

NHAE
LOCKFORMER

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Operator's manual

20 Gauge Super-Speed



LOCKFORMER

WARRANTY

Our guarantee on the products we manufacture is limited to repair or replacement without charge, of any part found to be defective in materials or workmanship. This guarantee is for a period of one year (unless otherwise specified) from the date of shipment from our factory, for all mechanical features of the machine, except purchased components that carry the warranty of the original manufacturer.

Warranty parts and components will be shipped freight collect from Lisle, Illinois. If the defective part has not been received by Lockformer within 15 working days after receiving the replacement part, your company will be responsible for the cost of replacement.

The warranty provided in this clause is in lieu of all other warranties, express or implied, arising by law or otherwise, including the implied warranties of merchantability and fitness for a particular purpose which are hereby disclaimed by Lockformer and excluded from this agreement. This warranty shall not be modified for any reason. In no event shall Lockformer be liable for consequential or incidental damages.



CAUTION

To provide clarity to points in question the illustrations and photos appearing in this manual are shown with cover(s) removed.

**NEVER OPERATE THIS EQUIPMENT
UNLESS ALL COVERS AND GUARDS
ARE IN PLACE.**

The information in this document has been reviewed and is believed to be completely accurate. However, no responsibility is assumed for inaccuracies. Furthermore, the LOCKFORMER COMPANY reserves the right to make changes to any products herein, at any time, to improve reliability, function, or design. The LOCKFORMER COMPANY does not assume any liabilities arising out of any use of any product described herein, neither does not convey any license under its patent rights nor the rights of others.

NOTES

SAFETY GUIDELINES



You are not ready to operate this equipment if you have not read and understood the safety information in this manual.



WARNING:

Do not wear loose clothing, neckties, improper gloves, or jewelry while operating this machine. If long sleeves must be worn, avoid loose cuffs or buttons. Tie back or contain long hair.

Wear proper gloves to prevent lacerations caused by sharp edges of stock as it travels through the forming operation.

Never operate this equipment unless all covers and guards are properly installed.

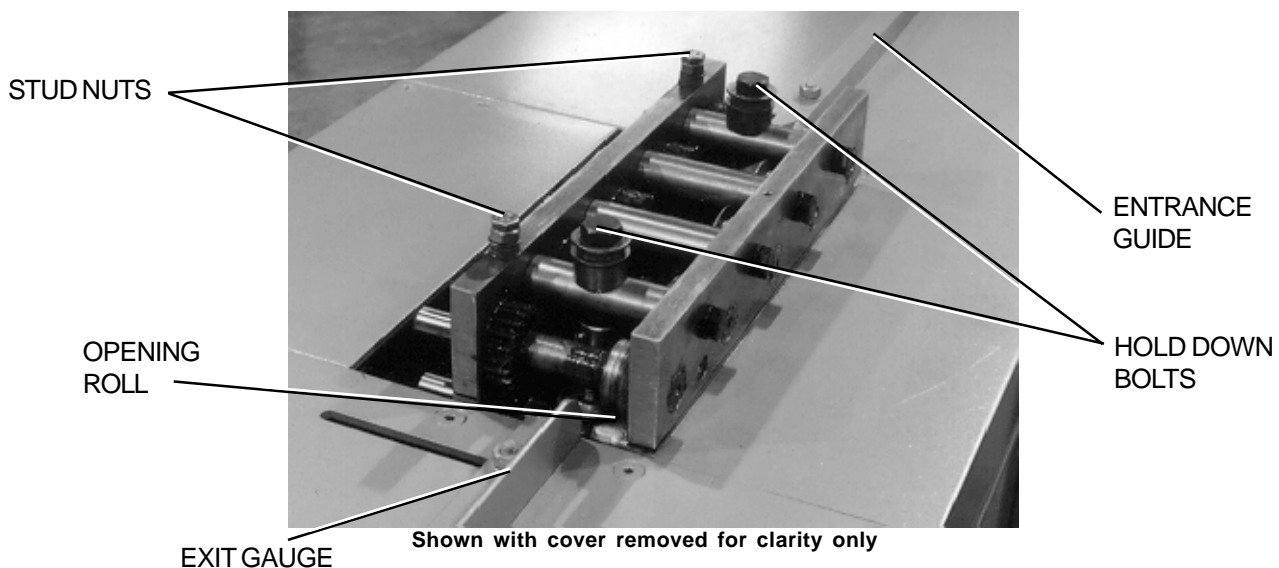
Be alert for loose, worn, or broken parts. Never operate this equipment unless it is in good working condition.

