DS-3 DUAL SIDE GRINDER

OPERATORS MANUAL

MADE IN THE U.S.A.

WRIGHT MACHINE

TALON DS-3 DUAL SIDE SHARPENER

Contents

LIMITED WARRANTY

This machine is warranted against defects in workmanship and materials under normal use and proper maintenance, for three years after date of purchase or 3,000,000 tips, whichever comes first. 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.

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

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

TALON DS-3 DUAL SIDE SHARPENER

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, clamp jaws, 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.

No Magnetic Devices Near the Operator Interface (OP73): The OP73 or push button Operator Interface contains internal circuitry along with an LCD Display that is sensitive to high magnetic fields. There must be a minimum distance of 2 meters from any magnetic device and the OP73 operator interface.

TALON DS-3 DUAL SIDE SHARPENER

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.

WARNING!

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

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 disolved 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 the factory 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

TALON DS-3 DUAL SIDE SHARPENER

SPECIFICATIONS

DS-3 Automatic Dual Side Grinder for Circular Saws. Featuring Step In / Lift Off Tapered Peripheral Grind.

STANDARD VOLTAGE:	230 Volt, 3 Phase, 50/60 HZ
OPTIONAL VOLTAGE:	440 Volt, 3 Phase
SHIPPING WEIGHT:	1,000 lbs / 450 kg
CRATE SIZE:	L 65" X W 49" X H 75" L 163 X 125 X H 188 cm
AIR REQUIREMENTS:	2 CFM at 80 psi / 6 bar
STANDARD SAW SIZE:	6"-36"/150-900mm - Automatically Up to 48"* / 1200 mm - Manually
OPTIONAL SAW SIZE:	Up to 48"/1200 mm Automatically Down to 2" / 50 mm
SPINDLE MOTORS:	(2) 2 hp Motors
STANDARD RPM:	5150 RPM
OPTIONAL RPM:	As Requested

*NOTE: 48" saws with less than a 25° hook may require having the base notched out.

TALON DS-3 DUAL SIDE SHARPENER

OPTIONS

Large Bore Option	W-50
Totalizer Counter	W-70
3 Pin Spline Saw Center	W-450
Spline Bore Saw Center	W-460
Expandable Saw Center with magnets	W-495
Large Saw Option	W-760
Manual Saw Locator	W-761
Small Saw Option (Down to 4") (Includes 2 W-652-1 and 4 bushings - specify size)	W-1320-1A
Dual Pitch Option	W-1745
Small Saw Auto Indexer - down to 2"/50mm	W-2370
Bevel Face Stop	W-1220
Borazon Grinding Wheel	B-35 (2 Required)
Diamond Grinding Wheel	D-35 (2 Required)

COMMON REPLACEMENT PARTS

Clamp Jaw	W-652-2
Index Finger	W-635
Index Clamp Jaw	W-721

TALON DS-3 DUAL SIDE SHARPENER

PRE SET UP

COOLANT

Coolant capacity is 10 to 15 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-589.

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.

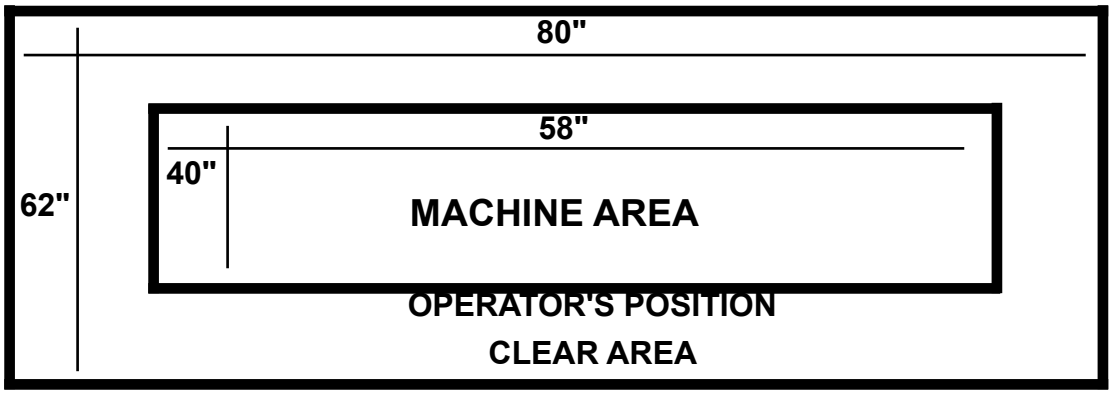
Mounting of the grinding wheel should only be done by persons with mechanical aptitude and good knowledge of mounting, care, and inspection of grinding wheels. All grinding wheels must be rated for at least 5,150 RPM of the RPM of your machine, whichever is greater. For Carbide, 2 D-35 Diamond Wheels are required. For Stellite® / High Speed Steel, 2 B-35 Borazon Wheels are required.

MACHINE INSTALLATION

Lifting this machine should only be done with a fork lift under the Coolant Tank.

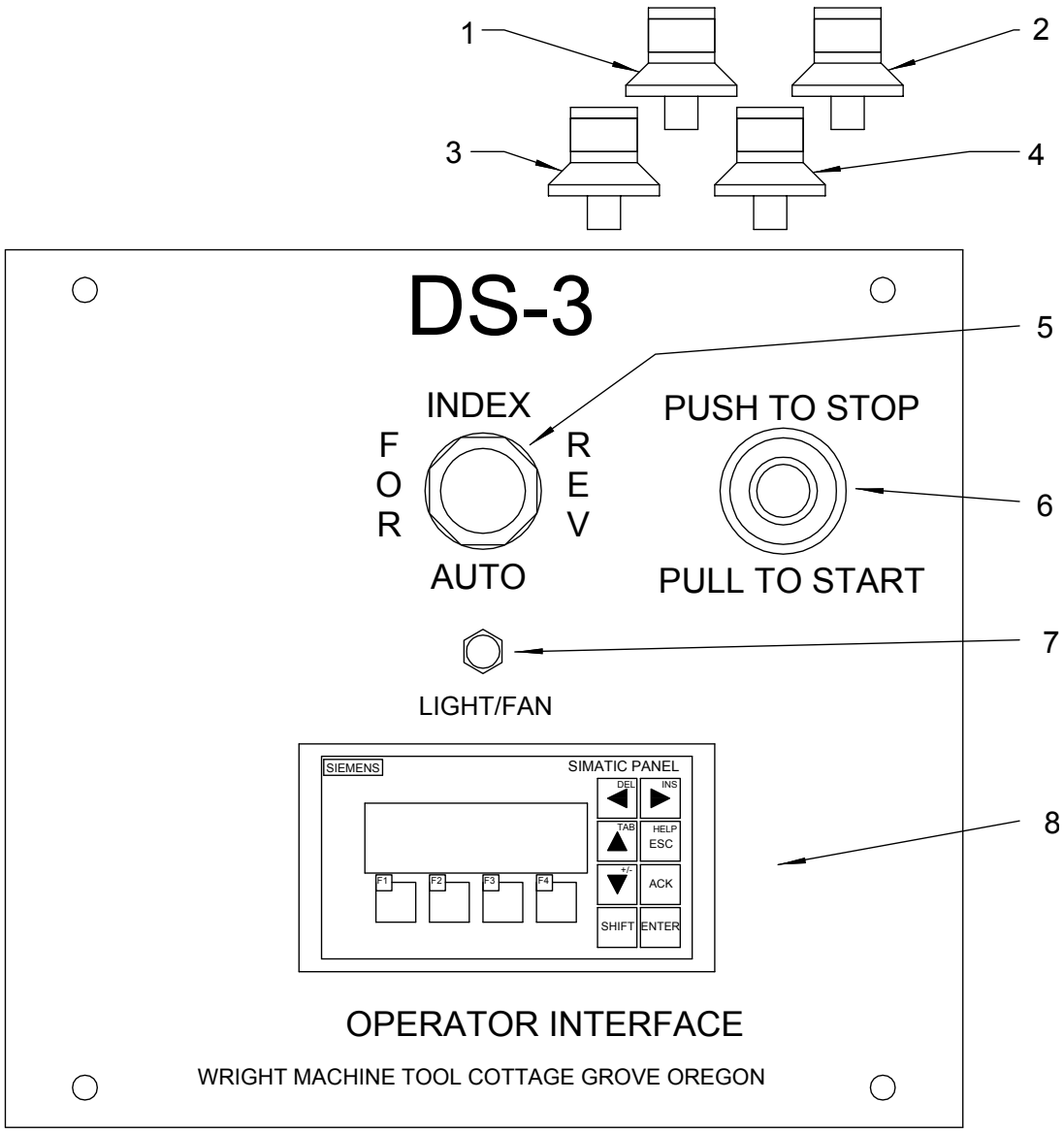
Machine weight is approximately 1,000 pounds.

RECOMMENDED FLOOR SPACE FOR MACHINE AND OPERATOR



TALON DS-3 DUAL SIDE SHARPENER

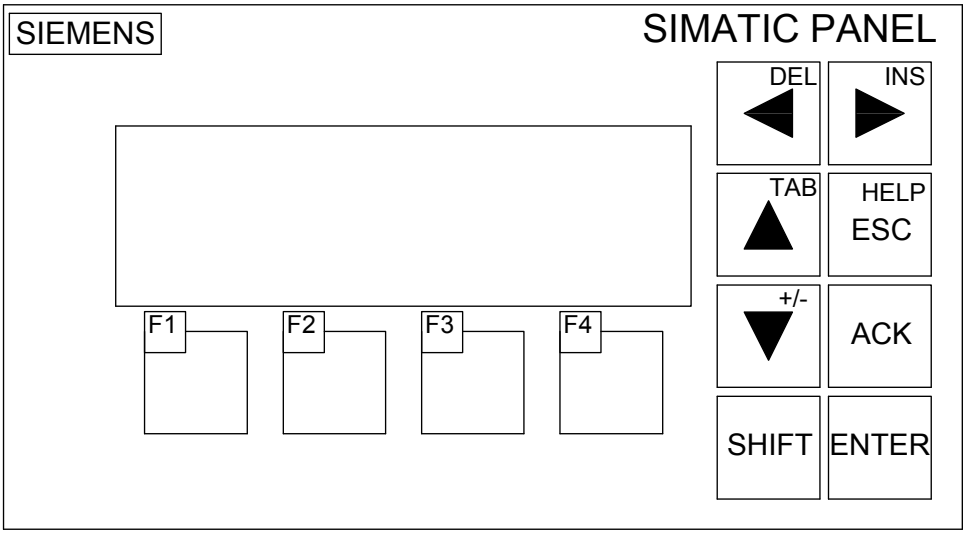
CONTROLS



1. **Forward Stroke Stop Position**
2. **Reverse Stroke Stop Position**
3. **Forward Feed Speed**
4. **Reverse Feed Speed**
5. **Control Joy Switch**
6. **Start / Stop Switch**
7. **Work Light/Fan**
8. **Operator Interface**

TALON DS-3 DUAL SIDE SHARPENER

OPERATOR INTERFACE



DS DUAL SIDE GRINDER
PRESS F4 FOR MENU

The main power switch for the machine is located on the left side of the control panel. When the machine is first powered up the system will run through a series of diagnostic checks. When the checks are completed you should see the above information on the screen. The DS-3 retains memory of the last saw ground. If you wish to continue grinding saws with the same settings as the previous saw, simply load the next saw and you are ready to continue grinding. If you want to change the number of teeth to grind, grind type or any of the other parameters press the F4 key to access the menu. Once the F4 key has been pressed the information below should appear on the screen:

Number of tips: 50
PULL START BUTTON

TALON DS-3 DUAL SIDE SHARPENER

OPERATOR INTERFACE (Cont.)

You are now in the setup menu and may change the grind settings. The numbers should be high lighted. Press ENTER key to make changes, then UP, DOWN, LEFT or RIGHT arrow keys to select the number of teeth on the saw you are going to grind, then press the ENTER key to accept the changes. Now press the down arrow key to move to the next item on the menu. The screen you see should look like this:

Saw type: NORMAL

To select between types of saws, press the ENTER key then the up or down arrow. When you see the correct saw type press the ENTER key. The choices you see will be NORMAL, COMBO and SKIP. Once you have the saw type set correctly press the down arrow key to move on to the next menu item. You should see this screen:

Combo saw type: 5-1

Here you set the number of teeth in each group on combo saws. The numbers should be highlighted. To change the number simply key in the new number and press the ENTER key. The number can be set anywhere from 1 to 99. In the example above, if the saw type were set to COMBO, the DS-3 would grind 5 teeth, then skip 1. Once the appropriate number is entered press the down arrow key to move on to the next menu item. You should see this screen:

Skip saw type: 1-1

TALON DS-3 DUAL SIDE SHARPENER

OPERATOR INTERFACE (Cont.)

If you set the saw type as SKIP, this is where you indicate the number of teeth you want it to index for each grind. In the example the skip is set to 1-1. This means that the DS-3 will grind one tooth, then index twice before grinding again. This function is normally used when teeth are spaced very far apart. For instance, if the teeth were spaced 10" apart, you would set the index at 5" and the skip on 1-1. This would cause the DS-3 to grind a tooth every 10 inches. Once this is properly set press the down arrow key to move to the next item on the menu. The screen you see should look like this:

Grind mode: STEP OUT

To set the grind mode you wish the machine to use press the ENTER key and use the up or down arrow to scroll through the choices. The following choices are available:

IN AND OUT: In this mode the grinding heads are locked and do not step in or out when grinding.

STEP IN: In this mode the machine grinds on the forward stroke and then steps in .005 for the return finish pass.

STEP OUT: In this mode the machine grinds on the forward stroke then lifts off on the return stroke. This position is best for saws with a plate thickness of .140 or thicker when maximum speed is required.

MULTI PASS: In this mode the machine grinds on the first pass, then steps in .005 for the next pass. Any succeding passes are ground at the same setting, the heads do not step in any further after the first time. This process is repeated for each tooth.

TALON DS-3 DUAL SIDE SHARPENER

OPERATOR INTERFACE (Cont.)

Once you have selected the appropriate grind mode press the ENTER key, then press the down arrow key to move to the next item on the menu. The screen you see should look like this:

Multi Pass # of Passes: 3

Here you set the number of passes the machine takes over each tooth when it is set in the MULTI PASS mode. To change the number simply key in the new number and press the ENTER key. Remember that the heads step in .005 on the second pass, then remain at the same setting for any following passes. Once the desired number is entered press the down arrow key to move on to the next menu item.

The remaining menu items are primarily for information purposes and should not need to be changed in order to grind a saw. A list of the items and their purposes follows:

POWER ON TIME: Displays the length of time that the machine has been powered up.

TOTAL TIPS GROUND: Displays the total number of tips that the machine has ground. This number cannot be changed.

RESET WHEEL TOTALIZER: This is used to keep track of how many tips the grinding wheels have ground. It is typically reset to zero when new wheels are installed. It is necessary to input the password before this can be changed.

TALON DS-3 DUAL SIDE SHARPENER

OPERATOR INTERFACE (Cont.)

RESET SHIFT TOTALIZER: This works the same as the wheel totalizer, but is used to keep track of the number of tips ground in a given shift, day, month, etc.

TOTAL SAWS GROUND: Work the same as total tips ground, except it keeps track of saws ground instead of tips. Cannot be changed.

SYSTEM PASSWORD: Hold the SHIFT key and press F5. Then enter the password and press ENTER. This will bring up the password screen. Input your new password and press ENTER. Be sure to write the password down where you won't lose it. When you are finished press the ESCAPE (ESC) key to return to the menu.

After you have finished programming all of the menu items press the ESCAPE key to return to the main prompt. While you are grinding the saw you will see the following information on the screen:

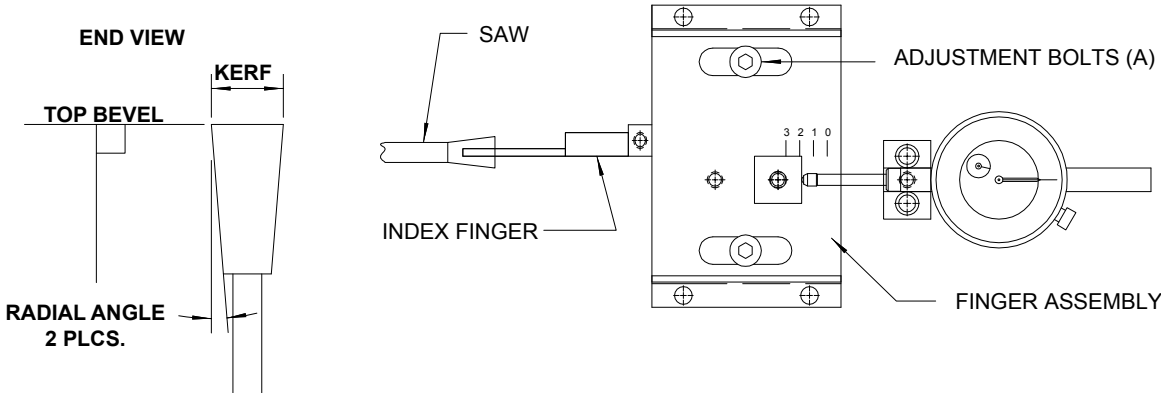
This is the information that should be displayed while grinding the saw. You may return to the menu at any time by pressing the yellow ENTER key, but it is always a good idea to return to this screen while grinding. Setup of the Operator interface is now complete. Turn to the next page to begin setup of the machine.

Note: Once a password has been entered it remains active until the machine is powered down. This means that all functions allowed by that password can be accessed by anyone until the machine is powered down.

TALON DS-3 DUAL SIDE SHARPENER

SETUP

1. Set the Radial Angle if necessary. Use the following procedure:
   A. Loosen adjustment bolts (A).
   B. Move finger assembly until indicator reads dimension shown in the chart below.
      Example: 2° on .500 tip the indicator should read .530
   C. Lock adjustment bolts (A).



