCTS CO. HAS DESIGNED THESE SAWS WITH MAXIMUM SAFETY, PRODUCTIVITY, AND SERVICE IN MIND. HOWEVER, THE USE AND SAFE OPERATION OF THESE MACHINES IS OUT OF PRECISION PRODUCTS CO.'S CONTROL AS SOON AS THE MACHINES LEAVE THE PREMISES OF PRECISION PRODUCTS CO. CONSEQUENTLY, PRECISION PRODUCTS CO. DOES NOT ACCEPT ANY LIABILITY FOR SAFETY, CONSEQUENTIAL DAMAGES TO PERSONS OR PROPERTY, SERVICE, LOSS OF USE, OR ANY OTHER CLAIMS IN CONNECTION WITH THESE SAWS. OPERATION, SERVICE, SAFETY AND MAINTENANCE ARE THE RESPONSIBILITY OF THE BUYER.

FURTHERMORE, AND IN LIGHT OF THE FOREGOING, BUYER AGREES TO INDEMNIFY AND DEFEND PRECISION PRODUCTS CO. AGAINST ALL LOSSES, CLAIMS, LIABILITIES, DAMAGES AND EXPENSES, INCLUDING ATTORNEYS FEES, THAT ARISE OUT OF, OR RESULT FROM, INJURIES OR DEATH TO PERSONS (INCLUDING BUYER'S EMPLOYEES) OR PROPERTY THAT ARISE OUT OF THE SALE OR USE OF THESE SAWS, REGARDLESS OF WHETHER SAID LOSSES, CLAIMS, LIABILITIES, DAMAGES OR EXPENSES ARE DUE TO THE NEGLIGENCE OF PRECISION PRODUCTS CO.

INTRODUCTION

The Precision Cut-Off Saw is an upcutting cut-off saw, designed to cut off ends, defects, etc., from pieces of wood, aluminum and plastics.

The saw can be used in most places where a radial arm saw is presently in use. In some ways, this up-cutting saw is safer than a radial arm saw. For instance, the Precision Products saw is guarded from above, and clamps the work piece from above, making it rather difficult to place a finger or hand in the path of the blade. Also, the direction of rotation of the saw blade does not "self-feed" as it does with a radial arm saw. Instead it is forced up thru the work piece from below, however, DO NOT CONSIDER THIS SAW SAFE.

Think about it. If you operate or hire an operator to run one of these saws, **it can cut off hands or fingers faster than a human can react**.

The Precision Cut-Off Saw is faster than a radial arm saw. It is useful for any operation that has many cuts to be made in a given period of time.

The mechanical concept of this saw provides a very controlled feed of the saw blade thru the work piece, providing a smooth accurate cut. Both mechanical and air operated versions of this saw have chipbreakers bottom and rear to support the work piece to minimize tearout.

The saw is generally operated by a single operator, standing just to the right or left of the saw blade, keeping their hands to either side of the saw blade and then tripping the foot pedal or knee switch to actuate the saw cut. The cut piece is removed by pulling it out or pushing it out with the balance of the work piece. **THINK ABOUT IT, and never place fingers or hands in the path of the blade.**

Conveyors may be used in conjunction with this saw to assist in bringing long or heavier pieces into position for cutting. Also, outfeed conveyors may be utilized, with present length stops to cut selected lengths. Precision Products offers a full line of standard conveyors for this saw.

SERVICING

A foremost consideration in the design of the saw was ease of service. Since the designer has worked on machines for many years, the designer made sure that every machine part was simple and accessible. Note that most service can be performed from the front of the machine simply by raising the top section. Only qualified personnel should attempt to open the saw for service and should always disconnect the power before doing so. **THINK ABOUT IT.**

OPERATION - NORMAL

To operate the Precision Products Undercutting Cut-Off Saw, simply follow these steps.

A. Familiarize yourself with the operation of the saw and its safety features. **NEVER PLACE YOUR HANDS IN THE PATH OF THE SAW BLADE.**

B. Push the "start" pushbutton. This will start the main saw motor. This action may cause the saw blade to raise and cycle once. Be prepared for this and DO NOT have hands in the path of the saw blade when pushing the "start" pushbutton.

C. With the main saw motor running, depress the foot pedal or knee switch to check the cycling of the saw blade for smooth up and down. **Remember**, never have hands in the path of the saw blade when depressing the foot pedal or knee switch. **THINK ABOUT IT.**

D. Place workpiece to be cut under the hold-down and position it firmly against the back side fence. Depress the foot pedal once and the saw blade will immediately cut the workpiece. After cutting, remove the workpieces. One final reminder and caution. At no time during the operation of this saw as just described, was it necessary to place your hands in the path of the saw blade. **THINK ABOUT IT.**

REMEMBER. This saw is faster than the fastest operator. NEVER PLACE YOUR HAND IN THE PATH OF THE SAW. THINK ABOUT IT!!!

OPERATION - ADJUSTMENTS

Always disconnect the power before making any adjustments. Be sure the saw blade is stopped and in the case of air powered saws, be sure and disconnect the air power source.

1. Adjusting the two piece adjustable hold-down.

   To adjust the adjustable hold-down:

   A. Stop the saw. (Turn off the power)
   B. Loosen the 1/2" bolts on the side of the hold-down.
   C. Adjust to desired height by hand, keeping fingers on either side of the saw blade path. This is very easy to do, and it is not necessary to place your fingers in the path of the saw blade. NEVER.

   D. Tighten the 1/2" bolts mildly tight, to lock hold-down.

   NOTE: It is not necessary to place fingers in the path of the blade to make the above adjustments. **THINK ABOUT IT.**

2. Adjusting the fence for a "square" cut.

   If the saw is NOT cutting within 1/16 to 1/8" of square it will sometimes be possible to correct this by re-adjusting fence. Note that this is not always possible, depending upon which way you need to adjust the fence, and whether the adjustment has or has not been used up. Simply loosen the three bolts holding the fence and re-align it. A right angle square placed against the fence and to the chipbreaker saw slot will tell you if the cut will be "square".

3. Opening the top for access to working parts.

   NOTE: Center bolt inside of hold-down MUST BE REMOVED BEFORE LID CAN BE RAISED.

   A. Turn off power.
   B. Remove 5/16" allen head screw at front of top.
   C. Remove center 1/2" bolt of hold-down.
   D. Lift top and pivot top to vertical rest position.
   E. When closing the top, always replace the allen head screw which locks the top in place, and the 1/2" hold-down bolt.

4. Installing a saw blade.

   A. TURN OFF THE POWER AND AIR WHERE APPLICABLE.
   B. Open top.
   C. Mount saw blade on arbor. Be sure teeth will cut towards back of saw. Be sure collars and arbor are clean.
   D. Tighten arbor nut; be sure nut tightens opposite of blade rotation. Place a piece of wood against the saw teeth while tightening the arbor nut to be sure nut is tight.
   E. Close top and lock.

