



Operating Instructions and Parts Manual
6"x18" Precision Manual Surface Grinder
Model JPSG-618M1



WMH TOOL GROUP

2420 Vantage Drive
Elgin, Illinois 60123
Ph.: 800-274-6848
www.wmhtoolgroup.com

Part No. M-414519
Revision A 4/05
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This manual has been prepared for the owner and operators of a JET JPSG-618M1 Surface Grinder. Its purpose, aside from machine operation, is to promote safety using accepted operating and maintenance procedures. To obtain maximum life and efficiency from your Surface Grinder and to aid in using it safely, please read this manual thoroughly and follow the instructions carefully.

Warranty and Service

WMH Tool Group warrants every product it sells. If one of our tools needs service or repair, one of our Authorized Repair Stations located throughout the United States can provide quick service or information.

In most cases, a WMH Tool Group Repair Station can assist in authorizing repair work, obtaining parts, or perform routine or major maintenance repair on your JET product.

For the name of an Authorized Repair Station in your area, please call 1-800-274-6848, or visit our web site at www.wmhtoolgroup.com

More Information

Remember, WMH Tool Group is consistently adding new products to the line. For complete, up-to-date product information, check with your local WMH Tool Group distributor, or visit our web site at www.wmhtoolgroup.com

WMH Tool Group Warranty

WMH Tool Group makes every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follows: 1 YEAR LIMITED WARRANTY ON ALL PRODUCTS UNLESS SPECIFIED OTHERWISE. This Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, repair or alterations outside our facilities, or to a lack of maintenance.

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To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to an Authorized Repair Station designated by our office. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, we will either repair or replace the product at our discretion, or refund the purchase price if we cannot readily and quickly provide a repair or replacement. We will return the repaired product or replacement at WMH Tool Group's expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of WMH Tool Group's warranty, then the user must bear the cost of storing and returning the product. This warranty gives you specific legal rights; you may also have other rights, which vary from state to state.

WMH Tool Group sells through distributors only. Members of the WMH Tool Group reserve the right to effect at any time, without prior notice, alterations to parts, fittings and accessory equipment, which they may deem necessary for any reason whatsoever.

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Warnings

1. Read and understand the entire owners manual before attempting assembly or operation.
2. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
3. Replace the warning labels if they become obscured or removed.
4. This surface grinder is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a surface grinder, do not use until proper training and knowledge have been obtained.
5. Do not use this surface grinder for other than its intended use. If used for other purposes, WMH Tool Group disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Always wear approved safety glasses/face shields while using this machine. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
7. Before operating the surface grinder, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
8. Wear ear protectors (plugs or muffs) during extended periods of operation.
9. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.
10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
11. Make certain the switch is in the **OFF** position before connecting the machine to the power supply.
12. Make certain the machine is properly grounded.
13. Make all machine adjustments or maintenance with the machine unplugged from the power source.
14. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
15. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately.
16. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
17. Provide for adequate space surrounding work area and non-glare, overhead lighting.
18. Keep the floor around the machine clean and free of scrap material, oil and grease.
19. Keep visitors a safe distance from the work area. **Keep children away.**



Warnings

20. Make your workshop child proof with padlocks, master switches or by removing starter keys.
21. Give your work undivided attention. Looking around, carrying on a conversation and “horse-play” are careless acts that can result in serious injury.
22. Maintain a balanced stance at all times so that you do not fall or lean against the grinding wheel or other moving parts. Do not overreach or use excessive force to perform any machine operation.
23. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
24. Use recommended accessories; improper accessories may be hazardous.
25. Make sure the work piece is secured before grinding operations.
26. Turn off the machine before cleaning. Use a brush or compressed air to remove chips or debris — do not use your hands.
27. Do not stand on the machine. Serious injury could occur if the machine tips over.
28. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
29. Remove loose items and unnecessary work pieces from the area before starting the machine.

Familiarize yourself with the following safety notices used in this manual:

CAUTION

This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

WARNING

This means that if precautions are not heeded, it may result in serious injury or possibly even death.

- - SAVE THESE INSTRUCTIONS - -

Introduction

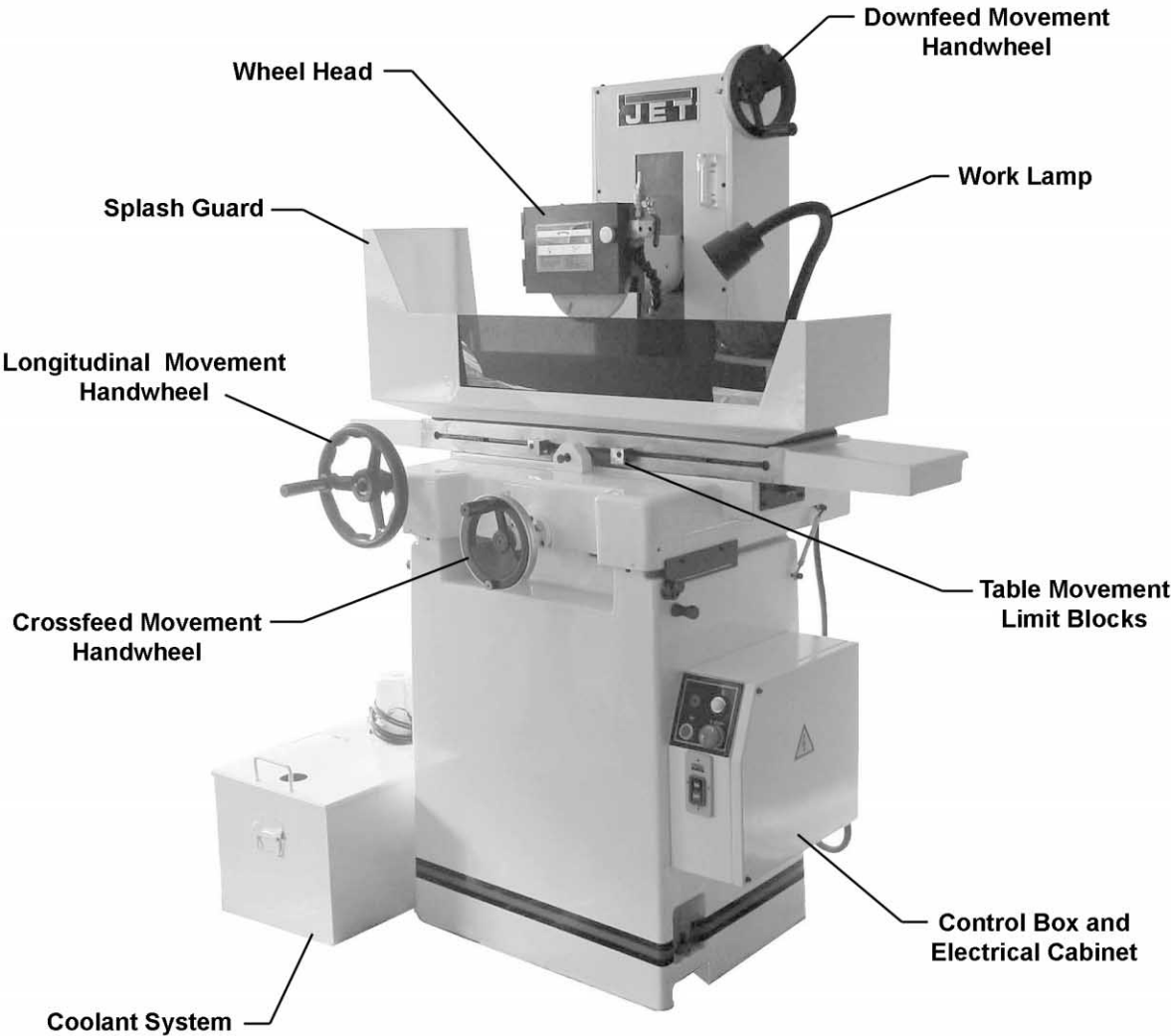
This manual is provided by WMH Tool Group covering the safe operation and maintenance procedures for a JET Model JPSG-618M1 Surface Grinder. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or WMH Tool Group. WMH Tool Group can also be reached at our web site: www.wmhtoolgroup.com.

Specifications

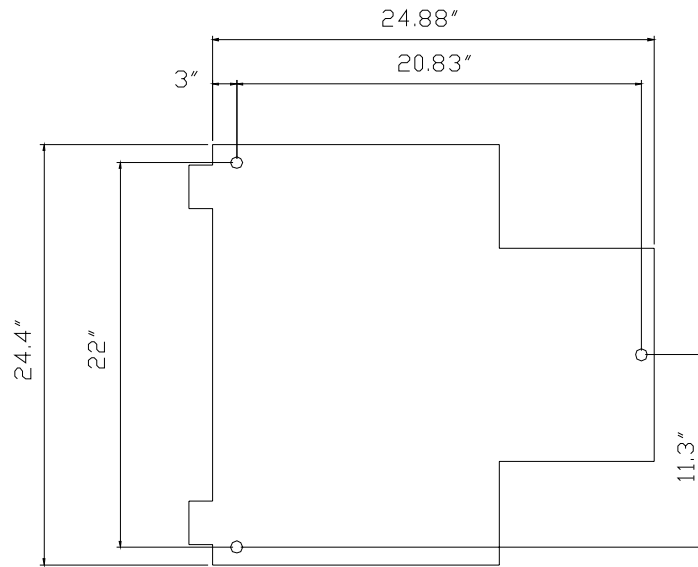
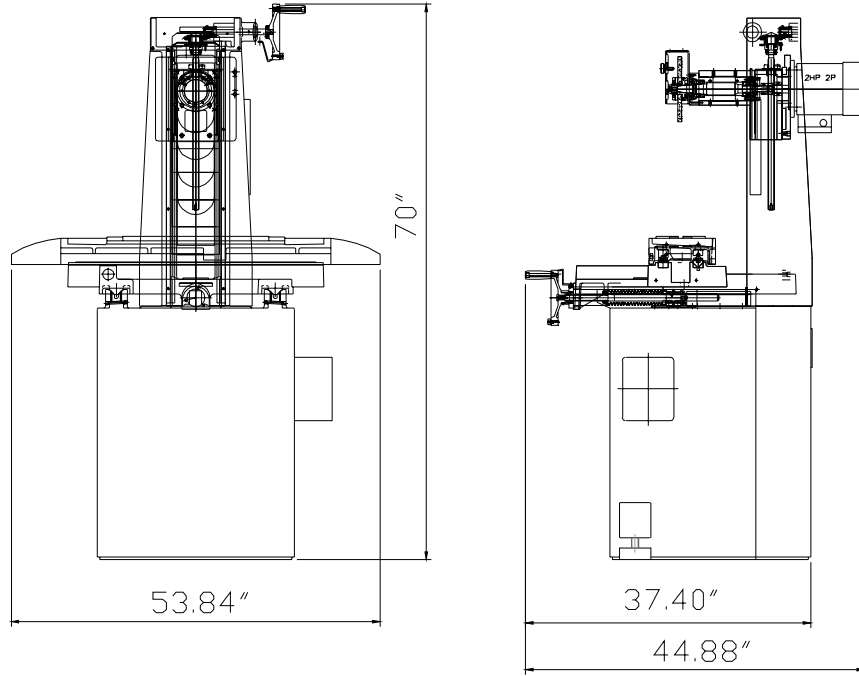
Model Number	JPSG-618M1
Stock Number.....	414519
Table Size (L x W)(in.)	6 x 18
Grinding Capacity (L x W)(in.)	9 x 7
T-Slot (in.).....	9/16
Maximum Longitudinal Manual Table Travel (in.).....	20
Maximum Cross Manual Table Travel (in.)	7-3/4
Cross Handwheel Graduation (in.)	0.0005
Cross per Handwheel Revolution (in.)	0.2
Maximum Spindle Centerline to Table (in.)	18
Vertical Handwheel Graduation (in.).....	0.0001
Vertical per Handwheel Revolution (in.).....	0.05
Maximum Wheel Diameter (in.)	8
Maximum Wheel Thickness (in.)	3/4
Wheel Center Bore (in.)	1 1/4
Spindle Speed (RPM)	3,450
Main Motor (TEFC)	2 HP, 3 Ph, 230V/460V Prewired 230V
Floor Space Required (L x W x H)(in.).....	74 x 45 x 68
Net Weight (lbs.).....	1,585

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, WMH Tool Group reserves the right to change specifications at any time and without prior notice, without incurring obligations.

