Forney MODEL FS 295Vw UTILITY WELDER

FOR EQUIPMENT and GENERAL MAINTENANCE REPAIR in INDUSTRY, on FARMS, in SCHOOLS, BODY SHOPS, VOCATIONAL TRAINING, etc.

CATALOG NO. 320-J

FEATURES

1. Direct reading amperage settings with stepless control for infinite amperage selection.
2. Positive amperage control mechanism "holds" at preset amperages selected.
3. Equipped with handle and 5 1/2" wheels for easy portability.
4. Self-tightening all-brass tapered jacks are used on front for sure and tight fit for ground and electrode holder leads.
5. Designed for very quiet operation with little transformer or fan noise.
6. Insulation and windings are double-dipped and double-baked for long-lasting life of the welder.
7. Large size transformer dissipates more heat, requiring less dependence on forced air cooling.
8. Case designed to provide excellent convection ventilation throughout the machine increasing efficiency of the fan.
9. Heavy duty brackets, welded to shrouded transformer, are bolted to the front and back of welder case. This provides exceptional damage resistance, for continued operation even if some case damage is experienced.
10. Engineered and designed for hours of continuous use and years of service!

The FS-295Vw is the 'Big Brother' of the FS-225Vw. It was manufactured with the same precision, but designed for those heavier duty jobs. Excellent on problem rods such as hardfacing, low hydrogen and stainless.

WARRANTY

All parts are warranted against defects in workmanship and material for a period of one year and transformer is guaranteed against burn-out for three years from date of purchase by the original owner.

SPECIFICATIONS

WELDING			
Range			HI 30-295 Amps LO 25-200 Amps
SECONDARY			
Max. Open Circuit Volts			80
Duty Cycle			20 to 100%
Temperature Rise			105° C
Secondary Load Volts			30
PRIMARY			
AC Input Volts			230
Fuse			60 Amperes
Phase			Single
H_z (Cycles)			60
SIZE			
Width	12"	Depth	13"
Height	28-1/2" (including crank)		33" (including handle)
Weight	108 lbs.		

VERTICAL SHUNT WELDER
FORNEY MODEL FS 295Vw
GENERAL INFORMATION & PARTS LIST # 14500

This arc welder is a precision engineered, quality manufactured machine designed for long life and dependable service. It is an easy-to-use practical welder for general repair--especially designed for filling station and garage work--light manufacturing --farm repair--body and sheet metal work.

The unit has two output welding ranges with infinite amperage settings within each range. The indicator arm (visible through slot in front panel) indicates at a glance the amperage you have selected.

SPECIFICATIONS

Transformer--Heavy Duty--Limited Input		Max. Open Circuit Voltage	80
Primary Voltage	230	Welding Range Amps-Lo 25-220 HI	30-295
Primary Input	65	Secondary Load Volts	30
Phase	Single	Temp. Rise	105° C
Frequency	60 Hz		

ACCESSORIES ARE OPTIONAL

Electrode Holder and Cable - The electrode holder is a fully insulated heavy duty holder allowing a full range of welding rod diameters and has four positions to hold welding rod. The cable is extra flexible fine strand welding cable. The plug is machined brass with a molded rubber integral insulation and grip.

Ground Clamp and Cable - The ground clamp is heavy duty and will clamp to a wide variety of shapes and sizes to be welded. Cable quality and plug-in the same as electrode cable.

Helmet - The helmet is molded rugged fiberglas with semi-flexible headband fully adjustable for comfort fit. Its main features besides the rugged quality are its light weight and snug size. It is especially advantageous to repair around machines, under cars and trucks and other confining repair jobs. Comes complete with Government approved welding arc filter lens and special spatter resistant clear cover lens.

Electric Arc Torch - A very useful accessory for brazing, heavy soldering, pre-heating, bending, paint and scale removing. Plugs into welding stages and gives up to 9000° F flame. Easy to use.

Welding Rod - Flux - Brazing Rod - Hardsurfacing Materials - Extension Cables - Many other Welding Supplies and Equipment.

INSTALLATION

Location - The location you pick for your arc welder is quite important and certain factors should be considered. Among them are the following:

1. Place your welder in an area that is free of any Volatile liquids, excessive dust, or any other easy inflammable items that sparks from welding may ignite.

2. An open area with adequate floor space is important as many things to be welded need to be laid out on the floor or on a large bench for easier operation.

3. Location of your welder should be free from damp or wet floor or ground;

4. If it is intended to weld on large equipment that cannot be brought inside the building, it is best to locate the welder near the door or provide a power receptacle near the door so that your welder can be used both outside and inside.

