Fast and Accurate. Do it the . . .

KWIK-WAY®

A tradition of Automotive Precision Since 1920

Model SVS II Deluxe (SVSII-D) Valve Refacer

INSTRUCTION MANUAL AND PARTS LIST

irontite The Professional's Choice
MANUFACTURER OF IRONTITE, VAN NORMAN, AND KWIK-WAY BRAND PRODUCTS
Irontite Products Inc. 2525 18th Street SW, Suite D, Cedar Rapids, IA 52409 USA 800-553-5953 +1-319-377-9421
www.kwik-way.com www.irontite.com www.van-norman.com

PURCHASER'S WARRANTY

Irontite Products Inc.
Manufacturer of Kwik-Way, Van Norman, and Irontite Brands
PO Box 9877,
Cedar Rapids, IA 52409-9877 USA

The Company guarantees all parts of its equipment, to the original purchaser, for three full years (one year electrical) from date of recorded warranty (except as provided below) against defects in material or workmanship when the equipment is installed in strict accordance with pertinent specifications and procedures.

The Company will repair and/or replace free of charge all such defective parts only when returned to the factory in Cedar Rapids, **with shipping charges prepaid and authorized RMA**. To obtain an RMA, contact Customer Service at 1-800-553-5953.

This warranty does not cover damage caused by accident, abuse or improper installation, nor repair or replacement of parts worn or consumed in normal operation of the machine.

Additionally, this warranty does not cover the following items; dresser diamonds, ball bearings, grinding wheels, belts, carbide tool bits, and other accessory items, except at the full discretion of the company. **The warranty on electric motors or electrical component parts is for a period of ninety days from date of delivery**.

This warranty is at no time intended to mean the entire machine.

RECEIVING SHIPMENT

Upon taking delivery of your machine, carefully inspect the assembly before removing the rating and packing materials.

If evidence of damage exists, contact the shipper and ***Irontite Products Inc.*** immediately.

Although ***Irontite Products Inc***. is not responsible for damage incurred during transit, you will be provided assistance in preparation and filing of any necessary claims.

CAREFULLY READ THIS MANUAL BEFORE ATTEMPTING TO SETUP OR OPERATE THIS MACHINE.

IMPORTANT NOTE

Always have your serial number ready when communicating with ***Irontite Products Inc.*** regarding parts or service. Keep this manual in a safe place.

Date Received:_____

Serial Number:_____

SAFETY FIRST

This manual has been prepared for the owner and those responsible for the maintenance of this machine. Its purpose aside from proper maintenance and operations, is to promote safety through the use of accepted practice. READ THE SAFETY AND OPERATING INSTRUCTIONS THOROUGHLY BEFORE OPERATING THE MACHINE.

In order to obtain maximum life and efficiency from your machine, follow all the instructions in the operating manuals carefully.

The specifications put forth in this manual were in effect at the time of publication. However, owing to the Company's policy of continuous improvement, changes to these specifications may be made at any time without obligation.

SAFETY INSTRUCTIONS

1. Read, understand and follow the safety and operating instructions found in this manual. Know the limitations and hazards associated with operating the machine.
2. Eye Safety: Wear an approved safety face shield, goggles or safety glasses to protect eyes when operating the machine.
3. Grounding the Machine: Machines equipped with three prong grounding plugs are so equipped for your protection against shock hazards and should be plugged directly into a properly grounded three-prong receptacle in accordance with national electrical codes and local codes and ordinances. A grounding adapter may be used. If one is used, the green lead should be securely connected to a suitable electrical ground such as a ground wire system. Do not cut off the grounding prong or use an adapter with the grounding prong removed.
4. Work Area: Keep the floor around the machine clean and free of tools, tooling, stock scrap and other foreign material and oil, grease or coolant to minimize the danger of tripping or slipping. The Company recommends the use of anti-skid floor strips on the floor area where the operator normally stands and that each machine's work area be marked off. Make certain the work area is well lighted and ventilated. Provide for adequate workspace around the machine.
5. Guards: Keep all machine guards in place at all times when machine is in use.
6. Do Not Overreach: Maintain a balanced stance and keep your body under control at all times.
7. Hand Safety: NEVER wear gloves while operating this machine.
8. Machine Capacity: Do not attempt to use the machine beyond its stated capacity or operations. This type of use will reduce the productive life of the machine and could cause the breakage of parts, which could result in personal injury.
9. Avoid Accidental Starting: Make certain the main switch is in the OFF position before connecting power to the machine.
10. Careless Acts: Give the work you are doing your undivided attention. Looking around, carrying on a conversation and horseplay are careless acts that can result in serious injury.
11. Job Completion: If the operation is complete, the machine should be emptied and the work area cleaned.
12. Disconnect All Power and Air to Machine before performing any service or maintenance.
13. Replacement Parts: Use only Kwik-Way replacement parts and accessories (manufactured by Irontite Products Inc.); otherwise, warranty will be null and void.
14. Misuse: Do not use the machine for other than its intended use. If used for other purposes, the Company disclaims any real or implied warranty and holds itself harmless for any injury or loss that may result from such use.

SAFETY GUIDE FOR VALVE GRINDER WHEELS

(Read before installing the Grinding Wheels)

IMPORTANCE OF PROPER MACHINE MAINTENANCE

The most common cause of wheel breakage is due to improper mounting and abusive and/or careless operation. Only through proper use, regular machine maintenance, service, and inspection procedures can wheel breakage be prevented.

It is the responsibility of the user to inspect, at regular intervals, to be certain that mounting flanges are in usable condition, are of proper size and shape and that no damage has occurred to the wheel or the machine.

The following **DO'S** and **DON'TS** should be used as a guide to safer grinding.

WARNING: IMPROPER USE MAY CAUSE BREAKAGE AND SERIOUS INJURY.

DO	DON'T
DO: CHECK all wheels for CRACKS or other DAMAGE before mounting.	**DON'T:** USE wheels WHICH HAVE BEEN DROPPED or otherwise damaged.
DO: USE MOUNTING BLOTTERS. Most modern wheels are supplied with blotters attached. If not, it is your responsibility to use appropriate mounting blotters.	**DON'T:** USE EXCESSIVE PRESSURE WHEN MOUNTING the wheel between flanges. Tighten the nut only enough to hold the wheel firmly.
DO: be sure the WHEEL HOLE, threaded or unthreaded, FITS the machine arbor PROPERLY and that flanges are clean, flat, and of the proper type for the wheel you are mounting.	**DON'T:** USE HEAVY GRINDING PRESSURE.
DO: always RUN THE WHEEL WITH THE GUARD IN PLACE at least one minute before grinding with it.	**DON'T:** USE THE MACHINE FOR ANY PURPOSE OTHER THAN GRINDING VALVES, VALVE STEMS OR ROCKER ARMS.
DO: USE THE WHEEL GUARD furnished with the machine.	**DON'T:** Operate the machine while wearing any baggy or loose clothing.
DO: always WEAR PROTECTIVE SAFETY GLASSES or FACE SHIELD.	**DON'T:** Use any cleaning chemicals that can leave a film or any residue as this will affect the performance of your chuck. The Collar and Balls area of the **Chuck should only be lubricated with Automatic Transmission Fluid** and NOTHING ELSE. And only **clean the chuck with Alcohol.**

WARNINGS AND CAUTIONS

WARNING: Improper use may cause breakage and serious injury. (Found on page 6).

WARNING: Always disconnect the machine from the power source before attempting to change wheels. (Found on page 14).

WARNING: NEVER dress the wheel without first covering the chuck. (Found on page 16).

WARNING: DO NOT draw the wheel off the valve. Move the valve away first. (Found on page 18).

WARNING: NEVER attempt to release or remove the valve from the chuck while either motor is still running. (Found on page 18).

WARNING: NEVER attempt to remove the valve from the V-block while grinding wheel is still turning. (Found on page 17).

WARNING: DO NOT attempt to remove the rocker arm while grinding wheel is still turning. (Found on page 20).

WARNING: Disconnect the machine from its power source BEFORE beginning any adjustments.

WARNING: Disconnect the machine from its power source before cleaning the chuck. (Found on page 24).

WARNING: Never use any penetrating oil or cleaning solutions on your chuck. ONLY LUBRICATE WITH AUTOMATIC TRANSMISSION FLUID on the collar and ball area of the chuck.

WARNING: To clean the chuck, you must disassemble it using the provided tool and ONLY use denatured alcohol to clean. Then lubricate during re-assembly with ATF.

CAUTION: Be certain that the machine is properly grounded.

CAUTION: DO NOT stop rocker arm movement while shoe is in contact with the grinding wheel. If rocker arm is allowed to dwell in one location, a flat spot will occur.

CAUTION: When adjusting belt tension, DO NOT over-tighten.

CAUTION: Dirty oil can damage the pump and affect grind quality.

SPECIFICATIONS

Specifications	Standard	Metric
Minimum Chuck Capacity (Valve Stem Diameter)	5/32"	4mm
Maximum Chuck Capacity (Valve Stem Diameter)	9/16"	14 mm
Minimum Valve Stem Length (approx.)	3.375"	85.73 mm
Maximum Valve Head Diameter	4"	100 mm
Valve Grinding Wheel Diameter	7"	178 mm
Surface Wheel Diameter	3"	76 mm
Spindle Drive Motor (H.P.)	1/2	0.37 KW
Chuck Drive Motor (H.P.)	1/17	0.06 KW
Coolant Capacity	1 Gallon	3.8 ltr
Chuck R.P.M. (approx.)	100 to 300	
Grinding Angles	From 13 to 62 degrees	
Overall Length	37"	940 mm
Overall Width	22"	559 mm
Overall Height	16"	406 mm
Shipping Weight	310 lbs.	141 kg

STANDARD ACCESSORIES WITH THE SVS II DELUXE

DESCRIPTION	PART NUMBER
1 Gallon (3.8L) Grinding Oil	000-2112-73
Chuck Assembly/Disassembly Tool	012-1054-60
Spanner Wrench	025-0150-02
Diamond Dressing Tool – Tip Grinding	024-0131-11
Diamond Dressing Tool – Face Grinding	023-0129-44
Rocker Arm Attachment Assembly	012-1120-00
Coolant Splash Guard	012-1208-00

SET-UP AND INSTALLATION INSTRUCTIONS

After uncrating, check for hidden damage. If any is found, contact your carrier immediately.

1. Place your valve facer in its pre-determined location and carefully remove crating.
2. Remove all rust preventative with a clean cloth and appropriate solvent such as WD-40 or denatured alcohol or equivalent.
3. Be sure coolant well (sump) is free of all packing materials.

4. Remove the 1/4-20 hex head cap screw from the swivel plate (located next to the chuck swivel plate clamp on the front of the machine).
5. Remove the "U" bracket from the spindle slide stop by loosening the cap nut and right most thumb screw. Then rock the bracket bottom toward you and away from the slide bar. Then re-tighten the cap nut and thumb screw.
6. Check electrical voltage input tag on the valve facer to be sure it matches your service.

CAUTION: Be certain that the machine is properly grounded.

7. Check coolant drain plugs and if tight, fill the sump until the fluid level is approximately 1" above the baffle rib.
8. Connect a filtered and lubricated air supply (65 PSI Min.) to the air inlet at the rear of the machine after attaching your shops' style of air supply fitting.

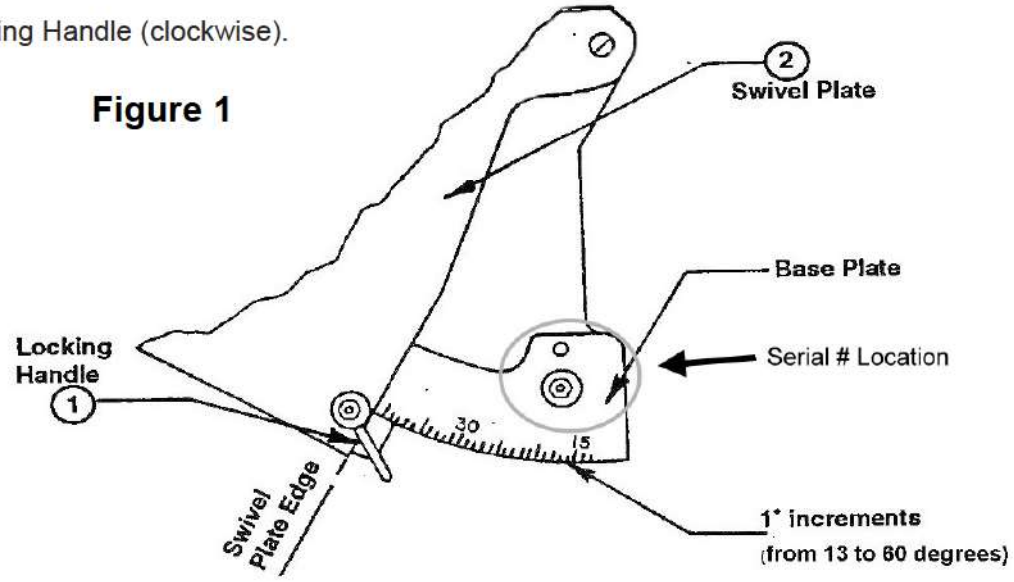
SETTING THE SWIVEL PLATE ANGLE

The swivel plate is marked in 1° increments from 13° to 60°. Actual setting for 15°, 30° and 45° are indicated with these numbers.

To set the angle:

1. Loosen the Locking Handle (Item 1, Figure 1) and set the edge of the swivel plate to the desired angle.
2. Tighten the Locking Handle (clockwise).

Figure 1



SETTING THE CHUCK VALVE STOP

The valve stop is a device designed to locate all like valves at a given relative distance from the end of the chuck.

To set the valve stop:

1. Install a valve in the chuck at the desired depth and allow the chuck to close.
2. Using the 3/16" diameter valve stop rod provided, push the valve stop in until it is seated against the valve stem end.

NOTE: Be sure subsequent valves are pushed in far enough to contact the stop.

SETTING SPINDLE SLIDE STOPS

This machine is equipped with adjustable stops to limit the travel of the grinding wheel spindle slide. These stops, when set, prevent the wheel from striking the chuck or the valve stem.

1. With the valve installed in the chuck, all motors off, and the thumbscrews loose, advance the traverse handle to the left.
2. Feed valve up to valve wheel.
3. Be sure the grinding wheel does not strike either the chuck or the valve stem.
4. Slide the right hand adjustable stop up against the fixed stop and tighten thumb screw.

CONTROLS AND SWITCHES

Before attempting to operate this machine, first familiarize yourself with all controls and switches and the functions of each.

MAIN SWITCH (Item 1, Figure 2 below)

This switch has three positions. In the left position, both the spindle and the chuck motor are on. With the switch in the right position, only the spindle motor will run. When centered, both chuck and spindle motors are off.

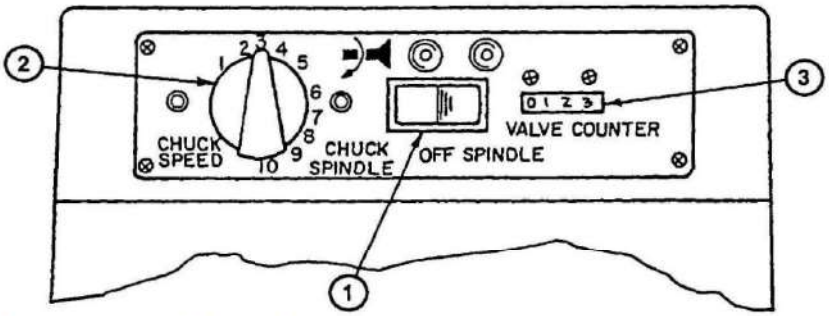


Figure 2

CHUCK SPEED CONTOLLERS (Item 2, Figure 2 above)

Your SVSII Deluxe Valve Facer is equipped with a variable speed chuck motor, which allows you to alter the rotational speed based on the valve head diameter (See chart on chuck cover).