Features of the JPSG-618M1



Dimensions and Layout



Unpacking

Open shipping container and check for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Surface Grinder is installed and running properly.

Compare the contents of your container with the following parts list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read the instruction manual thoroughly for assembly, maintenance and safety instructions.

Contents of the Shipping Container

- 1 Surface Grinder
- 1 Coolant Tank (with two hoses inside)
- 1 Balance Stand
- 1 Splash Guard (with 3 Sectional Pieces)
- 1 Table

- 2 Bearing Strips
- 1 Tool Box containing: *[see photo below]*
- 3 Leveling Blocks
- 3 Hex Cap Screws with Nuts
- 1 Hex Wrench Set (9 pcs.)
- 1 Adjustable Wrench
- 1 Cross Point Screwdriver
- 1 Flat Head Screwdriver
- 1 Dressing Diamond
- 1 Offset Diamond Holder
- 1 Can Touch-Up Paint
- 1 Balancing Arbor
- 1 Arbor Wrench
- 2 Square Head Bolts with Washers/Nuts
- 1 Wheel Extractor
- 1 Rubber Coupling (PN: SG1090)
- 1 Owner's Manual
- 1 Warranty Card



⚠ WARNING

Read and understand the entire contents of this manual before attempting set-up or operation! Failure to comply may cause serious injury.

Installation and Assembly

⚠WARNING The Surface Grinder should be disconnected from power during assembly procedures.

Refer to parts breakdowns at the end of this manual if clarification is needed for any assembly procedure.

1. Remove the top and sides of the crate. Leave the surface grinder bolted to the pallet until it reaches the desired location.
2. Clean all rust protected surfaces with kerosene or a light solvent. Do not use gasoline, paint or lacquer thinner – these will damage painted surfaces.
3. Cover all machined surfaces with a film of light machine oil to inhibit rust.
4. Remove all absorption bags and any other packing material. Remove bolts and/or shipping straps, and remove everything from the pallet except the Surface Grinder.
5. Use nylon straps that are rated for the proper weight of the machine to be lifted. See specifications. Attach the straps to the lifting bolts. See Figure 1.

⚠WARNING Keep people a safe distance away from the Surface Grinder while it is being moved.

6. The Surface Grinder must be on a solid, level surface. If the Surface Grinder is located next to another machine or wall, you must leave minimum clearance of 2 feet for maintenance and operation. Also take into consideration the size and location of the Coolant Tank.
7. When the Surface Grinder is in place, the lifting lugs can remain on the machine.
8. Thread the leveling screws into the base of the machine. Place the leveling blocks underneath the screws, and tighten the hex nut. See Figure 2. NOTE: You will adjust these to level the machine after the table has been installed.
9. Raise the wheelhead and remove the block of wood which was used for shipping.
10. Remove the table hold-downs and socket head cap screws. These should be saved for future use.
11. Loosen the table lock (knurled knob) on the right side of the table.

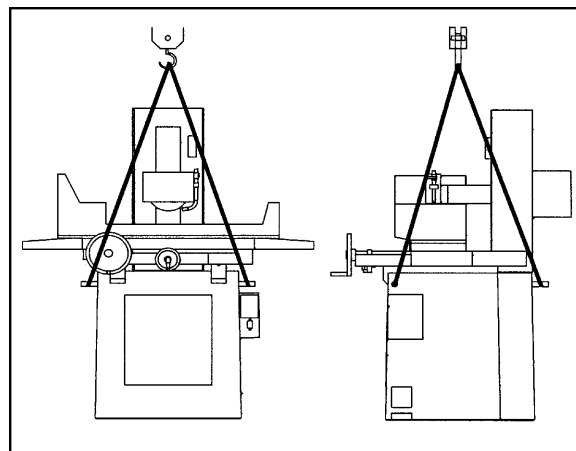


Figure 1

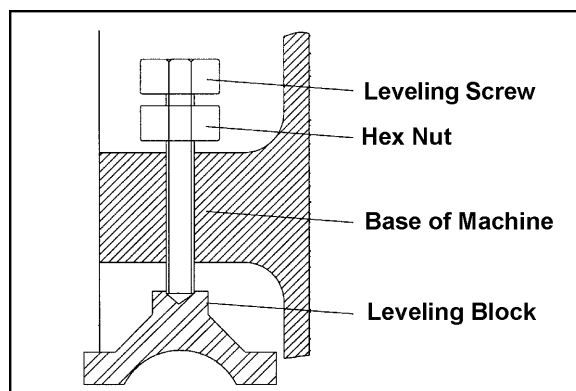


Figure 2

Installing Table

1. Raise the wheelhead.
2. Clean all rust protected surfaces of the table with kerosene or a light solvent. Do not use gasoline, paint or lacquer thinner, as these will damage painted surfaces.
3. The bearings are in sections and are easily installed with the dovetail connecting ends.
4. Place the 23-bearing section on the front slide way, and the 21-bearing section on the rear slide way. See Figure 3. Center the bearing strips on the rail with a measuring device.
5. With the help of an assistant, place the table on its side, sitting on the saddle directly in front of the rails.
6. Rotate the longitudinal handwheel to move the fixed plate as far to the left as it will go. Attach the table to the fixed plate with the socket head cap screw and washer. See Figure 4. NOTE: Be careful not to pull or pinch the belt.
7. Move the fixed plate as far to the right as it will go. Attach the table to the fixed plate with the socket head cap screw and washer. See Figure 4. NOTE: Be careful not to pull or pinch the belt.

Leveling the Machine

Two spirit levels are needed to accurately level the Surface Grinder.

1. Move the worktable to the middle of the machine.
2. Set one spirit level on the table in the longitudinal direction and the other in the cross direction.
3. Adjust the screws over the leveling blocks (Figure 2) until the machine is level. Check periodically for accuracy.

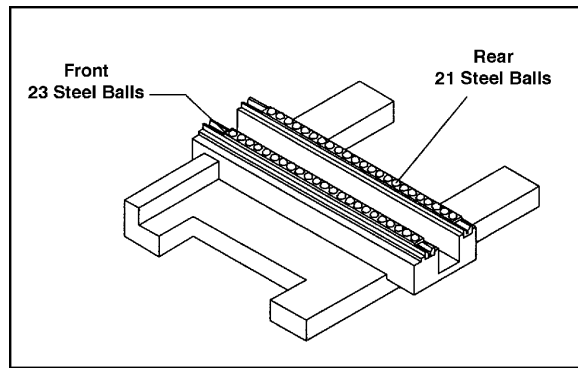


Figure 3

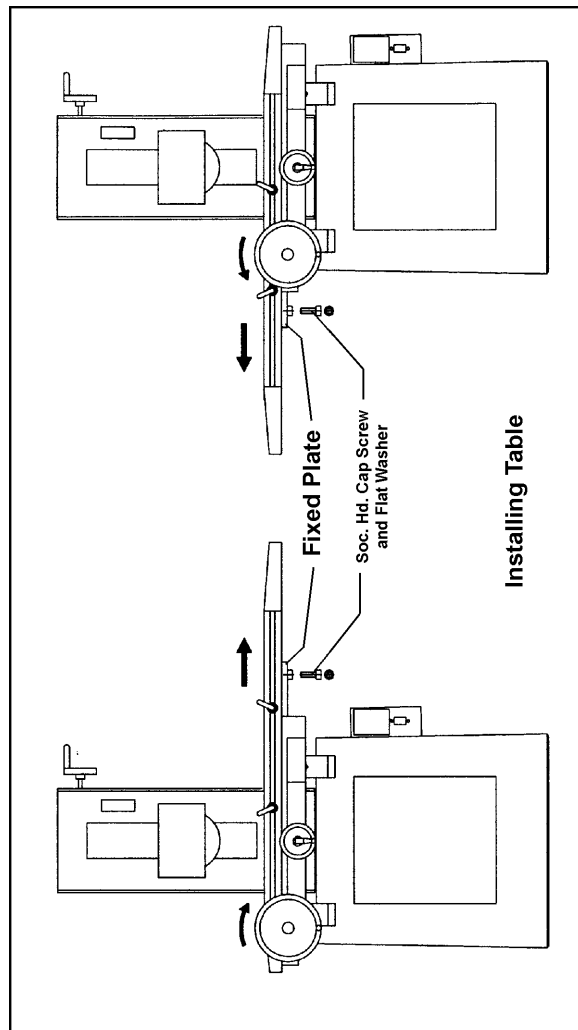


Figure 4

Installing Splash Guard

1. Attach the splash guard (tall side to the left) to the table, with four phillips pan head machine screws and four flat washers. See Figure 5. The rear splash plate should be secured to the splash guard with wing nuts and flat washers, and the tinted front splash plate should be installed in the tabs at the front of the splash guard.

Installing Coolant System

1. Blow out coolant tank with an air hose to remove any dirt and debris.
2. The coolant system should be placed on the left side of the machine.
3. Connect the hose from the coolant pump to the fitting on the wheel guard. See Figure 6.
4. Connect the drain hose from the tank intake to the drainage port at the left bottom side of the saddle See Figure 7.

⚠WARNING Disconnect machine from power source before making electrical connections. Electrical connections must be made by a qualified electrician in compliance with all relevant codes.

5. Run the power cable coming from the coolant pump through the electrical cabinet. Match up wires U2, V2, W2 and Ground wire to the terminal strip. (Consult the wiring diagrams inside the cover of the coolant pump and electrical cabinet.)

⚠CAUTION Do not start the coolant pump until coolant has been added.

6. The coolant should be visible, anti-high pressure, soluble and non-foam. The coolant must be non-flammable. Coolant mix should be 1/60 to 1/80 for normal surface grinding.
7. Pour the coolant mixture into the enclosure below the coolant pump.

Installing Grinding Wheel

Visually check the wheel for any cracks or damage. Make sure it is the correct size for your grinder. Then proceed with a "ring" test, as follows:

1. Suspend the wheel with your finger or a wooden stick through the hole.
2. Using a wood mallet, tap the wheel about 45° each side of the vertical center line and 1 to 2 inches from the center.

