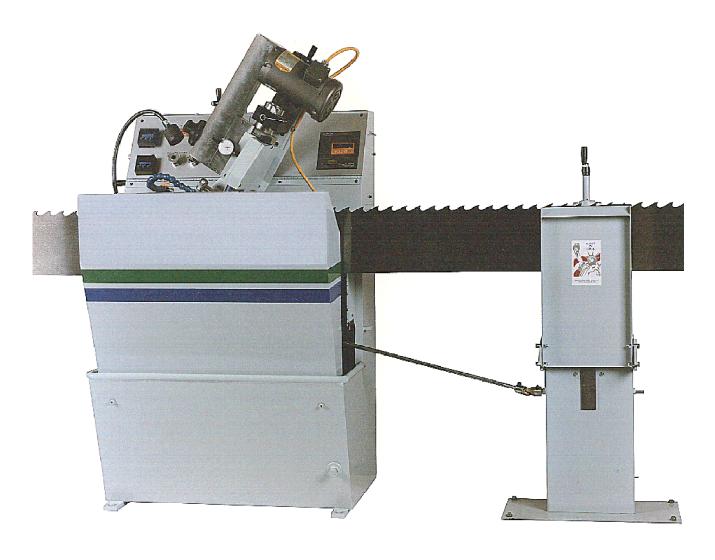
W-1701 AUTOMATIC PROFILE GRINDER



OPERATOR'S MANUAL



LIMITED WARRANTY

This machine is warranted against defects in workmanship and materials under normal use and proper maintenance, for one year after date of purchase from WRIGHT MACHINE TOOL CO. Any part which is determined to be defective in material or workmanship and returned to WRIGHT MACHINE TOOL CO., shipping costs prepaid will be repaired or replaced, at WRIGHT MACHINE TOOL CO. option.

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WRIGHT MACHINE TOOL CO., INC. 365 Palmer Avenue Cottage Grove, Oregon 97424

Phone (541) 942-3712 Fax (541) 942-0730





GENERAL SAFETY RULES

Failure to follow the Safety Rules and other basic precautions, may result in serious injury.

Always use eye protection: When operating this machine, eye protection should be worn. Grinding particles and the possibility of wheel breakage make eye protection necessary. Also face or dust mask if operation is dusty. Use adequate ventilation.

Use ear protection: If operation is creating excessive noise.

Disconnect power: To machine when NOT in use.

Keep clear: Of grinding wheels and pinch points when machine is running.

Saws are sharp: Wear appropriate personal protective equipment when handling saw blades.

Mounting of wheels: Should only be done by persons with mechanical aptitude and good knowledge of mounting, care, and inspection of grinding wheels. Wheels must be rated for the RPM of the machine.

Dress properly: Do not wear loose clothing or jewelry. Nonskid foot wear is recommended. Wear protective hair covering to contain long hair.

Avoid dangerous environments: Don't use in wet location. Keep work area well lit. Do not use this machine in the presence of flammable liquid or gasses.

Keep children away: Do not let VISITORS contact this machine.

Keep work area clean: Cluttered areas invite accidents.

All electrical covers: Must be in place before applying electrical power to this machine. Electrical service must be locked out prior to removing any electrical covers or machine guards. Access to electrical components must be restricted to trained personnel only to avoid possible electrical shock.





GENERAL SAFETY RULES (CONTINUED)

Voltage greater: Than specified on name plate can result in serious injury to user.

Never stand on this machine: Serious injury could occur if the machine is tipped or if the grinding wheel is accidentally contacted.

Follow safety precautions: For wheels, coolant and material being ground. These items must also be compatible. This information is available on the Safety Data sheet for each of these products.





Coolant Safety

Proper coolant maintenance will increase grinder life and grinding performance, and possibly reduce any risks associated with health concerns. Lack of proper coolant maintenance can result in increased exposure to grinding grit, bacteria, and other by products of grinding that may lead to increased skin sensitivity in some individuals. Water based coolants are designed to operate at precise mixture ratios. Check with the manufacturer of your coolant to determine the proper mix ratio.

CAUTION

Residual cleaning solutions on the saw will easily be dissolved into the coolant tank and can dramatically affect the chemistry of coolant which can significantly reduce wheel life, coolant efficiency, and corrosion efficiency.

Maintain the coolant filters that were shipped with this machine. If you have any questions on how to maintain the filters, call Wright Machine Tool at 1-541-942-3712

Test your coolant at regular intervals. Contact the manufacturer of your coolant to determine when to test, and which tests to perform.

Warning signs of improperly maintained coolant:

- 1. Strong (foul) odor coming from the coolant.
- 2. Color change in the coolant.
- 3. Noticeable stickiness on the saw.
- 4. Rust developing on the machine and/or saw steel.
- 5. Unexplained skin rash.
- 6. Deterioration of paint and/or plastic parts. If you detect any of these warning signs consult the coolant manufacturer at once. If you are having trouble contacting the coolant manufacturer, call Wright Machine Tool Co. Inc. at 1-541-942-3712

WARNING!

Coolants used in this machine must be designed to be used in wet grinding operations. <u>Do not use automotive coolant.</u> Check with the manufacturer of the coolant to make sure it is designed for use in wet grinding of saws.





SPECIFICATIONS

W-1701 Automatic Profile Grinder for Stellite® or Steel Circular saws or Band Saws.

STANDARD VOLTAGE: 230 Volt, 3 Phase, 50/60 HZ

OPTIONAL VOLTAGE: as requested

SHIPPING WEIGHT: 1,300 lbs

CRATE SIZE: L 48" X W 48" X H 63"

AIR REQUIREMENTS: 2 C.F.M at 100 psi to 120 psi

CIRCULAR SAW SIZE: 4"-30" (Up to 34" with tank screen removed)

OPTIONAL CIRCULAR SAW SIZE: Up to 54"

BAND SAW SIZE: 4" - 6"

OPTIONAL BAND SIZE: 3/4" - 3-1/2"

SPINDLE MOTOR: 2 H.P., 3 Phase, 3450 R.P.M. Motor





OPTIONS

Large Bore Option Totalizer Counter 3 Pin Spline Saw Center Spline Bore Saw Center Expandable Saw Center with m Large Saw Option 34" to 36"	W-50 W-70 W-450 W-460 agnets W-495 W-1701/36
36" to 54"	W-1701/54
Sash Gang Option	W-2245
Small Band Clamp Option from	3/4" to 1-3/8" W-2256
Stands	W-2259 Back Feed
	W-2260 Back Stand
	W-2261 Slave Stand
	W-2262 Guide Stand
Double Cut Saw Carrier for Bac	k Stands &
Slave Stands	W-2265
5 Gal. Coolant Concentrate Grinding Wheel	Qualstar Cimcool P-10

COMMON REPLACEMENT PARTS

Index Roller Bearing	W-188
Index Feed Finger	W-238-1
Index Finger Spring	W-239
Index Pivot Bearing	W-282
Index Pivot Bearing	W-283
Filter Paper	W-588
Coolant Nozzle	W-1295
Fixed Clamp Jaw	W-1788
Moveable Clamp Jaw	W-1787





PRE SET UP

Coolant capacity is 7 to 10 gallons. A rust inhibiting grinding coolant **MUST** be used or severe rust damage to machine can result. Mix coolant according to manufacturer's instructions.

COOLANT FILTERS: Clean coolant will increase grinding wheel life, improve grind finish and increase removal rates. Change coolant filter as necessary. Part # W-588.

RUST DAMAGE IS NOT COVERED BY THE WARRANTY

MOUNTING GRINDING WHEELS

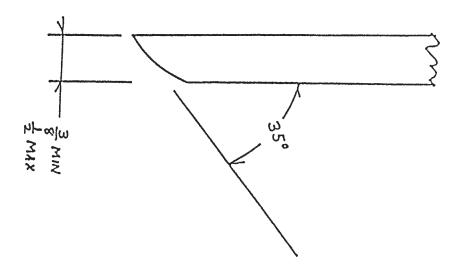
All grinding wheels must be rated for the RPM of this machine. Wheels exposed to higher than rated RPM are dangerous.

Mounting of the grinding wheel should only be done by persons with mechanical aptitude and good knowledge of mounting, care, and inspection of grinding wheels. The W-1701 uses up to a 10" diameter 1-1/4" bore grinding wheel. All grinding wheels must be rated for machine RPM.

MACHINE INSTALLATION

Lifting this machine should only be done with a fork lift under the Coolant Tank. Machine weight is approximately 1,300 pounds.

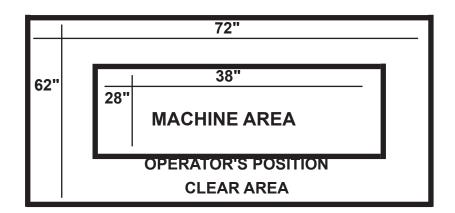
Required Wheel Shape for W-1730 Cam Set.