SPINDLE SLIDE SWITCH

This machine is equipped with an automatic switch, which shuts off the spindle (grinding) motor, chuck motor and the coolant pump when the traverse handle (Item 3, Figure 4) is in the far right position.

VALVE COUNTER (Item 3, Figure 2)

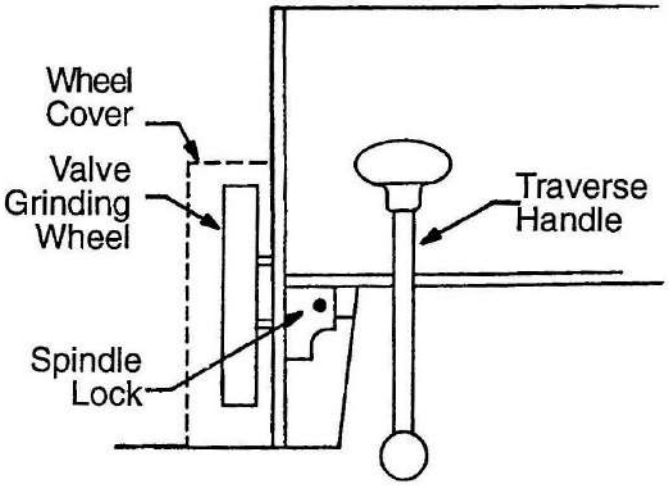
This machine is equipped with an automatic valve counter enabling you to keep an accurate count of valve facing production.

MOUNTING THE VALVE AND STEM GRINDING WHEELS

WARNING: Always disconnect the machine from the power source before attempting to change wheels.

The valve and stem grinding wheels are attached with special spanner nuts and **a special wrench (PN: 025-0150-02) for its removal is included with the accessories**.

Figure 3



VALVE GRINDING WHEEL REMOVAL & INSTALLATION

1. Remove the three mounting screws holding the wheel guard in place.
2. Insert the 3/16" diameter valve stop rod provided. (This will keep the spindle from turning while removing the grinding wheel nut.)
3. With the special spanner wrench (PN: 025-0150-02), remove the grinding wheel nut (Right Hand Threads) and then the grinding wheel.
4. Make certain the grinding wheel bushing is tight.
5. Install the new grinding wheel and grinding wheel nut, then tighten.
6. Remove special pin and re-install wheel guard.

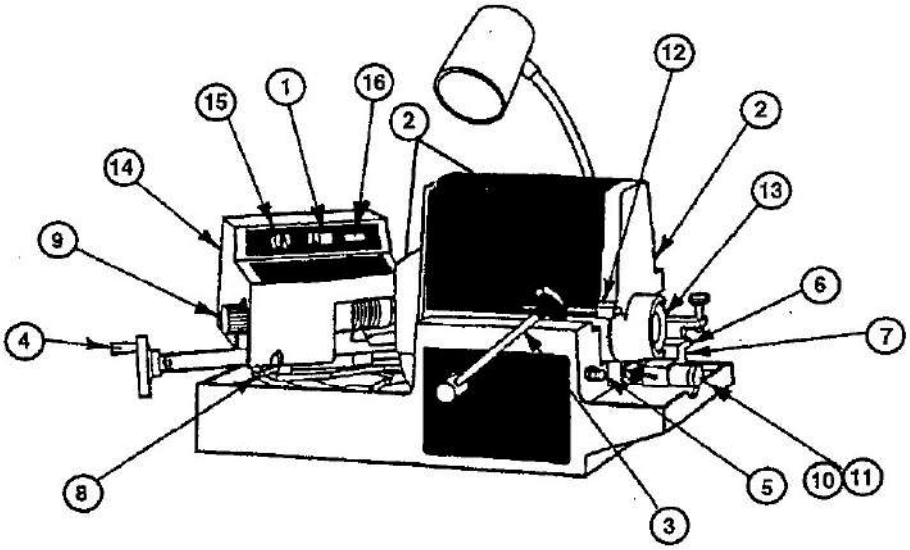
STEM GRINDING WHEEL REMOVAL & INSTALLATION

1. It is not necessary to remove the wheel guard to remove this wheel!
2. Insert the 3/16" diameter spindle lock pin provided. (This will keep the spindle from turning) See Figure 3.
3. With the special spanner wrench (PN: 025-0150-02), remove the cut-off wheel nut (**Left Hand Threads**) and then the grinding wheel.
4. Install the new grinding wheel and cut-off wheel nut, then tighten.
5. Remove special pin.

1. Main Switch	9. Chuck Hand wheel
2. Coolant Control Valves*	10. Surface Grinding Micro Feed Wheel
3. Traverse Handle	11. Micro Feed Dial
4. Valve Feed Hand wheel	12. Spindle Slide Adjustable Stops*
5. Chuck Open-Close Button	13. Valve Stop Screw*
6. Rocker Arm Grinding Assembly*	14. Chuck Cover
7. Surface Grinding Assembly	15. Chuck Speed Dial
8. Swivel Plate Lock	16. Valve Counter

*NOTE: These items are not visible in this view of machine

Figure 4



DRESSING THE WHEEL

NOTE: See "Trouble Shooting Guide" for tips on properly dressing the wheel.

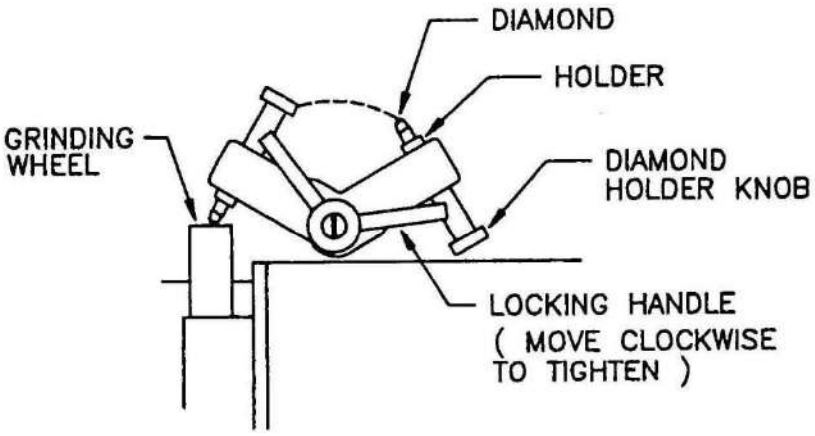
As the wheel is used, particles break away from the face of the wheel. This requires that the wheel face be dressed. The process of dressing the grinding wheel face returns its condition to a smooth and flat surface for the best possible finish on the face of the valve.

NOTE: A new wheel (or re-installed one which has been off the machine) must be dressed prior to use.

WARNING: Never dress the wheel without first covering the chuck.

Figure 5

Looking Down from Top



Looking from Machine Rear

1. Turn the main switch to the OFF (center) position.
2. Loosen the lock arm and swing the diamond toward the left.
3. Using the traverse handle, locate the grinding wheel so that the diamond point just contacts the center of the face and lock in place.
4. Position the wheel to the left of the diamond.
5. Depress the right side of the main switch turning on the spindle and coolant pump.

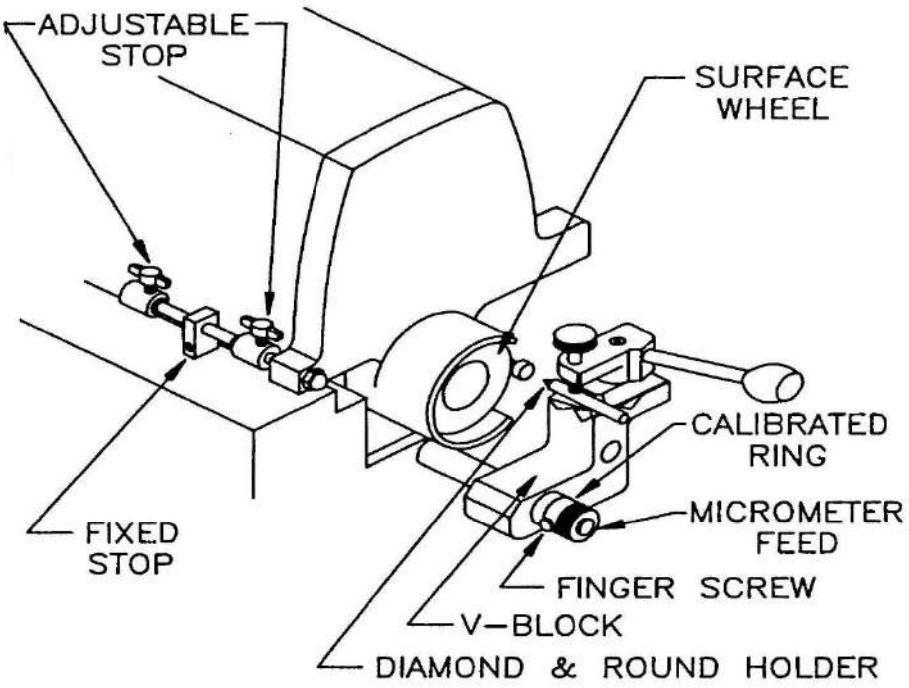
   NOTE: Coolant must always be directed onto the diamond when dressing.
6. Using a very slow uniform motion, move the grinding wheel across the diamond.

   NOTE: Primary cut must always be into the point of the diamond.
7. Return the wheel to the left and adjust the diamond about 1/8 turn clockwise.
8. Make an additional, very slow pass with the wheel (left to right, right to left) and turn the spindle motor off.

PRECAUTIONS WHEN DRESSING THE WHEEL

1. Take very light cuts, heavy cuts may grind away the mounting and loosen the diamond.
2. Avoid shocks or blows to the diamond tool.
3. The diamond and tool must be locked firmly and the wheel fed gradually across the diamond point.
4. Be careful not to jam the wheel into the diamond.

Figure 6



DRESSING THE STEM WHEEL (SEE FIGURE 6)

The stem wheel needs to be dressed periodically to maintain a sharp cutting edge and clean face.

1. Depress the right side of the rocker switch (spindle) and move the traverse handle to the left until the spindle motor comes on.
2. Leave the spindle slide in this location and turn the motor off (center position on the main switch).
3. Loosen the adjustable spindle slide stop, move it up tight against the fixed stop and tighten it to prevent the spindle slide from moving while dressing the stem wheel.
4. Install the round diamond in the V-block and clamp it in place.
5. Using the micrometer feed, move the diamond point in until it just touches the stem wheel.
6. Move the diamond clear of the wheel and turn the main switch to the spindle “ON” position.

NOTE: Coolant must always be directed onto the diamond when dressing.

7. Sweep the diamond across the face of the wheel feeding in .003 to .005 until the face has been totally cleaned up.

VALVE FACING

De-grease/clean valves, making sure they are free of carbon deposits BEFORE attempting to grind.

PRE-GRIND SET UP

1. Dress the grinding wheel (as needed).
2. Install the valve and set the valve stop.
3. Set the swivel plate to the desired angle.
4. Set the spindle slide stop.
5. Set the chuck speed as dictated by the valve head diameter.

FACING THE VALVE

1. With the traverse handle in the extreme right hand position, depress the left side (chuck/spindle) of the rocker switch, turning on the power to the machine.
2. Move the traverse handle slowly to the left until the motors and coolant pump come on.

NOTE: Adjust the coolant flow onto the face of the valve. Never allow the coolant to be directed into the chuck. Suspended grit in the coolant will cause damage to the chuck balls and collars.

3. Bring the valve face into contact with the grinding wheel by SLOWLY turning the feed hand wheel clockwise while at the same time slowly passing the wheel back and forth.
4. As the last low spot is removed, stop feeding the hand wheel in and pass the wheel across the face 3 or 4 times. (This will put on the finish grind). Allow the valve to spark out before proceeding to step 5.
5. Park the wheel in contact with the valve and turn the hand wheel counter-clockwise moving the valve face away from the grinding machine.

WARNING: DO NOT draw the wheel off the valve.

6. Move the traverse handle to the extreme right so the automatic switch shuts off both motors.

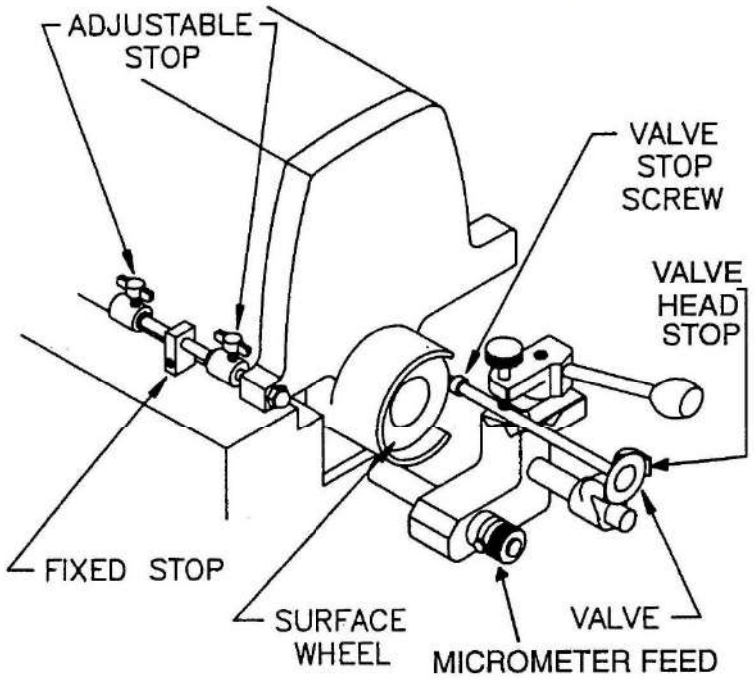
WARNING: NEVER attempt to release or remove the valve from the chuck while either motor is still turning.

7. Press the chuck release valve and remove the finished valve.

CUT-OFF GRINDING (FIGURE 7)

1. Depress the toggle switch to the right side position and move the grinder spindle slide to the left until the spindle motor comes on. Leave the slide in this position and shut the motor off at the toggle switch.
2. Lock the grinder spindle slide in this position by moving the two adjustable stops to contact the fixed stop.
3. Place the valve on the V-block, bringing it over the face of the wheel, and lock down in the V-block with the stem tip just contacting the wheel. Turn the motor on and take a light cut across the end of the valve stem.

Figure 7



Before removing the valve, move the V-block back to the rest position and adjust the valve stop screw and jam nut until it contacts the end of the valve stem. This sets the stop screw even with the front edge of the wheel and all other valve stems can be set in the V-blocks against the stop.

4. Set calibration ring to zero, rotate the V-block holder so that the valve stem end is between the stop screw and the wheel edge.
5. Feed the valve stem up by rotating the feed wheel the amount of stock that is to be ground off. (Should not exceed 0.002 inch (0.051mm) per pass).

NOTE: This Cut-Off Grinding should be performed using coolant directed over the Stem Wheel.

WARNING: Never attempt to remove the valve from the V-block while the grinding wheel is still turning.

VARYING WHEEL PERFORMANCE

It is possible to alter the performance of a grinding wheel by varying the traverse speed, infeed (amount of material being removed) or the speed of work. If a wheel acts as though it is too hard (causing burning, chatter, slow cutting or loading) it can be made to act softer by:

1. Increasing the work speed,
2. Increasing the traverse speed,
3. Increasing the infeed,
4. Dressing at a faster traverse speed, or
5. Dressing more often.

If a wheel acts as though it is too soft (not holding size or requiring excessive dressing), it can be made to act harder by:

1. Decreasing the work speed,
2. Decreasing the traverse speed,
3. Decreasing the infeed, or
4. Dressing at a slower traverse speed.

It's beneficial to use quality grinding stones and to match the stone to the material being ground. If you are grinding titanium valves then you should use a stone designed for use on titanium. Irontite Products uses the same formulation on the stones we offer as Kwik-Way has always used. The combination of our specially formulated stones, grinding oil, and the precision of our exclusive chuck design means you will get the best possible finish. Using other products can affect the quality or life of the stone.