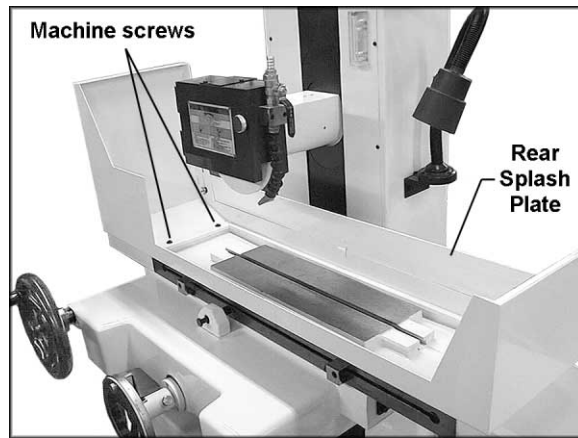


Figure 5

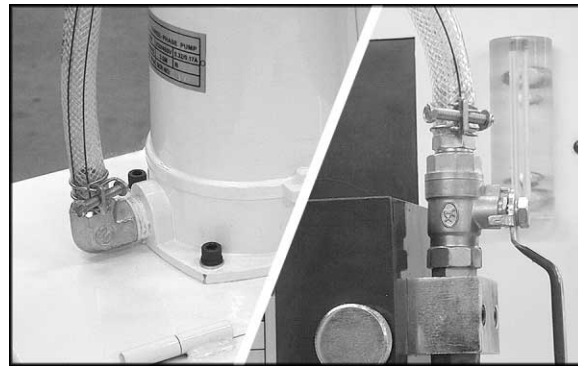


Figure 6

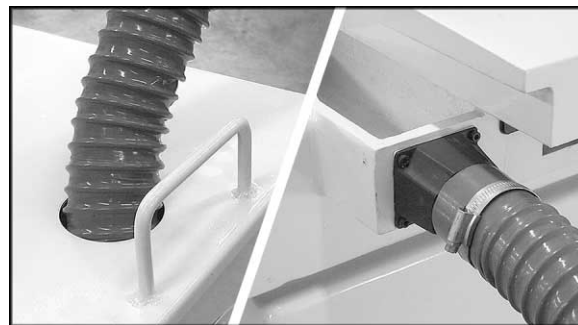


Figure 7

3. A grinding wheel in good condition will give a clear sound at any tap point. If it does not, the wheel is damaged. **Do not** use damaged wheels.
4. Place a grinding wheel onto the shaft of the grinding wheel seat (Figure 8).
5. Place the large washer onto the shaft, then thread the flat nut (left-hand threads; rotate counterclockwise to tighten) onto the wheel seat shaft. See Figure 9. Tighten the flat nut using the provided arbor wrench.
6. To remove a grinding wheel, reverse the above procedure.

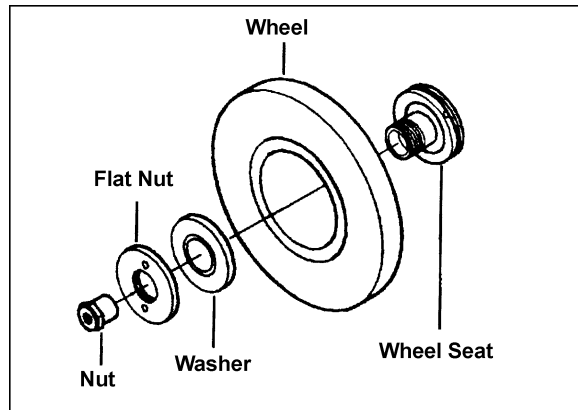


Figure 8

Removing Wheel Assembly

1. To remove the complete wheel assembly, remove the center nut (left-hand threads) from the shaft.
2. Thread the wheel extractor into the shaft of the wheel seat (Figure 9) and pull off the wheel assembly.

Wheel Dressing

Dressing procedures may vary depending upon optional accessories.

The diamond dresser seat provided with this machine must be used with a magnetic chuck or an overhead dresser system. These last items are optional accessories and can be purchased through your JET dealer.

1. Set the diamond in the overhead dresser, or in the seat on the magnetic chuck. The collar of the dresser is about 5°. The collar should be turned a small degree to keep the cutting edge in sharp condition. Use the coolant during dressing of the wheel. Start dressing in the center of the wheel.
2. If the grinding allowance is between .0008 and .0012 inches, the diamond should pass through the wheel quickly.
3. If the grinding allowance is .0004 inches, the diamond should pass through slowly.
4. Repeat the process 2 to 3 times until the wheel is clean and its corners are square.

NOTE: Do an initial dress before balancing the wheel to make the wheel round and true to the spindle. After the wheel has been balanced, do your final dress.

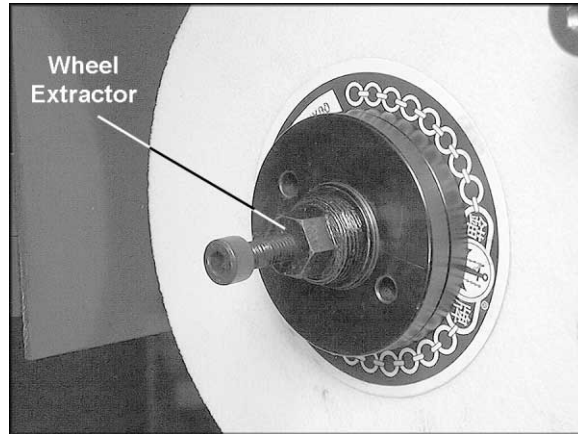


Figure 9

Wheel Balancing

1. Attach the wheel to the surface grinder.
2. Turn on the surface grinder and then turn on coolant flow.
3. Dress the wheel (see instructions above).
4. Remove the dresser, turn off the coolant and dry-run the wheel for ten minutes to remove any coolant.
5. Turn off the surface grinder and **disconnect the machine from power source**.
6. Remove the center nut and pull the wheel assembly off the shaft using the wheel extractor. Wipe out the inside of the wheel assembly.
7. Wipe off the balancing arbor and insert it into the wheel assembly.
8. Place the wheel assembly on the balancing stand (Figure 10) and mark its gravity center "S" with chalk. See Figure 11.
9. Insert a balancing weight "G" directly opposite of gravity center "S" (Figure 11).
10. Determine which side is heavier, "G" or "S".
11. Insert two balancing weights "K" on the lighter side. If the wheel is still out of balance, adjust "K" for balance. See Figure 11.
12. After balancing, do a final dressing of the grinding wheel.

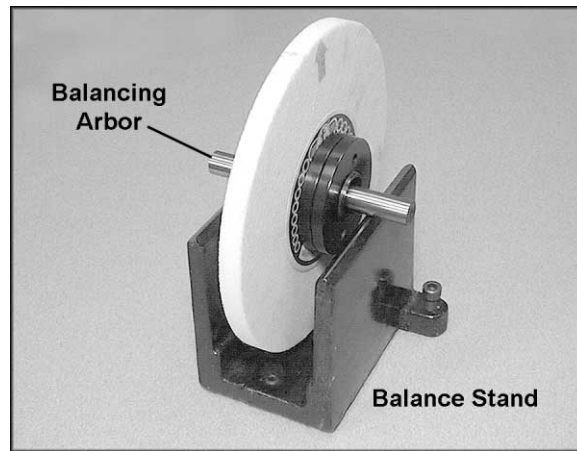


Figure 10

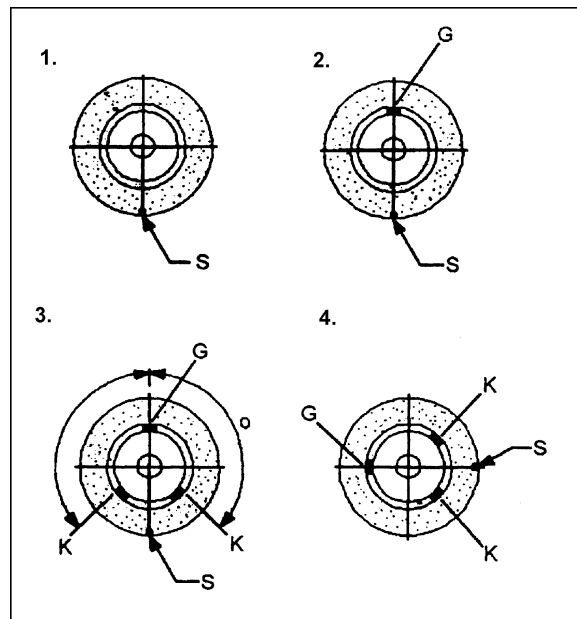


Figure 11

Grounding Instructions

⚠WARNING Electrical connections must be made by a qualified electrician in compliance with all relevant codes. This machine must be properly grounded to help prevent electrical shock and possible fatal injury.

This machine must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes, is the equipment-grounding conductor.

If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Repair or replace a damaged or worn cord immediately.

Make sure the voltage of your power supply matches the specifications on the motor plate of the Surface Grinder. The machine should be connected to a dedicated circuit.

Extension cords

The use of an extension cord is not recommended for the Surface Grinder. But if one is necessary, make sure the cord rating is suitable for the amperage listed on the machine's motor plate. An undersize cord will cause a drop in line voltage resulting in loss of power and overheating.

Use the chart in Figure 12 as a general guide in choosing the correct size cord. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

230 Volt, Three Phase Operation

The Surface Grinder is factory-wired for 230 volt, but can be converted to 460 volt if so desired (see "Converting From 230 Volt to 460 Volt"). You may either install a plug or "hard-wire" the Band Saw directly to a control panel.

If you are connecting a plug, use a proper UL listed 3-pole, 4-wire grounding plug suitable for 230 volt operation.

If the Band Saw is to be hard-wired to a panel, make sure a disconnect is available for the operator. During hard-wiring of the Band Saw, make sure the fuses have been removed or the breakers have been tripped in the circuit to which the Band Saw will be connected. Place a warning placard on the fuse holder or circuit breaker to prevent it being turned on while the machine is being wired.

Converting from 230 Volt to 460 Volt

There are two motors on this machine (Wheelhead Motor and Coolant Motor) that must be rewired for 460 volt. Consult the wiring diagram inside the electrical box of each motor.

Also, the transformer in the machine's electrical box must be switched to 460V operation.

If using a plug, install a proper UL listed plug suitable for 460V operation.

Recommended Gauges (AWG) of Extension Cords

Amps	Extension Cord Length *					
	25 feet	50 feet	75 feet	100 feet	150 feet	200 feet
< 5	16	16	16	14	12	12
5 to 8	16	16	14	12	10	NR
8 to 12	14	14	12	10	NR	NR
12 to 15	12	12	10	10	NR	NR
15 to 20	10	10	10	NR	NR	NR
21 to 30	10	NR	NR	NR	NR	NR

*based on limiting the line voltage drop to 5V at 150% of the rated amperes.

NR: Not Recommended.

Figure 12

Adjustments

Timing Belt

The timing belt should have 1/2" to 3/4" give with six pounds of pressure applied. The timing belt has been properly tensioned at the factory and should not be adjusted when you receive the machine.

As the machine receives use, however, the timing belt may eventually need tightening. To tension the timing belt:

1. Move the table to the left.
2. Loosen one of the hex nuts (A, B, Figure 13) and turn the socket screw (C, Figure 13) with a hex wrench as needed.
3. After getting the desired tension, tighten the hex nuts (A, B, Figure 13) against the plate.

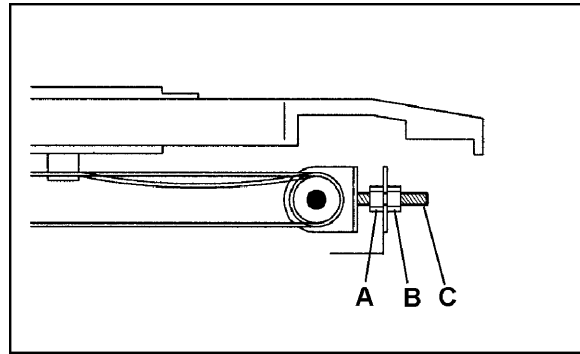


Figure 13

Operating Controls

(Figure 14)

The emergency stop button remains engaged after being pushed; to re-start the machine, rotate the stop button until it pops back out.

NOTE: The machine will not start if the electrical cabinet is open.

