

# Operating Instructions and Parts Manual **20-Ga. Pittsburgh Lockformer**Model LF-20



JET 427 New Sanford Road LaVergne, Tennessee 37086 Ph.: 800-274-6848 www.jettools.com



## 1.0 IMPORTANT SAFETY INSTRUCTIONS

#### WARNING - To reduce risk of injury:

- Read and understand the entire owner's manual before attempting assembly or operation.
- Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
- Replace warning labels if they become obscured or removed.
- 4. This lockformer is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a lockformer, do not use until proper training and knowledge have been obtained.
- Do not use this machine for other than its intended use. If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
- Always wear ANSI Z87.1 approved safety glasses or face shield while using this machine. (Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.)
- Before operating this machine, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Do not wear loose clothing. Confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do not wear gloves.
- Wear hearing protection (plugs or muffs) if noise exceeds safe levels.
- CALIFORNIA PROPOSITION 65 WARNING:
   This product contains chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.
- This product, when used for welding, cutting, or working with metal, produces fumes, gases, or dusts which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health and Safety Code Section 25249.5 et seq.)
- Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.

- 12. Make certain switch is in OFF position before connecting the machine to the power supply.
- 13. Make certain the machine is properly grounded.
- Make all machine adjustments or maintenance with the machine unplugged from the power source.
- 15. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
- 16. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately after completion of maintenance.
- 17. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- 18. Provide for adequate space surrounding work area and non-glare, overhead lighting.
- 19. Keep the floor around the machine clean and free of scrap material, oil and grease.
- 20. Keep visitors a safe distance from the work area. Keep children away.
- 21. Make your workshop child proof with padlocks, master switches or by removing starter keys.
- Give your work undivided attention. Looking around, carrying on a conversation and "horseplay" are careless acts that can result in serious injury.
- 23. Maintain a balanced stance at all times so that you do not fall onto moving parts. Do not overreach or use excessive force to perform any machine operation.
- 24. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and more safely.
- 25. Use recommended accessories; improper accessories may be hazardous.
- 26. Maintain tools with care. Follow instructions for lubricating and changing accessories.
- Turn off the machine before cleaning. Use a brush to remove chips or debris — do not use bare hands.

- 28. Do not stand on the machine. Serious injury could occur if the machine tips over.
- 29. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
- Remove loose items and unnecessary work pieces from the area before starting the machine.
- 31. Disconnect machine from power source (unplug) before changing out roll sets.
- 32. Top covers must be properly installed before feeding workpiece.

- Don't use in dangerous environment. Don't use power tools in damp or wet location, or expose them to rain. Keep work area well lighted.
- 34. Use proper extension cord. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table 1 (sect. 6.2) shows correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

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

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

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

### 2.0 About this manual

This manual is provided by JET, covering the safe operation and maintenance procedures for a JET Model LF-20 Lockformer. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

If there are questions or comments, please contact your local supplier or JET. JET can also be reached at our web site: www.jettools.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

**AWARNING**Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

#### Register your product online -

http://www.jettools.com/us/en/service-and-support/warranty/registration/

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The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