5. Aligning the saw blade after replacing the arbor pivot arm, or to correct for "out of square" conditions.

A. Turn off power.
B. Remove chipbreakers (two - top and rear), and hold-down.
C. Open the top and install a saw blade.
D. Manually raise saw arm/blade to maximum up position. On air saws this can be done by physically lifting the arm as long as the air pressure is off. On mechanical saws, release the clutch dog and manually turn the pulleys until the arm is up.
E. Close the top over the raised blade and using a square, check the blade to the straightedge. Before making any corrections, check to see if the saw blade is vertical using the square or a plumb line or vertical level.
F. Assuming the straightedge is square, align the arm for both of the above conditions at the same time by adjusting and shimming the saw arm pivot bearings. No detailed explanation is necessary, but be aware that plumb is the more critical adjustment because some squareness can be adjusted with the straightedge.
G. Also be aware of the saw blades centering in the chipbreaker slot. It is not necessary for this to be "dead on" but should be within + 1/8". NOTE, if this new position of the saw blade is different than previous, a new set of chipbreakers may be required.
H. With the arm and blade aligned, re-check the straightedge and align if necessary.
I. Lower the saw arm.
J. Close the top and lock.
K. Replace or renew the chipbreakers.
L. Turn on power and cycle saw blade thru chipbreakers.

THINK ABOUT IT. NEVER ADJUST THE SAW WITH THE POWER ON. NEVER PLACE YOUR HANDS IN THE PATH OF THE BLADE.

6. Tightening the arbor drive belts.

The belts are rightened by moving the main drive motor back and forth in slotted mounting holes. Tension the belts only until they are suitably tight to prevent slipping under load. Do not overtighten. Normally this can be checked by feeling the tightness to be sure both belts are evenly tensioned and require 20-25 lbs. force to deflect the belts about 1/2".

7. Removing the clutch assembly for services. (Mechanical saws only).

A. It is only necessary to remove three bolts to pull the entire clutch/crankshaft assembly. Two of these bolts are located centrally between the two bearings on the crankshaft, and the third bolt is the connecting point at the main saw arm.
B. After removing the three bolts, hold aside the V-belt and lift the clutch, crankshaft, and crank connecting arm out of the saw.
C. This entire unit may now be placed on a workbench for service.

8. Servicing the clutch assembly.

TURN OFF THE POWER BEFORE SERVICING. DO NOT GREASE THE INNER SPRING - EVER!!! CLEAN OCCASIONALLY.

The clutch of your Precision Cut-Off Saw is a very simple device consisting of five basic parts.
1. Hub, input (rotates free on the shaft).
2. Hub, output (attached and keyed to the shaft).
3. Main clutch spring (a wrap spring with 20-21 wraps).
4. Release sleeve (a plastic ring around the wrap spring).
5. Actuator assembly.

The clutch assembly works as follows:

The input and output hubs are of equal diameter. The driver spring is wrapped around the two hubs and in its relaxed state is slightly smaller in diameter than the two hubs. Consequently, the spring fits tightly onto the hubs and in order to get it around the two hubs initially, it is necessary to "un-torque" or "unwrap" the spring slightly. As the spring is unwrapped, its diameter gets larger and it can be slipped over the two hubs. Upon releasing the spring after placing it over the hubs, it will wrap itself tightly back onto the two hubs. In this tightly wrapped position, the two hubs are locked together for rotation in one direction by the spring. Remember, in this tightly wrapped position, the spring is actually in its relaxed state.

When cycling or cranking the saw arm up and down, the driver spring is relaxed (tight) on the hubs, wrapping them together, providing a positive rotation. The clutch in this saw is rated a 2500 inch-point of torque with the spring in its relaxed state, wrapped tightly onto the hubs.

In order to stop the rotation, it is only necessary to unwrap the spring slightly which increases its diameter and allows the input hub to turn free inside the spring.

In the Precision Cut-Off Saw, the driver spring is unwrapped by the release sleeve (the plastic outer sleeve) to disengage the clutch and stop the crank cycle. Thus, any time the plastic release sleeve is stopped, the spring is unwrapped and the clutch is free running. (Not cranking). Conversely, any time the plastic release sleeve is released, the spring will wrap to its natural relaxed state, which tightens it onto the hubs and provides positive rotation.

The method of controlling when the clutch is cranking or not cranking is a mechanical actuator assembly. This actuator assembly is connected to a foot pedal or knee switch. When the foot pedal or knee switch is depressed, the actuator assembly releases the plastic release sleeve and the clutch cranks the saw up and down. When the foot pedal or knee switch is not pressed, the actuator assembly holds the release sleeve which unwraps the spring and disengages the crank.

The actuator assembly of the saw is designed to give only one rotation of the clutch each time the pedal or switch is depressed. Thus, the saw only makes one cut for each cycle of the pedal or switch which forces the operator to press it again for a second cut.

This is accomplished by the actuator assembly automatically disengaging from the foot pedal as the clutch makes a single revolution which automatically allows the actuator to hold the release sleeve to stop the crank.

The crank always stops in the same position for the following reasons:

(1) The clutch sleeve has a single stop which the actuator assembly always engages.
(2) The spring is bent on both ends, and engages the sleeve at only one point, and engages the output hub only at one point.
(3) The weight of the saw blade, arbor, and arm are on the bottom of their cycle.

To visually see the clutch in motion, turn off power and manually turn the clutch vee belt pulley in the normal direction of rotation. <u>The crank should not turn</u>. Now, manually depress the actuator assembly. The plastic release sleeve should immediately and freely turn approximately 30° in the direction of rotation. Now turning the vee belt pulley again should turn the crank. As one complete revolution is made, the sleeve will re-engage the actuator assembly and release the clutch, stopping the rotation of the crank. The actuator assembly should not rub the sleeve too hard, which would tend to hold back the spring.

With the power off, manually try the above several times until you understand how the clutch is actuated by releasing the plastic sleeve. If the clutch needs service and does not respond as just described, disassemble same and look for the following:

NOTE: DO NOT GREASE INNER SPRING - EVER!!

A. A broken spring.
B. Ends broken off the spring. (Each end should be bent 90° one end up/one end down, and these should be in line with the spring off the hubs and relaxed).
C. Input hub not rotating freely when the vee belt pulley is attached.

Generally, these are the only items which could cause an internal malfunction of the clutch. Externally, it is possible for the actuator assembly or sleeve to become worn or broken or too tight. This could cause accidental tripping or prevent tripping. A visual inspection of these parts should answer any questions and no detailed explanation will be attempted here.

When re-assembling, be sure all parts are clean and free of grease. The clutch should turn easily, lock positively when the sleeve is released, and re-engage firmly after one revolution.

9. Removing the arbor for service. TURN OFF POWER.

To remove the arbor, it is not necessary to remove the entire arbor are housing. The arbor and bearings may be removed by themselves in the following manner:

A. Remove the saw blade, collars, and the plastic dust seal.
B. Disconnect the connecting arm from the housing, and raise the arm to its highest position for access to the arbor. Block it in this position.
C. Loosen the motor vee belts and remove the vee belts from the arbor.
D. Remove the main bearing retainer by the four small cap screws.
E. Slide the entire arbor with pulley and bearings out of the arbor.

10. Servicing the arbor and bearings.

Most mechanics will recognize the standard precision type bearings and ground fits of the arbor and we will not elaborate heavily, except to point out a few design points for reference.

A. The bearings are light press fits on the arbor.
B. The bearings are loose slip fits in the housing.
C. The larger bering is fixed in the housing by the retainer, and the smaller bearing is the expansion bearing.
D. Both bearings are held in position on the arbor with lock washers and lock nuts.

E. Always keep the bearings clean when installing, and never strike with a hammer or other object to place a bearing on the arbor. Use standard bearing techniques to install these bearings such as using sleeve in a hydraulic press or preheating the bearing slightly, etc.
F. New or replaced bearings should turn freely by hand. With the arbor re-installed in the housing, the arbor should turn smoothly by hand without any rough spots.