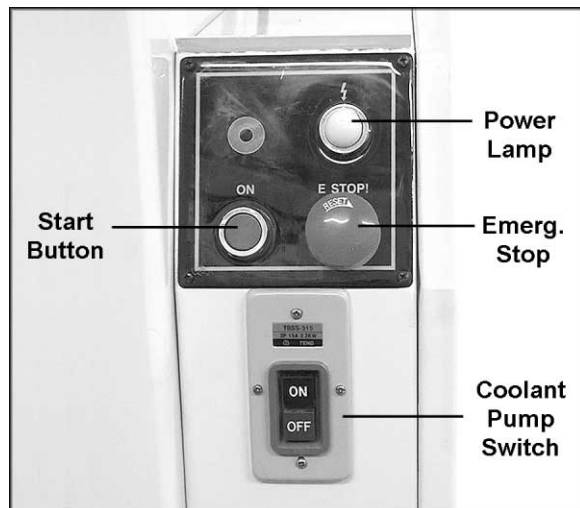


Figure 14

Operation

Longitudinal Movement of Table

1. Loosen the socket head cap screws in the limit blocks (A, Figure 15), and slide the limit blocks to the desired position. Retighten the socket head cap screws.
2. Move the table using the handwheel (B, Figure 15) and lock the table in position by tightening the knurled knob (C, Figure 15).

Crossfeed Movement of Table

The crossfeed handwheel (D, Figure 15) has a scale for precision setting. The crossfeed movement of the table can be locked by tightening the knurled knob on the column (E, Figure 15).

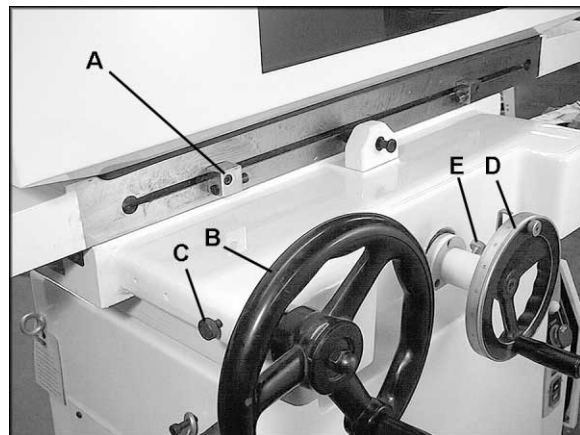


Figure 15

Maintenance

⚠WARNING Disconnect machine from the power source before doing any maintenance. Failure to comply may cause serious injury.

Coolant System

Check coolant level once a week.

Change coolant after every 100 hours of use, as follows: Remove coolant tank lid, and dispose of the old coolant properly. Clean out the tank with hot soda water. Pour in water/coolant mix to fill the tank. (Pour the water slowly to minimize bubbles.) After changing coolant, wash hands and arms thoroughly.

Periodically check the coolant pump to make sure all connections are tight.

Auto Lubrication System

The auto lubrication system lubricates the table slideways, elevating leadscrew and crossfeed leadscrew. The system operates whenever the spindle is turning.

Open the upper rear panel and check the oil level – it should reach halfway in the reservoir. Add Mobil Vactra® Oil No. 2 to the reservoir if the level falls below the halfway mark. Completely change the oil every three months using the drain valve (remove lower rear panel to access the valve).

The oil distributor comes pre-adjusted from the factory and should not require any further adjustment.

Grinding Wheel Selection Chart

To obtain an accurate, finished surface the proper grinding wheel must be used.

	Material to be ground	Hardness	Wheel Specification			
			Under 8"		Under 14"	
Carbon Steel	Steel Plate Carbon Steel Carbon Steel Pipe	Under HRC 25	WA A	46K	WA A	46K
	Forging Carbon Steel Cast Carbon Steel	Above HRC 25	WA A	46J	WA A	46J
Alloy Steel	Nickel Chrome Steel Nickel Chrome Molybdenum Alloy Steel Chromium Steel	Under HRC 55	WA	46J	WA	46J
	Chrome Molybdenum Steel High Carbon Alloy Steel Alloy Cast Steel Tool Carbon Steel	Above HRC 55	WA	46I	WA	46H
Tool Steel	High Speed Steel	Under HRC 60	WA	46I	WA	46H
	Alloy Tool Steel	Above HRC 60	WA	46H	WA	46G
Stainless Steel	Stainless Steel		WA	46I	WA	46H
	Anti-Heat Steel		WA	36J	WA	30J
Cast Iron	Gray Cast Iron		C	46J	C	46I
	Special Cast Iron		GC	46I	GC	46H
	Malleable Cast Iron		WA	46K	WA	46J
	Forging Cast Iron					
Nonferrous Metal	Brass		C	30J	C	30I
	Bronze		A	46K	A	46J
	Aluminum Alloy		C	30J	C	30I
	Cemented Carbide		GC 60 ~ 100HI Diamond Wheel			

KEY:

Abrasives

A = Regular Aluminum Oxide
 WA = White Aluminum Oxide
 C = Regular Silicon Carbide
 GC = Green Silicon Carbide

Grit Sizes

30, 36, 46

Hardness

A (softest) through Z (hardest)

Troubleshooting

Trouble	Probable Cause	Remedy
Frequent wave on the surface of workpiece.	Excess machine vibration.	Make sure machine is level and on a solid surface. Check the spindle.
	Grinding wheel is not balanced.	Dress and balance the wheel.
	Wheel is too hard.	Use a softer wheel. Use a rough wheel. Reduce the feed amount.
Minor scratch on the surface.	Improper operation.	Dress the wheel. Make sure wheel edge is parallel with workpiece. Slow down your crossfeed. Make sure workpiece is securely fastened to the table.
	Improper dressing of wheel.	Tighten the dresser. Use proper dressing speed. Don't dress too deep at one time.
Burning spots and cracks.	Improper operation.	Reduce feed amount. Use proper crossfeed speed.
	Improper heat treatment.	Perform heat treatment again.
	Unsuitable grinding wheel.	Dress the wheel finely and frequently. Use a softer and rougher wheel.
Poor grinding ability, wheel clogs and workpiece shows burns.	Wheel is too hard.	Increase table and crossfeed speeds. Reduce the wheel diameter or width. Use a sharp diamond for dressing. Use a rougher wheel.
Wheel dulls and grit falls off.	Wheel is too soft.	Reduce table and crossfeed speed. Increase wheel diameter if possible. Lightly dress the wheel, repeatedly.

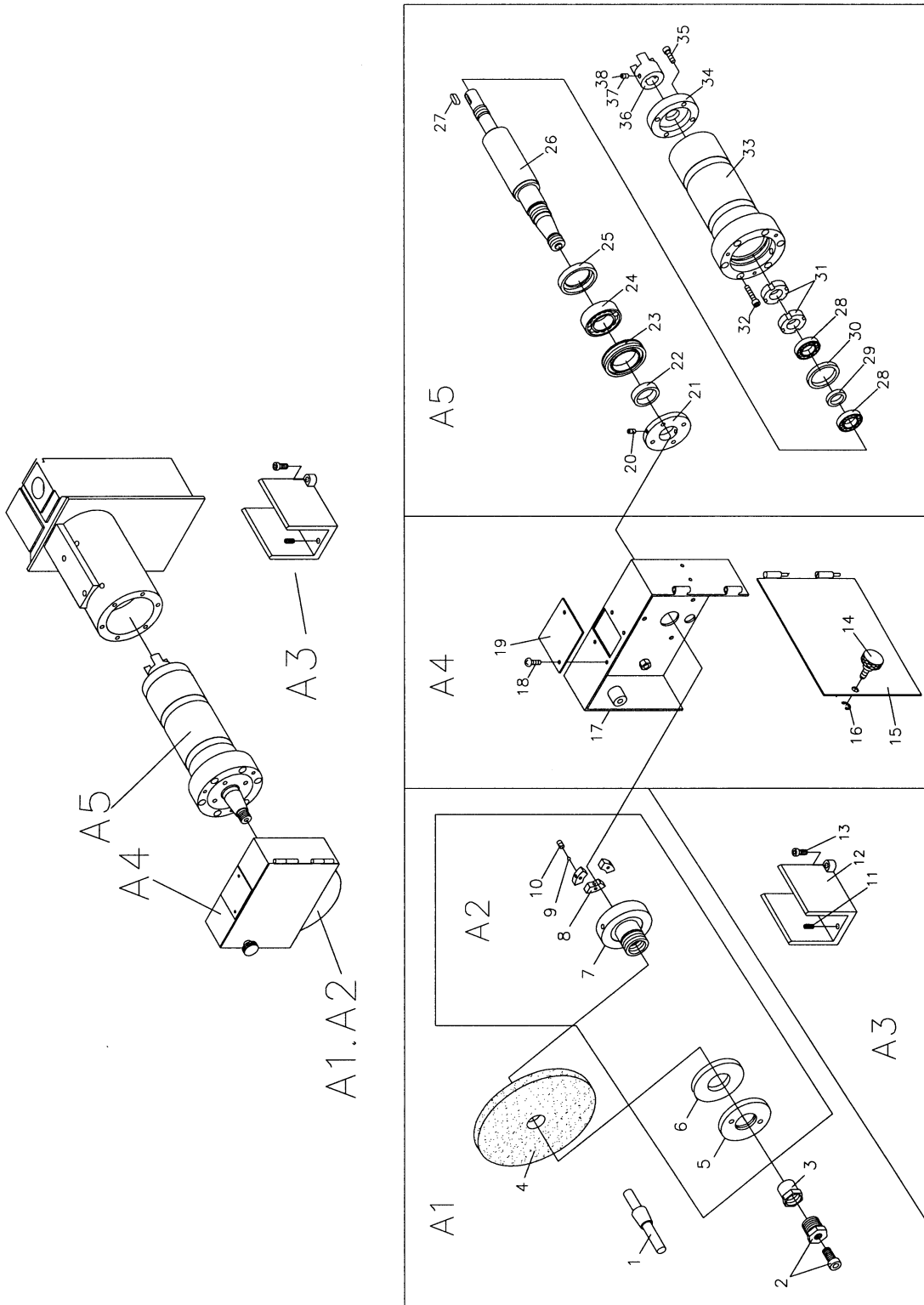
Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 between 7:30 a.m. and 6:00 p.m. (CST), Monday through Friday. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

Parts List: Spindle Assembly

Index No.	Part No.	Description	Size	Qty
A1	618M1-01A1	Complete Wheel Assembly		1
1	SG1202	Balancing Arbor		1
2	SG1206	Wheel Extractor		1
3	SG1083	Nut		1
4	618M-164	Grinding Wheel	203x31.75x12 mm	1
A2	618M1-01A2	Grinding Wheel Seat		1
5	SG1082	Wheel Setting Nut		1
6	SG1081	Wheel Washer		1
7	SG1079	Wheel Hub		1
8	SG1080	Balance Block		1
9	618M1-019	Steel Ball		1
10	TS-1523031	Socket Set Screw	M6x12	3
A3	618M1-01A3	Balance Stand Assembly		1
11	TS-1524041	Socket Set Screw	M8x16	1
12	SG1201	Balance Stand		1
13	TS-1504051	Socket Head Cap Screw	M8x25	2
A4	618M1-01A4	Complete Wheel Cover		1
14	618M1-0114	Lock Screw		1
15	SG1085	Wheel Guard Door		1
16	618M1-0116	Retaining Ring	E8	1
17	SG1084	Wheel Guard		1
18	618M-149	Cross Head Screw	M5x8	2
19	SG1086	Cover		1
A5	618M1-01A5	Complete Spindle Assembly		1
20	TS-1522011	Socket Set Screw	M5x5	1
21	SG1078	Setting Nut		1
22	SG1077	Collar		1
23	SG1076	Pressing Plate		1
24	618M-154	Ball Bearing	NN3006K	1
25	SG1075	Spacing Ring		1
26	SG1074	Spindle		1
27	1020A-292	Key	6x6x20 mm	1
28	618M-142	Angular Bearing	7204C	2
29	SG1073	Bearing Washer		1
30	SG1072	Bearing Washer		1
31	618M1-0131	Setting Nut	AN04	2
32	TS-1503061	Socket Head Cap Screw	M6x30	6
33	SG1069	Spindle Housing		1
34	SG1070	Rear Cover		1
35	TS-1503081	Socket Head Cap Screw	M6x35	4
36	SG1088	Coupling		1
37	TS-1503011	Socket Set Screw	M6x6	1
38	TS-1503021	Socket Set Screw	M6x8	1