5. Your welder should be located where there is adequate power supply. The unit requires a 60 amp fuse or breaker. A power supply wire size for the welder only over a short distance can be a size # 8. If longer distances are required, a # 6 wire is recommended to eliminate any excessive voltage drop. If other electrical equipment is to be operated at the same time you are welding, increasingly larger wire size will be necessary and can be figured by your electrician.

N O T E | DO NOT connect this welder to a 3-phase supply as a 3-phase machine. If no 230 volt single phase power is available, the welder can be used by connecting to only two of the 3-phase connections. However, care must be taken that the third ground safety wire is properly connected to a separate approved ground.

OPERATING INSTRUCTIONS

WELDING--Good strong welds can be easily attained by following these easy instructions:

1. Prepare the joint to be welded making certain that the metal is clean of all foreign material.

2. Select the correct rod type and size to properly weld the joint.

3. Connect the electrode holder and ground clamp cables to the proper output jacks, turn the crank so that the output amperage is matched to the amperage requirements of the rod used.

4. Turn the welder on and proceed to weld using accepted welding procedures.

BRAZING--With the carbon arc torch it is very easy to do. You simply use the regular amperage plugs and grounds with the torch. The torch is designed to use 1/4", 5/16", 3/8", and 1/2" copper coated carbon rods. The most popular sizes for regular work are 5/16" and 3/8" diameters.

3/16" carbon ..... not more than 30 amps 1/4" carbon.....not more than 50 amps
5/16" carbon ..... not more than 90 amps 3/8" carbon.....not more than 120 amps

MAINTENANCE--The welder requires little maintenance other than normal care. Keep the welder case clean and waxed to preserve the original finish. The electrode holder, ground clamp, and plugs SHOULD BE KEPT CLEAN to give BEST PERFORMANCE!

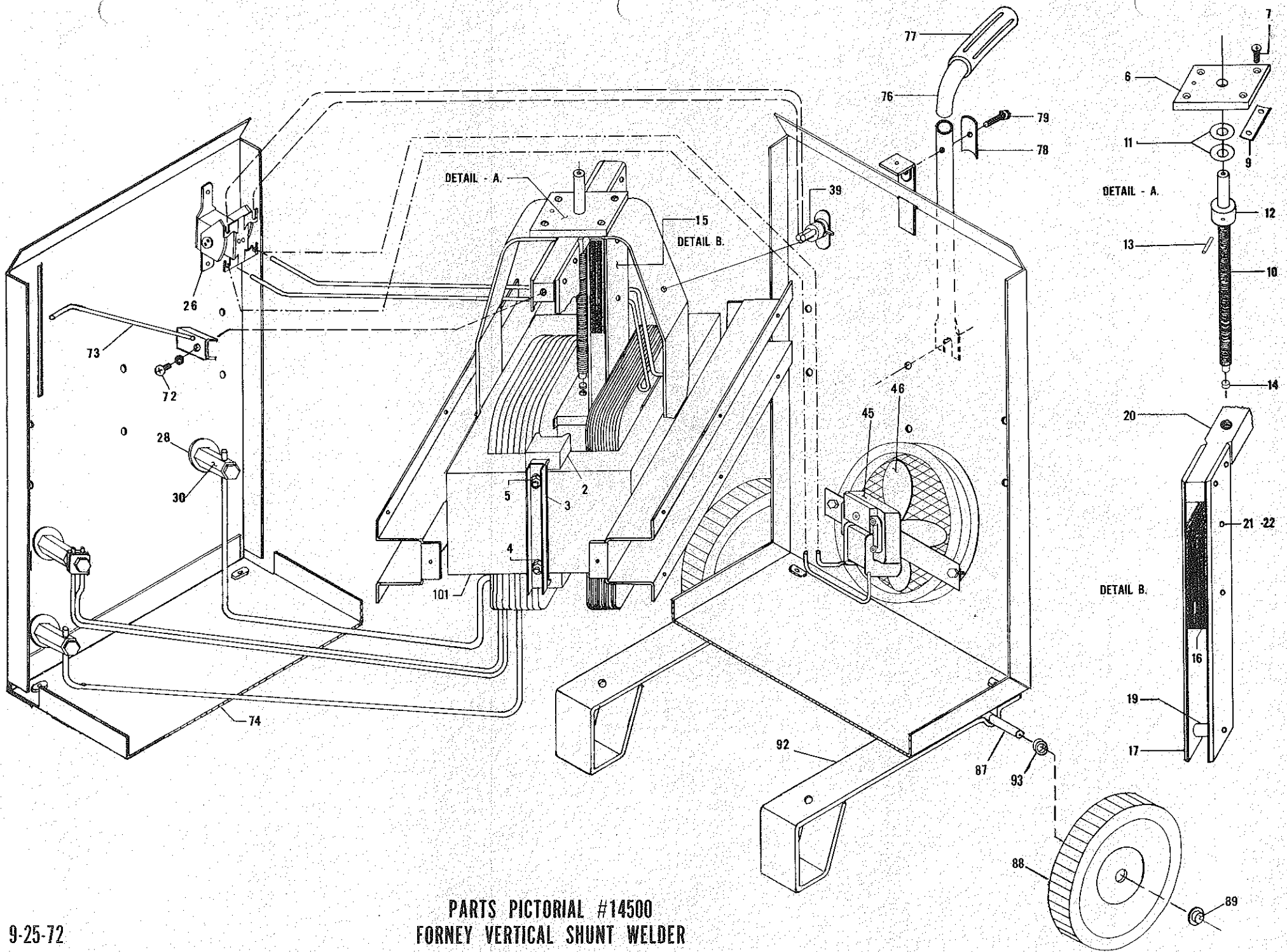
Caution: Do not force the crank at the end of the welding ranges; observe the indicator arm through slot on front panel. Some increase in transformer hum may be noted at some amperage settings more than others. This is normal, however, wear on the shunt locks or guides may cause hum to become excessive. This can be corrected by unplugging supply cable, removing case wrap-around, locate shunt lock pressure plates on side of transformer, tighten each nut equally (not over 1/4 turn at a time.) Under each nut is a special "spring" washer--this washer should never be tightened completely flat. Tension can be checked by turning crank to determine if it cranks too hard. The locks should not be tightened beyond a comfortable turning of the crank with the fingers. A paste-type silicone grease may be added to the 45° slope of the shunt guides and to shunt lead screw.