As the stock feeds into the rolls, a pinch point is created as the stock advances. Keep hands clear of this and all pinch points.

Always disconnect the main power supply power and install lock outs when making adjustments or repairs.

When transporting, take into consideration that this machine is top heavy.

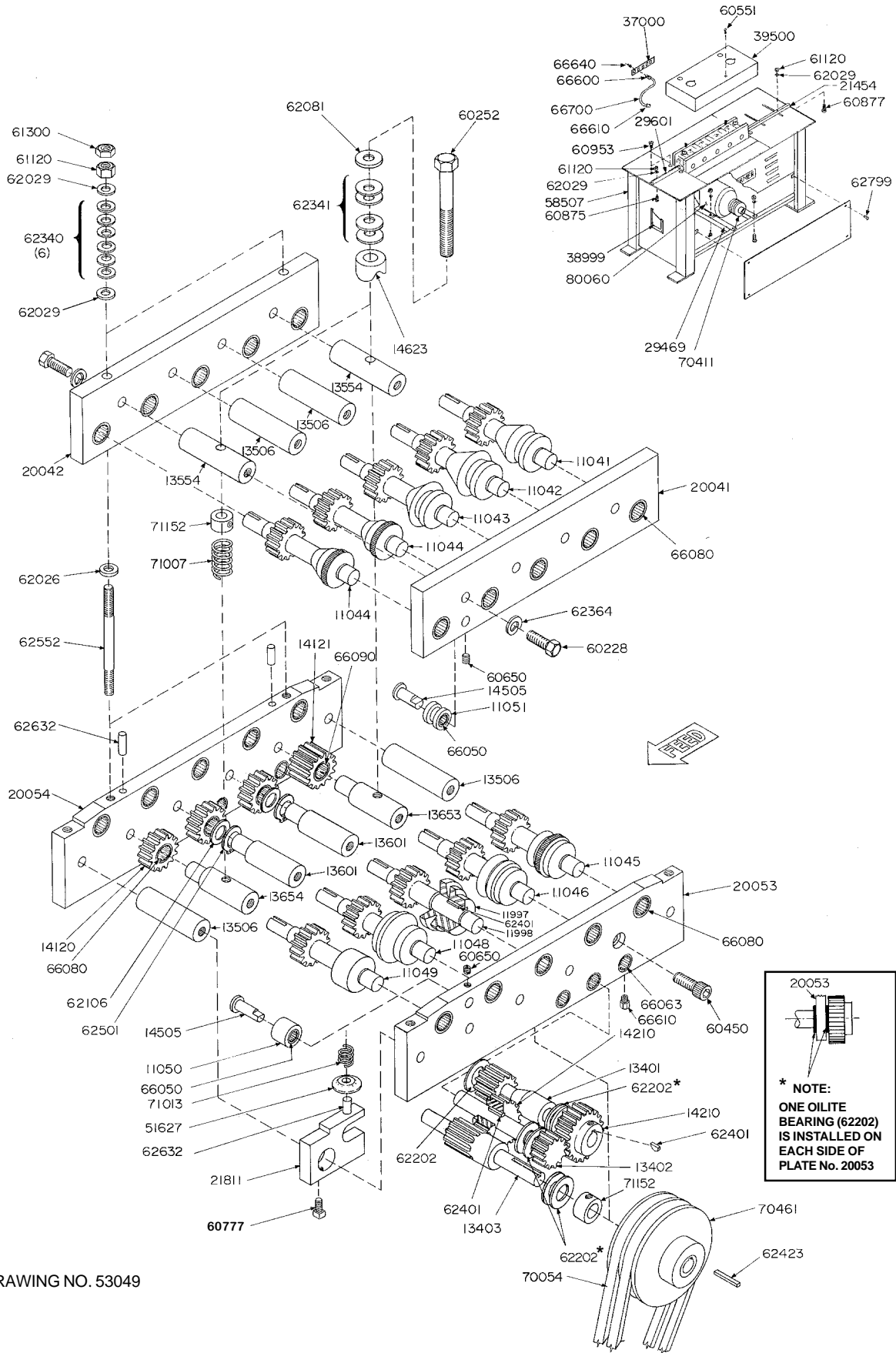
Remember that the information contained in this manual is only a portion of an adequate training program. It must be coupled with specific instructions for your application along with full information of national and local safety regulations that may apply.