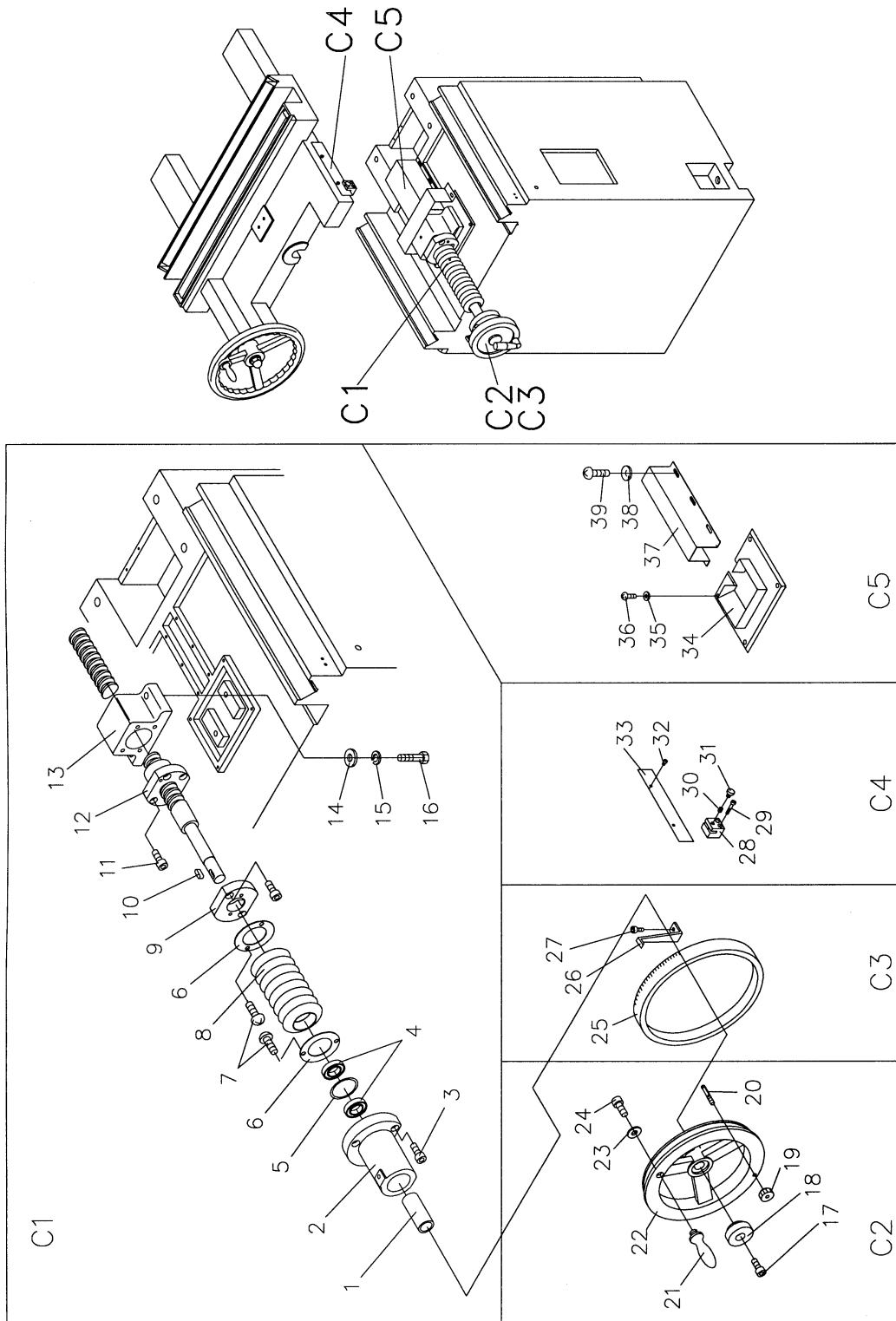
Spindle Assembly



Parts List: Saddle and Base Assembly

Index No.	Part No.	Description	Size	Qty
C1	618M1-03C1	Cross Leadscrew Assembly		1
1	618M1-031	Sleeve		1
2	618M1-032	Bearing Seat		1
3	TS-1502041	Socket Head Cap Screw	M5x20	3
4	BB-6202	Bearing	6202ZZ	2
5	618M1-035	Washer		1
6	618M1-036	Washer		2
7	TS-2284082	Phillips Pan Head Machine Screw	M4x8	4
8	618M1-038	Protect Plastic Cover		1
9	618M1-039	Oil proof Sleeve		1
10	5300551	Key	5x5x15 mm	1
11	TS-1502041	Socket Head Cap Screw	M5x20	2
12	618M1-0312	Ball Screw	Inch Style	1
13	618M1-0313	Nut Seat		1
14	TS-1550061	Flat Washer	M8	2
15	TS-1551061	Lock Washer	M8	2
16	TS-1504111	Socket Head Cap Screw	M8x50	2
C2	618M1-03C2	Cross Feed Handwheel Set		1
17	TS-1502031	Socket Head Cap Screw	M5x16	1
18	618M1-0318	Washer		1
19	618M1-0319	Locking Nut		1
20	618M1-0320	Keyed Screw		1
21	618M1-0321	Handle		1
22	618M1-0322	Handwheel		1
23	TS-1550031	Flat Washer	M4	2
24	TS-1501031	Socket Head Cap Screw	M4x6	2
C3	618M1-03C3	Cross Feed Dial Set		1
25	618M1-0325	Scale Ring	Inch Style	1
26	618M1-0326	Indication Plate		1
27	TS-1502021	Socket Head Cap Screw	M5x10	1
C4	618M1-03C4	Cross Feed Lock		1
28	SG1010	Travel Setting Block		1
29	TS-1502061	Socket Head Cap Screw	M5x30	2
30	618M1-0330	Screw		1
31	618M1-0331	Lock Screw		1
32	TS-1501011	Socket Head Cap Screw	M4x6	2
33	618M1-0333	Covering Plate		1
C5	618M1-03C5	Cross Feed Leadscrew Cover Set		1
34	SG1034	Oil Cover		1
35	TS-1550031	Flat Washer	M5	2
36	TS-133032	Phillips Pan Head Machine Screw	M5x10	2
37	SG1036	Shaft Cover		1
38	TS-1550041	Flat Washer	M5	6
39	TS-133032	Phillips Pan Head Machine Screw	M5x10	6

