FG5000/10000

Flywheel

Grinder

Instruction Manual and Parts List

Van Norman 500 57th St., Marion, IA 52302 888-855-1789 319-377-9101 (FAX)

Equipment specifications, options and accessories subject to change without notice.

WARRANTY

Flywheel Grinders, 777 and 204C Brake Lathes

Van Norman will repair and/or replace, free of charge (FOB factory) all such defective parts, only when returned to factory with shipping charges prepaid. This warranty does not cover parts and supplies (wheel dresser/diamonds/abrasives) consumed in normal operation of the machine.

Van Norman disclaims all other warranties, expressed or implied, as to the quality of any goods, including implied warranties of MERCHANTABILITY and FITNESS FOR PARTICULAR PURPOSES. UNDER NO CIRCUMSTANCES WHATSOEVER, SHALL **Van Norman** BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON LOST GOODWILL, LOST RESALE PROFITS, WORK STOPPAGE, IMPAIRMENT OF OTHER GOODS OR ARISING OUT OF BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, BREACH OF CONTRACT, NEGLIGENCE OR OTHERWISE, EXCEPT ONLY IN THE CASE OF PERSONAL INJURY.

Because of **Van Norman's** constant program of product improvement, specifications are subject to change without notice.

VAN NORMAN **PROVIDES A LIMITED WARRANTY ON PRODUCTS WHEN PURCHASED IN A NEW AND UNUSED CONDITION TO BE FREE FROM DEFECTIVE MATERIAL OR WORKMANSHIP FROM DATE OF PURCHASE FOR A PERIOD OF ONE YEAR.**

This warranty does not apply to a product that has been purchased in used condition, that has failed due to improper installation, repairs, service or that has sustained damage caused by accident, improper use or shipment.

For further information or questions, please contact **Van Norman at 888-855-1789 or fax 319-377-9101.**

PLEASE RETAIN THIS WARRANTY FOR YOUR RECORDS

RECEIVING SHIPMENT

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

If evidence of damage exists, contact the shipper and ***Van Norman/Kwik-Way Products Inc.*** immediately. Although ***Van Norman/Kwik-Way 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 ***Van Norman/Kwik-Way Products Inc.*** regarding parts or service.

Keep this manual in a safe place.

Date Received: _____

Serial Number: _____

(Serial Number location: Upper left corner at rear of unit)

SAFETY FIRST

This manual has been prepared for the owner and those responsible for the maintenance of this machine. It's 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 Van Norman'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. Van Norman/Kwik-Way 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 Van Norman/Kwik-Way replacement parts and accessories; 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, Van Norman/Kwik-Way Products Inc. disclaims any real or implied warranty and holds itself harmless for any injury or loss that may result from such use.

ELECTRICAL REQUIREMENTS — FG5000

PART #	DESCRIPTION/ELECTRICALS	AMP SERVICE REQUIRED	MINIMUM WIRE SIZE
794-8690-00	208/230V, 60 Hz, 3 Ph	30	12
794-8690-01	208/230V, 60 Hz, 1 Ph	60	8
794-8690-02	460V, 60 Hz, 3 Ph	20	14
794-8690-03	380V, 50 Hz, 3 Ph	20	14
794-8690-04	575V, 60 Hz, 3 Ph	15	14
794-8690-15	230V, 60 Hz, 3 Ph w/10 Hp Motor		
FG5000 w/PowerHead			
794-8688-40	208/230V, 60 Hz, 3 Ph	30	12
794-8688-41	208/230V, 60 Hz, 1 Ph	60	8
794-8688-42	380V, 50 Hz, 3 Ph	20	14
794-8688-43	460V, 60 Hz, 3 Ph	20	14
FG5000 w/PowerHead & AutoGrind™			
794-8688-50	208/230V, 60 Hz, 3 Ph	30	12
794-8688-51	208/230V, 60 Hz, 1 Ph	60	8
794-8688-52	380V, 50 Hz, 3 Ph	20	14
794-8688-53	460V, 60 Hz, 3 Ph	20	14

ELECTRICAL REQUIREMENTS — FG10,000 STANDARD

PART #	DESCRIPTION/ELECTRICALS	AMP SERVICE REQUIRED	MINIMUM WIRE SIZE
FG10,000 w/PowerHead			
794-8688-22	208/230V, 60 Hz, 3 Ph	60	8
794-8688-36	460V, 60 Hz, 3 Ph	30	12
794-8688-35	380V, 50 Hz, 3 Ph	30	12
FG10,000 w/PowerHead & AutoGrind™			
794-8688-06	208/230V, 60 Hz, 3 Ph	60	8
794-8688-38	460V, 60 Hz, 3 Ph	30	12
794-8688-37	380V, 50 Hz, 3 Ph	30	12

SPECIFICATIONS - FG5000

Table Diameter 18”	450 mm	
Flywheel Diameter Capacity	24”	600 mm
Grinding Motor 5 HP	3.5 Kw	
Grinding Motor 3500 RPM		
Vertical Travel w/2.5” Wheel	8.75”	222 mm
Coolant: Capacity, Std.	9.5 gal.	36 liters
Capacity, Opt.	32 gal.	121 liters
Coolant Flow per Minute	19.5 gal.	475 liters
Height, Overall 67“	1600 mm	
Height to Table 34.5”	876 mm	
Space Required	35 x 38”	889 x 965 mm
Shipping Weight		
FG5000	1500 lbs.	675kg
FG5000PCA	1550 lbs.	698kg

SPECIFICATIONS - FG10,000

Table Diameter 18”	450mm	
Grinding Capacity	24”	600mm
Grinding Motor @ 3500 RPM	10HP	7Kw
Vertical Travel/Clearance	10.5”	267mm
Coolant: Capacity, Std.	9.5 gal	36 liters
Capacity, Opt.	32 gal	121 liters
Coolant Flow per Minute	19.5 gal.	475 liters
Height to Table 34.5”	876 mm	
Height, Overall 69”	1753 mm	
Floor Space	35 x 38”	889 x 965 mm
Machine Weight	1550 lbs.	703 kg
Shipping Weight	1700 lbs.	771 kg

STANDARD EQUIPMENT — FG5000/ FG10,000

ITEM	PART #	DESCRIPTION
1	794-8010-64	Centering Cone Bolt 1.875" (47.6 mm)
2	794-8010-65	Centering Cone Bolt 2.375" (60.3 mm)
3	794-8010-66	Centering Cone Bolt 3.375" (87.8 mm)
4	794-8010-72	Centering Cone 1"-1.75" (25.4-44.5 mm)
5	794-8010-74	Centering Cone 1.312"-2" (33.3-50.8 mm)
6	794-8010-76	Centering Cone 1.75"-2.5" (44.5-63.5 mm)
7	794-8017-93	Centering Cone 2"-2.625" (50.8-66.7 mm)
8	794-8010-78	Centering Cone 2.25"-3" (57.2-76.2 mm)
9	794-8010-80	Centering Cone 2.75"-3.5" (69.9-88.9 mm)
10	794-8010-90	Flange Adaptor 3" (76.2 mm)
11	794-8010-92	Flange Adaptor 4" (101.6 mm)
12	794-8010-94	Flange Adaptor 5" (127 mm)
13	794-8010-97	Flange Adaptor 5.875" (149.2 mm)
14	794-8124-71	Wheel Spacer 1.5" (38.1mm)
15	794-8011-28	Grinding Wheel 4" (101.6 mm) Flaring Cup
16	794-8011-12	Grinding Wheel 6" (152.4 mm) Flaring Cup
17	794-8011-30	Grinding Wheel 6" (152.4 mm) Flaring Cup
18	794-8011-88	Lower Wheel Flange
19	794-8017-44	E-Z Lok Inserts (2)
20	794-8011-52	Leadscrew Lubricant
21	794-8011-40	Coolant Additive, 1 Qt (.946 liter)
22	794-8011-55	Table Lubricant, 2 Qts (.946 liter)
23	794-8033-21	Leveling Bolts (4)
24	000-1035-35	Leveling Bolt Lock Nuts (4)
25	794-8030-58	Leveling Pads (4)
26	794-8639-45	E-Z Lok Insert Extractor
27	794-8013-73	Table Oil Level Gage
28	794-8017-32	T-Handle Hex Wrench
29	794-8017-37	Wrench Set
30	000-0170-60	Wheel Mounting Bolt, 2.75"
31	000-0170-55	Wheel Mounting Bolt, 2.50"
32	000-0170-35	Wheel Mounting Bolt, 1.25"
33	000-0170-27	Wheel Mounting Bolt, 1.00"
34	794-8013-12	O-Ring

STANDARD EQUIPMENT — FG5000/ FG10,000

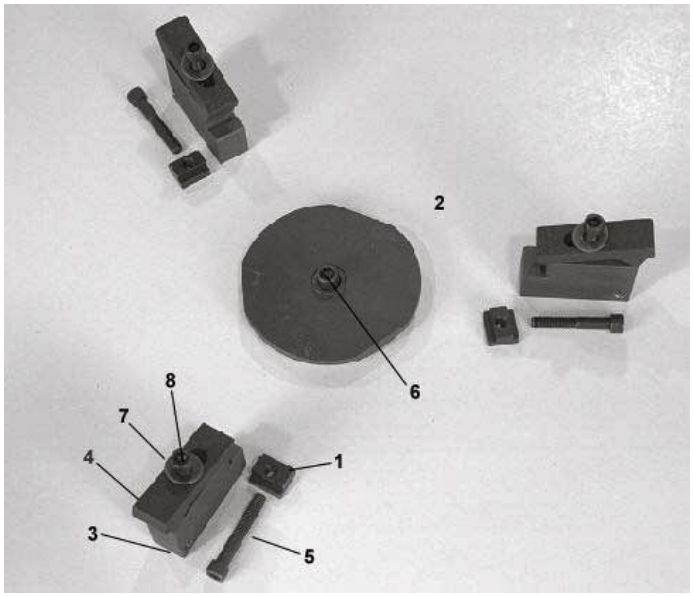
OPTIONAL EQUIPMENT

ITEM	PART #	DESCRIPTION
1	794-8010-67	Centering Cone Bolt 3.5"(88.9 mm)
2	794-8011-41	Coolant Additive, 1 Gal. (3.8 L)
3	794-8011-42	Coolant Additive, 5 Gal. (18.9 L)

Grinding Wheels

1	794-8011-16	Grinding Wheel 6" Flaring Cup
2	794-8011-32	Grinding Wheel 6" Straight Sided
3	794-8011-34	Grinding Wheel 6" Flaring Cup
4	794-8011-36	Grinding Wheel 6" Straight Sided
5	010-0797-03	Grinding Wheel 3" Flaring Cup (Requires 801173 Mounting Adaptor)
6	794-8011-73	Mounting Adaptor 1.75" to .75"
7	794-8011-12	Grinding Wheel 6" Flaring Cup
8	794-8011-30	Grinding Wheel 6" Flaring Cup
9	794-8011-28	Grinding Wheel 4" Flaring Cup
10	794-8687-01	Grinding Wheel 3" Flaring Cup (Requires 868697 Mounting Flange)

VW/UNIVERSAL FLYWHEEL KIT (#794-8685-49)

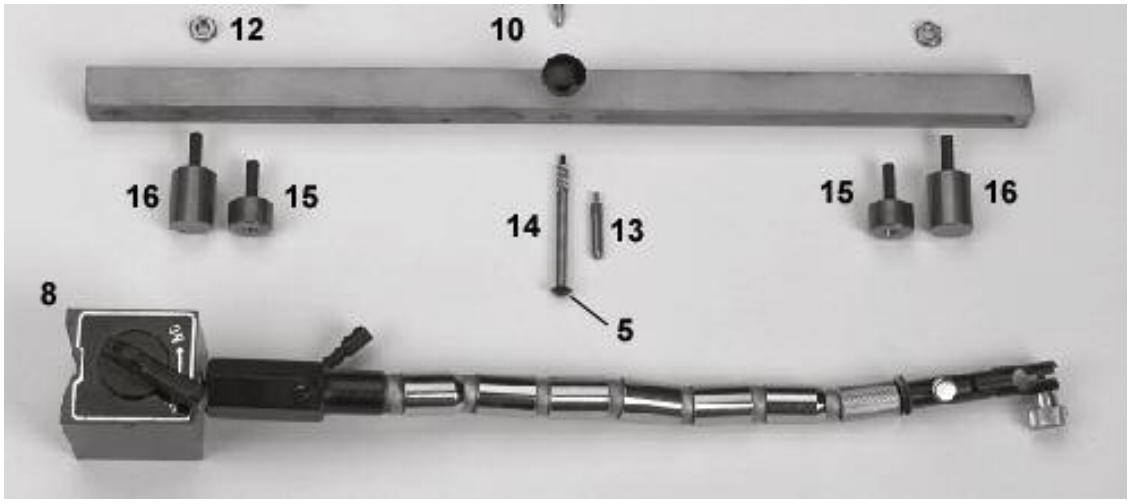


ITEM	PART #	DESCRIPTION
	794-8685-49	VW/Universal Flywheel Kit
1	794-8010-58	Tee Nut 375-16 x .500 (3)
2	794-8012-02	Centering Cone
3	794-8012-03	Tooling Support Block (3)
4	794-8012-04	Tooling Clamp (3)
5	804-8012-06	SHCS .375-16 x 2.250 (3)
6	794-8012-07	SHCS .437-14 x .750
7	000-1155-33	Flat Washer, .375 (3)
8	000-0171-40	SHCS .375-16 x 1.5 (3)

OPTIONAL EQUIPMENT (continued)

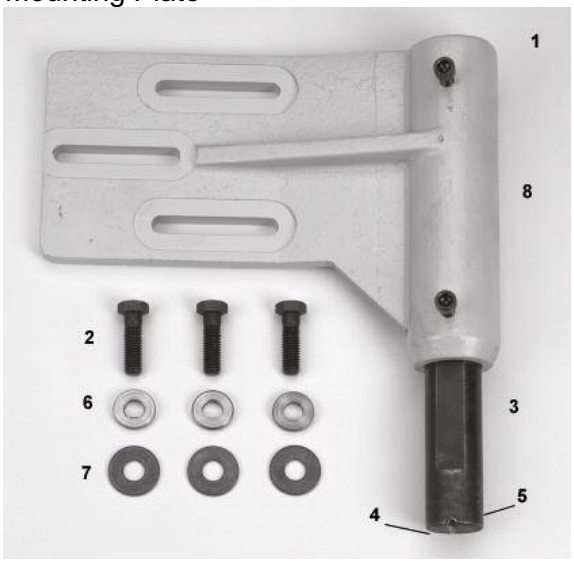
#794-8686-32

ITEM	PART #	DESCRIPTION
	794-8627-83	**Dial Indicator/Indicator Bar Set**
1	794-8013-17	Mounting Adapter (not shown)
2	001-0023-75	Dial Indicator
3	794-8013-20	Indicator Bar
4	794-8013-21	Spacer
5	794-8013-22	Convex Point
6	000-0485-18	SSS .250-20 x .250 (not shown)
7	794-8055-99	SHCS .375-16 x 3.25 Long
8	794-8627-82	Dial Indicator Magnetic Base
9	000-1020-16	.250-28 Jam Nut (not shown)
	794-8627-83	**Indicator Bar Kit**
10	794-8011-91	Knob
11	794-8013-25	Indicator Bar
12	804-8013-29	Hex Nut .250-20, Jam (2)
13	794-8013-33	Indicator Point, 1
14	794-8017-04	Indicator Point, 2.5
15	794-8020-52	Foot Assembly, .500 (2)
16	794-8020-53	Foot Assembly, 1.00 (2)

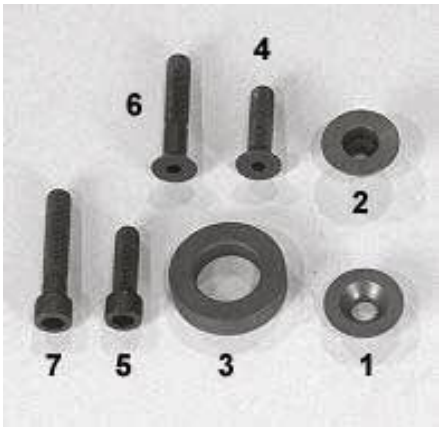


OPTIONAL EQUIPMENT (continued)

ITEM	PART #	DESCRIPTION
	794-8625-27	**Radius Cutter Assembly**
1	000-0170-19	SHCS .375-16 x .750 (2)
2	794-8030-20	HHCS .500-13 x 1.750 (3)
3	794-8084-05	Boring Bar, 1.5" (38.1 mm) Dia.
4	794-8084-06	Boring Tool
5	794-8084-07	SSS .312-18 x .500
6	000-1150-53	Washer .562 x 1.375 (3)
7	794-8011-99	Spacer, Power Column Washer (3)
8	794-8621-28	Mounting Plate

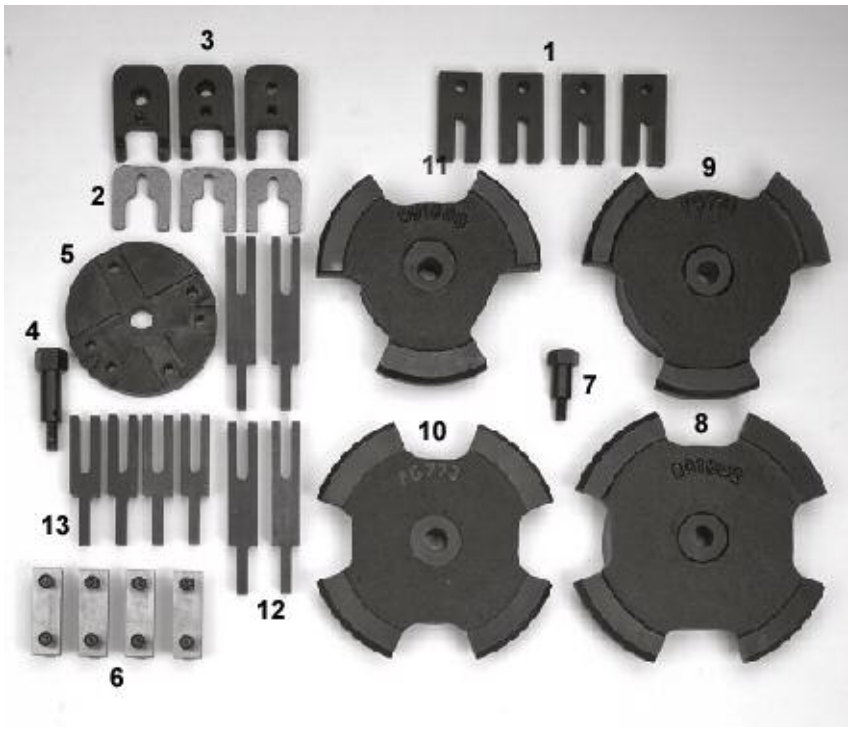


	794-8107-90	**Small Bore/VW Centering Cone Set**
1	794-8010-69	VW Rabbit Centering Cone, 1.38"
2	794-8010-70	Centering Cone, 1.375"
3	794-8010-95	VW Flange Adapter
4	794-8015-96	FSHCS, .437-14 x 2"
5	794-8016-28	SHCS, .437-14 x 1.5"
6	794-8686-99	FSHCS, .437-16 x 2.50"
7	794-8687-14	SHCS, .437-14 x 2.25"



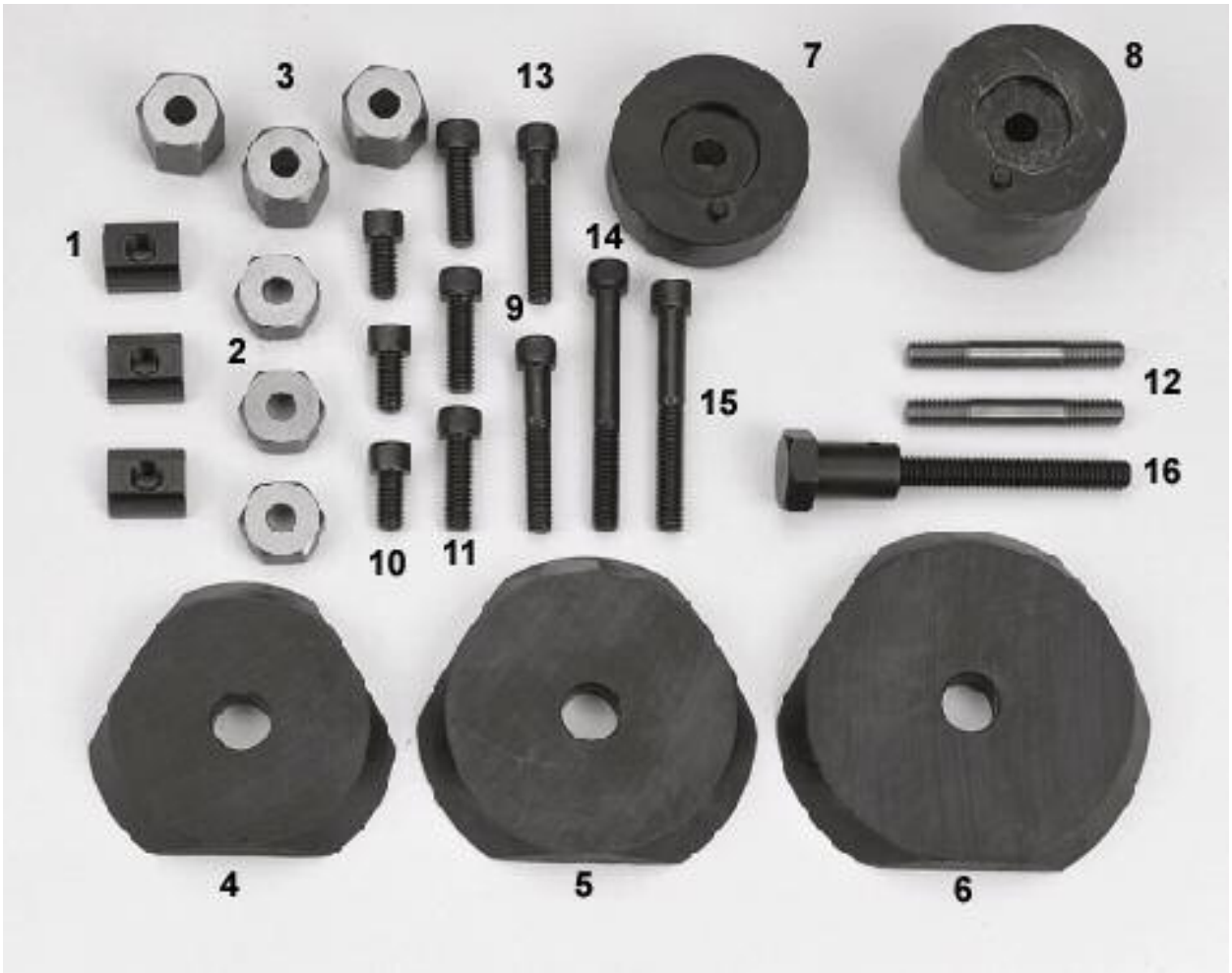
OPTIONAL EQUIPMENT (continued)

ITEM	PART #	DESCRIPTION
	794-8010-40	**Clutch Tooling Kit**
	794-8010-01	BHCS .312-24 x 1.00 (4)not shown
	000-0592-20	BHCS .312-18 x 1.00 (4) not shown
1	794-8010-03	Clutch Diaphram Fastener (4)
	804-8010-05	BHCS .375-16 x .75 (3) not shown
2	794-8010-07	Clamp Plate (3)
3	794-8010-09	V-Plate (3)
4	794-8010-12	Hold Down Bolt Assembly
5	794-8010-16	Center Plate
6	794-8010-19	Parallel Block Assembly (4)
	804-8010-23	Flat Washer (4) not shown
7	794-8010-30	Hold Down Bolt Assembly
8	794-8010-32	Clutch Adapter, 9.5
9	794-8010-34	Clutch Adapter, 8.75
10	794-8010-36	Clutch Adapter, 9.0
11	794-8010-38	Clutch Adapter, 7.5
	794-8010-58	Tee Nut, .375-16 x .50 (6) not shown
	000-0170-19	SHCS .375-16 x .75 (2) not shown
	000-0170-27	SHCS .375-16 x 1.00 (4) not shown
	000-0171-40	SHCS .375-16 x 1.50 (6) not shown
	804-8016-58	BHCS .375-16 x 1.00 (3) not shown
12	794-8047-86	Long Finger, 6" (4)
13	794-8047-87	Long Finger, 4.5" (4)



