

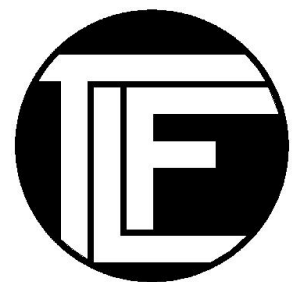
T. L. FAHRINGER CO.

**FLASH-BUTT WELDER
OWNER'S MANUAL**

Models

W-10, WG-10

W-15, WG-15



T. L. Fahringer Co.
P.O. Box 1412
Brandon, FL 33509-1412
Toll Free: 800-237-3829
Local: 813-681-2373
Web: www.fahringer.com

INSTALLATION INSTRUCTIONS

(Read all instructions and cautions carefully)

- 1) For welders purchased with automatic anneal controls, remove the cover from small junction box at the rear of the welder.
- 2) For welders without automatic anneal controls, remove the cover plate from junction box at the rear of the welder.
- 3) Locate the wires marked: L1, L2 and ground.
- 4) **CAUTION:** Disconnect the main circuit breaker at the switch box for the line that is to be connected to the welder. Do not attempt to wire the power line to the welder unless the power line circuit breaker is in “OFF” position, or fuses are pulled out. Check the line with a voltmeter to be sure the line is dead before proceeding.
- 5) Locate the cable clamp installed in the welder junction box. Install power cable through cable clamp. Tighten the cable clamp screws to prevent the cable from being pulled out of the box.

CAUTION: USE ONLY UL APPROVED CABLE AND WIRE.

CAUTION: USE UL APPROVED WIRE NUTS FOR ALL CONNECTIONS AND THOROUGHLY TAPE THE WIRE AND WIRE NUTS TOGETHER WITH ELECTRICAL TAPE. FAILURE TO PROPERLY CONNECT AND TAPE WIRES COULD RESULT IN DANGEROUS ELECTRICAL SHOCK RESULTING IN SERIOUS INJURY OR DEATH. WE RECOMMEND SOLDERING THE WIRE ENDS BEFORE INSTALLING WIRE NUTS.

- 6) Connect the power line ground wire to the green wire in the junction box marked “GND”.
- 7) Connect the remaining two power lines (usually black and white to gray wires in welder junction box marked L1 and L2).
- 8) **CAUTION:** Check the gray wire marked “H1” to make sure it is capped off and safely taped to prevent electrical shock. (This step is only for welders shipped without solid state anneal control).
- 9) Reinstall the cover plate on the welder junction box.
- 10) Plug the male anneal control plug into the female receptacle located in the center of the large junction box at the rear of the welder. (This step is only for welders sold with the model AC-100 anneal control).
- 11) See operating instructions (Pages 4 and 6) before turning on the power.

SPECIFICATIONS
(FOR W-10/15 WELDERS)

Frequency..... 60 Hz

Phase..... Single

Primary Amps (208, 220, 230 v.)..... 27 amps

Primary Amps (420, 440, 460 v.)..... 13 amps

Secondary Amps (maximum)..... 2400 amps

Secondary Volts (220 v. primary)..... 5.2 volts

Customer Connections (wire size):