11. Re-installing the arbor.

Simply reverse the steps of section 9, then without the saw blade or collars in place, run the arbor to check it out. New bearings will run warm (150° to 200°) for a short period, however, they should cool down to under a temperature which you can touch (barely). The new bearings should not make excessive noise.

12. Electrical and pneumatic.

The Precision Cut-Off Saws have no electrical control circuitry for the cycling operation. The only electricity to these machines is to control and run the motors.

Refer to wiring nameplates on motors for connections.

The mechanical clutch saws require no compressed air.

13. Testing the Cut.

1. Use a new blade.
2. Dial blade within .005 under teeth.
3. Check vertical rise and fall within .005.
4. Use machined back side chipbreaker.
5. Be sure bottom chipbreakers are level.
6. Hold part securely when cutting.

Any one of the above items not correct can cause the saw to make a poor cut.

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Minimum tools required to service this machine are:

A. Screwdriver - standard blade end.
B. Allen wrenches, 5/16" & 1/2".
C. Socket wrenches or open end wrenches 1/2", 9/16", 3/4" 15/16" and 1-1/8".
D. Crescent wrench to open to 1-1/8".

NEVER PLACE HANDS IN THE PATH OF THE SAW BLADE!!!

PARTS LIST

COMMON PARTS FOR BOTH MECHANICAL AND AIR SAWS

PART NO.	DESCRIPTION	PRICE
	Cast Top	$ 450.00
3	Hold Down Pivot Arm, Cast Iron	225.00
4	Hold Down Adjustable Half, Cast Iron	225.00
5	Saw Guard for Model 14, Aluminum	70.00
6	Fabricated Hold Down Pivot Half	150.00
7	Fabricated Hold Down Adj. Half, Model 14	50.00
9	Back Side Chipbreaker	45.00
10	Straightedge	25.00
11	Chipbreaker for Model 14	20.00
	Chipbreaker for Model 18	25.00
14	Push Rod Female Half	25.00
15	Push Rod Male Half	10.00
16	Push Rod for Fabricated Hold Down	35.00
17	Mounting Bracket for Hold-Down	25.00
18	Saw Guard for Model 18	80.00
19	Fabricated Hold Down Adj. Half, Model 18	50.00
21	Saw Arm Weldment, Specify #14 or #18	350.00
22	Bearing Retainer	10.00
23	Arbor Shaft w/Pulley - RH or LH	400.00
24	Fixed Collar - 5/8" Thick	25.00
25	Moveable Collar - 1/2" Thick	25.00
26	Pulley - 2 GR-3V-6.5"	55.00
27	1610 Bushing, Specify 1-1/8" or 1-3/8" Bore	14.00
48	Tube Inside Spring Lid	15.00
49	Hinge Bolt for Lid - Long/Short	3.00
50	Bushing on Female Half of Push Rod	7.50
51	Bushing in Pivot Half of Hold Down	7.50
53	Spring for Counterbalance	20.00
56	Brass Pivot Bushing in Saw Guard	9.50
130	Main Arbor Bearing (#308)	32.00
131	Rear Arbor Bearing (#306)	27.00
134	Pillow Block Bearings (4)	35.00 ea.
141	Arbor Drive Belt (3V-375) (2)	15.00 ea.
145	Spherical Rod End 1/2"	12.00
146	Spherical Rod End 3/4"	18.00
149	Hold Down Spring (5" long)	10.00
	Hold Down Spring (2.5" long)	5.00
150	Saw Blade 14" (100T - 1" Arbor)	154.00
	Saw Blade 18" (100T - 1" Arbor)	198.00