RECOMMENDED FLOOR SPACE FOR MACHINE AND OPERATOR

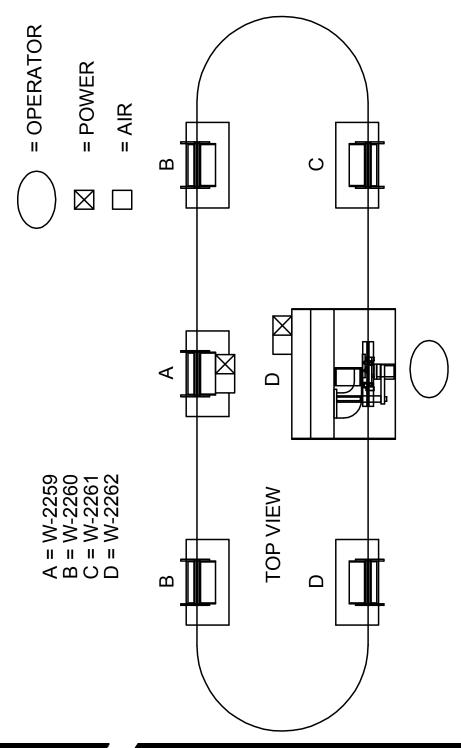






FLOOR SPACE EXAMPLE

(BAND SAWS)
FOR MACHINE AND OPERATOR



Band Gauge Adjustments

To adjust for different gauge thicknesses remove fixed clamp jaw, install correct shim, and replace the fixed clamp jaw.

Saw Gauge	Thickness (in thousandths)	Shim #	Shim Thickness
12	.109	E	.143
13	.095	G	.150
14	.083	I	.156
15	.072	K	.161
16	.065	M	.165
17	.058	O	.169
18	.049	Q	.173
19	.042	S	.176
20	.035	U	.180
22	.028	Υ	.183

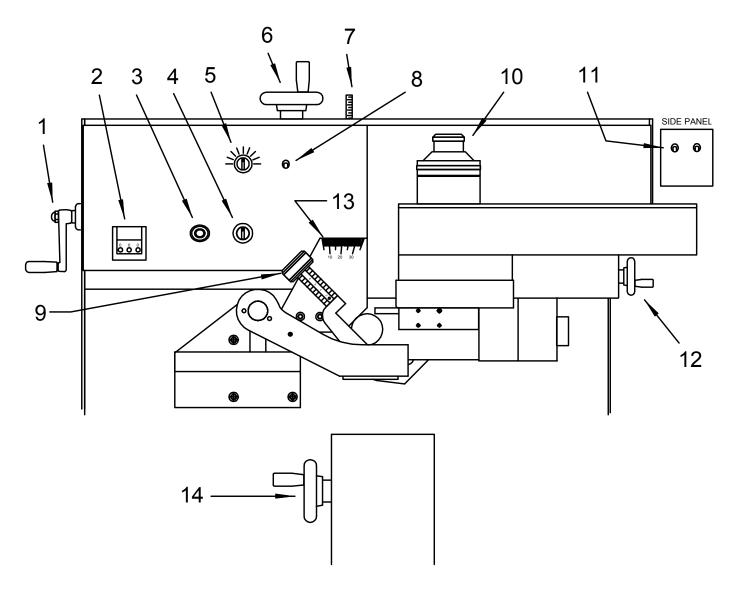
Standard shims are 13, 15, 17, 19 ga.. To order additional or replacement shims use part number C-6981 plus letter suffix. Example: 15 gauge would equal C-6981-K.

Note, on split gauges use nearest full gauge size.





CONTROL PANEL



- 1. Hook/Back Angle Crank
- 2. Counter
- 3. Start/Stop Switch
- 4. Saw Clamp Control
- 5. Speed Control
- 6. Index Pitch Control
- 7. Index Pitch Indicator

- 8. Cycle Switch
- 9. Depth of Tooth Adjustment
- 10. Infeed Adjustment
- 11. Coolant Pump/Lift Off Switches
- 12. Head Lift-Off Handle
- 13. Hook Angle Scale
- 14. Saw Lift Adjustment





Operation

NOTE: When dressing or shaping grinding wheels, eye protection should be worn and adequate ventilation is necessary. Flood coolant should be used while dressing the wheel to reduce air-born dust which can shorten the life of the machine.

WARNING. Do not set wheel RPM higher then the rating for the grinding wheel being used.

Profile Grinding

- 1. Adjust hook angle as necessary by turning hand crank on left end of the machine.
- 2. Set speed control #1 to the number of teeth per minute of grinding speed.
- 3. Set the tooth counter #3 to the number of teeth in the saw + 1. Example, a 30 tooth saw would be set at 31.
- 4. Set the Saw Clamp Control #5 (Run / Off) switch to Off. This will open the clamp jaw.
- 5. Mount the band saw and turn the sawlift hand crank until the saw tip is 1/8" above the index finger.
- 6. Move Saw Clamp Control #5 (Run / Off) switch to Run. This will close the clamp jaw.
- 7. Pull the Start button and the machine will start. Move the Cycle Switch #2 (For. / Stop toggle switch) to For. the index will place the tip in position and the grinding head will start moving down. Adjust the spindle infeed until the desired amount of material is being removed from the face of the saw gullet.
- 8. Adjust the depth of grind by turning the sawlift hand crank. This will determine the amount being removed from the back and bottom of the saw.
- 9. To adjust for wheel wear turn the black knob next to the spindle motor.





ADJUSTING THE TOOTH SHAPE

- 1. The W-1701 can be adjusted to alter the tooth shape. Tooth shape (depth) is adjustable by turning the Tooth Shaper (Depth) #9 knob next to the hook angle scale. Turning this clockwise will give a deeper gullet and a more steep back angle, counterclockwise for a more shallow gullet and a flatter back angle.
- 2. Wheel shape and width can change the gullet shape. The wheel shape and thickness must be matched to the cam to deliver the designed tooth shape.

Tooth Shape (Depth)



Wheel R.P.M. A.C. Inverter Operation

Warning: Do Not set wheel R.P.M. higher than the rating for the grinding wheel being used.

Setting Spindle R.P.M.

Hz	R.P.M.
90	4400
80	3900
70	3400
60	2900
50	2430
40	1950

Assuming .85 to 1 ratio. 1.800 drive, 2.125 driven.

When electrical power is reconnected to the machine the display will flash. To reset, start machine and then press run button on inverter. To change the R.P.M. start machine and press (/\) to increase or (V) to decrease R.P.M.



Inverter Operation

Models 3HX70 thru 3HX79 3KV62 thru 3KV67

Basic Operation INSPECTION PRIOR TO OPERATION

IMPORTANT: When the installation and wiring have been completed, carry out an inspection regarding the following items before applying power supply.

- 1. Double check for proper wiring.
- 2. Remove all wire strands and drilling chips.
- 3. Make sure all screws are tight.
- Make sure that wire strands on crimp terminals are not in contact with other terminal.

A CAUTION

Do not perform dielectric megger test on control terminals or between power circuit terminals.

A CAUTION Replace all covers and key pad

before applying power to drive. Failure to do so could result in death or serious injury.

START-UP (TEST)

- 1. Turn on power supply. Digital display will flash 60.00.
- 3. Push RUN key. Digital display will stop blinking and indicate 0.00.
- Push and hold UP key until motor shaft is rotating. Verify direction of rotation is correct.

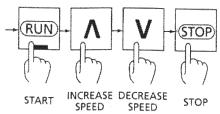


Figure 7-Operation/Run Diagram

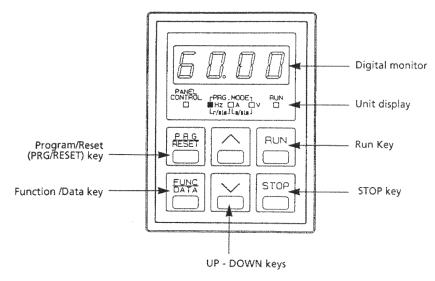


Figure 8-Digital Display and Keypad Description

 a. If rotation is incorrect, push STOP key. Turn off power to the inverter, and interchange wires connected to power terminals V and W.

A CAUTION Maintenance and inspection should be performed only after "CRG" Lamp turns off.

- b. Turn power back on. Digital display will flash the last frequency setting prior to shutdown.
- c. Push RUN key. Inverter will automatically accelerate to this last frequency setting.
- 5. Push and hold UP key until motor is running at desired speed. (See Figure 7.)
- 6. To change speed, use UP/DOWN keys.
- 7. To stop, push STOP key. Digital display will flash last frequency setting.

NOTE: Next time RUN key is pushed, inverter will automatically accelerate to this last frequency setting.

RELATIONSHIP OF MOTOR SPEED TO DIGITAL DISPLAY FREQUENCY SETTING:

Basic formula:

% of Speed =
$$\frac{\text{Frequency}}{\text{Setting}} \times 100$$

Example: Digital display indicates 45.0.

% of Speed =
$$\frac{45.0}{60 \text{ Hz}}$$
 X 100 = 75%

NOTE: 60.00 Hz equals 100% motor speed.

- If at any point during operation one of the alarm indications is displayed (Figure 9), the inverter will shut down. See Troubleshooting Chart, page 13.
- After fault is corrected, push -PRG/RESET key to clear alarm indication. Display will flash the last frequency setting prior to shut down.





Inverter Operation

Basic Operation (Continued)

Alarm Message	Display	Description
Overcurrent	0C1	Overcurrent or output short line to line during acceleration.
	002	Overcurrent or output short line to line during deceleration.
Output short line to line	OC3	Overcurrent or output short line to line during steady state running.
Overvoltage	OU	DC bus voltage reaches the overvoltage protection level.
	<u> </u>	DC bus voltage reaches the overvoltage protection level during acceleration.
	<i>002</i>	DC bus voltage reaches the overvoltage protection level during deceleration.
	<i>0</i> U3	DC bus voltage reaches the overvoltage protection level during steady state running.
Inverter heat sink overheating	OH1	Overheating of the inverter heat sink due to overload, cooling fan malfunction or abnormal ambient temperature.
External alarm function	0H2	THR-CM terminal open due to external fault and/or the electronic overload switches.
CPU error	ERR	CPU malfunction due to noise.
Low voltage	LU	Under voltage of power supply

Instantaneous power failure (15 msec max.)