It's very important to keep your chuck free of debris. Clean your chuck should you encounter any problem with its operation.

Use Kwik-Way grinding oil (000-2112-73 gal.) and keep your grinding oil free of contaminants to get the best possible performance.

"Perfection is not attainable, but if we chase perfection we can catch excellence."
–Vince Lombardi

ROCKER ARM GRINDING

It is not necessary to remove the stem grinding attachment to grind rocker arms. Rotate the stem attachment from its at-rest position toward the front of the machine.

SET-UP

1. Move the traverse handle to the extreme right and depress the spindle switch.
2. Slowly move the traverse handle to the left until the spindle motor starts.
3. Allow the traverse handle to remain in this position and turn the spindle motor off.
4. Loosen the stops, slide them against the fixed stop and lock in place.
5. Mount the rocker arm between the cones (See Figure 9) and position the attachment so that the wheel is in contact with the grinding wheel (See Figure 10).

Figure 8

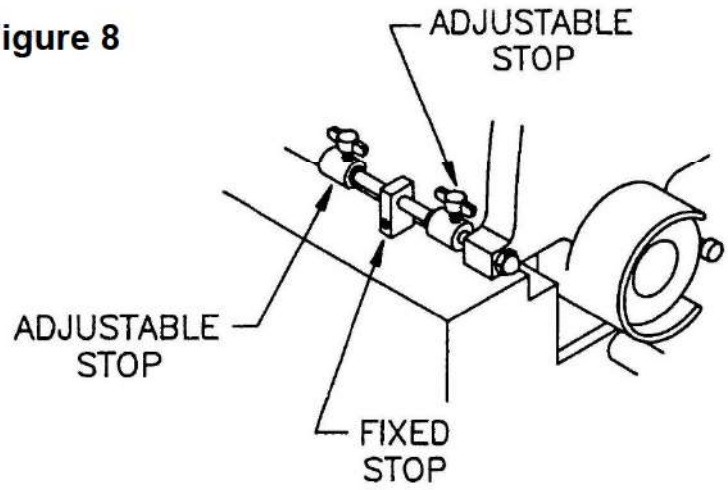


Figure 9

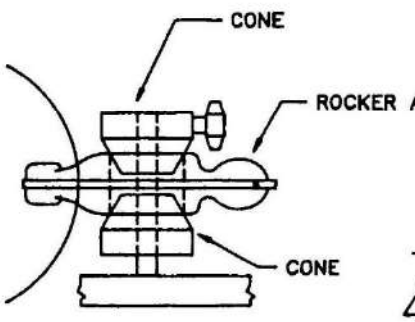
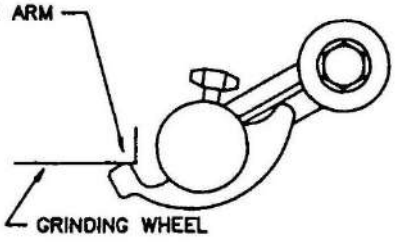


Figure 10



ROCKER ARM GRINDING PROCEDURE

Start the spindle motor and direct the coolant flow onto the rocker arm shoe.

1. Apply light pressure and slowly rotate the face of the shoe back and forth across the grinding wheel.

IMPORTANT: Be sure that the rocker arm shoe is in continuous contact with the wheel during complete travel in both directions.

2. Continue grinding until the entire shoe surface is cleaned up.

CAUTION: DO NOT stop rocker arm movement while shoe is in contact with the grinding wheel. If rocker arm is allowed to dwell in one location, a flat spot will occur.

3. Turn off the spindle motor and remove the finished rocker arm.

WARNING: DO NOT attempt to remove the rocker arm while the grinding wheel is still turning.

4. When the rocker arm grinding process has been completed, return both this attachment and the V-block to their original locations.

MOTOR/BELT INSTALLATION

When installing a motor or belts, the center line (CL) motor must be parallel to the top of the spindle slide. (See Figure 11)

Failure to accurately install/adjust the motor will cause premature belt breakage.

Poly Belts stretch to fit.

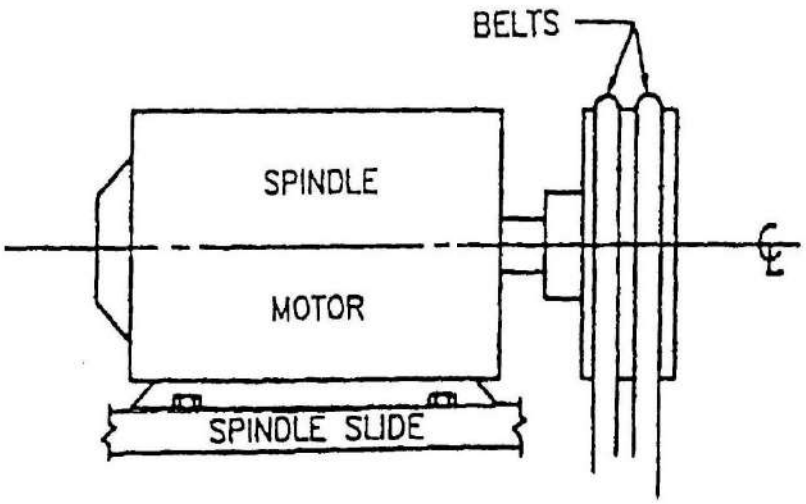


Figure 11

SPINDLE SLIDE ADJUSTMENT

(For Serial No. 4315 and up)

If the spindle slide should need adjustment, start by locating the three socket head set screws at the rear of the machine just below the slide (See Figure 12).

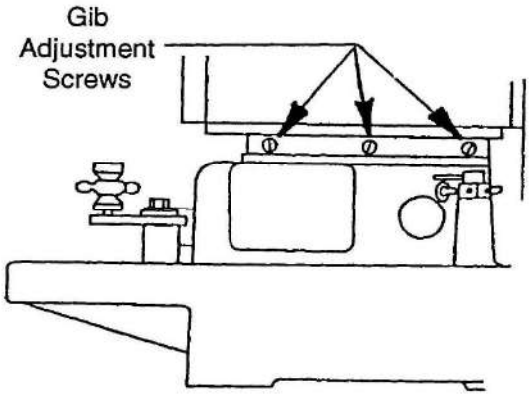
WARNING: Disconnect the machine from its power source BEFORE beginning any adjustments.

1. Position the traverse handle in the vertical position.

NOTE: All screw adjustments are to begin with the handle in this position.

2. The first adjustment will be to the setscrew nearest the large diameter-grinding wheel. Tighten this screw until the spindle slide cannot be moved when using the traverse handle.
3. SLOWLY loosen this screw while attempting to move the traverse handle - stop loosening the screw when the traverse handle can be cycled through its entire range and a noticeable amount of smooth drag is achieved.

Figure 12

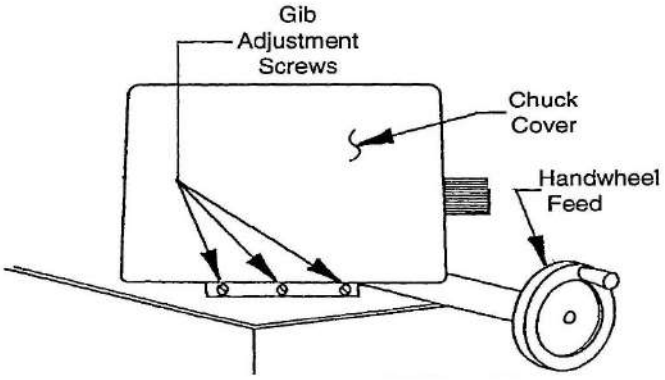


1. The next adjustment is to the screw nearest the small diameter-grinding wheel. Tighten this screw until once again the spindle slide cannot be moved with the traverse handle.
2. SLOWLY loosen this setscrew while rocking the traverse handle back and forth - stop when the slide moves smooth and free, yet drag can be detected.
3. While standing on the operator side, grasp both the large diameter and small diameter grinding wheel covers and alternatively push/pull on each, checking for any movement of the spindle slide. If no movement is detected, go to Step 7. If MOVEMENT IS DETECTED, one of the gib screws is too loose and will cause inaccuracy - repeat Steps 2 through 6.
4. Tighten the screw in the center until the spindle slide cannot be moved - SLOWLY loosen this screw while rocking the traverse handle side to side. Continue to loosen the screw, stopping when the amount of drag felt in the center matches that provided by the outer screws.

CHUCK SLIDE

The chuck slide uses spring loaded gib screws, which **can be damaged** if they are over tightened. Carefully tighten each spring loaded gib screw until it bottoms out and then back it off 1/2 turn (See Figure 13).

Figure 13



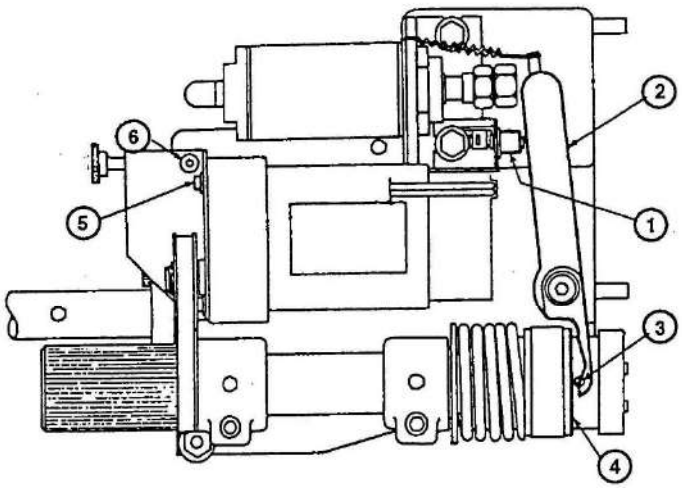
MICRO SWITCH ADJUSTMENT

(See Figure 14)

The micro switch (Item 1) when properly adjusted, will shut off the chuck motor before the chuck yoke pin (Item 3) engages the chuck flange (Item 4). This switch is a safety device to prevent stripping the gears in the chuck motor.

1. Disconnect the machine from the power source and air supply and remove the chuck cover.
2. Move the chuck yoke (Item 2) by hand (you should hear a click in the micro switch before feeling the chuck yoke pin - Item 3) and engage the chuck flange (Item 4).
3. If the chuck yoke pin engages the chuck flange first, adjust the switch bracket by bending away from the chuck yoke slightly, re-check per Step 2.
4. Reattach chuck cover.

Figure 14



CHUCK DRIVE BELT ADJUSTMENT

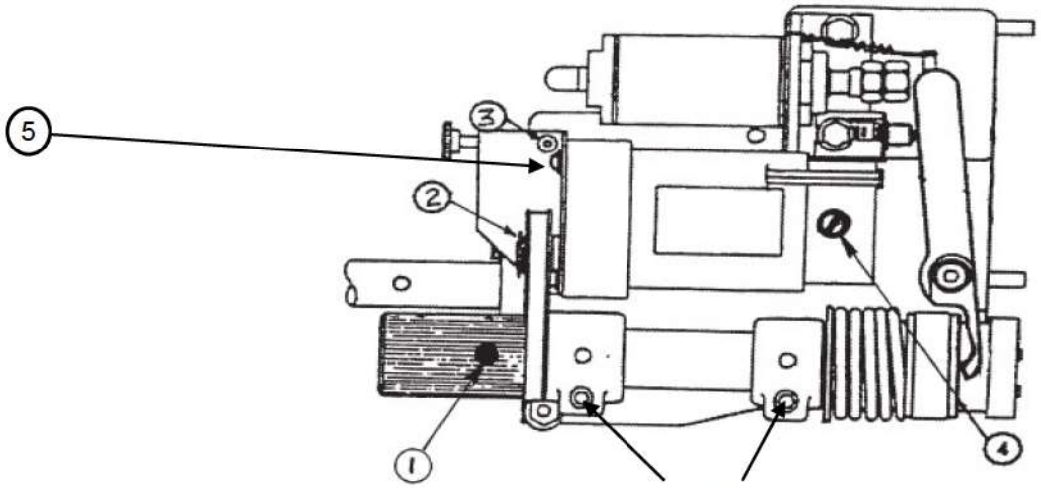
(See Figure Below)

Proper adjustment of the chuck drive belt will insure long life.

It is not necessary to run excessive tension in this belt. (Positive drive belts require less tension than "V" type belts). Belt tension is adjusted by the motor mount bolts (Item 5 below). If the belt runs to one side then the motor shaft is not parallel to the chuck. This is adjusted by bracket bolts (Item 3, below). Loosen and adjust the motor until the belt runs true. Re-tighten bolts. It may be necessary to re-adjust belt tension. Once complete, the belt should provide long life and trouble free operation.

CAUTION: When adjusting belt tension, DO NOT over tighten.

NOTE: Chuck shaft must rotate freely, by hand. Over tightening bearing cap screws will damage the gear motor. These should be snug. They are not intended to stop lateral movement of the chuck. Lateral movement is prevented by the position of the belt pulley on the end of the chuck being tight up against the chuck mount bearing mount.



Bearing Cap Screws

PROPER BEARING CAP SCREW ADJUSTMENT

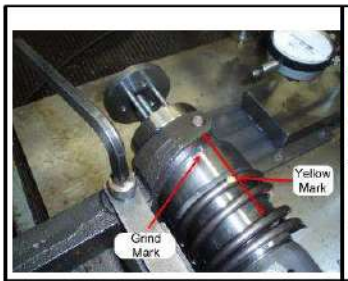
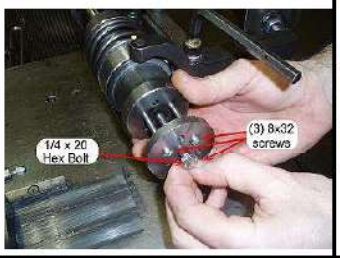
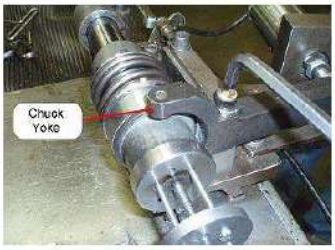
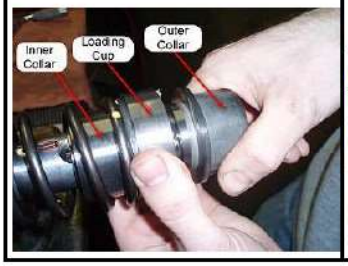
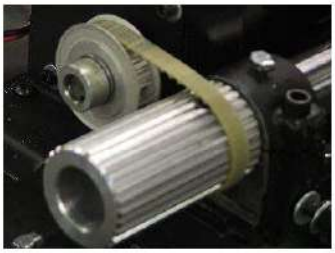
Start with the bearing cap screw closes to the Valve end of the chuck. While rotating the check with your left hand, tighten the bearing cap screw until you feel resistance turning and very slightly back off the screw. Then move to the other bearing cap screw and repeat the process. Finally go back to the first bearing cap screw and repeat the process. The last step is to check to see if there is any lateral play, If there is lateral play loosen the spline pulley set screw (number 1 above) and while pushing the valve end of the chuck back with your right hand, slide the splined pulley up on the chuck shaft until it just barely touches the Bearing Saddle and then tighten the set screw. You want no lateral movement of the chuck, but you also do not want the pulley to be creating any drag by rubbing against the bearing saddle.

CLEANING

CLEANING THE CHUCK (Chuck Disassembly)

WARNING: Disconnect the machine from its power source before cleaning the chuck.

The Valve Chuck Disassembly / Assembly Tool is required to perform the following procedures.