### 4.0 Specifications

Model number	LF-20
Motor and electricals:	
	TEFC, capacitor start
	1.5HP
	single
	115 V
	60Hz
	14 A
	7.1 A
	200MF 125VAC
•	
	mushroom style with safety key
	SJT 3/14AWG; 6 ft. (1830 mm)
	NÈMA 5-15P
Recommended circuit and fuse/breake	r size <sup>1</sup> 15A
Capacities:	Annes (05 con (4 in ) of material (0.5 4 0 con (00.00 con))
Pittsburgh lock dimensions	
Pittsburgh lock dimensions8mm (	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)
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Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7.62m (25 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel  hardened steel
Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7.62m (27 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel  hardened steel  819 mm (32-1/4 in.)
Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7.62m (25 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel  hardened steel  914 x 419 x 927 mm (36 x 16-1/2 x 36-1/2 in.)
Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7.62m (27 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel  hardened steel  819 mm (32-1/4 in.)
Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7.62m (25 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel  hardened steel  914 x 419 x 927 mm (36 x 16-1/2 x 36-1/2 in.)
Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel, with needle bearings  819 mm (32-1/4 in.)  914 x 419 x 927 mm (36 x 16-1/2 x 36-1/2 in.)  1075 x 510 x 1075 mm (42-5/16 x 20 x 42-5/16 in.)
Pittsburgh lock dimensions	5/16 in.) width of hammer-over edge, adjustable up to 9.5mm (3/8 in.)  7.62m (25 ft.)/min  7.62m (25 ft.)/min  7 in. (178mm)  steel  hardened alloy steel  hardened steel  hardened steel  hardened steel  914 x 419 x 927 mm (36 x 16-1/2 x 36-1/2 in.)

Туре	Roll set	Capacity	Approx. mat'l used	Size
5/16 in. (8mm)	Pittsburgh lock seam (standard, pre-mounted)	0.5 - 1.0 mm 20 to 26 ga	25mm (1")	8 mm 5/16" width
<i>-</i>	Double seam (DSS) OPTIONAL <sup>2</sup>	0.5 - 1.0 mm 20 to 26 ga.	25.4mm (1")	10 mm 3/8" seam
	Drive cleat (DCS) OPTIONAL <sup>2</sup>	0.5 – 1.0 mm 20 to 26 ga.	54mm (2-1/8")	28.5 mm 1-1/8" width

<sup>&</sup>lt;sup>1</sup> Subject to local and national electrical codes.

<sup>&</sup>lt;sup>2</sup> Optional Double Seam and Drive Cleat roll sets are available from JET. See sect. 10.4.1.

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

### 5.0 Setup and assembly

Remove all crating and check for shipping damage. Report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Lockformer is assembled and running properly.

Compare contents with the following list to make sure all parts are intact. Any missing parts should be reported to your distributor. Read this instruction manual thoroughly for operation, maintenance and safety instructions.

Remove fasteners holding machine to pallet, and use forklift or hoist with straps to move lockformer to position. Location should be well-lighted, with a sturdy, level floor. It is recommended that the machine be secured to the floor with lag screws or other means for stability.

#### 5.1 Shipping contents

- 1 Lockformer
- 2 Wrenches, 23/26 and 12/14mm
- 2 Hex wrenches, 4mm and 6mm
- 1 Formed sample plate
- 10 Double head round keys

### 6.0 Electrical connections

AWARNING All electrical connections must be done by a qualified electrician in compliance with all local codes and ordinances. Failure to comply may result in serious injury.

The LF-20 Lockformer is rated at 115-volt power only, and is supplied with a plug designed for use on a circuit with a *grounded outlet* that looks like the one pictured in Figure 6-1.

Before connecting to power source, be sure switch is in *off* position.

It is recommended that the Lockformer be connected to a dedicated 15 amp circuit with circuit breaker or fuse. If connected to a circuit protected by fuses, use time delay fuse marked "D". Local codes take precedence over recommendations.

#### 6.1 GROUNDING INSTRUCTIONS

This machine must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly

installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

AWARNING Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Failure to comply may cause serious or fatal injury.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

This machine is for use on a nominal 120-V circuit, and has a grounded plug that looks like the plug illustrated in sketch A in Figure 6-1. A temporary adaptor that looks like the adaptor illustrated in sketch B may be used to connect this plug to a 2-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adaptor should be used only until a properly grounded outlet (sketch A) can be installed by a qualified electrician. The green colored rigid ear, lug, or the like extending from the adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by a metal screw.

In Canada, the use of a temporary adaptor is not permitted by the Canadian Electrical Code, C22.1.