OPTIONAL EQUIPMENT (continued)

	794-8107-88	**Heavy Duty Universal Centering Cone & Spacer Set**
1	794-8010-58	Tee Nut .375-16 x .500 (3)
2	794-8010-59	Hex Stool, 0.5" (12.7 mm) (3)
3	794-8687-12	Hex Stool, 1" (25.4 mm) (3)
4	794-8010-82	Centering Cone, 4" (101.6 mm)
5	794-8010-84	Centering Cone, 4.5" (114.3 mm)
6	794-8010-86	Centering Cone, 5" (127.0 mm)
7	794-8011-89	Wheel Spacer, 1" (25.4 mm)
8	794-8011-90	Wheel Spacer, 2" (50.8 mm)
9	000-0170-94	SHCS .375-16 x 2.25
10	000-0170-19	SHCS .375-16 x .75 (3)
11	000-0170-35	SHCS .375-16 x 1.25 (3)
12	794-8016-19	Stud .375-16 x 2.875 (2)
13	000-0170-51	SHCS .375-16 x 2.00
14	794-8055-99	SHCS .375-16 x 3.25
15	000-0170-65	SHCS .375-16 x 3.00
16	794-8677-99	Centering Cone Bolt, 4.25"

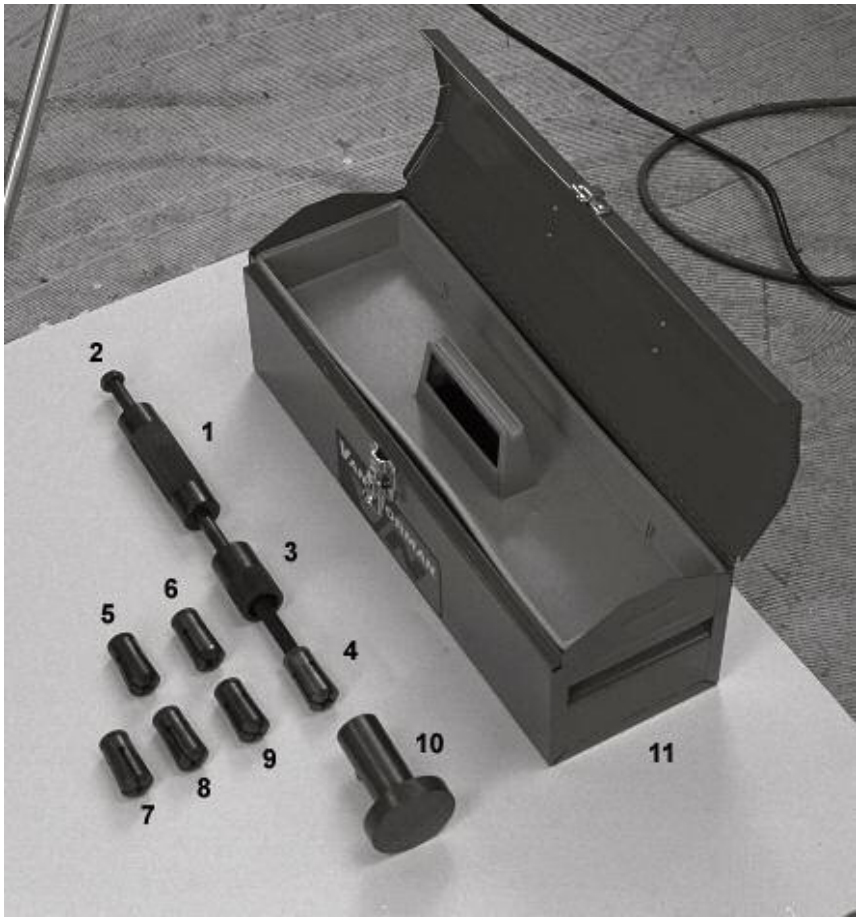


OPTIONAL EQUIPMENT (continued)

ITEM	PART #	DESCRIPTION
	794-8633-33	**ATP5000 Transmission Pump Kit**
	794-8632-07	Centering Hub, Pump Body
	794-8633-29	Adaptor Disc, .910
	794-8636-23	Adaptor Disc, 2.062 ID
	794-8632-22	Adaptor Disc, 2.121 ID
	794-8632-21	Adaptor Disc, 2.183 ID
	794-8632-20	Adaptor Disc, 2.613 ID
	794-8632-27	Adaptor Disc, 2.723 ID
	794-8632-19	Adaptor Disc, 2.751 ID
	794-8632-26	Adaptor Disc, 2.825 ID
	794-8632-25	Adaptor Disc, 2.925 ID
	794-8632-18	Adaptor Disc, 2.965 ID
	794-8632-24	Adaptor Disc, 2.980 ID
	794-8632-28	Adaptor Disc, 2.057 Pilot Dia.
	794-8632-09	Alignment Plate
	794-8632-17	Brass Wire Brush
	794-8632-11	Centering Disc
	794-8632-07	Centering Hub
	794-8633-30	Counter Boring Tool
	794-8105-29	Dressing Stick, Hand Held
	794-8664-42	Flanged Nut .5" (12.7 mm)
	010-0797-03	Grinding Wheel, 3" (76.2 mm)
	794-8633-32	Grinding Wheel, 4" (101.6 mm)
	794-8632-13	Hold Down Stud
	794-8011-73	Mounting Adaptor
	794-8633-31	Peg Board

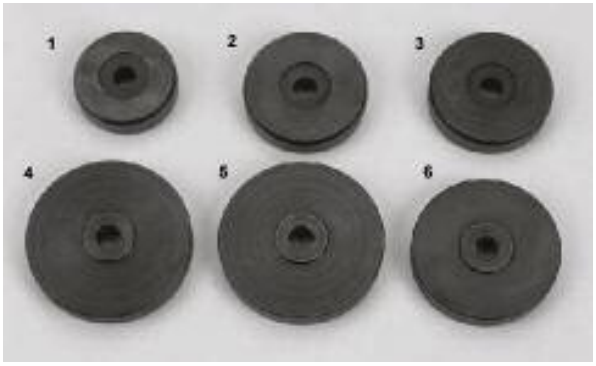
OPTIONAL EQUIPMENT (continued)

		Flywheel Dowel Pin Puller Kit
	794-8684-78	**Popular Automotive Domestic & Import Kit**
1	794-8688-44	Slide Hammer
2	794-8688-45	Slide Rod
3	794-8688-46	Tightening Sleeve
4	794-8688-56	1/4" Collet (6.35mm)
5	794-8688-57	5/16" Collet (7.93mm)
6	794-8688-58	3/8" Collet (9.53mm)
7	794-8688-59	7/16" Collet (11.10mm)
8	794-8688-62	5mm Collet
9	794-8688-63	6mm Collet
10	794-8688-47	Removal Stand
11	794-8688-48	Storage Case
		Optional Collets
	794-8688-55	3/16" Collet (4.75mm)
	794-8688-60	1/2" Collet (12.7mm)
	794-8688-89	9/16" Collet (14.28mm)
	794-8688-61	4mm Collet
	794-8688-64	8mm Collet
	794-8688-65	10mm Collet
	794-8684-77	0"-4" Depth Micrometer (0-101.6mm) (Not Shown)



OPTIONAL EQUIPMENT (continued)

	794-8680-18	**Heavy Duty Centering Adapter Set**
1	794-8657-37	Ford/Cat 205, 2.040" (51.8 mm)
2	794-8657-38	Mack 305, 2.435" (61.8 mm)
3	794-8657-39	Ford Truck, 2.495" (63.4 mm)
4	794-8657-40	Cum/GMC 306, 2.830" (71.9 mm)
5	794-8657-41	Ford 307, 3.149" (79.9 mm)
6	794-8657-42	Ford Truck, 3.255" (82.7 mm)



SELECTING FLYWHEEL GRINDING STONES

Harder flywheels require softer grinding wheels, and softer flywheels need harder grinding wheels. Change the stone to match the flywheel being ground. It may be necessary to experiment to find the best stone suited to a specific application.

STONE HARDNESS	PART NO. REFERENCE NO.	SIZE/TYPE COLOR	WORKPIECE HARDNESS MATERIAL
	794-8011-34 FG1058	6" Diameter Flared Cup Ruby	For soft steel flywheels only. The most free-cutting stone on steel.
	794-8011-36 FG1058S	6" Diameter Straight Side Ruby	Same composition as 801134 but with straight sides to grind flat flywheels only.
	794-8687-01 FG1059	3" Diameter Flared Cup Gray	For crankshaft mounting flanges, pressure plate surfaces, automatic trans. pump bodies and covers.
	794-8011-30 FG1057	6" Diameter Flared Cup Ruby	Best general purpose wheel for cast iron and medium steel. Requires very little dressing.
	794-8011-32 FG1057S	6" Diameter Straight Side Ruby	Same composition as 801130 but with straight sides to grind flat flywheels only.
	794-8633-32 FG1060	4" Diameter Flared Cup White	Best wheel for grinding aluminum.
	794-8011-28 FG1056	4" Diameter Flared Cup White	For small, imported flywheels. Works well on cast iron and medium steel.
	794-8011-12 FG1049	6" Diameter Flared Cup Ruby	For use on some cast iron and ductile iron. Special grit tends to be fast cutting and long wearing.
	794-8011-16 FG1050	6" Diameter Flared Cup White	Best all-around stone for billet steel. Softer wheel requires minimum dressing.

NOTE: 10% Discount on Grinding Wheels in Lots of 10 Each

MACHINE DESCRIPTION

1. Emergency Stop
2. Table On/Off
3. Grinder Motor On/Off
4. Coolant Pump Switch
5. PowerHead Up/Down
6. AutoGrind™ On/Off
7. AutoGrind™ Grinding Rate
8. Coolant Pump/Reservoir Access
9. Table
10. Coolant Nozzle
11. Grinding Wheel
12. Grinding Motor
13. Column Lock Handle
14. Micrometer Feed Dial
15. Wheel Dresser
16. Fine Feed Hand Knob
17. Manual Feed Handwheel

Stamdard Controls

PowerHead Controls

PowerHead w/Auto Grind Controls

MACHINE SET-UP

1. Remove protective covering from around machine. Remove bolts from four corner pads to free machine from skid. Remove all tooling packages from machine and set aside. Using the fine feed handknob, raise the grinding head motor off the wood shipping block and discard. Unlock the grinding head column lock handle (Figure 1) and swing the grinding head motor so it is centered over the table. Relock the motor flange.

Figure 1

2. A forklift is recommended for removing the machine from the skid and setting in place. Lift only from the base cabinet **from the rear** (Figure 2).

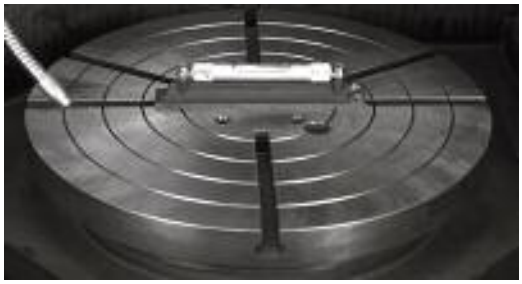
Figure 2

MACHINE SET-UP (continued)

3. Locate machine in desired area. Install leveling bolts, lock nuts and leveling pads in each corner of the machine (Figure 3). Place a level on the table (Figure 4). Level the machine side-to-side and front to back adjusting the four leveling bolts. Tighten lock nuts when level.

Figure 3

Figure 4



4. Remove rust preventative from machine using an approved commercial solvent.

5. Unpack tool board and install the 2 - wooden pegs on the bottom of the back side of the tool board. This sets the tool board at a slight angle when mounted on machine. Install the tool board on right side of machine using the 2 - 1/4" screws provided. Next, screw the tool tray to the top of the tool board using the 3 - screws provided (Figure 5).

6. Unpack the Standard Tooling, clean with an approved commercial solvent, and place on the tool board.

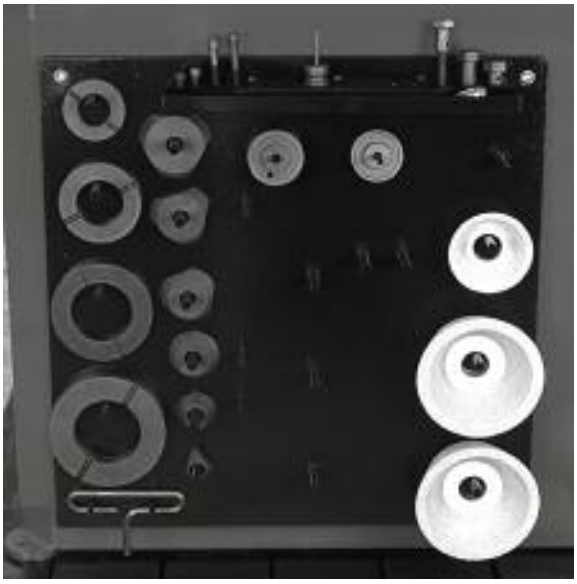


Figure 5

MACHINE SET-UP (continued)

7. Install the plastic handle in wheel dresser (Figure 6)

Figure 6

FILL OIL RESERVOIR

1. Remove the large flat head cap screw from the machine table (Figure 7). Add approximately one quart Table Lubricant #794-8011-55 to the reservoir through the filler hole (Figure 8) and replace cap screw. Make certain the small O ring is in place on the underside of cap screw.

Figure 7

Figure 8

2. Remove the plastic oil container at the rear of the machine from its base by turning counterclockwise (Figure 9). Invert the container and fill with Table Lubricant 794-8011-55 through the bottom tube. Quickly invert and re-install the oil container, tighten hand tight only.

FILL OIL RESERVOIR (continued)

Figure 9

After installation, the oil level in the plastic container will start to drop. The base of the oiler has been preset at the factory to the proper height. When the oil level in the reservoir in the base casting reaches the preset height the level in the plastic container will stabilize. It may be necessary to refill the container after level has stabilized.

3. A depth gage is provided with the machine for checking the oil level through the hole in the table (Figure 10A). The overall length of the gage pin should be set to equal the thickness of the machine table (Figure 10B). Set pin to bottom of table and tighten set screw on side of gage (Figure 10C). The oil level line marked on the gage pin is 1/16" above the bottom of the table.

Figure 10C

Figure 10A

Figure 10B

4. In the center hole of the table is a 7/16"-14 set screw. This was installed during shipping of the machine to keep any debris out of the hole. Remove set screw and discard.

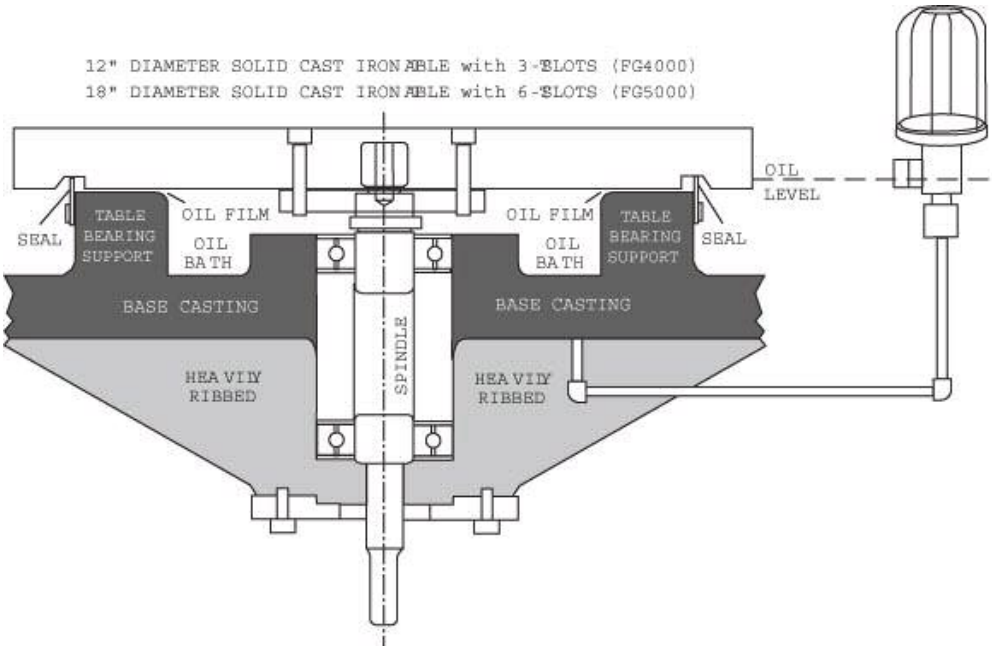
FILL COOLANT TANK

1. Open front access door and slide coolant tank out of machine (Figure 11). Pour one quart of #794-8011-40 Coolant Additive into the tank and add water to within approximately one inch of the top. Slide coolant tank back into machine. Direct coolant drain hose to the inside of the tank. After machine is wired, turn on coolant pump and set flow by turning valve located outside the sheet metal coolant shroud (Figure 12).

Figure 11

Figure 12

CAUTION: Excessive build up of grinding sludge in the coolant may cause premature failure of the coolant pump. Clean out coolant tank every 50 flywheels.



WIRE MACHINE

1. Electrical hookup to machine should be done by a qualified electrician. The power source supplied must be the same as specified on the Serial Plate which is attached on the motor flange (Figure 13).

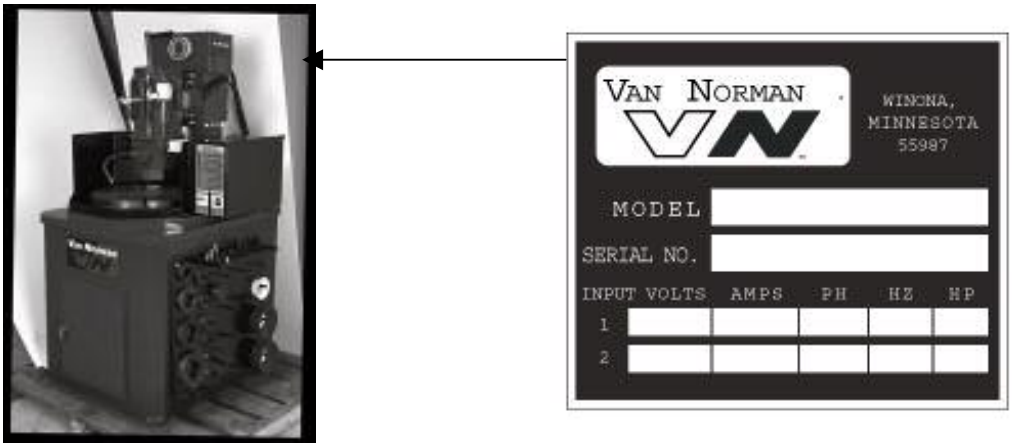


Figure 13

2. Connections are made at the fuse block located inside the electrical box mounted on the side of the machine. Refer to the diagram for a three phase hookup (Figure 14) and a single phase hookup (Figure 15). Please note that single phase machines require a 4 wire hookup; which includes 2 wires to hot, 1 wire to ground and 1 wire to neutral. The machine will not operate without the neutral connection.

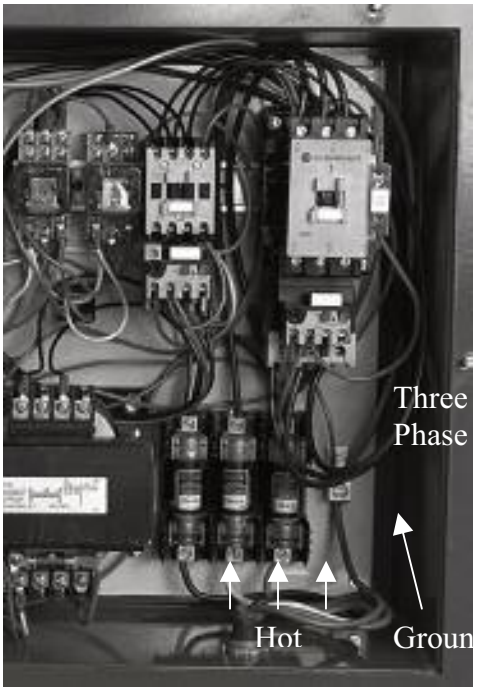


Figure 14

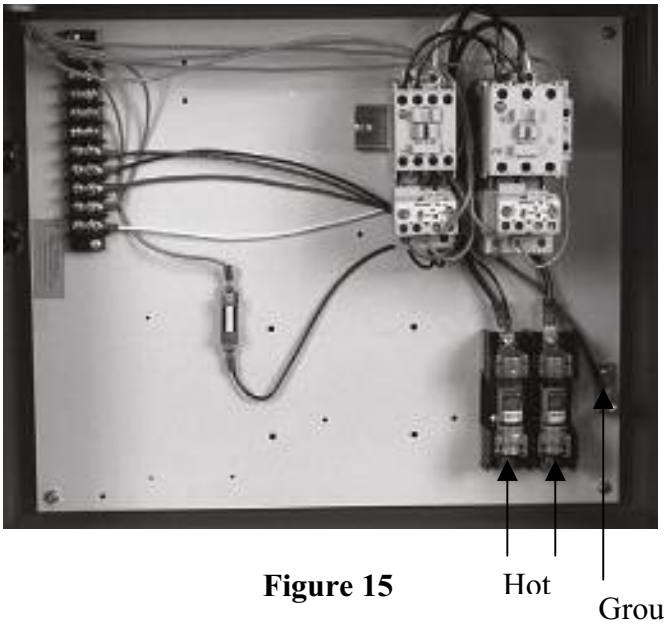


Figure 15

3. After the electrical hookup is completed, verify correct rotation of the table and grinding motor.

ROTATION CHECKS

Check rotation of the table and grinding motors on 3 Phase Flywheel Grinders

1. Turn on table motor. Table should rotate in counter clockwise direction when viewed from the top (see arrow label on edge of table). Turn on grinding motor. Motor should rotate in clockwise direction when viewed from the top (see arrow label on front of motor).

2. If both the table motor and the grinding motor are rotating the wrong direction, interchange any two of the three HOT LEADS of the 3 Phase connection at the electrical box (Figure 14). DO NOT INTERCHANGE GROUND WIRE. If the rotation is correct on one motor, but not the other, contact Van Norman technical assistance.

3. On 1 Phase (Single Phase) machines, if rotation is not correct, contact Van Norman for assistance.

OPERATION

1. Remove the coolant shroud door at the front of the machine using the two handles. Select a grinding wheel according to the material to be ground. (See grinding wheel selection, Page 11)

2. Install the grinding wheel (Figure 16) Tighten to 150 In. Lbs. Occasionally it may be necessary to use a wheel spacer in order to reach to the bottom of a recessed flywheel. Use the spacer and the longer cap screw provided and install (Figure 16).

Figure 16

****CAUTION: DO NOT INSTALL GRINDING WHEEL IF EITHER OR BOTH PAPER BLOTTERS ARE MISSING**

3. When a new grinding wheel is installed, or a wheel is re-installed, the wheel should be dressed or “trued up” (Figure 17).

OPERATION (continued)

Figure 17

WHEEL DRESSER

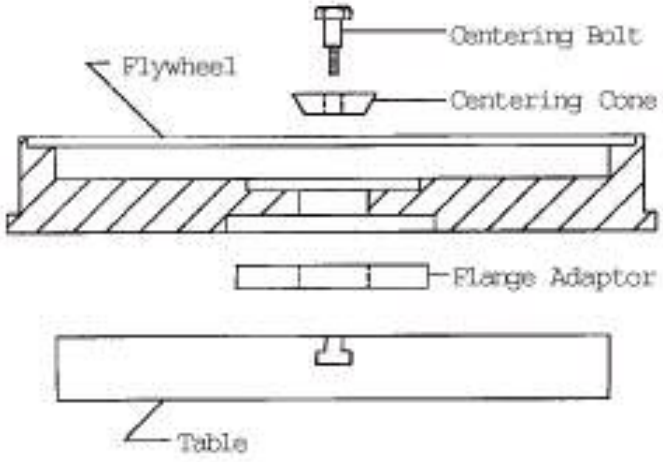
1. Since it may be impossible to accurately match the grinding wheel material and hardness to the metal alloy being ground, it may become necessary on some applications to dress the grinding wheel after use. The purpose in dressing the wheel is to remove that portion of the wheel's edge which has become dull and/or clogged with particles causing a decrease in cutting ability. A clean grinding wheel will be evident and very little heat will be generated in the work piece. Under ideal circumstances, the grinding wheel will break down during grinding at a rate sufficient to keep sharp. clean particles exposed on the grinding edge. If the grinding rate decreases noticeably as evident by a decrease in the shower of sparks, it will be necessary to dress the wheel. This should be accomplished by raising the wheel up far enough so that the dresser can swing under the wheel. The dresser height is changed by rotating the adjustment collar (Figure 17).