Before each operation of the welder check to see if the fan is turning properly after turning welder switch on. The fan has sealed lubricated bearings; however, dirt may accumulate on the fan blades or armature causing decreased air flow or fan stoppage. THE WELDER MUST NOT BE OPERATED IF FAN IS NOT RUNNING PROPERLY.

The fan can easily be removed for cleaning or checking by unplugging supply cord. Remove case wrap-around, loosen screws on fan motor straps allowing motor and fan assembly to be removed from shroud. The blade and motor can be observed and cleaned at this point. If necessary to remove completely, the leads can be disconnected at the switch. Apply 230 volts AC to fan on bench checking.

PARTS LIST 14500
FORNEY VERTICAL SHUNTWELDER
MODEL FS-295

Item No.	NAME	Number Required	Part No.
101	X-former Ass'y (w. Windings & Mtg. Brackets)	1	14550
02	Shuntlock	4	12733
03	Pressure Plate for Shuntlocks	2	13730
04	Spring Washer	4	134-5200
05	Nut, Self-Locking	4	135-4332
06	Front Plate	1	12726
07	Screws, Pan Hd. Ph. 1/4-20 x 3/4" lg.	4	131-6256
09	Speed-Nut, 1/4-20 (Dual)	2	135-6331
10	Lead Screw	1	12725
11	Washer Thrust (Nylon)	2	134-1762
12	Bushing	1	12734
13	Drive Pin (1/8 dia.)	1	136-3815
14	Thrust Disk	1	12729
15	Shunt Ass'y	2	13728
16	Shunt Laminations 7/8" stack, 5.0" long)	a. r.	127-4043B
17	Shunt Plates	4	12721
19	Plastic Spacer	2	12723
20	Crossbar	1	12727
21	Rivet	10	136-3151
22	Insulator	4	12722
72	Screw. (Ind. Arm) 10-24 x 3/4	1	130-2246
73	Indicator Arm	1	13519
26	Switch, Toggle, DP. ST.	1	151-7307
28	Insulator Washer (1/8 thick)	3	06066
27	Insulator, Molded, 1 Green, 2 Black (Not Shown)	3	06056
30	Jack	3	06142
45	Fan Motor Ass'y (230V, 60 Hz) 1/4 " Shaft	1	151-5010
46	Fan Blade, 6-5/8" Dia. (Molded Nylon)	1	151-5011
74	Case Ass'y, Front - Bottom - Rear (w. Handle Tab)	1	14410
75	Wrap-around - Top & Sides (Not Shown)	1	14513
39	Lead-in-Cordset	1	173-0807
40	Crank (Not Shown)	1	12774
41	Cotter Pin; to attach crank (Not Shown)	1	136-2900
42	Screw, Mach., 10-24 x 3/8' to attach crank (Not Shown)	1	131-62403
76	Handle Bar	1	13516
77	Grip, (for handle bar)	1	148-2612
78	Clamp (for handle bar)	1	13518
79	Screw, Mach. Hex. Hd., 1/4-20 x 1-1/4"	1	131-0058
87	Axle	1	13515
88	Wheel (5-1/2 x 1-3/16)	2	148-8406
89	Pushnut	2	135-9702
92	Leg	2	14414
93	Washer	2	14415