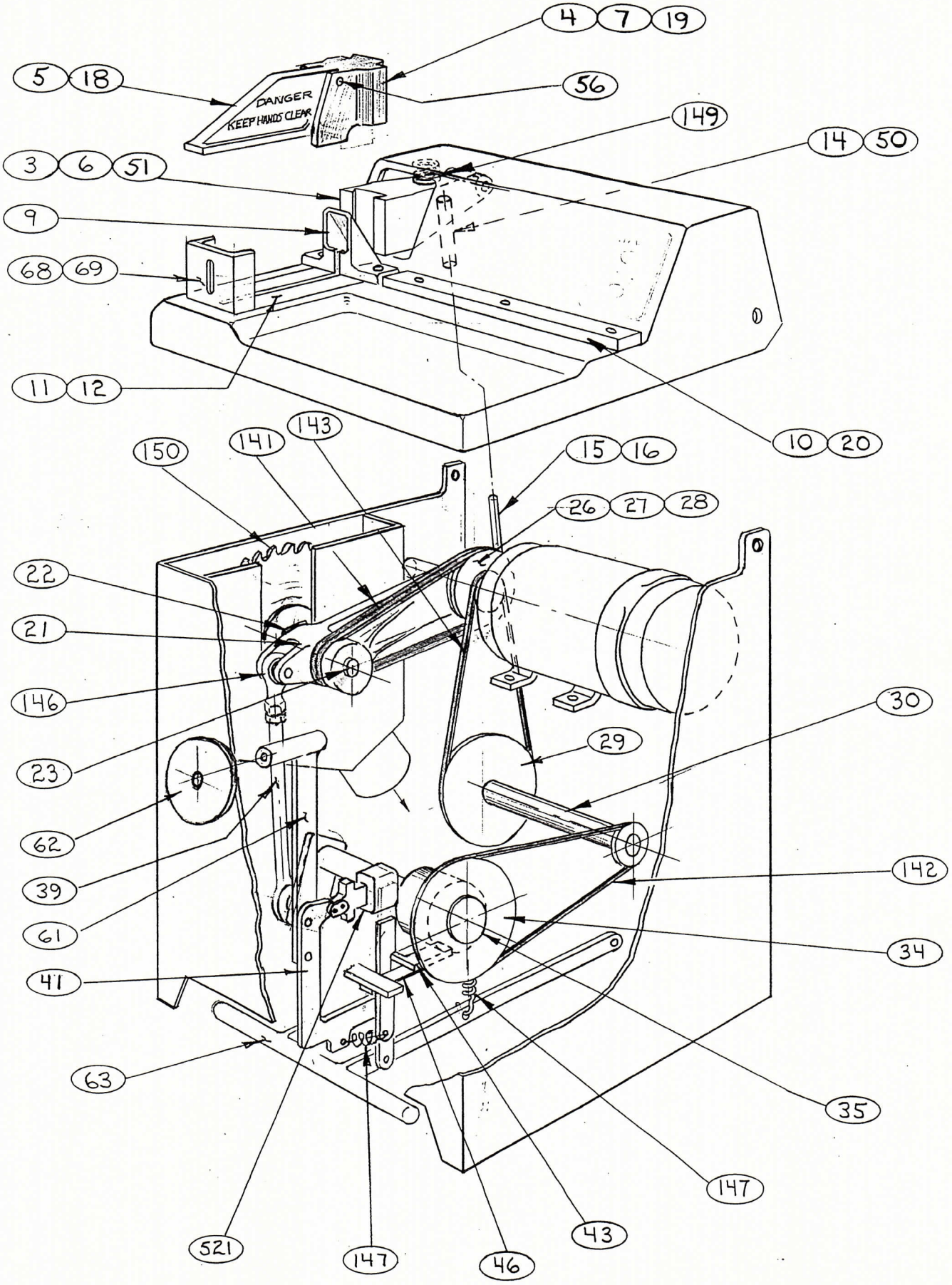
MECHANICAL SAWS - PARTS COMMON TO MECHANICAL SAWS ONLY

PART NO	DESCRIPTION	PRICE
26	Pulley on Motor	$ 150.00
27	1610 Bushing, 1-1/8" or 1-3/8" Bore	14.00
28	2-7/8" OD Small Pulley on Motor	30.00
29	Pulley on Jackshaft - 6" or 9.5"	120.00
30	Jackshaft	75.00
33	Crank Mounting Base	125.00
34	Drive Pulley - 9.5" Dia.	100.00
	Drive Pulley - 13.5" Dia.	150.00
35-1	Clutch Out-Put Hub (LH or RH)	300.00
35-2	Clutch In-Put Hub	225.00
35-3	Clutch Wrap Spring (LH or RH)	25.00
35-4	Clutch Sleeve	50.00
35-5	Clutch Retainer - Snap Ring (5000-118)	3.00
37	Crankshaft Weldment	165.00
39	Connecting Arm Weldment	165.00
40	Connecting Arm Retainer	5.00
41	Connecting Arm to Solenoid Weldment - RH/LH	50.00
42	Actuator Bar (Old Style 12" Long) RH/LH	65.00
	(New Style 6" Long) RH/LH	50.00
43	Stop Dog	30.00
44	Actuator Pivot Block	10.00
46	Spring for Stop Dog	10.00
54	Brake Hub	25.00
57	Brake - Lining & Band	50.00
58	Brake Hold Down Spring	5.00
59	Flat Pulley for Take-Up	10.00
60	Spring for Take-Up	10.00
61	Knee Trip Lever - RH/LH	40.00
62	Knee Trip Button	10.00
63	Foot Pedals	100.00
65	Idler Arm Weldment	50.00
132	Crank Bearing in Connecting Arm (#204)	10.00
133	Flange Bearing for Old Style Jackshaft	30.00
	Insert Only - Fafnir #1108KRRB	17.50
135	New Style Clutch Bearing (#6006) (2)	21.00 ea.
138	Solenoid Adjusting Base	25.00
139	Formed Mounting Bracket for Solenoid	15.00
142	Final Drive Belt (3V-400) for 10" Clutch Pulley	20.00
143	First Jackshaft Belt (3V-530) for 10" Jackshaft Pulley	20.00
	Note: Sometimes other size vee belts are used to fit with different size pulleys. Please specify belt length.	
147	Tension Spring	10.00
148	Torsion Spring - RH/LH	10.00
521	Saw Clutch Solenoid, 110V	35.00
	Solenoid Chain Line Assembly	8.50

CLUTCH ASSEMBLIES

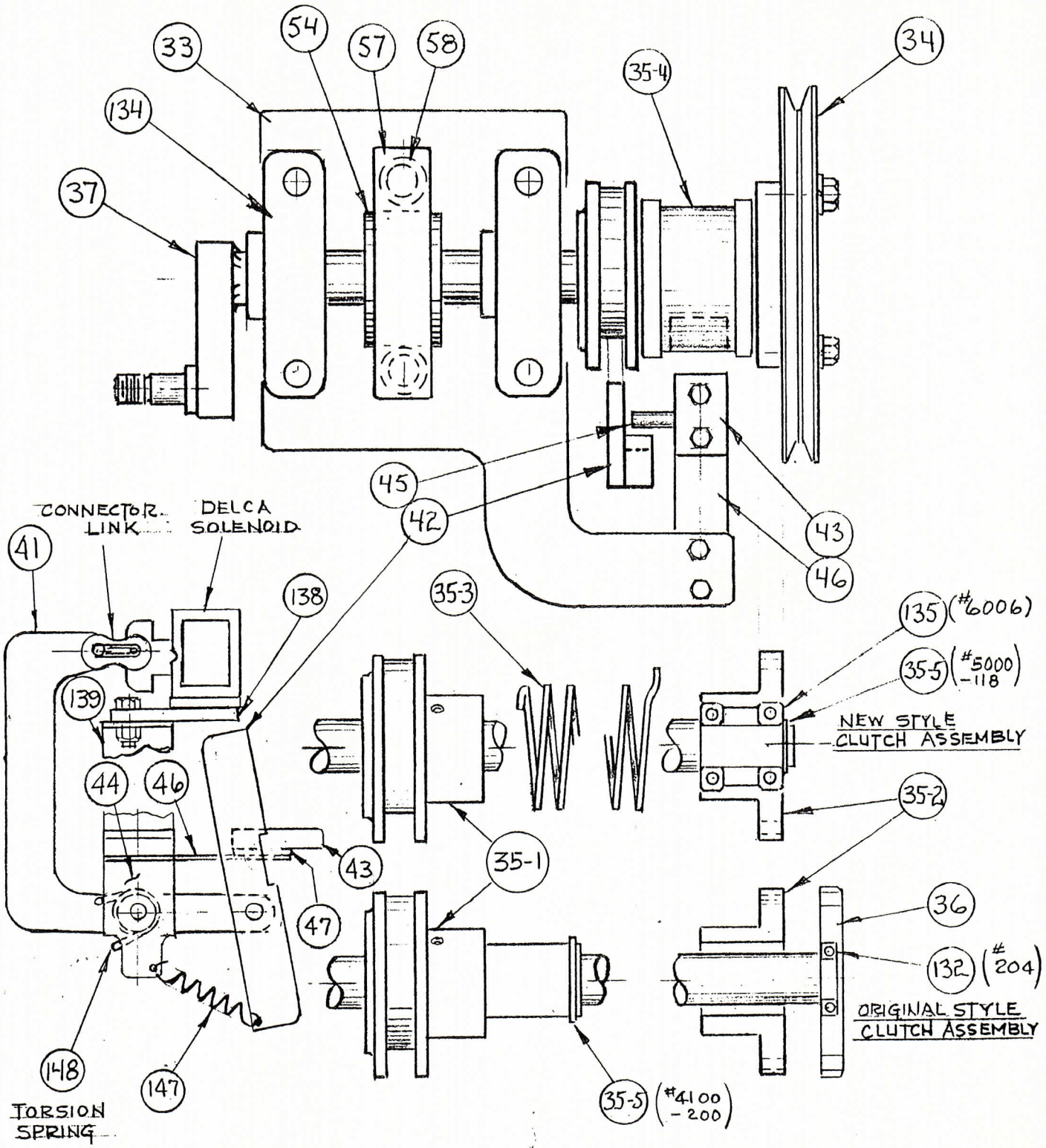
Complete assemblies mounted on bases include, crankshaft, bearing and all clutch parts. Excludes connecting arm and connecting arm bearing. Excludes vee belt drive pulley, 6", 7.5", 10" or 14" dia.

Old Style Standard Clutches Excludes activator arm and connecting arm to actuator arm.	$ 1075.00
New Style Standard Clutch Same as above but includes actuator arm and connecting arm.	1200.00
Solenoid Activated Same as above but includes solenoid and mounting of solenoid.	1400.00
Vise Mounting Bracket for servicing clutches	25.00



MECHANICAL SAWS - PARTS

SEE ALSO CLUTCH PARTS LIST



TOLERANCES (EXCEPT AS NOTED)	REVISIONS			PRECISION PRODUCTS CO. S.E. 282ND & STONE RD. GRESHAM, OREGON P.O. BOX 545 (503) 663-4811		
	NO.	DATE	BY	CLUTCH-BRAKE PARTS LIST ASSEMBLY DRAWING		
DECIMAL ±	1					
FRACTIONAL ±	2					
ANGULAR ±	3			DRAWN BY LEC	SCALE NONE	MATERIAL
	4			CHK'D.	DATE MAY 84	DRAWING NO.
	5			TRACED	APP'D.	