2. Adjust wheel guard and install shroud door for maximum protection. (No coolant is needed for the dressing operation). Start grinding motor. Carefully swing the dresser back and forth under the front edge of the grinding wheel, gradually rotating the dresser adjustment collar to raise the dresser until contact is made. Only a small amount of material has to be removed to obtain a new grinding edge.

SETTING UP FLYWHEEL

1. To load the flywheel, remove the front coolant shroud door, raise the headlock handle and swing the grinding head into the far right hand corner of the shroud, flipping the shroud cover out of the way (Figure 18).

2. A cross section diagram of the general method for setting up a flywheel for grinding is shown in (Figure 19). Detailed instructions are outlined below. The accuracy of the ground flywheel will depend to a large extent on the accuracy and condition of the surface that the flywheel is mounted on. A flywheel cannot be expected to run true if it was ground on a surface that was not parallel to the crankshaft mounting surface. Whenever a flywheel is ground while mounted on a surface other than the crankshaft mounting surface, careful inspection to assure parallelism of the two surfaces should be done.



SETTING UP FLYWHEEL (continued)

3. Clean table and lay proper flange adapter on table. Use the largest possible flange adapter for maximum support. Place flywheel onto table with crankshaft mounting surface contacting the flange adapter (Figure 20).

4. Choose proper size centering cone to fit center hole in flywheel. (Figure 21) Select correct length centering cone bolt. Secure to table by tightening centering cone bolt. If exact centering is necessary such as on some recessed flywheels, a dial indicator may be used.

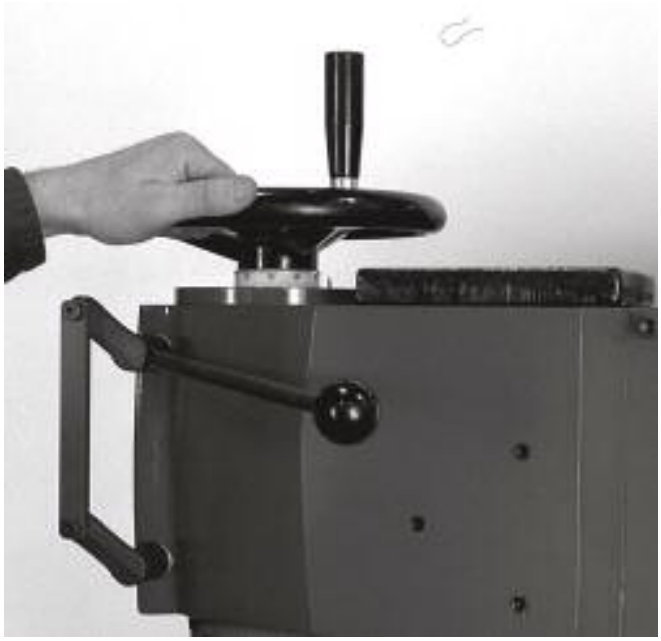
5. Position grinding wheel over friction surface to be ground and lock grinding head in place by pulling headlock handle on left side of head downward. POSITION WHEELGUARD FOR MAXIMUM OPERATOR PROTECTION.

6. Replace shroud cover and actuate grinder motor, table motor and coolant pump. Direct coolant onto workpiece so it flows under the grinding wheel. Regulate amount of coolant flow by adjusting valve on rear of shroud. NEVER GRIND WITHOUT ADEQUATE COOLANT FLOW.

GRINDING FLYWHEEL

MANUAL MACHINES:

Feed grinding wheel downward by turning feed handle clockwise (Figure 22). Grind surface until flat and free of defects or to desired depth.

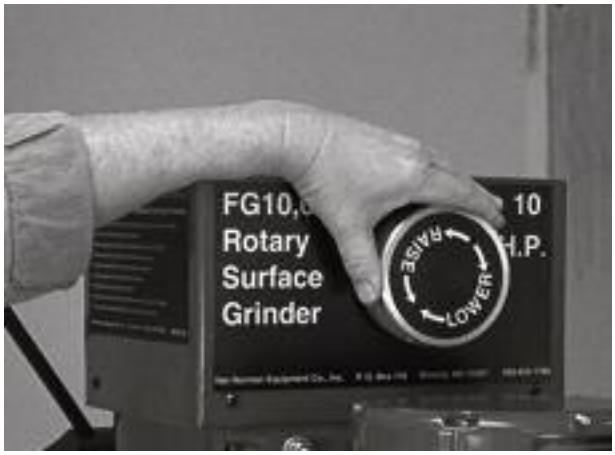


POWERHEAD MACHINES

1. Power the grinding head down to the workpiece using the power column up/down switch (as a safety feature, the power column will not function if the grinder motor is running).

2. Start table, grinder head motor, and coolant flow.

3. Rotate the fine feed handknob clockwise (Figure 23) to lower grinder head until stone contact is made. (if machine is equipped with the auto grind feature, proceed to step 4) Continue to feed grinder head down to grind surface until flat and free of defects or to desired depth.



GRINDING FLYWHEEL (continued)

4. This step is for machines equipped with auto grind only:
   a. Determine depth of grind (amount of material to be removed).
   b. Rotate graduated dial to that amount lined up with pointer (Figure 24)
   c. Select downfeed rate with variable feed rate dial.
   d. Start auto grind by depressing “on” switch.
   e. Auto grind will stop feeding and turn off when the preset depth is reached (feed may temporarily stop as it senses the grinder motor being overloaded and then restart automatically during the auto grind process until finished).
   f. Turn off table, grinder head motor, and coolant after sparkout.

5. **SURFACE FINISH:** Keep the grinding wheel cutting at all times never allow the wheel to coast for a long period of time without feeding it downward. long periods of coasting will cause the grinding wheel to glaze and load up. The only exception to this is when it is desired to obtain a very smooth finish. A wide variety of surface finishes are obtainable using the grinder without varying the grit size of the grinding wheel. This range of surface finish is obtained by varying the pressure exerted on the grinding wheel. A coarse finish is obtained by feeding heavily then backing off the work piece quickly. Smoother finishes are obtained by backing off the workpiece then coming back down with a very light feed pressure.

6. **RECESSED FLYWHEELS:** When grinding recessed flywheels, the depth dimension from the pressure plate mounting surface to the clutch friction surface should be restored after grinding of the friction surface. This is done by grinding the pressure plate mounting surface an amount equal to that ground off the friction surface. The steps followed in grinding recessed flywheels are as follows:
   a. Mount flywheel on machine.
   b. If original equipment specs are unavailable, use a depth micrometer to measure depth from pressure plate mounting surface to an unworn area of the clutch friction surface.
   c. Grind friction surface to clean up.
   d. Use depth micrometer again to measure new depth. Subtract original depth from this measurement to obtain amount to be removed from pressure plate mounting surface.
   e. Locate dial indicator on pressure plate mounting surface, set dial to zero.
   f. Grind surface until dial indicator reading changes by the proper amount.

7. While a dial indicator or a depth micrometer is used to measure a specific amount of material, the graduated dial (Figure 24 & 25) will give the operator an approximate amount of material removal. The readings of this dial will be influenced by both stock removal and wheel wear.

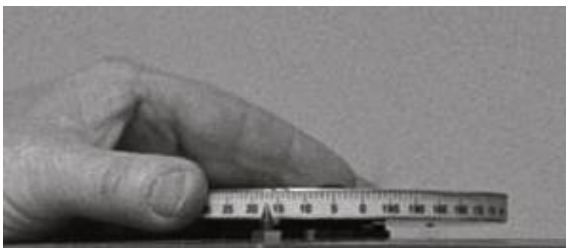


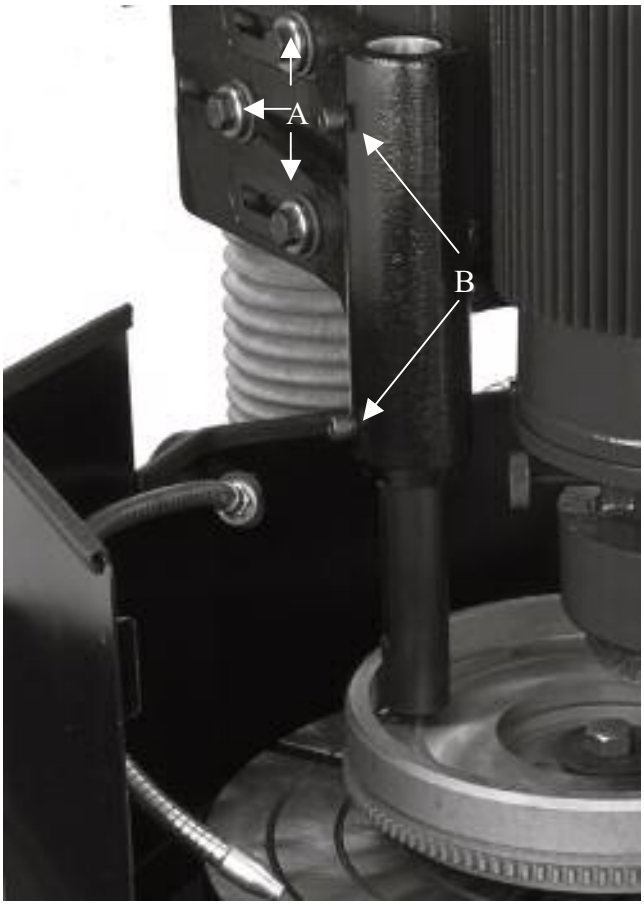
Figure 24

Figure 25

RADIUS CUTTER OPERATION (OPTIONAL)

Before grinding the flywheel or cutting a radius on a recessed flywheel, make certain the flywheel is accurately centered. A dial indicator may be used. It is not necessary to use coolant when using the radius cutter

1. On certain applications on a recessed or stepped flywheel such as International, Mack, etc., it is necessary to remove the slight radius left by the grinding wheel. This can be accomplished using the optional Radius Cutter (Figure 26).



2. First, adjust the radius cutter assembly so the cutting tip of the tool bit is positioned over the center of the table. This can be done by loosening the 3 hex bolts that attach the radius cutter to the machine (Figure 26A) and sliding the assembly to the front or back and retighten.

3. The tool bar may be positioned to the correct depth by loosening the 2 cap screws (Figure 26B) and sliding the bar up or down and retighten. When properly positioned, the grinding wheel will be about 1/2” above the highest point of the flywheel when the tool bit is in contact with the radius to be removed. Do not over extend the tool bar.

4. Loosen the column lock handle. Swing the grinding head to the left side of the flywheel, so the tip of the tool bit is at its outermost location. Gradually feed the grinding head down until the radius is removed.

LUBRICATION

1. **TABLE SUPPORT BEARING**: The turntable is completely supported from below by a cast in table support. The table runs on a film of oil supplied by the reservoir in the center of the base casting. The level of this reservoir is adjustable and must be approximately 1 /16" above the surface of the table bearing (or the bottom of the table). This level has been pre-set at the factory and should not require further adjustment. In the event that the level must be adjusted, this would be accomplished by raising or lowering the plastic constant level oiler at the rear of the machine by loosening the set screw in the base and sliding assembly up or down (Figure 27). Use #801155 Table Oil only.

2. The level of the oil under the work table is checked by removing the large flat head cap screw from the table. A depth gauge is provide with the machine for checking the oil level through this hole in the table. The overall length of the gauge pin protruding from the round handle should be equal to the thickness of the machine's table (Figure 28). The oil level therefore, will be 1/16” above the bottom of the table.

3. The plastic oil reservoir on the constant level oiler at the rear of the machine should be refilled with oil when it reaches 1/4" from the bottom. Use only #801155 Table Lubricant.

4. **COLUMN**
   The machine column is lubricated by a wick from the same plastic oil reservoir used on the constant level oiler. As long as oil is in this container both the table bearing surface and the column will be adequately lubricated.

5. **LEADSCREW AND NUT**
   Lubricate leadscrew and bronze nut as required to maintain smooth operation with #801152 Leadscrew Lubricant or a medium duty grease containing graphite or molybdenum.

GRINDING MOTOR

CAUTION: Overgreasing bearings can cause premature bearing and/or motor failure. The amount of grease added should be carefully controlled.

NOTE: If lubrication instructions are shown on the motor nameplate, they will supersede this general instruction.

Motors are pregreased with a polyurea mineral oil NGLI grade 2 type grease unless stated otherwise on the motor nameplate. Some compatible brands of polyurea mineral base type grease are: Chevron SRI#2, Rykon Premium #2, Shell Oil Dolium R or Texaco Polystar RB.

Motors may be greased at 500 hour intervals, adding .30 oz. of recommended grease to each bearing.

POWER COLUMN GEARMOTOR

The power column gearmotor is a permanently sealed unit and does not require any further lubrication.

TABLE DRIVE GEAR REDUCTION BOX

MANUFACTURERS RECOMMENDED LUBRICANTS:

AGMA Lubricant	#8 Comp.
Cities Service Co.	CITGO Cyl. Oil 680-7
Fiske Bros. Refining	SPO-288
Gulf Oil Corp.	Transgear EP 680
Keystone Div.	K-600
Mobil Oil Corp.	Mobil 600W Super
Shell Oil Corp.	Omala 680
Sun Oil Corp.	Sunep 1150
Texaco, Inc.	Honor Cyl. Oil 680
American Lub., Inc.	AGMA #8 Gear Oil
Chevron	NL Gear Comp. 680

1. **INTIAL OIL CHANGE:** The oil in a new speed reducer should be changed at 250 hours of operation.

2. **SUBSEQUENT OIL CHANGES:** Under normal conditions, after the initial oil change, the oil should be changed after every 2,500 hours of operation, or every six months, whichever occurs first. Under severe conditions (rapid temperature changes, moist, dirty, or corrosive environment) it may be necessary to change oil at intervals of one to three months. Periodic examination of oil samples taken from the unit will help establish the appropriate interval.

3. **OVERFILLING OR UNDERFILLING:** If a speed reducer is overfilled with oil, the energy used in churning the excessive oil can result in overheating. If this occurs, shut down the drive, remove the oil level plug and allow oil to drain until oil ceases to drain from the level hole. reinstall the oil level plug, and restart the drive. If the speed reducer is underfilled, the resultant friction can cause overheating and possible damage. If this occurs, fill the speed reducer to the oil level plug hole and check the gearing for excessive wear.

MACHINE MAINTENANCE

1. **COOLANT TANK REMOVAL AND CLEANING:** Clean Tank after every 50 flywheels
   a. Open front access door and pull entire coolant unit completely out onto floor.
   b. Remove pump.
   c. Empty, clean and flush tank.
   d. Re-install pump, slide unit half way into machine, add one quart of 794-8011-40 coolant additive and fill with water.
   e. Slide coolant unit completely into machine.

2. **FLYWHEEL E-Z LOCK INSERT:** The table spindle into which the flywheel hold down bolts get threaded contains a threaded insert. This replaceable E-Z Lok insert is provided so that when the threads become damaged replacement of the entire table spindle is not necessary. It is recommended that replacement should be done before the insert's threads are completely worn out. An E-Z Lok insert extractor is supplied with the grinder (794-8637-45)

Once a month, remove the E-Z Lok insert (794-8017-44) from the center of the table, and coat the threads with an anti-seize lubricant. This will prevent the insert from becoming permanently lodged in place from rust and grit.

GRINDING HEAD ADJUSTMENTS

All grinding should be done with the rear edge of the grinding wheel. Insufficient rearward tilt as evident by sparks from both the front and rear of the wheel may result in abnormal heating of the work piece and necessitate more frequent dressing of the grinding wheel.

Experience has shown that tilting the head of the machine so that the indicator reading at the rear is .020” to .025" lower than at the front is a good starting point. Individual operators may want to increase or decrease tilt depending upon their own preferences. (Increased tilt should be used if higher stock removal rates are desired.)

NOTE: The head tilt on your grinder was set at the factory at .023” tilt to the rear.

1. **FRONT TO REAR HEAD TILT ADJUSTMENT:** Loosen two 7/16 cap screws (5/8 Hex) and turn the pair of socket head cap screws in or out to obtain desired tilt, (Figure 29).
2. Tilt may be checked by attaching the Optional Dial Indicator and Mounting Hardware, Part Number 794-8685-32, to grinder motor (Figure 30), and lowering head until indicator touches table. Rotate indicator (and motor shaft) from front to back and note direction and amount of indicator travel.

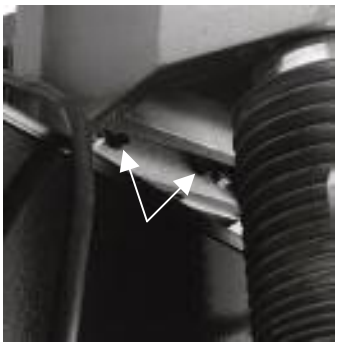


Figure 29

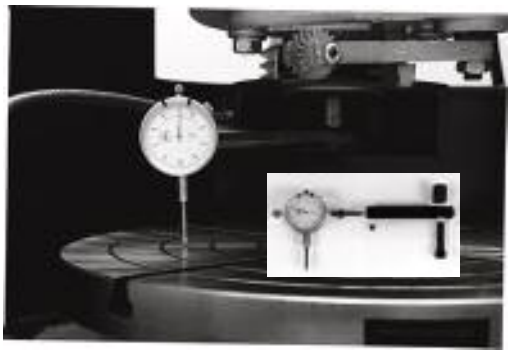


Figure 30 Optional – Part # 794-8627-83

GRINDING HEAD ADJUSTMENTS (continued)

3. **SIDE-TO-SIDE HEAD TILT ADJUSTMENT:** The grinding head is also adjustable for side-to-side tilt. This adjustment will affect the flatness and/or parallelism of the ground work piece. The double configuration used between the grinder motor and the cast iron motor flange enables the motor to be mounted on the front plate, which pivots on a 1" dia. pin to allow side-to-side adjustment (Figure 31). Adjustment may be made as follows:
   a. Loosen four 3/8-16 nuts (9/16 Hex) approximately 1/2 to 3/4 turn.
   b. Loosen adjusting screw on same side of machine as corresponds to the low side of the grinding wheel. Tighten screw on opposite side to pivot adjusting plate appropriate amount (Figure 32).
   c. Check side-to-side tilt using same dial indicator setup used in checking front to rear tilt above. The dial indicator reading should be identical when swung from one side to the other.

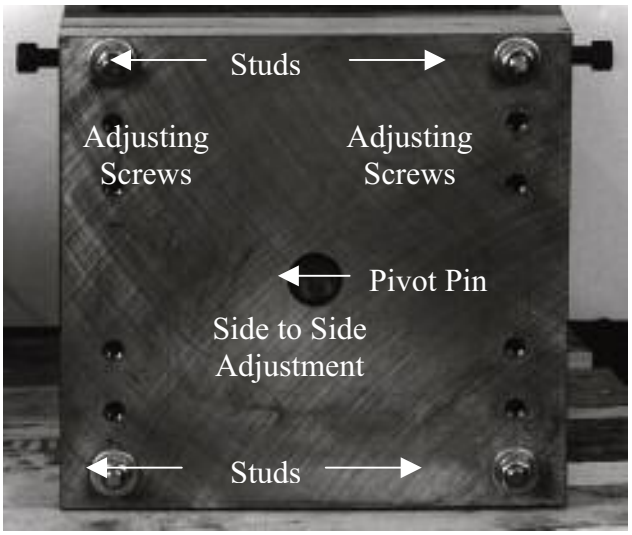


Figure 31

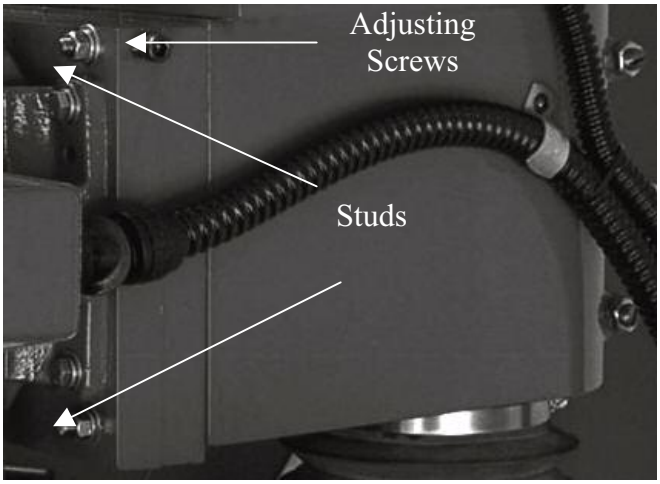
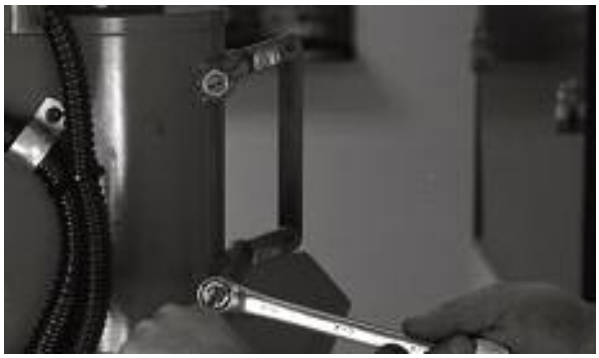


Figure 32

GRINDING HEAD ADJUSTMENTS (continued)

4. **GRINDING HEAD MOUNTING: T**he grinding head motor may be mounted in any of three positions. The machine is shipped from the factory with the motor in center position. A lower and higher mounting position are provided with the tooling. The lower mounting holes on the motor are then placed over these studs, two 3/8-16 cap screws are used through the upper motor mount. When the motor is mounted in the upper position the same procedure is used replacing the upper studs with longer ones (794-8016-19).

5. **HEAD LOCK HANDLE POSITION ADJUSTMENT:** The locked position of the head lock handle is adjustable (Figure 33). To raise or lower the handle position follow the procedure below:
   a. Loosen the 3/4 hex lock nuts.
   b. With upper head lock loose, turn studs with screwdriver until handle is in desired position when the head is locked. Retighten lock nuts.



6. **LEADSCREW BACKLASH ADJUSTMENT:** The amount of backlash in the leadscrew and nut combination may be adjusted by tightening or loosening the cap screw through the bronze leadscrew nut. Access to the leadscrew nut is gained by removing the rear access door. Tightening the cap screw in the bronze nut decreases the amount of backlash (Figure 34).