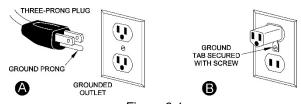


Figure 6-1

#### 6.2 Extension cords

The use of extension cords is discouraged; try to position machines near the power source. If an extension cord is necessary, make sure it is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table 1 shows correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Extension Cord Recommended Gauges (AWG)						
		Extension cord length *				
	25	50	75	100	150	200
Amps	feet	feet	feet	feet	feet	feet
< 5	16	16	16	14	12	12
5 to 8	16	16	14	12	10	NR
8 to 12	14	14	12	10	NR	NR
12 to 15	12	12	10	10	NR	NR
15 to 20	10	10	10	NR	NR	NR
21 to 30	10	NR	NR	NR	NR	NR

\*based on limiting the line voltage drop to 5V at 150% of the rated amperes. NR = Not Recommended.

Table 1

### 7.0 **Operation**

The following figures show top cover removed for clarity only. All top covers must be installed before operating machine. Failure to comply may cause serious injury.

NOTE: Length of workpiece must be at least 7-inches. If a shorter piece is required, process a longer piece, then cut to length.

#### 7.1 Pittsburgh Lock Seam procedure

This machine comes pre-installed with a Pittsburgh lock roll set, and requires only fence adjustment to proceed with this operation.

 Make sure workpiece is free of burrs or twist from snip cuts.

Twists or bent notches in material can strike and damage the knife-edge roll that holds open the pocket of the Pittsburgh Lock. Flatten such edges before feeding material.

- Adjust entry fence, using a straight edge. See Figure 7-2. Entry fence position determines width of hammer-over edge. Tighten both nuts on entry fence.
- 3. Adjust exit fence as follows: Run a test piece through and stop machine when workpiece has reached end of exit table but is still pinched between the rolls. Move fence into position just flush or slightly clear of workpiece edge. Exit fence must not bear pressure against workpiece under normal circumstances. Tighten down fence.
- 4. Hold material against entry fence and slide it into forming head until machine engages workpiece and pulls it through. Make sure workpiece remains against entry fence until its trailing end is engaged by the rolls.

If a wider or narrower hammer-over edge is desired, move entry fence to give desired width. Move entry fence *in* to produce wider edge, *out* to produce narrower edge. Make sure to move both ends of entry fence the same distance, keeping it parallel to front edge of machine's top plate. See Figure 7-2.

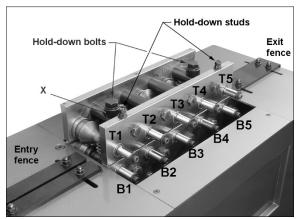


Figure 7-1

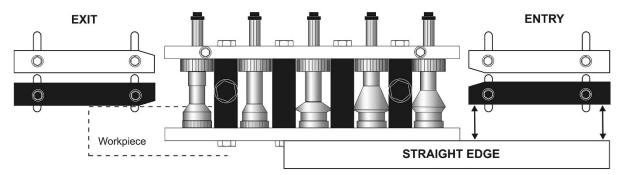


Figure 7-2: Pittsburgh Lock Seam setup

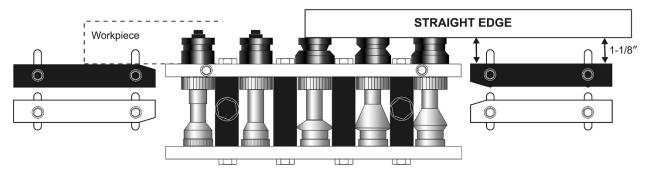


Figure 7-3: Double Seam setup (optional roll set)

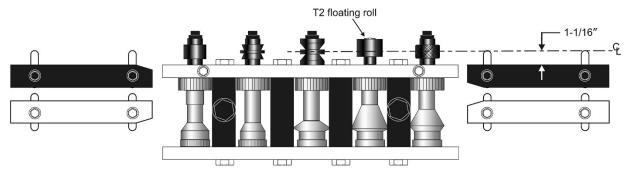


Figure 7-4: Drive Cleat setup (optional roll set)

AWARNING Always disconnect machine from power before installing roll sets. Failure to comply may cause serious injury.