20 Super Speed Parts List

NEW PART NUMBER	OLD PART NUMBER	DESCRIPTION	QUANTITY
20053	2101-A	Lower Plate (Left)	1
20054	2101-B	Lower Plate (Right)	1
20041	2102-A	Upper Plate (Left)	1
20042	2102-B	Upper Plate (Right)	1
11045	2103	Bottom 1 Forming Roll	1
11046	2104	Bottom 2 Forming Roll	1
1997, 11998	2105	Bottom 3 Forming Roll	1
11048	2106	Bottom 4 Forming Roll	1
11049	2107	Bottom 5 Forming Roll	1
11041	2108	Top 1 Forming Roll	1
11042	2109	Top 2 Forming Roll	1
11043	2110	Top 3 Forming Roll	1
11044	2111	Top 4 Forming Roll	1
11044	2112	Top 5 Forming Roll	1
11050	2113	Lower Idler Roll	1
11051	2114	Upper Idler Roll	1
13554	2115	Plain Spacer Drilled	2
13654	2116	Step Spacer Tapped	1
13601	2117	Step Spacer	1
62501	2117	Retaining Ring	2
13506	2118	Plain Spacer	4
14210	2119	3 inch Gear With Hub 28 teeth	2
51627	2120	Opening Roll	1
14505	2121	Idler Roll Pins	2
9952500	2122	Opening Roll Holder	1
66080	2123	Bearing 7/8" ID x 3/4" Long	23
66063	2124	Bearing 3/4" ID x 3/4" Long	6
13401	2125	Third Drive Shaft	1
13402	2126	Second Drive Shaft	1
13403	2127	First Drive Shaft	1
66050	2128	Bearing 5/8" ID x 3/4" Long	2
70054	2130	V-Belt (B size Browing No. 5248)	1
29601	2131	Exit Angle Gauge	1
70461	2132	Machine Pulley (Double Groove)	1
62401	2135	Woodruff Key No. 9	3
60650	2136	Hex Head Set Screw 5/16 x 2/16	2
14623	2137	Locking Collar	2
60953	2138	Flat Head Cap Screw	4
62081	2139	Steel Washer for Part No 2144	1
62364	2140	Washer	19
60875	2141	Carriage Bolt 3/8 x 1 for Ent. Gauge	2
37000		Lube Bracket	2