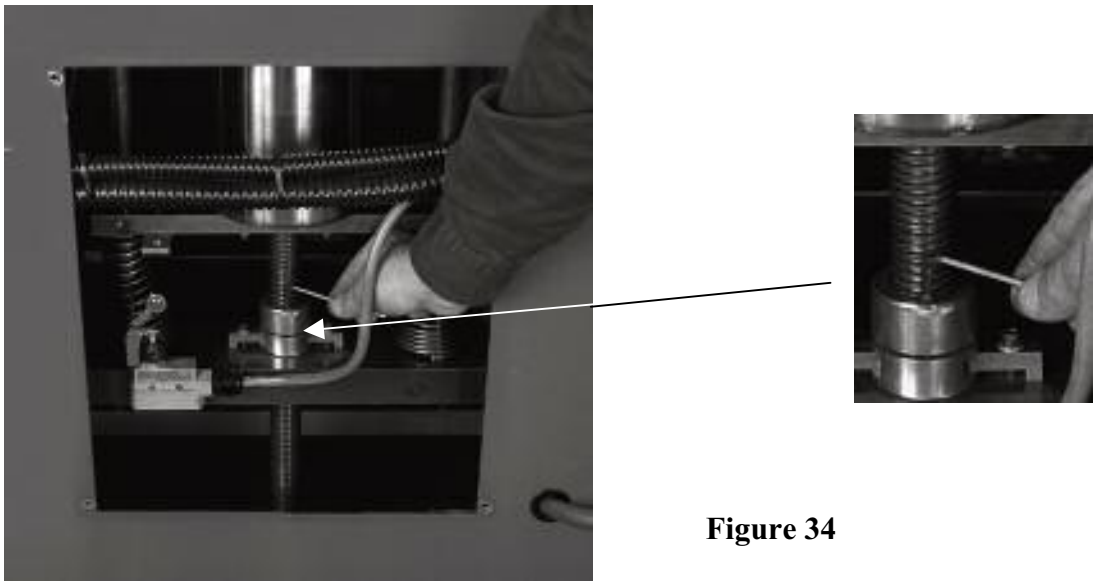
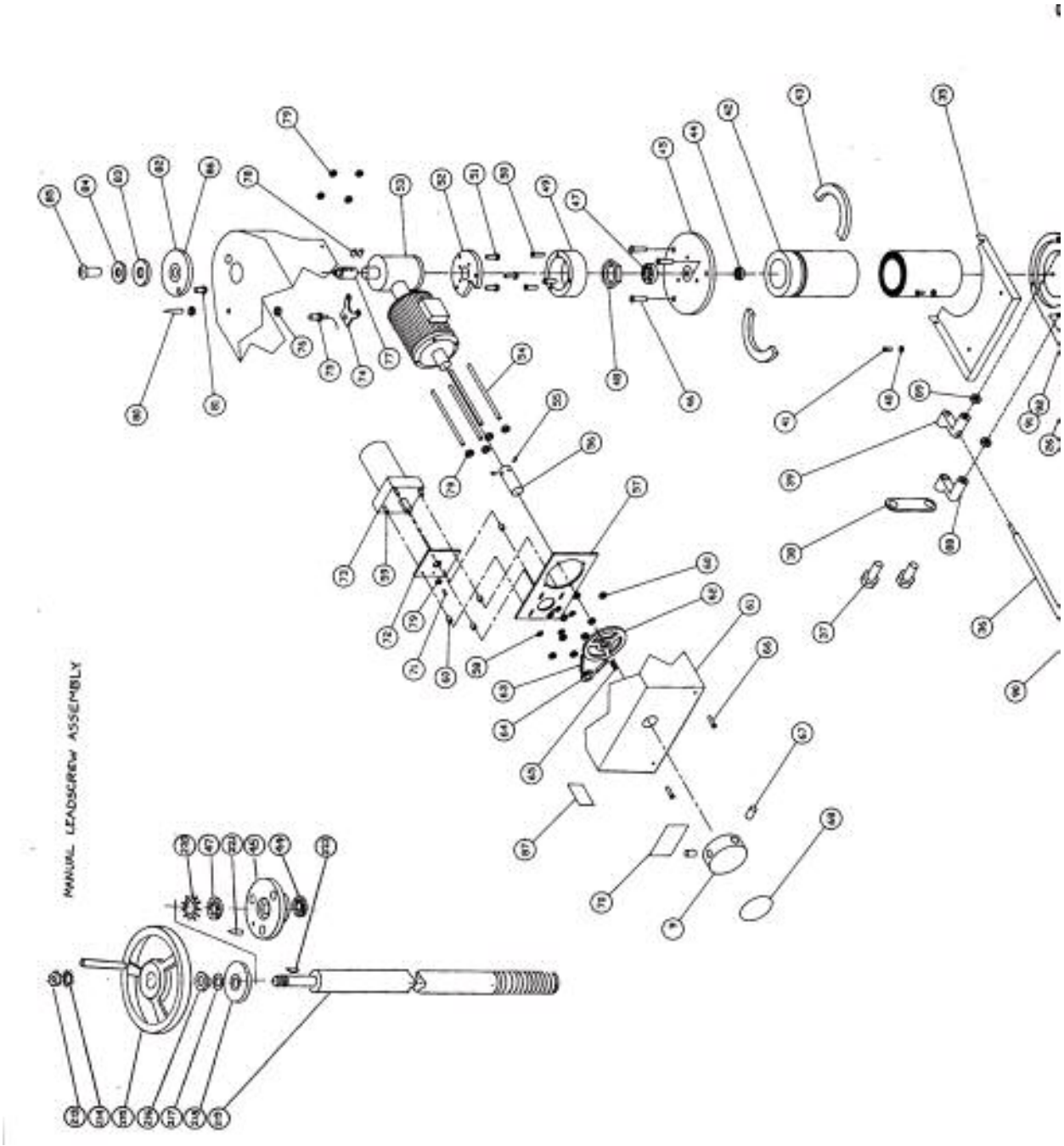


Figure 34

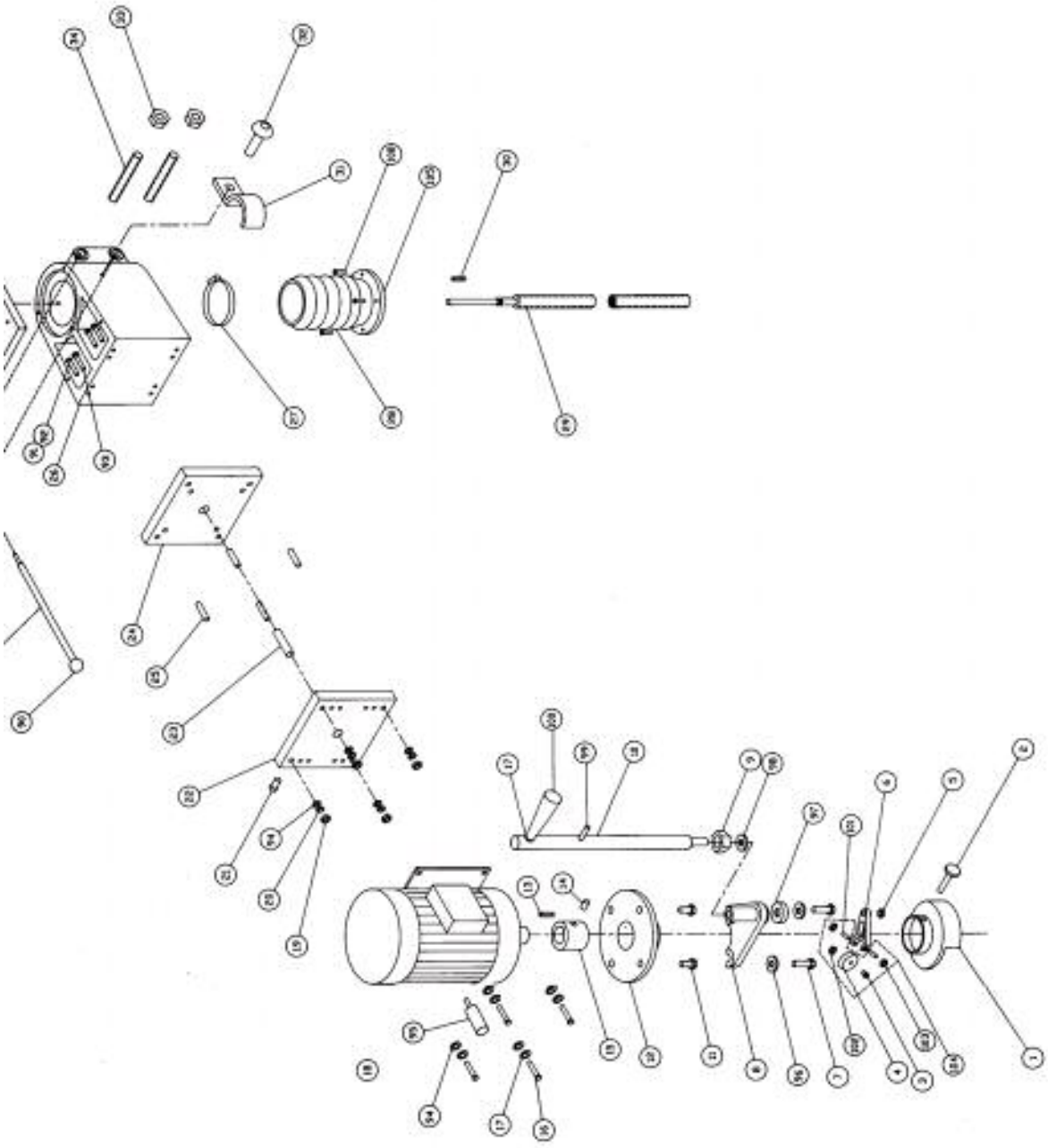
GRINDING HEAD ADJUSTMENTS (continued)

7. **COLUMN SIDE-TO-SIDE MOVEMENT ADJUSTMENT:** Any side-to--side movement noticed at the grinding head (when column is locked) can be eliminated by following this procedure.
   a. Remove access door at the rear of the machine.
   b. Lower column until the rectangular bars are in the most accessible location.
   c. Loosen jam nuts on the bolts located at the ends of both bars (Figure 35).
   d. Adjust bolts out until slight pressure is put on the round support bars. Tighten jam nuts.
   e. Apply a film of grease on contact area of the support bars.

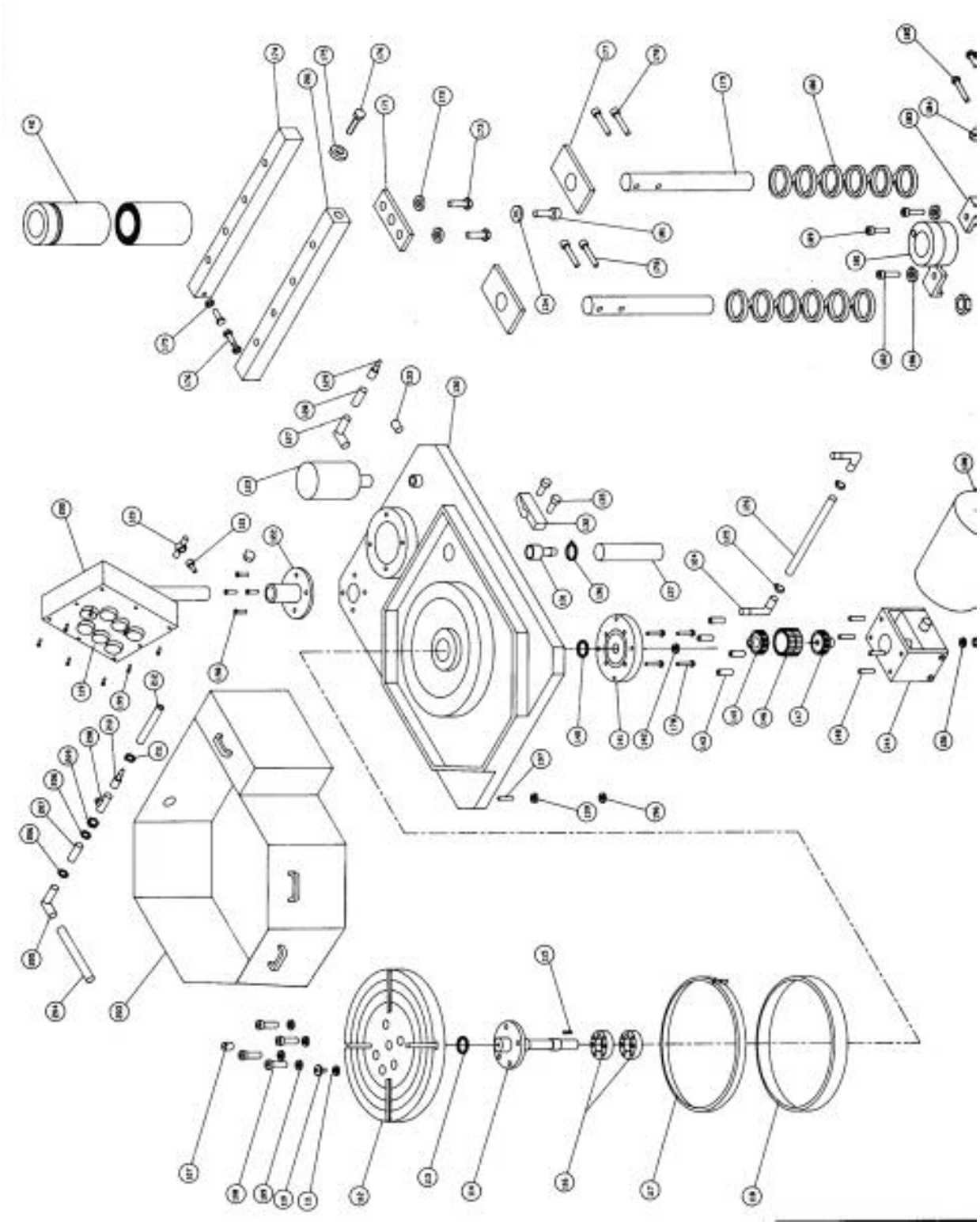
ASSEMBLY DRAWING



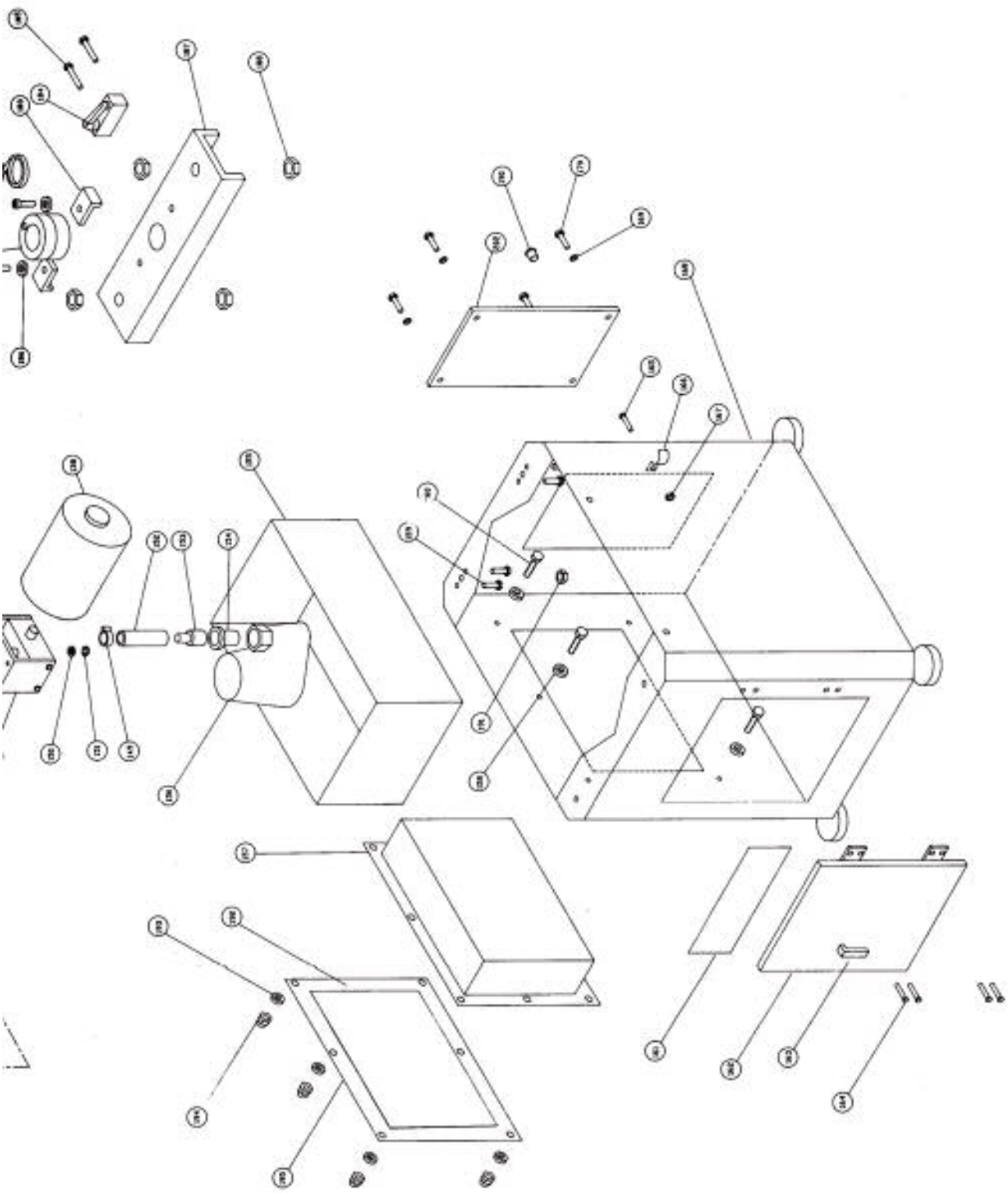
ASSEMBLY DRAWING



ASSEMBLY DRAWING



ASSEMBLY DRAWING



ASSEMBLY DRAWING

ITEM	PART #	DESCRIPTION	QTY
1	794-8011-84	Wheel Guard Ring	1
2	800-8017-30	Clamp Bolt	1
3	794-8016-47	Star Dresser Hub	1
4	794-8011-69	Wheel Dresser Star	7
5	000-1070-18	1/2-20 Jam Nut	1
6	794-8011-62	Dresser Arm	1
7	000-0110-37	HHCS 1/2-13 x 2.00	2
8	794-8011-68	Dresser Bracket	1
9	794-8011-63	Adjustment Collar	1
10	794-8011-64	Dresser Shaft	1
11	000-0114-01	HHCS 1/2-13 x 1.00	2
12	794-8011-82	Wheel Guard Flange	1
13		Key (Supplied W/ Motor)	1
14	800-8016-20	SSS 1/4-20 x .25	1
15	794-8011-87	Wheel Flange	1
16	000-0105-53	HHCS 3/8-16 x 1.25	4
17	800-8030-61	Lock Washer 3/8	5
18	794-8660-97	Motor, 5 HP 208-230/460 3Ph	1
18	794-8660-98	Motor, 5 HP 208-230/460 1Ph	1
18	794-8687-57	Motor, 10 HP 208-230/460 3Ph	1
19	000-1035-19	Hex Nut 3/8-16	4
20	800-8030-61	Lock Washer	4
21	794-8649-38	SHCS 3/8-24 x 1.25	2
22	794-8011-79	Adjusting Plate	1
23	794-8011-80	Pivot Pin	1
24	794-8011-78	Adapter Plate	1
25	794-8016-23	Stud 3/8-16 x 2.62	4
26	794-8621-33	Motor Flange (FG10,000)	1
26	794-8621-33	Motor Flange (FG5000)	1
27	794-8070-88	Hose Clamp	1
28	794-8687-69	Column Cover (FG10,000)	1
28	794-8012-45	Column Cover (FG5000)	1
29	794-8687-60	Leadscrew (FG10,000)	1
29	794-8688-27	Leadscrew (FG5000)	1
30	794-8689-40	5mm x 6mm Key	1
31	794-8688-01	Jiffy Clamp (FG10,000)	1
31	794-8143-75	Jiffy Clamp (FG5000)	1
32	794-8016-31	BHCS 1/4-20 x .500	1
33	000-1035-35	Hex Nut 1/2-13	2
34	794-8011-96	Column Lock Stud	2
35	794-8687-30	Motor Flange Cover Plate	1
36	794-8011-97	Handle	1
37	791-8016-42	Stripper Bolt	2
38	794-8011-98	Bar	1
39	794-8689-54	Upper Hub	1
40	000-1180-10	Lock Washer 1/4”	2

ASSEMBLY DRAWING (continued)

ITEM	PART #	DESCRIPTION	QTY.
41	000-0100-14	HHCS 1/4-20 x .500	2
42	794-8687-27	Column (FG10,000)	1
42	794-8012-38	Column (FG5000)	1
43	794-8687-82	Half Ring Set (FG10,000)	1
43	794-8012-63	Half Ring Set (FG5000)	1
44	794-8012-51	Bearing	1
45	794-8687-62	Column Cap (FG10,000)	1
45	794-8012-61	Column Cap (FG5000)	1
46	000-0167-80	SHCS 5/16-18 x .75	3
46	000-0165-35	SHCS 1/4-20 x .75	3
47	000-1605-39	Bearing	1
48	794-8687-61	Bearhug Nut	1
49	794-8687-90	Spacer Ring	1
50	794-8687-91	SHCS 5/16-18 x 2.50	3
51	794-8687-51	SHCS M6 x 14mm	4
52	794-8687-40	Gearmotor Mount Flange	1
53	794-8687-36	Power Column Gearmotor 3 Ph	1
53	794-8688-95	Power Column Gearmotor 1 Ph	1
54	794-8687-47	Stud #10-32 x 5.75	4
55	000-0485-18	SSS 1/4-20 x .250	2
56	794-8687-43	Shaft Extension	1
57	794-8687-39	Motor Coupling Plate	1
58	000-1154-60	Washer	4
59	794-8687-48	Stud #10-32 x 1.50	4
60	794-8687-41	Spacer	4
61	794-8687-31	Hood	1
62	794-8687-45	Pulley	1
63	794-8687-46	Gearbelt	1
64	794-8687-38	Clutch	1
65	000-7300-41	Woodruff Key #405	1
66	000-0595-28	BHCS #10-32 x 375	4
67	000-0515-00	SSS 1/4-20 x .250 Br. Tip	2
68	794-8688-23	Label, Raise/Lower	1
69	794-8687-44	Handknob	1
70	794-8688-25	Label, FG10,000	1
70	794-8688-24	Label, FG5000	1
71	794-8687-52	Clutch Anchor Pin	1
72	794-8687-42	Clutch Anchor Plate	1
73	794-8687-37	Autofeed Gearmotor	1
74	794-8687-50	Switch Mounting Bracket	1
75	794-8687-49	Proximity Switch	1
76	800-8083-74	Hex Nut #10-32	2
77	794-8687-98	Dial Mounting Sleeve	1
78	000-0515-00	SSS 1/4-20 x .250	2
79	800-8083-74	Hex Nut #10-32	1
80	794-8687-95	Pointer	1

ASSEMBLY DRAWING (continued)

ITEM	PART #	DESCRIPTION	QTY.
81	794-8097-29	BHCS #8-32 x .250	1
82	794-8687-97	Feed Dial	1
83	794-8017-16	Spring Washer	1
84	800-8044-45	Flat Washer	1
85	000-0592-00	BHCS 5/16 x .500	1
86	794-8661-66	Label, Depth Dial	1
87	794-8688-08	Label, Auto Downfeed	1
88	794-8011-95	Lower Hub	1
89	000-1155-50	Flat Washer 1/2	1
90	800-8030-16	Ball	1
91	000-1181-17	Lock Washer 7/16	4
92	794-8016-08	HHCS 7/16-14 x 1.50	4
93	000-0170-78	SHCS 3/8-24 x 1.00	4
94	000-1150-37	Flat Washer 3/8	8
95	794-8636-60	Handle Assembly	1
96	000-1181-33	Lock Washer 1/2	2
97	794-8011-65	Seal	1
98	794-8011-66	Washer	1
99	000-7204-10	Roll Pin 1.20 x .625	1
100	794-8016-82	Handle	1
101	000-0485-65	Pivot Screw	2
102	000-1063-21	Hex Nut 5/16-24	1
103	000-1020-16	Hex Nut 1/4-28	2
104	794-8011-70	Star Dresser Assembly	1
105	794-8687-68	Retaining Flange FG10,000	1
105	794-8012-48	Retaining Flange FG5000	1
106	794-8016-31	BHCS 1/4-20 x .500	4
107	794-8017-44	E-Z Lock Insert	1
108	794-8016-07	SHCS 3/8-16 x 1.75	4
109	800-8012-92	O-Ring	4
110	794-8016-54	Oil Fill Plug	1
111	794-8013-12	O-Ring	1
112	794-8012-85	Table	1
113	000-2301-38	O-Ring	1
114	794-8651-04	Table Spindle	1
115	794-8651-06	Key	1
116	794-8012-95	Bearing	2
117	794-8012-76	Clamp	1
118	794-8012-82	Seal	1
119	794-8688-17	Control Panel Assembly (PC)	1
119	794-8687-71	Control Panel Assembly (PCAF)	1
119	794-8689-59	Control Panel Assembly (Man.)	1
120	800-8678-08	Knob	1
121	000-0167-80	SHCS 5/16 x .75	1
122	794-8687-96	Control Box Pivot Base	1

ASSEMBLY DRAWING (continued)