Figure 9 - Alarm Messages

NOTE: See Technical Manual for complete list of fault displays.





Inverter Operation

Models 3HX70 thru 3HX79 3KV62 thru 3KV67

Troubleshooting Chart

Display	Check Point	Corrective Action
OC1	 Power supply within allowable variation Output circuit short line to line Torque boost value too high Acceleration time setting too short Other than 1-4 	 Adjust the supply voltage to suitable value Check the wiring and motor winding Adjust to suitable value Adjust to suitable value Use larger size inverter
0C2	 Power supply within allowable variation Output circuit short line to line Deceleration time setting too short Other than 1-3 	 Adjust the supply voltage to suitable value Check wire and motor winding insulation Adjust to suitable value Use larger size inverter Connect external DB resistor (optional)
0C3	 Power supply within allowable variation Output circuit short line too line Abrupt change of the load Torque boost too high Other than 1-4 	 Adjust the supply voltage to suitable value Check wire and motor winding insulation Eliminate load fluctuation Decrease torque setting Use larger size inverter Check for electronic noise
0U1	Power supply within limits Acceleration setting too short	 Adjust the supply voltage to suitable value Increase time Use larger size inverter
0U2	 Power supply within allowable variation Deceleration time setting too short Other than 1-2 	 Adjust the supply voltage to suitable value Adjust to suitable value Connect external DB resistor (optional)
0U3	Power supply within limits Steady state running	1. See Technical Manual for further help
он1	 Ambient temperature within allowable variation Cooling fan malfunction Load condition too heavy 	 Put the inverter in appropriate environment Replace Reduce the load or use larger size inverter
OH2	 Motor protection circuit thermal overload relay Brake resistor protection thermal switch Wiring THR-CM 	 Determine fault and correct Extend cycle time Check the wiring and correct
LU	 Power supply within allowable variation Lack of phase Magnetic contactor or MCCB Other than 1-3 	 Adjust the supply voltage to suitable value Check the wiring and correct it Make sure to turn on this equipment Check power supply capacity
ERR	1. See Technical Manual for further help	





Inverter Operation

TABLE 6: Function Codes

Function Code Numbers Followed by Function Descriptions

* Function can be changed while the Drive is operating.

8:	sic Functions Page	6	Ba	sic Functions (cont'd)	6 -	Bas	ic Functions (cont'd)	6
00	Data Protection	1	22	*Multistep Frequency Setting 2	9	43	X4 Terminal Function	16
01	Frequency Command	1	23	*Multistep Frequency	9	44	*Multistep Frequency Setting 8	16
02	Operation Command	2		Setting 3		45	*Multistep Frequency Setting 9	16
03	Maximum Frequency	2	24	*Multistep Frequency Setting 4	9	46	*Multistep Frequency Setting 10	16
04	Base Frequency 1	2	25	*Multistep Frequency	9	47	*Multistep Frequency Setting 11	16
05	Maximum Oulput Voltage	3		Setting 5		48	*Multistep Frequency Setting 12	
06	*Acceleration Time 1	3	26	*Multistep Frequency Setting 6	9	49	*Multistep Frequency Setting 13	
07	*Deceleration Time 1	3	27	*Multistep Frequency	9	50	*Multistep Frequency Setting 14	-
08	*Torque Boost 1	3	21	Setting 7	3	51 52	*Multistep Frequency Setting 15 *Signal Filter	17
09	*FMA Terminal Voltage	4	28	S-curve Acceleration/	10	32	Frequency Setting	<u>'</u>
	Adjustment			Deceleration (Operation Selection)		53	Timer	17
10	*Number of Motor Poles	4	29	* Fault Memory/History	11	54	Y1 Terminal (Function)	18
11	*Line Speed Display Coefficient	4	30	Starting Frequency	11	55	*Frequency Level Detection	18
12	*Motor Sound (Carrier Freq.)	4	31	* (During Accel/Decel) Torque Limit	11	33	(FOT Operation Level)	L
13	Number of Restart Attempts	5	32	* (At Constant Speed)	11	56	*Hysteresis Width	19
14	Restart After Momentary	5	33	Braking Torque Selection	12	57	THR Terminal (Function)	19
	Power Failure		34	* Bias Frequency	12	58	*Jump Frequency Hysteresis	50
15	Electronic Overload 1 Selection	6	35	* Gain for Frequency Setting Signal	13	59	*Jump Frequency 1	20
16	Electronic Overload Setting 1	7	36	* High Frequency Limiter	14	60	*Jump Frequency 2	20
17	DC Brake Operation	8	37	* Low Frequency Limiter	14	61	*Jump Frequency 3	20
18	*DC Brake Starting Frequency	8	38	* Motor Characteristics	14	62	Base Frequency 2	20
19	*DC Braking Level	8	39	Data Initialization (Default	14	63	*Acceleration Time 2	20
20	*DC Braking Time	8		Settings)	-	64	*Deceleration Time 2	20
21	*Multistep Frequency	9	40	FMA, FMP terminals (Operation Selection)	15	65	*Torque Boost 2	21
	Setting 1		41 42	FMA Terminal (Function) * FMP Pulse Rate Multiplier	15	-	cont'd on next page	
L	<u> </u>	<u></u>	1.4	Levic Loise usis wombliet	115	<u></u>	<u> </u>	





Inverter Operation

TABLE 6: Function Codes (Cont'd)

Function Code Numbers Followed by Function Descriptions

* Function can be changed while the Drive is operating.

Ва	sic Functions Page	6 -	Ba	asic Functions (cont'd)	Page	6	Basi	c Functions (cont'd)	Page	6
66	Electronic Overload 2 Selection	21								
67	Electronic Overload Setting 2	21								
68	*Slip Compensation	21		MANAGERIA A CALIFORNIA CONTRACTOR			-		***************************************	
69	Torque Vector Control	22		New Medical Control of the Control o	·····			ran rangon da arango da na da da na rango garanga da arang mananga na ar		
70	Motor HP Capacity 1	22		E U V		heestaba sada saddaha				
71	Rated Current 1	22		gamanaykuddikuncukuda***********************************		-				
72	No-load Current 1	22				-				
73	Rated Current 2	22				, and the same of			*******	
74	Automatic Tuning	23								
75	Motor 1 (%R1 Setting)	23				-				
76	Motor 1 (%X Setting)	24			***************************************	_		, , , , , , , , , , , , , , , , , , ,		
77	*Torque Limiting Response at Constant Speed	24								
78	*Torque Limiting Response During Acceleration/ Deceleration	24								
79	Option Card Selection	24			Section Committee	<u> </u>				
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Anceterateur						+				+
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PERFORMANCE

1. SAW BLADE DIMENSIONS:

- * Minimum saw diameter 4 inches.
- * Maximum saw diameter 34 inches (with coolant screen removed).
- * Maximum saw thickness to 3/8 inches.
- * Maximum tooth pitch straight 4-1/2 inches.
- * Hook angle 0 to 40 degrees.
- * Bore 5/8" to 2.5" standard, 5/8" to 10" optional.
- * Teeth per minute 0 to 29.

2. SPEEDS:

- * Average set up time approximately 2 minutes.
- * Reload time less than 1 minute.
- * Grinding speed (average resharpening) 11 teeth per minute.

The above speeds were accomplished by an experienced operator. The saw used for these average speeds was 24 inches in diameter with 40 teeth, .087 plate thickness, .125 kerf. Larger saws, thicker plate or kerf will require somewhat slower speeds.





MAINTENANCE

Care should be taken when control console or rear cover is removed. Do not allow any grinding grit to enter.

Drain water from air filter every day. More often may be required if air is wet or dirty.

Do not use oilers. Do not use synthetic compressor oil or severe valve damage will occur. Use only water based grinding coolant.

TROUBLE SHOOTING

CAUTION: DISCONNECT FROM POWER BEFORE OPENING ANY COVER.

Machine will not start when start button is pulled.

- 1. No power to machine.
- 2. Transformer fuse blown, under rear cover next to transformer.
- 3. Item #5 not in Run Position.

Machine stops as soon as start button is released.

- 1. Counter is set to zero.
- 2. Overload tripped on motor starter (inside control console right side bottom).

Machine starts but does not cycle, feed, or index.

- 1. Check the fuse behind control console.
- Index is bound.
- 3. Cam drive motor is defective.
- 4. Circuit board is defective.

Coolant does not flow when switch is on.

- 1. Check to be certain coolant is in the tank.
- Valve is closed.
- 3. Blow air through nozzle to clean obstruction.
- 4. Coolant pump may be clogged.
- 5. Coolant pump may be defective.





TROUBLE SHOOTING (Continued)

Machine will not function, nothing works.

1. Open rear cam cover. On door next to large transformer is an in line fuse holder, twist to open, replace with 6 to 6-1/4 amp slow blow fuse.

Machine will run only when start button is held out.

1. Motor overload is tripped or the counter is set on zero. Reset overload inside control console right side bottom.

Machine runs but will not go through it's cycle.

1. Fuse to cam motor is blown. Open the control panel on the front of the machine. Fuse holder is located left of center below wire bundle. Replace as necessary with five amp fast-blow fuses. If this fuse blows more than twice in six months **CALL US** for adjustment recommendations.