DEGREE *	INDICATOR READING			
	CARBIDE LENGTH ...			
	.312	.375	.500	.625
0°	.000	.031	.094	.156
1/2°	.109	.140	.203	.265
1°	.218	.249	.312	.374
1-1/2°	.327	.358	.421	.483
2°	.436	.467	.530	.592
2-1/2°	.545	.576	.639	.701
3°	.654	.686	.748	.810

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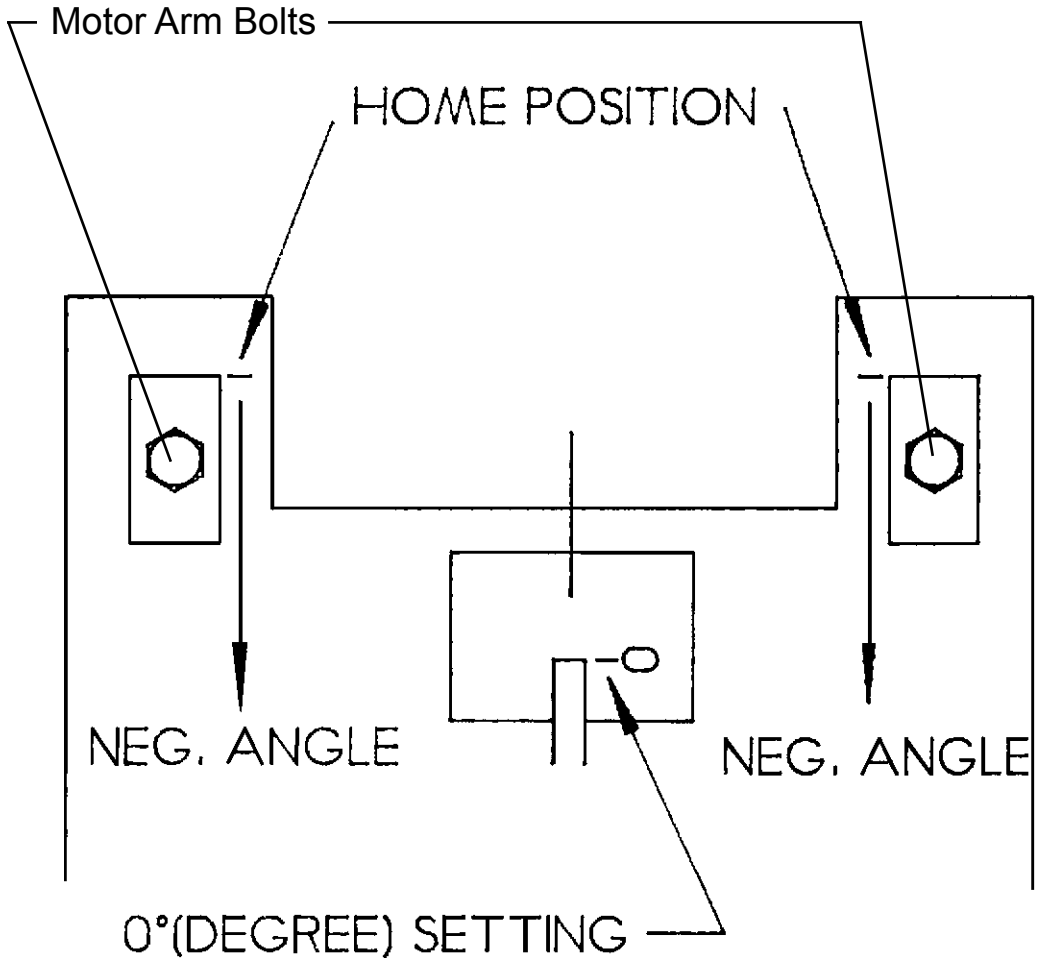
The DS-3 is capable of grinding negative radial angles. Use the following procedure to set up for those applications, otherwise continue to the next step on the following page.

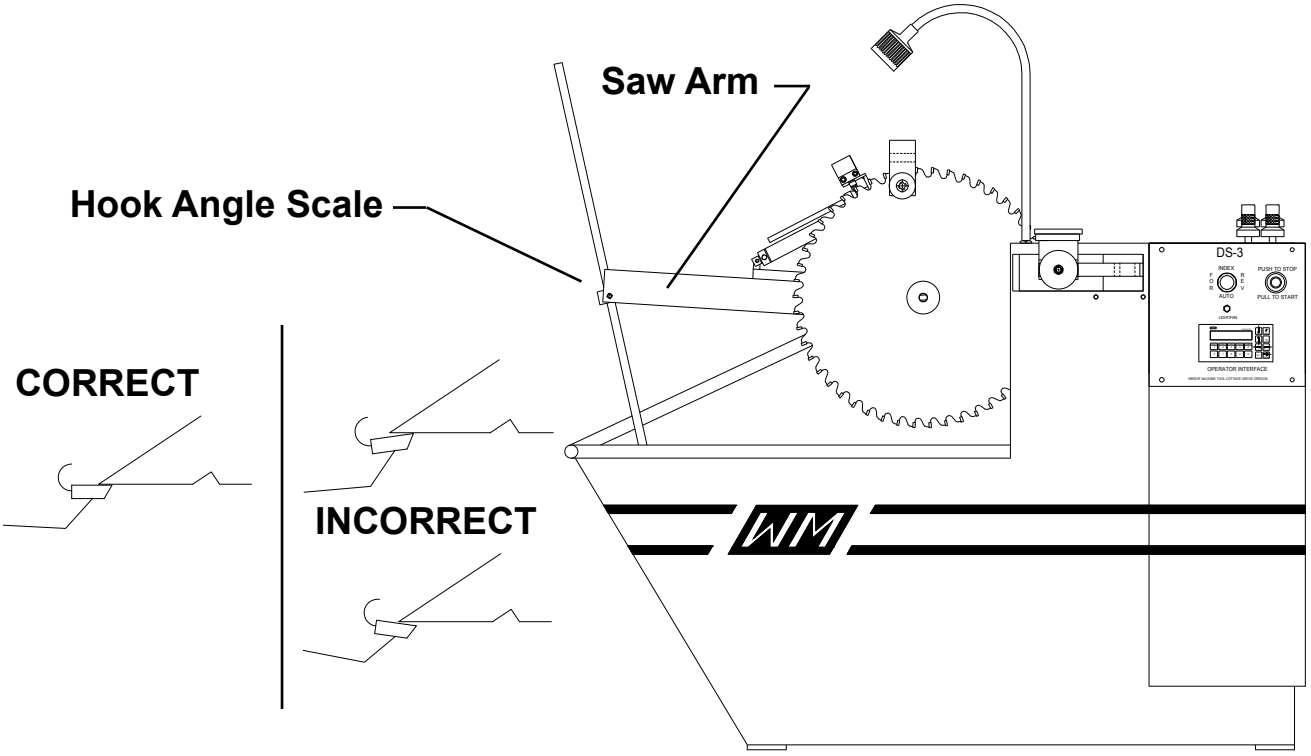
Step 1. Set machine on 0° radial.

Step 2. Remove the rear cover, loosen the motor arm bolts and move the motor arms back to the rear stop blocks, then tighten the bolts. This will provide 4° negative radial angle. Support the motor with one hand while making adjustments.



TALON DS-3 DUAL SIDE SHARPENER

2. Set hook angle. Move the saw arm until the hook angle of the saw matches the hook angle scale at the end of the saw arm. When set properly, the face of the saw tip to be ground should be horizontal.



3. Mount the saw on the centering device. When the machine is off the Control Joy Switch (#5) controls the saw diameter actuator. Moving the joy stick to the left will adjust for a smaller diameter saw and moving it to the right a larger saw. The face of the tooth should be flat against the index finger to prevent excess wear and chipping.

4. Move the joy stick to the left. The tooth sensor will extend below the index finger. Allow the saw tooth to touch the sensor. When the saw is in the correct position the saw diameter actuator will stop. It may be necessary to disconnect the auto loader for saws 34" and larger.

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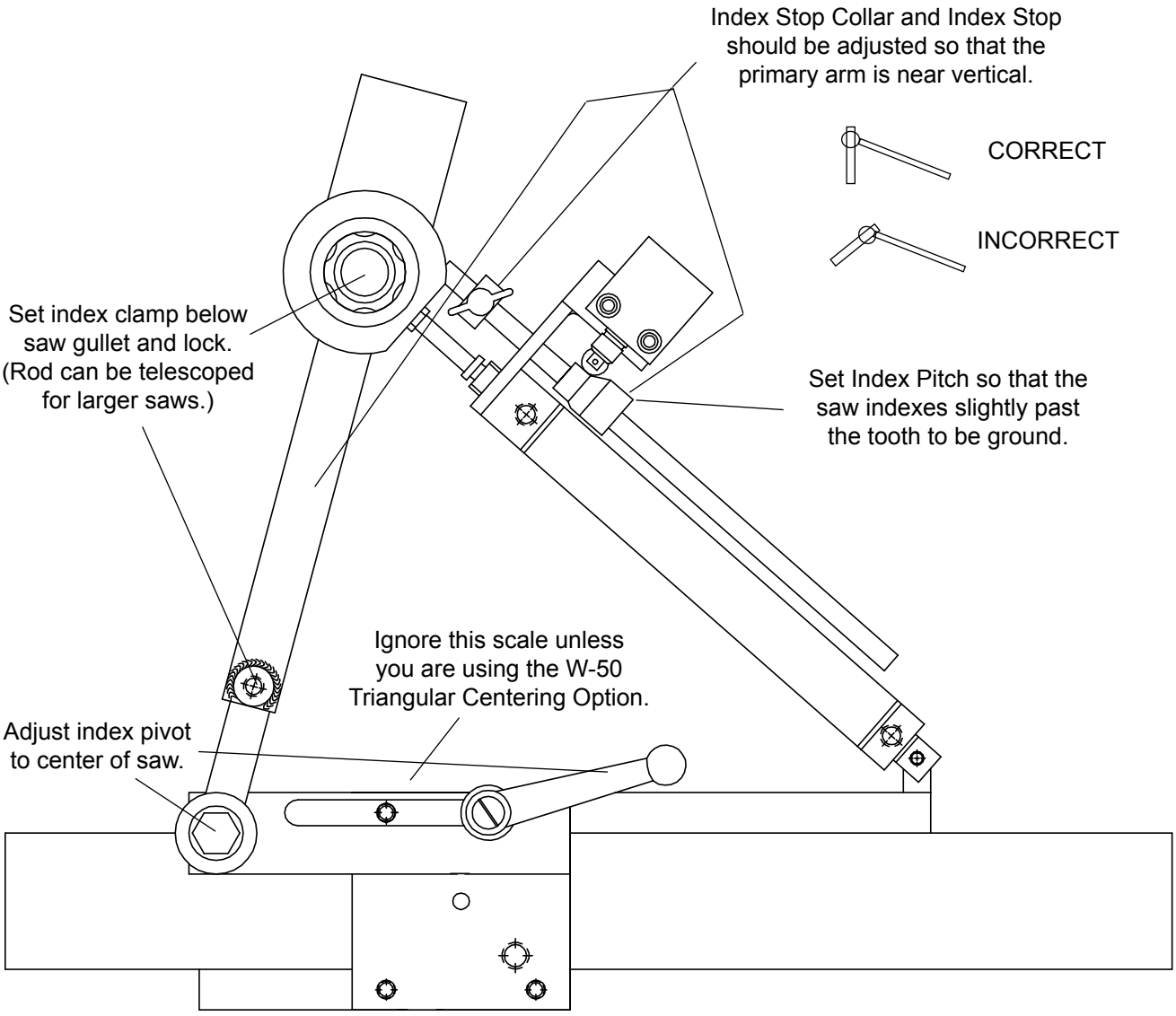
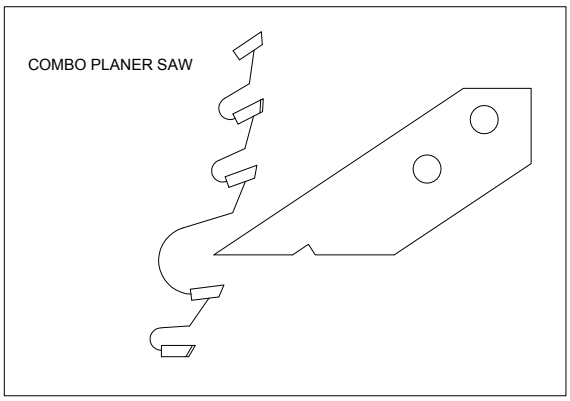
5. Adjust index pitch and clamp as shown below.



6. Start the machine by pulling the Start/Stop Switch (#6) out.

TALON DS-3 DUAL SIDE SHARPENER

NOTE: When starting in COMBO mode put the stop finger in the center of the long tooth space in order to keep the index correct.



7. Turn the Forward Feed Speed knob (#3) full clockwise.

8. Place Joy Stick (#5) into Auto. The machine will index one tooth and be ready to grind.

9. Open Forward Feed Speed knob(#3) slightly. This will allow the grinding head to move out toward the tooth. When the grinding wheels are over the front edge of the carbide tip, Turn Forward Feed Speed knob (#3) full clockwise again. This will stop the grinding wheels at that position.

10. Turn the infeed until it grinds across the entire surface of the tooth. (The tooth should clean up and shine across it's entire width where the grinding wheel is contacting it.) Do this for both sides, then zero the dial indicators.

11. Open Forward Feed Speed (#3) again until the grinding wheels have traveled beyond the tooth being ground. Close Forward Feed Speed (#3) by turning full clockwise.

12. Turn the Forward Stroke Adjustment knob (#1) clockwise until the grinding wheels reverse. This adjusts the travel limit of the forward stroke.

13. When the grinding wheels have fully retracted, place Joy Stick (#5) to the center position.

14. Stop the machine by pushing the Start/Stop Switch (#6).

15. Check the tip that was ground. Measure the side clearance of the tip after it is ground and make any necessary adjustments to the infeed wheels to give the tooth the proper side clearance, then grind it and recheck it.

NOTE: All adjustments of infeed must be made with the hand wheel being turned in. If necessary to move out, turn at least one half turn further out than necessary, then adjust it back in to the proper position. This removes the backlash in the lead screw threads. The machine should be running but not cycling when the in-feed is adjusted.

16. After step 15 is completed it may be necessary to adjust the Tangental Angle. If the Tangental Angle is changed it will be necessary to recheck the hook angle to ensure that the tooth face is still flat against the index finger. The procedure for setting the Tangental Angle is on the following page.

NOTE: Teeth must have flat tops (0° Top Bevel) in order for side tolerances to be accurate. For grinding alternate tops the procedure on the following page is recommended.

17. Setup is now complete. Move Joy Stick (#5) to Auto and open Forward Feed Speed knob (#3) to begin grinding the saw.

IMPORTANT

Do not shut off machine during the grind with the Start / Stop Button. It will un-clamp the saw before the wheels stop turning.

NOTE: Pulling the Start/Stop switch (#6) when the machine is running, and the Joystick (#5) is centered will toggle the coolant pump on and off. When the Joystick (#5) is in Auto, the coolant pump will be on. When the Start / Stop switch (#6) is pulled, and the Joystick (#5) is in Auto counter will reset to zero.

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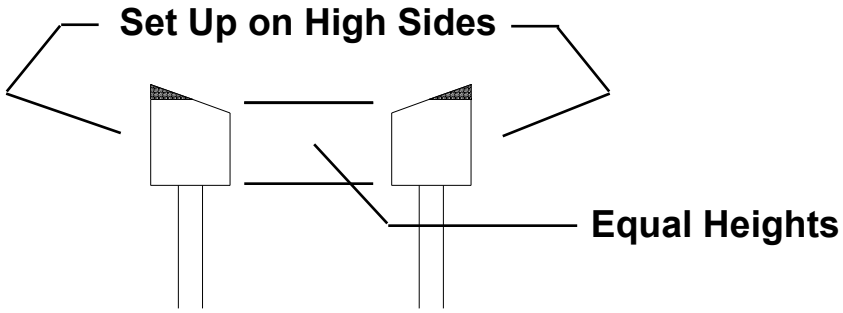
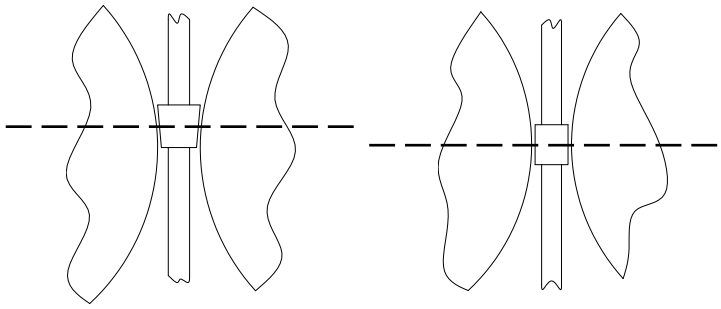
Alternate Tops:
When setting alternate top bevels you should grind small 0° flats on the tops of two set up teeth, making them the same height. Then set up each side so that it grinds correctly on the "high" side of each tooth.



TANGENTAL ANGLE ADJUSTMENT

Note: The finger location vertically sets the tangental angle.



Use the procedure on the following page for exact adjustment of the tangental angle on the DS-3.

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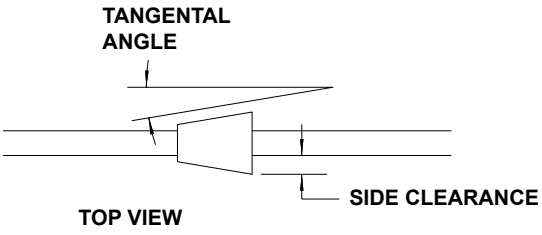
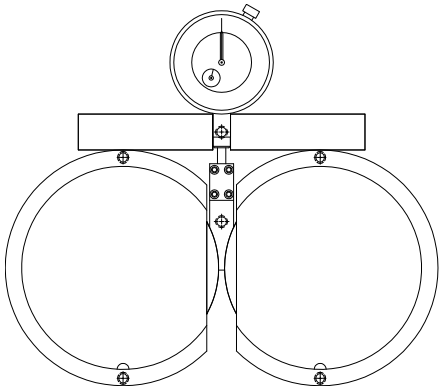
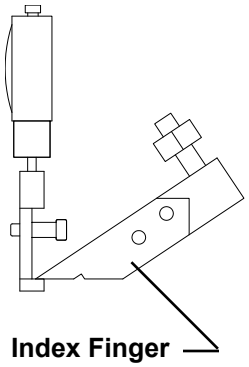
SETTING TANGENTAL ANGLES ON DS-3







DEGREE *	INDICATOR READING			
	CARBIDE THICKNESS ...			
	.078	.093	.125	.156
0°	---	.000	.017	.033
1/2°	.011	.019	.035	.051
1°	.029	.037	.053	.069
1-1/2°	.047	.055	.071	.087
2°	.065	.073	.089	.105
2-1/2°	.083	.091	.107	.123
3°	.101	.109	.125	.141
3-1/2°	.119	.127	.143	.159
4°	.138	.146	.162	.178
4-1/2°	.155	.163	.179	.195
5°	.173	.181	.197	.213
5-1/2°	.191	.199	.215	.231
6°	.209	.217	.233	.249
6-1/2°	.228	.236	.252	.268
7°	.246	.254	.270	.286
7-1/2°	.264	.272	.288	.304
8°	.283	.291	.307	.323

Steps to set the tangental angle(s)...

1. Move the heads out to position. Set the tangental scale on top of the wheel guard. Hook the tangental scale under the index finger.
2. Use the chart above to check angle(s) in thousandths.
   Example: .072 = 2°.
3. Loosen nut (A) with a 7/16" wrench. With a 1/8" allen wrench raise or lower the index

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MONITOR LIGHT

The machine's monitor light will signal when the machine stops it's automatic cycle. The first minute down, the light blinks on for 1 second, off 3 seconds. At 2 minutes it flashes on for 1 second, off for 1 second. At 3 minutes it flashes on for 1second, off for 1/3 second. At 4 minutes the monitor light stays on. To turn the monitor light off, restart the machine, or move the joy switch out of automatic.