CUBIC FT. OF SUCTION REQUIRED:

500 CFM @ 6" STATIC

ADDENDUM

"SETTING UP" AND "ADJUSTING" THE CLUTCH MECHANISM

THIS ADDENDUM IS TO EXPLAIN AND ESTABLISH OUR UNIFORM SET-UP PROCEDURE AS OF MAY 1987. TIME AND IMPROVEMENTS MAY MODIFY THE PROCEDURE, HOWEVER WE PLAN THAT IMPROVEMENTS CAN BE RETROFIT, SO THE PROCEDURE SHOULD NOT CHANGE SIGNIFICANTLY.

THIS ADDENDUM IS DIVIDED INTO TWO (2) PARTS, FIRST A SIMPLIFIED EXPLANATION OF THE FOUR (4) STEPS USED TO SET UP THE CLUTCH AND SECOND, A DETAILED DISCUSSION OF EACH STEP.

"SIMPLIFIED PROCEDURE"

STEP #1 POSITION THE ENTIRE CLUTCH ASSEMBLY AND BOLT IT FIRMLY IN PLACE - SO AS TO PROVIDE A TIGHT DRIVE VEE BELT.

STEP #2 ADJUST THE STOP DOG (PART NO. 43) TO PROVIDE CORRECT ONE CYCLE OPERATION IT IS ADJUSTED (A) LATERALLY BY SLOTTING HOLES TO LOCATE THE PIN (PART NO. 45) IN CORRECT RELATION TO THE ACTIVATOR BAR AND (B) UP AND DOWN BY SLIGHTLY BENDING THE FLAT SPRING (PART NO. 46).

STEP #3 ADJUST THE ACTUATOR BAR (PART NO. 42) TO BE SURE IT RESETS ITSELF EACH CYCLE.

STEP #4 SET THE TIMING TO BRING THE CRANK ARM (PART NO. 3) TO ITS LOWEST CYCLE POINT -- WHICH IS B.D.C. THIS IS ACCOMPLISHED BY CHANGING THE SPRING, WHICH CAN BE DONE IN THE FIELD. PLEASE SEE THE DETAILED DISCUSSION FOLLOWING FOR A COMPLETE EXPLANATION.

NOTE: THE ABOVE SET UP STEPS #2, #3, and #4 CAN BE SET UP ON A BOARD OR IN A VISE, ON MOST RECENT CLUTCH ASSEMBLIES.

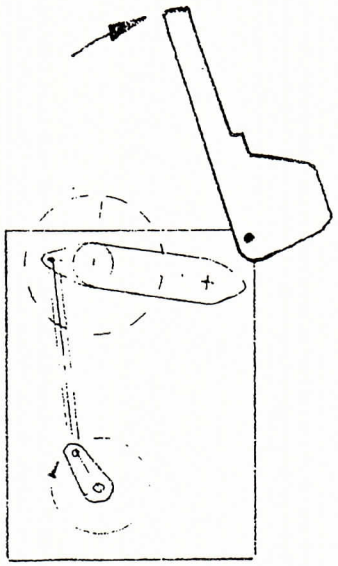
THINK ABOUT IT!

NEVER PLACE HANDS IN THE PATH OF THE BLADE

DETAILED DISCUSSION OF EACH STEP

STEP #1 POSITION THE ASSEMBLY -- SET THE ENTIRE CLUTCH ASSEMBLY IN THE SAW FRAME, TIGHTEN THE TWO MOUNTING BOLTS AND INSTALL THE VEE BELT, CHECKING IT FOR SUFFICIENT TENSION TO PREVENT SLIPPAGE. IF IT IS TOO SLACK, SIMPLY LOOSEN THE BOLTS, MOVE THE CLUTCH ASSEMBLY AND RE-TIGHTEN IT. DO THIS AS OFTEN AS NECESSARY UNTIL THE VEE BELT IS TIGHT.

ONCE THE VEE BELT IS TIGHT, AND YOU ARE SATISFIED WITH THE PULLEY ALLIGNMENT, FASTEN THE CRANK ARM (PART #39) TO THE SAW ARBOR HOUSING (PART #17). THEN WHILE HOLDING THE TOP CASTING SLIGHTLY AWAY FROM FULL OPEN, AND WITHOUT A SAW BLADE IN THE ARBOR - CHECK THE CYCLING OPERATION OF THE CLUTCH.



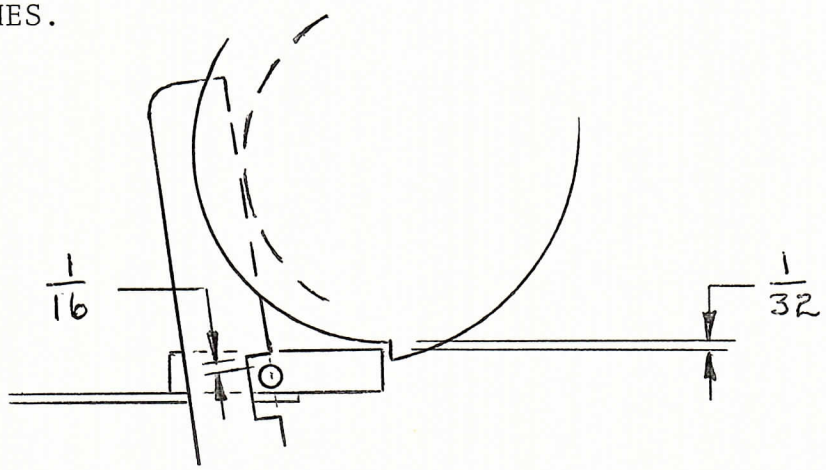
IF THE CLUTCH CYCLES PROPERLY WITH THE ARM STOPPING AT THE BOTTOM POSITION - AND MAKES ONLY ONE CYCLE, REQUIRING RELEASING THE KNEE TRIP TO GET THE CLUTCH TO CYCLE AGAIN, THEN THE SET-UP IS OKAY AND IT WILL NOT BE NECESSARY TO CONTINUE FURTHER.

IF THE ABOVE IS NOT THE CASE, AND THE CLUTCH DOES NOT CYCLE PROPERLY, GO ON TO STEP #2.

STEP #2 -- ADJUST THE STOP DOG -- THE STOP DOG CAN BE ADJUSTED TWO WAYS.

A. LATERALLY TO LOCATE THE STOP DOG TRIP IN PROPER POSITION TO BE ENGAGED BY THE ACTIVATOR BAR.

B. VERTICALLY TO ENGAGE THE PLASTIC SLEEVE STOP SURFACE. IT NEEDS TO BE POSITIONED AS SHOWN BY THE FOLLOWING SKETCHES.



A. LATERAL ADJUSTMENT -- IF IT IS NECESSARY TO MOVE THE STOP DOG LATERALLY, DO SO BY MOVING THE FLAT SPRING. LOCATE THE CENTER LINE OF THE STOP DOG PIN APPROXIMATELY IN-LINE WITH THE LEADING EDGE OF THE ACTUATOR BAR.

B. VERTICAL ADJUSTMENT -- IF IT IS NECESSARY TO ADJUST THE SPRING VERTICALLY, DO SO BY BENDING THE FLAT SPRING. THE VERTICAL CLEARANCE SHOULD BE A MAXIMUM OF 1/32 OF AN INCH, TO PROVIDE TURNING CLEARANCE, BUT TO POSITIVELY ENGAGE THE STOP SURFACE.