Saddle and Base Assembly

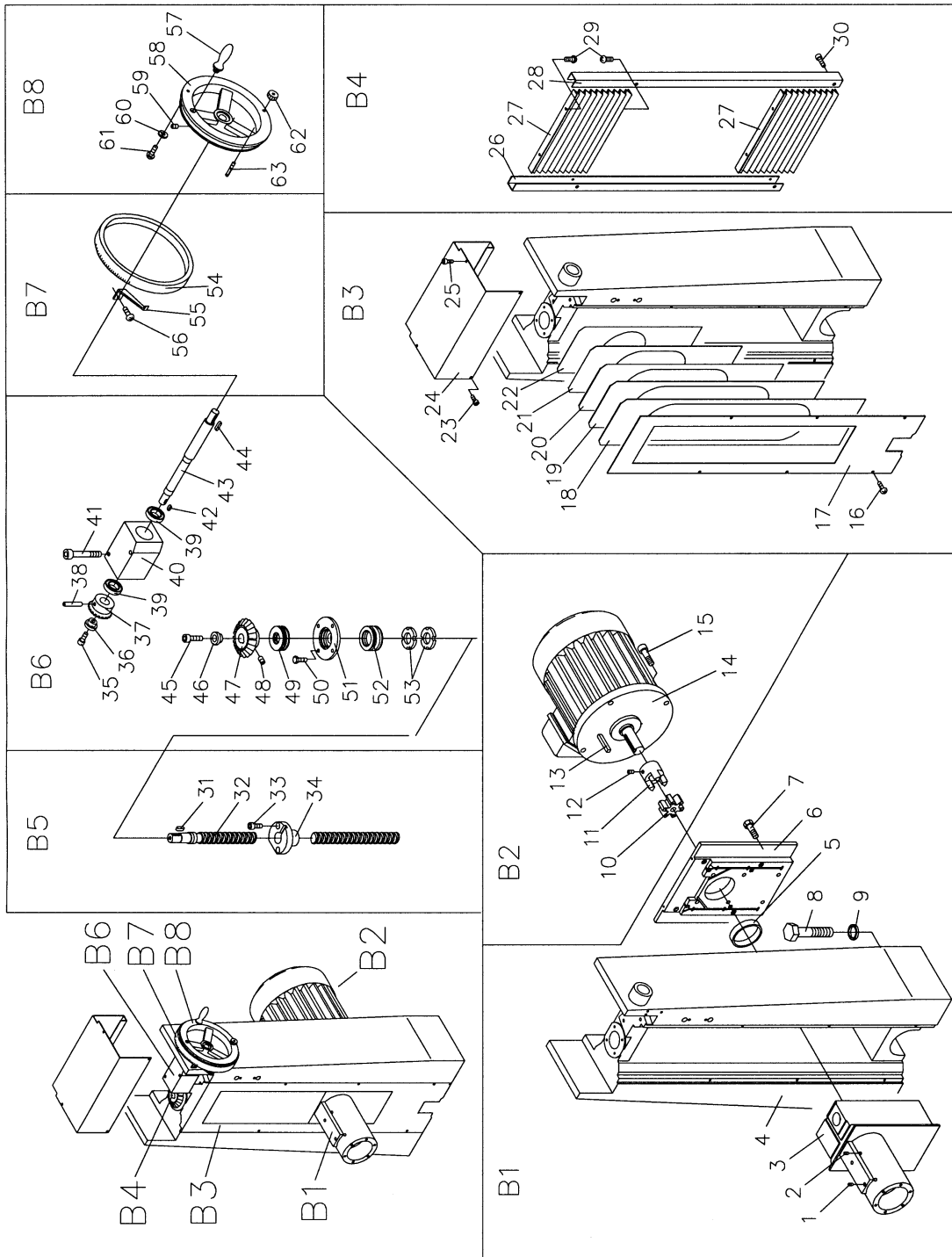


Parts List: Column Assembly

Index No.	Part No.	Description	Size	Qty
B1	618M1-02B1	Column and Spindle Seat		1
1	TS-1524041	Socket Set Screw	M8x14	2
2	TS-1523041	Socket Set Screw	M6x12	6
3	618M1-023	Spindle Seat		1
4	618M1-024	Column		1
5	618M1-025	Bushing		1
6	SG1091	Motor Support		1
7	TS-1293051	Hex Cap Screw	M8x25	6
8	TS-1510071	Hex Cap Screw	M16x70	4
9	TS-1551041	Lock Washer	M6	4
B2	618M1-02B2	Main Motor	2HP,60HZ	1
10	SG1090	Rubber Coupling		1
11	SG1089	Coupling		1
12	TS-1523021	Socket Set Screw	M6x8	1
13	618M1-0213	Key	8x7x40 mm	2
14	618M-127	Motor		1
15	TS-1505041	Socket Head Cap Screw	M10x30	4
B3	618M1-02B3	Front Cover Sheet Metal Assembly		1
16	618M1-0216	Phillips Pan Head Machine Screw	M5x8	6
17	SG1104	Front Guard		1
18	SG1109	Front Guard (1st)		1
19	SG1108	Front Guard (2nd)		1
20	SG1107	Front Guard (3rd)		1
21	SG1106	Front Guard (4th)		1
22	SG1105	Front Guard (5th)		1
23	TS-2285102	Phillips Pan Head Machine Screw	M5x8	1
24	SG1110	Cover		1
25	TS-2285102	Phillips Pan Head Machine Screw	M5X8	2
B4	618M1-02B4	Rear Cover Sheet Metal Assembly		1
26	SG1114	Plate Seat		1
27	SG1112	Telescopic Cover		2
28	SG1115	Plate Seat		1
29	TS-2284102	Cross Head Screw	M4x10	8
30	TS-2284061	Phillips Flat Head Machine Screw	M4x6	4
B5	618M1-02B5	Vertical Leadscrew Assembly		1
31	618M1-0231	Key		1
32	618M1-0232	Elevating Leadscrew	Inch Style	1
33	618M1-0233	Socket Head Cap Screw		2
34	618M1-0234	Leadscrew Nut	Inch Style	1
B6	618M1-02B6	Vertical Transmitting Assembly		1
35	TS-1502041	Socket Head Cap Screw	M5x14	1
36	618M1-0236	Washer		1
37	618M1-0237	Pinion Gear		1
38	618M1-0238	Spring Pin	4x25L	1
39	BB-6002NR	Ball Bearing	6002NR	2
40	618M1-0240	Shaft Seat		1
41	TS-1503141	Socket Head Cap Screw	M6x65	2
42	KEY4410	Key	4x4x10 mm	1
43	618M1-0243	Shaft		1
44	618M1-0244	Key	5x5x22 mm	1
45	TS-1482041	Socket Head Cap Screw	M6x20	1
46	618M1-0246	Washer		1
47	618M1-0247	Bevel Gear		1
48	TS-1522051	Socket Set Screw	M5x14	1
49	618M1-0249	Thrust Needle Bearing	51103	1
50	TS-1291031	Hex Cap Screw	M5x15	4
51	618M1-0251	Bearing Seat		1

52	618M1-0252	Thrust Needle Bearing	ASK1730	1
53	618M1-0253	Setting Nut	AN04	2
B7	618M1-02B7	Cross Feed Dial Assembly		1
54	618M1-0254	Index Disc	Inch Style	1
55	618M1-0255	Indicator		1
56	TS-2284102	Phillips Pan Head Machine Screw	M4x10	2
B8	618M1-02B8	Cross Feed Handwheel Set		1
57	618M1-0257	Handle		1
58	618M1-0258	Handwheel		1
59	TS-1523031	Socket Set Screw	M6x10	1
60	TS-1550021	Flat Washer	M4	3
61	TS-1501021	Socket Head Cap Screw	M4x8	3
62	618M1-0262	Setting Handle		1
63	618M1-0263	Keyed Screw		1

Column Assembly

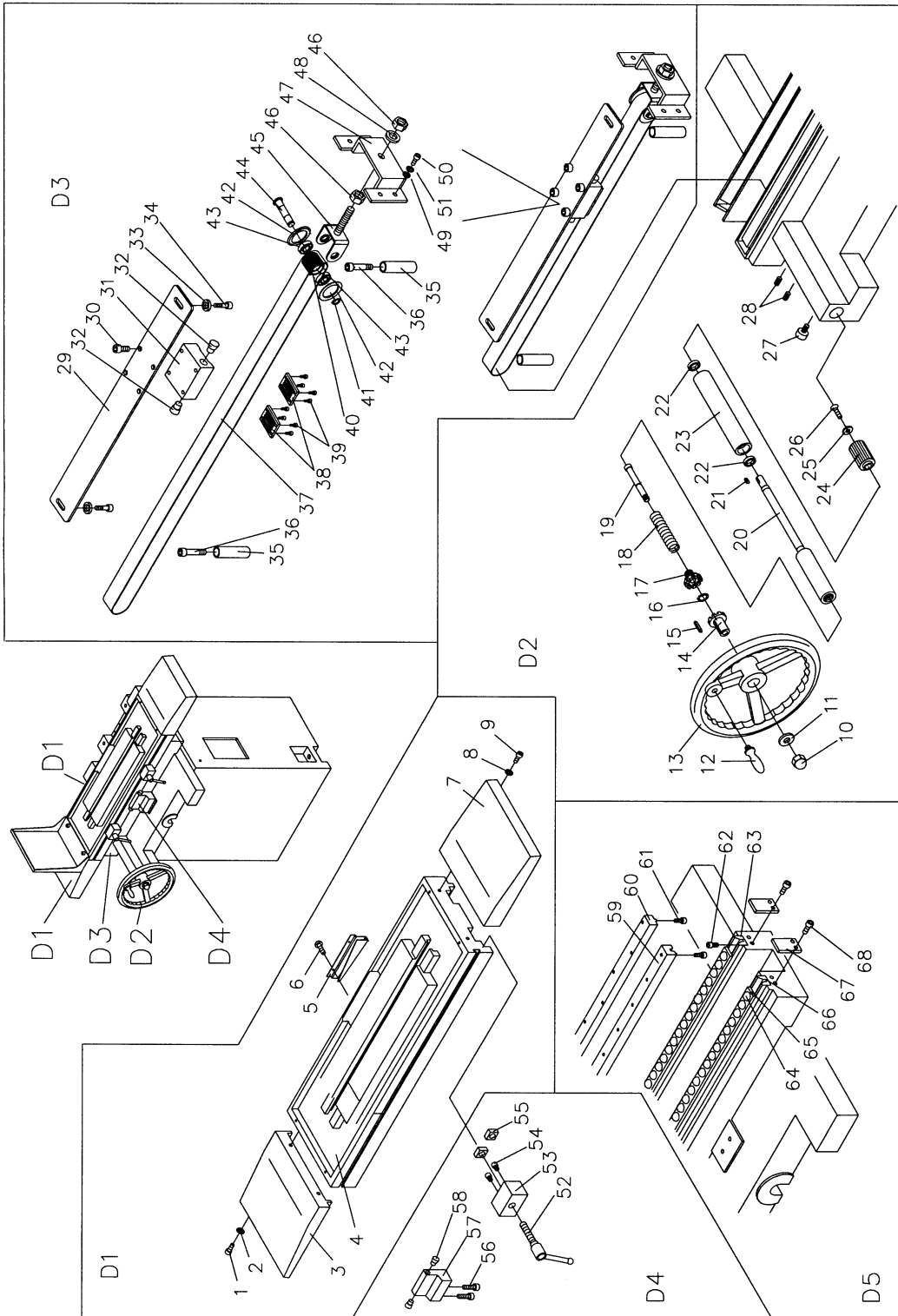


Parts List: Table Assembly

Index No.	Part No.	Description	Size	Qty
D1	618M1-04D1	Table Assembly		1
1	TS-1504051	Socket Head Cap Screw	M8x25	2
2	TS-1550061	Flat Washer	M8	2
3	618M1-043	Left End Cover		1
4	618M1-044	Table		1
5	618M1-045	Anti-Water Plate		1
6	TS-1532032	Phillips Pan Head Machine Screw	M4x10	2
7	618M1-047	Right End Cover		1
8	TS-1550061	Flat Washer	M8	2
9	TS-1504051	Socket Head Cap Screw	M8x25	2
D2	618M1-04D2	Longitudinal Handwheel		1
10	TS-2331121	Cap Nut	M12	1
11	TS-1550081	Flat Washer	M12	1
12	618M1-0412	Knob		1
13	618M1-0413	Handwheel		1
14	618M1-0414	Clutch Gear		1
15	KEY5518	Woodruff Key	5x5x18 mm	1
16	618M1-0416	C Ring	Ø12	1
17	618M1-0417	Clutch Gear		1
18	618M1-0418	Spring		1
19	618M1-0419	Draw Bar		1
20	618M1-0420	Transmit Shaft		1
21	618M1-0421	Wood Ruff Key	4x4x12 mm	1
22	618M1-0422	Snap Ring	DHK6903ZZ	1
23	618M1-0423	Transmit Shaft Sleeve		2
24	618M1-0424	Pinion Gear		1
25	618M1-0425	Setting Block		1
26	TS-1502041	Socket Head Cap Screw	M5X16	1
27	618M1-0427	Lock Screw		1
28	TS-1523021	Socket Set Screw	M6x8	2
D3	618M1-04D3	Longitudinal Transmission Assy		1
29	618M1-0429	Fixed Plate		1
30	TS-1502041	Socket Head Cap Screw	M5x16	4
31	618M1-0431	Fixed Seat		1
32	618M1-0432	Striking Block		2
33	TS-1550041	Flat Washer	M6	2
34	TS-1503051	Socket Head Cap Screw	M6x20	2
35	618M1-0435	Limits Fixed Block		2
36	TS-1503131	Socket Head Cap Screw	M6x60	2
37	618M1-0437	Timing Belt	564XL/5SUS	1
38	618M1-0438	Press Plate		2
39	TS-1501021	Socket Head Cap Screw	M4x8	8
40	618M1-0440	Idle Pulley		1
41	5515607	Snap Ring	S-10	1
42	618M1-0442	Limit Plate		2
43	BB-6900	Bearing	6900ZZ	2
44	618M1-0444	Pulley Shaft		1
45	618M1-0445	Draw Bar		1
46	TS-1540071	Hex Nut	M10	2
47	618M1-0447	Draw Bar Fixed Plate		1
48	TS-1550071	Flat Washer	M10	1
49	TS-1523021	Socket Set Screw	M6x8	2
50	TS-1503041	Socket Head Cap Screw	M6x20	2
51	TS-1550051	Flat Washer	M6	2

D4	618M1-04D4	Longitudinal Travel Set	1
52	618M1-0452	Handle	M8x35L 2
53	618M1-0453	Adjusting Block	2
54	TS-0206022	Socket Head Cap Screw	10-32x1/2" 4
55	618M1-0455	Square Nut	4
56	TS-1504051	Socket Head Cap Screw	M8x25 2
57	618M1-0457	Setting Block	1
58	618M1-0458	Striking Plate	2
D5	618M1-04D5	Bearing Cover Plate	1
59	SG1128	Table Slide Way-front	1
60	SG1127	Table Slide Way-rear	1
61	TS-1503031	Socket Head Cap Screw	M6x14 18
62	TS-1292031	Hex Cap Screw	M6x14 20
63	618M1-0463	Saddle Slide Way	1
64	618M-96	Steel Ball	D5/8" 44
65	618M1-0465	Steel Ball Protecting Plate	2
66	618M1-0466	Saddle Slide Way	1
67	618M1-0467	End Plate	2
68	TS-1292021	Hex Cap Screw	M6x8 4