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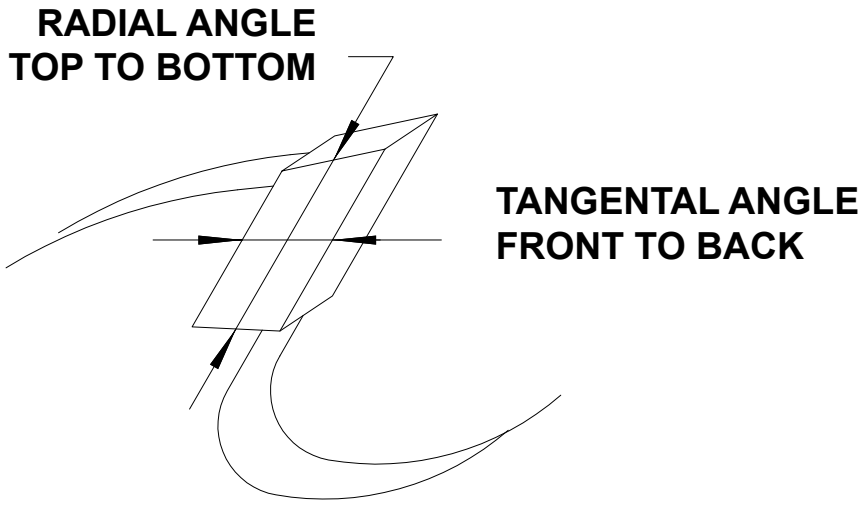


CONVERSION CHART

DEGREES OF ANGLE CONVERTED TO DROP OFF IN THOUSANDTHS X DISTANCE.

To convert degrees to thousandths, select degrees required on line (A). Example: 3.5 degrees. On line (B) select length of measurement. Example: .375 for a 3/8 tip. Where 3.5 degrees and .375 intersect is drop off in thousandths of an inch.

Line (A)	.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
.125	1	2	3	4	5	6	7	8	9	10	11	12
.250	2	4	7	9	11	13	15	18	20	22	24	26
.312	3	5	8	11	14	16	19	22	25	27	30	33
.375	3	7	10	13	16	20	23	26	30	33	36	39
.437	4	8	11	15	19	23	27	30	34	38	42	46
.500	4	9	13	17	22	26	31	35	39	44	48	52
Line (B)												

TALON DS-3 DUAL SIDE SHARPENER

MAINTENANCE

The useful life of this machine can be dramatically extended if the following rules of operation are followed.

1. Clean the machine regularly to avoid carbide buildup.

2. Leave all inspection covers closed and in place. Only open inspection covers during maintenance.

3. A good rust inhibiting coolant must be used in the correct ratio. Too weak a mix will cause rust problems and too thick will damage the paint and load the Diamond wheels.

4. When not in use leave the enclosure door open. This eliminates humidity build up in the enclosure. (Enclosure optional)

5. Do not clean the machine with high pressure air or water. This can blow grit into the internals of the machine and cause rusting problems which is not covered by warranty.

MAINTENANCE

DAILY	1. Check coolant level and filter. 2. Clean interior of machine.
WEEKLY	1. Check coolant tank for carbide buildup. 2. Replace coolant filters.
MONTHLY **or 100,000 CYCLES**	1. Grease motor arm pivot and index ring zerk fittings. 2. Inspect finger for wear. 3. Inspect drive belts for wear. 4. Inspect index clamp jaws for wear. 5. Inspect saw clamp jaws for wear.
EVERY 6 MONTHS **or 500,000 CYCLES**	1. Clean coolant tank completely
EVERY 24 MONTHS **or 1,000,000 CYCLES**	1. Replace spindle drive belt . 2. Inspect pulleys for wear.

TALON DS-3 DUAL SIDE SHARPENER

TROUBLESHOOTING

1. Coolant does not flow when switch is on:

a. Check to be certain coolant is in the tank.
b. Is valve open.
c. Blow air through the nozzle to clean obstruction.
d. Coolant pump defective.

2. Machine does not grind accurately:

Possible problems:

Kerf is uniform but side clearance varies between tips. This problem is usually caused by saw teeth that are bent or the body of the saw has lumps. When using a side dial indicator to measure side clearance, keep in mind that it can give false readings if the saw plate is not perfectly flat. The readings from a side dial indicator should be used only to set side clearances, not to check the accuracy of the machine.

3. Kerf and side clearance varies:

a. Diamond wheels are glazed or loaded. Dress diamond wheels to correct the problem, or switch them from side to side. (Don't turn them over.)

b. Operating machine at too fast a speed for the amount of carbide to be removed.

c. Carbide tips were installed excessively off center causing the bend away from the heavy grind pressure on that side.

NOTE: If silver solder is allowed to flow onto sides of carbide when tipped, the diamond wheels will be clogged by it. This will cause erratic nonuniform grind.

4. In automatic, heads stop full forward and do not return:

a. Forward Stroke Stop (#1) is adjusted too far out, screw it in until machine reverses.

5. In automatic, heads grind first tip and then saw does not index:

a. Reverse Stroke Stop (#2) is adjusted too far out, screw in until the machine indexes.

TALON DS-3 DUAL SIDE SHARPENER

HELPFUL HINTS

All saws should be measured with a micrometer to determine the saw plate thickness. Then each plate thickness should be marked on the plate with a marking pen.

When ready to grind the first saw be sure that the finger is 1/8" beyond the top of the carbide tip when the tip is pulled back against the index finger.

If the next saw is approximately the same hook angle, the outside grinding head will not have to be changed unless a different side clearance is needed.

The inside grinding head will have to be moved to compensate for difference in saw plate thickness. Example, if the second saw is .003 thinner than the first saw, the inside head would have to be moved .003 in to give the same clearance as the first saw, starting with thickest saws first.

If the next saw to be ground is slightly larger or smaller in diameter it will affect the side clearance unless you reset the diameter adjustment so the finger is 1/8" below the top of the carbide tip. A 1/16" change in this adjustment will change the side clearance approximately .005.

TALON DS-3 DUAL SIDE SHARPENER

ACCURACY PROBLEMS

Our DS-3 Automatic Side Grinders can easily hold a tolerance of + or - .0003. If the saws you are grinding exceed acceptable side clearance tolerances one or more of the following problems exist.

Is your saw plate clean?
If any pitch, flux or saw dust is on the sides of the saw plate, it can become lodged between the saw and the clamp jaw. This will force the saw to move away from the fixed clamp jaw. This will shift the side clearance which will add side clearance from the opposite side.

Are your diamond wheels cutting freely?
If the diamond wheels are loaded or dull, the saw will bend away from the loaded wheel and the accuracy of the side clearance and kerf will be erratic. Diamond wheels will not remove large amount of silver solder. The solder will melt and stick to the diamond particles in the grinding wheel. This makes it impossible for the wheel to cut freely.

To determine if the wheel is loaded, feel the back edge of the wheel with your fingernail. If there are any chips on this surface of the wheel, it indicates that the wheel is not cutting freely and therefore the grinding pressure is high enough that the rear of the wheel chips out.

To clean and sharpen the wheel, reverse the left wheel with the right. This will reverse the rotation of the cutting load and will easily clean the wheels.

If large amounts of silver solder are on the side of the tip, remove it with a 4-1/2 inch hand held grinder with paper grinding disk. This will remove the solder but leave the carbide undamaged. Grinding with loaded diamond wheels is very similar to shaving with a very dull razor.

TALON DS-3 DUAL SIDE SHARPENER

ACCURACY PROBLEMS
(Continued)

Are your clamp jaws adjusted as close as possible to the tooth that is being ground?

Use the U shaped clamp jaws only if you are grinding strob saws. If you are using these strob jaws, rotate them until they are set at the 2 o'clock position. This can be done by loosening the allen screw in the center of each clamp jaw. The round clamp jaws part number W-652-2 support the saw plate much closer to the tip and therefore there will be less saw plate deflection which means closer tolerances.

On saws with a plate thickness of .095, 5 pounds of side load will bend the saw plate .0025 and 10 pounds of side load will bend it .005. Due to the lateral flexibility in a saw, uneven grinding forces will cause the plate to bend during the grind, which will cause erratic grinding tolerances. On the DS-3 Side Grinder it would take a grind side load of 25 pounds to deflect the grinding wheels .001. Therefore any deflection always occurs in the saw plate not in the grinding machine.

If there is more than .005 difference in the amount of carbide to be removed from opposing sides of the top, a slower feed rate may become necessary to keep the lateral grinding forces from bending the saw plate sideways.

Are the proper diamond wheels being used?

Not all diamond wheels are the same. The type of wheel used must match the recommended width of 1/8". If the wheel is wider, it can bend the saw plate while grinding. The finer grit wheels can only be used if the feed rate is slowed so the wheel cutting capacity is not exceeded. For most applications 150 grit with no more than 75 concentration should work well. If the wheel bond is too hard, the wheel will not cut freely. Use a quality brand of wheel. Bargain wheels may not work well.

TALON DS-3 DUAL SIDE SHARPENER

ACCURACY PROBLEMS
(Continued)

Are the saw's other critical dimensions accurate?
There are many things that effect side grinding tolerances in the saw plate such as O.D. run out, dubbed faces, hook angle variation, plate thickness variation, bumps, uneven tension, and bent teeth. You can not make an inferior saw into a quality saw by side grinding. To be extremely accurate on side grinding requires the rest of the saw to be at least reasonably accurate. Uneven face and top bevel (other than 0°) is not recommended.

Any dual side grinder can grind accurately if reasonably maintained. Even the most expensive grinder will grind erratically if any of the preceding problems are encountered. In our experience less than 1/4 of the side grinding tolerances can be attributed to the side grinding machine.

If your side grinding tolerances are still unacceptable, please call Wright Machine Tool Company and we will assist you with this problem.

TALON DS-3 DUAL SIDE SHARPENER

REPLACEMENT OF DS-3 SPINDLE (P.N. W-1166)

1. Loosen one end of the feed linkage on the side of the spindle being replaced.

2. Remove the drive belt.

3. Take the pulley off of the spindle shaft, taking note of location.

4. Remove the wheel guard on the spindle housing.

5. Loosen the bolts on the spindle housing.

6. Move the head all of the way back and slide the spindle out the front.

7. Slide the new spindle in.

8. Tighten bolts on the spindle housing (snug). **IMPORTANT: DO NOT OVERTIGHTEN.**

9. Install the wheel guard, being sure that the spindle moves freely.

10. Put the pulley on in the same location as on the old spindle.

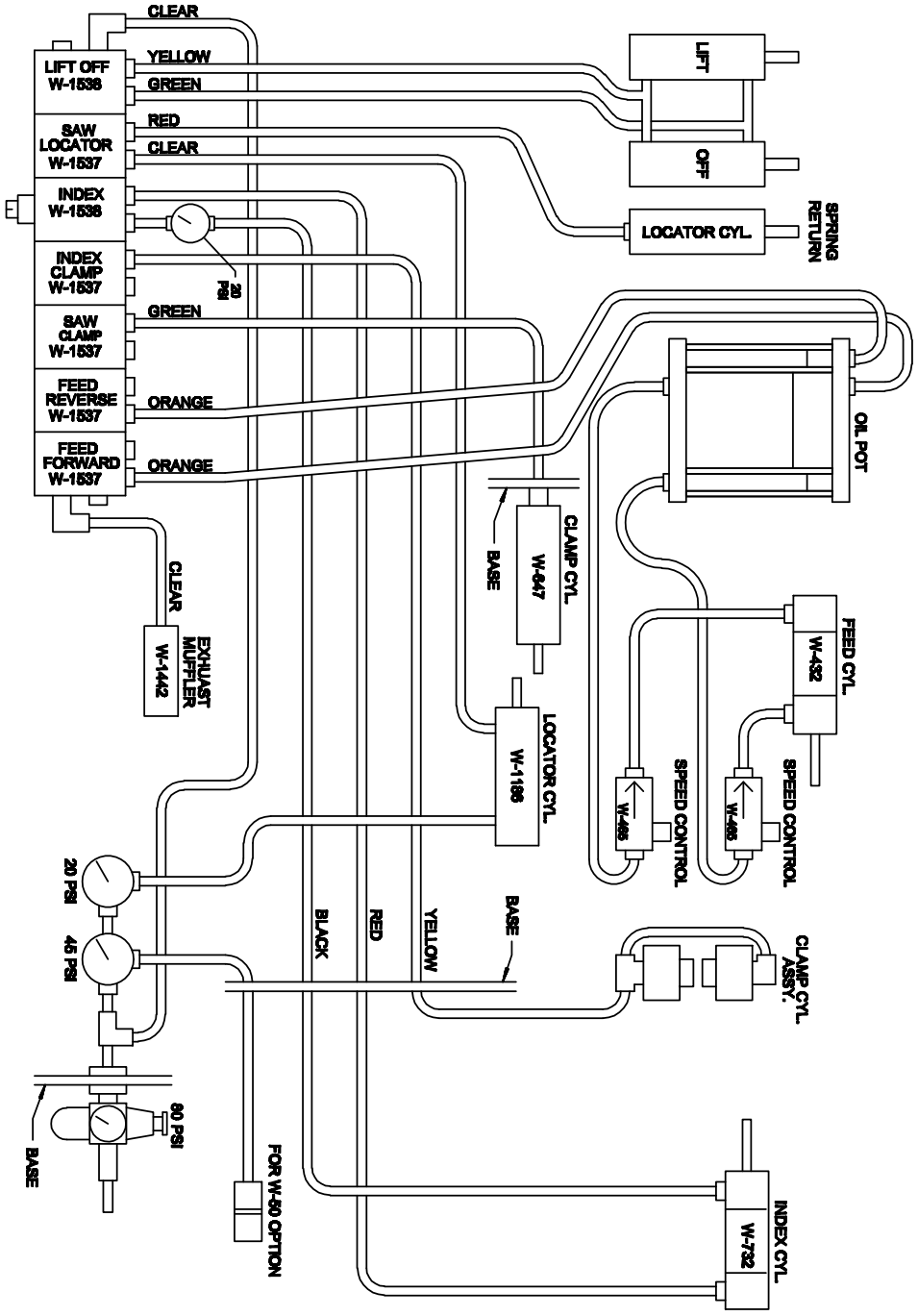
11. Reinstall the drive belt.

12. Fasten the feed linkage.

Note: If the motor arm hits on the guide, loosen and turn to the side.

TALON DS-3 DUAL SIDE SHARPENER

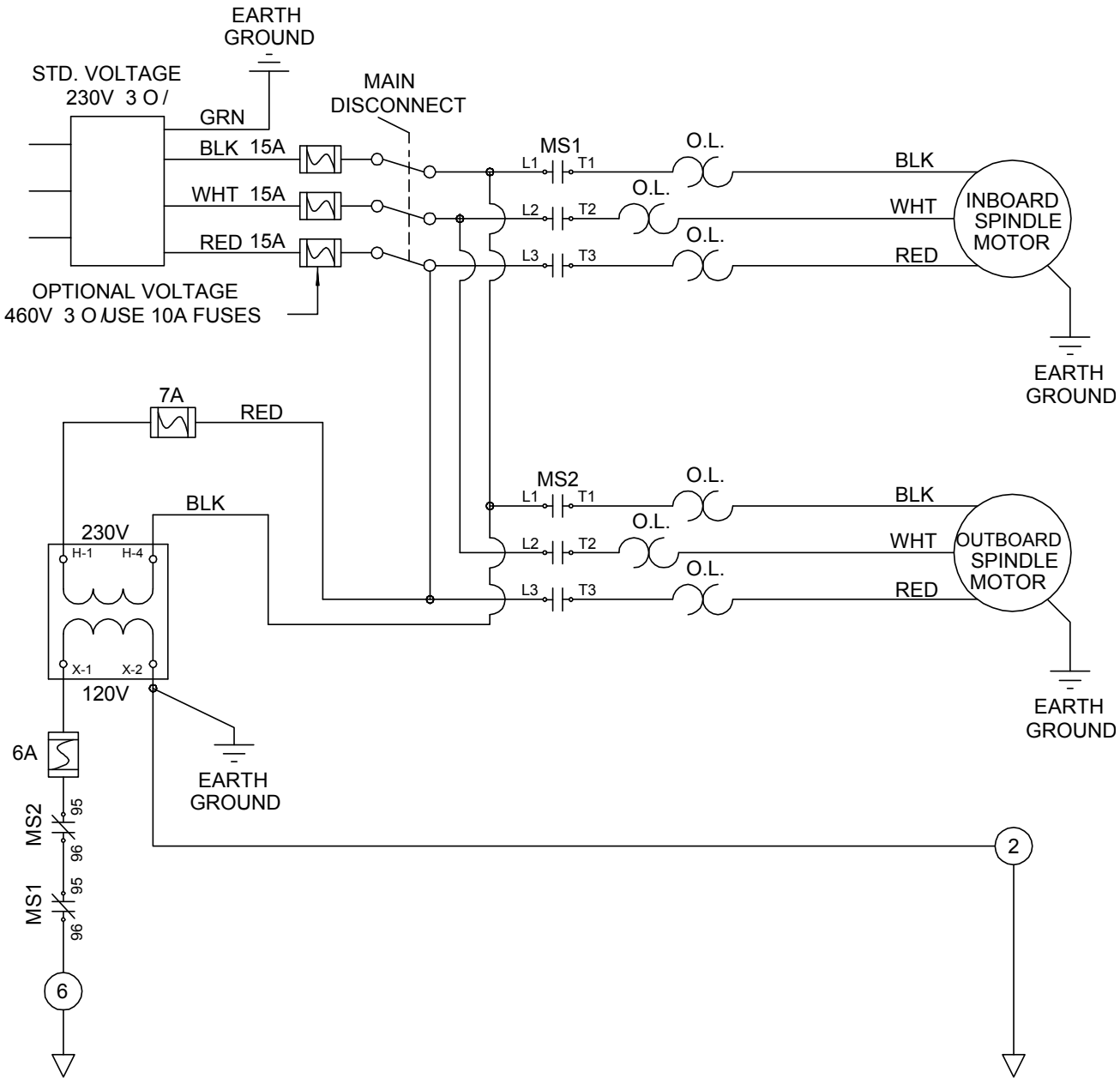
AIR SYSTEM



CAUTION: Use of some types of synthetic lubricants in the air system can break down the plastic in the sediment bulb, ultimately resulting in failure. For safety purposes always keep the metal cover in place over the plastic sediment bulb. If your air system uses synthetic lubricants contact Wright Machine Tool to order a metal replacement bulb.