	1) Remove the chuck cover from the Chuck Bearing Assembly, being careful not to pull any wires from the cover.. Rotate the Chuck so that the Grind Mark on the front collar and the Yellow Mark on the Spring are Vertical as show in the photo left.	2) Remove the (3) three 8 x 32 x 5/16 slot head screws from the Chuck End Cap (Black) shown right.	
	3) Use the Disassembly Tool (picture at the top) that comes with your machine, put the 8 x 32 screws (3) into the chuck shaft in a 1/4 of an inch. Put the 1/4 x 20 Hex Head Bolt finger tight against the End Plate.	4) Remove the Chuck Yoke	
	5) Loosen the 1/4 x 20 Hex head bolt counter clockwise. As you release the 1/4 x 20 bolt, the spring pressure should begin to release.. NOTE: You may need to soak the chuck in Automatic Transmission Fluid to remove grit and make the collars slide easier.	6) Remove the Chuck Disassembly Tool.	
	7) Begin to remove the outer collar from the chuck shaft. Next, remove the Loading Cup with the Four (4) springs. The large spring and inner collar will be removed along with the Thrust Step Washer. As you take the Inner collar off the steel chuck balls (9/16) may fall out of the chuck shaft.	8) Remove the Chuck Hand wheel and belt from the chuck shaft. Remove the chuck from the chuck bearing assembly. Clean all parts with a parts cleaning solvent.	

ASSEMBLY INSTRUCTIONS

	9) Put the shaft back in the chuck bearing slide, use transmission fluid only and coat the chuck shaft. Make sure the keys are vertical.	10) Put the thrust washer, spring, and (3) three rear balls back on the chuck shaft, making sure that the Yellow mark is lined up with the Keys. Hold on to the bottom balls so they don't fall out of the shaft	
	11) Slide on the Inner collar, so all three rear balls are inside of the collar.	12) Put the front set of balls in the shaft. Install the loading cup with four (4) springs facing out.	
	13) Install the outer collar, making sure the grind mark is lined up with the keyways.	14) Reinstall the Disassembly tool. Put the three screws (8 x 32) in one quarter (1/4) of an inch. Begin to tighten the 1/4 x 20 bolt, making sure that the collars are still lined up with the keys. Run 1/4 x 20 bolt in until it is tight.	
	15) Reinstall the Chuck Yoke.	16) Remove the Disassembly Tool and reinstall the chuck End Cap with the three 8 x 32 screws.	
	17) Reinstall the chuck Hand wheel and Belt, making sure the chuck and chuck hand wheel are snug to the chuck bearing slide.	18) Reinstall the chuck cover. Make sure there are no wires touching the chuck.	

HERRAMIENTA DE ENSEMBLAJE (012-1054-60) PARA LIMPIAR UN MANDRIL

1. Mientras el mandril está en la máquina de rectificar válvulas, remueva el tapón del eje del mandril.
2. Enrosque la herramienta de ensamblaje dentro del eje del mandril (vea el dibujo). Esté seguro de que los tornillos de cabeza redonda están por lo menos 1/4" dentro del eje del mandril.
3. Vire el tornillo de cabeza hexagonal hasta que los collares del mandril se empujen hacia atrás.
4. Saque el perno de pivote de horquilla y mueva la horquilla del mandril.
5. Destornille el tornillo de cabeza hexagonal hasta que los collares se muevan al frente, aflojando la presión del resorte.
6. Saque la herramienta de ensamblaje del mandril. Ahora dl mandril puede ser limpiado mientras esta en la maquina de rectificar válvulas o el mandril puede ser sacado de la maquina para entrada más fácil.
7. Saque los collares y bolas del mandril y limpielos completamente con solvente. Limpie el eje y hoyos también.
8. Aplique aceite a los collares, los ejes y bolas y devuélvalos a su sitio. Este seguro que la ranura de cuña en los collares esta colocada correctamenta.
9. Coloque la herramienta de ensamblaje en el eje de nuevo con tomillos de cabeza redonda.
10. Comprima los collares hacia atrás al atornillar el tornillo de cabeza hexagonal. Si los collares se enrollan, revise por alineamiento correcto entre las llaves del eje con las ranuras de cuña en los collares.
11. Reemplace la horquilla y el perno de pivote de horquilla como lo hizo anteriormente.
12. Saque la herramienta de ensamblaje y reemplace el tapón en el eje del mandril.

CHUCK ASSEMBLY REMOVAL

If it is necessary to remove the complete chuck assembly for replacement, proceed as follows:

1. Remove the chuck cover.
2. Remove the chuck yoke pivot cap screw. Disconnect return spring and move the chuck yoke out of the way.
3. Loosen the four socket head cap screws mounting the motor to the motor bracket to relieve the belt tension.
4. Loosen the set screw in the chuck shaft pulley/hand wheel and remove the chuck shaft assembly.
    a. **To re-install a chuck shaft, reverse steps 1 through 4.**

1. Make certain that the shoulder on the valve head end of the chuck is back snug against the solid bearing.
2. When installing the pulley/hand wheel, make certain it is drawn up snug yet the chuck shaft can turn freely. Then tighten the setscrew.

HELPFUL HINTS

1. **GET ACQUAINTED WITH YOUR *KWIK-WAY* VALVE FACER.** We recommend that you use scrap valves and practice before beginning an actual job. This will avoid any undue pressure or failure while learning a new procedure.
2. **ALWAYS** cover the chuck before dressing the valve grinding wheel.
3. **ALWAYS** dress a grinding wheel after installation (whether new or reinstalling).
4. If the grinding wheel becomes impregnated with grease or lubricating oil, remove the spindle, soak in solvent overnight, reinstall and turn the motor on. This will throw out the oil by centrifugal force.
5. **ALWAYS** use coolant when dressing the grinding wheel.
6. A good grinding practice is to take very light cuts and to slowly pass the wheel back and forth across the valve face many times.
7. **ALWAYS** clean and degrease valves before grinding to prevent the grinding wheel from “loading up” with residue.
8. For best valve face finish, dress the grinding wheel to a “glassy smooth” surface.

MAINTENANCE

Your **KWIK-WAY SVS II Deluxe** Valve Facing Machine is designed as a minimal maintenance product. However, some basic maintenance will assure that it will continue to operate in a satisfactory manner.

LUBRICATION

1. Grinder spindle slide ways are equipped with snap-lid oilers (1 front, 1 rear) and must be oiled once a week (more frequently if machine is in continuous service).
2. Chuck slide feed screw is equipped with a snap-lid oiler located near the hand wheel.
3. Gib and dovetail ways have two (2) snap-lid oilers, one behind the chuck motor and the other under the chuck shaft and between the chuck bearings.
4. Spindle drive motor has two oiling points, one at each end. USE ONLY A FEW DROPS OF OIL in each (every 3 to 4 months).

CAUTION: Excessive oiling will damage the motor.

5. The crankshaft assembly, chuck motor and gear case are all lubricated for life and require no additional lubrication.
6. Surface grinding attachment requires only a few drops of oil placed on either side of the V-block on a weekly basis.

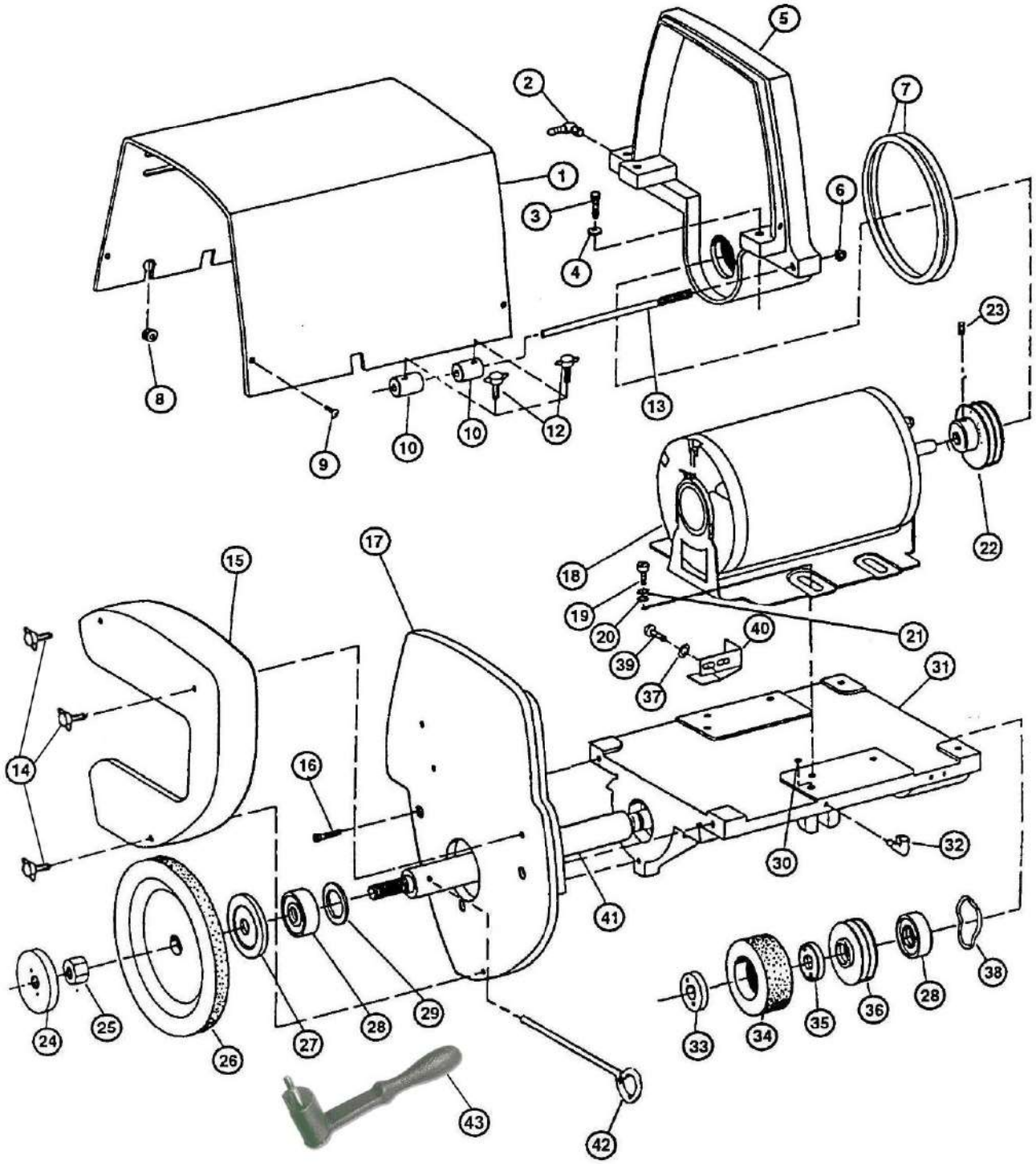
The Chuck Collar Area - This area ***should only be lubricated with Automatic Transmission Fluid***. Use a spray bottle and use sparingly. If you notice the chuck opening and closing slowly or in a sticky motion use **a little ATF spray** and actuate the open can close switch several times to spread the lubrication. ***DO NOT USE WD-40 or any other SPRAY LUBRICANTS or PENETRATING OILS. NO BRAKE OR CARB CLEANER EITHER!***

Valve Slide Feed Hand Wheel Adjustment – If you valve slide has too much play you adjust it by turning the hand wheel so the set screw is visible, then turn it one full rotation clockwise, loosen the set screw and push inward on the hand wheel then tighten the set screw.

Grinding coolant should be changed as needed when it gets dirty. Use only Kwik-Way Grinding Coolant P/N: 000-2112-73 and Kwik-Way formula grinding stones for best results. Use of other Coolant will significantly affect the performance of the machine and void the warranty.

Always cover the chuck with a shop towel when dressing your grinding stone to keep debris from entering the chuck collar area. Never direct your coolant nozzle into or over the chuck as this can introduce debris into your chuck and cause it to wear prematurely.

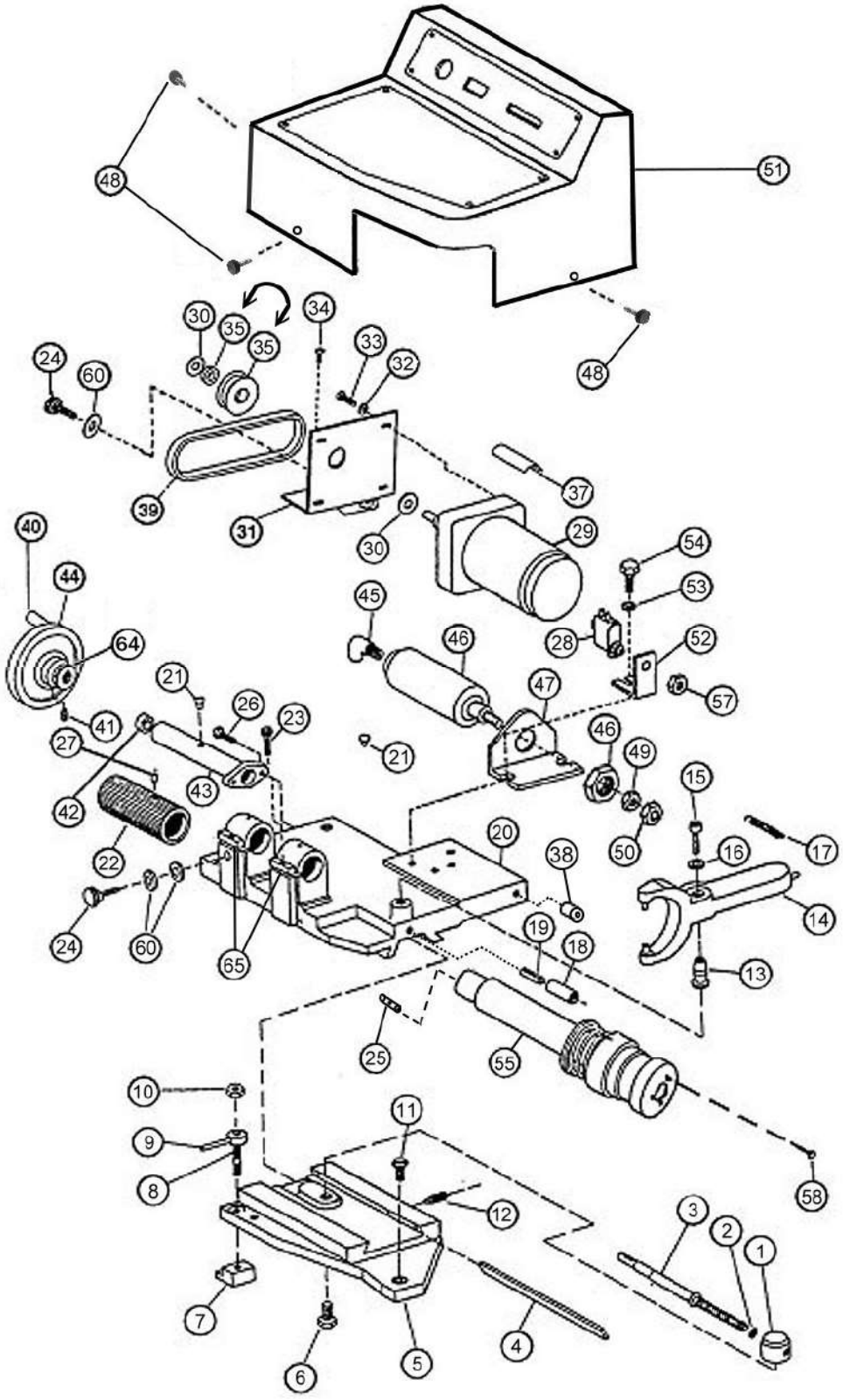
SPINDLE ASSEMBLY DRAWING
115V/230V-60HZ AND 220V/50HZ