ITEM	PART #	DESCRIPTION	QTY
123	794-8013-80	Oil Reservoir	1
124	794-8044-36	Pipe Assembly	2
125	794-8081-91	Hose Clamp	1
126	794-8013-89	Tubing	1
127	000-1567-87	Elbow	1
128	794-8044-73	Tubing	1
129	000-1562-64	Fitting	1
130	794-8688-30	Base (FG5000)	1
130	794-8687-87	Base (FG10.000)	1
131	794-8690-12	Drain Hose Fitting	1
132	000-1208-50	Limit Switch	1
133	000-0485-18	SS 1/4-20 x .25	1
134	794-8016-16	Lock Washer 1/4”	4
135		Supplied with Switch	2
136	794-8690-13	Hose Clamp	1
137	794-8690-14	Drain Hose	22’
138	794-8651-08	Table Drive Motor 230V, 3 Ph	1
138	794-8651-09	Table Drive Motor 230V, 3 Ph	1
139	794-8033-64	Concave Washer	2
140	794-8012-91	O-Ring	1
141	794-8651-05	Bearing Cap	1
142	794-8622-34	Seal	1
143	794-8651-15	Spacer	4
144	794-8651-07	Table Drive Gearbox	1
145	794-8651-13	Coupler	1
146	794-8651-14	Chain Coupler	1
147	794-8651-12	Coupler	1
148	794-8016-23	Stud	4
149	000-4200-77	Hose Clamp	1
150	800-8030-61	Lock Washer 3/8	4
151	000-1035-19	Hex Nut 3/8	4
152	794-8619-33	Coolant Hose	1
153	003-0005-70	Fitting	1
154	794-8621-71	Reducer Bushing	1
155	794-8620-47	Coolant Tank	1
156	794-8621-76	Coolant Pump	1
157	794-8687-77	Starter Box	1
158	000-1180-10	Lock Washer 1/4”	6
159	000-0105-53	HHCS 3/8-16 x 1.25	4
160	000-0100-30	HHCS 1/4-20 x .75	6
161	000-6601-28	Van Norman Label	1
162	794-8082-75	Front Door	1
163	800-8017-23	Door Latch	1
164	000-0205-75	Screw #10-32 x .25	4
165	000-0592-24	BHCS 1/4-20 x .50	1

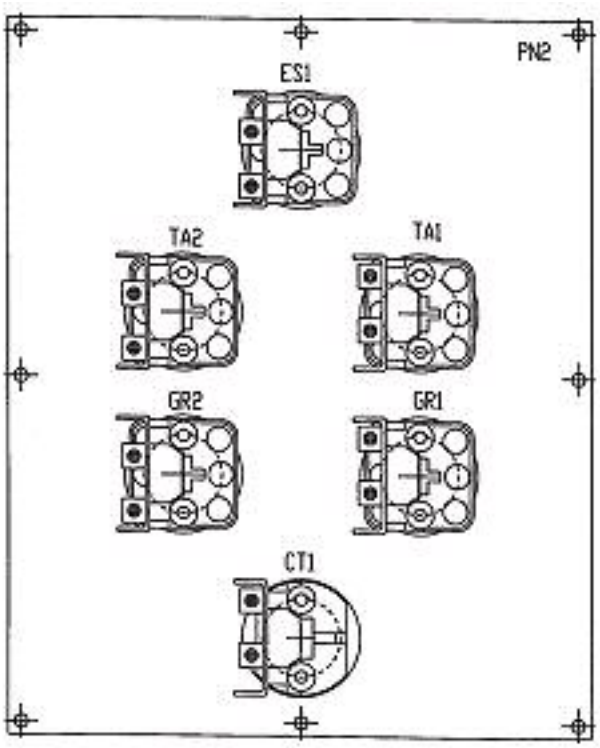
ASSEMBLY DRAWING (continued)

ITEM	PART #	DESCRIPTION	QTY
166	794-8688-01	Jiffy Clamp 3/4” FG10,000	1
166	794-8143-75	Jiffy Clamp 1/2” FG5000	1
167	000-1020-08	Hex Nut 1/4-20	1
168	794-8687-89	Base Cabinet	1
169	000-1180-10	Lock Washer	4
170	000-0100-30	HHCS 1/4-20 x .75	4
171	794-8012-54	Plate	1
172	000-1180-10	Lock Washer	2
173	000-0100-30	HHCS 1/4-20 x .75	2
174	794-8631-04	Bar	1
175	800-8016-15	Hex Nut 1/4-20	5
176	000-1020-08	Hex Nut 1/4-20	3
177	794-8012-26	Plate	2
178	000-0170-35	SHCS 3/8-16 x 1.25	8
179	794-8687-81	Support Bar (FG10,000)	2
179	794-8012-23	Support Bar (FG5000)	2
180	794-8012-29	Spring	2
181	794-8012-34	Leadscrew Nut Manual Machine	1
183	794-8012-59	Leadscrew Nut Power Column	1
182	000-0166-08	SHCS 1/4-20 x 1.00	
184	000-1208-50	Limit Switch	1
185		(Supplied with Switch)	2
186	000-1180-10	Lock Washer 1/4”	2
187	794-8012-24	Lower Support (FG5,000)	1
187	794-8687-64	Lower Support (FG10,000)	1
188	794-8044-75	Hex Nut 1.00-14	4
189	794-8016-33	SSCS #10-24 x 1.50	1
190	794-8687-93	Power Cable Bushing	1
191	000-1140-30	Hex Nut 1/2-13	4
192	800-8062-30	Weatherstrip	80”
193	000-1150-10	Flat Washer 1/4”	6
194	794-8062-35	Acorn Nut 1/4”	6
195	794-8687-94	Cover Panel	1
196	794-8033-65	Convex Washer	2
197	794-8016-30	Stud 1/2-13 x 2.62	4
198	000-0592-24	BHCS #10-32 x .37	8
199	000-0592-28	BHCS #10-32 x .37	8
200	794-8687-29	Switch Panel Box	1
201	794-8687-86	Bar	1
202	794-8620-12	Rear Panel	1
203	794-8622-47	Shroud Assembly	1
204	794-8013-13	Hose	1
205	794-8013-14	Elbow	1
206	794-8013-16	Washer	2
207	794-8013-15	Nipple	1

ASSEMBLY DRAWING (continued)

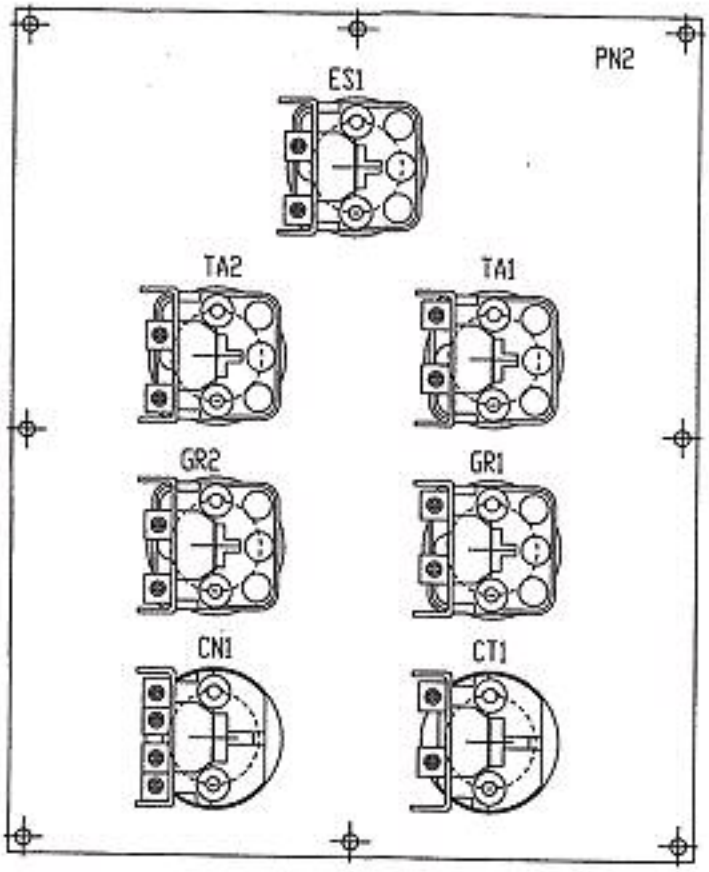
ITEM	PART #	DESCRIPTION	QTY
208	794-8012-98	Valve	1
209	794-8014-76	Nut	1
210	794-8071-36	Fitting	1
211	000-4200-77	Clamp	1
212	794-8071-18	Hose	1
213	800-8031-25	Nut .62-11	1
214	794-8015-62	Star Washer	1
215	794-8012-40	Handwheel	1
216	794-8012-44	Spacer	1
217	800-8663-77	Washer	2
218	794-8688-09	Dial, Graduated	1
219	794-8012-35	Leadscrew	1
220	794-8017-16	Spring Washer	1
221	800-8012-68	Pointer	1
222	804-8017-17	Key, Woodruff	1

SWITCH PANEL ASSEMBLY
MACHINE MODEL NUMBERS:
794-8690-00, 794-8690-01, 794-8690-02, 794-8690-03, 794-8690-04



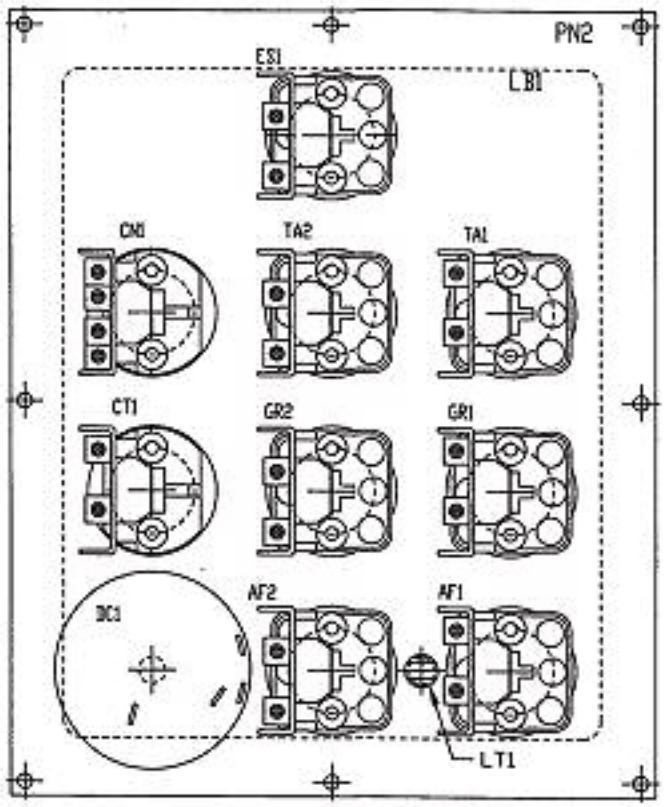
Item	Part #	Description
PN2	794-8688-16	SWITCH PANEL
ES1	794-8623-14	EMERGENCY STOP SWITCH
TA2	794-8622-82	TABLE STOP (RED)
TA1	794-8622-81	TABLE START (GREEN)
GR2	794-8622-82	GRINDER STOP (RED)
GR1	794-8622-81	GRINDER START (GREEN)
CT1	794-8622-80	COOLANT SWITCH

SWITCH PANEL ASSEMBLY
MACHINE MODEL NUMBERS:
794-8688-22, 794-8688-35, 794-8688-36, 794-8688-40, 794-8688-41, 794-8688-42, 794-8688-43



Item	Part #	Description
PN2	794-8688-16	SWITCH PANEL
ES1	794-8623-14	EMERGENCY STOP SWITCH
TA2	794-8622-82	TABLE STOP (RED)
TA1	794-8622-81	TABLE START (GREEN)
GR2	794-8622-82	GRINDER STOP (RED)
GR1	794-8622-81	GRINDER START (GREEN)
CN1	7948625-13	POWER COLUMN SWITCH
CT1	794-8622-80	COOLANT SWITCH

SWITCH PANEL ASSEMBLY
MACHINE MODEL NUMBERS:
794-8688-06, 794-8688-37, 794-8688-38, 794-8688-50, 794-8688-51, 794-868852, 794-8688-53

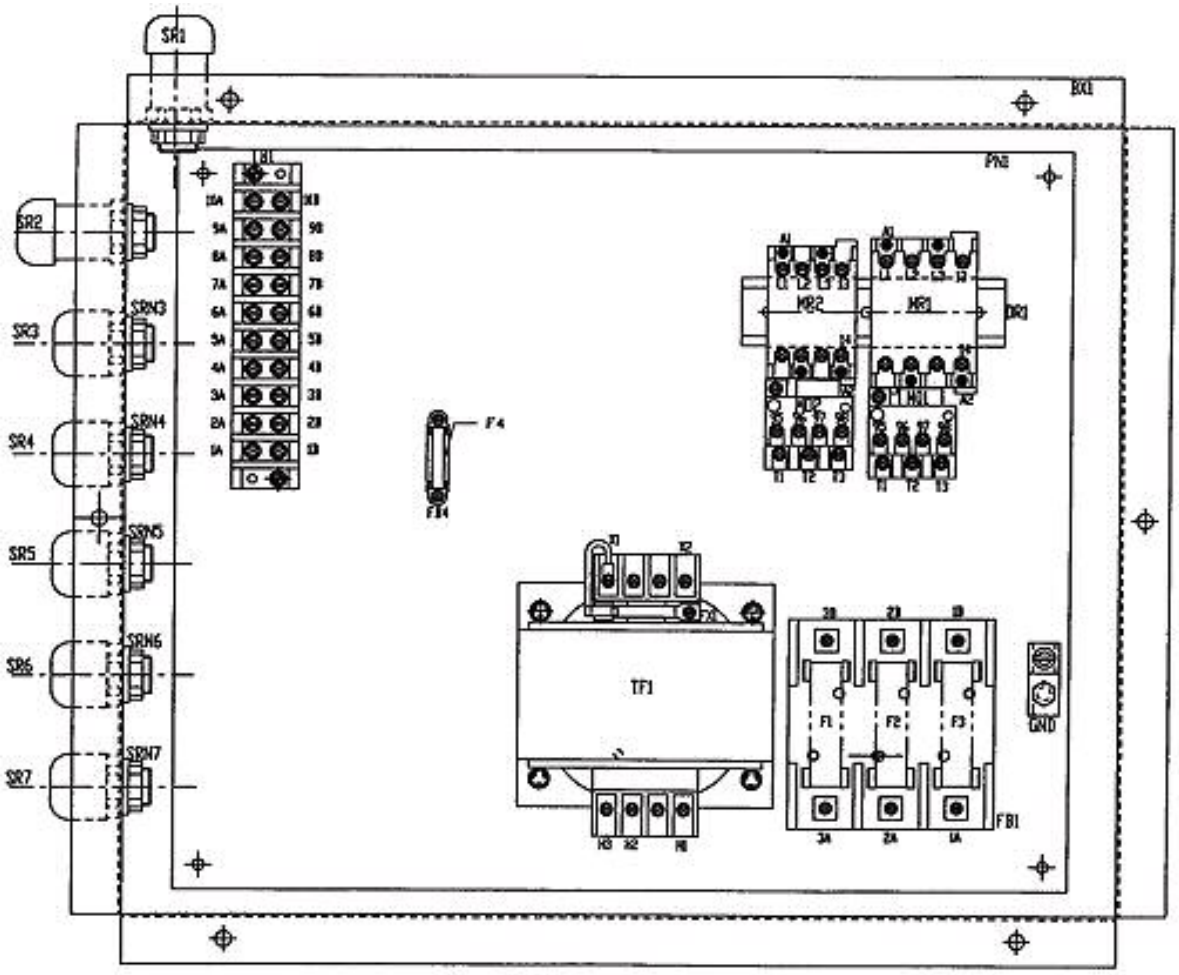


Item	Part #	Description
PN2	794-8688-16	SWITCH PANEL
ES1	794-8623-14	EMERGENCY STOP SWITCH
TA2	794-8622-82	TABLE STOP (RED)
TA1	794-8622-81	TABLE START (GREEN)
GR2	794-8622-82	GRINDER STOP (RED)
GR1	794-8622-81	GRINDER START (GREEN)
CN1	7948625-13	POWER COLUMN SWITCH
CT1	794-8622-80	COOLANT SWITCH
DC1	800-8606-79	D.C. CONTROLLER
AF2	794-8622-82	AUTO FEED STOP (RED)
AF1	794-8622-81	AUTO FEED START (GREEN)
LT1	794-8687-70	LIGHT

CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8690-00, 794-8690-02, 794-8690-04

	794-8690-00	794-8690-02	794-8690-04	
Item	**Part #**	**Part #**	**Part #**	**Description**
BX1	794-8687-77	794-8687-77	794-8687-77	CONTROL BOX
PN1	794-8687-78	794-8687-78	794-8687-78	PANEL
DR1	794-8014-10	794-8014-10	794-8014-10	DIN RAIL
MR1	794-8691-46	794-8691-46	794-8691-46	MOTOR RELAY
MD1	794-8691-53	794-8691-53	794-8691-53	MOTOR OVERLOAD
MR2	794-8691-45	794-8691-45	794-8691-45	MOTOR RELAY
MD2	794-8691-57	794-8691-57	794-8691-57	MOTOR OVERLOAD
GND	794-8142-14	794-8142-14	794-8142-14	GROUND LUG
FB1	794-8132-70	794-8132-70	794-8132-70	FUSE HOLDER
F1	794-8132-69	794-8132-69	794-8132-69	FUSE
F2	794-8132-69	794-8132-69	794-8132-69	FUSE
F3	794-8132-69	794-8132-69	794-8132-69	FUSE
FX1	794-142-117	794-142-117	794-142-117	FUSE
TF1	794-8676-78	794-8623-17	794-8623-17	TRANSFORMER
TB1	794-8622-44	794-8622-44	794-8622-44	TERMINAL BARRIER
SR1	794-8687-79	794-8687-79	794-8687-79	STRAIN RELIEF
SR2	794-8144-03	794-8144-03	794-8144-03	STRAIN RELIEF
SR3	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SR4	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SR5	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SR6	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SR7	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT

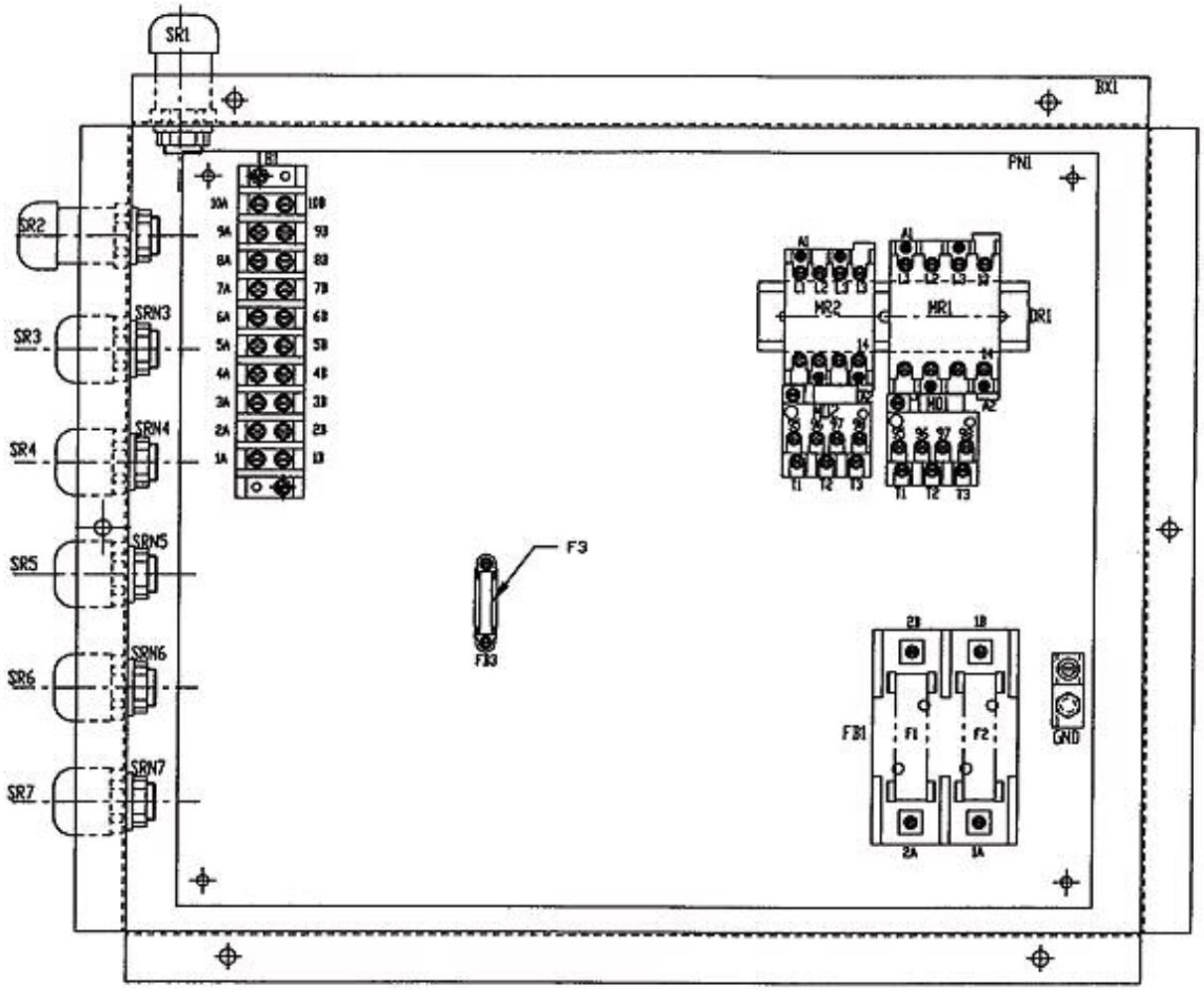
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8690-00, 794-8690-02, 794-8690-04



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8690-01

Item	Part #	Description
BX1	794-8687-77	CONTROL BOX
PN1	794-8687-78	PANEL
DR1	794-8014-10	DIN RAIL
GND	794-8142-14	GROUND LUG
FB1	794-8624-11	FUSE HOLDER
F1	794-8633-68	FUSE
F2	794-8142-66	FUSE
FB3	794-1421-19	FUSE HOLDER
F3	794-8691-47	FUSE
MR1	794-8691-56	MOTOR RELAY
MD1	794-8691-45	MOTOR OVERLOAD
MR2	794-8691-58	MOTOR RELAY
MD2	794-8622-44	MOTOR OVERLOAD
TB1	794-8687-79	TERMINAL BARRIER
SR1	794-8144-03	STRAIN RELIEF
SR2	800-8014-69	STRAIN RELIEF
SR3	800-8014-69	STRAIN RELIEF
SR4	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	STRAIN RELIEF NUT