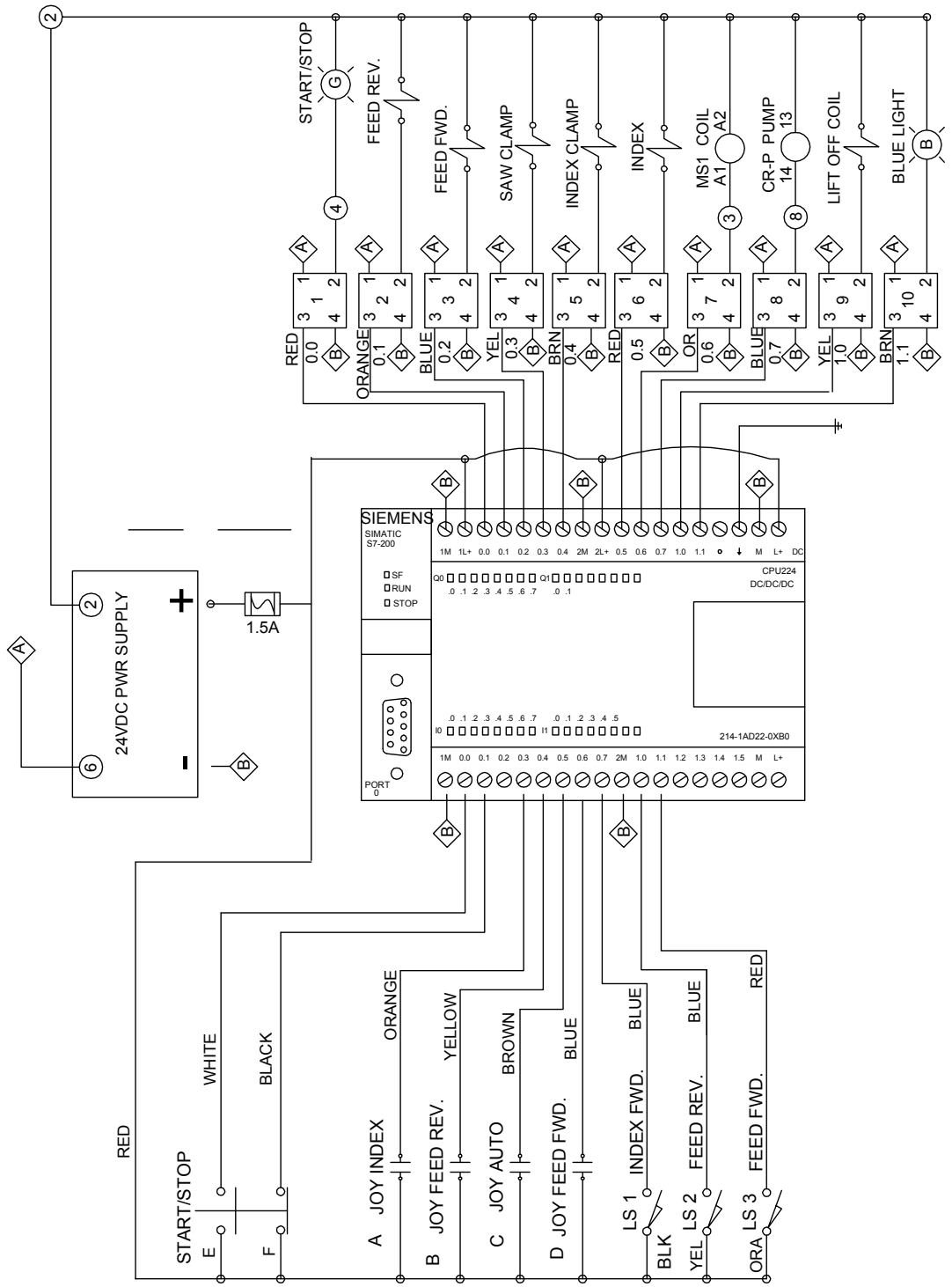
TALON DS-3 DUAL SIDE SHARPENER

ELECTRICAL SCHEMATIC



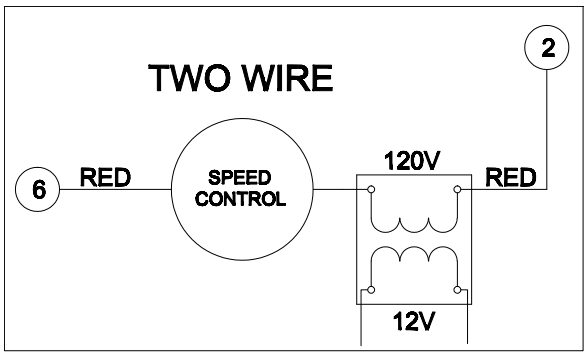
TALON DS-3 DUAL SIDE SHARPENER

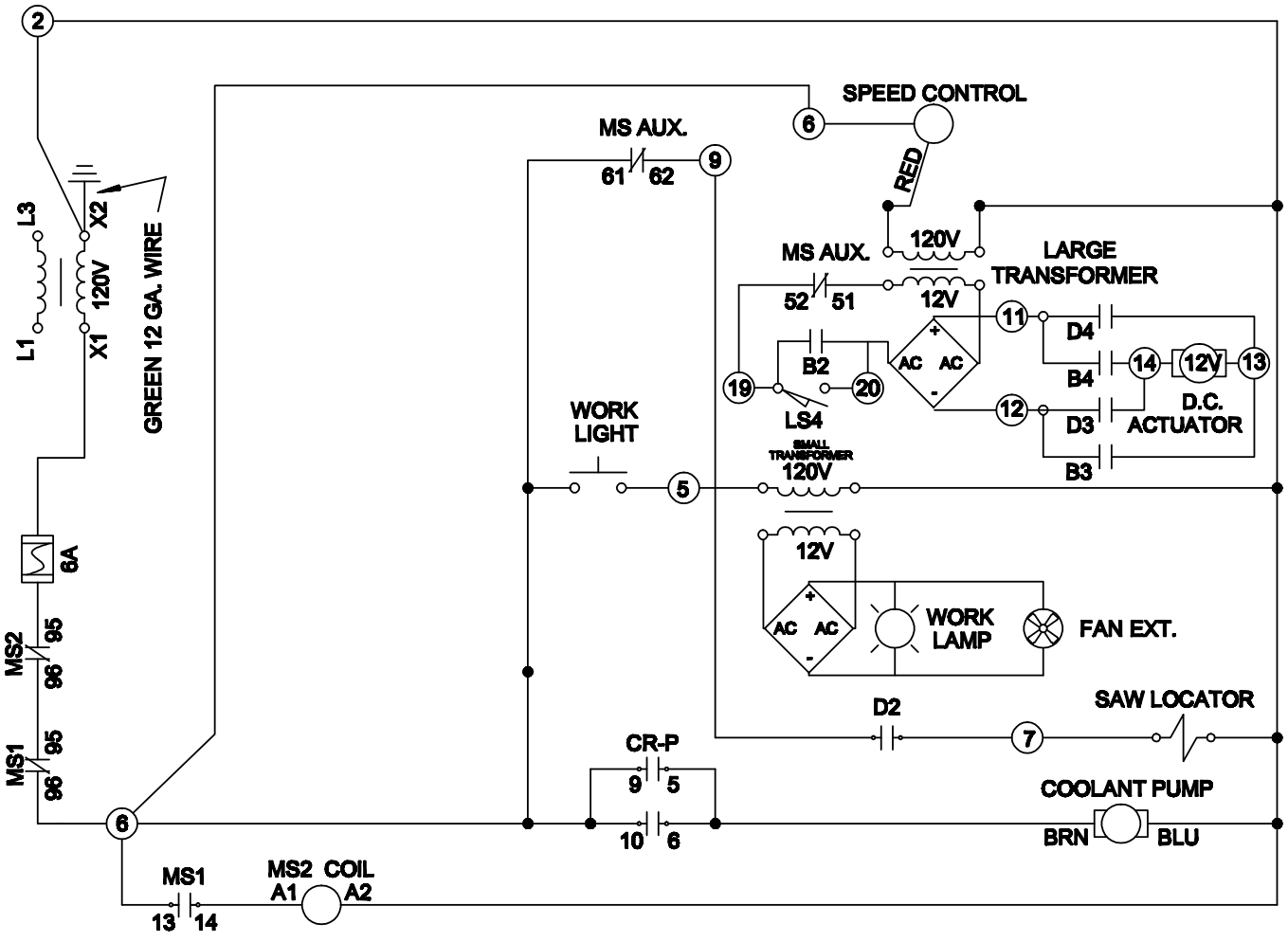
ELECTRICAL SCHEMATIC (FLOW CHART)



TALON DS-3 DUAL SIDE SHARPENER

NOTE:
Speed control wiring could be one of three ways depending on date of manufacture. Some older models did not use a speed control.





TALON DS-3 DUAL SIDE SHARPENER

INSTRUCTIONS FOR CONVERTING DS TO 440v

LEFT MOTOR

RED - 2
BLACK - 3
WHITE - 1

RIGHT MOTOR

WHITE - 1
RED - 3
BLACK - 2

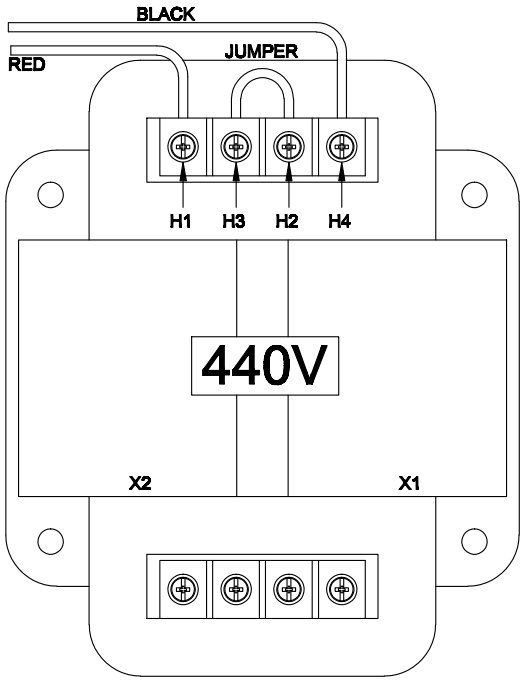
7-4
8-5
9-6

EVERTHING ELSE IS THE SAME AS SHOWN:

MOTOR STARTER
SWITCH AND WIRE UP THE SAME. SHOULD BE SET ON AUTO AND SET AT 3 AMPS ON THE DIAL.

CORD END
WIRE UP THE SAME AS EXISTING ONE AND IF MOTOR RUNS BACKWORDS, SWITCH THE RED AND BLACK WIRES.

TRANSFORMER
TAKE JUMPER OFF OF H1 AND H3, H2 AND H4. PUT A JUMPER ON H2 AND H3 SO THAT THE RED AND BLACK WIRES ARE THE ONLY WIRES IN CONNECTION. PLACE THE 440v STICKER OVER THE EXISTING 230v/240v STICKER ON THE ELECTRICAL NAME PLATE.



TALON DS-3 DUAL SIDE SHARPENER

MACHINE ASSEMBLY SHEETS

The following pages provide drawings of various assemblies contained in this machine.

DRAWINGS OF...

Control Box Components
Base Layout
Auto Index 1
Auto Index 2
Stroke Control
Coolant Parts Diagram
Saw Clamp Cylinder
Oil Pot
Motor Arm Assembly
Actuator Arm Assembly
Finger Assembly
Dial Indicator and Cover Assembly
Drag Pressure Valve Assembly

TALON DS-3 DUAL SIDE SHARPENER

CONTROL BOX COMPONENTS
(CONTROL CONSOLE)

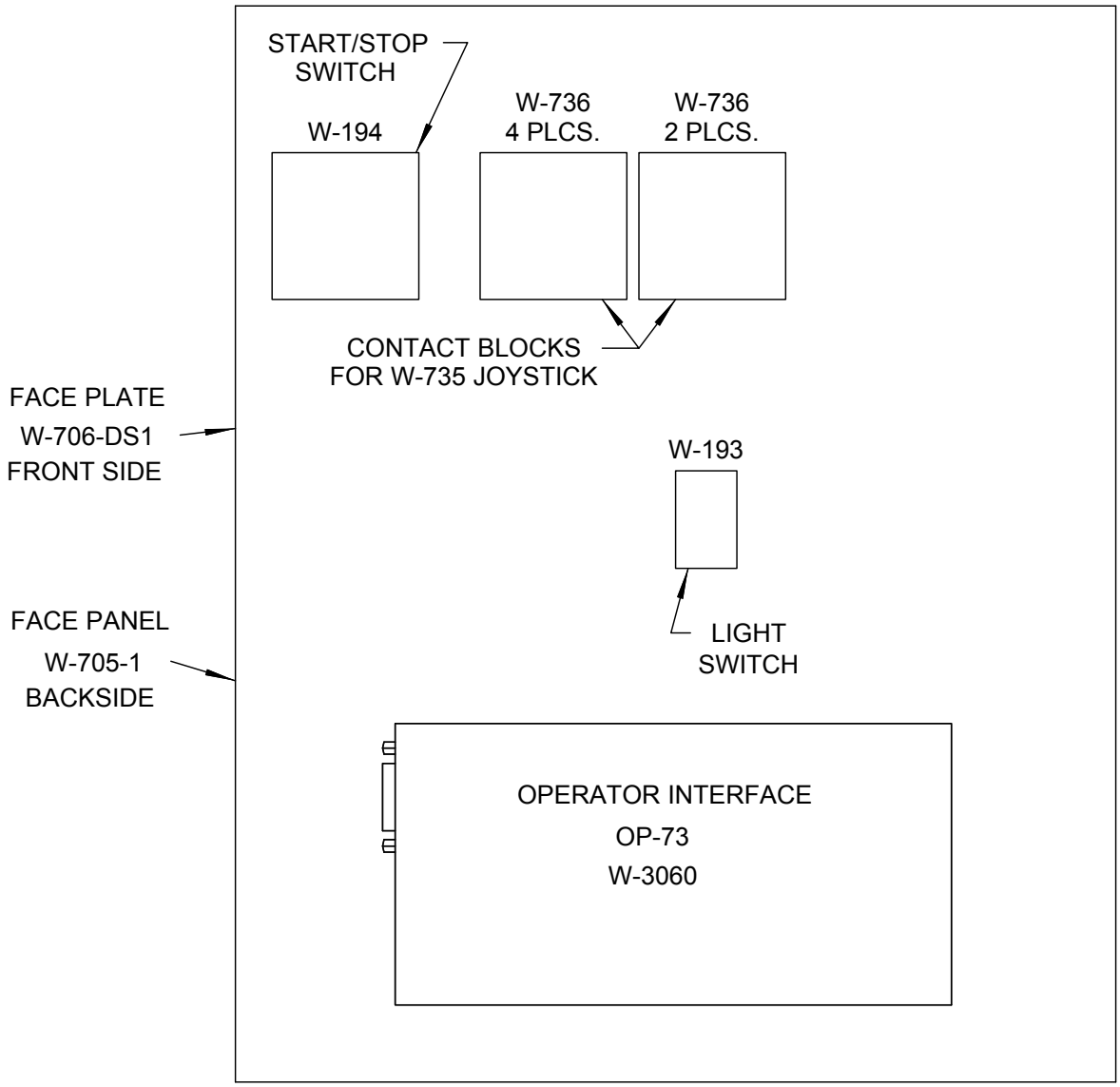
PART #	DESCRIPTION
W-193	LIGHT SWITCH
W-194	STOP/START SWITCH
W-705-1	FACE PLATE
W-706-DS1	FACE PANEL
W-735	JOY STICK
W-736	CONTACT BLOCK

PART #	DESCRIPTION
W-3060	OPERATOR INTERFACE

TALON DS-3 DUAL SIDE SHARPENER

CONTROL BOX COMPONENTS
(CONTROL CONSOLE)

DS-3 CONTROL PANEL
LOOKING FROM BACKSIDE.



TALON DS-3 DUAL SIDE SHARPENER

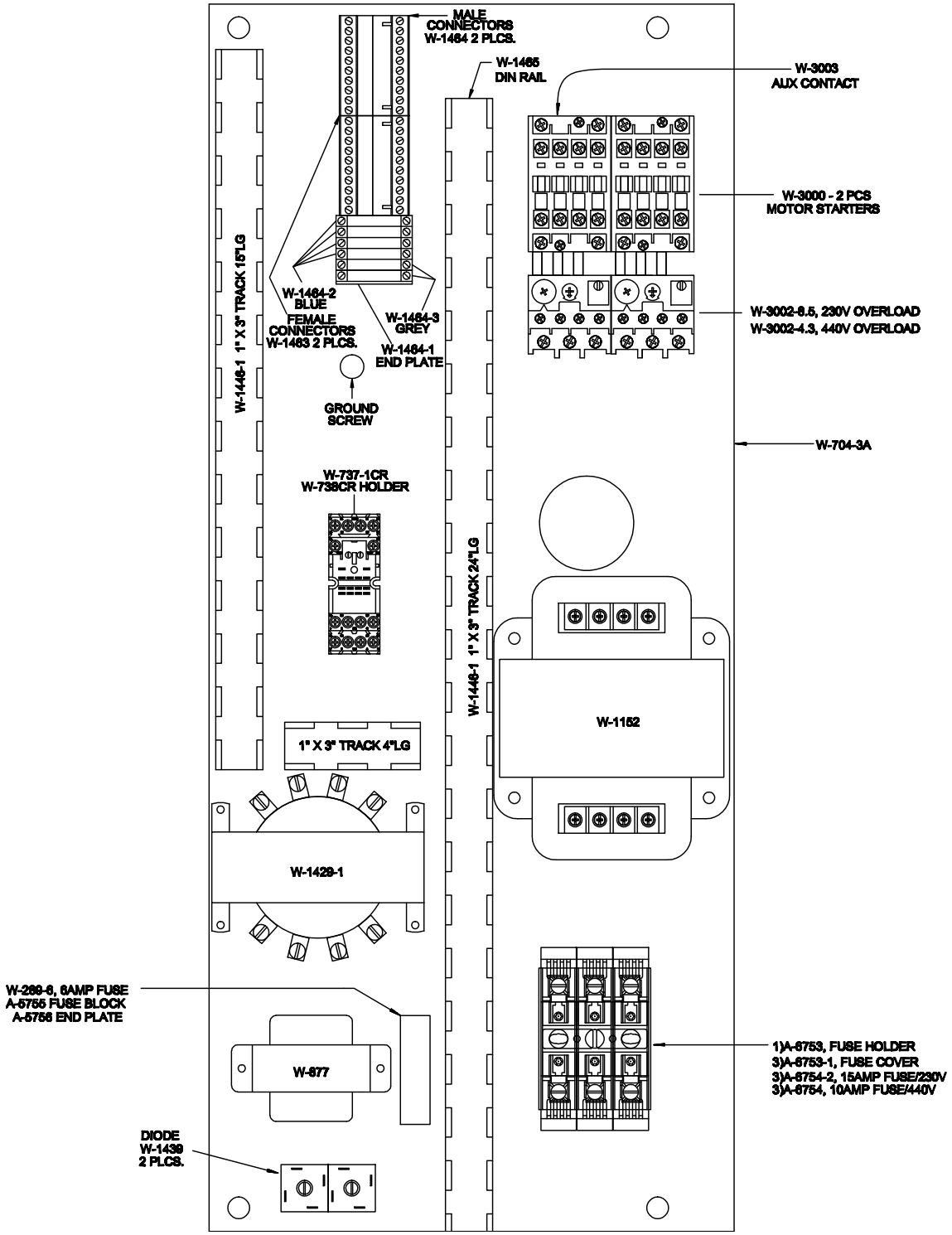
CONTROL BOX COMPONENTS (SUB PANEL)