SPINDLE ASSEMBLY DRAWING
115V/230V-60HZ AND 220V/50HZ

Item	Part Number	Description	Quantity
1.	012-0020-10	Spindle Motor Cover	1
2.	000-1567-95	90° Elbow 1/4 x 1/8 MPT	1
3.	000-0168-02	5/16-18 x 1 Soc. Hd. C.S.	2
4.	000-1145-02	1/4 Iron Washer	2
5.	012-3007-10	Motor Sheave Guard	1
6.	000-0150-08	5/16-18 Hex Cap Nut	1
7.	000-2303-62	O-Ring Belt – 50 & 60 Hz	2
8.	000-2700-24	3/8 ID Grommet	1
9.	000-0595-01	10-24 x 3/8 Button Hd. C.S.	4
10.	012-1092-20	Stop Collar	2
11.		{removed}	
12.	060-1125-00	T-Bolt Thumbscrew Assembly	2
13.	012-1092-30	Stop Rod	1
14.	012-0012-06	Wheel Guard T-Bolt, Assembly	3
15.	012-0012-07	Wheel Guard Cover	1
16.	000-0123-47	1/4-20 x 3/4 Flat Hd. Soc. C.S.	3
17.	012-0036-00	Wheel Guard Plate	1
18.	001-1949-95	Motor 115/230-60/50-1	1
19.	000-0165-19	1/4-20 x 1/2 Soc. Hd. C.S	4
20.	000-1155-25	1/4 SAE Washer	4
21.	000-1170-48	1/4 Int. Lock washer	4
22.*	012-1000-20	Motor Sheave 60Hz	1
22.*	012-1000-30	Motor Sheave 50Hz	1
23.	000-0485-24	1/4-20 x 3/8 Nylon Soc. Cup S.S	1
24.	012-1004-00	Grinding Wheel Nut	1
25.	012-1003-00	Grinding Wheel Bushing	1
26.	010-0709-00	Grinding Wheel, General Purpose	1
27.	012-1005-07	Grinding Wheel Flange	1
28.	000-1605-12	Bearing	2
29.	000-2003-44	Gasket	1
30.	023-0201-90	Plug	1
31.	012-3004-00	Spindle Bearing Slide	2
32.	000-1900-20	1/4 Angle Oiler	1
33.	024-0646-03	Cut-off Grinding Wheel Nut	2
34.	010-0300-72	Cut-off Wheel	1
35.	013-0218-05	Spindle Pulley Nut	1
36.	012-1001-20	Spindle Sheave	1
37.	000-1170-30	#10 Int. Lock washer	1
38.	000-1820-52	Wave Spring Washer	1
39.	000-0347-54	10-24 x 3/8 Rd. Hd. M.S.	2
40.	012-1072-20	Switch trip Bracket	1
41.	012-1002-05	Spindle	1
42.	012-1205-00	Valve Stop Rod	1
43.	025-0150-02	Spanner Wrench	1

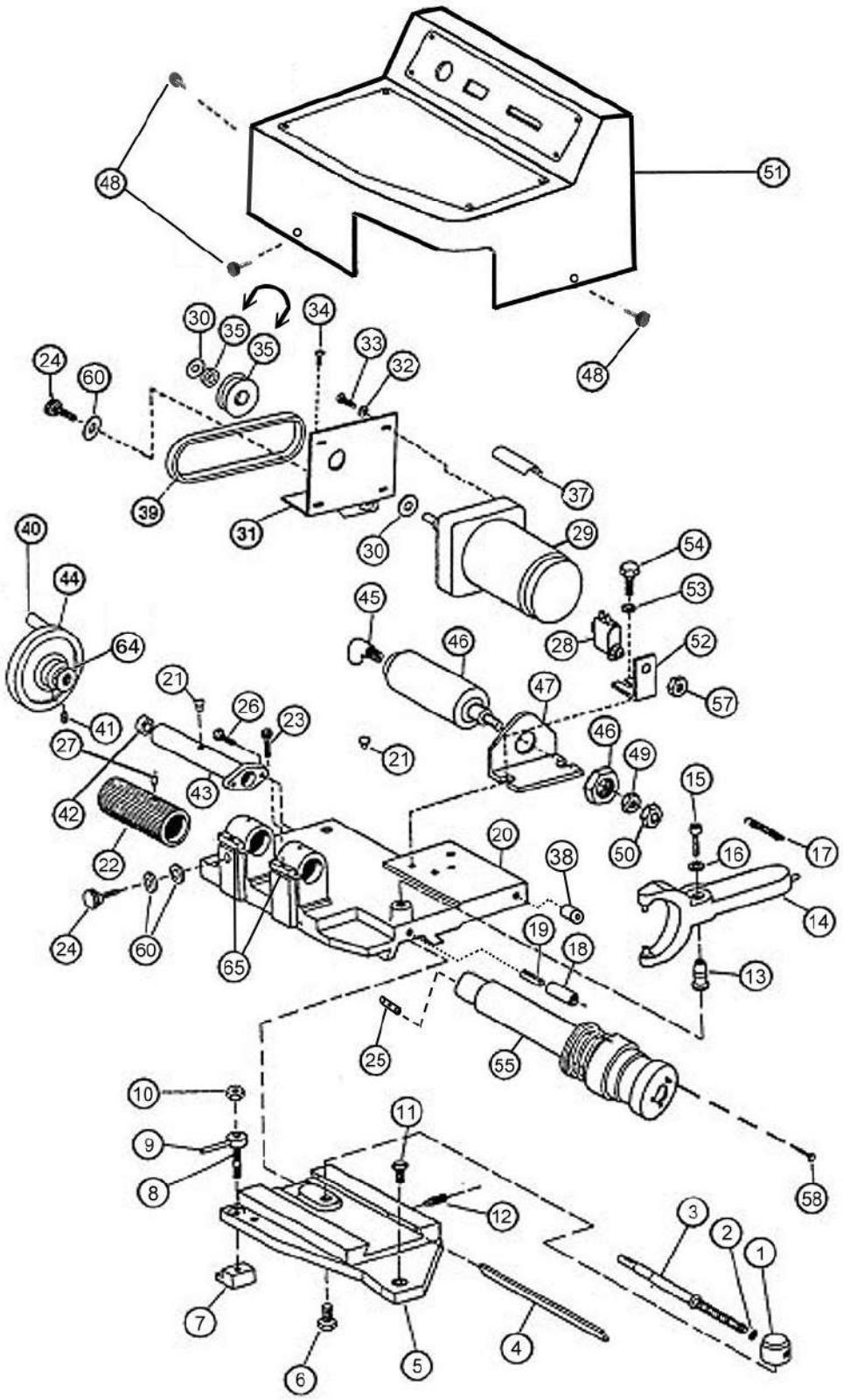
CHUCK BEARING SLIDE ASSEMBLY



CHUCK BEARING SLIDE ASSEMBLY (SERIAL #12651 AND UP)

Item	Part Number	Description	Quantity
1.	023-0306-08	Feed screw Nut	1
2.	000-2300-57	O Ring	1
3.	012-1046-00	Chuck Bearing Feed screw	1
4.	012-1051-10	Chuck Bearing Slide Gib	1
5.	012-0011-10	Swivel Plate	1
6.	000-0116-57	5/16-18 x 1/2 Hex Head Cap Screw	1
7.	023-0328-05	Swivel Plate Clamp	1
8.	023-0329-02	Stud Clamp Screw	1
9.	023-0330-46	Clamp Screw Collar Assembly.	1
10.	000-1063-21	5/16-24 Hex Jam Nut	1
11.	013-0303-08	Swivel Plate Pivot	1
12.	000-0585-10	Spring Plunger	3
13.	012-1036-80	Chuck Yoke Pivot	1
14.	012-1035-50	Chuck Yoke Assembly	1
15.	000-0170-51	3/8-16 x 2 socket head cap screw	1
16.	000-1150-37	5/16 Wrought Iron Washer	1
17.	000-1807-26	Chuck Yoke Return Spring	1
18.	003-0050-00	Cap	1
19.	000-7205-65	1/4 x 1-1/2 Roll Pin	1
20.	012-3012-00	Chuck Bearing Slide	1
21.	000-1900-12	1/4 Snap Lid Oiler	5
22.	012-1032-10	Chuck Hand wheel	1
23.	000-0168-02	5/16-18 x 1 socket head cap screw	2
24.	060-1102-50	Thumbscrew Assembly	2
25.	013-0370-19	Chuck Valve Stop, 4mm & H.P. Chuck	1
26.	000-0171-24	1/4-20 x 7/8 socket head cap screw	2
27.	000-0515-35	5/16-24 x 1/4 brass set screw	1
28.	000-1201-02	Micro-Switch	1
29.	012-1045-09	Gear Motor	1
30.	000-1452-03	Collar	1
31.	012-1044-00	Gear Motor Bracket	1
32.	000-1154-60	#10 SAE Washer	4
33.	000-0162-92	10-32 x 3/8 Socket Head Cap Screw	4
34.	000-0592-24	1/4-20 x 1/2 Button Head Cap Screw	2
35.	012-1044-10	Gear Belt Pulley / Clutch	1
37.	000-6610-55	Chuck Adjustment Decal	1
38	012-1080-00	Chuck Cover Spacer	1
39.	001-1899-90	Gear Belt	1
40.	794-8693-53	Hand Knob	1
41.	000-0515-27	1/4-20 x 3/8 Soc. Br. Ft. Pt. S.S.	1
42.	000-9200-96	Oilite Bushing-Feed Screw Housing	1
43.	012-1041-20	Feed screw Bearing. Housing	1
44.	012-1042-10	Feed Hand Wheel Assembly	1
45.	000-1599-48	Tube Elbow	1

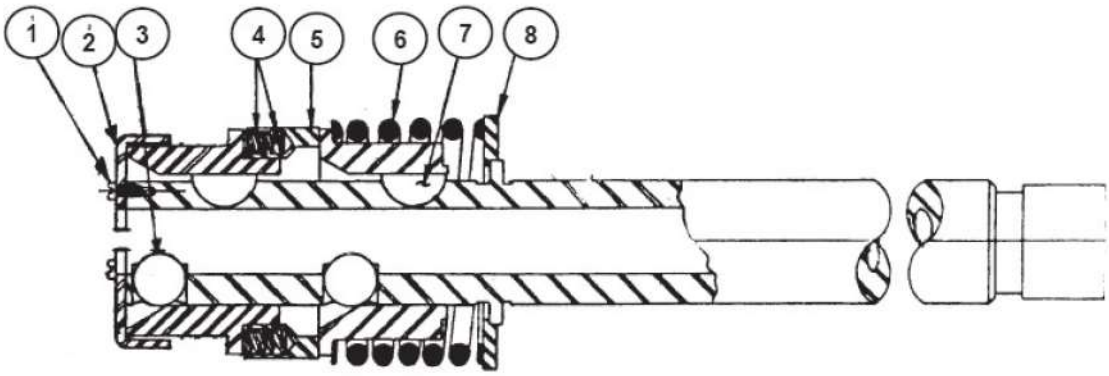
CHUCK BEARING SLIDE ASSEMBLY



CHUCK BEARING SLIDE ASSEMBLY (SERIAL #12651 AND UP)

Item	Part Number	Description	Quantity
46.	000-1566-40	Air Cylinder (includes 1-1/4-12 Hex Nut)	1
47.	000-1566-36	Air Cylinder Bracket	1
48.	000-0515-35	Chuck Cover Mounting Screw	1
49.	000-1070-18	1/2-20 Hex Jam Nut	1
50.	000-1035-51	1/2-20 Hex Full Nut	1
51.*	012-1045-60	Cover/Decals both 50Hz & 60Hz	1
51.*	012-1044-60	Red Cover/Decals both 50Hz & 60Hz	1
52.	012-1044-21	Limit Switch Bracket	1
53.	000-1145-02	1/4 Wrought. Iron Washer	2
54.	000-0167-80	5/16-18 x 3/4 Socket head cap screw	2
55.	012-1575-00	Replacement 4mm Chuck (includes disassembly tool)	1
55.	012-1575-94	Replacement 4mm Chuck only	1
25.	013-0370-19	Chuck Valve Stop, 4mm & H.P. Chuck	1
57.	000-1100-32	12mm Hex Nut Zinc Plated	1
58.	000-0590-99	8-32 x 3/8 Socket Head Cap Screw	3
60.	000-1155-25	1/4 SAE Washer	4
64.	000-6611-12	Hand wheel Decal (Std.)	1
64.	000-6611-19	Hand wheel Decal (Metric)	1
65.	000-1740-09	Felt Strip (cut into two pieces)	1
67.	003-0076-50	Speed Controller Knob	1

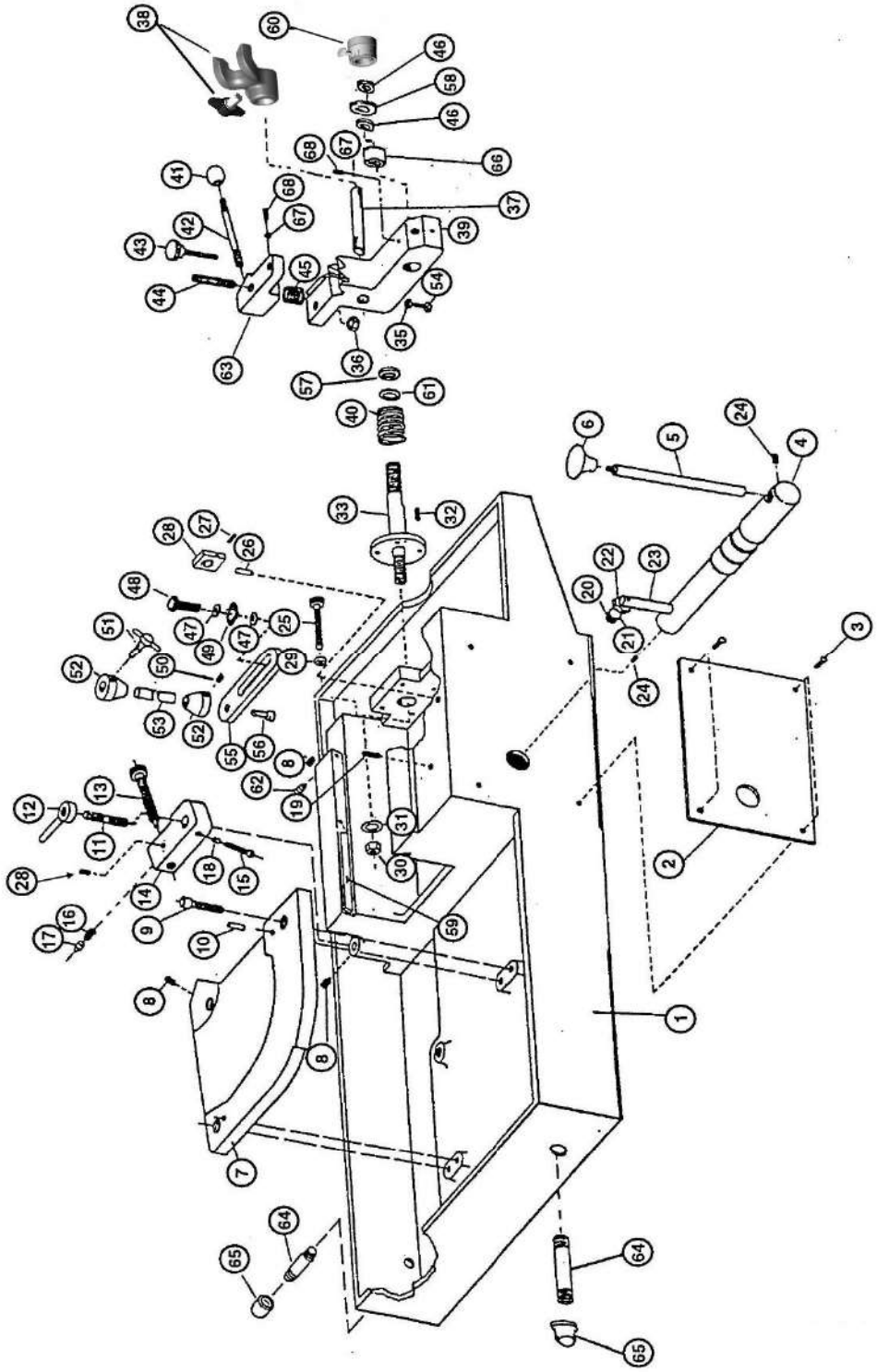
* See part description for part number that applies to your machine



1.	000-0590-99	Special Machine Screw	3
2.	012-1040-22	Chuck Shaft End Cover	1
3.	010-2101-45	9/16" Steel Ball (set of 6)	1
4.	000-1800-94	Compression Spring for all current models	8
5.	012-1031-07	Loading Cup	1
6.	012-1034-17	Chuck Spring	1
7.	012-2000-05	#5 Woodruff Key	2
8.	012-1206-00	Stepped Thrust Spacer	1

* The above Chuck Assembly Parts are for replacing lost or damaged during cleaning and are not intended for improving the performance of a worn out chuck. To inquire about replacing your chuck please call 800-553-5953.