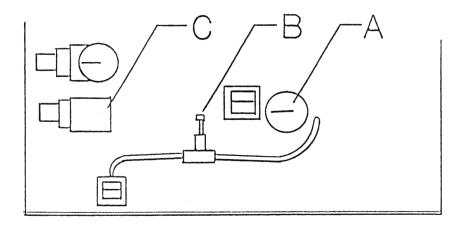
If other problems arise please call us for technical advice. (541) 942-3712.





UNEVEN GRINDING

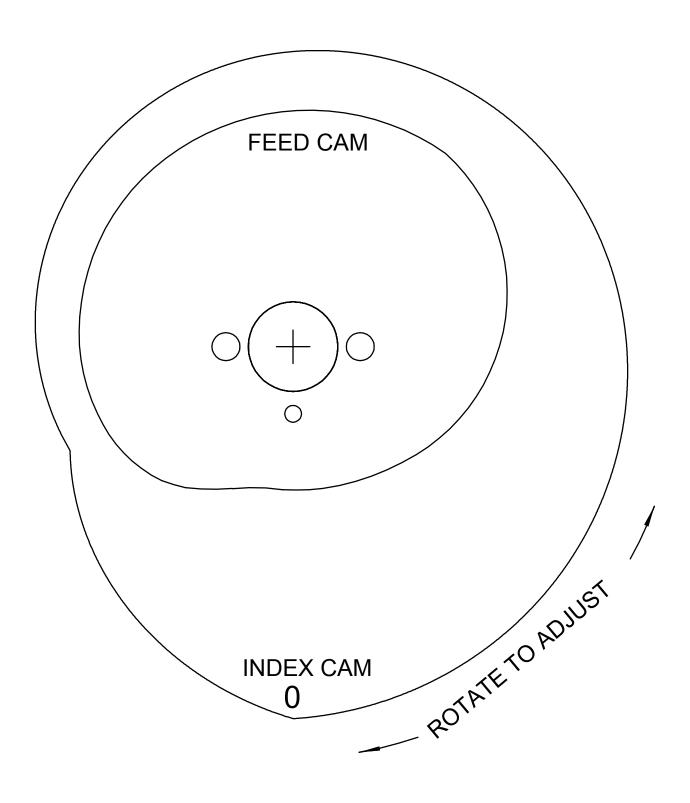
- 1. Is the saw free of rust and pitch.
- 2. Set tooth counter on 1. Start Machine and let it stop by itself. Mount saw, turn selector to run. Pull the saw by hand and see if it moves smoothly with about 10 pounds drag. If it does not, check the saw for plate damage, or for saw carrier binding. If these appear normal open rear cam cover and check pressure settings on gauge "A". If pressure is below 40 lbs. check bleeder "B". It must be exhausting some air. It cannot be fully closed. Regulator "C" controls drag pressure and it is set for 10 lbs. A lower setting at some times is necessary to get the saw to move smoothly.



Inside Rear Door











TIMING THE TRIP CAM

Once the correct cam relationship has been established then you must set the time duration on the trip cam to achieve "full" clamp pressure.

Cycle the grinder at slow speed to full forward index position. See index cam follower on fig. 1, next page.

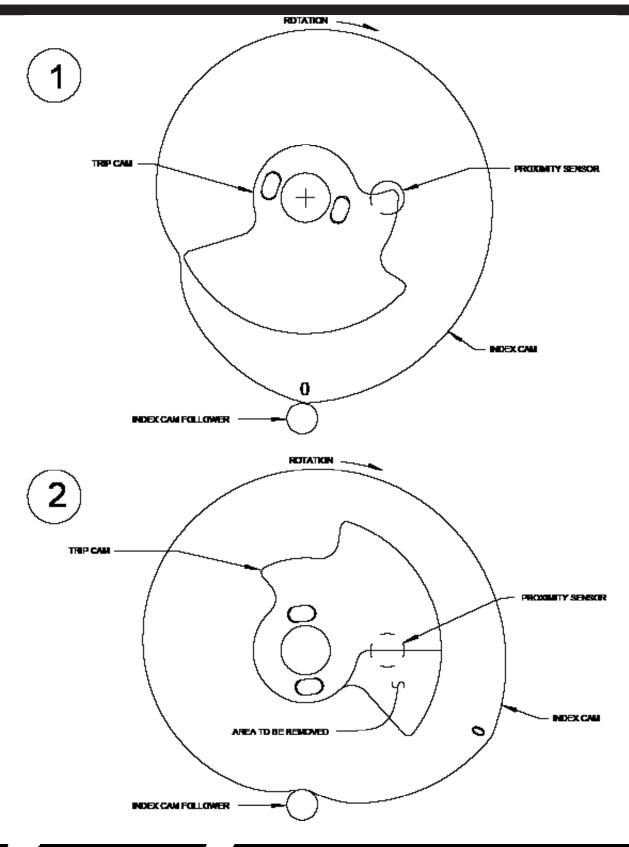
While cycling the cam forward, mark the spot on the cam to determine the "deactivation point" which will either match the cam follower low contact point(See fig. 2.) or at the point which the feed finger is about to contact the next tip. This is important so as to properly sequence the low pressure setting during the indexing of the saw at the same time when the grinding wheel sweeps down through the gullet.

By removing the trip cam material, the duration of clamp cycle is set and no further adjustment will be required if cam set are subsequently changed.

We suggest using a permanent marker to indicate these points and position of trip cam to index cam. This will minimize guess work after removing the trip cam to trim with a metal cutting tool, ie. band saw, jig saw, etc..





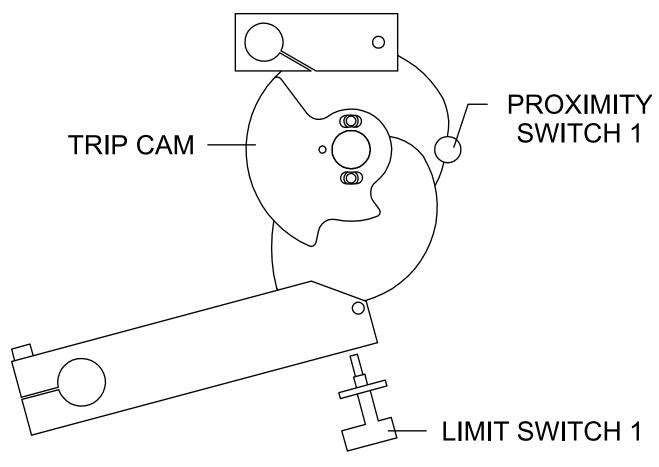






PROXIMITY SWITCH ADJUSTMENT

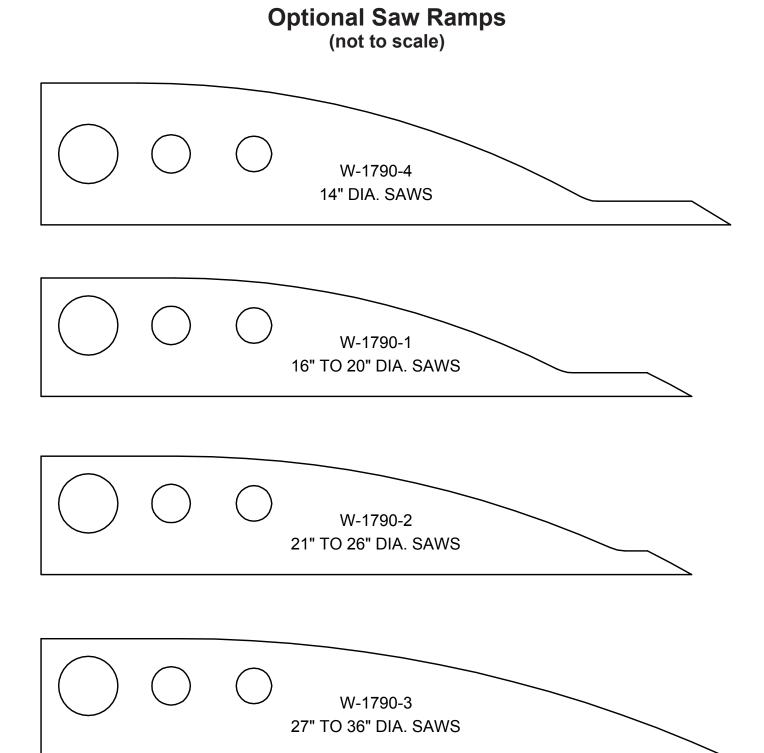
The proximity switches tripped by the trip cam, control the function of the machine. If the machine does not function correctly check the proximity switch for proper adjustment.



Note: Proximity switches are set .050 before being tripped by the trip cam. Proximity switch 1 sends a signal to CR-3 for head movement to full forward. Limit switch 1 provides counter counting signal.