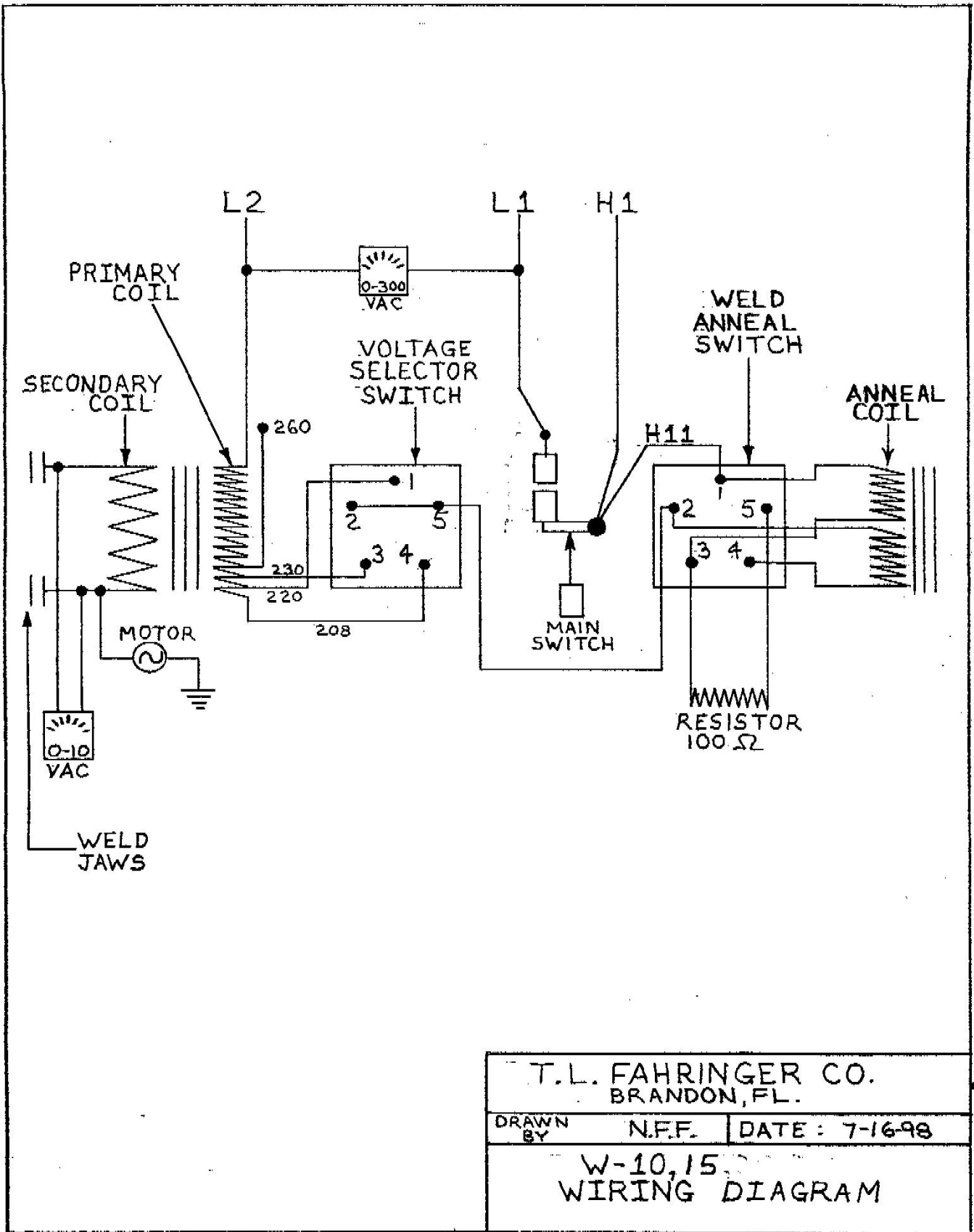
Length of Cable (ft):	0-60	60-120	120-180	180+
Min. Wire Size (AWG):	12	10	8	Consult Power Co.

TAP SWITCH AND AC VOLTMETERS

The tap switch allows selection of one of the following separate transformer taps: 208, 220, 230, or 206* volts, or 440, 460, 480 volts. The tap selected should correspond as closely as possible to the incoming power supply to the welder, as read on the 0-300 voltmeter. Selection of the proper tap will ensure that the optimum weld voltage of 5.2 volts (as read on the 0-10 voltmeter) is produced. If your line voltage reads higher than 230 volts or lower than 208 volts, for example, then you must select the tap setting that most closely corresponds to your voltage, in order to ensure the proper voltage output. Failure to do this may result in poor weld quality.

*Please note that in new models there is also a 260 volt tap available which has been capped off inside the Voltage Selection Box. If the incoming voltage to the welder is 245 volts plus, then this 260 volt tap may be installed on the switch in place of the 208 volt tap, to provide the desired 5.2 volts between the two interior carriage jaws. (Be sure to cap off and/or tape the replaced tap wire ends).

The wiring diagram for the model W-10/15 is on page 3A.