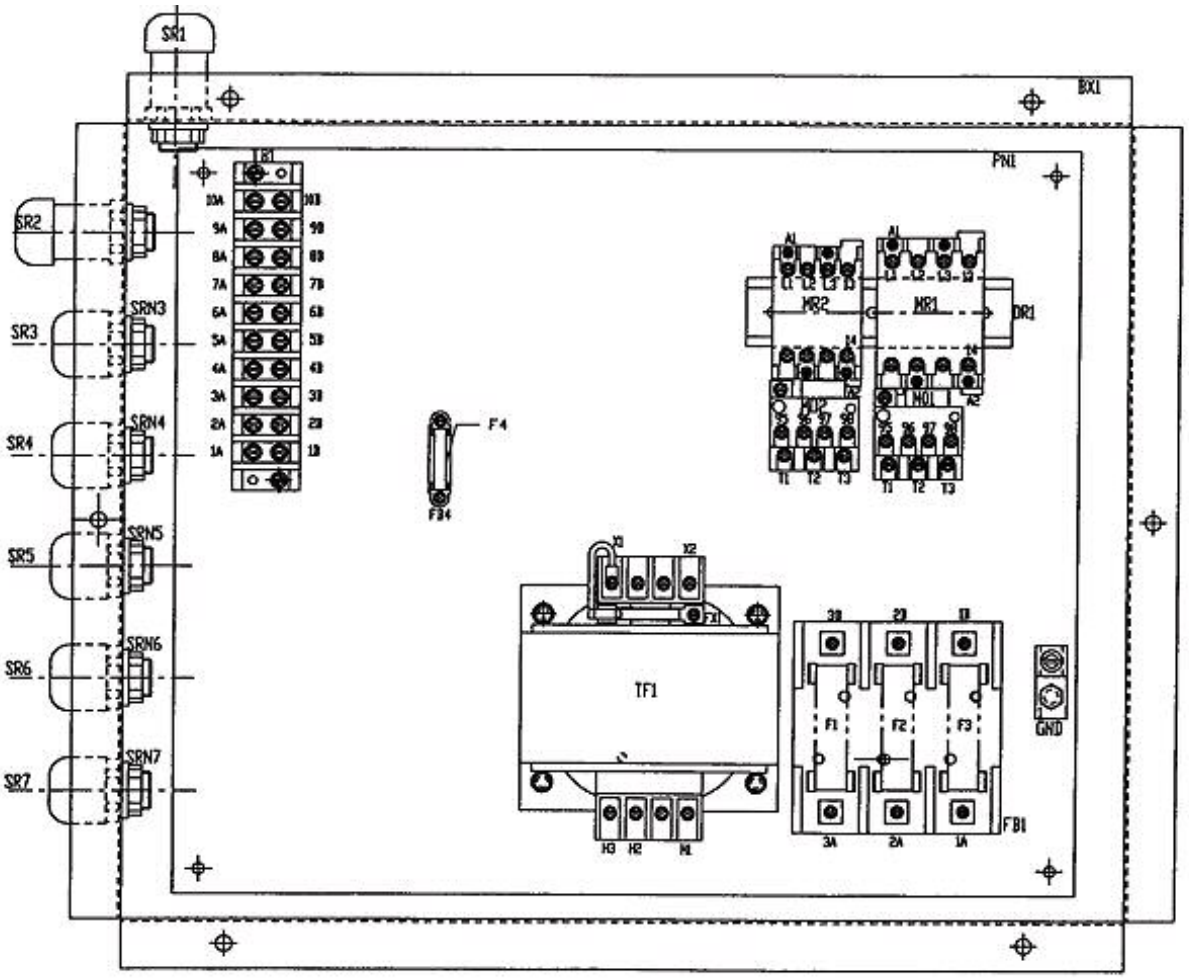
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8690-01



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8690-03

Item	Part #	Description
BX1	794-8687-77	CONTROL BOX
PN1	794-8687-78	PANEL
DR1	794-8014-10	DIN RAIL
MR1	794-8691-46	MOTOR RELAY
MD1	794-8691-51	MOTOR OVERLOAD
MR2	794-8691-45	MOTOR RELAY
MD2	794-8622-59	MOTOR OVERLOAD
GND	794-8142-14	GROUND LUG
FB1	794-8180-16	FUSE HOLDER
F1	794-8659-98	FUSE
F2	794-8659-98	FUSE
F3	794-8659-98	FUSE
FX1	794-9119-78	FUSE
TF1	794-8677-74	TRANSFORMER
FB4	794-8142-66	FUSE HOLDER
F4	794-8119-78	FUSE
TB1	794-8626-01	TERMINAL BARRIER
SR1	794-8687-79	STRAIN RELIEF
SR2	794-8144-03	STRAIN RELIEF
SR3	800-8014-69	STRAIN RELIEF
SR4	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	STRAIN RELIEF NUT

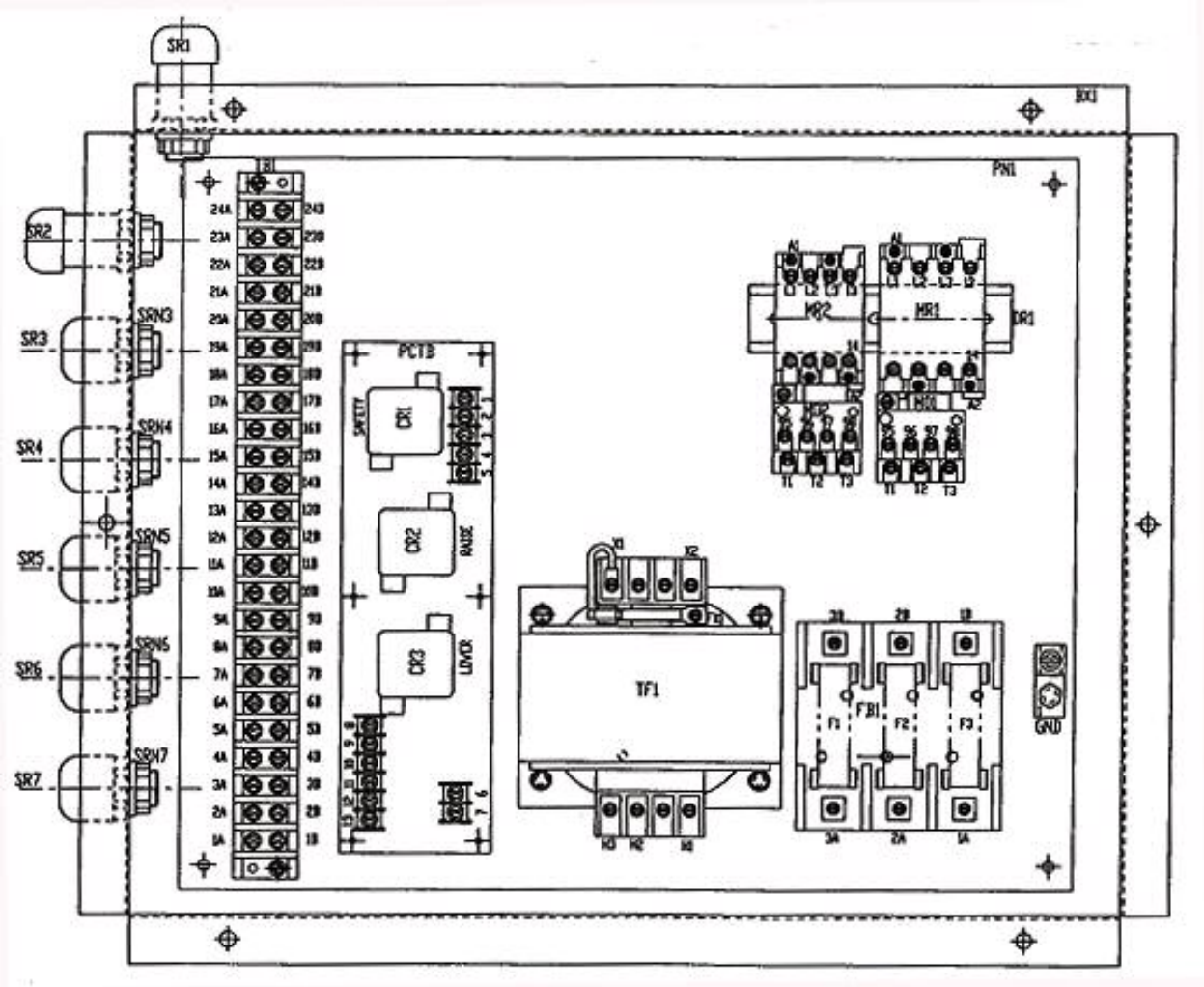
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8690-03



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-22, 794-8688-36, 794-8688-40, 794-8688-43

Item	794-8688-22 Part #	794-8688-36 Part #	794-8688-40 Part #	794-8688-43 Part #	Description
BX1	794-8687-77	794-8687-77	794-8687-77	794-8687-77	CONTROL BOX
PN1	794-8687-78	794-8687-78	794-8687-78	794-8687-78	PANEL
DR1	794-8687-72	794-8687-72	794-8687-72	794-8687-72	DIN RAIL
GND	794-8142-14	794-8142-14	794-8142-14	794-8142-14	GROUND LUG
FB1	794-8686-75	794-8180-16	794-8132-70	794-8180-16	FUSE HOLDER
F1	794-8633-68	794-8688-72	794-8132-69	794-8659-98	FUSE
F2	794-8633-68	794-8688-72	794-8132-69	794-8659-98	FUSE
F3	794-8633-68	794-8688-72	794-8132-69	794-8659-98	FUSE
TF1	794-8676-78	794-8623-17	794-8676-78	794-8623-17	TRANSFORMER
FX1	794-1421-17	794-1421-17	794-1421-17	794-1421-17	FUSE
MR1	794-8691-47	794-8691-46	794-8691-46	794-8691-46	MOTOR RELAY
MD1	794-8691-55	794-8691-55	794-8691-53	794-8691-51	MOTOR OVERLOAD
MR2	794-8691-45	794-8691-45	794-8691-45	794-8691-45	MOTOR RELAY
MD2	794-8691-57	794-8691-57	794-8691-57	794-8691-59	MOTOR OVERLOAD
TB1	794-8626-01	794-8626-01	794-8626-01	794-8626-01	TERMINAL BARRIER
CR1	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CR2	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CR3	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
SR1	794-8687-79	794-8687-79	794-8687-79	794-8687-79	STRAIN RELIEF
SR2	794-8687-79	794-8144-03	794-8144-03	794-8144-03	STRAIN RELIEF
SR3	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR4	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
PCTB	794-8016-71	794-8016-71	794-8016-71	794-8016-71	PRINTED CIRCUIT BOARD

CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-22, 794-8688-36, 794-8688-40, 794-8688-43

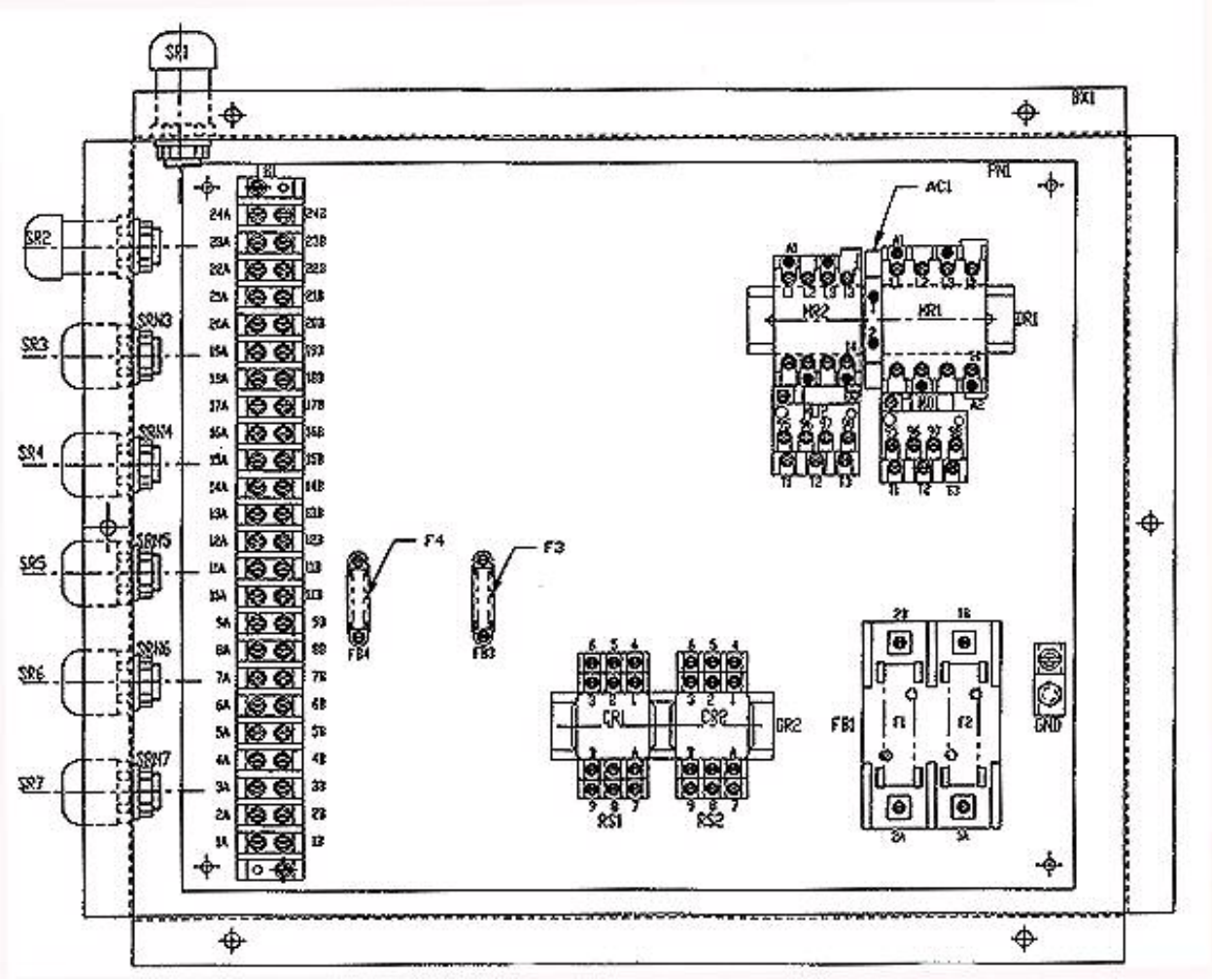


CONTROL BOX ASSEMBLY

MACHINE MODEL NUMBERS
794-8688-41

Item	Part #	Description
BX1	794-8687-77	CONTROL BOX
PN2	794-8687-78	PANEL
DR1	794-8687-72	DIN RAIL
GND	794-8142-14	GROUND LUG
FB1	794-8624-11	FUSE HOLDER
F1	794-8633-68	FUSE
F2	794-8633-68	FUSE
F3	794-1421-17	FUSE
F4	794-1421-17	FUSE
MR1	794-8691-47	MOTOR RELAY
MD1	794-8691-56	MOTOR OVERLOAD
MR2	794-8691-45	MOTOR RELAY
MD2	794-8691-58	MOTOR OVERLOAD
RS1	794-8687-73	RELAY SOCKET
RS2	794-8687-73	RELAY SOCKET
TB1	794-8626-01	TERMINAL BARRIER
CR1	794-8625-15	RELAY
CR2	794-8625-15	RELAY
FB3	794-8142-66	FUSE HOLDER
FB4	794-8142-66	FUSE HOLDER
SR1	794-8687-79	STRAIN RELIEF
SR2	794-9144-03	STRAIN RELIEF
SR3	794-8144-03	STRAIN RELIEF
SR4	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	STRAIN RELIEF NUT
AC1	794-8688-93	AUXILARY CONTROL
DR2	794-8014-10	DIN RAIL

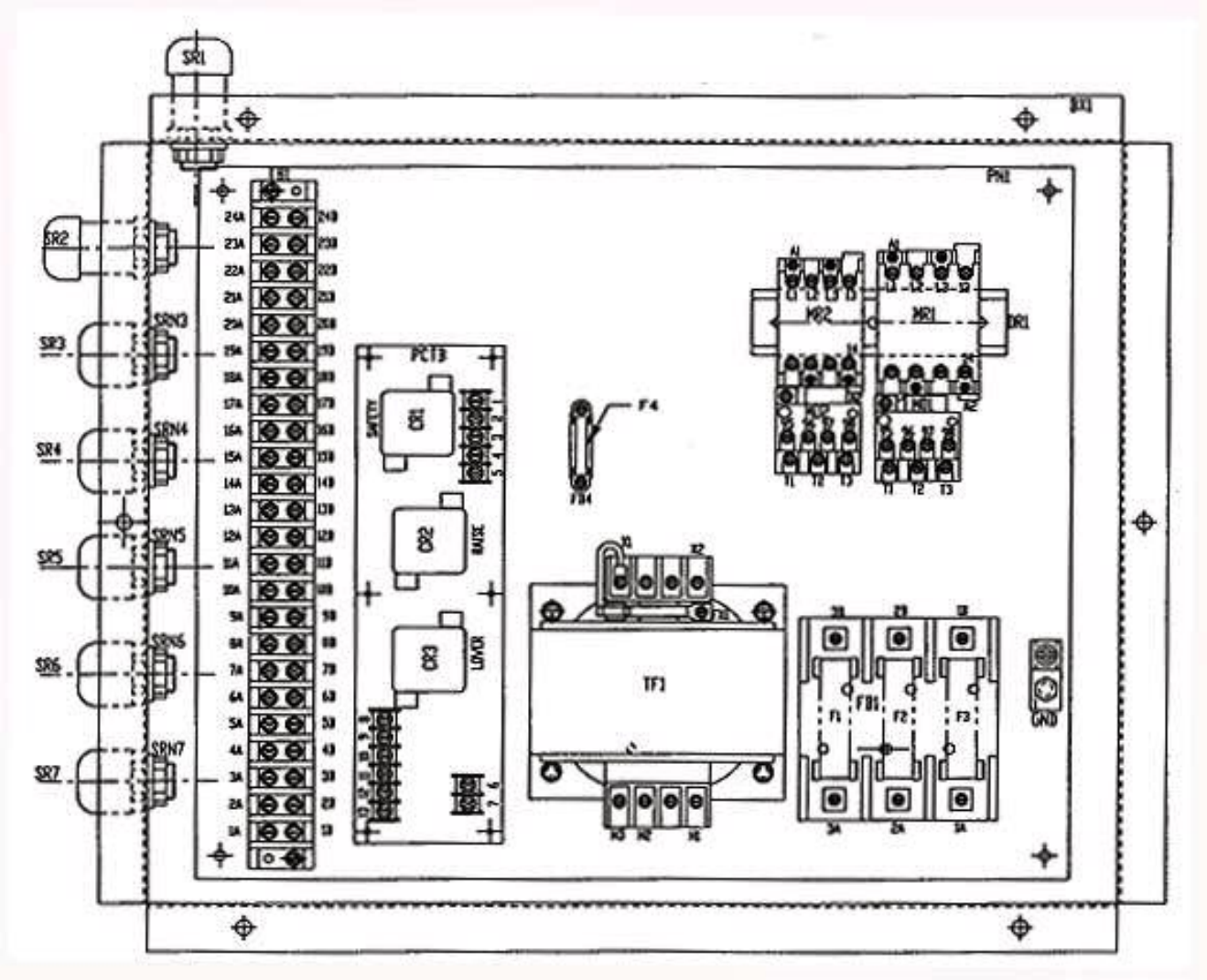
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-41



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-35, 794-8688-42

Item	794-8688-35 Part #	794-8688-42 Part #	Description
BX1	794-8687-77	794-8687-77	CONTROL BOX
PN1	794-8687-78	794-8687-78	PANEL
DR1	794-8687-72	794-8687-72	DIN RAIL
GND	794-8142-14	794-8142-14	GROUND LUG
FB1	794-8180-16	794-8180-16	FUSE HOLDER
F1	794-8688-72	794-8659-98	FUSE
F2	794-8688-72	794-8659-98	FUSE
F3	794-8688-72	794-8659-98	FUSE
TF1	794-8677-74	794-8677-74	TRANSFORMER
MX1	794-8119-78	794-8119-78	FUSE
MR1	794-8691-46	794-8691-46	MOTOR RELAY
MO1	794-8691-53	794-8691-51	MOTOR OVERLOAD
MR2	794-8691-45	794-8691-45	MOTOR RELAY
MO2	794-8691-59	794-8691-59	MOTOR OVERLOAD
TB1	794-8626-01	794-8626-01	TERMINAL BARRIER
CR1	794-8625-15	794-8625-15	RELAY
CR2	794-8625-15	794-8625-15	REALY
CR3	794-8625-15	794-8625-15	REALY
SR1	794-8687-79	794-8687-79	STRAIN RELIEF
SR2	794-8144-03	794-8144-03	STRAIN RELIEF
SR3	800-8014-69	800-8014-69	STRAIN RELIEF
SR4	800-8014-69	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	800-8667-93	STRAIN RELIEF NUT
PCTB	794-8016-71	794-8016-71	PRINTED CIRCUIT BOARD
FB4	794-8142-66	794-8142-66	FUSE HOLDER
F4	794-8119-78	794-8119-78	FUSE

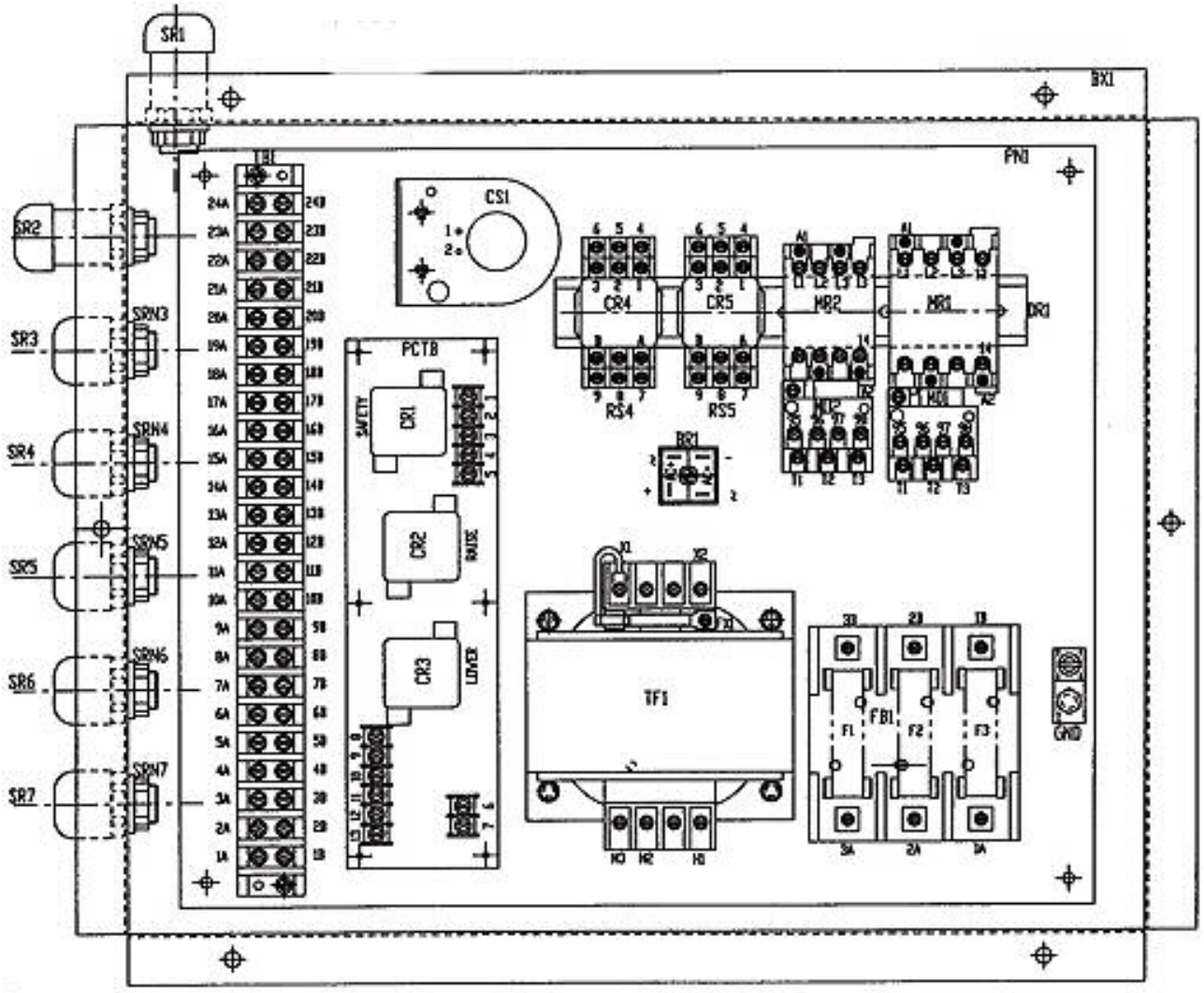
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-35, 794-8688-42



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-06, 794-8688-38,
794-8688-50, 794-8688-53