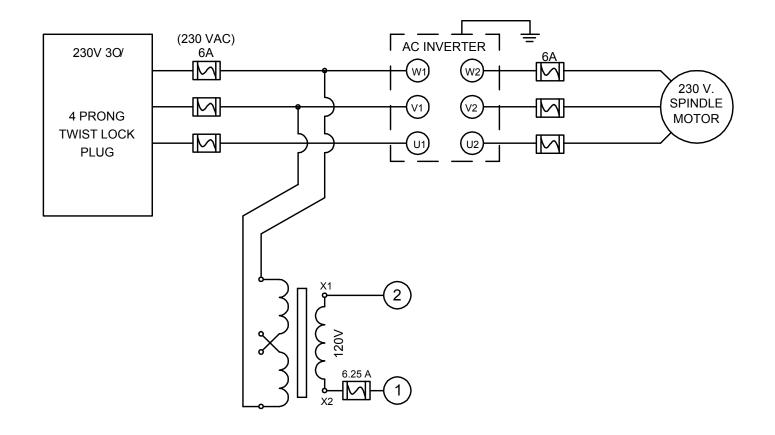








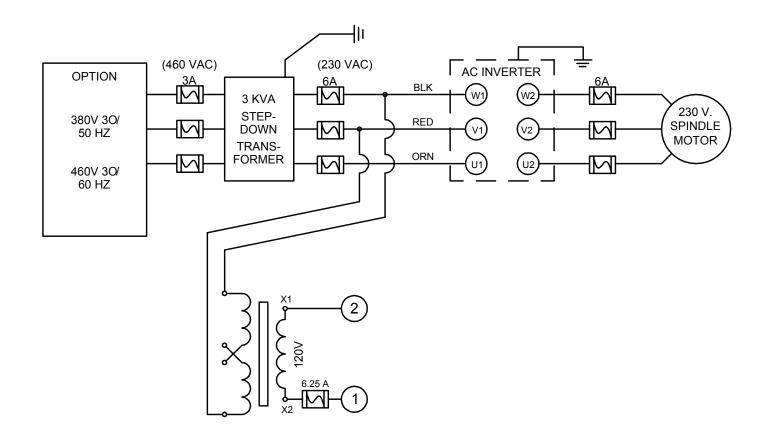
ELECTRICAL SCHEMATIC 230 VAC, 3 phase line power







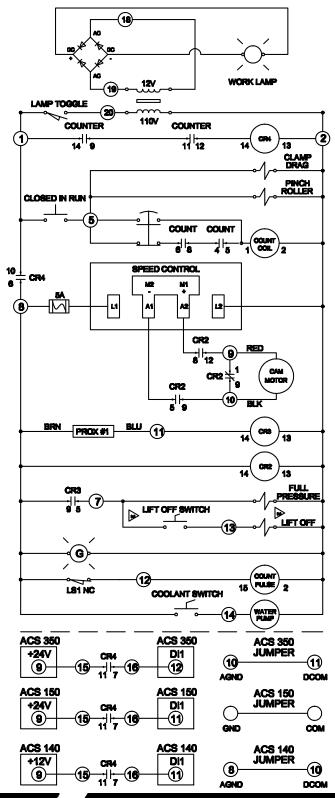
ELECTRICAL SCHEMATIC460 VAC, 3 phase line power







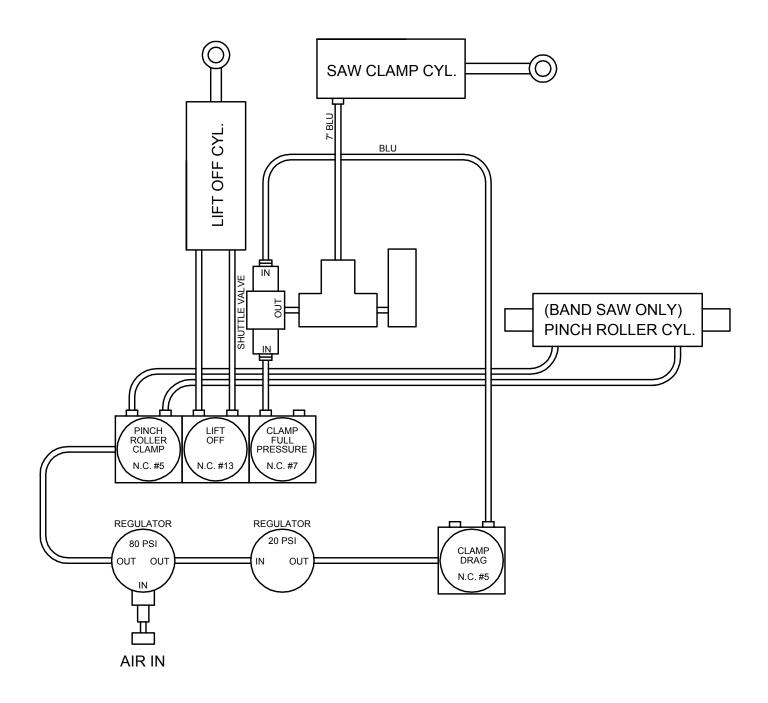
ELECTRICAL SCHEMATIC







AIR DIAGRAM







PARTS LIST

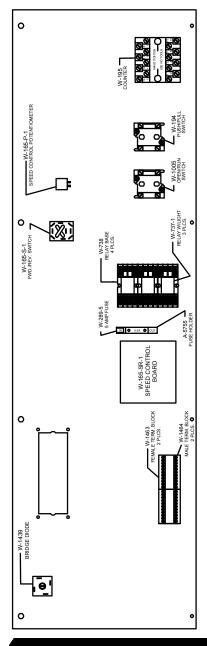
The following parts lists are areas within the machine broken down into various individual assemblies.

OUTSIDE CONTROL PANEL (LEFT SIDE)

QTY 1 1 1 1 1 1 1	PART NUMBER W-1497 W-165-S-1 W-165-P-1 W-195 W-194 W-1005 W-1386-17 L/R	DESCRIPTION BOOT FOR TOGGLE SWITCH TOGGLE SWITCH SPEED CONTROL KNOB COUNTER PUSH PULL SWITCH 2 POSITION SWITCH CONTROL PANEL FACE PLATE
		W-165-P-1 SPEED CONTROL KNOB TOGGLE SWITCH
WHEN OPER	VARNING RATING THIS MACHINE CTION MUST BE WORN	30 O P R E V SPEED
0	COUNTS O 1	O START OFF TO STOP RUN W-1005 2 POSITION SWITCH
W-19 COUN		
		RIGHT ACHINE

INSIDE CONTROL PANEL

QTY	PART NUMBER	DESCRIPTION
1	W-1439	DIODE
1	W-165-SR-1	SPEED CONTROL BOARD
3	W-738	RELAY BASE
3	W-737-1	RELAY WITH LIGHT
1	W-289-5	5 AMP FUSE
1	A-5755	FUSE HOLDER







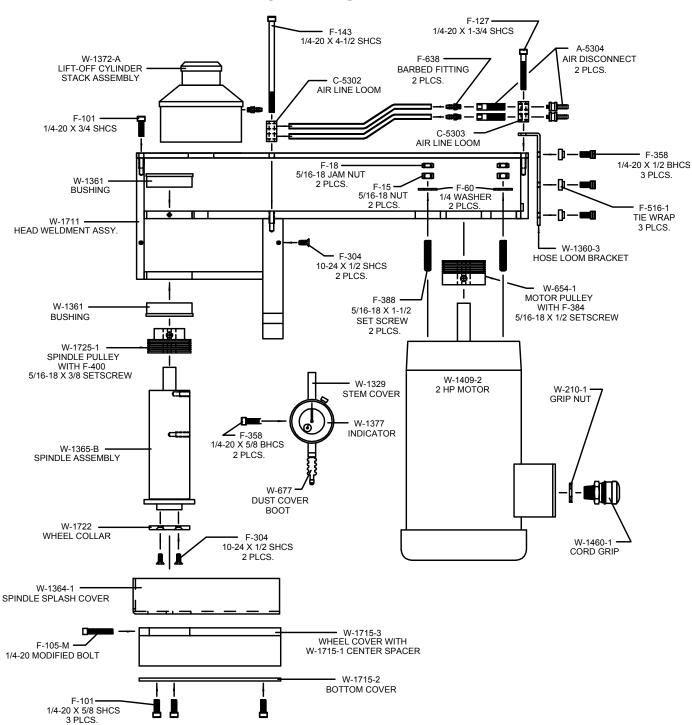
GRINDING HEAD

QTY	PART NUMBER	DESCRIPTION
1	W-1372-A	LIFT OFF CYLINDER ASSEMBLY
1	W-654-1	MOTOR PULLEY
1	W-1725-1	SPINDLE PULLEY
1	W-1726	SPINDLE BELT
1	W-1409-2	SPINDLE MOTOR
1	W-677	DUST BOOT
1	W-1365-B	SPINDLE ASSEMBLY
1	W-1367	LEAD SCREW ATTACHMENT
1	W-1377	INDICATOR
1	W-1329	INDICATOR COVER
3	F-304	SCREW
1	W-1722	WHEEL HUB NUT
1	W-1712	SPINDLE SPLASH COVER
1	W-1715-1	WHEEL COVER (CENTER SPACER)
1	W-1715-2	WHEEL COVER (BOTTOM)
1	W-1715-3	WHEEL COVER (TOP)
1	F-105-M	WHEEL COVER SCREW
1	F-101	HEAD MOUNT SCREW
1	F-143	AIR LINE SCREW
1	C-5302	AIR LINE LOOM
1	F-127	AIR LINE SCREW
1	C-5303	AIR LINE LOOM
4	F-358	SCREW
2	W-1361	BUSHING
1	W-1711	HEAD WELDMENT
2	F-18	JAM NUT
2	F-60	1/4 WASHER
2	F-15	5/16 NUT
2	A-5304	AIR DISCONNECT
2	F-638	BARBED FITTING
3	F-516-1	CABLE TIE
1	W-1360-3	HOSE LOOM BRACKET
2	F-388	SET SCREW
1	W-210-1	GRIP NUT
1	W-1460-1	CORD GRIP