T. L. FAHRINGER CO. BRANDON, FL.		
DRAWN BY	N.F.F.	DATE: 7-16-98
W-10, 15 WIRING DIAGRAM		

APPROXIMATE MACHINE SETTINGS

FIGURE #1

BLADE SIZE		BLADE TYPE		WELD SETTINGS		ANNEAL SETTINGS	
Width (in)	Thickness (in)	Carbon	Bi-Metal	Weld Dial	Spring Tension	Soak Time (sec)	Anneal Setting
1/8	.025	X	X	1 – 2	1 – 2	1 – 5	1
3/16	.025	X	X	1 – 2	1 – 2	1 – 5	1
1/4	.025	X	X	2	2	1 – 10	1
1/2	.025	X	X	2 – 3	2 – 3	1 – 10	2
5/8	.025	X		3 – 4	3 – 4	5 – 15	2
5/8	.032		X	3 – 4	3 – 4	5 – 15	2
3/4	.032	X		4 – 5	4 – 5	5 – 15	2
3/4	.032		X	4 – 5	4 – 5	5 – 20	2
1	.035	X	* X	5 – 6	5 – 6	5 – 20	3
1 1/4	.042	* X	N/A	6	6	10 – 30	3
Above 1 1/4	.042 +	* X	N/A	6	6	20 – 30	3

* Settings for W-15 Only

NOTE: Anneal time and temperature requirements will vary for different blade types and manufacturers. The approximate settings shown above may not correspond to those settings recommended by the manufacturer of your blades. For best results, contact your blade manufacturer and ask for their recommended anneal requirements for the above sizes and types of blades.

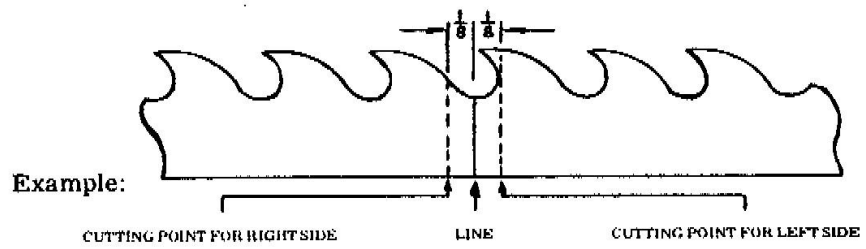
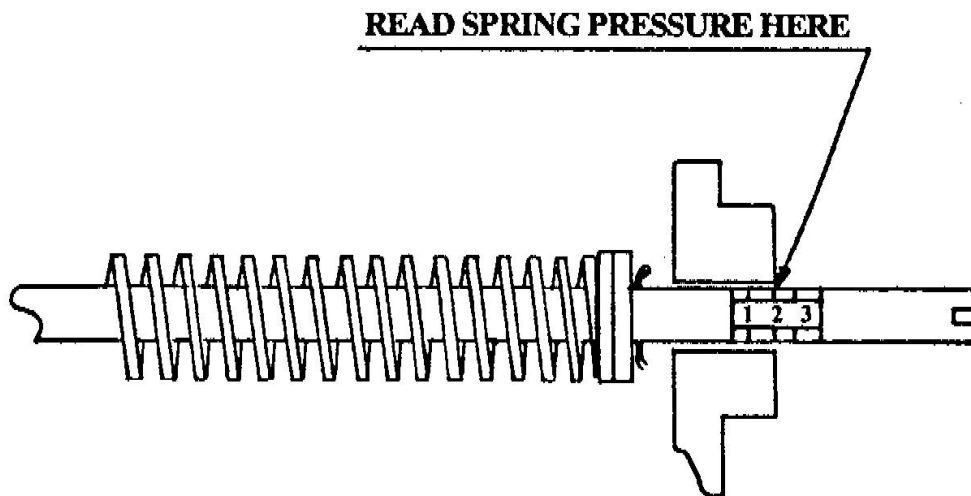


FIGURE #2



SPRING PRESSURE INDICATOR

Spring pressure must be read while cocking lever
CL-1015 is in the fully lowered position.

FIGURE #3

WELDING AND ANNEALING

HOW TO:

- 1) **CUT THE BLADE** – The blade ends should be cut to allow for approximately 1/8” burn-off at each blade end. To compute the point of the cut, imagine a line through the center of the gullet and add 1/8” to each blade end. This will determine where each blade end should be cut.

SEE EXAMPLE: Figure #2 on page 4A.