STEP #3 ADJUST THE ACTUATOR BAR

THE ACTUATOR BAR SHOULD BE ADJUSTED FOR VERTICAL ENGAGEMENT AS SHOWN IN THE ABOVE SKETCH. IT SHOULD HAVE APPROXIMATELY 1/16" CLEARANCE OVER THE STOP DOG PIN IN THE RELAXED POSITION.

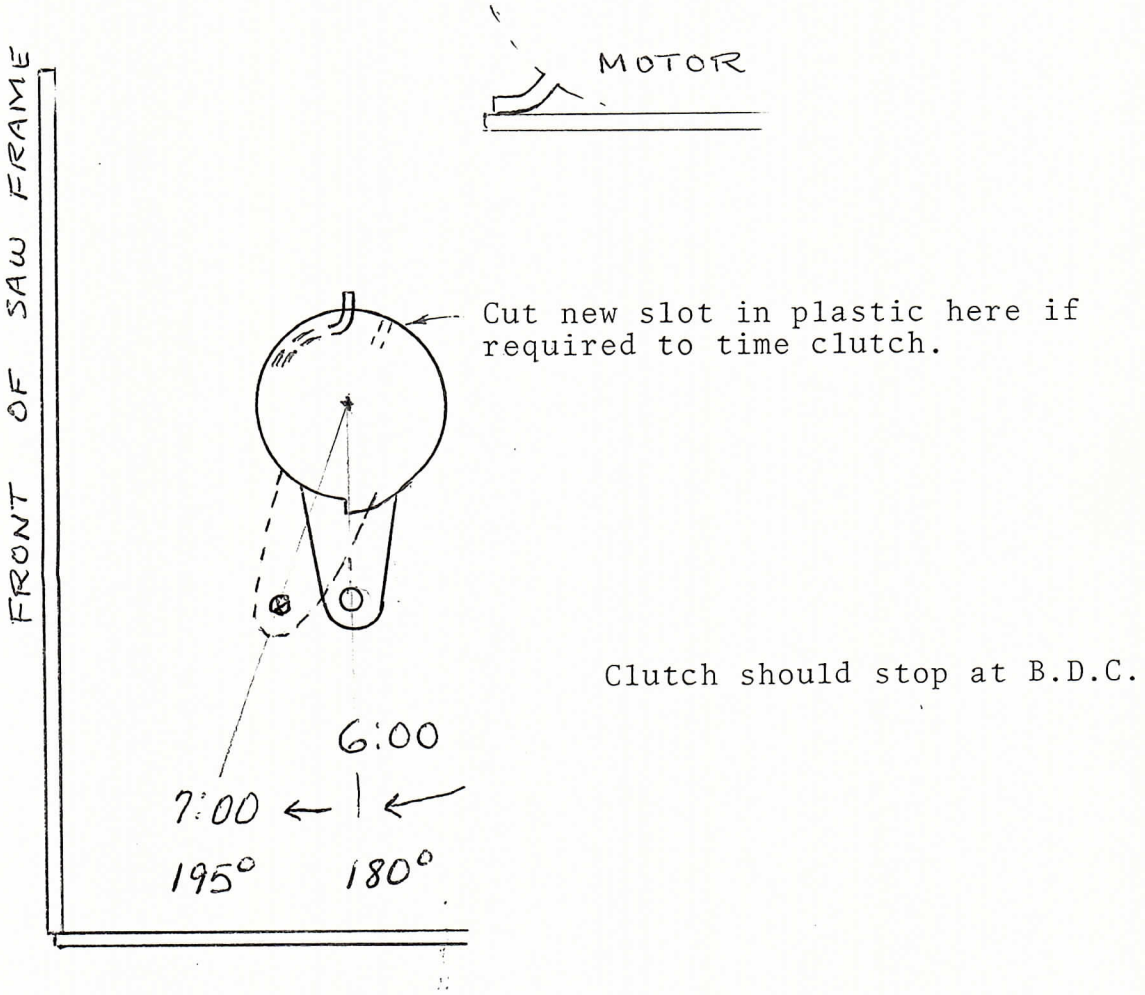
ONCE THE STOP DOG IS ADJUSTED, CHECK THE CYCLING OF THE OPERATION AGAIN AS OUTLINED UNDER STEP #1. BE SURE THERE IS NOT A BLADE ON THE ARBOR, AND HOLD THE LID OFF THE PUSH-PULL ASSEMBLY (SLIGHTLY FORWARD OF FULL OPEN).

NOW AS IN STEP #1, IF THE CYCLE IS CORRECT, WITH THE CRANK ARM STOPPING AT THE BOTTOM POSITION, AND CLUTCH MAKES ONLY ONE (1) CYCLE, THE SET UP IS FINISHED.

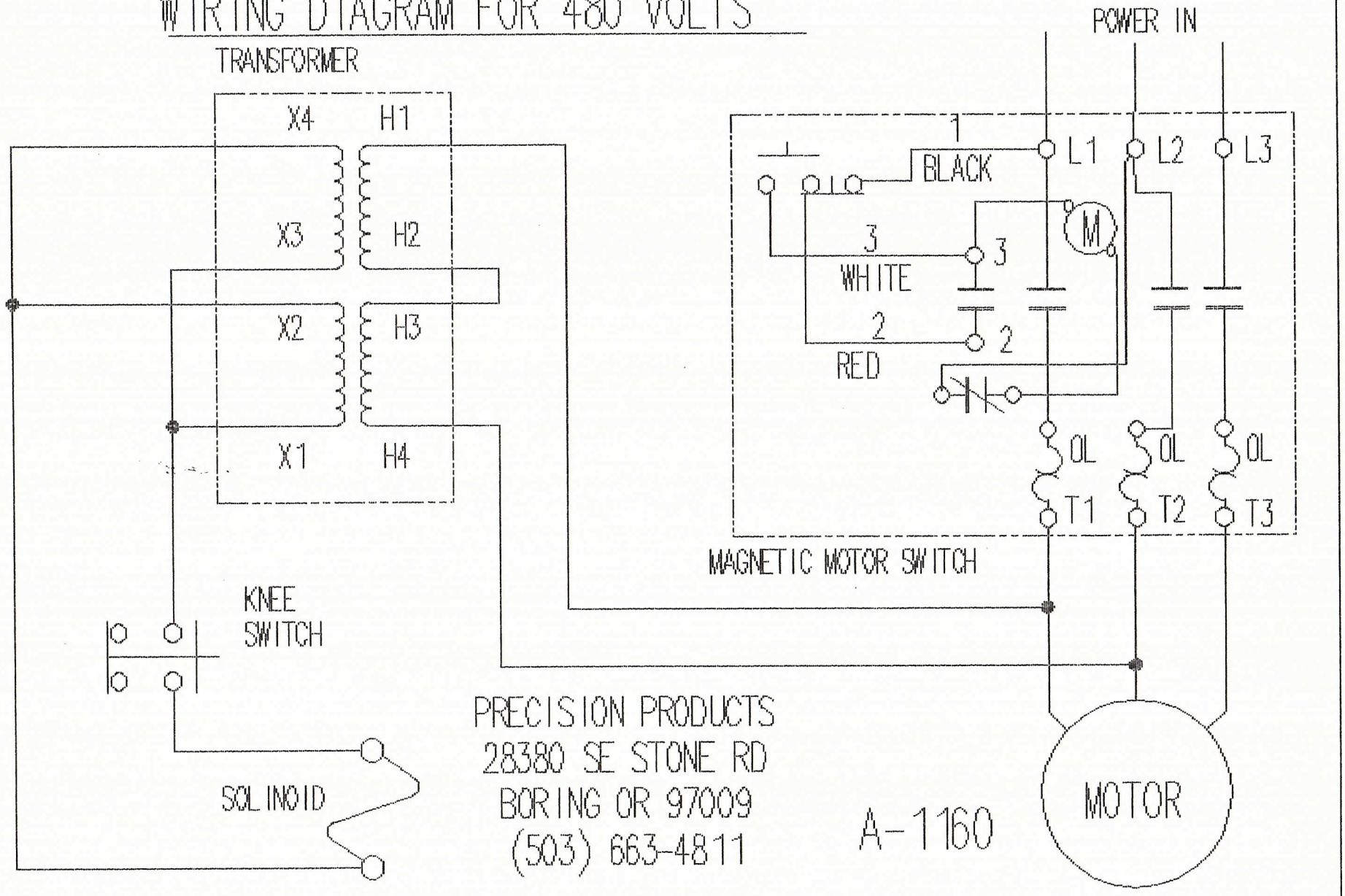
IF THE CRANK ARM DOES NOT STOP AT THE BOTTOM POSITION, GO ON TO STEP #4.