NEW PART NUMBER	OLD PART NUMBER	DESCRIPTION	QUANTITY
71152	2142	3/4" Collar	3
60450	2143	1/2 - 13 x 1" S.H.C. Screw	1
60252	2144	Hold Down Stud 5/8 x 6	2
66600	2145	Connector (Lubrication)	6
66610	2146	Half Union (Lubrication)	6
62552	2147	Hold Down Stud 3/8 x 4-3/4	2
14120	2149	Idler Gear (66080 Bearing)	3
62341	2150	Spring Washer 1-1/2" O.D.	8
62340	2151	Spring Washer 3/4" O.D.	12
58507	2152	Stand Assembly	1
39500	2153	Forming Head Cover	1
60777	2154	Set Screw 3/8 x 3/4"	1
62026	2155	Spacer Washer 3/8"	2
21454	2156	Entrance Gauge Bar	2
66700	2157	Plastic Tubing 11" Lg.	3
66700	2158	Plastic Tubing 16" Lg.	3
80060	2161	Motor 2 H.P.	1
62633	2162	Dowel Pin	2
62029	2163	Steel Washer 3/8"	14
61120	2164	Hex Nut 3/8"	6
61300	2165	Hex Jam Nut 3/8"	2
60750	2166	Square Head Set Screw 1/4 x 1/2	1
66640	2167	Grease Fitting (Alemite)	2
60877	2168	Carriage Bolt 3/8 x 1-3/4	2
80923		Starter 609AOW	1
80928		Enclosure Back	1
21811	2122-A	Opening Roll Holder	1
62632	2122-B	Dowel Pin	1
71013	2122-C	Spring	1
13653		Spacer Main Idler	1
14121		Main Idler Gear (66090 Bearing)	1
60228	2140-A	Hex Head Screw 1/2 - 13 x 11-9/4	1
62423		Straight Key	1
71007		Compression Spring	1
66090		Main Idler Bearing	1
66610		Half Union	6
29469		Motor Base	2
70411		Sheave 2BK28	1
82247		Heater W-47	1
60551		Round Head Screw 1/4-20 x 1/2	1
62706		Washer	2
62202		Oilite Thrust Bearing	7



DRAWING NO. 53049

Installation

Provide a clean, flat, well lighted installation site. Level the machine and anchor it to the floor. Inspect the gears and drive assembly, and remove any debris that may have accumulated during shipping.

Standard electrical installation requires a 115 volt grounded power supply. Provide a 115 volt receptacle at the point of operation. If a 230 volt motor is ordered, install the power supply in compliance with local and national electrical codes. For further information, contact a certified electrician or the Lockformer Service Department at (630) 964-8000.

Operating Instructions

BASIC OPERATION

Hold the stock against the entrance gauge and slide it into the forming head. Be sure that the stock remains against the gauge until the trail edge of stock is engaged in the rolls.

Note: Minimum part length is 7 inches. If a shorter piece is needed, run a long piece, then notch and cut it to size.

Make hold down adjustments, as outlined below, to accommodate slight variations in metal thickness and hardness.

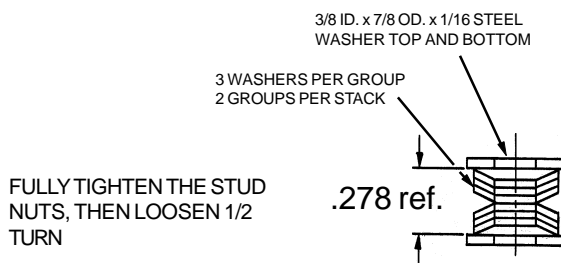
HOLD DOWN ADJUSTMENT PROCEDURE

1. DISCONNECT POWER !
2. Install lock outs to prevent accidental start up.
3. Remove top cover.
4. Tighten the hold down bolts until snug, then loosen them 3/4 turn. This setting should give good results for all stock thicknesses.
5. INSTALL THE COVER, remove lock outs, restore power.
6. Run a test piece.
 - If the stock slips in the rolls, tighten the hold down bolts equally in small increments until the desired results are obtained.
 - If the stock curls up after forming or shows extremely heavy pressure marks, loosen the hold down bolts slightly.
7. Machine is now ready for production.