BASE ASSEMBLY

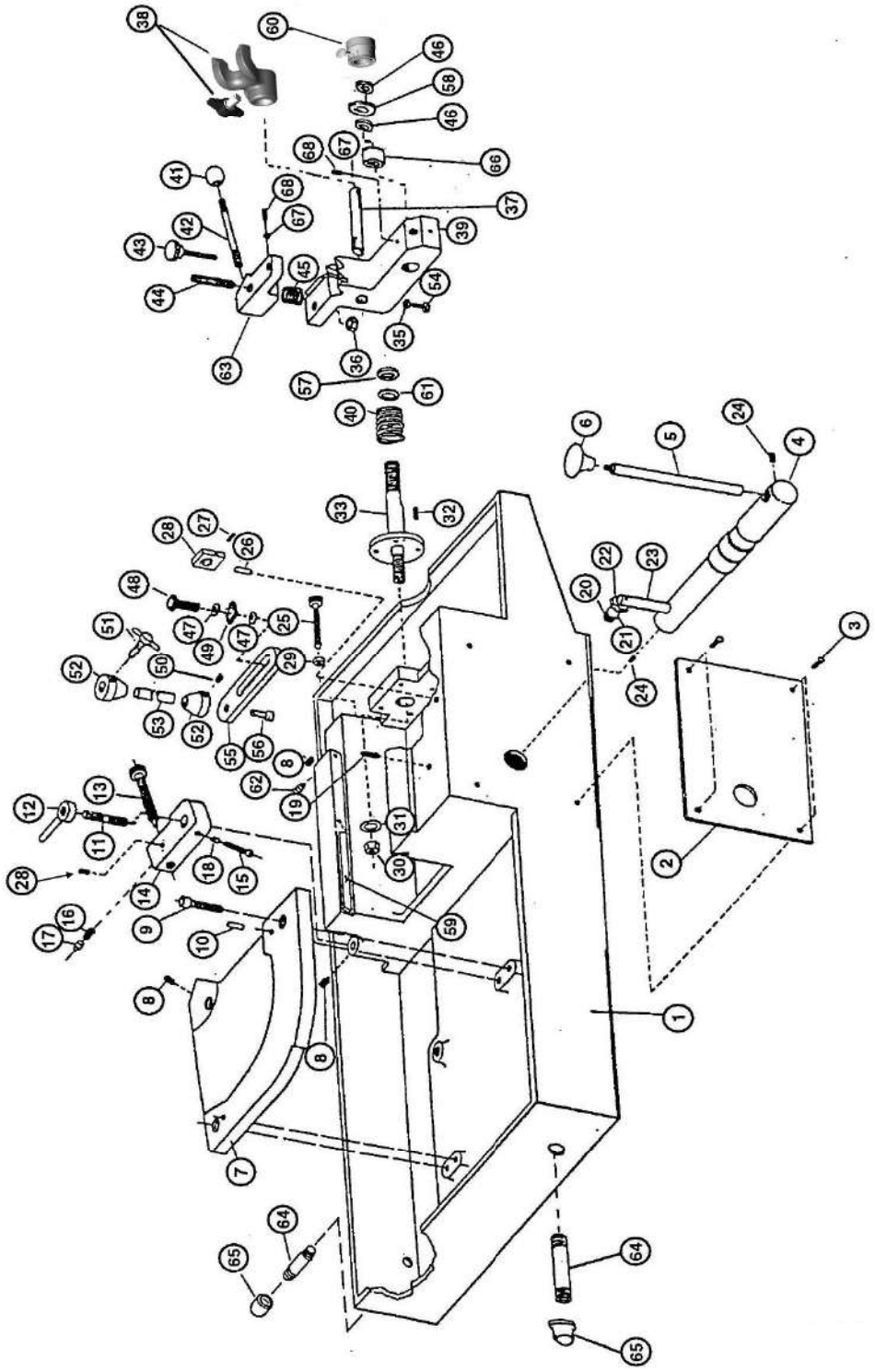


BASE ASSEMBLY

Item	Part Number	Description	Quantity
1.	012-3002-10	Base	1
2.	000-6610-23	Base Panel	1
3.	000-0597-06	6 x 5/16 U Drive Screw	4
4.	012-1021-04	Crankshaft Assembly	1
5.	012-1019-10	Traverse Handle	1
6.	004-0015-46	Oval Knob	1
7.	012-0038-03	Base Plate	1
8.	000-0515-00	1/4-20 x 1/4 Socket Brass Flat Pt. Set Screw	3
9.	000-0170-19	3/8-16 x 3/4 Socket head cap screw	3
10.	000-7001-50	1/4 x 7/8 Dowel Pin	2
11.	023-0132-07	Diamond Bracket Lock screw	1
12.	013-0133-14	Lock screw Collar Assembly	1
13.	023-0129-44	Holder-Diamond Nib Assembly	1
14.	012-1006-20	Diamond Holder Bracket	1
15.	000-0213-85	1/4-20 x 1-1/4 Round Head Metal Screw	1
16.	000-1800-76	Compression Spring	1
17.	031-1118-03	Plug	1
18.	000-0500-16	1/4-20 x 1/4 Socket Flat Point Set Screw	1
19.	000-0566-18	1/4-20 x 1 Socket Cone Point. Set Screw	1
20.	000-0166-32	1/4-20 x 1-1/4 Socket Head Cap Screw	1
21.	013-1002-09	5/8 Nylon Pivot	1
22.	000-1020-08	1/4-20 Hex Full Nut	1
23.	013-1003-06	Crankshaft Arm	1
24.	000-0487-63	5/16-18 x 5/16 Socket Cup Set Screw	1
25.	025-0251-05	Stop Screw	1
26.	000-7000-37	1/4 x 1-1/4 Dowel Pin	1
27.	000-0485-10	1/4-20 x 3/16 Socket Cup Point Set Screw	1
28.	000-0482-67	Set screw	1
29.	000-1034-89	5/16-18 Hex Full Nut	1
30.	000-1035-35	1/2-13 Hex Full Nut	1
31.	000-1181-33	1/2 Medium Split Lock washer	1
32.	000-0500-24	1/4-28 x 1/4 Socket Flat Point Set Screw	3
33.	012-1066-22	V-block Pivot Shaft (not included with V-Block Assembly)	1
34.	000-1540-75	1/2-14 Square Head Pipe Plug (Not Shown)	1
35.	000-1040-19	1/4-20 Hex Jam Nut	1
36.	000-1045-15	3/8-16 Hex Jam Nut	1
37.	025-0636-00	Valve Stop Rod (Optional) (see more details on page 38)	1
38.	025-0635-03	Valve Stem Stop (Optional) (see more details on page 38)	1
39.	012-1009-16	V-block Assembly (see more details on page 38)	1
40.	000-1808-23	Compression Spring	1
41.	000-4500-22	Knob-Ball	1
42.	012-1055-09	Clamp Lever Handle	1
43.	012-1039-30	Clamp Screw Assembly	1
44.	000-0491-23	3/8-16 x 2 Soc. Hd. Cup Pt SS	1
45.	000-1807-00	Compression Spring	1

**** Continues on next page ****

BASE ASSEMBLY (CONTINUED)



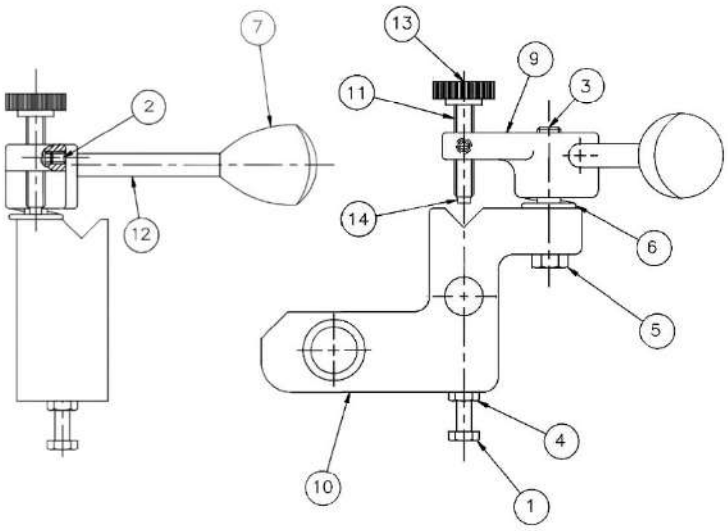
BASE ASSEMBLY (CONTINUED)

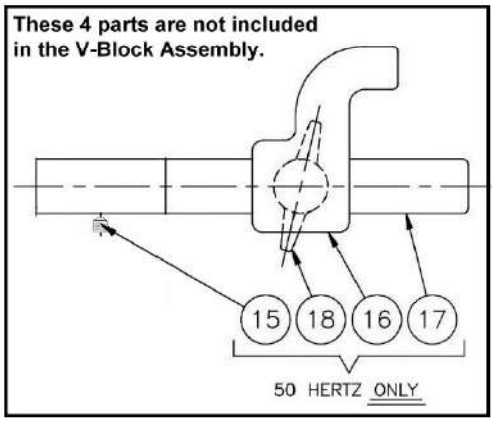
Item	Part Number	Description	Quantity
46.	000-1624-10	Thrust Washer	2
47.	000-1150-37	5/16 Wrought Iron Washer	2
48.	000-0105-53	3/16-18 x 1-1/4 Hex Head. C.S	1
49.	000-1183-22	3/8 Spring Washer	1
51.	060-1130-02	T-Bar thumbscrew Assembly ♦♦	1
52.	015-0837-43	Rocker Arm Cone ♦♦	2
53.	023-0836-04	Rocker Arm Attachment Post ♦♦	1
54.	000-0100-65	1/4-20 x 1-1/4 Hex Hd. C.S.	1
55.	023-0835-07	Rocker Arm Attachment Base ♦♦	1
56.	000-0167-64	5/16-18 x 1/2 Soc. Hd C.S. ♦♦	1
57.	000-1158-00	1-1/8 x 3/4 x 3/16 Felt Washer	1
58.	000-1624-00	Thrust Needle Bearing	1
59.	012-1051-50	New Style Gib	1
60.	012-1064-08	Feed nut Assembly Standard	1
61.	000-1142-12	3/4 Machine Bushing	1
62.	000-0488-70	5/16-18 x 1 Nyl Soc SS	3
63.	012-1007-01	Clamp Lever	1
64.	000-1502-74	1/2 x 3-1/2 Pipe Nipple TBE	2
65.	000-1540-83	1/2 Black Pipe Cup	2
66.	012-1066-80	Cup, Marker	1
67.	000-6400-26	Lock screw Plug	2
68.	000-0486-40	1/4-20 x 1/4 Nyl Soc Cup SS	1
69.	000-0485-10	1/4-20 x 3/16 Soc Cup Pt SS (not shown)	1
70.	012-1208-00	Coolant Splash Guard (not shown)	1

012-1120-00 Rocker Arm Attachment Assembly

(Items marked with "♦♦" above are included in this assembly)

PN: 012-0160-00 V-BLOCK ASSEMBLY (60HZ)



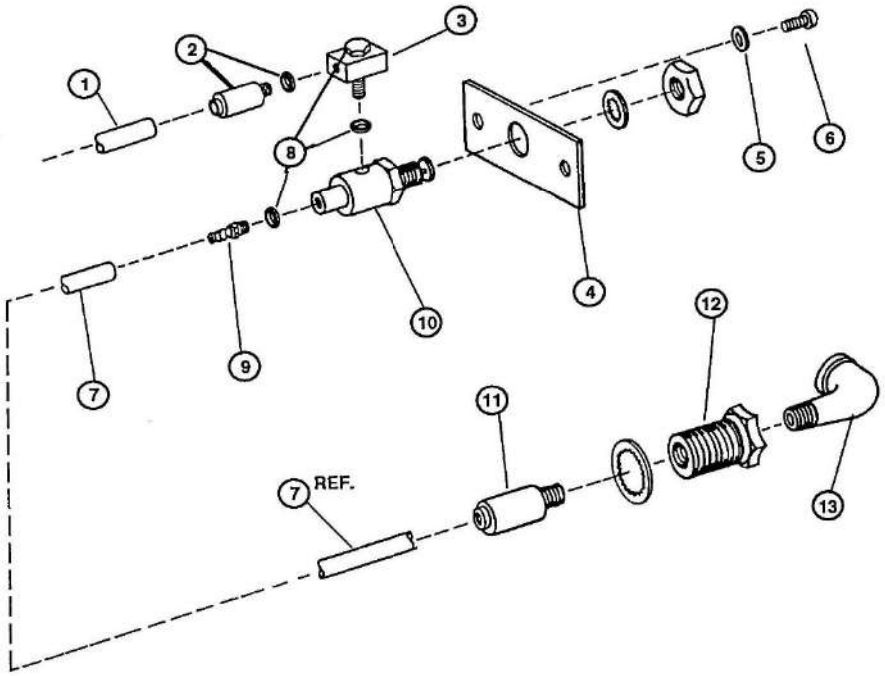


Item	Part Number	Description	Quantity
1.	000-0100-65	¼ - 20 X 1-1/4 Hex HD Cap Screw	1
2.	000-0486-40	Nylon Socket Cup Set Screw	1
3.	000-0491-23	3/8 – 16 x 2 Socket Cup Pt. S.S.	1
4.	000-1040-19	¼ - 20 Hex Jam Nut	1
5.	000-1045-15	3/8 – 16 Hex Jam Nut	1
6.	000-1807-00	Compression Spring	1
7.	000-4500-22	5/16 – 18 Tapered Oval Handle	1
9.	012-1007-01	Clamp Lever	1
10.	012-1009-16	V-Block Assembly	1
11.	012-1039-05	Screw Clamp 5/16 – 18 x 1.50	1
12.	012-1055-09	Lever Handle Clamp	1
13.	000-0760-82	Thumbscrew Cap 5/16	1
14.	081-0911-02	Cam Setscrew plug	1
15.	000-0500-16	**** 1/4"-20 X 1/4" Socket Flat Point Setscrew	1
16	025-0635-46	**** Valve Stop	1
17	025-0636-00	**** Valve Stop Rod	1
18	060-1130-05	**** 5/16 – 24 x ½ T-Bar Assembly	1

**** Standard on 50 Hertz Machine Only. These are Optional Items and can be purchased separate from the Assembly.

The Valve Stop with 3 additional parts listed above is used to guide the valve stem length when grinding the top of the valve stem. This helps to insure that valve stems are all the exact same length. While this is not necessary for most engines, it can help with some engine models that are not easily adjusted or that have much tighter tolerances. The Valve Stop parts are added to the V-Block Assembly and are purchased separately as their individual part number listed above.