STEP #4 TIME THE CLUTCH -- THE CRANK ARM SHOULD STOP AT B.D.C. IF IT STOPS TOO EARLY CHANGE THE CLUTCH WRAP SPRING, OR ADVANCE THE LOCATION OF THE SPRING "UP TANG" TO RE-TIME THE CLUTCH. IT MAY BE NECESSARY TO CUT A NEW SLOT FOR THE FOLLOWING DIAGRAMS. A SLOT SPACING OF 1/2 OF AN INCH EQUALS APPROXIMATELY 15° ROTATION.

NOTE: IF THE CLUTCH WRAP SPRING CAUSES THE CRANK ARM TO STOP BEFORE B.D.C. WITHOUT FREE PLAY WHEN IT STOPS, IT WILL EVENTUALLY BREAK THE FLAT STOP DOG SPRING OR CLUTCH SPRING UP TANG.



WIRING DIAGRAM FOR 480 VOLTS



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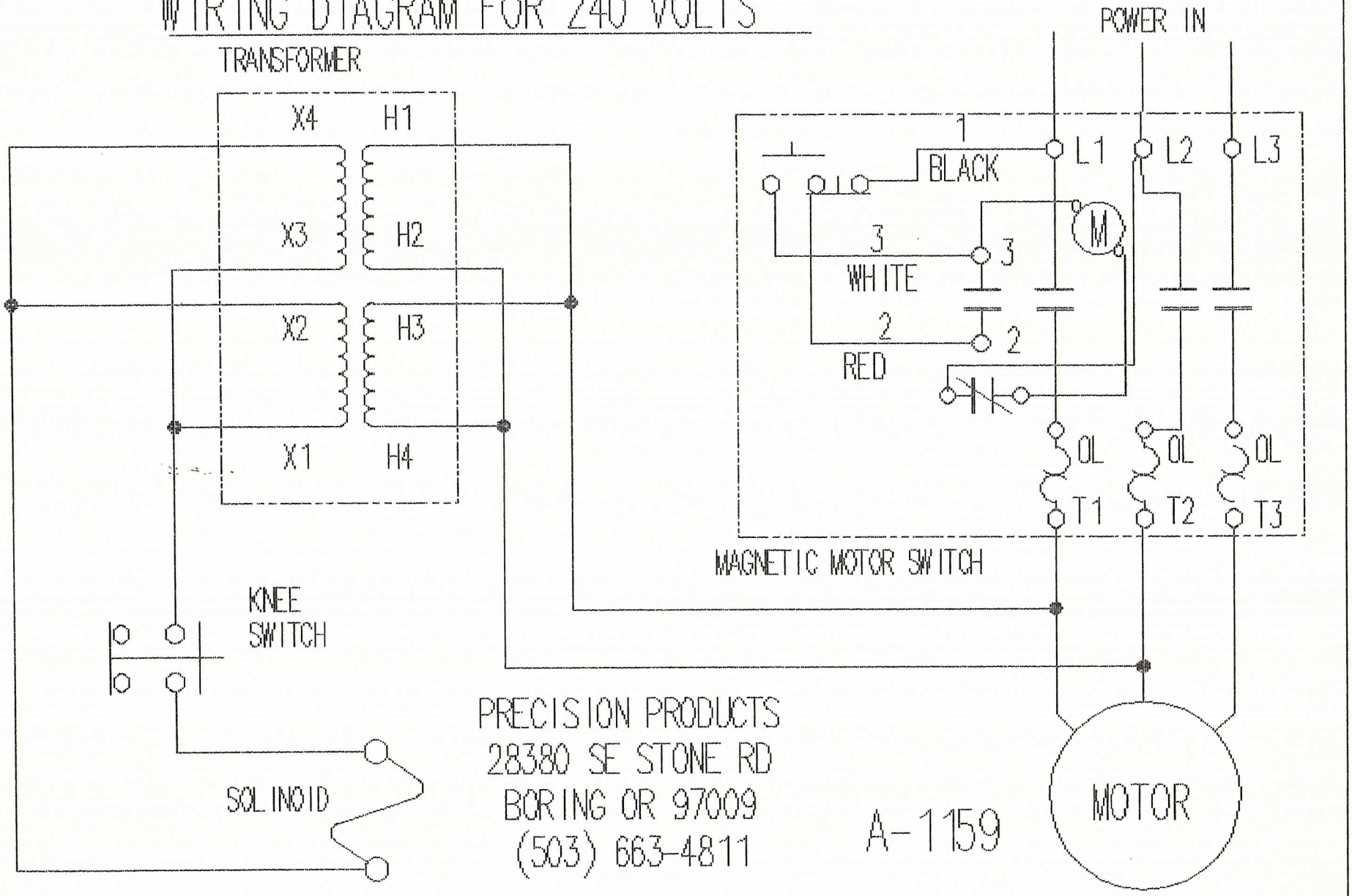
28380 SE STONE RD
BORING OR 97009
(503) 663-4811