- 2) **SELECT WELD SETTINGS** – Select the appropriate spring tension and weld dial settings (Ref. Page 4). NOTE: Spring pressure must be read while operating lever is in the fully lowered position (see figure #2 on page 4a). Rotate the weld dial to the appropriate number. (The setting number will be at the bottom of the dial).
- 3) **INSERT BLADE** – After placing the operating lever in the weld (up) position, insert the blade into the machine with the tooth edge towards the rear of the welder, and the cut ends butted together in the center of the gap between the upper jaws.
- 4) **CLAMP THE BLADE** – Hold the blade so that the teeth touch both blade guides on the front of the carriage. Then firmly raise the handle until the blade is clamped. Be sure to clamp the blade very tightly, as good clamping is essential to good welding.
- 5) **WELD THE BLADE** – After presetting the welder to the proper settings and, having properly inserted and clamped the blade, quickly and firmly depress the weld button to it's fullest until it stays in by itself. Welding will begin instantly and a shower of sparks will take place. **DO NOT HOLD THE BUTTON DURING WELDING**, as this will prevent the welder from automatically shutting off.
- 6) **RELEASE THE WELDED BLADE** – Grasp the operating lever and raise it slowly until you feel the spring pressure release (about halfway up). Let go of the operating lever and push each clamping handle down until the blade is released.
- 7) **REPOSITION THE BLADE FOR ANNEALING** – Grasp the operating lever and lower it completely until it cannot be lowered any further, then raise the handle slightly (about 1/4 – 3/8”). Reposition the blade so the weld is in the middle of the space between the upper jaws. Be sure the teeth are touching all four blade guides. Raise the clamping handles firmly until the blade is tightly clamped. You are now ready to anneal the blade.

- 8) **ANNEAL THE BLADE** – After selecting the proper anneal settings (Ref. Page 4), begin annealing by rapidly pushing the anneal button in and out while observing the weld area on the blade. As the weld begins to smoke, shade the weld area with your free hand to observe the color. Slow down the beating action of the button to allow the heat to spread evenly across the weld. Refer to the instructions on page 4 of this book for approximate anneal times and temperatures, or consult the manufacturer of your blades for recommended anneal practices.
- 9) **REMOVE THE EXCESS METAL** – The excess metal (weld burr) can be removed by:
 - a) Filing, b) Grinding, or c) Sanding with a belt sander.
 - a) Filing – using a suitable filing clamp to hold the blade, a file can be used to remove excess metal on both sides of the weld.
 - b) Grinding – if your welder is equipped with a grinder, you may pass the weld area over the edge of the wheel to remove the weld burr. Be careful not to grind too deeply, as this will weaken the weld.
 - c) Sanding – a small belt sander may be used in conjunction with a filing clamp or any other suitable clamping device to remove weld burr.

MAINTENANCE

Normal maintenance should consist of the following:

- 1) Check timing daily before welding. Reset if necessary.
- 2) Check timing periodically during periods of extended welding (25-50 welds).
- 3) Clean clamping surfaces with a rag or air hose at frequent intervals to remove flashings, and to prevent pitting and imbedding of flashings in the jaws.
- 4) Use a non-silicone based flash retardant spray, to prevent flash buildup and facilitate flash removal (See page 6a for more information).
- 5) Replace badly pitted contacts and contact bar.
- 6) Replace excessively worn or badly pitted jaws, as their continued use will diminish current flow and reduce weld quality.
- 7) Do not place pitted side of jaws against contact surface of carriages, as this will remove current flow and result in poor weld and anneal quality. **DO NOT FLIP JAWS OVER**, as this will also diminish current flow and will cause poor welding or annealing. See page 6a for more information on caring for your jaws.
- 8) Replace badly worn clamping handles and/or clamp plates, as their continued use could result in uneven current flow and poor weld quality,
- 9) Place several drops of oil on oil pad located on top of steel gear, CPG-3.

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY! COMPLIANCE WITH THESE INSTRUCTIONS, AND THE TIMING INSTRUCTIONS FOUND ON PAGE 7, ARE ESSENTIAL TO THE PROPER OPERATION OF YOUR MACHINE. FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEFECTIVE WELDS.