PARTS PICTORIAL #14500
FORNEY VERTICAL SHUNT WELDER

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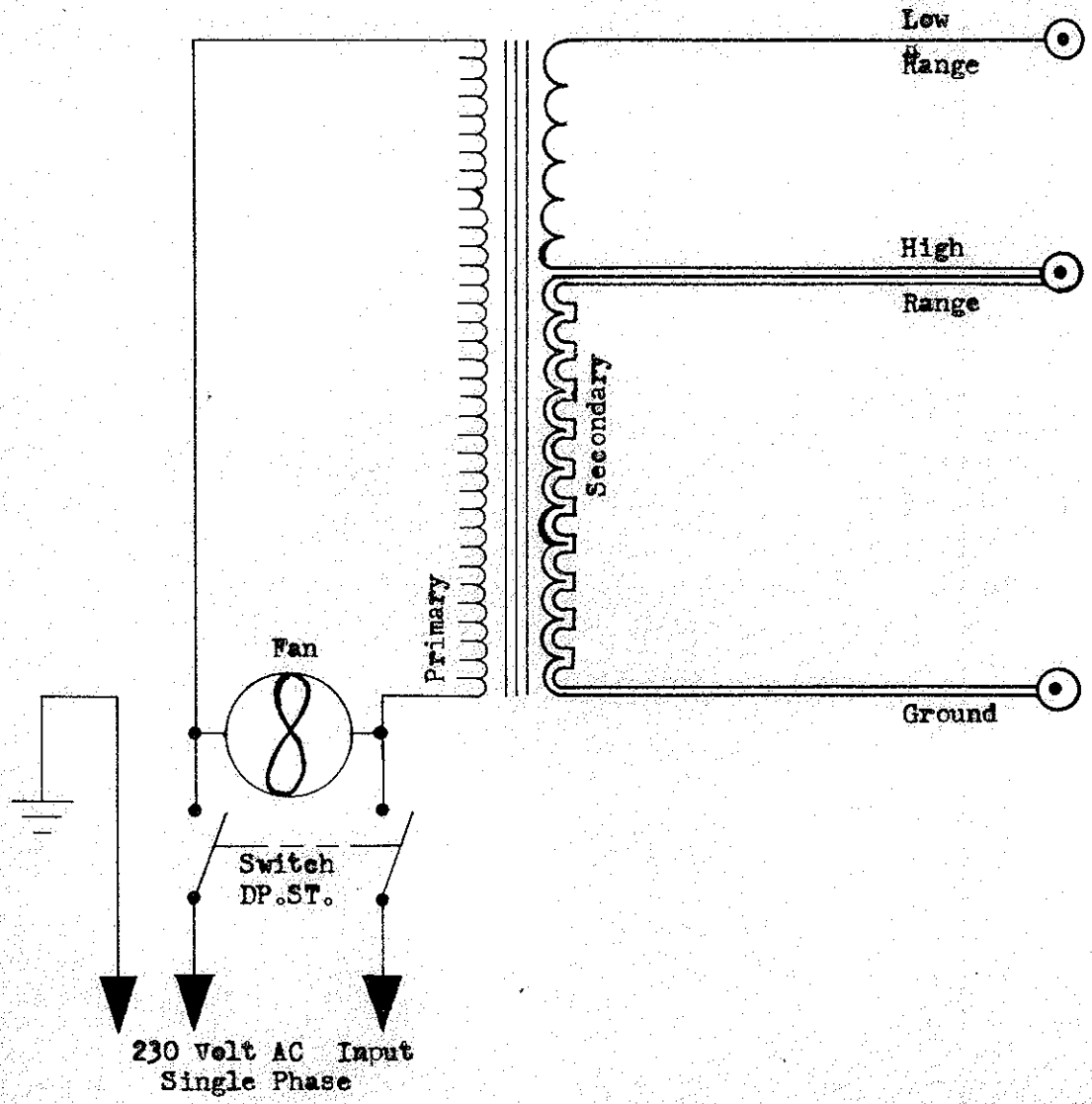

Schematic Electrical

Shuntwelder Model FS 295 Vw Spec. # 159-U-3

DRAWN	B M. Nolte	FORNEY MANUFACTURING CO.	DWG. NO.
DATE	10-5-71	DIV. OF FORNEY INDUSTRIES, INC.	14501
SCALE	— — —	FORT COLLINS, COLORADO	
TOL. ±	XX .032 XXX .015		