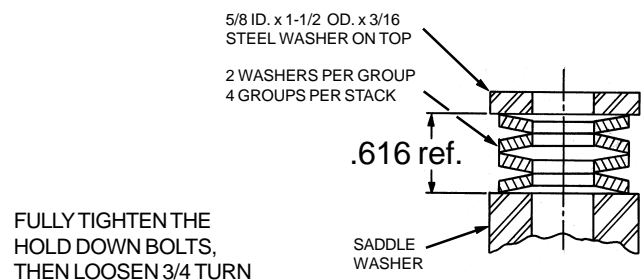
Do not adjust hold downs unless the stock slips in the rolls, pulls away from the entrance gauge, or curls when exiting the rolls.

BELLEVILLE SPRING WASHERS

3/8" HOLD-DOWN STUDS



5/8" HOLD-DOWN BOLTS



PITTSBURGH LOCK

HAMMER-OVER LEG ADJUSTMENT



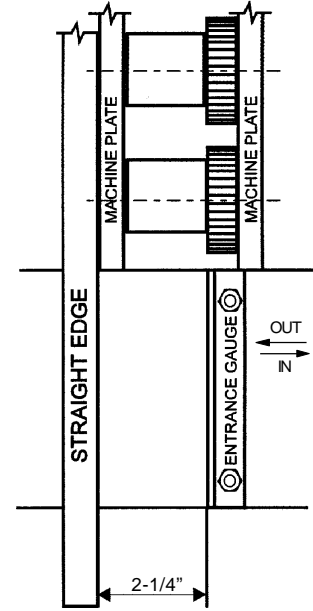
The width of the Pittsburgh lock hammer over leg is adjustable. Move *only* the right hand entrance gauge in to produce a wider leg and out for a narrower leg. ALWAYS move both ends of the entrance gauge equally, keeping it parallel to the top machine plates.

Never move the exit gauge bar for this roll set. This gauge is not intended to contact the material under normal circumstances.

OPENING ROLL

CAUTION

The flat roll mounted horizontally after the last roll station maintains the opening of the gap in the Pittsburgh lock. If burrs or twists caused by snips are present on the stock, they should be flattened. Failure to do this can result in breakage of the opening roll.

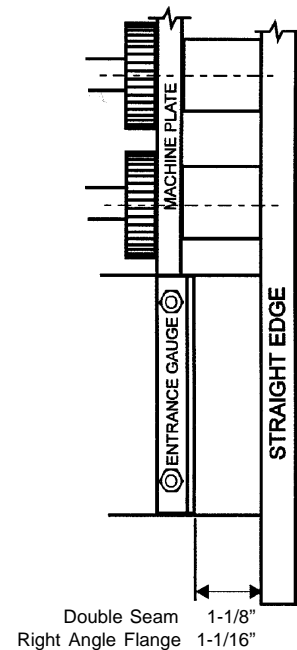
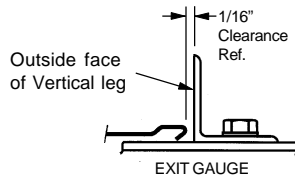


INSTALLATION and OPERATION OF AUXILIARY ROLLS

NOTE: Standard auxiliary rolls are interchangeable between the standard Lockformer 20 and the Super-Speed models. Since different entrance gauges are required, the model for which the rolls are intended should be specified