A-1160

WIRING DIAGRAM FOR 240 VOLTS



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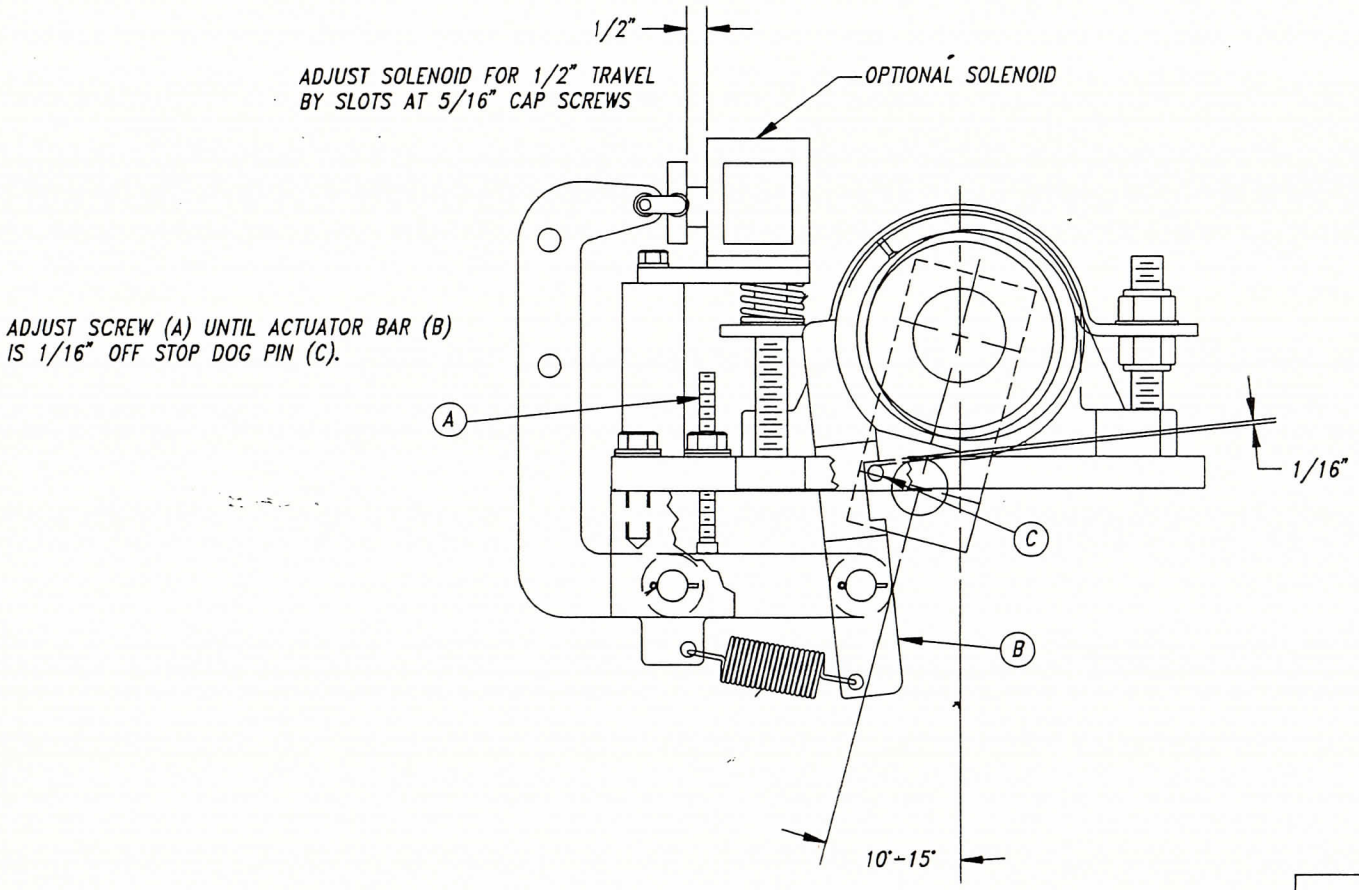


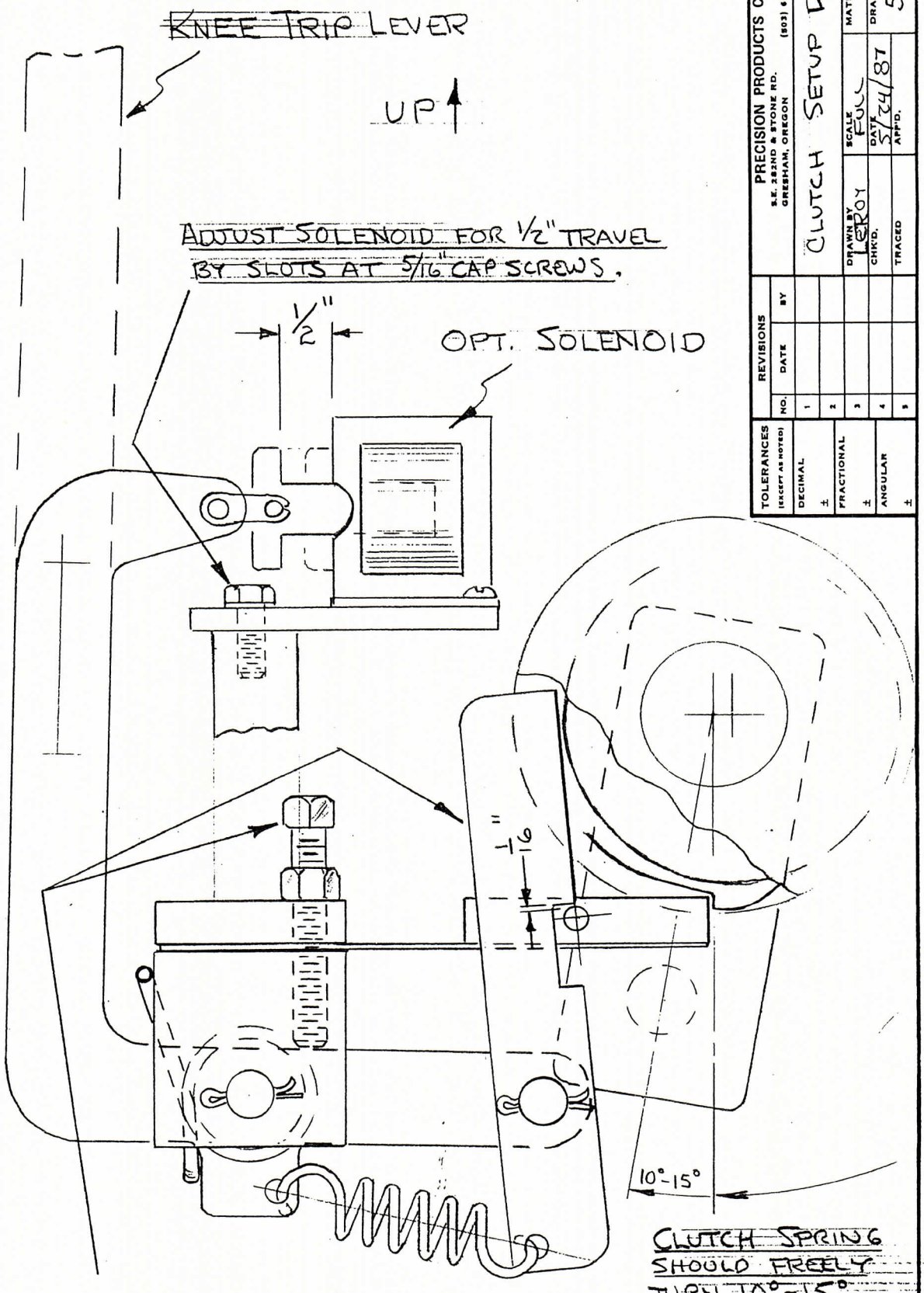
MARK	REVISION	DATE

ULTIMIZERS INC
28380 S. E. STONE ROAD
BORING OR 97009 (503) 663 - 7283

GENERAL SAW INFORMATION
CLUTCH SETUP DETAIL

DRAWN BY	SCALE	DATE
CEP	1/2"=1"	3-12-93
CHK'D	DRAWING NO.	
APP'D	B-2745	

MAR 15 1993



TOLERANCES (EXCEPT AS NOTED)	
DECIMAL	±
FRACTIONAL	±
ANGULAR	±

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

PRECISION PRODUCTS CO.
S.E. 282ND & STONE RD.
GRESHAM, OREGON (503) 665-4811

CLUTCH SETUP DETAIL

DRAWN BY	SCALE	MATERIAL
LEROY	FULL	
CHK'D.	DATE 5/24/87	DRAWING NO. 52487
TRACED	APP'D.	

OREGON BLUE PRINT CO.