PART #	DESCRIPTION
A-6753	FUSE HOLDER
A-6753-1	FUSE COVER
W-289-6	FUSE
W-704-3A	PANEL
W-737-1	RELAY
W-738	RELAY BASE
W-877	TRANSFORMER
W-1152	TRANSFORMER
W-3000	MOTOR STARTER
W-3000-8.5	OVERLOAD

PART #	DESCRIPTION
W-1429-1	TRANSFORMER
W-1439	DIODE
W-1463	FEMALE CONNECTOR
W-1464	MALE CONNECTOR

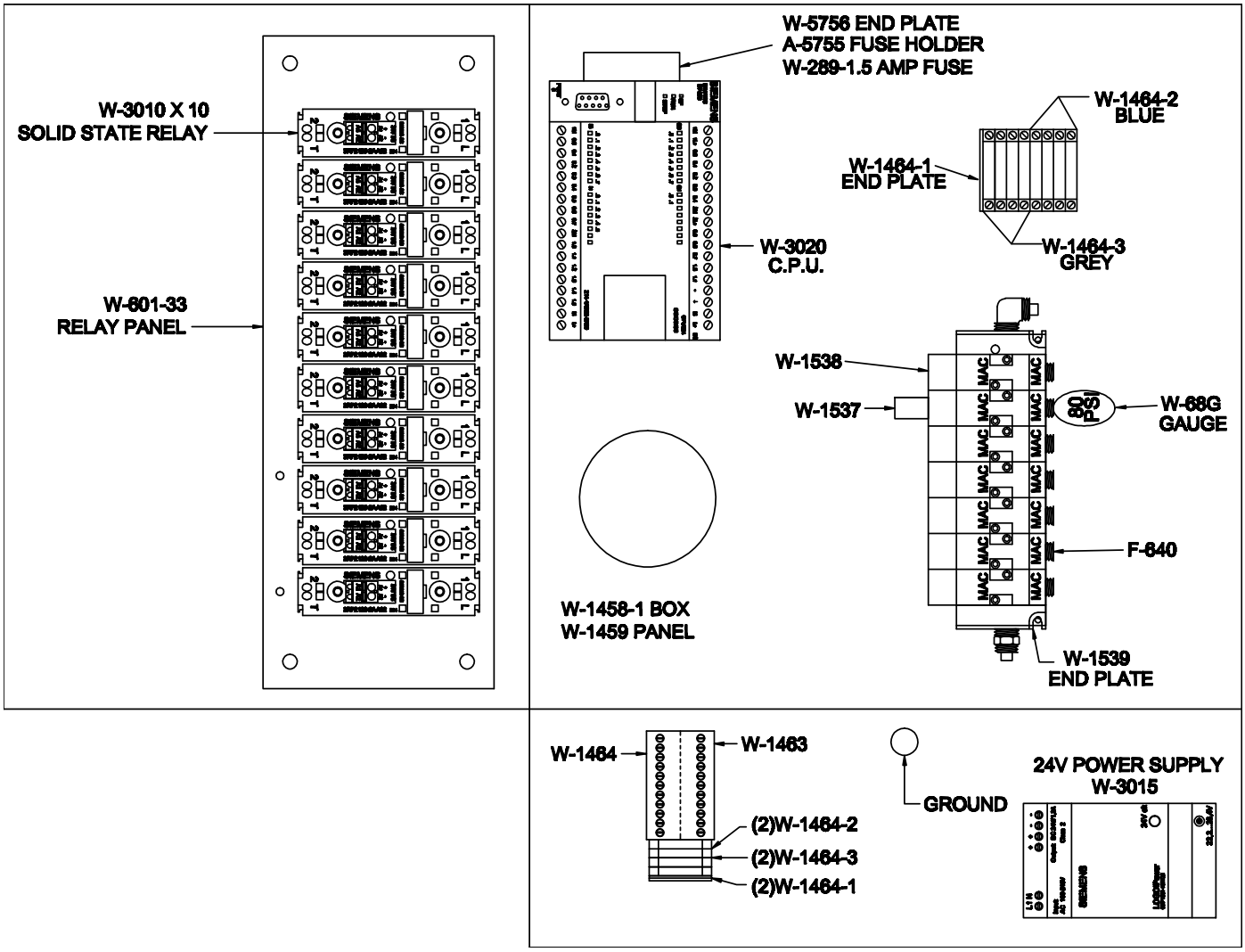
TALON DS-3 DUAL SIDE SHARPENER

CONTROL BOX COMPONENTS
(SUB PANEL)



TALON DS-3 DUAL SIDE SHARPENER

CONTROL BOX COMPONENTS
(SUB PANEL)



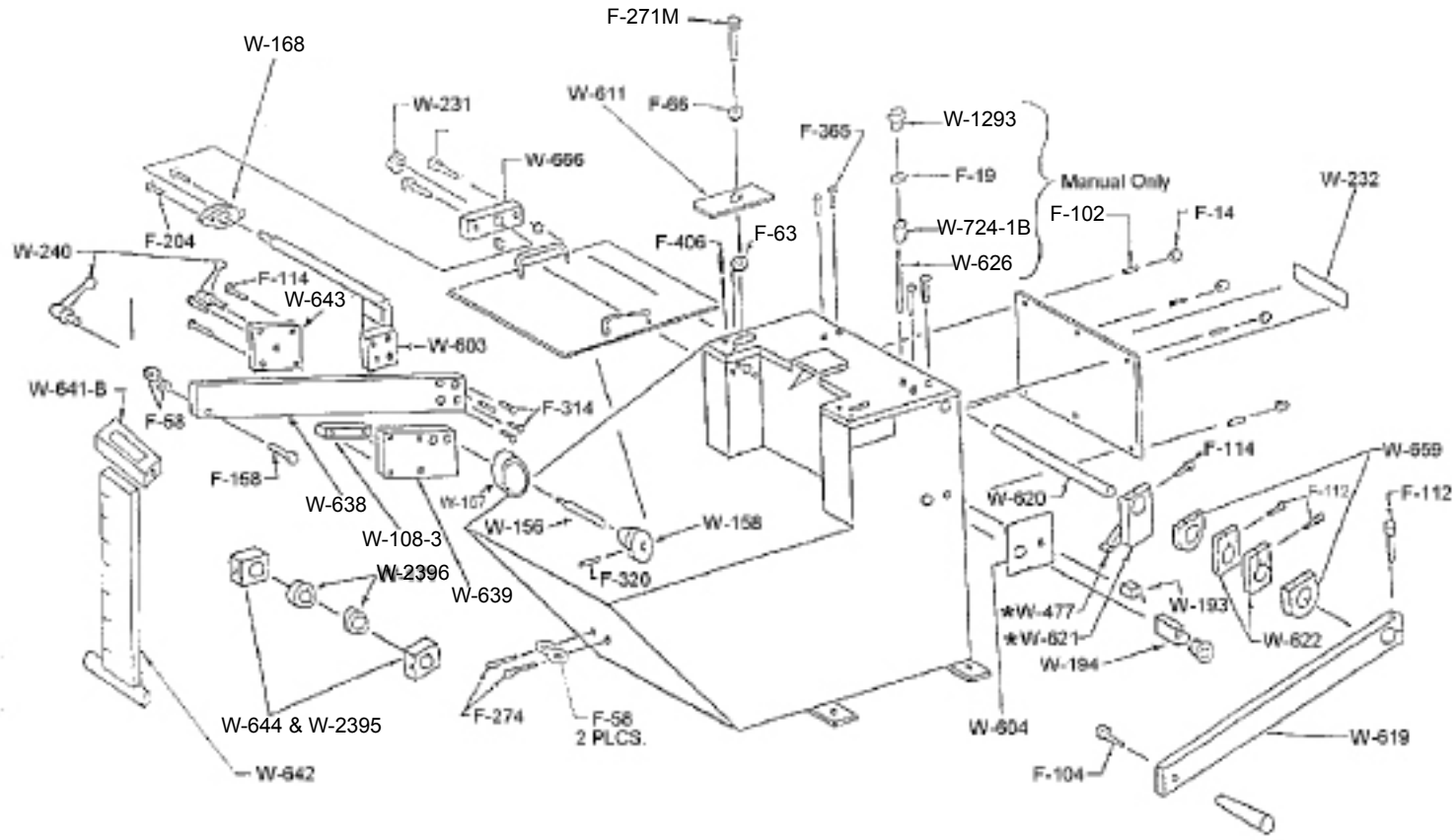
TALON DS-3 DUAL SIDE SHARPENER

BASE ASSEMBLY

PART #	DESCRIPTION	PART #	DESCRIPTION
W-108-3	SAW SLIDE PLATE	F-14	NUT
W-156	CONE BOLT	F-19	NUT
W-157	CUP	F-58	WASHER
W-158	CONE	F-63	WASHER
W-168	FACE MT BEARING	F-102	SET SCREW
W-193	COOLANT SWITCH	F-104	SCREW
W-194	STOP/START SWITCH	F-109	SCREW
W-202	COVER	F-112	SCREW
W-204	HAND WHEEL	F-114	SCREW
W-231	COLLAR	F-158	BOLT
W-240	HANDLE	F-204	BOLT
W-603	SAW ARM PIVOT	F-271M	SCREW
W-604	FACE PLATE	F-359	SCREW
W-611	RADIAL ANGLE SCALE	F-365	SCREW
W-619	FEED HANDLE	F-384	SET SCREW
W-620	FEED SHAFT	F-390	SET SCREW
W-621	CLAMP SWITCH ARM	F-406	ROLL PIN
W-626	MANUAL FEED STOP		
W-638	SAW ARM		
W-639	SAW SLIDE FRONT		
W-640	SAW SLIDE REAR		
W-641-B	HOOK LOCK		
W-642	LARGE HOOK SUPPORT ARM		
W-643	HOOK ARM PIVOT		
W-643	HOOK ARM PIVOT		
W-644	HOOK PIVOT BEARING		
W-659	BEARING		
W-666	PIVOT PLATE		
W-724-1B	INDEX BUMPER		
W-1293	KNOB		
W-2395	PLASTIC BUSHING		

TALON DS-3 DUAL SIDE SHARPENER

BASE ASSEMBLY



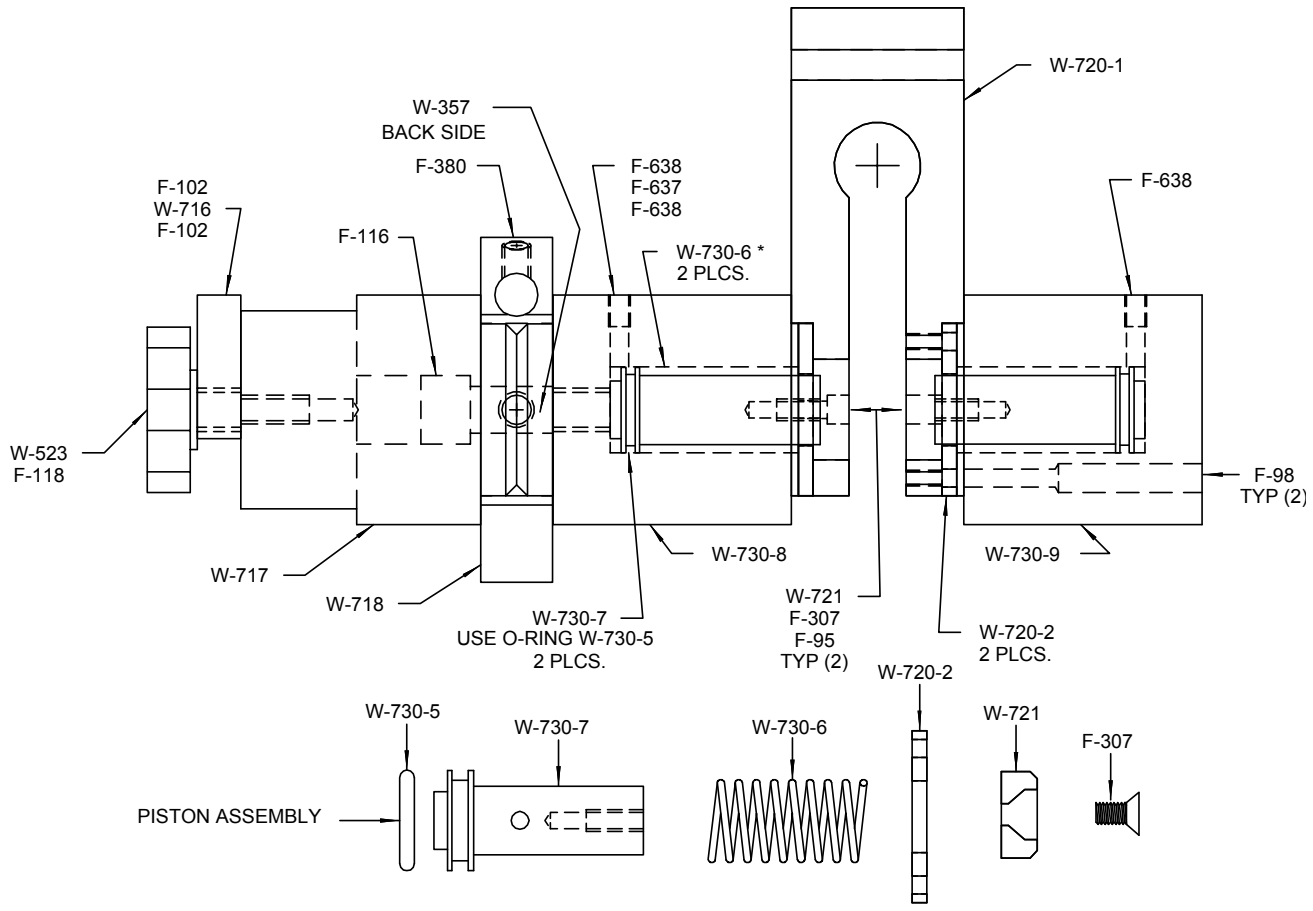
TALON DS-3 DUAL SIDE SHARPENER

AUTO INDEX 1

PART #	DESCRIPTION	PART #	DESCRIPTION
W-357	ZERK FITTING	F-95*	SCREW
W-523	HANDLE	F-98*	SCREW
W-716	COVER PLATE	F-102	SCREW
W-717	MOUNT BRACKET	F-115	SCREW
W-718	CYL. MT. RING	F-116*	SCREW
W-720-1*	CLAMP YOKE	F-118	SCREW
W-720-2*	SPACER	F-268	SCREW
W-721*	INDEX CLAMP JAW	F-307*	SCREW
W-730-A	INDEX CLAMP ASSEMBLY	F-380	SET SCREW
	(INCLUDES EVERYTHING WITH *)	F-631	T-FITTING
W-730-37*	PISTON	F-637*	TEE
W-730-5*	O-RING	F-638*	BARB FITTING
W-730-6*	SPRING		
W-730-8*	CLAMP CYL. INNER		
W-730-9*	CLAMP CYL. OUTER		

TALON DS-3 DUAL SIDE SHARPENER

AUTO INDEX 1



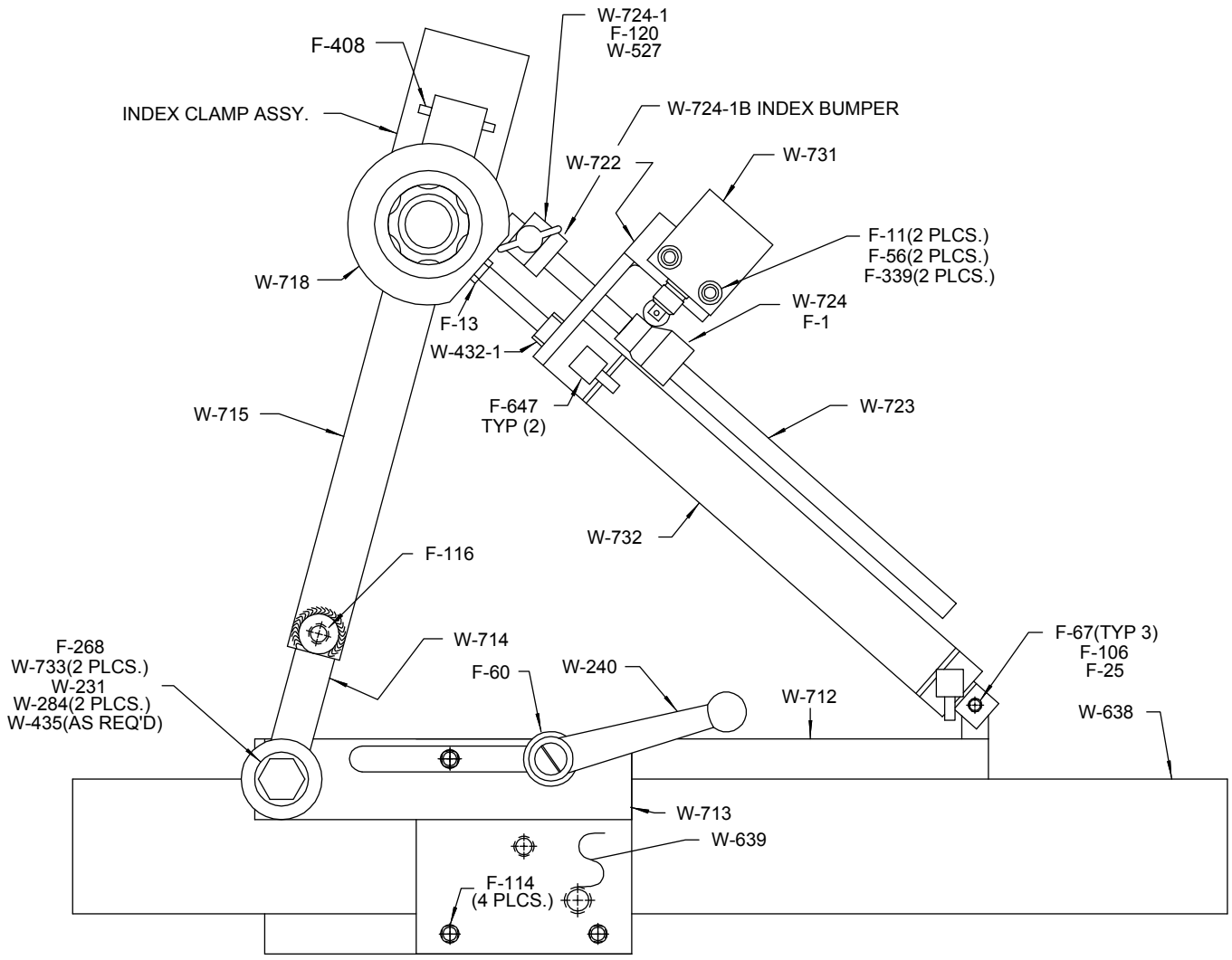
TALON DS-3 DUAL SIDE SHARPENER

AUTO INDEX 2

PART #	DESCRIPTION	PART #	DESCRIPTION
W-101-1	NUT	F-1	SCREW
W-156	CONE BOLT		
W-157	CUP	F-11	NUT
W-240	HANDLE	F-13	NUT
W-435	WASHER THIN	F-25	NUT
W-638	SAW ARM		
W-639	FRONT SAW SLIDE	F-56	WASHER
W-712	SAW SLIDE SPACER	F-58	WASHER
W-714	PRIMARY ARM	F-67	WASHER
W-715	TELESCOPE TUBE OUTER	F-106	SCREW
W-721-1	INDEX STOP COLLAR		
W-722	SWITCH BRACKET	F-116	SCREW
W-723	INDEX PITCH SCALE	F-268	SCREW
W-724	INDEX STOP	F-339	SCREW
W-731	LIMIT SWITCH		
W-732	INDEX CYLINDER		
W-733	BEARING		