### 7.2 Double Seam procedure

See Figure 7-3.

- 1. Disconnect machine from power source.
- 2. Remove top cover, and rear top plate.
- Select first pair of rolls marked "T1" and "B1", and slide them on the shafts at the left, or entry side, of machine. Place "T1" on top shaft, B1 on bottom shaft. Insert key into keyway for each roll. THE NUMBERED SIDES OF ROLLS MUST FACE OUTWARD.
- 4. Repeat procedure with rolls "T2" and "B2" through "T5" and "B5", placing them in sequence from left to right. All rolls marked "T" should be on top shafts; all rolls marked "B" should be on bottom shafts.
- Fasten rolls to shafts with the provided socket head cap screws and washers.
- Lay straight edge against outside surface of rolls, and position entry fence at 1-1/8" clearance from straight edge, as shown in Figure 7-3. Tighten down both screws on entry fence.
- 7. Reinstall rear top plate, and top cover.
- Adjust exit fence as follows: Run a test piece through and stop machine when workpiece has

reached end of exit table but is still pinched between the rolls. Move fence into position just flush or slightly clear of workpiece edge. Exit fence must not bear against workpiece. Tighten down fence.

9. Start machine and feed workpiece.

### 7.3 Drive Cleat procedure

See Figure 7-4.

**IMPORTANT:** Make sure to cut the material a full 2-1/8 inch wide to ensure an accurate cleat.

- Disconnect machine from power source.
- Follow same procedure as for double seam rolls, but leave roll "T2" loose. This roll centers itself to the bottom roll and should not be fixed in place with a socket cap screw. However, double head round keys are used with all the rolls.
- Position entry fence so that centerline of material will align with centerline of rolls. This is important – if it is not centered, the cleat will not be accurate. Tighten down fence.
- 4. Reinstall rear top plate, and top cover.
- 5. Tighten hold-down stud (see Figure 7-1) so that "T5" and "B5" rolls do not separate when drive cleat passes through.

- 6. Adjust exit fence as follows: Run a test piece through and stop machine when workpiece has reached end of exit table but is still pinched between the rolls. Move fence into position just flush or slightly clear of workpiece edge. Exit fence must not bear against workpiece. Tighten down fence.
- 7. Start machine and feed workpiece.

### 8.0 Adjustments

#### 8.1 Hold-downs

Refer to Figure 7-1.

Adjustment can be made to accommodate variations in material thickness and hardness. The hold-down *bolts* are adjusted for Pittsburgh lock set; the hold-down *studs* are adjusted for optional roll sets. These fasteners set the tension for top and bottom plates to move, allowing material to slide between them. **Only adjust hold-downs if there is a problem feeding the material.** If material slips, tends to leave the guide fence, or curls up at exit, adjust as follows:

- 1. Disconnect machine from power source.
- 2. Remove top cover.
- 3. Tighten hold-down bolts (or studs) until snug, then loosen them a quarter turn. This will usually give proper adjustment for all material thicknesses.
- 4. Reinstall top cover and run a test piece through machine:
  - If material slips, tighten both hold-down bolts (or studs) equally until problem is resolved. If it slips as it leaves the rolls, tighten hold-down bolt on exit side. If

- material starts working away from entry fence, tighten hold-down bolt on entry side.
- If material curls up after leaving forming head, or shows extremely heavy pressure marks, loosen hold-down bolts (or studs) slightly.
- 5. After adjustments, lock setting of the bolts by tightening side screw (X, Figure 7-1). Lock setting of studs by tightening top nuts.

### 9.0 User-maintenance

AWARNING Before doing maintenance on the machine, disconnect it from the electrical supply by pulling out the plug or switching off the main switch. Failure to comply may cause serious injury.