Item	794-8688-06 Part #	794-8688-38 Part #	794-8688-50 Part #	794-8688-53 Part #	Description
BX1	794-8687-77	794-8687-77	794-8687-77	794-8687-77	CONTROL BOARD
PN1	794-8687-78	794-8687-78	794-8687-78	794-8687-78	PANEL
DR1	794-8687-72	794-8687-72	794-8687-72	794-8687-72	DIN RAIL
GND	794-8142-14	794-8142-14	794-8142-14	794-8142-14	GROUND LUG
FB1	794-8686-75	794-8180-16	794-8132-70	794-8180-16	FUSE HOLDER
F1	794-8633-68	794-8688-72	794-8132-69	794-8659-98	FUSE
F2	794-8633-68	794-8688-72	794-8132-69	794-8659-98	FUSE
F3	794-8633-68	794-8688-72	794-8132-69	794-8659-98	FUSE
TF1	794-8676-78	794-8623-17	794-8676-78	794-8623-17	TRANSFORMER
FX1	794-1421-17	794-1421-17	794-1421-17	794-1421-17	FUSE
BR1	794-8687-76	794-8687-76	794-8687-76	794-8687-76	BRIDGE RECTIFIER
MR1	794-8691-47	794-8691-46	794-8691-46	794-8691-46	MOTOR RELAY
MO1	794-8691-55	794-8691-53	794-8691-53	794-8691-51	MOTOR OVERLOAD
MR2	794-8691-45	794-8691-45	794-8691-45	794-8691-45	MOTOR RELAY
MO2	794-8691-57	794-8691-59	794-8691-57	794-8691-59	MOTOR OVERLOAD
RS4	794-8687-73	794-8687-73	794-8687-73	794-8687-73	RELAY SOCKET
RS5	794-8687-73	794-8687-73	794-8687-73	794-8687-73	RELAY SOCKET
TB1	794-8626-01	794-8626-01	794-8626-01	794-8626-01	TERMINAL BARRIER
CR1	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CR2	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CR3	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CR4	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CR5	794-8625-15	794-8625-15	794-8625-15	794-8625-15	RELAY
CS1	794-8687-74	794-8687-74	794-8687-74	794-8687-74	CURRENT SENSOR
SR1	794-8687-79	794-8687-79	794-8687-79	794-8687-79	STRAIN RELIEF
SR2	794-8687-79	794-8687-79	794-8687-79	794-8687-79	STRAIN RELIEF
SR3	794-8144-03	794-8144-03	794-8144-03	794-8144-03	STRAIN RELIEF
SR4	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	800-8014-69	800-8014-69	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	800-8014-71	800-8014-71	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	800-8667-93	800-8667-93	800-8667-93	STRAIN RELIEF NUT
PCTB	794-8016-71	794-8016-71	794-8016-71	794-8016-71	PRINTED CIRCUIT BOARD

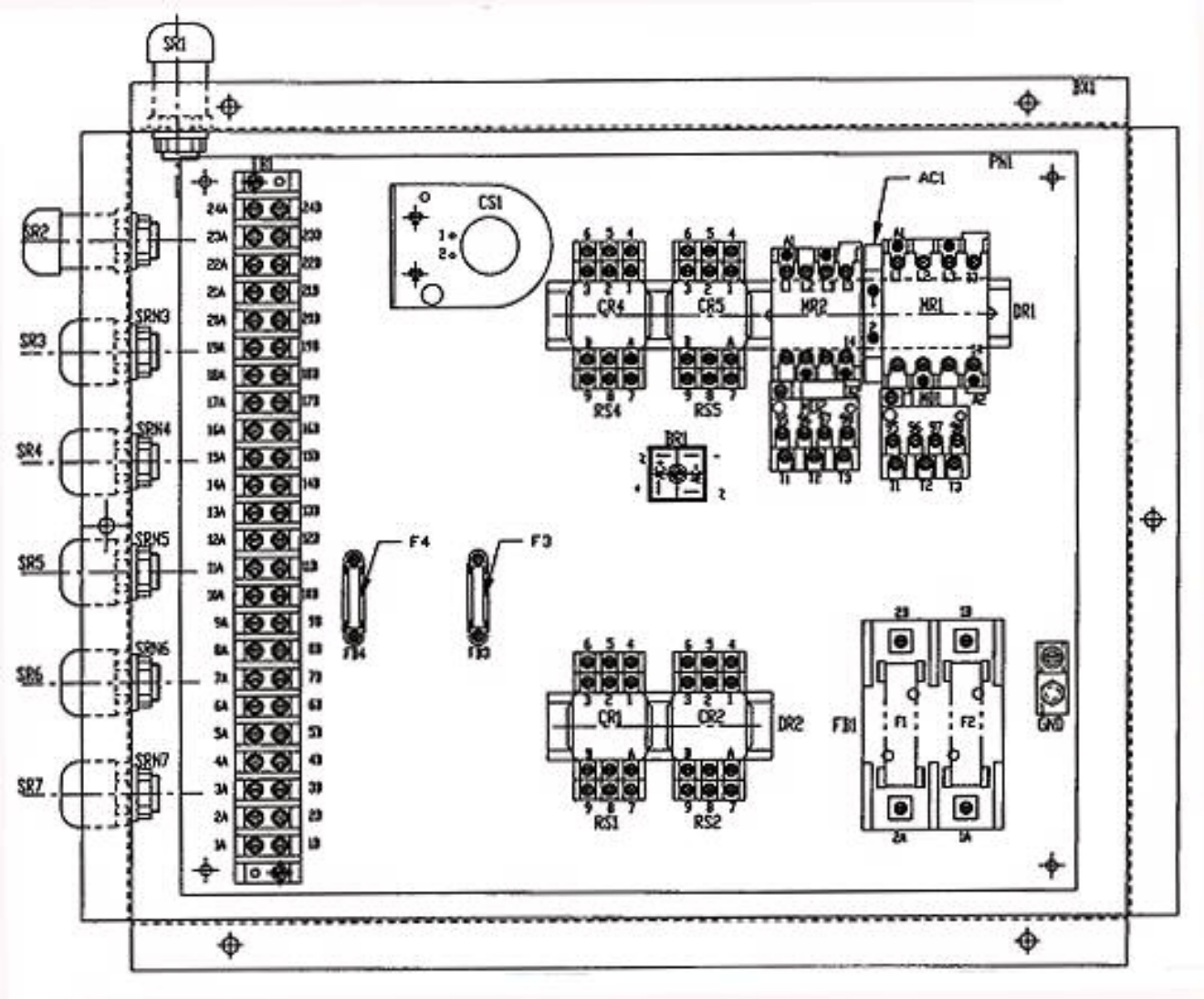
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-06, 794-8688-38,
794-8688-50, 794-8688-53



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-51

Item	Part #	Description
BX1	794-8687-77	CONTROL BOX
PN1	794-8687-78	PANEL
DR1	794-8687-72	DIN RAIL
GND	794-8142-14	GROUND LUG
FB1	794-8624-11	FUSE HOLDER
F1	794-8633-68	FUSE
F2	794-8633-68	FUSE
F3	794-1421-17	FUSE
F4	794-1421-17	FUSE
BR1	794-8687-76	BRIDGE RECTIFIER
MR1	794-8691-47	MOTOR RELAY
MO1	794-8691-56	MOTOR OVERLOAD
MR2	794-8691-45	MOTOR RELAY
MO2	794-8691-58	MOTOR OVERLOAD
RS1	794-8687-73	RELAY SOCKET
RS2	794-8687-73	RELAY SOCKET
RS4	794-8687-73	RELAY SOCKET
RS5	794-8687-73	RELAY SOCKET
TB1	794-8626-01	TERMINAL BARRIER
CR1	794-8625-15	RELAY
CR2	794-8625-15	RELAY
CR4	794-8625-15	RELAY
CR5	794-8625-15	RELAY
CS1	794-8687-74	CURRENT SENSOR
SR1	794-8687-79	STRAIN RELIEF
SR2	794-8144-03	STRAIN RELIEF
SR3	794-8144-03	STRAIN RELIEF
SR4	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	STRAIN RELIEF
SR7	800-8014-69	STRAIN RELIEF
SRN3	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	STRAIN RELIEF NUT
FB3	794-8142-66	FUSE HOLDER
FB4	794-8142-66	FUSE HOLDER
AC1	794-8688-93	AUXILIARY CONTROL
DR2	794-8014-10	DIN RAIL

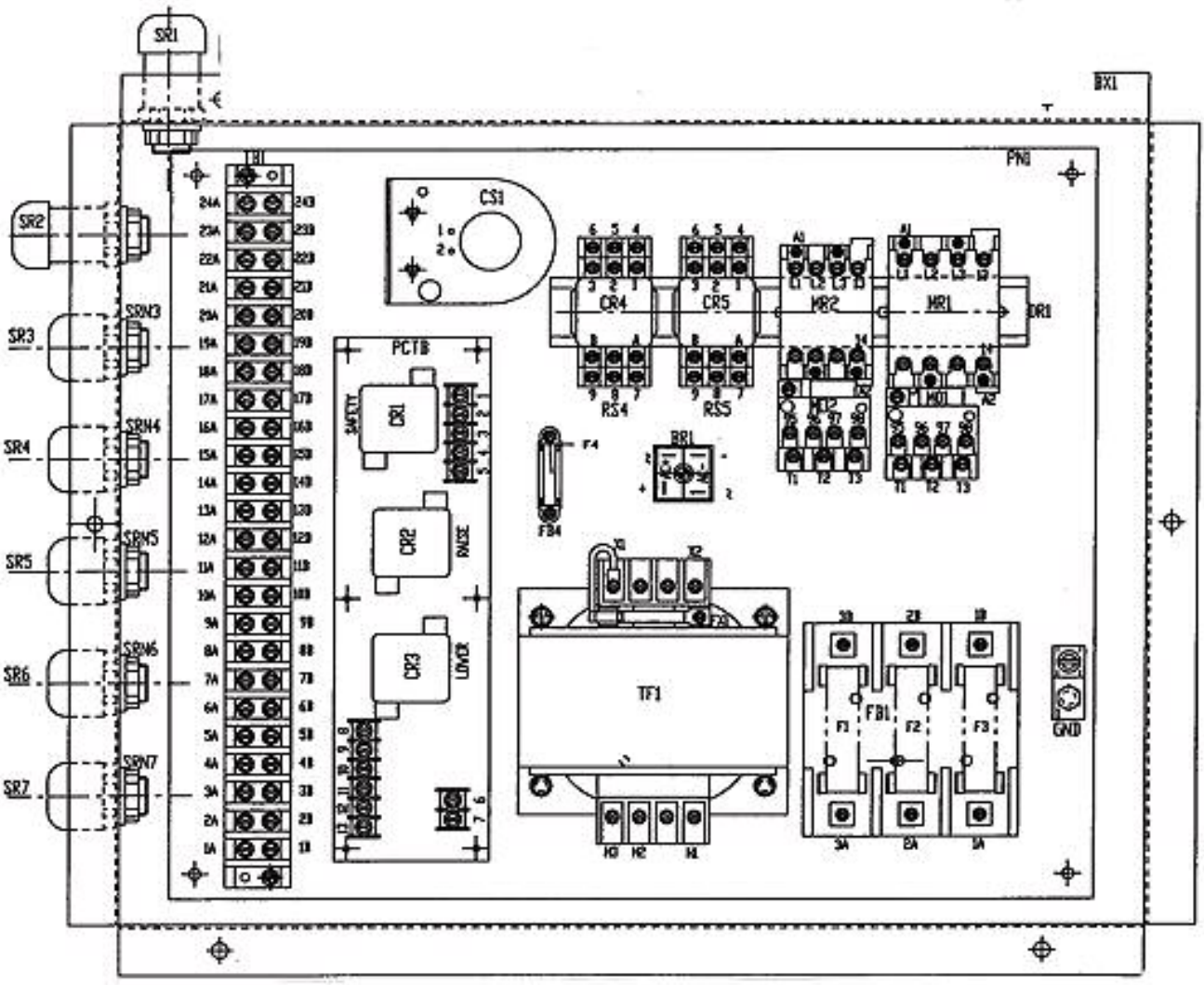
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-51



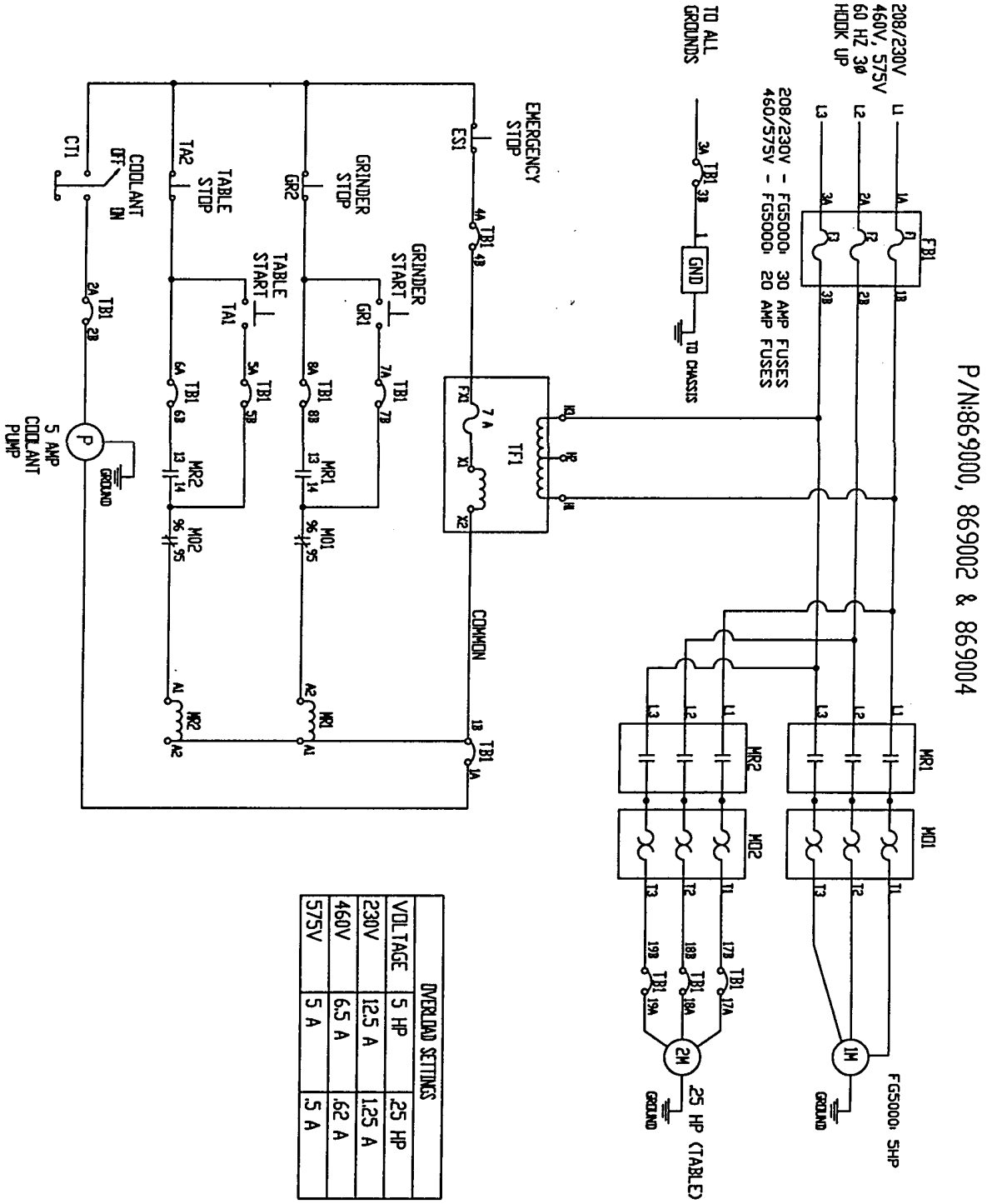
CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-37, 794-8688-52

Item	794-8688-37 Part #	794-8688-52 Part #	Description
BX1	794-8687-77	794-8687-77	CONTROL BOX
PN1	794-8687-78	794-8687-78	PANEL
DR1	794-8687-72	794-8687-72	DIN RAIL
GND	794-8142-14	794-8142-14	GROUND LUG
FB1	794-8180-16	794-8180-16	FUSE HOLDER
F1	791-8688-72	794-8659-98	FUSE
F2	791-8688-72	794-8659-98	FUSE
F3	791-8688-72	794-8659-98	FUSE
TF1	794-8677-74	794-8677-74	TRANSFORMER
FX1	794-8119-78	794-8119-78	FUSE
BR1	794-8687-76	794-8687-76	BRIDGE RECTIFIER
MR1	794-8691-46	794-8691-46	MOTOR RELAY
MO1	794-8691-53	794-8691-51	MOTOR OVERLOAD
MR2	794-8691-45	794-8691-45	MOTOR RELAY
MO2	794-8691-59	794-8691-59	MOTOR OVERLOAD
RS4	794-8687-73	794-8687-73	RELAY SOCKET
RS5	794-8687-73	794-8687-73	RELAY SOCKET
TB1	794-8626-01	794-8626-01	TERMINAL BARRIER
CR1	794-8625-15	794-8625-15	RELAY
CR2	794-8625-15	794-8625-15	RELAY
CR4	794-8625-15	794-8625-15	RELAY
CR5	794-8625-15	794-8625-15	RELAY
CS1	794-8687-74	794-8687-74	CURRENT SENSOR
SR1	794-8687-79	794-8687-79	STRAIN RELIEF
SR2	794-8144-03	794-8144-03	STRAIN RELIEF
SR3	794-8144-03	794-8144-03	STRAIN RELIEF
SR4	800-8014-69	800-8014-69	STRAIN RELIEF
SR5	800-8014-69	800-8014-69	STRAIN RELIEF
SR6	800-8014-69	800-8014-69	STRAIN RELIEF
SR7	800-8014-71	800-8014-71	STRAIN RELIEF
SRN3	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN4	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN5	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN6	800-8667-93	800-8667-93	STRAIN RELIEF NUT
SRN7	800-8667-93	800-8667-93	STRAIN RELIEF NUT
PCTB	794-8016-71	794-8016-71	PRINTED CIRCUIT BOARD
FB4	794-8142-66	794-8142-66	FUSE HOLDER
F4	794-8119-78	794-8119-78	FUSE

CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-37, 794-8688-52

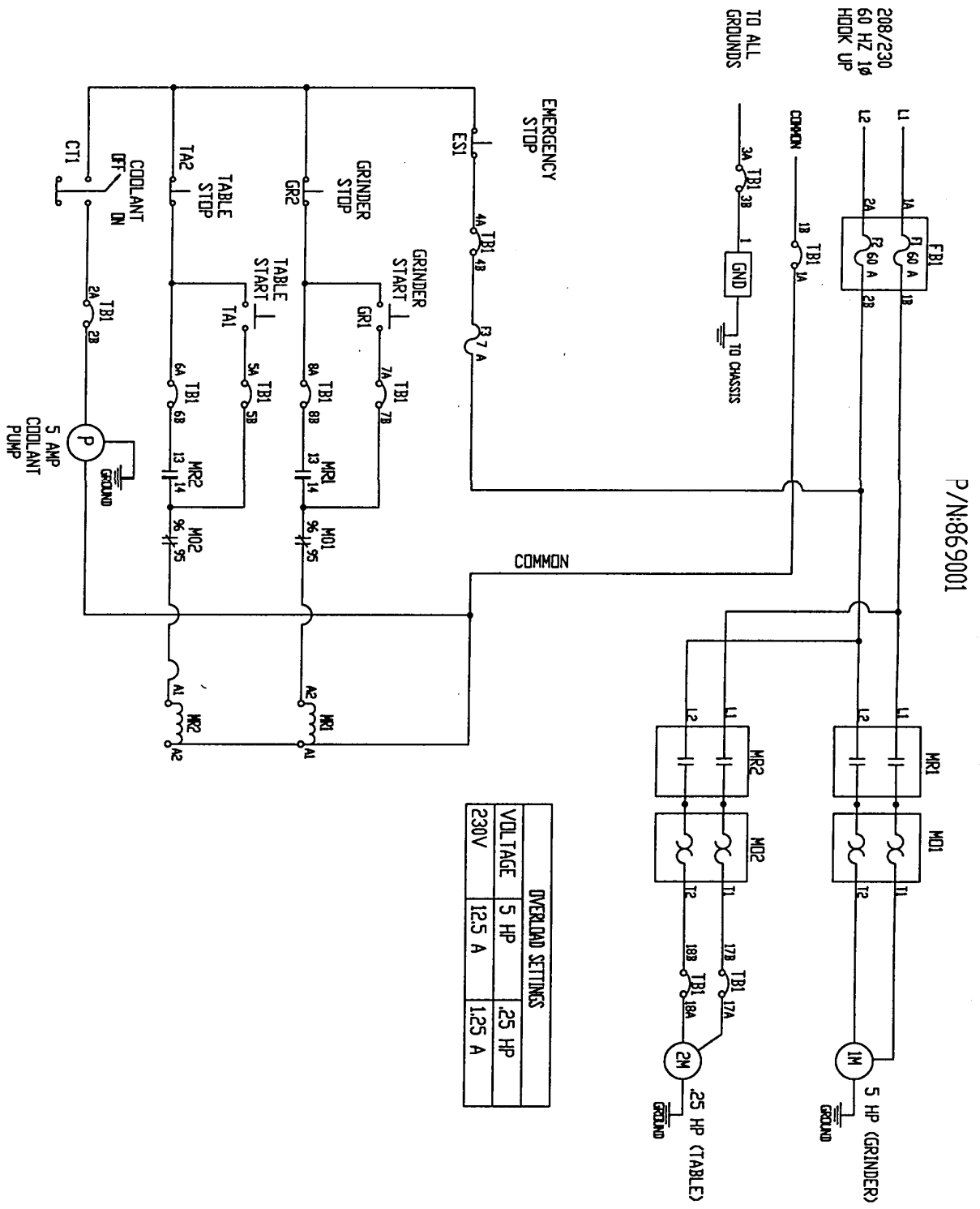


WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8690-00, 794-8690-02, 794-8690-04