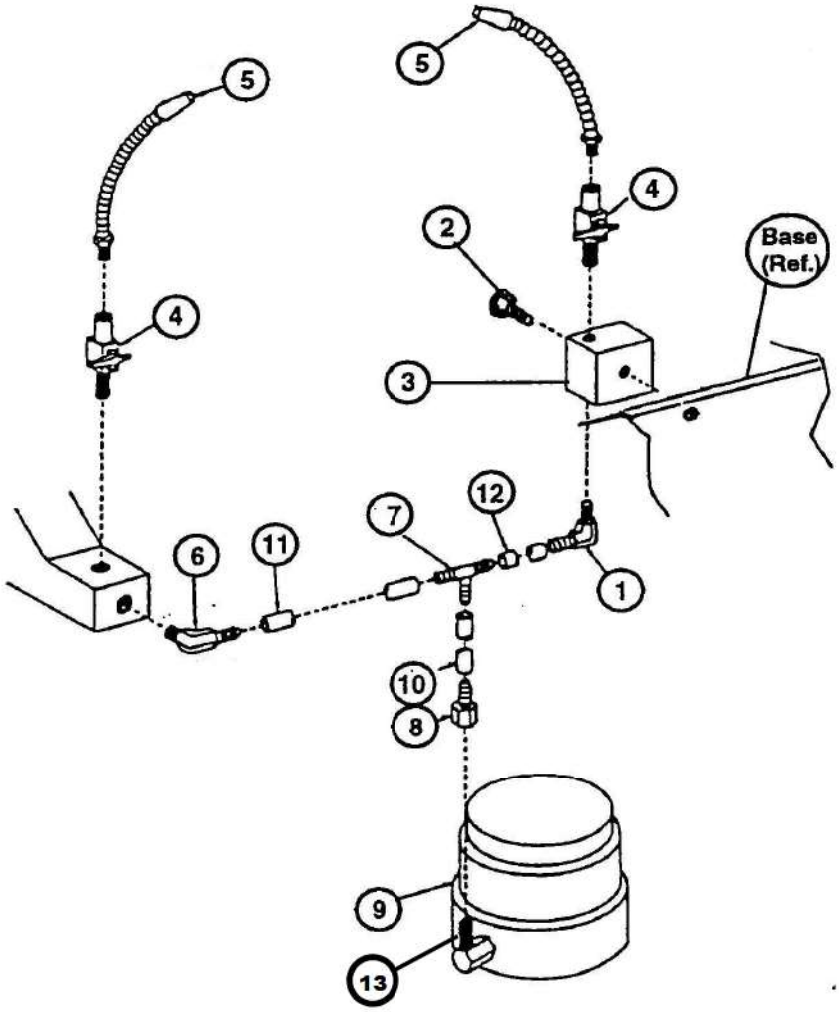
AIR PLUMBING ASSEMBLY



Item	Part Number	Description	Quantity
1.	**003-0002-52	5/32 O.D. Tubing	4 Ft
2.	**000-1598-90	10-32 Max 5/32 Str. Fitting	1
3.	**000-1563-50	10-32 Univ. El Fitting	1
4.	**012-1072-40	Air Switch Mounting Plate	1
5.	000-1170-48	1/4 Int. Lock washer	2
6.	000-0213-77	1/4-20 x 3/8 Rd. Head MS	2
7.	**003-0002-49	1/4 O.D. Tubing	1 Ft
8.		Gasket (now included with parts)	3
9.	**000-1563-37	10-32 Max 1/4 Str. Fitting	1
10.	**000-1563-29	3 Way Air Valve	1
11.	000-1599-25	1/4 x 1/4 Tube-In Str. Fitting	1
12.	000-1559-34	Bulkhead Fitting	1
13.	000-1530-28	1/4 x 90° Street Elbow	1

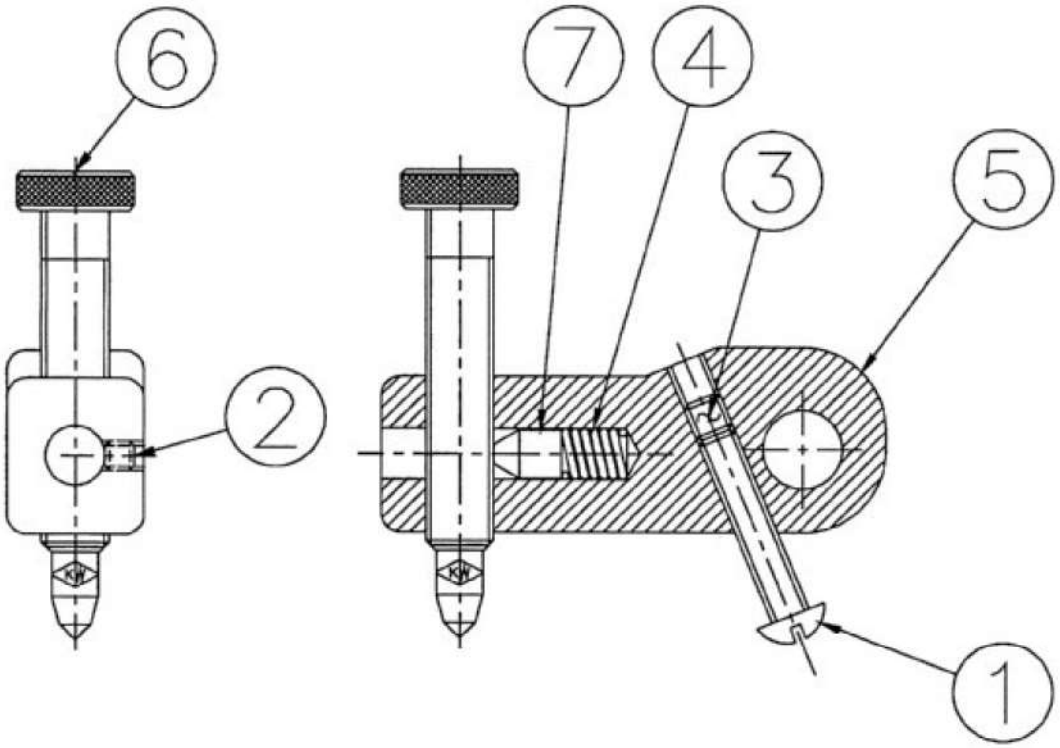
AIR VALVE SWITCH ASSEMBLY
(PN: 012-1094-00)
Pictured on the right and includes all parts with ** in table above. Assembled and tested against air leakage for quick and easy installation.

COOLANT PLUMBING ASSEMBLY



Item	Part Number	Description	Quantity
1.	000-1567-87	90° Elbow 1/4 Barb x 1/4 MPT	1
2.	000-0101-54	1/4-20 x 1-1/2 Hex Head. C.S.	1
3.	012-1045-10	Coolant Nozzle Mount	1
4.	000-1563-68	Plug Valve	2
5.	000-1550-10	Flex Nozzle	2
6.	000-1567-95	90° Elbow, 1/4 Barb x 1/8 MP Brass	1
7.	000-1551-10	Barbed Tee 1/4 ID Hose	1
8.	000-1560-34	1/4 Barb x 1/4 FPT Brass Fitting	1
9.*	000-1919-00	Pump 115-50/60-1	1
9.*	000-1919-04	Pump 220-50/60-1	1
10.	004-0018-57	1/4 ID x 1/16 Wall PVC Tube (2-1/2" Long)	1 Ft
11.	004-0018-57	1/4 ID x 1/16 Wall PVC Tube (10" Long)	1 Ft
12.	004-0018-57	1/4 ID x 1/16 Wall PVC Tube (15" Long)	1 Ft
13.	000-1556-00	Nylon Elbow 90°	1

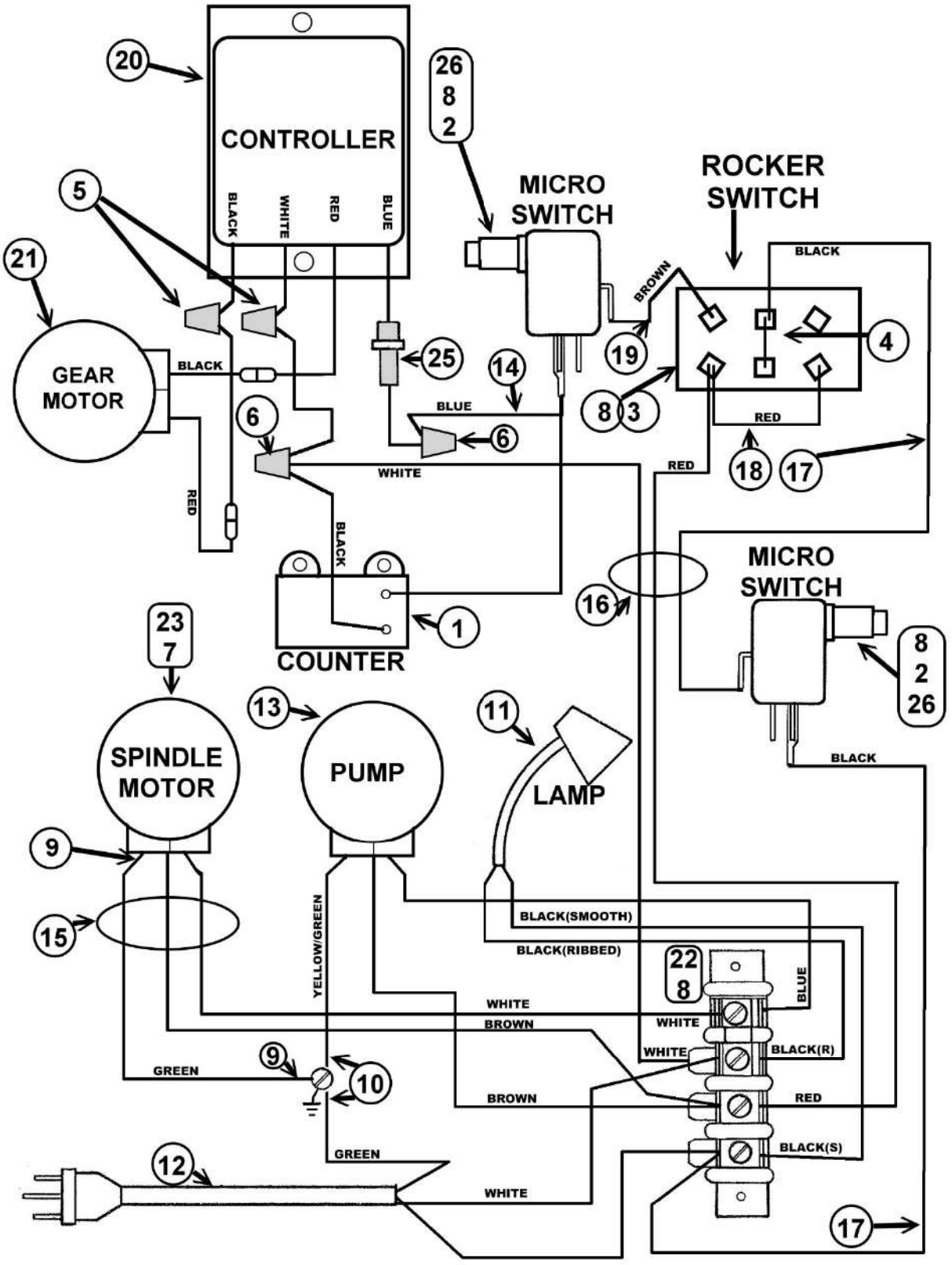
PN: 012-1006-71 WHEEL DRESSER BRACKET ASSEMBLY



Item	Part Number	Description	Quantity
1.	000-0213-85	¼ - 2- x 1 – ¼ Round Head Machine Screw	1
2.	000-0482-67	10 – 24x3/16 Socket cup Point Set Screw	1
3.	000-0500-16	¼ - 20 x ¼ Socket Flat Point Set Screw	1
4.	000-1800-76	Compression Spring	1
5.	012-1006-20	Diamond Holder Bracket	1
6.	023-0129-55	Valve Diamond	1
7.	031-1118-03	Brass Plug	1

Note: Setscrew (Item 2) is used to retain the Plug (Item 7) until the Diamond (Item 6) is in position. After this bracket assembly is installed, the setscrew must be backed off to allow the plug to contact the Diamond threads.

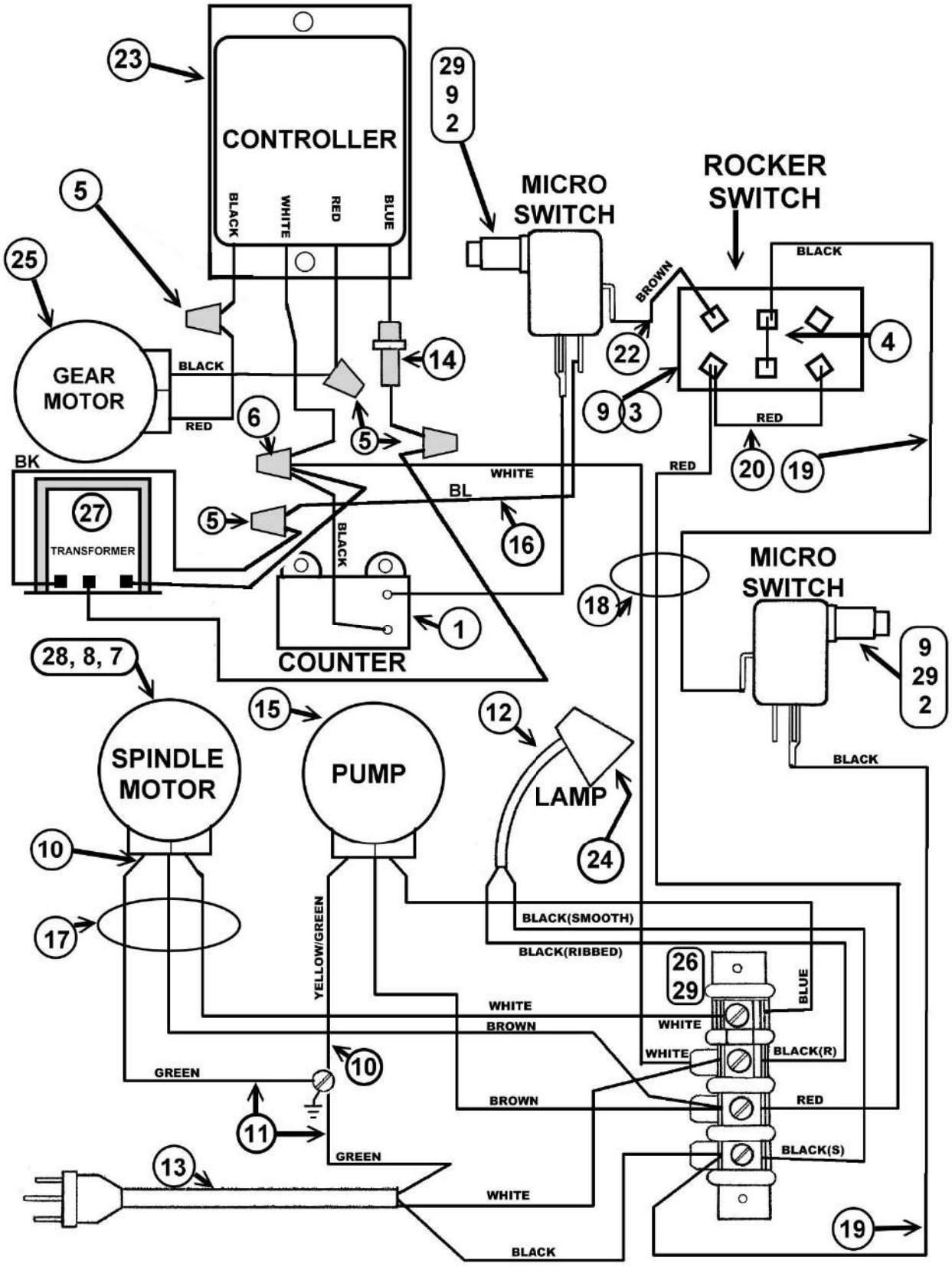
115V/60HZ/1PH WIRING DIAGRAM



115V/60HZ/1PH WIRING DIAGRAM (SERIAL # 12651 AND UP)