GRINDING HEAD







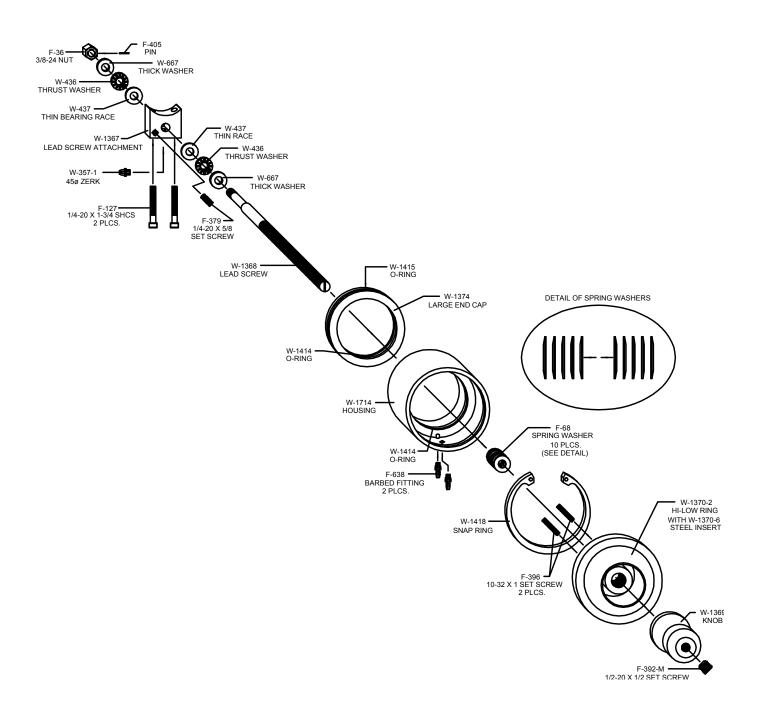
LIFT OFF CYLINDER ASSEMBLY

QTY 1	PART NUMBER F-36	3/8" NUT
1	F-405	PIN
2	W-667 W-436	THICK WASHER THRUST WASHER
2	W-437	THIN BEARING RACE
1	W-1367	LEAD SCREW ATTACHMENT
1	W-357-1	45° ZERK FITTING
2	F-127	1/4" BOLT
1	F-379	1/4"SET SCREW
1	W-1368	LEADSCREW
10	F-68	SPRING WASHER
1	W-1418	SNAP RING
2	F-638	BARBED FITTING
1	W-1714	HOUSING
2	W-1414	O-RING
1	W-1415	O-RING
1	W-1373-B	LARGE PISTON
1	W-1374	LARGE END CAP
2	F-396	10-32 SET SCREW
1	W-1370-2	HI-LOW RING
1	W-1369	KNOB
1	F-392-M	1/2" SET SCREW
1	W-1370-6	STEEL INSERT





LIFT OFF CYLINDER ASSEMBLY







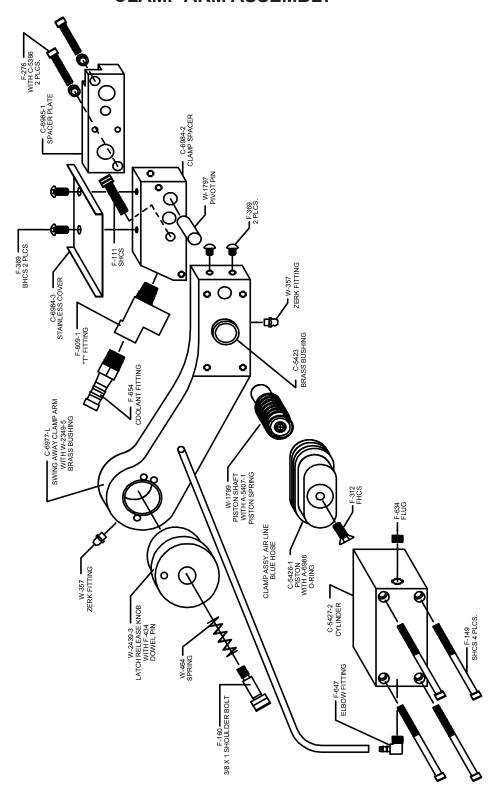
CLAMP ARM ASSEMBLY

QTY 4	PART NUMBER F-148	DESCRIPTION 1/4-20 X 3-1/4 SHCS
1	F-647	ELBOW FITTING
1	C-5427-2	CLAMP CYLINDER
1	F-634	1/8 N.P.T. PLUG
1	F-312	5/16-18 X 5/8 FHCS
1	C-5426-1	CLAMP PISTON
1	A-6988	O-RING
1	W-1799	PISTON SHAFT
1	A-5407-1	COMPRESSION SPRING
8'	F-661-07	1/4" BLUE FLEX HOSE
1	C-5423	BRASS BUSHING
2	W-357	GREASE ZERK FITTING
1	C-6977-L	SWING AWAY CLAMP ARM
4	F-358	1/4-20 X 1/2 BHCS
1	C-6872-1	PIVOT PIN
1	F-654	COOLANT FITTING
1	C-6984-3	STAINLESS COVER
1	F-112	5/16-18 X 1-1/4 SHCS
1	C-6984-2	CLAMP SPACER
1	C-6985-1	SPACER PLATE
2	F-105	1/4-20 X 1-1/4 SHCS
2	C-5386	SPACER
1	F-609-1	"T" FITTING





CLAMP ARM ASSEMBLY

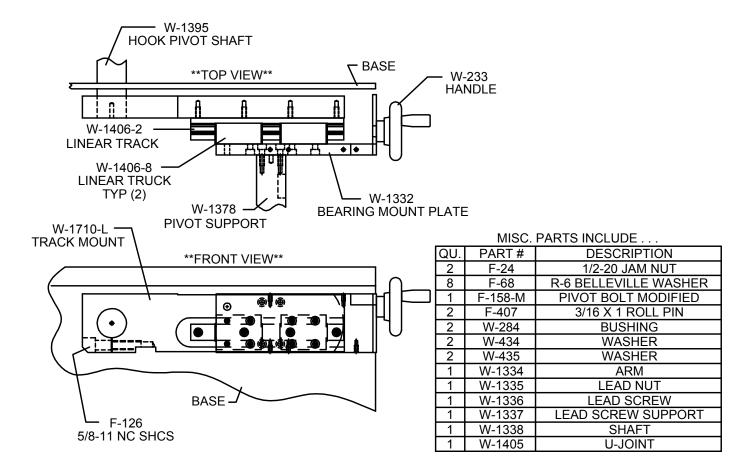






FEED SYSTEM ASSEMBLY

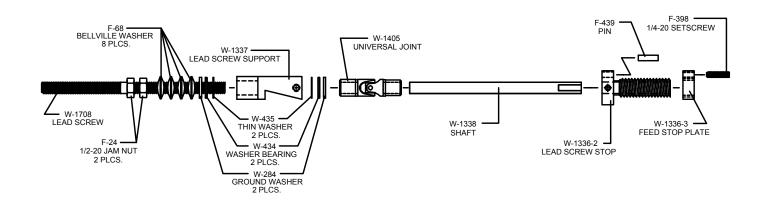
QTY	PART NUMBER	DESCRIPTION
1	W-1395	HOOK PIVOT SHAFT
1	W-1406-2	LINEAR TRACK
2	W-1406-8	LINEAR TRUCK
1	W-1378	PIVOT SUPPORT
1	W-1332-1	BEARING MOUNT PLATE
1	W-233	HANDLE
1	W-1710-L	TRACK MOUNT
1	F-126	5/8" BOLT