### 9.1 Cleaning and lubrication

Insert oil every 4 hours of operation into the six oil fittings at back of machine. These lubricate the main bearings. Recommended oil is Mobil DTE Oil Light $^{TM}$ , or equivalent.

Apply a multi-purpose lithium grease to the drive gears after approximately 40 hours of operation, or as needed.

Keep forming rolls and table surface clean and free of deposits.

### 9.2 Additional servicing

Any additional servicing should be performed by an authorized service technician.

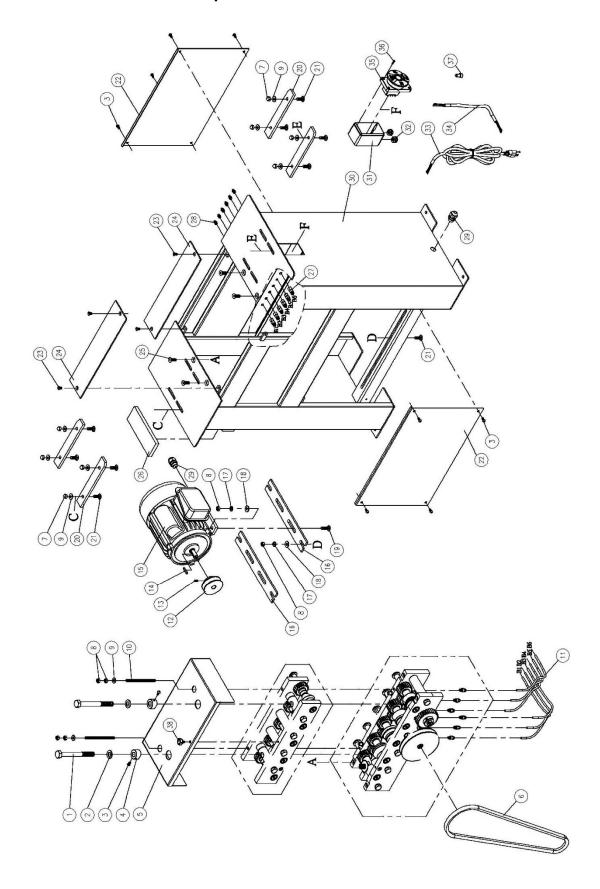
### 10.0 Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 Monday through Friday, 8:00 a.m. to 5:00 p.m. CST. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you guickly and accurately.

Non-proprietary parts, such as fasteners, can be found at local hardware stores, or may be ordered from JET.

Some parts are shown for reference only, and may not be available individually.

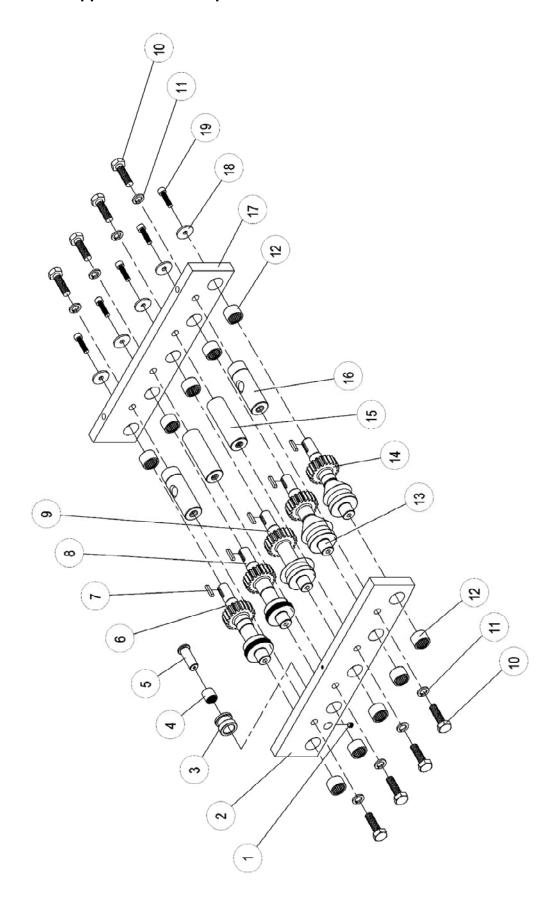
### 10.1.1 **LF-20 Lockformer – Exploded View**