TALON DS-3 DUAL SIDE SHARPENER

AUTO INDEX 2



TALON DS-3 DUAL SIDE SHARPENER

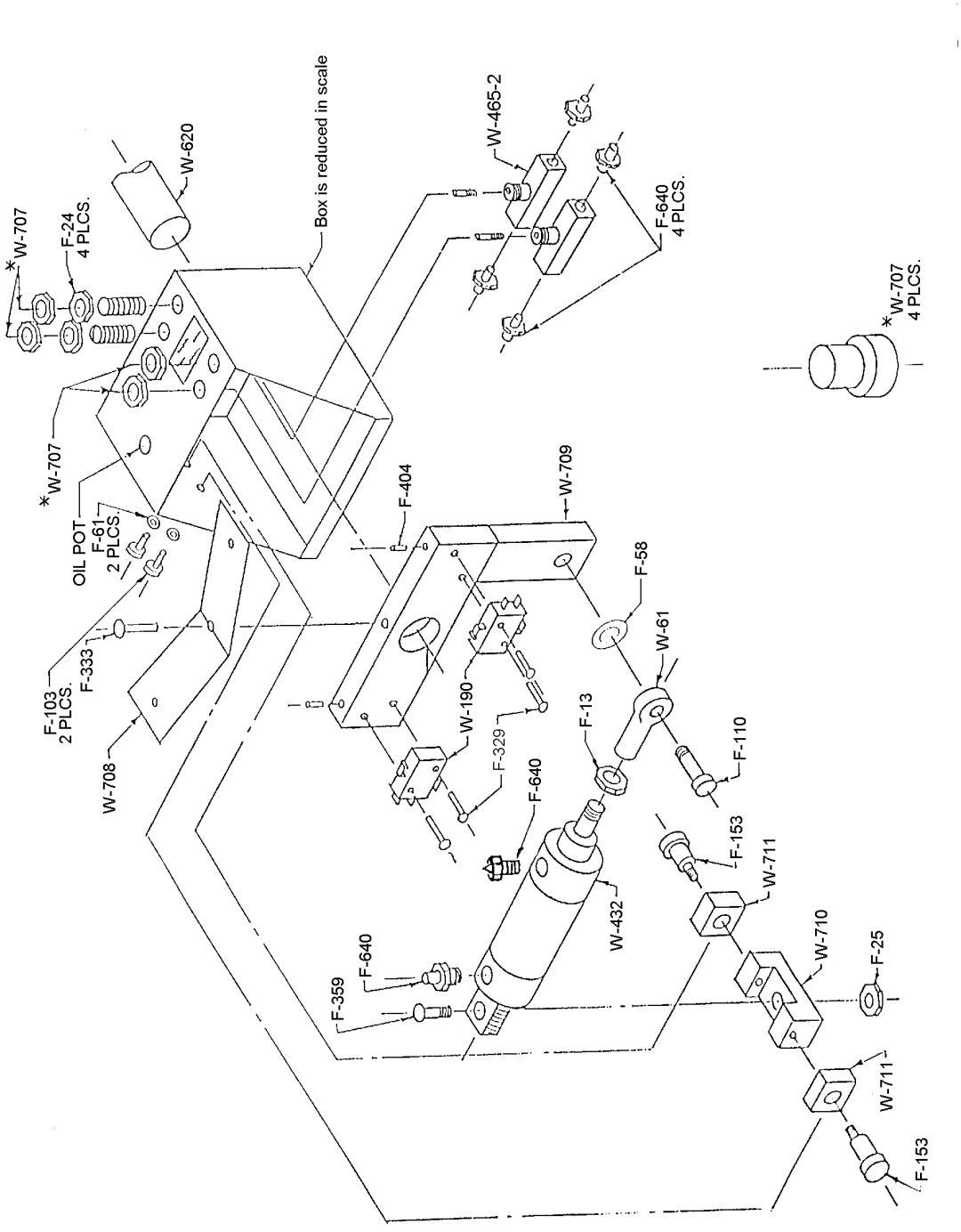
STROKE CONTROL

PART #	DESCRIPTION
W-61	ROD END
W-190	LIMIT SWITCH
W-432	CYLINDER
W-465-2	FLOW CONTROL
W-620	FEED SHAFT
W-707	KNOB
W-708	SWITCH TRIP PLATE
W-709	FEED CYL. ARM
W-710	CYLINDER MT. BLOCK
W-711	MOUNT PIVOT
C-5386	WASHER

PART #	DESCRIPTION
F-13	NUT
F-24	NUT
F-25	NUT
F-30	NUT
F-58	WASHER
F-61	WASHER
F-101	SCREW
F-103	SCREW
F-110	SCREW
F-153	BOLT
F-329	SCREW
F-333	SCREW
F-358	SCREW
F-359	SCREW
F-404	ROLL PIN
F-618	FITTING
F-639	FITTING
F-640	FITTING

TALON DS-3 DUAL SIDE SHARPENER

STROKE CONTROL



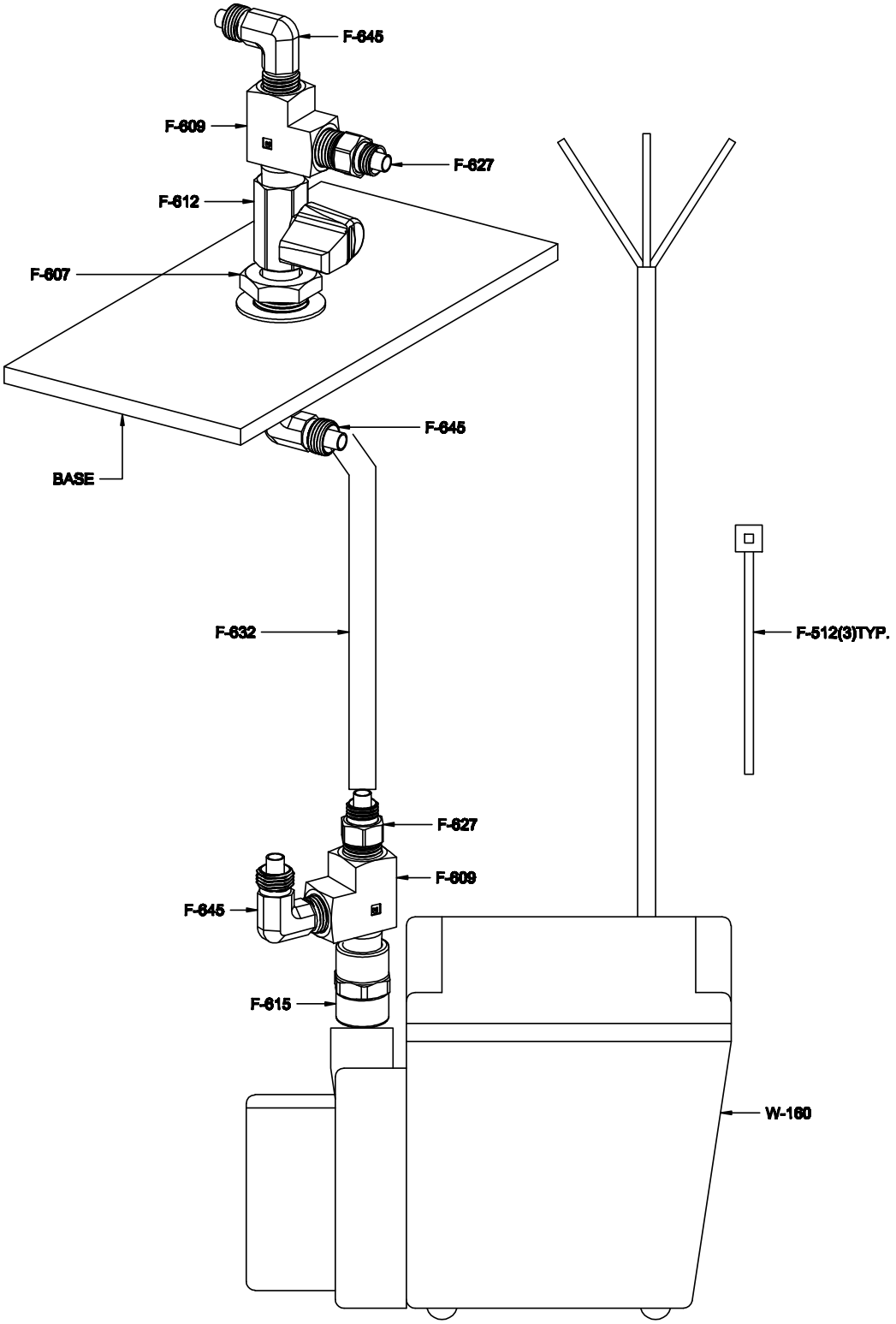
TALON DS-3 DUAL SIDE SHARPENER

COOLANT PART DIAGRAM

PART #	DESCRIPTION
W-160	COOLANT PUMP
W-1294-C	CONNECTOR
W-1294-N	NOZZLE
W-1394-P	COOLANT NOZZLES
F-512	CABLE TIE
F-607	FITTING
F-610	STREET ELBOW
F-612	SHUT OFF VALVE
F-616	BUSHING
F-629	BAND
F-632	3/8 TUBING
F-635	FITTING
F-645	FITTING

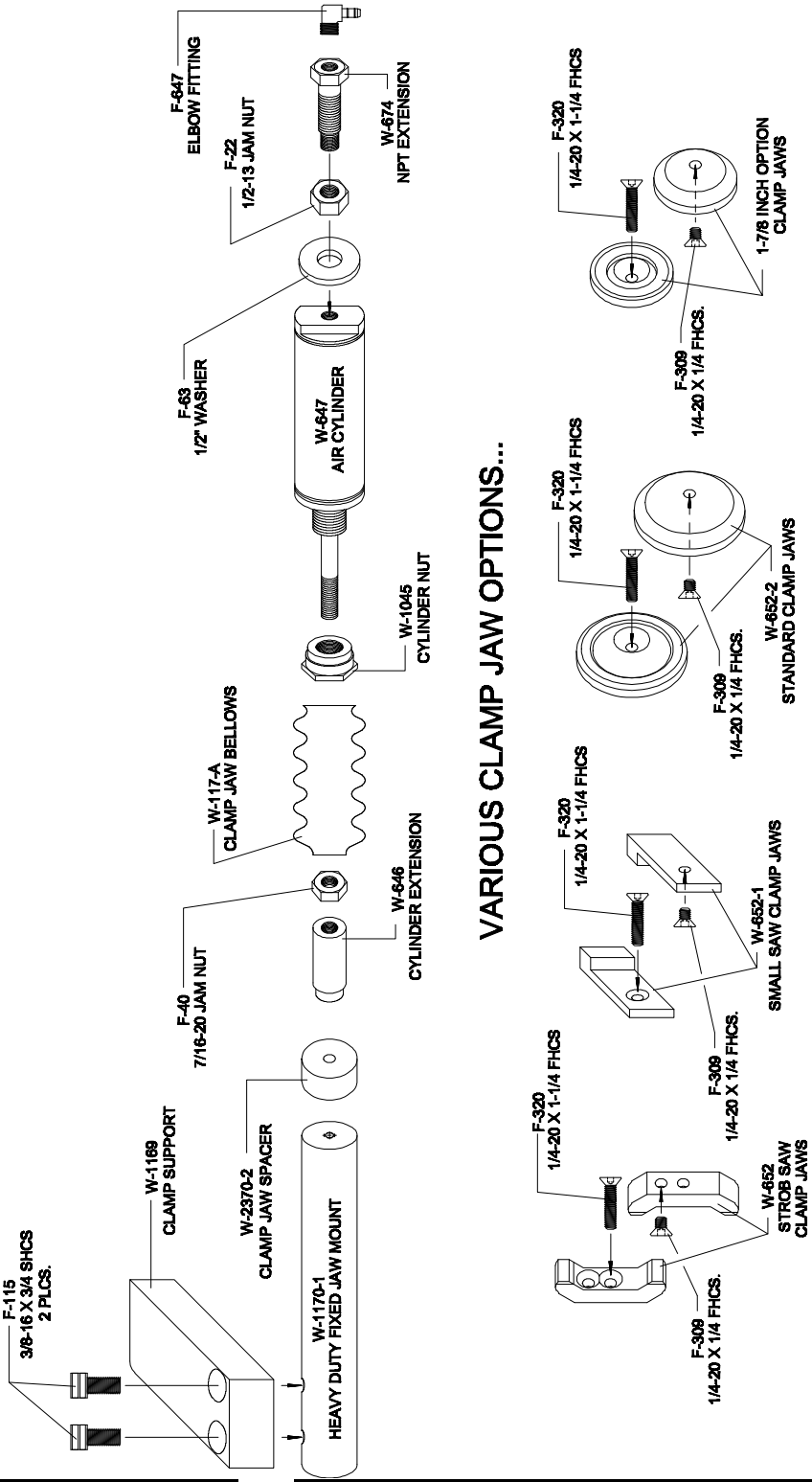
TALON DS-3 DUAL SIDE SHARPENER

COOLANT PART DIAGRAM



TALON DS-3 DUAL SIDE SHARPENER

SAW CLAMP CYLINDER



TALON DS-3 DUAL SIDE SHARPENER

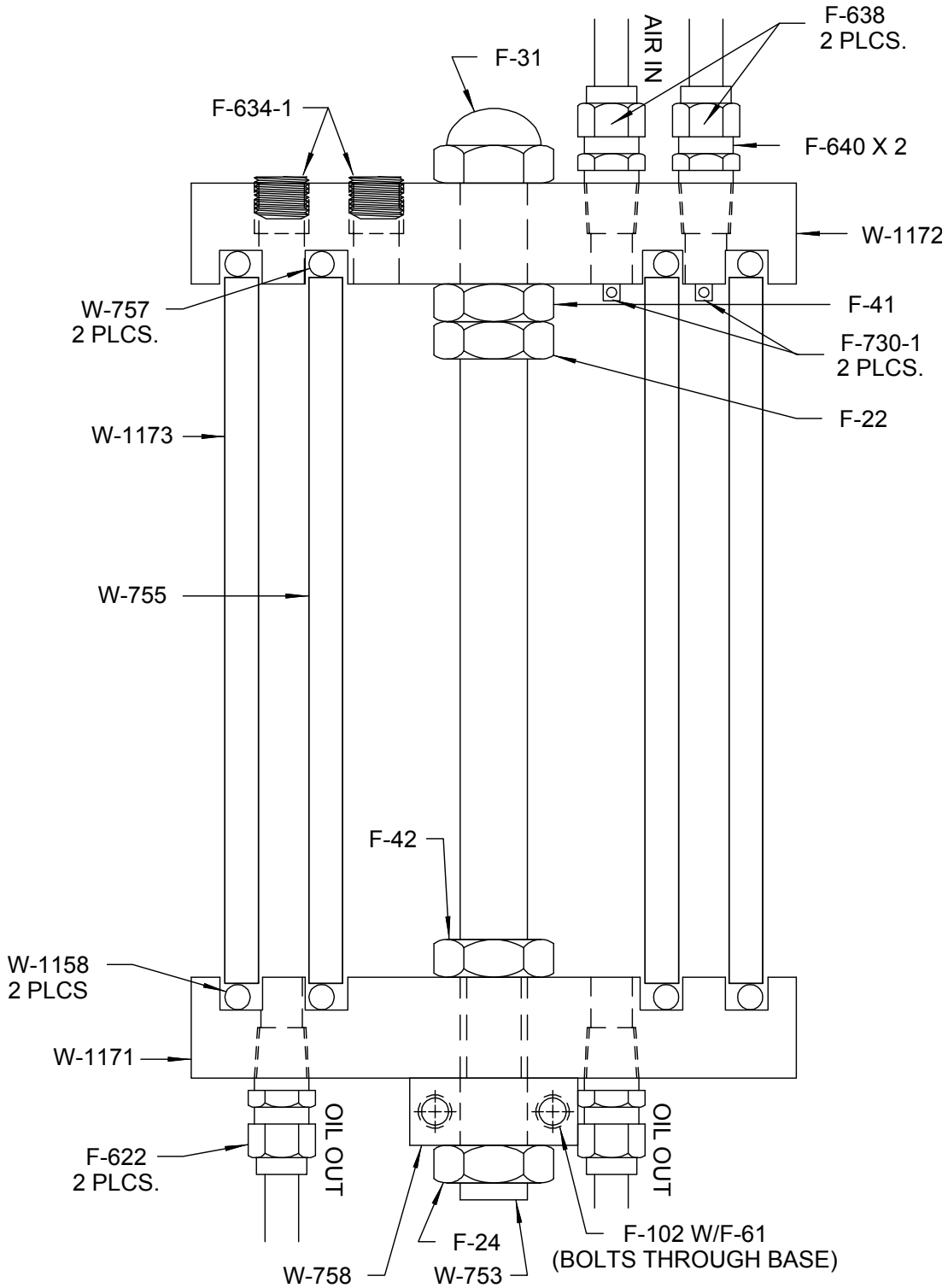
OIL POT
(W-1171-A)

PART #	DESCRIPTION
W-752	AIR INLET
W-753	STUD
W-755	TUBE
W-757	O RING
W-1158	O RING
W-1171	END CAP BOTTOM
W-1172	END CAP TOP

PART #	DESCRIPTION
F-24	NUT
F-31	NUT
F-41	NUT
F-42	NUT
F-626	FITTING
F-632	PIPE PLUG
F-634	PIPE PLUG
F-640	BARBED FITTING