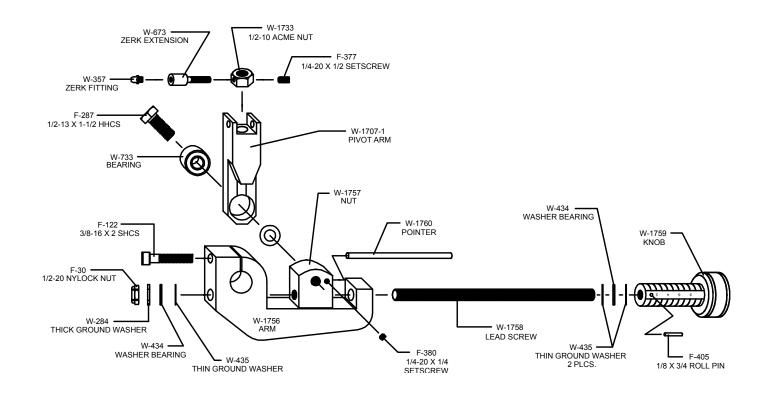






FEED SYSTEM ASSEMBLY CONTINUED

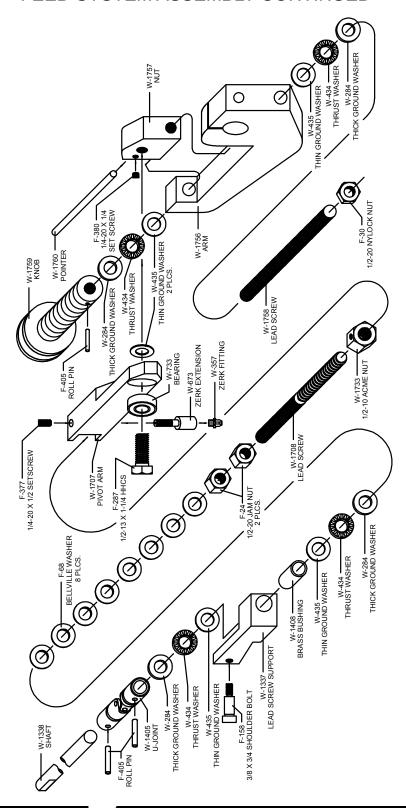








FEED SYSTEM ASSEMBLY CONTINUED







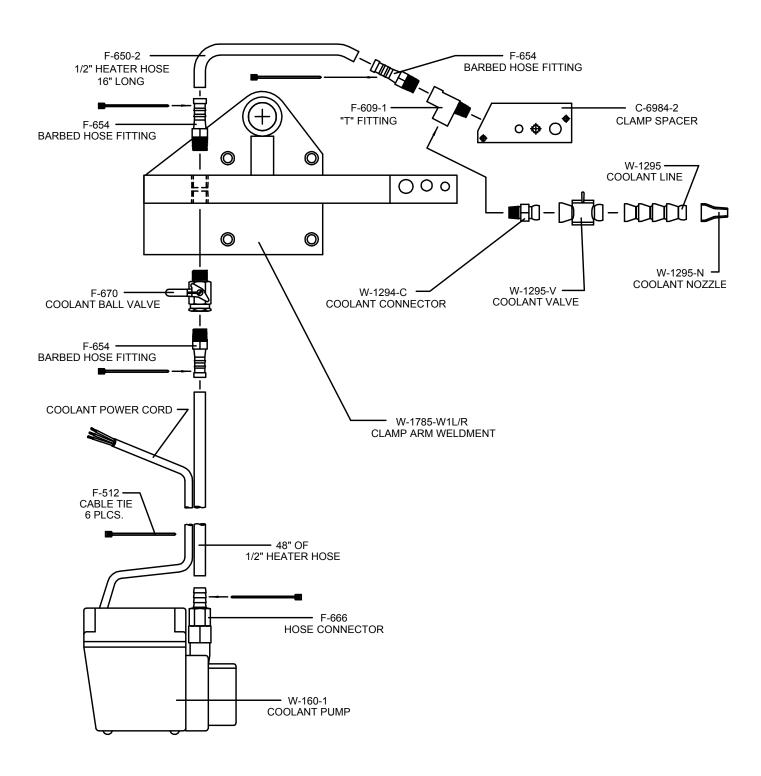
COOLANT SYSTEM ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
21	W-1295-P	COOLANT LINE
1	W-1295-C	COOLANT COUPLER
1	W-1295-N	COOLANT NOZZLE
1	W-1295-V	COOLANT VALVE
1	W-160-1	COOLANT PUMP
2	F-512	CABLE TIE
1	F-605	ELBOW
1	F-635	CONNECTOR FITTING
1	F-616	ADAPTER COUPLER
3	F-654	BARBED HOSE FITTING
1	F-670	BALL VALVE
1	F-609-1	STREET "T"
1	F-667	BARBED FITTING





COOLANT SYSTEM ASSEMBLY







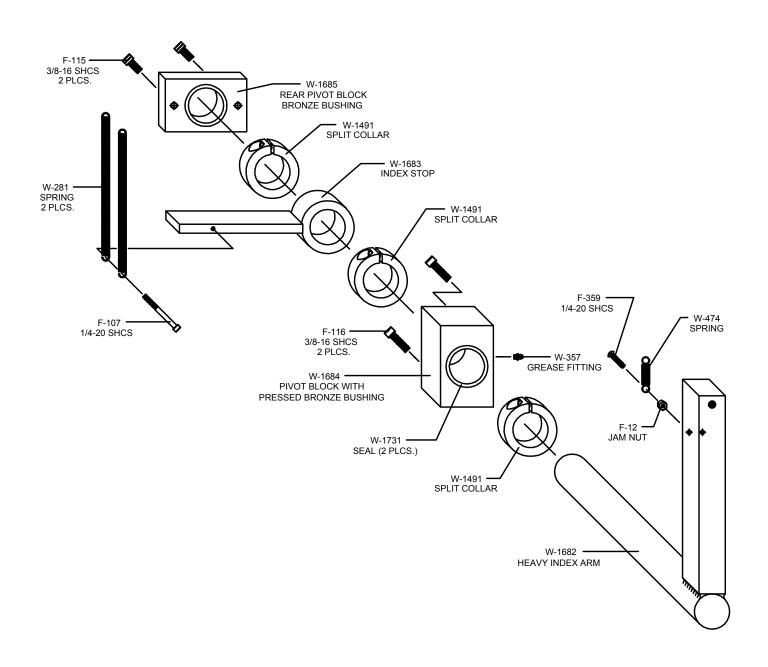
INDEX ARM ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
1	F-12	1/4-20 JAM NUT
2	F-107	1/4-20 X 2-1/2 SHCS
2	F-115	3/8-16 X 3/4 SHCS
2	F-116	3/8-16 X 1 SHCS
1	F-359	1/4-20 X 1 BHCS
2	W-281	SPRING
1	W-357	GREASE FITTING
1	W-474	SPRING
3	W-1491	SPLIT COLLAR
1	W-1682	HEAVY INDEX ARM
1	W-1683	INDEX STOP
1	W-1684	PIVOT BLOCK WITH BRONZE BUSHING
1	W-1685	REAR PIVOT BLOCK WITH BRONZE BUSHING





INDEX ARM ASSEMBLY







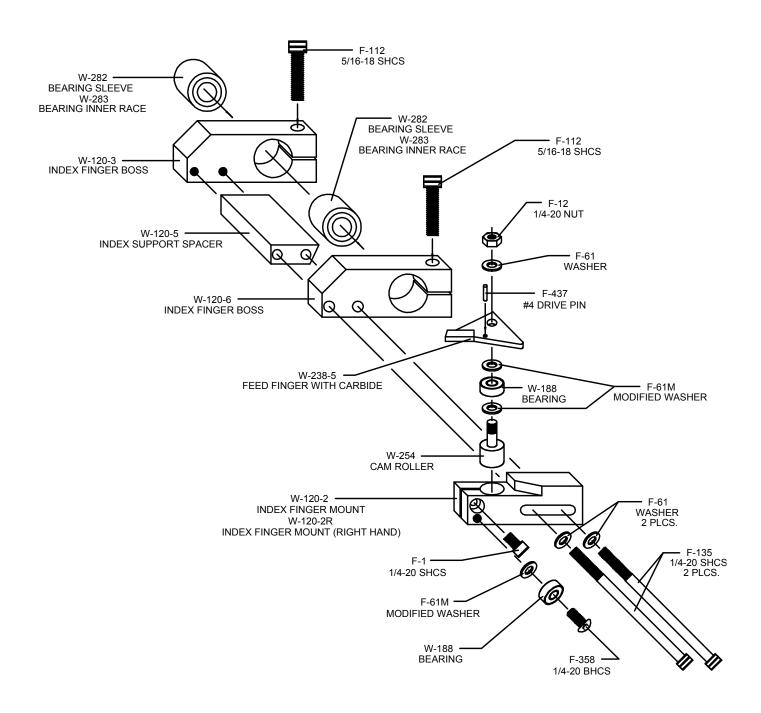
INDEX FEED FINGER ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
1	W-259	INDEX FINGER
1	F-304	FINGER SCREW
1	W-1330	INDEX RAMP SKID
1	W-287	FINGER BOSS
1	W-883	SPRING FOR FINGER
1	W-1381	INDEX FINGER WELDMENT
2	W-188	FINGER BASE PIVOT BEARING
1	W-1453	SPRING
1	W-1382	INDEX ARM





INDEX FEED FINGER ASSEMBLY







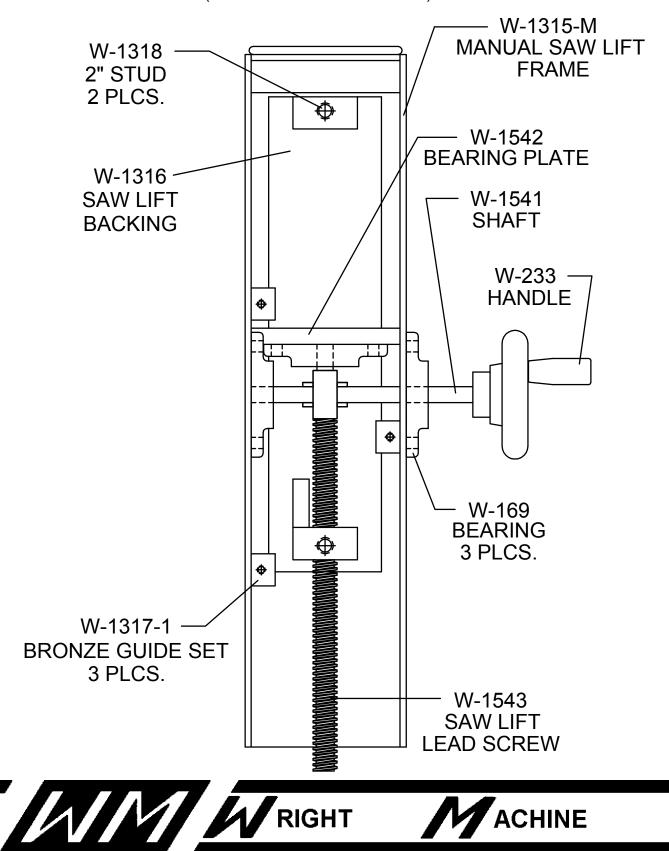
SAW LIFT ASSEMBLY

QTY	PART NUMBER	DESCRIPTION
1	F-12	1/4-20 JAM NUT
2	F-58	1/4" CUT WASHER
1	F-101	1/4-20 SOCKET HEAD CAP SCREW
4	F-102	1/4-20 SOCKET HEAD CAP SCREW
6	F-104	1/4-20 SOCKET HEAD CAP SCREW
3	F-106	1/4-20 SOCKET HEAD CAP SCREW
3	W-1317-1	BRONZE GUIDE BLOCK
2	W-1318	2" STUD
1	W-1316	SAWLIFT BACKING
1	W-1315-M	SAWLIFT FRAME
1	W-1542	BEARING PLATE
1	W-1541	SHAFT
1	W-233	HANDLE
3	W-169	PILLOW BLOCK BEARING
1	W-1543	SAWLIFT LEAD SCREW