### 10.1.2 LF-20 Lockformer – Parts List

Index No	Part No	Description	Size	Qty
		. Hex Cap Screw		
		. Flat Washer		
3	TS-0207021	. Socket HD Cap Screw	1/4-20x1/2	10
		. Spacer		
		. Cover		
		. V-Belt		
7	TS-059303	. Cap Nut	3/8-16	8
		. Hex Nut		
9	TS-0680041	. Flat Washer	3/8	10
10	LF20-110	. Full Threaded Stud	3/8"-16UNC*128L	2
11	LF20-111	. Oil Pipe	6*400 mm	6
12	LF20-112	. Motor Pulley		1
13	TS-1523041	. Socket Set Screw	M6x12	1
14	5508945	. Double Head Round Key	5*5*30L mm	1
15	LF20-115	. Motor	1.5HP/115V/60Hz/4P/1Ph	1
	LF20-115SC	. Starting Capacitor (not shown)	200MF 125VAC	1
		. Running Capacitor (not shown)		
	LF20-115MF	. Motor Fan (not shown)		1
	LF20-115CS	. Centrifugal Switch (not shown)		1
		. Fan Cover (not shown)		
16	LF20-116.	. Motor Plate		2
		Lock Washer, Medium		
		Flat Washer		
		. Hex Cap Screw		
		. Guide Fence		
		Carriage Bolt		
		Cabinet Cover		
		Socket HD Flat Screw		
		. Top Plate		
		Socket HD Flat Screw		
		Soft Pad		
		. Female Thread Fitting		
		Oakla Cland		
		. Cable Gland		
		. Cabinet		
		. Switch Box		
		. Strain Relief		
		. Power Cord		
		. Motor Cord		
		. Switch Assembly		
		. Self-Drilling Screw		
		. Wire Connector		
		. JET Knob		
		. JET Logo (not shown)		
		. ID Label, LF-20 (not shown)		
	LM000223	. Warning Label (not shown)		1
		. Tool Package (includes items below)		
		. Wrench (not shown)		
		. Wrench (not shown)		
		. Hex Wrench (not shown)		
		. Hex Wrench (not shown)	6mm	1
		. Double Head Round Key (not shown)	5*5*25L mm	10

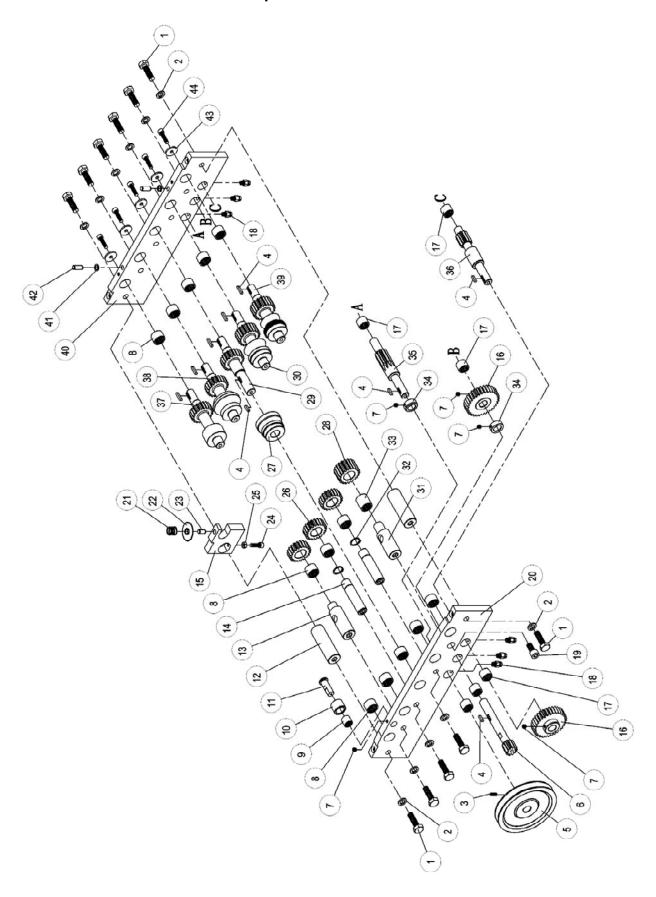
### 10.2.1 LF-20 Upper Bracket – Exploded View