To prevent the weld flash from sticking to all weld surfaces such as carriages, clamp plates, jaws, etc., should be sprayed liberally with welders anti-spatter compound, which can be purchased from your local welding products supplier. Do not use the type with a heavy silicone base (light non-silicone base is best), or the type that is a white powder. To ensure maximum cleanliness of the machine, we recommend wiping between the jaws surfaces with a clean rag and blowing out the clamping area with an air hose after each weld.

When excessive pitting of the clamping surface occurs and resurfacing becomes necessary, the steel jaws and the elkonite jaws should be removed and surface ground. Both sets of jaws (steel and elkonite) must be ground flat and parallel within .001", and all eight jaws must be ground to the same thickness within .005". Do not use emery cloth, sandpaper, a file, or any other method to resurface these jaws or weld quality may be adversely affected.

After grinding, a clamp check must be made to determine clamping flatness. This procedure is as follows:

- 1) Place carbon paper (carbon side down) on a clean white piece of paper.
- 2) Place both sheets into clamping area between the elkonite jaws.
- 3) Raise both handles and clamp the carbon paper as you would clamp a blade, firmly rapping the handles with the palm of your hand to set them securely.
- 4) Unclamp and remove the carbon paper from the white paper.
- 5) The impression must be identical to the physical size of the jaws (i.e., ¼" x 2").
- 6) If the impression is not ¾" x 2" you must: (1) adjust the clamp plate insert set screws to even out the clamping pressure, or (2) add or remove thin shims (.002" or .005" thick) beneath the steel jaws (top, bottom, or both) until flat clamping is restored.
- 7) Re-check as per instructions #1 through #5, and adjust per instruction #6, until flat clamping is achieved.

ADJUSTMENTS

Minor adjustments to your machine will be necessary from time to time due to normal wear during use. Read and understand the following instructions thoroughly, as their correct completion could be vital for successful, trouble-free welding.

TIMING

The precise time at which the current is shut off is extremely important. To assure correct timing of your welder take the following steps:

- 1) Cut off main power source to welder.
- 2) Set spring pressure to 1
- 3) Rotate weld dial WD-1015 counter clockwise to position #1.
- 4) Move the cocking lever OL-1015 to anneal ready (handle down) position.
- 5) Rotate steel gear CGA-1015 so that the timing mark on gear SG-3 points toward the rear of the machine.
- 6) Move the lever OL-1015 to weld ready (handle up) position.
- 7) Push in the weld button WB-1015 until it stays in by itself. If it will not stay in, the trip screw is out too far. Follow instructions of step 11 and return to step 7 to complete the timing operation.
- 8) Rotate steel gear CGA-1015 counter clockwise to advance gear SG-3 in a clockwise direction.
- 9) Observe the timing mark on the gear SG-3. As it crosses the timing mark located on the arm of the motor bar casting, the switch contacts should snap open.
- 10) If the contacts do not snap open as the timing marks cross, the timing is set too late. If the contacts snap open before the marks cross, the timing is set too early. In either case, perform step 11 and return to step 4 to complete the timing operation.
- 11) If the contacts snapped open too late during step 8 above, use a 5/16" open end wrench and turn the trip screw (TS-3) on the motor bar arm out (counter clockwise). If contacts opened too early, turn the trip screw in (clockwise).

ALIGNMENT

- 1) Blade mismatch may occur due to excessive jaw wear, a difference in thickness of the right and left jaw, or possible misuse. To correct this problem, raise or lower the left carriage by use of the leveling stud LS-3. This should effectively compensate for horizontal misalignment.
- 2) Blade twist misalignment may be removed by adjusting the three allen head set screws located in the pivot boss behind CL-10.