TALON DS-3 DUAL SIDE SHARPENER

OIL POT
(W-1171-A)



TALON DS-3 DUAL SIDE SHARPENER

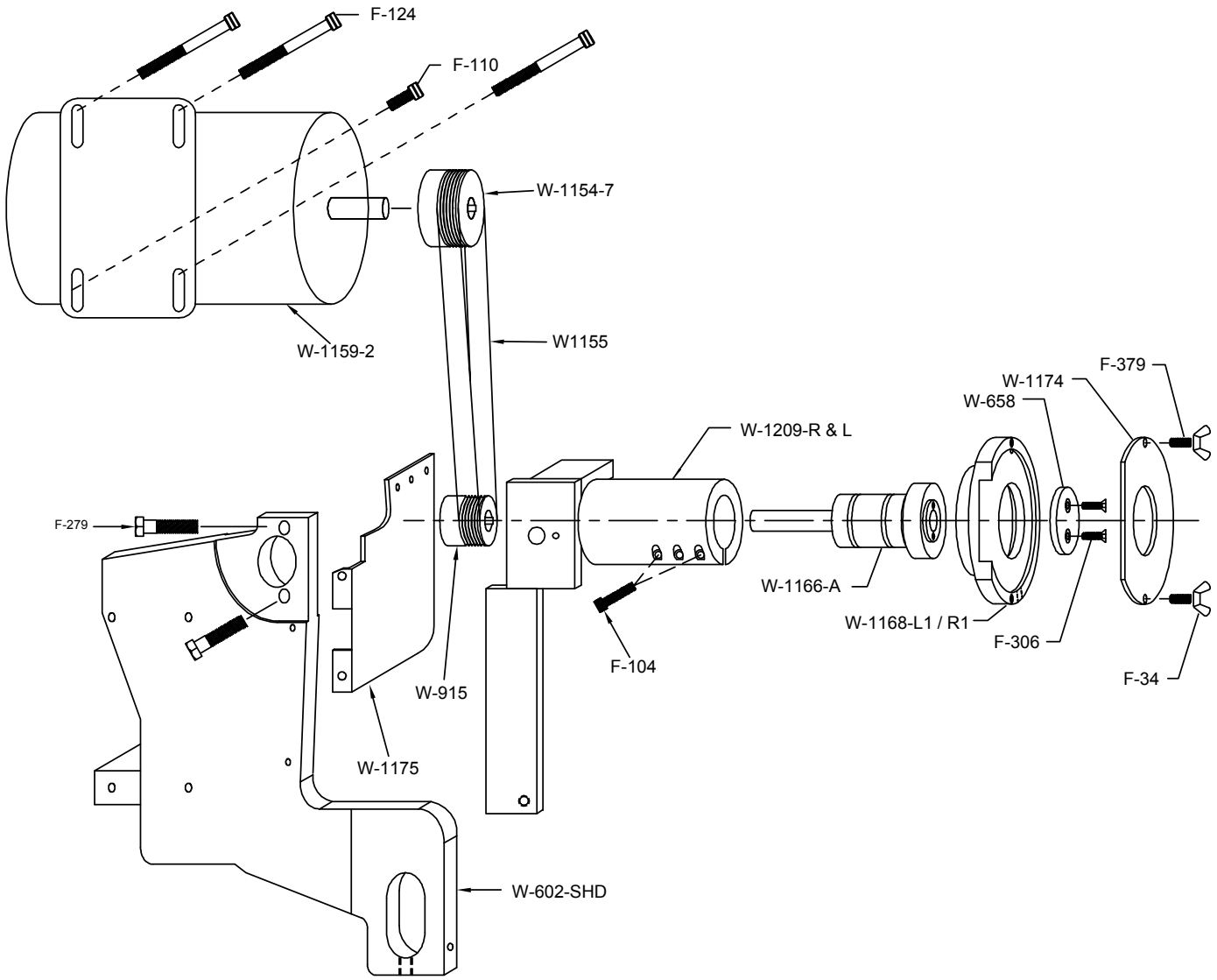
MOTOR ARM ASSEMBLY

PART #	DESCRIPTION
W-602-1-SHD	MOTOR ARM
W-658	SPINDLE NUT
W-915	PULLEY SPINDLE
W-1154-5	PULLEY MOTOR
W-1154-1	SHIVE
W-1155	BELT (after sn 383)
W-1159-2	MOTOR
W-1166-A	SPINDLE
W-1209 L or R	SPINDLE HOUSING
W-1168 L1 or R1	WHEEL GUARD
W-1174	WHEEL COVER
W-1175	BELT GUARD

PART #	DESCRIPTION
F-34	WING NUT
F-104	SCREW
F-110	SCREW
F-124	SCREW
F-279	SCREW
F-306	SCREW
F-379	SET SCREW
F-380	SET SCREW

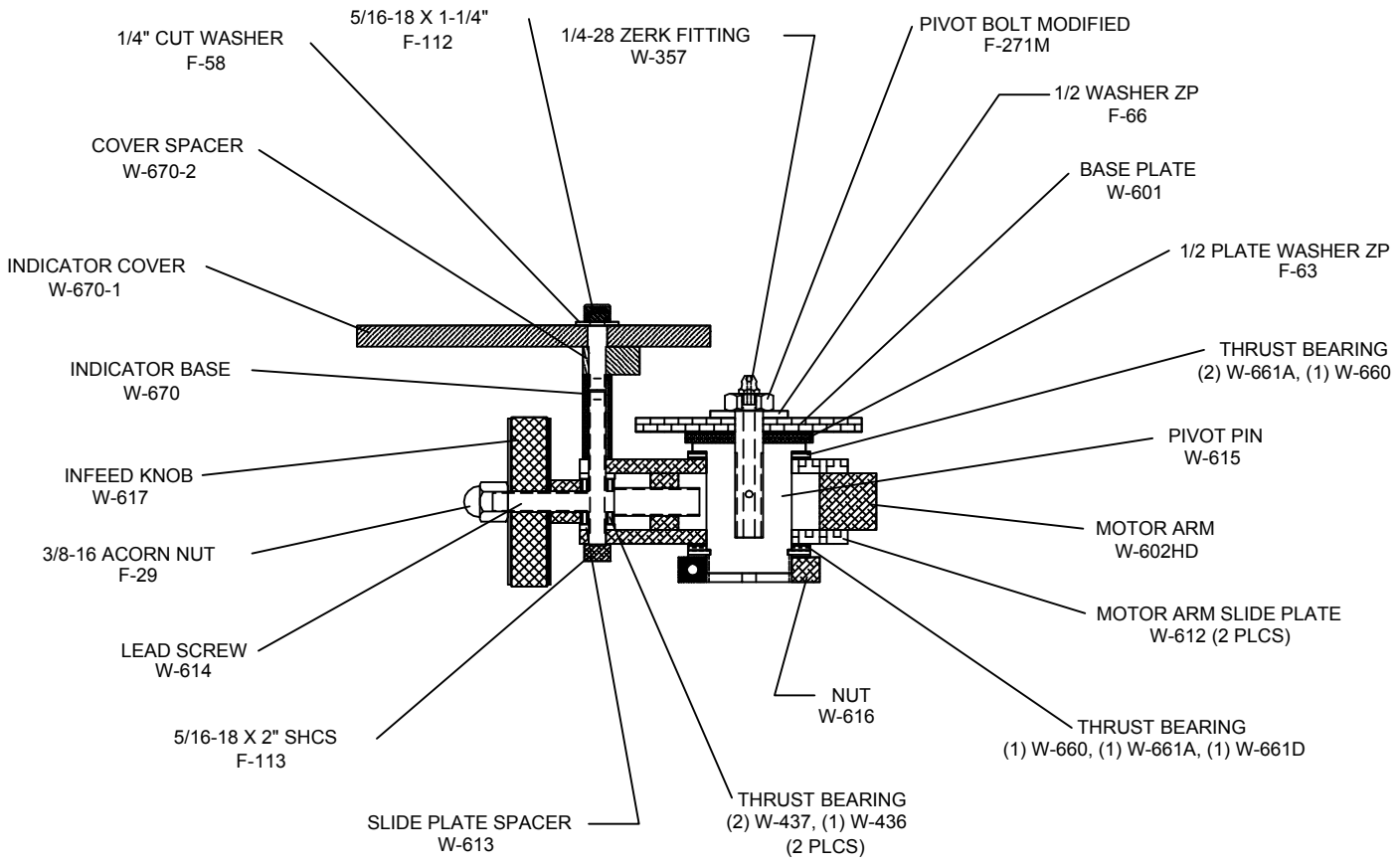
TALON DS-3 DUAL SIDE SHARPENER

MOTOR ARM ASSEMBLY



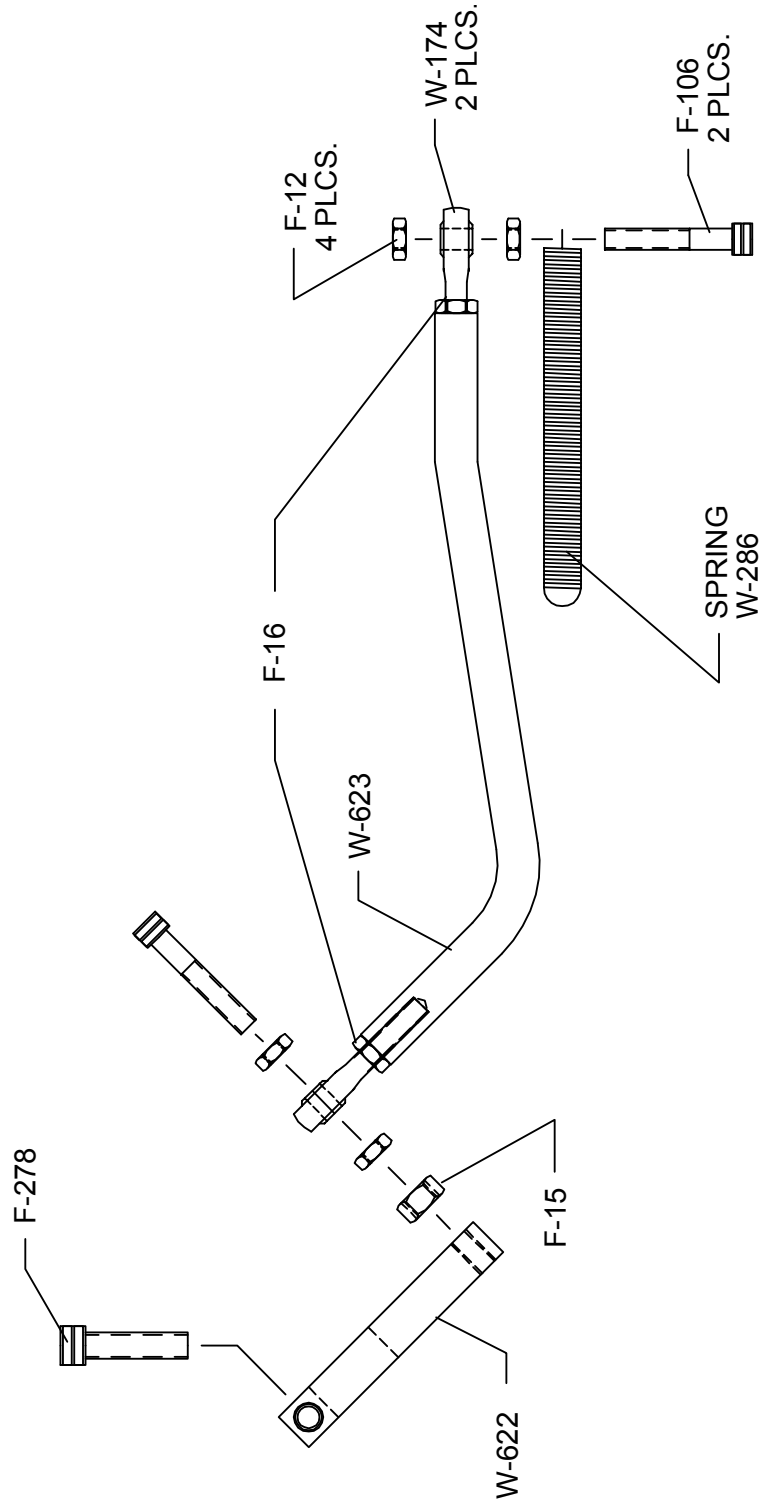
TALON DS-3 DUAL SIDE SHARPENER

MOTOR ARM ASSEMBLY CONT.



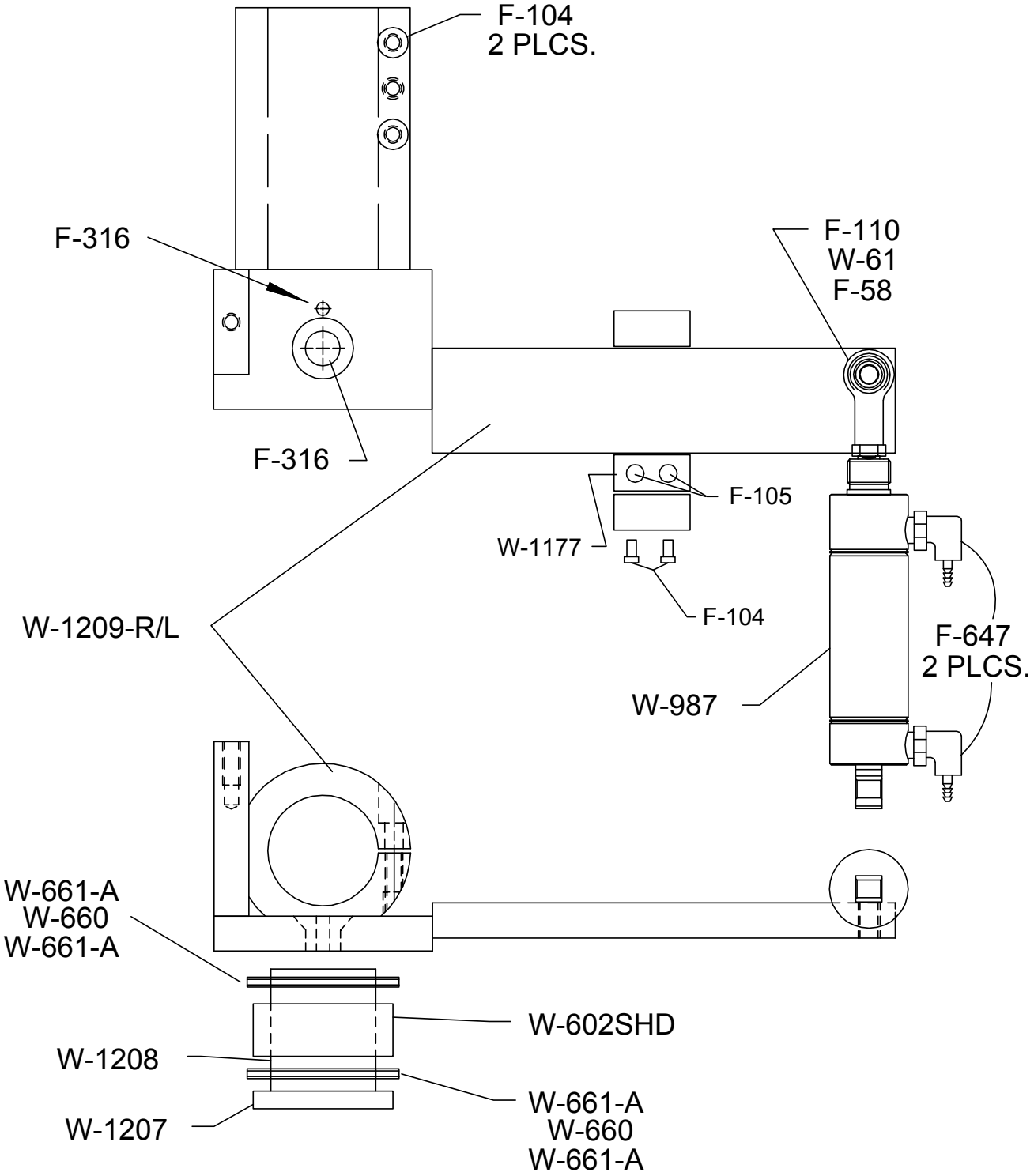
TALON DS-3 DUAL SIDE SHARPENER

MOTOR ARM ASSEMBLY CONT.



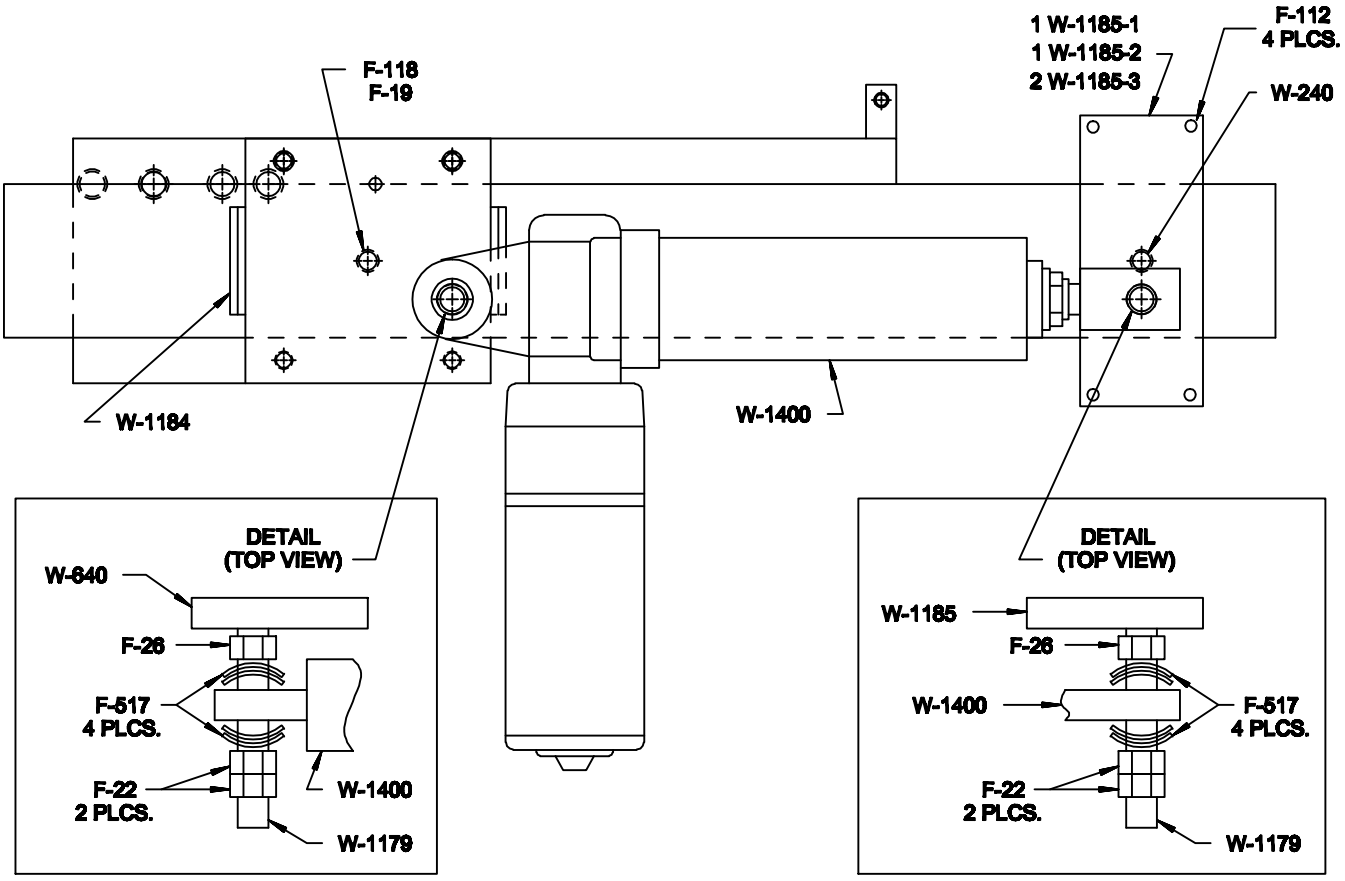
TALON DS-3 DUAL SIDE SHARPENER

MOTOR ARM ASSEMBLY CONT.