### 10.2.2 LF-20 Upper Bracket – Parts List

Index No Part No	Description	Size	Qty
1TS-0270011	Socket Set Screw	5/16-18x1/4	1
	Upper Front Die Clamping Plate		
	Die T5		
4LF20-204	Needle Bearing	BA1012	1
5LF20-205	Shaft		1
6LF20-206	Die T6		1
76293358	Double Head Round Key	5*5*25L mm	5
	Die T4		
	Die T3		
	Hex Cap Screw		
	Lock Washer, Medium		
	Needle Bearing		
	Die T2		
	Die T1		
	Connecting Rod		
	Connecting Rod with Hole		
	Upper Rear Die Clamping Plate		
	Flat Washer		
19TS-0208071	Socket HD Cap Screw	5/16-18x1-1/4	5

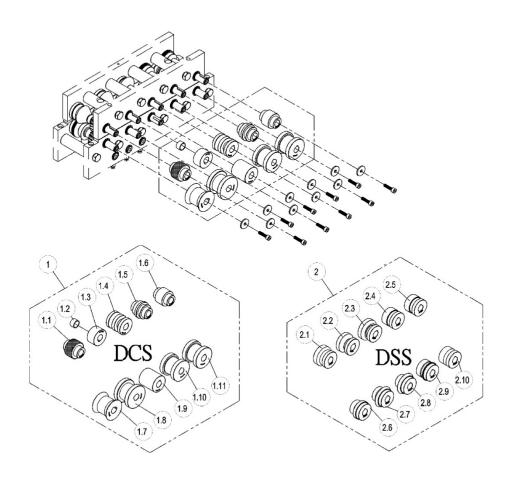
### 10.3.1 LF-20 Lower Bracket – Exploded View



### 10.3.2 LF-20 Lower Bracket – Parts List

Index No	Part No	Description	Size	Qty
1	TS-0070041	Hex Cap Screw	1/2-13x1-3/4	11
2	TS-0720111	Lock Washer, Medium	1/2"	11
3	TS-1523051	Socket Set Screw	M6x16	1
		Double Head Round Key		
		Gear Pulley		
6	LF20-306	Gear Shaft		1
		Socket Set Screw		
8	LF20-308	Needle Bearing	BA1412	13
9	LF20-309	Needle Bearing	BA1012	1
10	LF20-310	Die B5		1
11	LF20-311	Shaft		1
		Connecting Rod		
13	LF20-313	Connecting Rod		1
14	LF20-314	Connecting Rod		2
15	LF20-315	Bracket		1
		Gear		
		Needle Bearing		
		Copper Adapter		
		Socket HD Cap Screw		
20	LF20-320	Lower Front Die Clamping Plate		1
		Spring		
		Disc		
		Pin		
		Socket HD Cap Screw		
		Hex Nut		
		Spur Gear		
		Die B 3		
28	LF20-328	Spur Gear		1
29	LF20-329	Die Shaft B 3		1
		Die B2		
31	L F20-331	Connecting Rod	•••••	1
32	STW22	C Ring	STW-22	2
33	LF20-333	Needle Bearing	BA1416	1
34	LF20-334	Collar		2
		Gear Shaft		
		Gear Shaft		
		Die B6		
		Die B4		
39	LF20-339	Die B1		1
40	LF20-340	Lower Rear Die Clamping Plate		1
41	TS-1550071	Flat Washer	M10	2
		Pin		
		Flat Washer		
44	TS-0208071	Socket HD Cap Screw	5/16-18x1-1/4	5