PARTS INDEX for W-10, WG-10

Ref #	Part Number	Description	Qty / Welder
1	J-10	Elkonite Jaws	1 set
2	J-10-1	Steel Jaws	1 set
3	CP-10	Clamp Plate	2
4	CH-10-1	Clamp Handle Shoulder Screw	2
5	CH-10	Clamp Handle w/ Grip	2
6	G-3	Grips	3
7	GG-3	Grinder Guard	1
8	GRW-3	Grinder Wheel	1
9	GMS-3	Grinder Motor Switch	1
10	PVM-3	Primary Voltmeter (0-300)	1
11	SVM-3	Secondary Voltmeter (0-10)	1
12	VSS-3	Voltage Selector Switch	1
13	SH-1015	Shell (SHG-1015 for grinder)	1
14	LS-3	Leveling Stud	1
15	C-1015	Top Cover	1
16	OL-1015B-5	Crank Bushing	1
17	OL-1015B-1	Operating Lever Crank	1
18	MBC-1015	Motor Bar (Only)	1
19	CGS-1015	Compound Gear Shaft	1
20	TF-1015	Top Frame	1
21	MSW-1015-06	Switch Contact	2
22	MSW-1015-08	Switch Contact Guard	1
23	TAS-3	See TS-3	0
24	TS-3	Trip Screw	1
25	CMB-1015	Carriage Mount Bar	1
26	IP-1015	Indicator Plate	1
27	T-1015	Transformer (6 Kva, 220 V)	1
28	RB-1015	Roller Bar Spring	1
29	MC-1015	Motor Cam	1
30	ST-3	Stator Assembly	1
31	LB-1015S-1	Leveling Bushing - Steel	1
32	R-3	Rotor Assembly	1
33	CCR-1015	Crank Connecting Rod	1
34-35	MBP-1015	Motor Bar Pin	2
36	RPG-3	Rotor Pinion Gear	1
37	CGA-3	Compound Gear Assembly	1
38	SG-3	Spur Gear	1
39	SG-1015	Slide Guide	1
40	SA-1015-2	Switch Bar - Horizontal	1
41	JB-3	Junction Box	1
42	RB-1015-5	Roller Bar Spring	1
43	WB-1015	Weld Button	1
44	BF-1015	Bottom Frame	1
45	WAS-3-08	Switch Knob - Weld/Anneal	1
46	WD-1015	Weld Dial	1
47	SR-1015-1	Spring Rod	1
48	MS-1015	Main Shaft	1
49	MS-1015-1	Main Shaft Bearing	2
50	SR-1015-2	Drive Spring	1
51	FG-1015	Flash Guard	1
52	SR-1015-3	Spring Rod Block	1
53	CR-10	Right Carriage (moveable)	1
54	OL-1015B-2	Operating Lever Handle	1
55	CL-10	Left Carriage	1
56	LB-1015S-5	Leveling Plate	1

PARTS LIST:

MODEL: W-10 / MF-1 & "G" SERIES

T. L. FAHRINGER CO., INC.

P.O. BOX 1412, BRANDON, FL. 33509

PART NO.	DESCRIPTION	QTY	REF
***	VOLTAGE SIDE BOX	***	Å Å Å10 SERIES ONLY

VSS-3	VOLTAGE SELECTOR SWITCH	1	12
VSP-3	°VOLTAGE SELECTOR PLATE	° 1	° °
PVM-3	dPRIMARY VOLT MTR (0-300)	d 1	d0 d
SVM-3	SECONDARY VLT MTR (0-10)	1	11

***	WELD-ANNEAL PANEL	***	Y Y Y

WAS-3	aWELD-ANNEAL SWITCH	a 1	a a
WAS-3-08	RSWITCH KNOB-ONLY	R 1	R5 R
WAS-3-10	ùINSULATION-ONLY	ù 1	ù ù
WB-10/15	;WELD BUTTON ASSY	; 1	43 ;
WD-10/15	IWELD DIAL ASSY	I 1	46 I
IP-10/15	ñINDICATOR PLATE	ñ 1	26 ñ

***	SWITCH ARM ASSY	***	B B B

SA-10/15	SWITCH ARM ASSY	1	
SA-10/15-1	nVERTICAL SWITCH ARM	n 1	n n
SA-10/15-2	ÅHORIZONTAL SWITCH ARM	Å 1	Å0 Å
SA-10/15-3	MOUNTING BAR	1	
SA-10/15-4	\SPRING	\ 2	\ \