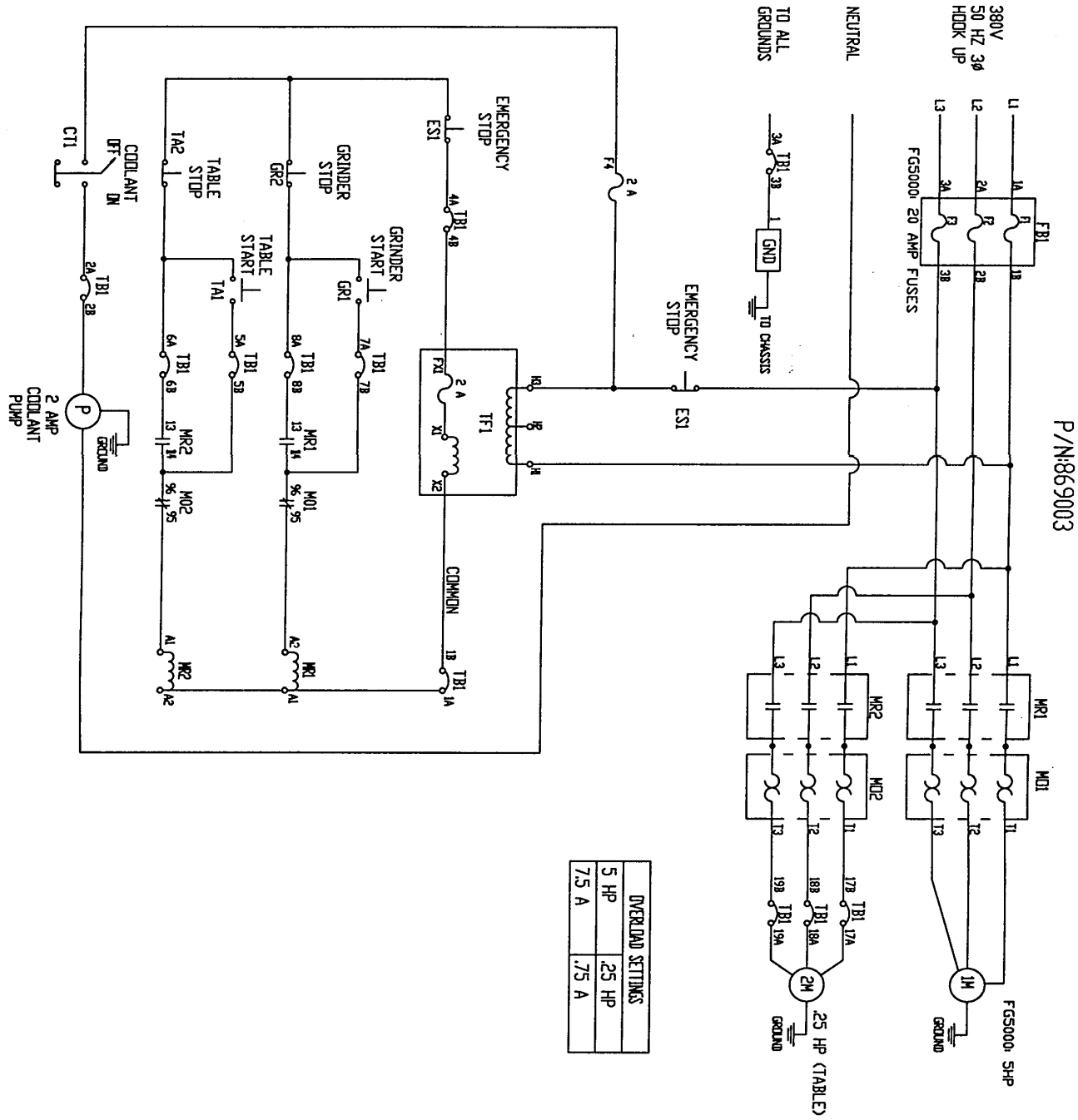


	OVERLOAD SETTINGS	
VOLTAGE	5 HP	.25 HP
230V	12.5 A	1.25 A
460V	6.5 A	.62 A
575V	5 A	.5 A

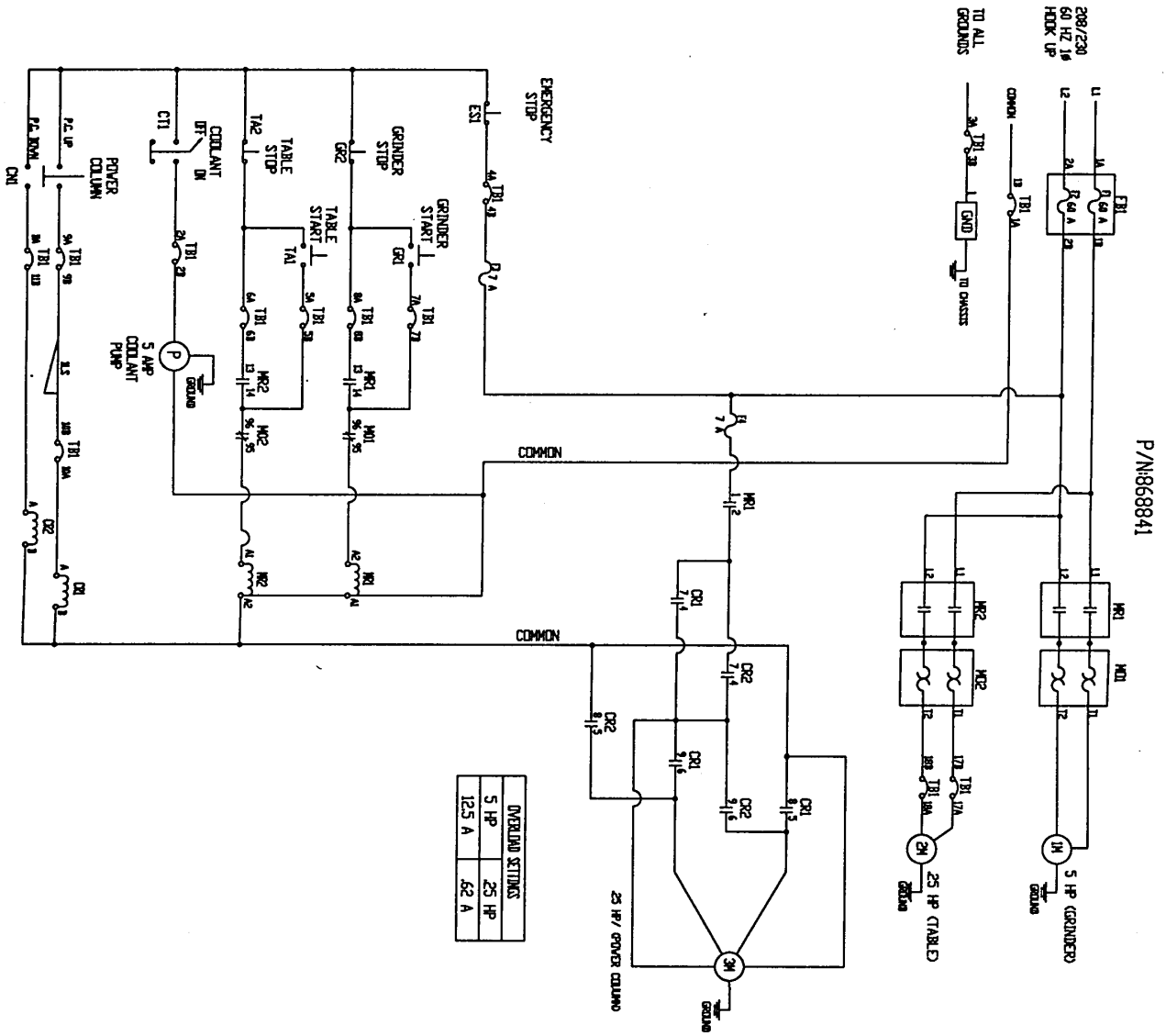
WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8690-01



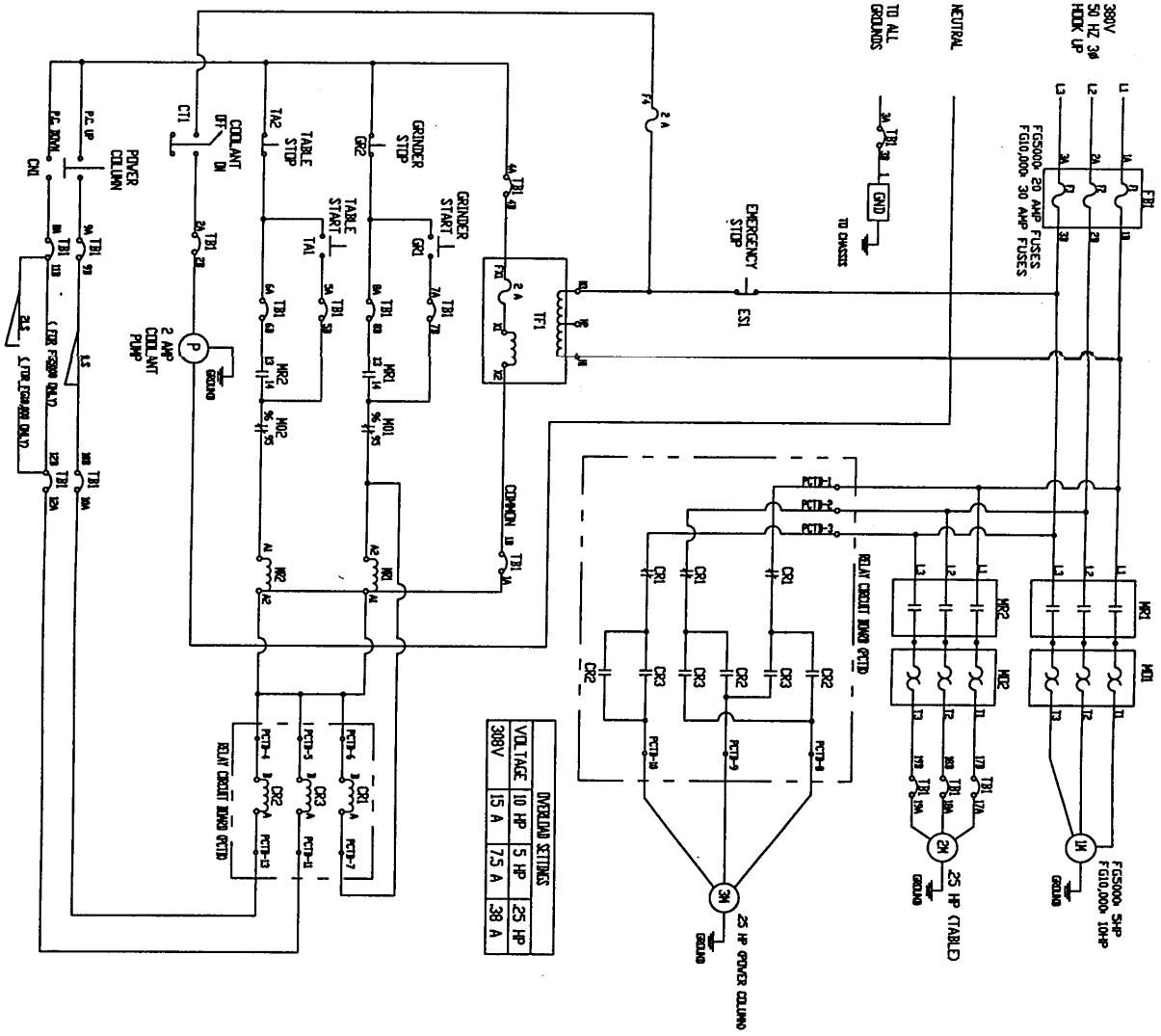
WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8690-03



WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8688-41

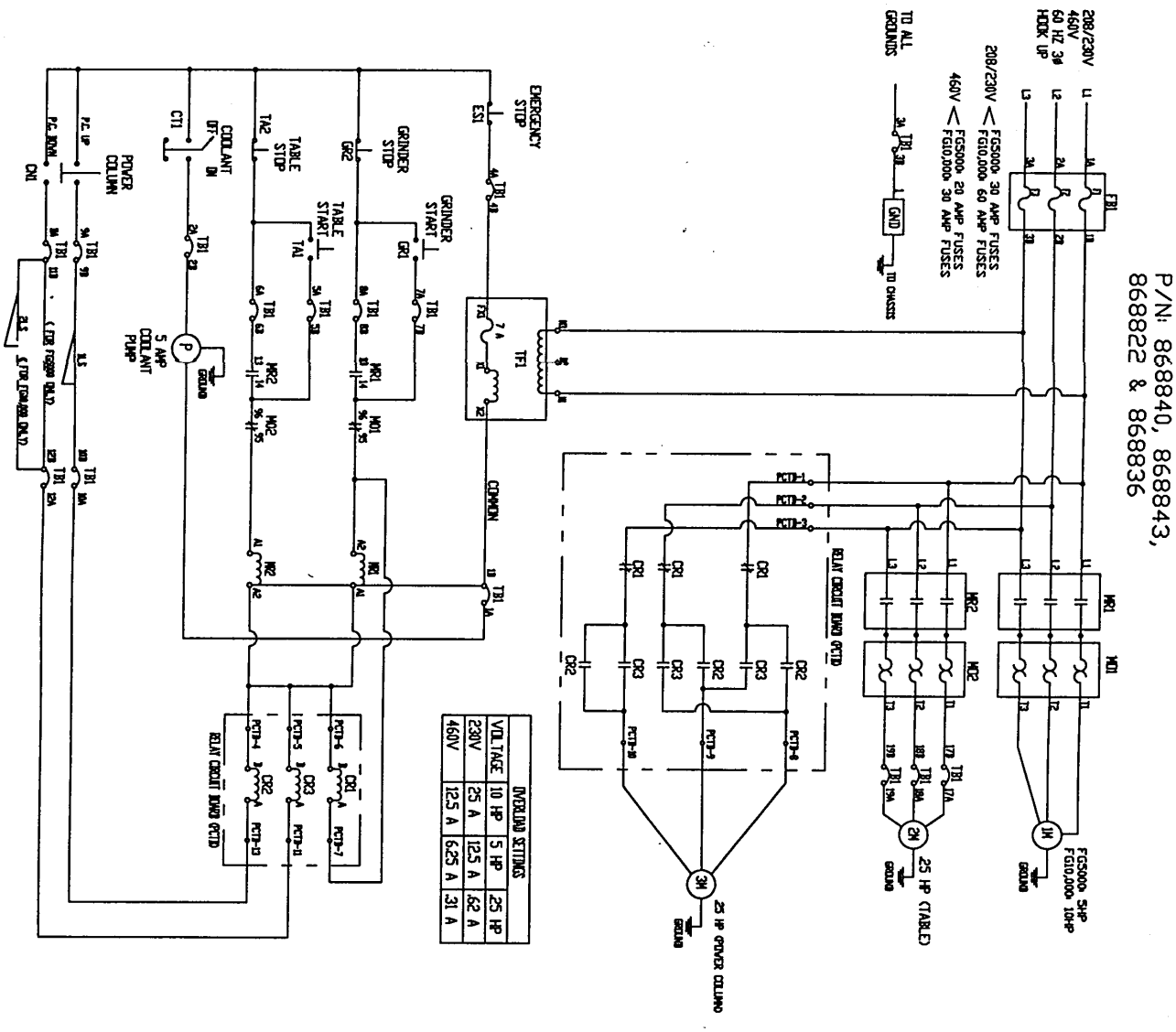


WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8688-35, 794-8688-42

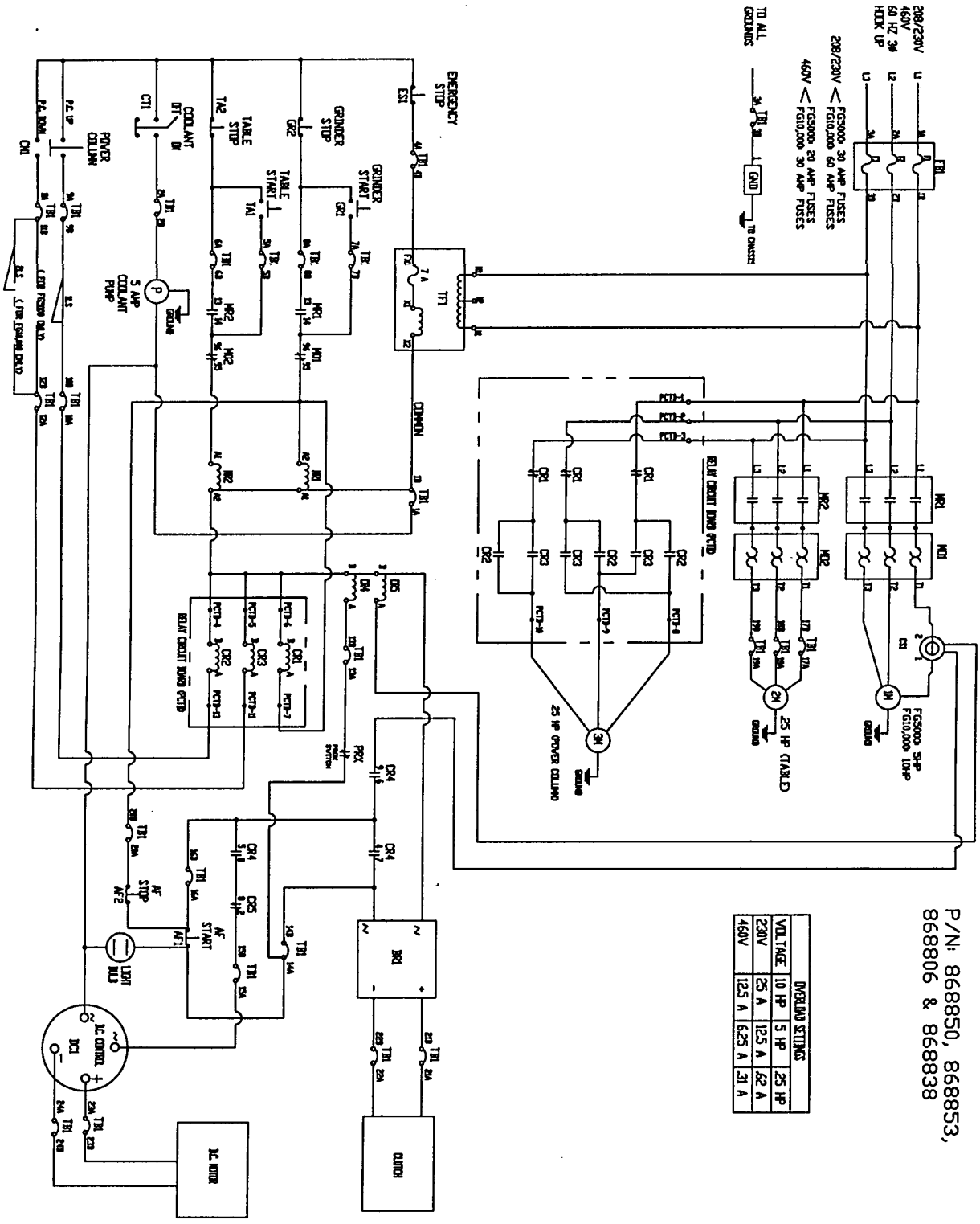


P/N: 868842 & 868835

WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8688-22, 794-8688-36, 794-8688-40, 794-8688-43

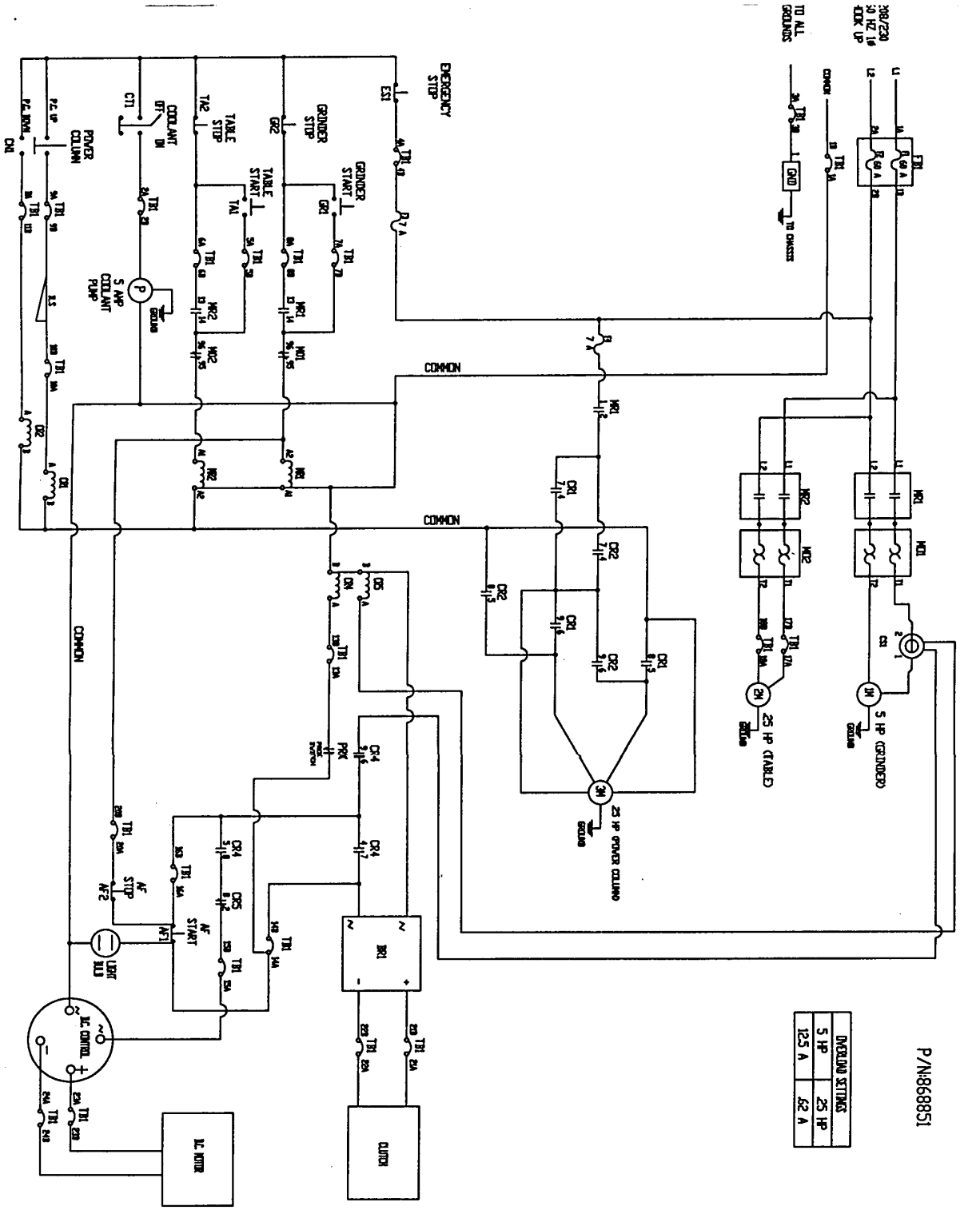


WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8688-06, 794-8688-38, 794-8688-50, 794-8688-53

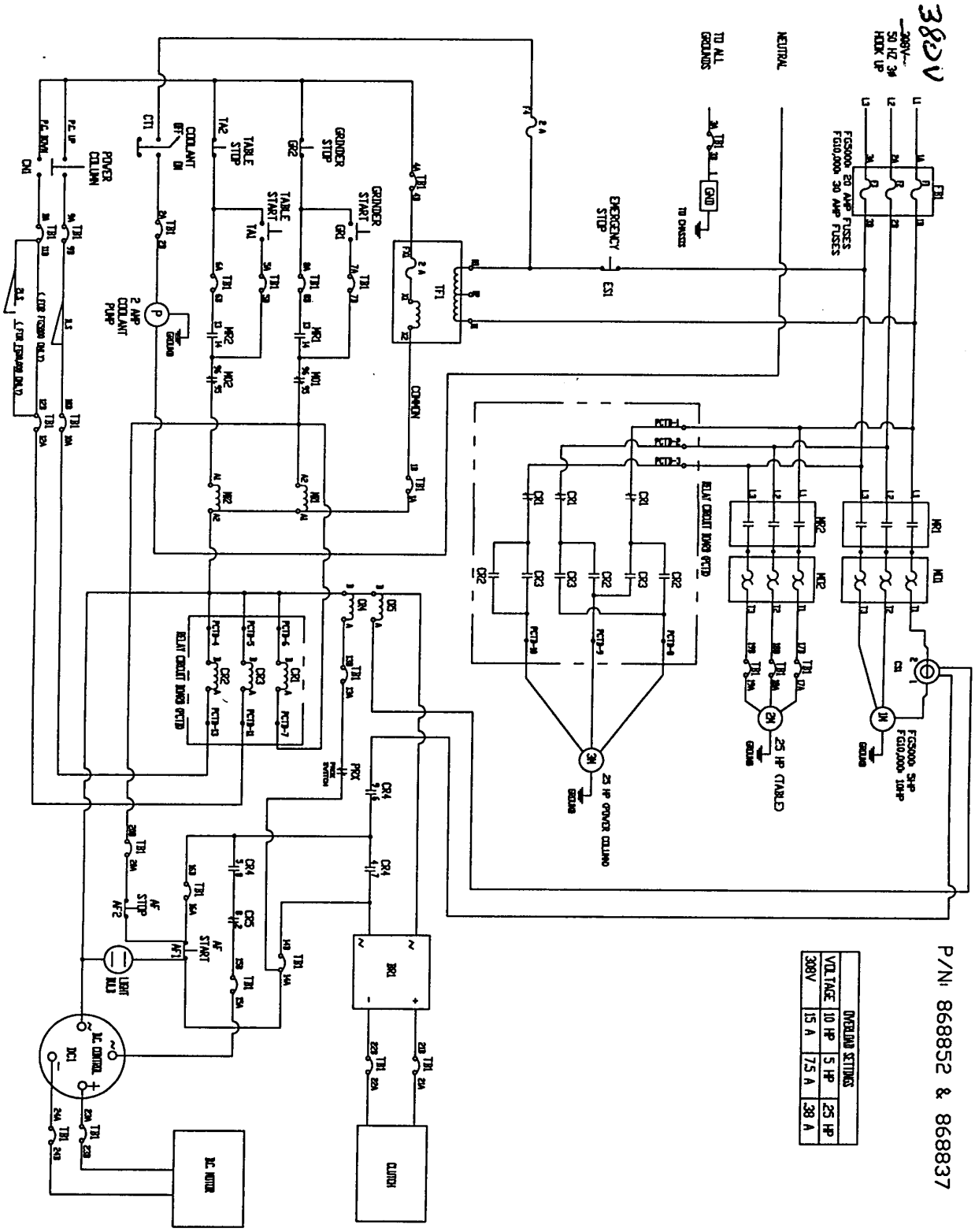


P/N: 868850, 868853, 868806 & 868838

WIRING DIAGRAM
MACHINE MODEL NUMBERS
794-8688-51



CONTROL BOX ASSEMBLY
MACHINE MODEL NUMBERS
794-8688-37, 794-8688-52



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