SAWLIFT ASSEMBLY (BACK SIDE OF SAWLIFT)



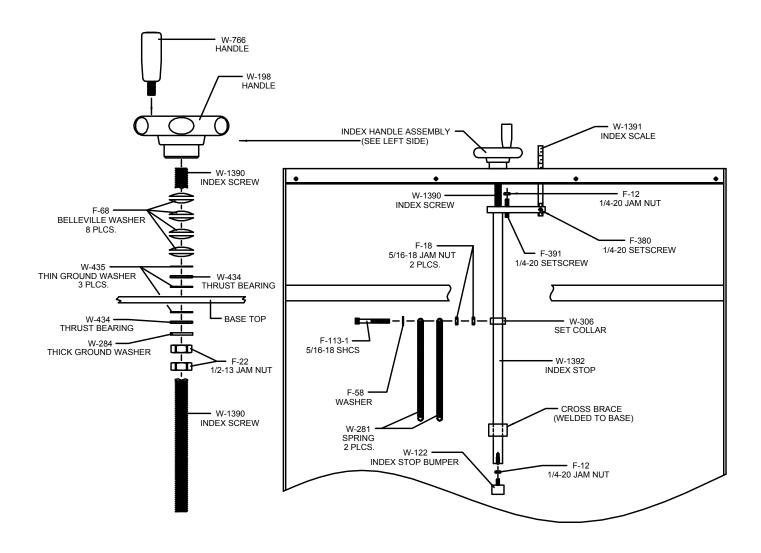
INDEX ADJUSTMENT ASSEMBLY INSIDE BASE

QTY	PART NUMBER	DESCRIPTION
1	W-766	HANDLE
1	W-198	MODIFIED HANDLE
1	W-1391	INDEX SCALE
1	W-1390	INDEX SCREW
3	F-12	1/4-20 JAM NUT
1	F-391	1/4-20 SET SCREW
1	F-380	1/4-20 SET SCREW
1	W-1392	INDEX STOP
1	W-122	INDEX STOP BUMPER
8	F-68	SPRING WASHER
3	W-435	THIN GROUND WASHER
2	W-434	THRUST BEARING
1	W-284	THICK GROUND WASHER
2	F-18	5/16-18 JAM NUT
1	F-113-1	5/16-18 SOCKET HEAD CAP SCREW
1	F-58	WASHER
1	W-306	SET COLLAR
2	W-281	SPRING





INDEX ADJUSTMENT ASSEMBLY INSIDE BASE







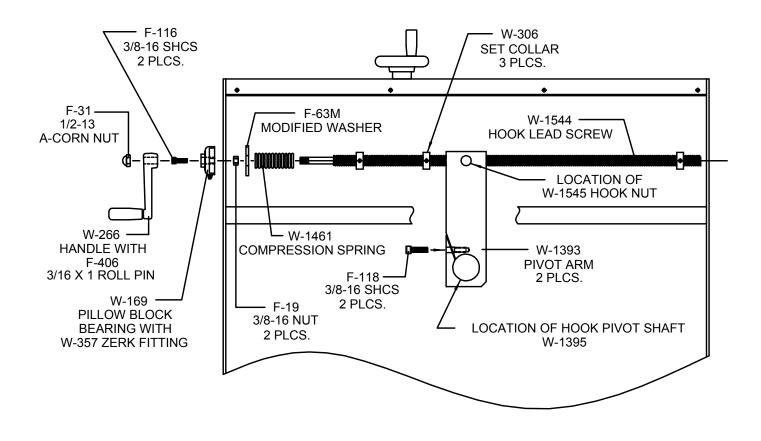
HOOK SHAFT CRANK HANDLE ASSEMBLY INSIDE BASE

QTY	PART NUMBER	DESCRIPTION
2	F-116	3/8-16 BOLT
1	F-31	1/2-13 A-CORN NUT
1	F-63M	MODIFIED WASHER
1	W-1544	HOOK LEAD SCREW
1	W-266	HANDLE
1	F-406	3/16 X 1 ROLL PIN
1	W-169	PILLOW BLOCK BEARING
1	W-357	ZERK GREASE FITTING
1	W-1461	COMPRESSION SPRING
2	F-118	3/8-16 BOLT
2	F-19	3/8-16 NUT
2	W-1393	PIVOT ARM
3	W-306	SET COLLAR
1	W-1545	HOOK NUT





HOOK SHAFT CRANK HANDLE ASSEMBLY INSIDE BASE



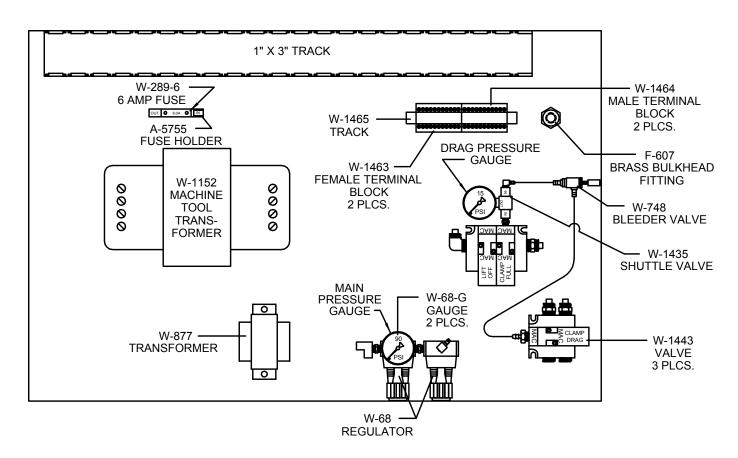




INSIDE REAR DOOR

QTY	PART NUMBER	DESCRIPTION
1	W-1429	TRANSFORMER (BUCK BOOST)
1	W-1152	TRANSFORMER (MACHINE TOOL)
1	W-289-6	6-1/4 AMP FUSE
2	W-68	REGULATOR
2	W-68-G	GAUGE
3	W-1443	VALVE
2	W-1463	FEMALE TERMINAL BLOCK
2	W-1464	MALE TERMINAL BLOCK

SUB PANEL ASSEMBLY (INSIDE REAR DOOR)







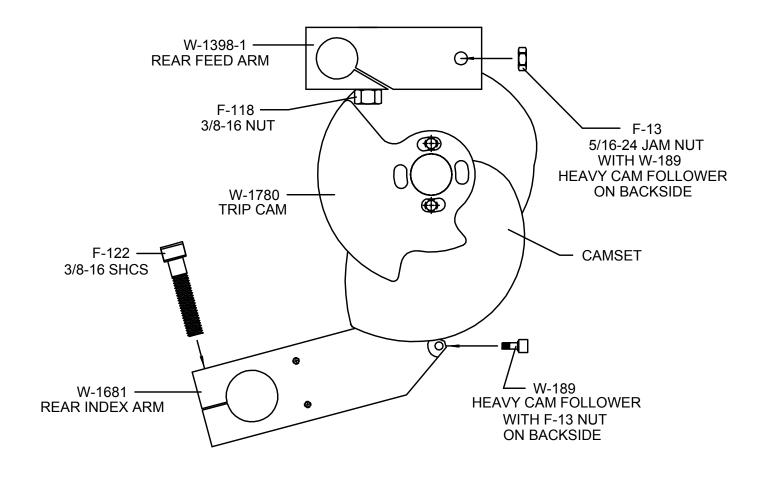
CAM AREA

QTY	PART NUMBER	DESCRIPTION
1	W-1438	LIMIT SWITCH (MICRO)
1	W-1437	PLUNGER FOR MICRO
1	W-221	INDEX CAM
1	W-220	CAM HUB
1	W-1383	FEED CAM
2	W-189	CAM FOLLOWER
2	F-13	5/16-24 JAM NUT
1	W-1681	REAR INDEX ARM
1	F-122	3/8-16 BOLT
1	W-1398-1	REAR FEED ARM
1	W-1780	TRIP CAM





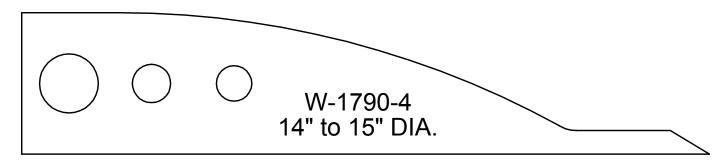
CAM AREA

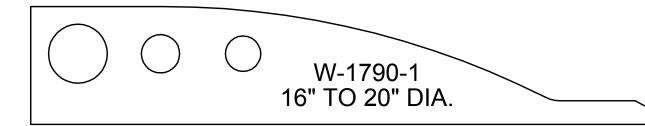


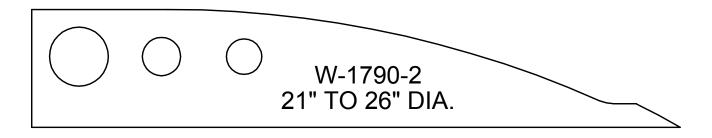


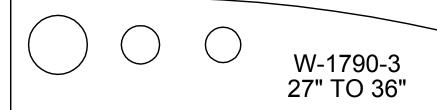


VARIOUS RAMPS FOR DIFFERENT SAW DIAMETERS













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ELECTRICAL SCHEMATICpower saw option