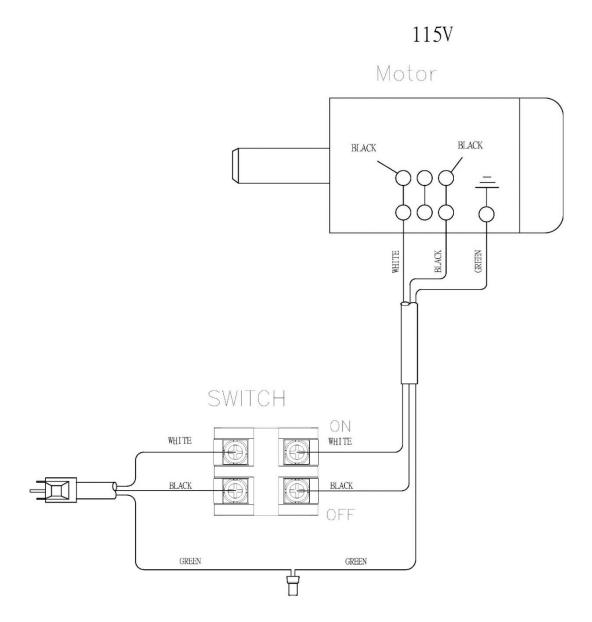
### 10.4.1 LF-20 Optional Rollers – Exploded View



### 10.4.2 **LF-20 Optional Rollers – Parts List**

Index No	Part No	Description	Size	Qty
1	.756092	. Drive Cleat Rolls, set of 10		1
2	.756091	. Double Seam Rolls, set of 10		1

### 11.0 Electrical Connections for LF-20



### 12.0 Warranty and service

JET warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

#### **Warranty Period**

The general warranty lasts for the time period specified in the literature included with your product or on the official JET branded website.

- JET products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90 day limited warranty against manufacturer's defects.

#### Who is Covered

This warranty covers only the initial purchaser of the product from the date of delivery.

#### What is Covered

This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance. JET woodworking machinery is designed to be used with Wood. Use of these machines in the processing of metal, plastics, or other materials outside recommended guidelines may void the warranty. The exceptions are acrylics and other natural items that are made specifically for wood turning.

#### **Warranty Limitations**

Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

#### **How to Get Technical Support**

Please contact Technical Service by calling 1-800-274-6846. Please note that you will be asked to provide proof of initial purchase when calling. If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. JET has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the JET website.

#### More Information

JET is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the JET website.

#### **How State Law Applies**

This warranty gives you specific legal rights, subject to applicable state law.

#### **Limitations on This Warranty**

JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. JET SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

JET sells through distributors only. The specifications listed in JET printed materials and on official JET website are given as general information and are not binding. JET reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever. JET® branded products are not sold in Canada by JPW Industries, Inc.

### Product Listing with Warranty Period

90 Days - Parts; Consumable items

1 Year - Motors; Machine Accessories

2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories; Woodworking Machinery used for industrial or commercial purposes

5 Year – Woodworking Machinery

Limited Lifetime – JET Parallel clamps; VOLT Series Electric Hoists; Manual Hoists; Manual Hoist Accessories; Shop Tools; Warehouse & Dock products; Hand Tools; Air Tools

NOTE: JET is a division of JPW Industries, Inc. References in this document to JET also apply to JPW Industries, Inc., or any of its successors in interest to the JET brand.

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