TALON DS-3 DUAL SIDE SHARPENER

ACTUATOR ARM ASSEMBLY



TALON DS-3 DUAL SIDE SHARPENER

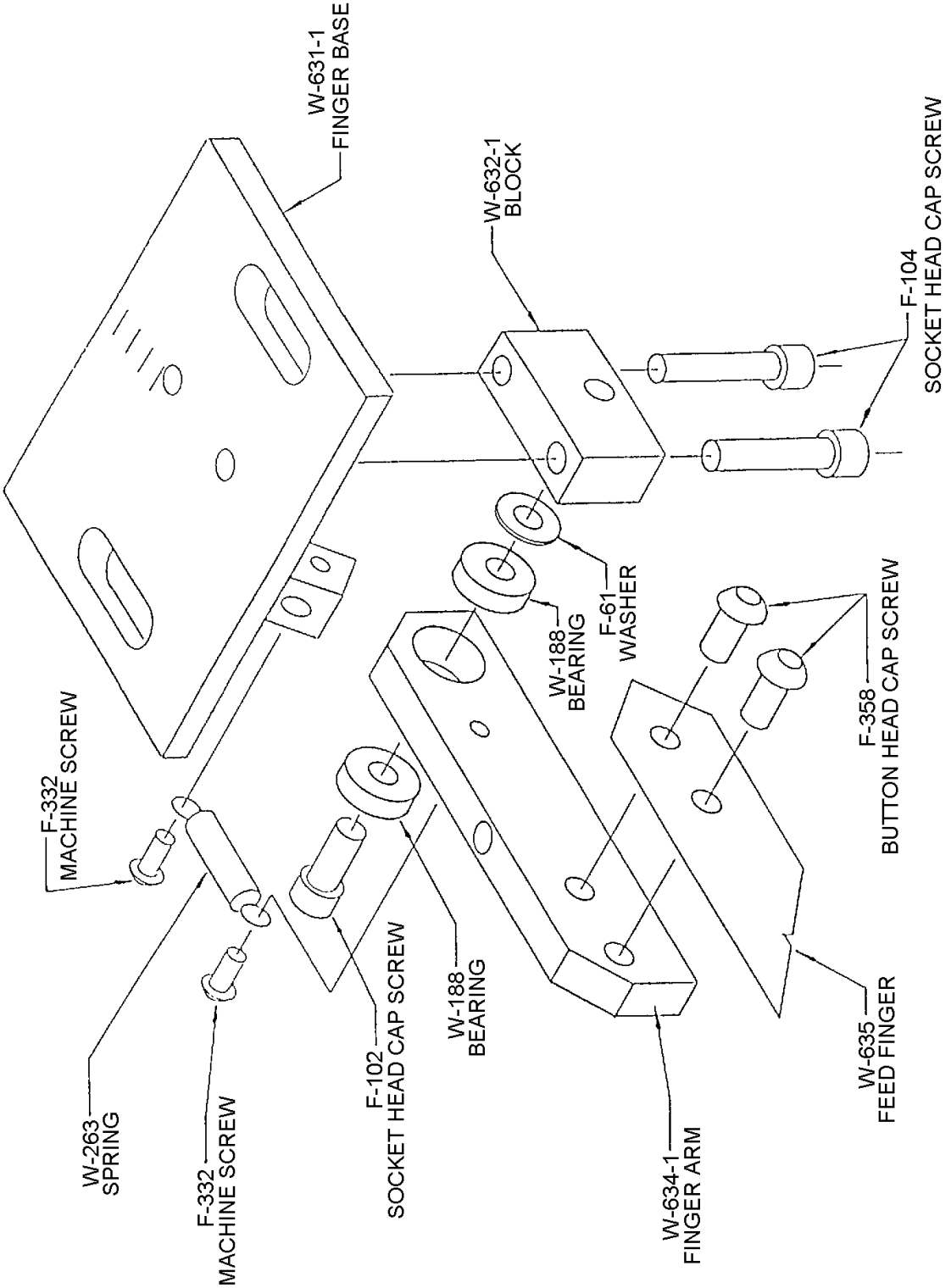
FINGER ARM ASSEMBLY

PART #	DESCRIPTION
W-188	BEARING
W-263	SPRING
W-631-1	FINGER BASE
W-632-1	BLOCK
W-634-1	FINGER ARM
W-635	FEED FINGER

PART #	DESCRIPTION
F-12	NUT
F-37	NUT
F-61	WASHER
F-104	SCREW
F-345	SCREW
F-379	SET SCREW
F-391	SET SCREW

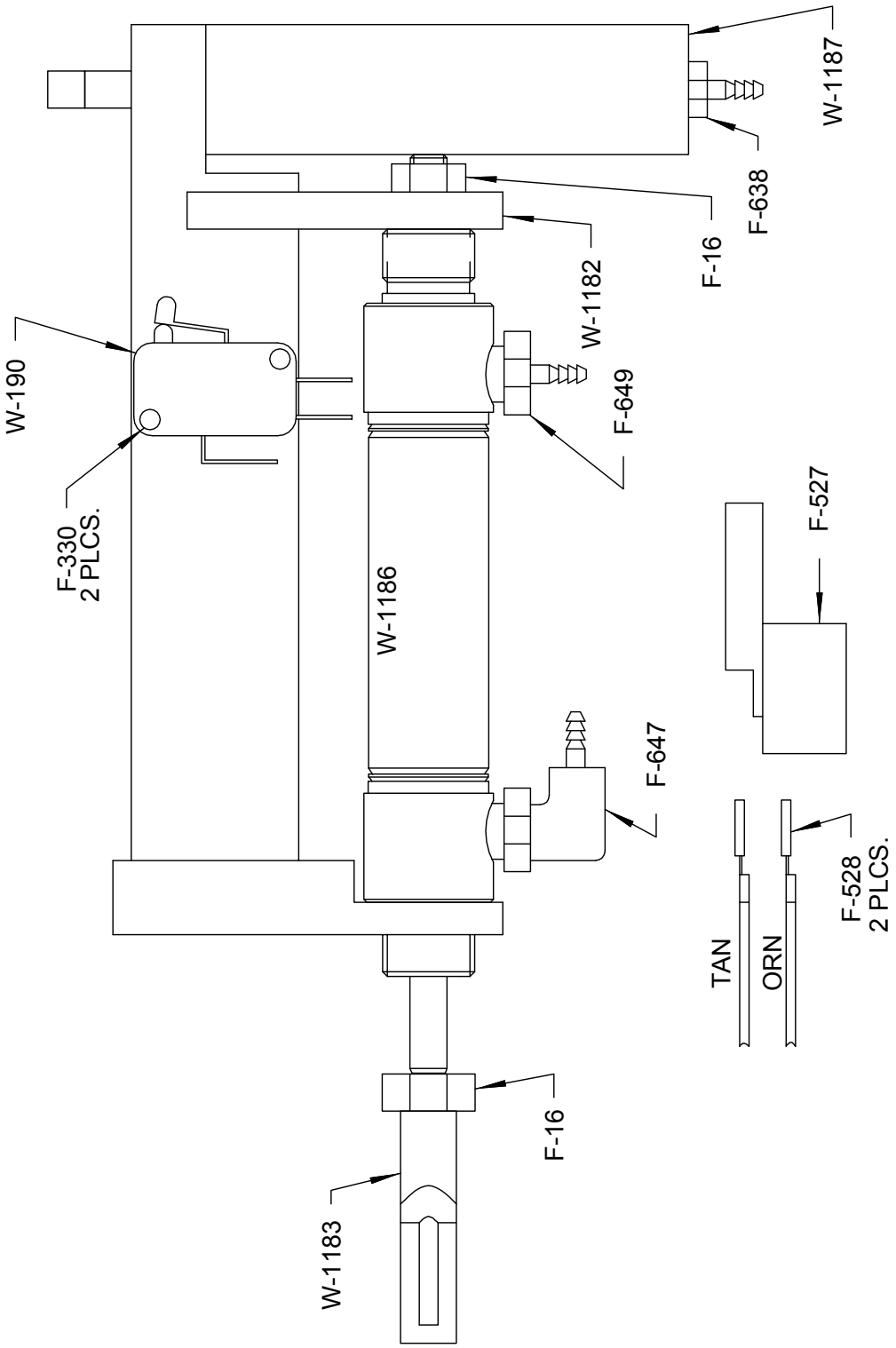
TALON DS-3 DUAL SIDE SHARPENER

FINGER ARM ASSEMBLY



TALON DS-3 DUAL SIDE SHARPENER

FINGER ARM ASSEMBLY CONT.



TALON DS-3 DUAL SIDE SHARPENER

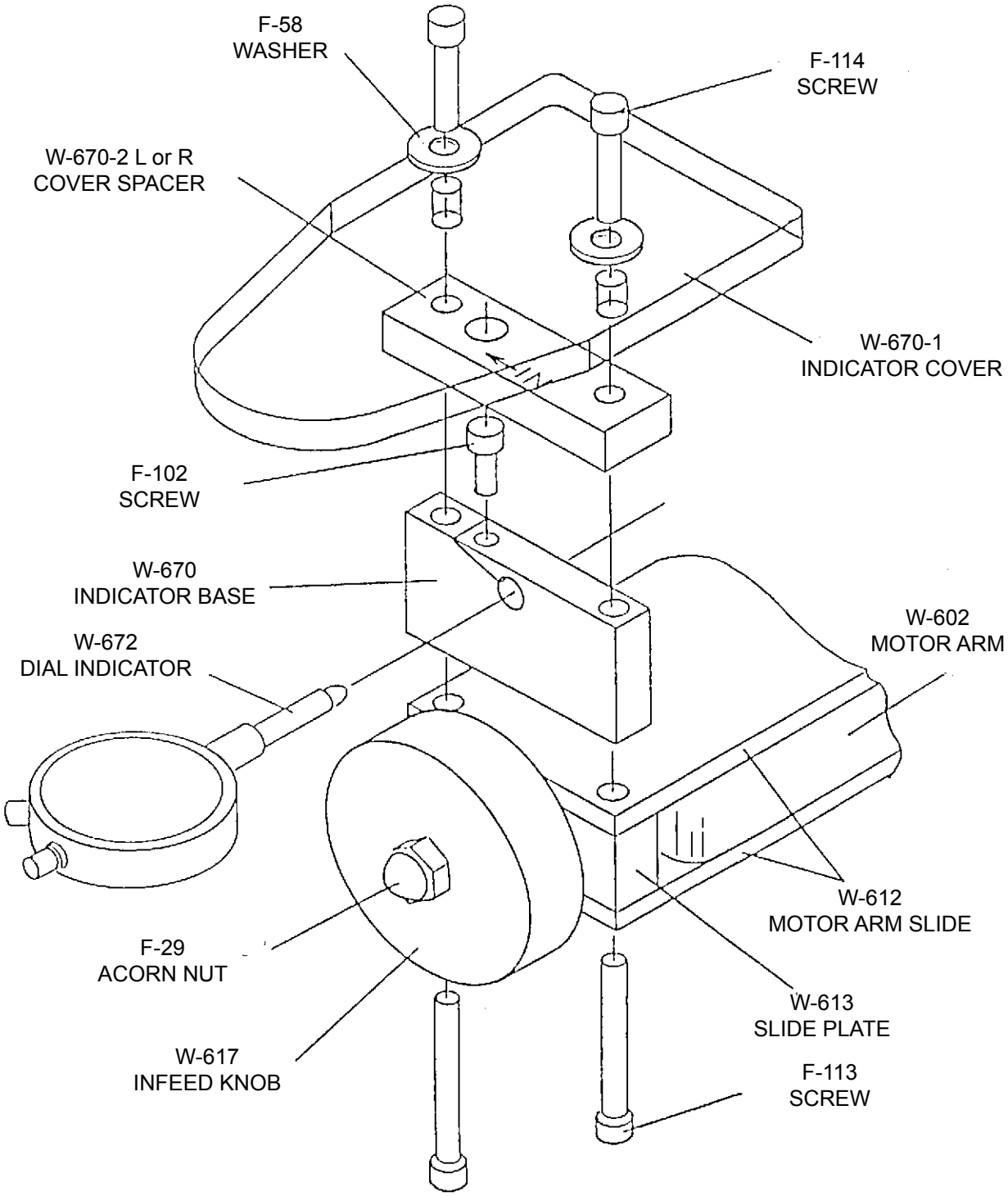
DIAL INDICATOR & COVER ASSEMBLY

PART #	DESCRIPTION
W-602	MOTOR ARM
W-612	MOTOR ARM SLIDE PLATE
W-613	SLIDE PLATE SPACER
W-617	INFEED KNOB
W-670	INDICATOR BASE
W-670-1	INDICATOR BASE
W-670-2 L or R	COVER SPACE
W-672	DIAL INDICATOR

PART #	DESCRIPTION
F-29	NUT
F-58	WASHER
F-102	SCREW
F-113	SCREW
F-114	SCREW

TALON DS-3 DUAL SIDE SHARPENER

DIAL INDICATOR & COVER ASSEMBLY



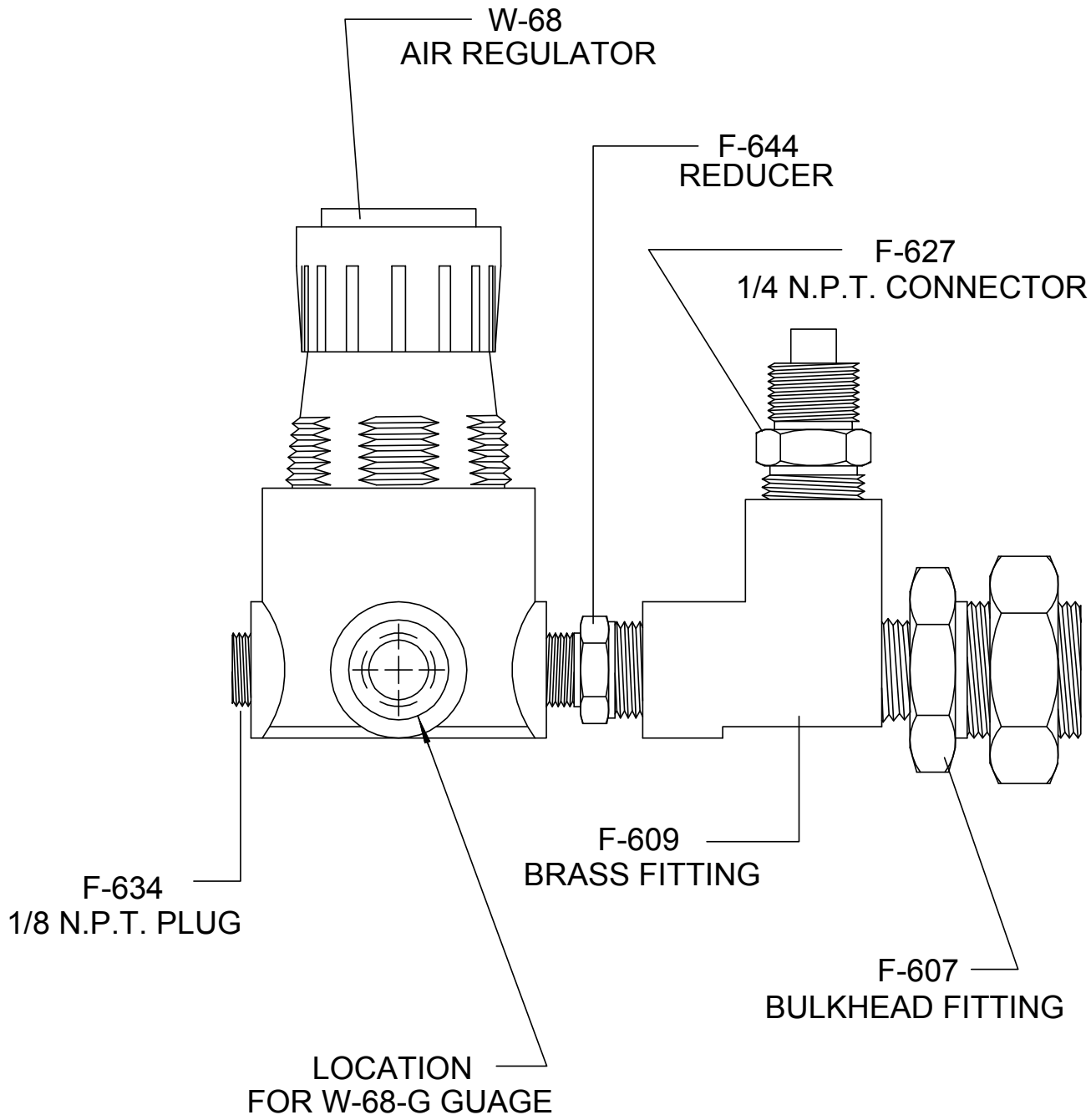
TALON DS-3 DUAL SIDE SHARPENER

DRAG PRESSURE VALVE

PART #	DESCRIPTION	PART #	DESCRIPTION
F-607	BULKHEAD FITTING	F-609	BRASS FITTING
F-614	1/8 N.P.T. NIPPLE	F-627	1/4 N.P.T. CONNECTOR
F-634	1/8 N.P.T. PLUG	F-644	REDUCER
F-647	ELBOW FITTING	W-68	AIR REGULATOR
W-68-G	GUAGE	W-1441-N	AIR VALVE

TALON DS-3 DUAL SIDE SHARPENER

DRAG PRESSURE VALVE ASSEMBLY



TALON DS-3 DUAL SIDE SHARPENER

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TALON DS-3 DUAL SIDE SHARPENER

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