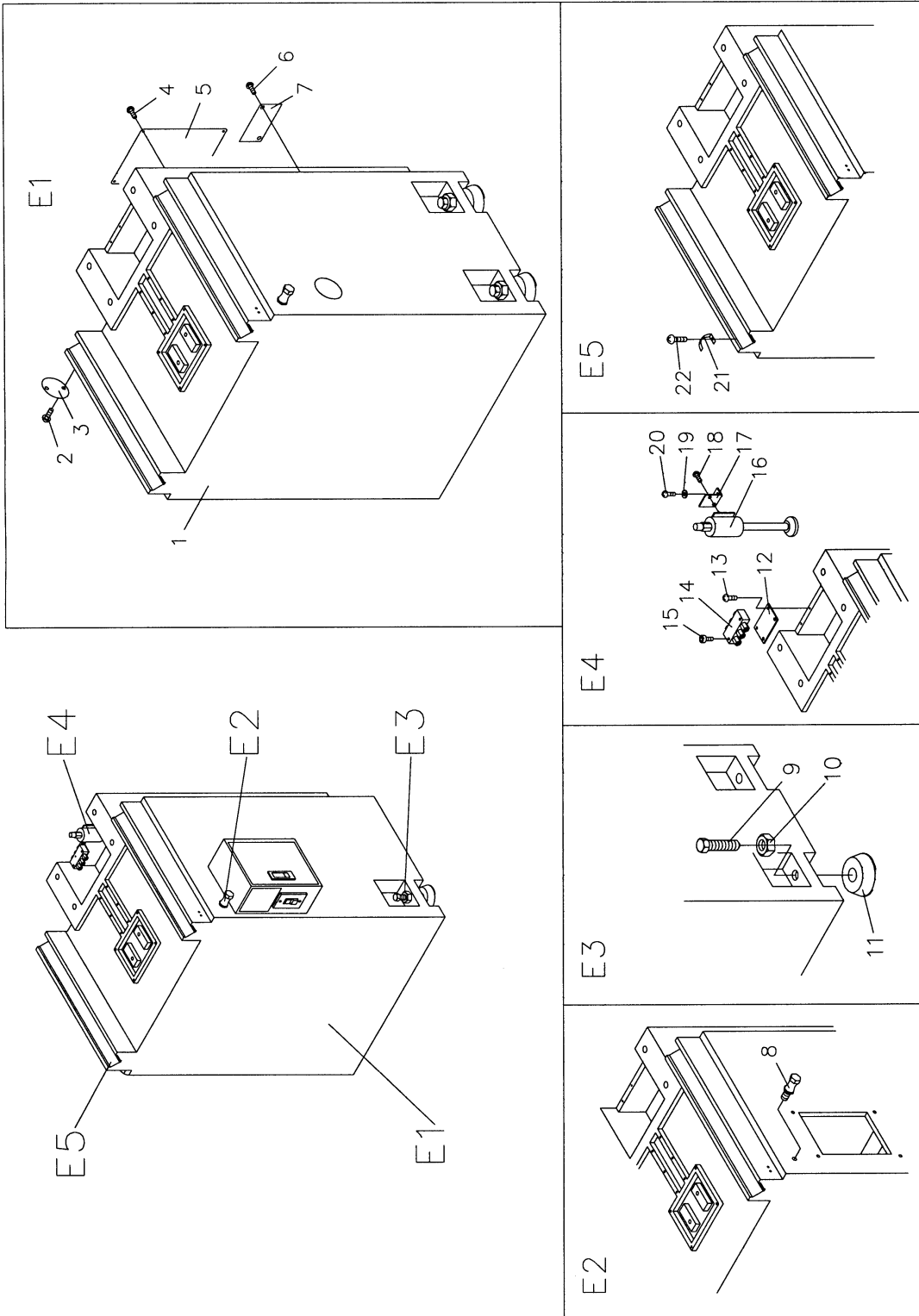
Table Assembly



Parts List: Base Assembly

Index No.	Part No.	Description	Size	Qty
E1	618M1-05E1	Base Assembly		1
1	618M1-051	Base		1
2	TS-2284101	Phillips Pan Head Machine Screw	M4x6	2
3	618M1-053	Base Cover		1
4	TS-2285102	Phillips Pan Head Machine Screw	M5x8	4
5	SG1006	Rear Dust Fender		1
6	TS-2285102	Phillips Pan Head Machine Screw	M5x8	2
7	618M1-057	Cover		1
E2/8	SG1009	Lifting Bolt		4
E3	618M1-05E3	Leveling Set		1
9	SG1012	Leveling Screw		3
10	618M-202	Hex Nut	M22	3
11	SG1013	Leveling Plate		3
E4	618M1-05E4	Lubrication System		1
12	618M1-0512	Lubrication Oil Plate		1
13	TS-2284101	Phillips Pan Head Machine Screw	M4x8	2
14	618M-190	Oil Distributor	B3, D6	1
15	TS-1501041	Socket Head Cap Screw	M4x12	2
16	618M-188	Pump	YEM-250IL	1
17	SG1124	Switch Bracket		1
18	TS-2286102	Phillips Pan Head Machine Screw	M6x8	2
19	TS-1550021	Flat Washer	M4	2
20	TS-2284102	Phillips Pan Head Machine Screw	M4x8	2
E5	618M1-05E5	Oil Wiper Set		1
21	618M1-0521	Copper Wiper		4
22	TS-2284101	Phillips Pan Head Machine Screw	M4x6	4

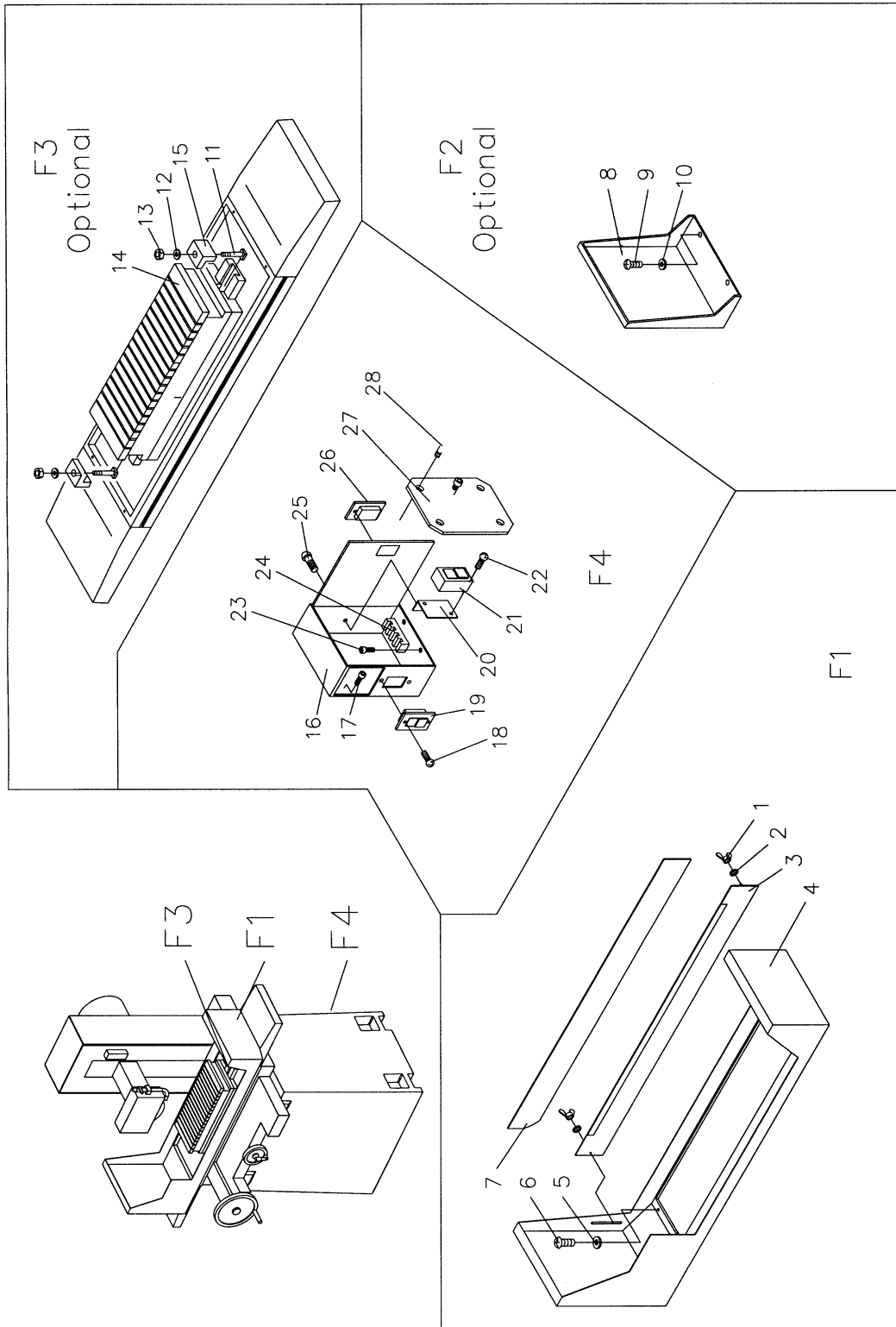
Base Assembly



Parts List: Guard and Electrical Assembly

Index No.	Part No.	Description	Size	Qty
F1	618M1-06F1	Splash Guard Set		1
1	618M-212	Wing Nut	DCN5M	2
2	TS-1550031	Flat Washer	M5	2
3	SG1119	Rear Splash Plate		1
4	618M1-064	Guard		1
5	TS-1550041	Flat Washer	M6	4
6	TS-2286105	Phillips Pan Head Machine Screw	M6x20	4
7	618M1-067	Front Splash Plate		2
F2	618M1-06F2	Splash Guard Set (Optional)		1
8	618M1-068	Left Hand Splash Guard		1
9	TS-1503061	Socket Head Cap Screw	M6x25	2
10	TS-1550041	Flat Washer	M6	2
F3	618M1-06F3	Table Magnetic Chuck Set (Optional)		1
11	618M1-0611	T-Nut		2
12	TS-1550081	Flat Washer	M10	2
13	TS-1540071	Hex Nut	M10	2
14	618M1-0614	Magnetic Chuck	6"x18"	1
15	618M1-0615	Chuck Fixed Block		2
F4	618M1-06F4	Switch Assembly		1
16	618M1-0616	Control Box		1
17	TS-1504041	Socket Head Cap Screw	M8x14	2
18	TS-2284082	Phillips Pan Head Machine Screw	M4x8	2
19	618M1-0619	Push Button Switch	3P	1
20	618M1-0620	Switch Bracket		1
21	618M1-0621	Switch		1
22	TS-2284101	Phillips Pan Head Machine Screw	M4x6	2
23	TS-1532042	Phillips Pan Head Machine Screw	M4x12	2
24	618M1-0624	Terminal Seat	4P	1
25	TS-2285101	Phillips Pan Head Machine Screw	M5x8	2
26	618M1-0626	Door Lock		1
27	618M1-0627	Electrical Board		1
28	TS-1503031	Socket Head Cap Screw	M6x10	4