Item	Part Number	Description	Quantity
1.	000-1191-50	Counter, Valve	1
2.	000-1201-02	Micro-Switch	2
3.	000-1205-26	Rocker Switch	1
4.	000-1241-00	Term, QD (12-10) full Ins. 1/4	2
5.	000-1241-41	Nut, Wire-72B (Blue)	2
6.	000-1241-50	Nut, Wire-73B (Orange)	2
7.		Term, Female Flag 1/4	2
8.		Term, FQ Disc (16-14GA) Ins-1/4	19
9.		Term, Hook (16-14GA) #10	2
10.		Term, Hook (12-10GA) #10	1
11.	000-1252-18	Lamp Fixture (no bulb)	1
	001-1601-76	115v LED Light Bulb (not shown)	1
12.	000-1261-01	Set, Cord 115V-16-3	1
13.	000-1919-00	Pump, 115V-50/60Hz. Ph	1
14.	000-2401-92	Wire, Blue 16GA 20" Lg.	2 Ft
15.	000-2403-38	Cord, 16-3SJO 28" Lg.	3 Ft
16.	000-2403-70	Cord, 16-4SJO 55" Lg.	5 Ft
17.	000-2410-24	Wire, Black-16GA 4" Lg.	2
18.	000-2410-59	Wire, Red 16GA 4" Lg.	1
19.	800-8063-33	Wire, Brown 16GA 20" Lg.	2 Ft
20.	000-6700-60	Controller, Speed-115V	1
21.	012-1045-09	Gear motor, Pm-1/12Hp	1
22.	004-0034-72	Block, Term 4 Pole 1/4 Tabs	1
23.	001-1949-95	Motor, Spindle 115/220V-60/50Hz-1Ph	1
25.	Included w/20	Fuse-AGC 6 Amp	1
26.	000-1100-32	12mm Hex Nut Zinc Plated	4

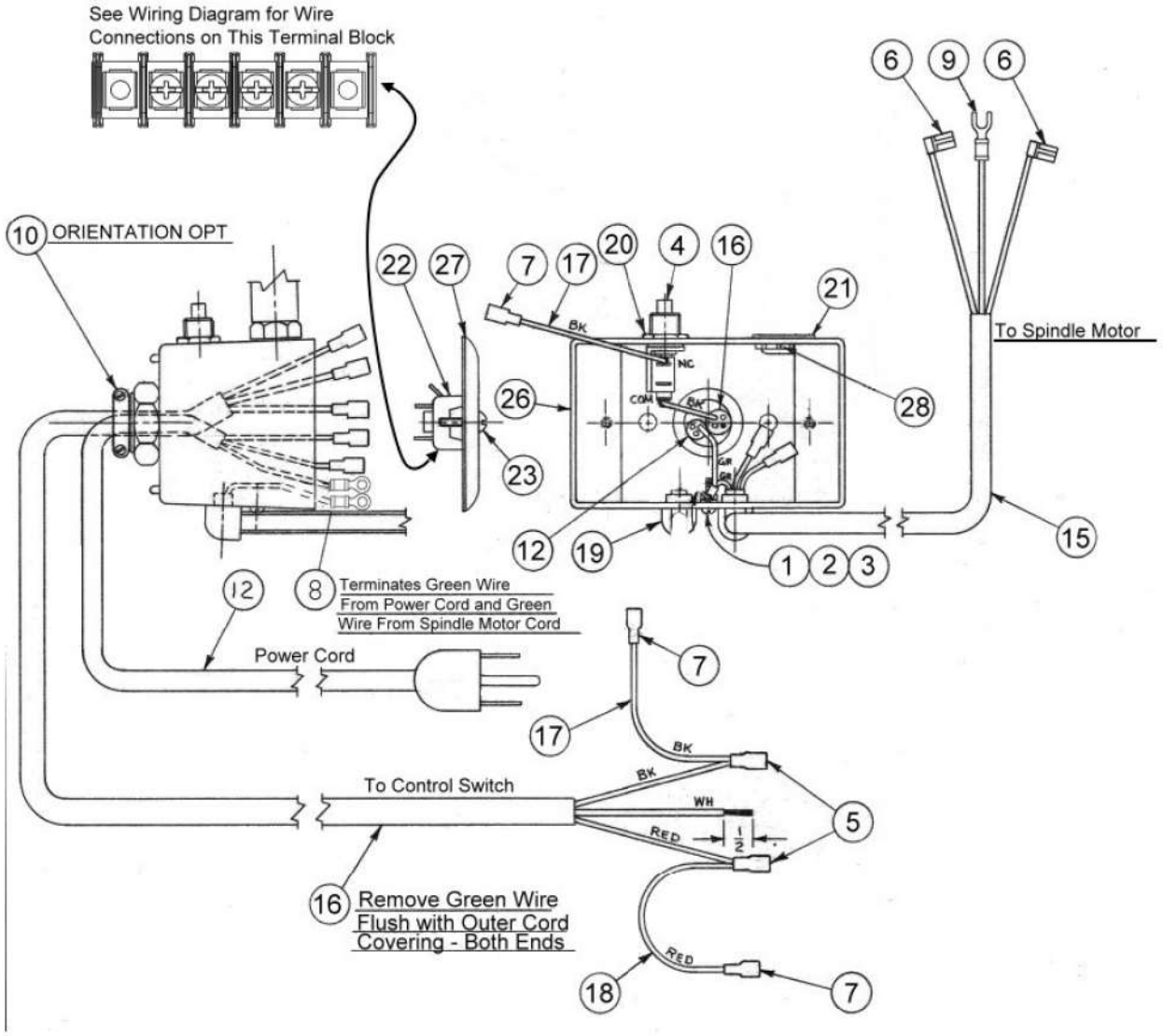
220V/50HZ/1PH WIRING DIAGRAM



220V/50HZ/1PH WIRING DIAGRAM (SERIAL # 12651 AND UP)

Item	Part Number	Description	Quantity
1.	000-1191-50	Counter, Valve	1
2.	000-1201-02	Micro-Switch	2
3.	000-1205-26	Rocker Switch	1
4.	000-1241-00	Term, QD (12-10) 1/4 Full Ins.	2
5.	000-1241-41	Nut, Wire-72B (Blue)	4
6.	000-1241-50	Nut, Wire-72B (OR)	1
7.	000-1242-49	Term, Female Flag 1/4	2
8.	000-1242-49	Term, Female Flag 1/4	2
9.	000-1100-32	12mm Hex Nut Zinc Plated	4
10		Term, Hook (16-14) #10	2
11.		Term, Hook (12-10) #10	1
12.	000-1252-18	Lamp (no bulb)	1
13.	000-2403-38	Set, Cord - 16-3SJO	1
14.	Included w/23	Fuse, AGC 6 Amp	1
15.	000-1919-04	Pump 220V-50/60Hz-1Ph	1
16.	000-2401-92	Wire, Blue 16GA 20" Lg.	2 Ft
17.	000-2403-38	Cord, 16-3SJO 28" Lg.	3 Ft
18.	000-2403-70	Cord, 16-4SJO 55" Lg.	5 Ft
19.	000-2410-24	Wire, Black 16GA 4" Lg.	2 Ft.
20.	000-2410-59	Wire, Red 16GA 4" Lg.	1 Ft
22.	800-8063-33	Wire, Brown 16GA 20" Lg.	2 Ft
23.	000-6700-60	Controller, Speed 115V	1
24.	000-1601-76	115v-230v LED Lightbulb	1
25.	012-1045-09	Gear Motor, PM 1/12 HP	1
26.	004-0034-72	Block, Term-4P-1/4 Tabs	1
27.	000-1274-90	Transformer – 150VA	1
28.	001-1949-95	Motor-1/2 115/230-50/60-1	1
29.	000-1242-70	Term, Q Disc (16-14) Fully Ins. 1/4	19

012-0140-20 WIRING HARNESS



012-0140-20 WIRING HARNESS (CONT.)

Item	Part Number	Description	Quantity
1.	000-0347-62	10-24x1/2 RD HD M.S. –Z.P.	1
2.	000-1100-19	10-24 Hex M.S. Nut – Z.P.	1
3.	000-1170-30	10 Internal Lock Washer – Z. P.	1
4.	000-1201-02	Micro-Switch	1
5.	**	Term, F QDisc(12-10GA) Fully Ins-1/4	2
6.	**	Term, Flag (16-14GA) – ¼	2
7.	**	Term, F QDisc(16-14GA) Fully Ins-1/4	15
8.	**	Term, Hook(16-14GA) #10	2
9.	**	Term, Spade (16-14GA) Ins-#6	1
10	000-1243-11	3303 Cable, Conn. ¾ K.O.	1
12.	000-1261-01	16-3 SJO Cord Set – 115v	1
15.	000-2403-38	Cord, 16-3 SJO – 28" Lg.	2.4 Ft
16.	000-2403-70	Cord, 16-4 SJO – 55" Lg.	4.6 FT
17.	000-2410-24	Wire, Jumper – 16GAx4"LG – Bk.	8 Ft
18.	000-2410-59	Wire – 16GA – 4" Lg.- Red	8.34 Ft
19.	000-2602-26	Bushing, Strain Relief – 90°	2
20.	000-1100-32	12mm Hex Nut Zinc Plated	2
21	000-1142-00	Washer - .69ID x 1.19OD	1
22.	004-0034-72	Block, Term – 4 Pole	1
23.	000-0202-68	6-32 x ½ RD HD M.S. – Z.P.	2
26.	012-1090-50	Junction Box	1
27.	012-1090-60	Junction Box Cover with screws	1
28.	000-1118-28	3/8 Conduit Locknut	1

** Not sold separately

VALVE REFACING SUPPLIES KWIK-WAY SIX BALL CHUCKS

The Key to the KWIK-WAY "Centerline" Chuck System

Every ***KWIK-WAY*** chuck features two sets of 3 hardened steel balls - one set in the front of the chuck and the other set in the rear of the chuck - that grasp the valve on the portion of the stem that travels within the valve guide. It automatically aligns the valve stem, allowing the valve face to be refaced concentric to the valve stem.

This precision six-ball self-centering chuck requires no stem chamfering or butt grinding prior to refacing.

The ***KWIK-WAY*** Centerline System assures alignment and accuracy, providing precision valve refacing.

VALVE REFACER CHUCKS

MODEL	VALVE STEM DIAMTER CAPACITY	ITEM NUMBER
SVS II-D	0.157" – 0.5625" 4.0 mm – 14.3 mm	012-1575-00 (w/disassembly tool) 012-1575-94 (without tool)
SVS II-D	7/16" – 13/16" 11.11 mm – 20.6 mm	012-1025-21*

* Requires 012-1035-21 Chuck Yoke
Existing machines in the field may require the chuck cover to be modified to fit new chuck and chuck yoke.

VALVE REFACING WHEELS

010-0710-08	Finishing 7"
010-0709-00	General Purpose 7"
010-0708-05	Titanium 7"
010-0707-50	Stelite 7"

3" (76 MM) STEM WHEELS

010-0300-72	For General Purpose Stem Grinding
010-0300-13	For Rocker Arm Grinding

VALVE GRINDING OILS

Proper Lubrication is necessary for quality valve finishes, abrasive performance and machine life

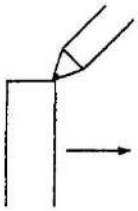
ITEM	DESCRIPTION
000-2112-73	1 Gallon (3.6L) Valve Grinding Oil
000-2111-92	5 Gallon (18L) Valve Grinding Oil

VALVE REFACER DIAMOND TOOLS

Replacement tools for dressing either valve or butt wheels on valve refacers. Quality oversized diamond tips last longer. Produce different wheel surfaces by varying the amount and speed of stock removal.

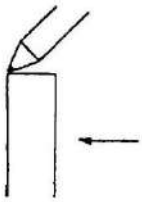
SHOP TIP!

A.



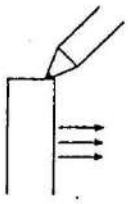
A. Feed diamond up to contact, then traverse from left to right. This will open the abrasive, causing a faster stock removal on valve.

B.



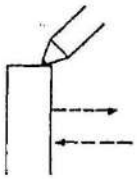
B. Feed diamond up to contact, then traverse from right to left. This will close the abrasive, causing a smoother finish but a slower stock removal and a faster load up of wheel.

C.



C. A faster traverse into the diamond point will cause the wheel to act softer. Recommended for hard alloy valves.

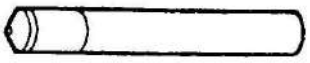
D.



D. A slower traverse into the diamond point and then a sweep back with **NO** additional feed up will cause the wheel to act hard. This is recommended for polished surface finishes.

MODEL	DESCRIPTION	ITEM
SVS II-D Size: 7/16” Threads: 20 x 1-7/8”	Valve Wheel Diamond	023-0129-44
SVS II-D Size: 5/16” No Thread	Butt Wheel Diamond	024-0131-11

Valve Wheel Diamond



Butt Wheel Diamond

OPTIONAL ACCESSORIES

DESCRIPTION	ASSEMBLY	ITEM
Valve Refacer Cabinet	37w x 22d x 36h	012-0039-00
H.P. Small Valve Collet Chuck	3.0 mm – 6.0 mm	012-1575-60

Valve Refacer Cabinet

Heavy-duty unit with spacious cabinet and valve storage rack mounted on side. Holds all your valve grinding supplies (37" wide x 22" deep x 36" high) cabinet for all **KWIK-WAY** bench top valve refacers.

High Performance Small Valve Collet Kit

Permits grinding smaller valves without changing chucks. Collet fits into chuck and holds valves with small stem diameters. High Performance because this isn't your typical small collet chuck. We did our research and provide a small collet chuck that meets the Kwik-Way standards for accuracy.

Includes the following collets:

PART NUMBER	COLLET SIZE (MM)	DECIMAL
012-1575-61	HP Collet Extension	N/A
012-1575-62	3.00 mm	0.118
012-1575-63	4.00 mm	0.157
012-1575-65	5.00 mm	0.196
012-1575-66	6.00 mm	0.236
OPTIONAL		
012-1575-53	3.50 mm	0.138
012-1575-54	4.50 mm	0.177
012-1575-55	5.50 mm	0.217
012-1575-56	6.50 mm	0.256

012-0039-00
Valve Refacer Cabinet

012-1575-60
High Performance
Small Collet Chuck Kit

TROUBLE SHOOTING GUIDE

CONDITIONS	POSSIBLE CAUSE
1. Spindle Motor and/or chuck motor will not operate	1. Line fuse is open. Check fuse/breaker. 2. Power cord un-plugged 3. Loose or broken wire(s).
2. Spindle lacks power.	1. Loose "O" Ring belts. Replace. 2. Line voltage incorrect for motor, check motor input tag current supply.
3. Spindle motor will not start when the main switch is turned on	1. Spindle slide in far right location. **NOTE:** This machine is equipped with an automatic limit switch when the spindle slide is on the far right location. 2. Limit switch is out of adjustment.
4. Wheel face rough after facing.	1. Feeding the wheel across the diamond too rapidly. 2. Broken diamond. Replace. 3. Diamond tool holder not locked tight. 4. Blunt diamond. Replace.
5. Poor finish on valves (Chatter)	1. Check wheel dress. 2. Chuck out of adjustment. 3. Slide out of adjustment. 4. Spindle bearings worn. 5. Chuck Motor Belt too tight. (should be as loose as possible without it slipping) **NOTE:** See page 18 on varying wheel performance.
6. Grinding sounds heavier on one side of the valve face over the other.	1. Check the Gib adjustments on both the Chuck and spindle side. Especially on the chuck side it's possible for one of the spring loaded gib adjustment screws to be stuck causing a mis-alignment of the chuck shaft.
7. Chuck open and close action seems sticky.	1. This is almost always due to debris in the chuck and a full disassembly and cleaning with denatured alcohol will solve it. On very new machines it could just need to have the collars lubricated with Automatic Transmission Fluid and worked a bit. The chuck has very high tolerances when new and there is a small "wear-in" period needed.

by **Irontite Products Inc.**
Manufacturer of Kwik-Way, Van Norman, and Irontite Brands
2525 18th St. SW, Cedar Rapids, IA 52404 USA
PO Box 9877, Cedar Rapids, IA 52409-9877 USA
319-377-9421
319-377-9101 (FAX)
800-553-5953
service@irontite.com
www.kwik-way.com - www.van-norman.com - www.irontite.com