***	MISC.	***	ÿ ÿ ÿ

C-10/15	žCOVER - TOP	ž 1	ž5 ž
C-10/15-1	íCOVER INSULATION	í 1	í í
TF-10/15	<TOP FRAME	< 1	20 <
BF-10/15	ĞBASE	Ğ 1	44 Ğ
SH-10/15	ŪSHELL	Ū 1	Ū3 Ū
SHG-10/15	.SHELL-GRINDER MODEL	. 1	. .
T-10/15	zTRANSFORMER 6KVA 220V	z 1	27 z-10/15-1/440V
JB-3	ÉJUNCTION BOX-4"	É 1	11 É
IG-3A	INSIDE CARR GUIDE SPECL	2	1"-FOR WIDE TOOTH BLAD
OG-10A	LOUTER CARR GUIDE SPECL	1 2	1 " " " "
FRS-10	»ANTI-SPATTER COMPOUND	» 1	» »
R-100-3	100 OHM RESISTOR	1	
C-50F-1	VCUTTER BLADES (1 SET)	V 1	V FOR C-50F CUTTER
V-101-1	©FILE BLOCK	© 1	© FOR V-101 FILE VISE
PG-3	òGRINDER WHEEL - 12"	ò 1	ò FOR PG-1 PEDESTAL TYPE

***	GRINDER PARTS	***	' ' '

GR-3	mGRINDER MOTOR 220/440 V	m 1	m m
GRW-3	GRINDER WHEEL	1	8
GRW-3-1	aWASHER-GRINDER WHEEL	a 2	a a
GRW-3-2	INUT-GRINDER WHEEL	I 1	I I
GMS-3	çSWITCH-GRINDER MOTOR	ç 1	ç9 ç
GG-3	†GRINDER GUARD	† 1	†7 †
GGP-3	-GRINDER GUARD PLATE	- 1	- -

PARTS INDEX for W-15, WG-15

Ref #	Part Number	Description	Qty / Welder
1	J-15	Elkonite Jaws	1 set
2	J-15-1	Steel Jaws	1 set
3	CP-15	Clamp Plate	2
4	CH-15-1	Clamp Handle Shoulder Screw	2
5	CH-15-1	Clamp Handle w/ Grip	2
6	G-3	Grips	3
7	GG-3	Grinder Guard	1
8	GRW-3	Grinder Wheel	1
9	GMS-3	Grinder Motor Switch	1
10	PVM-3	Primary Voltmeter (0-300)	1
11	SVM-3	Secondary Voltmeter (0-10)	1
12	VSS-3	Voltage Selector Switch	1
13	SH-1015	Shell (SHG-1015 for grinder)	1
14	LS-3	Leveling Stud	1
15	C-1015	Top Cover	1
16	OL-1015B-5	Crank Bushing	1
17	OL-1015B-1	Operating Lever Crank	1
18	MBC-1015	Motor Bar (Only)	1
19	CGS-1015	Compound Gear Shaft	1
20	TF-1015	Top Frame	1
21	MSW-1015-06	Switch Contact	2
22	MSW-1015-08	Switch Contact Guard	1
23	TAS-3	See TS-3	0
24	TS-3	Trip Screw	1
25	CMB-1015	Carriage Mount Bar	1
26	IP-1015	Indicator Plate	1
27	T-1015	Transformer (6 Kva, 220 V)	1
28	RB-1015	Roller Bar Spring	1
29	MC-1015	Motor Cam	1
30	ST-3	Stator Assembly	1
31	LB-1015S-1	Leveling Bushing - Steel	1
32	R-3	Rotor Assembly	1
33	CCR-1015	Crank Connecting Rod	1
34-35	MBP-1015	Motor Bar Pin	2
36	RPG-3	Rotor Pinion Gear	1
37	CGA-3	Compound Gear Assembly	1
38	SG-3	Spur Gear	1
39	SG-1015	Slide Guide	1
40	SA-1015-2	Switch Bar - Horizontal	1
41	JB-3	Junction Box	1
42	RB-1015-5	Roller Bar Spring	1
43	WB-1015	Weld Button	1
44	BF-1015	Bottom Frame	1
45	WAS-3-08	Switch Knob - Weld/Anneal	1
46	WD-1015	Weld Dial	1
47	SR-1015-1	Spring Rod	1
48	MS-1015	Main Shaft	1
49	MS-1015-1	Main Shaft Bearing	2
50	SR-1015-2	Drive Spring	1
51	FG-1015	Flash Guard	1
52	SR-1015-3	Spring Rod Block	1
53	CR-15	Right Carriage (moveable)	1
54	OL-1015B-2	Operating Lever Handle	1
55	CL-15	Left Carriage	1
56	LB-1015S-5	Leveling Plate	1