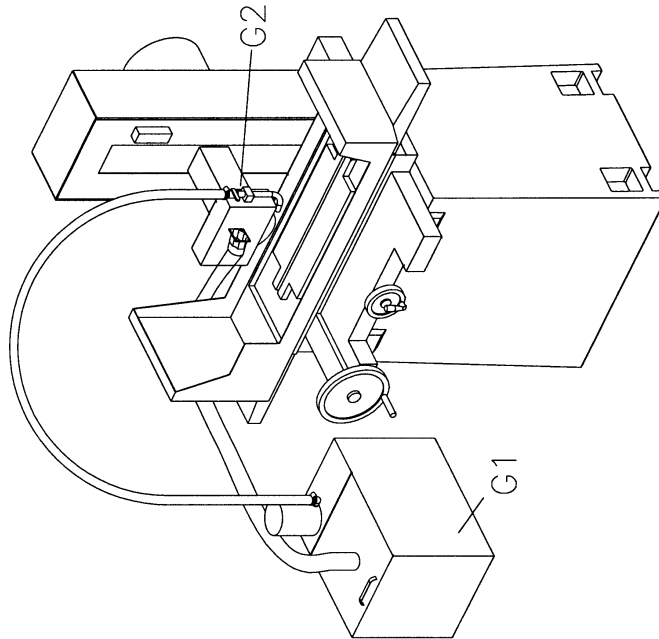
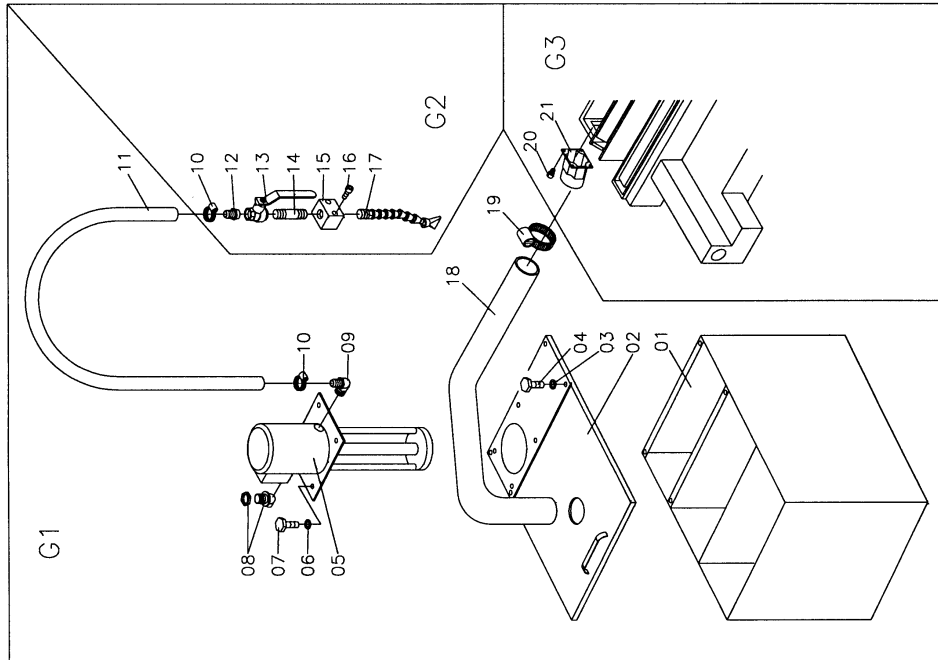
Guard and Electrical Assembly



Parts List: Coolant System

Index No.	Part No.	Description	Size	Qty
G1	618M1-07G1	Coolant System		1
1	618M1-071	Tank		1
2	618M1-072	Motor Fixed Plate		1
3	TS-1550041	Flat Washer	M6	4
4	TS-1482031	Hex Cap Screw	M6x16	4
5	618M1-075	Coolant Pump	A-1/8HP	1
6	TS-1550041	Flat Washer	M6	4
7	TS-1482031	Hex Cap Screw	M6X16	4
8	618M1-078	Nylon Cable Connector	S21-0003	1
9	618M1-079	Coolant Hose Connector	1/2"x1/2"E	1
10	618M1-0710	Hose Clamp	2-1/2"	2
11	618M-227	Inlet Hose	2"x48"L	1
G2	618M1-07G2	Coolant Nozzle Assembly		1
12	618M1-0712	Connector	3/8"x1/2"E	1
13	618M1-0713	Valve	3/8"	1
14	618M1-0714	Connector	3/8"x2"	1
15	618M1-0715	Nozzle Seat		1
16	TS-1502071	Socket Head Cap Screw	M5x30	2
17	618M1-0717	Nozzle	3/8"x6"L	1
18	618M1-0718	Coolant Hose	1/2"x98"L	1
19	618M1-0719	Hose Clamp	3/4"	2
G3	618M1-07G3	Complete Water Outlet		1
20	TS-1501031	Socket Head Cap Screw	M4x10	4
21	SG1041	Water Outlet		1

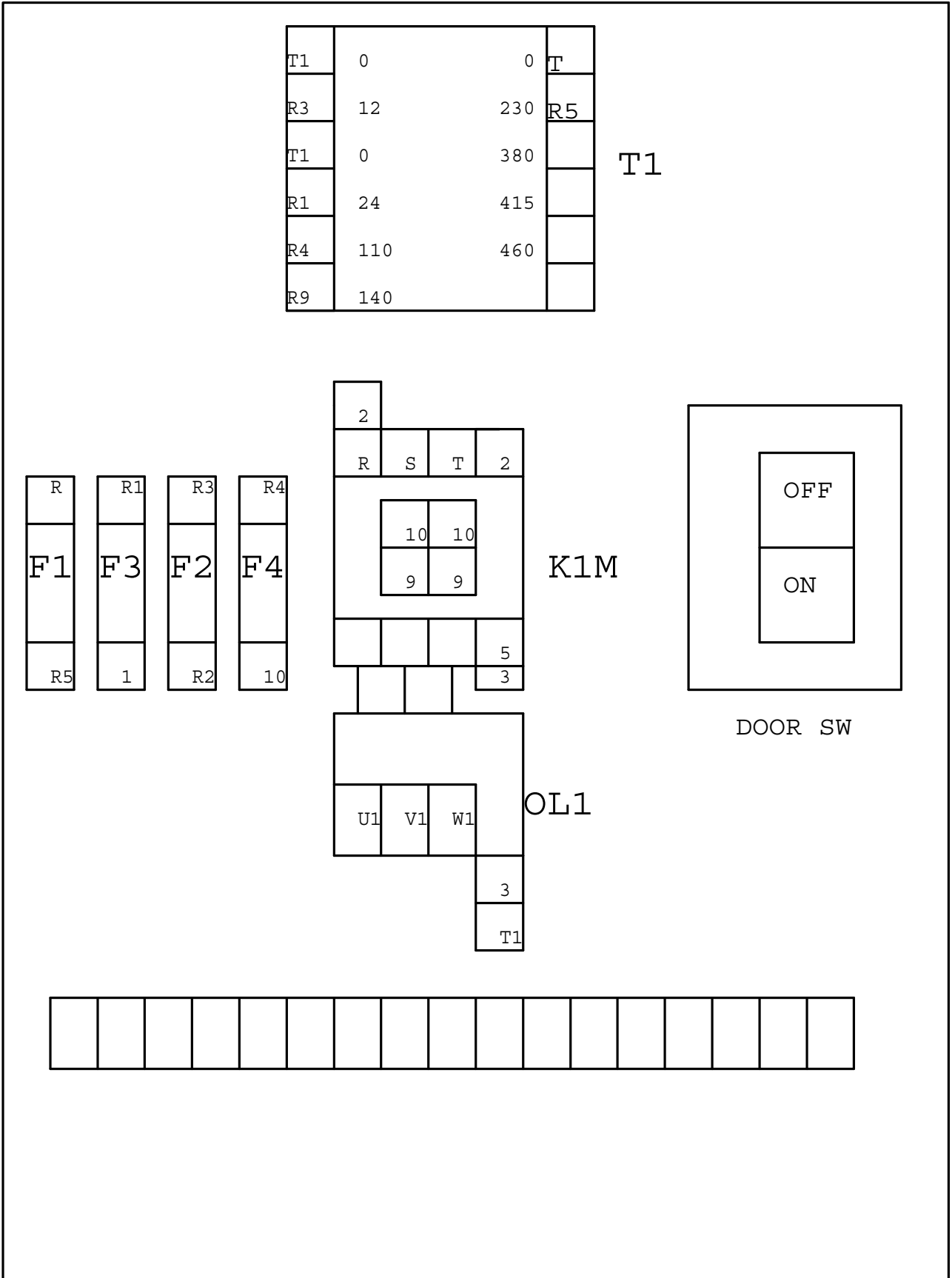
Coolant System



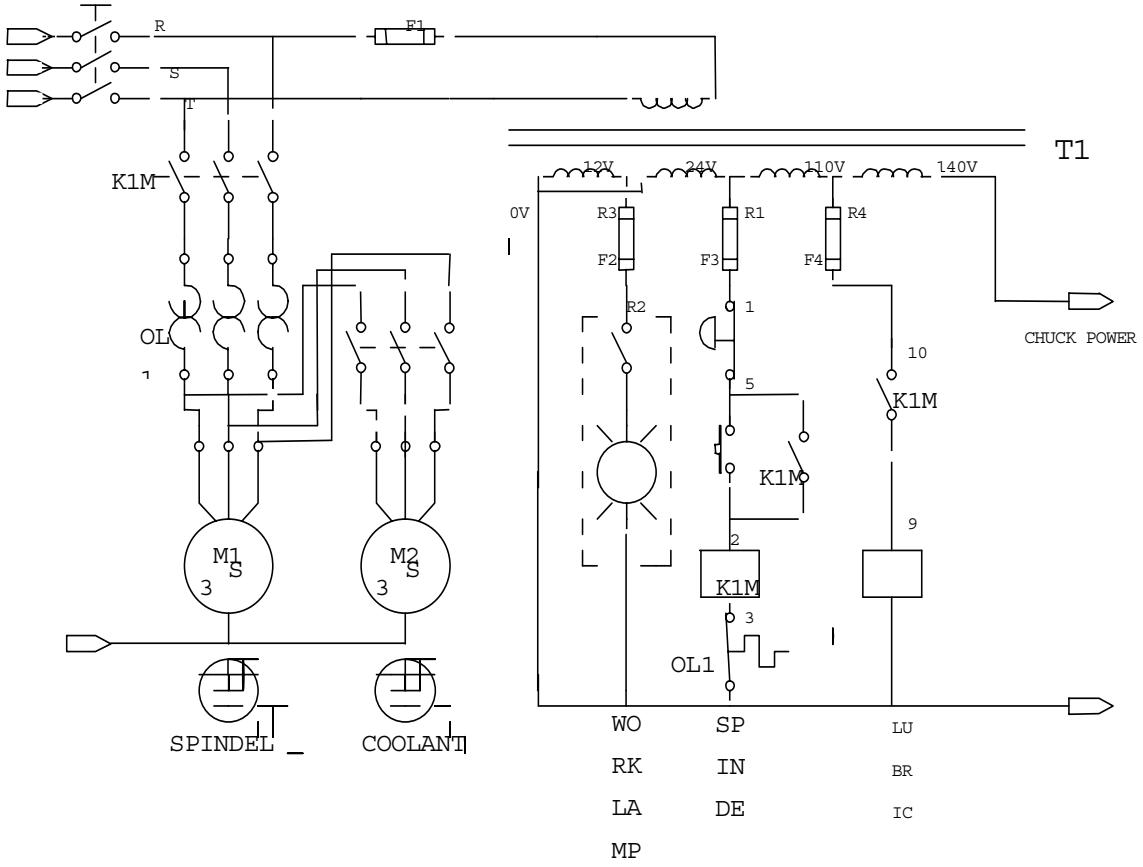
Parts List: Electrical Panel

Index No.	Part No.	Description	Size	Qty
T1.....	618M1-08T1.....	Transformer.....		1
K1M.....	618M1-08K1M.....	Magnetic Contactor.....		1
OL.....	618M1-08OL.....	Overload.....		1
F1.....	618M1-08F1.....	Low Voltage Fuse.....		1
F2.....	618M1-08F2.....	Low Voltage Fuse.....		1
F3.....	618M1-08F3.....	Low Voltage Fuse.....		1
F4.....	618M1-08F4.....	Low Voltage Fuse.....		1
DS.....	618M1-08DS.....	Door Switch.....		1

Electrical Panel



Electrical Connections





WMH Tool Group
2420 Vantage Drive
Elgin, Illinois 60123
Phone: 800-274-6848
www.wmhtoolgroup.com