DOUBLE SEAM or STRAIGHT RIGHT ANGLE FLANGE ROLLS

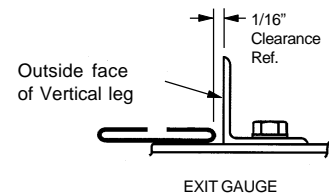
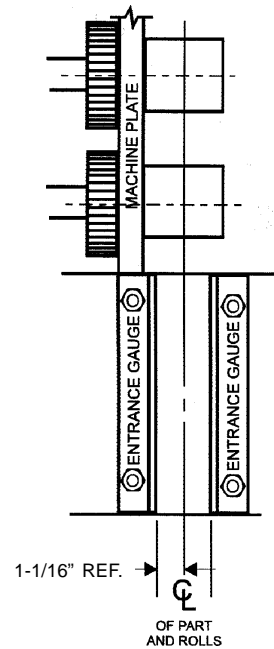
1. DISCONNECT POWER.
2. Install lock outs to prevent accidental start up.
3. Remove the cover.
4. Unscrew and remove the right hand side table top section. This will expose the auxiliary shafts on which the rolls will be mounted.
5. Select the first pair of rolls which are marked T1 (Top roll first station) and B1 (Bottom roll first station). Slide them as a mated pair onto the shafts. All information stamped on the rolls must face outward. Slide a key into each keyseat. Follow this procedure in sequence with each remaining pair of rolls.
6. Fasten the rolls onto the shafts with the screws and washers provided.
7. Mount the entrance gauge and set it to the dimensions shown in the illustration.
8. Mount the exit gauge so the outside face of the vertical leg is parallel to the part as it passes over the exit table. Set to allow approximately 1/16" clearance between the part and the exit gauge.
9. Replace the table top.
10. INSTALL THE COVER.
11. Remove the lock outs.
12. Restore power to the machine.



DRIVE CLEAT ROLLS



1. DISCONNECT POWER.
2. Install lock outs to prevent accidental start up.
3. Remove the cover.
4. Unscrew and remove the right hand side table top section. This will expose the auxiliary shafts on which the rolls will be mounted.
5. Select the first pair of rolls which are marked T1 (Top roll first station) and B1 (Bottom roll first station). Slide them as a mated pair onto the shafts. All information stamped on the rolls must face outward. Slide a key into each key seat. Follow this procedure in sequence with each remaining pair of rolls.
6. Fasten all rolls except the top number 2 onto the shafts with the screws and washers provided. Do not insert a mounting screw into the top 2 rollshaft; this allows the roll to "float" laterally, and center itself to the bottom roll as the stock passes through.
7. Mount the entrance gauges so that the centerline of the stock aligns with the centerline of the rolls.
8. Tighten the stud nuts so that the **T5** and **B5** rolls do not separate as the drive cleat passes through.
9. Mount the exit gauge so the outside face of the vertical leg is parallel to the part as it passes over the exit table. Set to allow approximately 1/16" clearance between the part and the exit gauge.
10. Replace the table top.
11. INSTALL THE COVER.
12. Remove the lock outs.
13. Restore power to the machine.

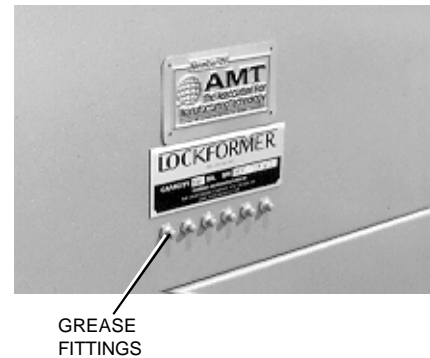


IMPORTANT: BE SURE TO CUT STOCK EXACTLY 2-1/8 INCHES WIDE TO INSURE AN ACCURATELY FORMED CLEAT.

MAINTENANCE

LUBRICATION

Six grease fittings are located on the side panel of the stand. Lubricate these fittings after every eight hours of operation. The recommended lubricant is Molub-Alloy 777-1 or equivalent. Apply grease to all drive gears after every 40 hours of operation. If the machine is to be used in a damp environment, apply a film of oil or grease to all unpainted metal surfaces to prevent rust.



CLEANING THE ROLLS

Keeping the roller dies clean is an important step toward efficient operation of your machine. Lockformer's GALV-OFF aerosol spray cleaner, will soften galvanized build up so that it flakes off by itself. Daily use is recommended to prevent harmful deposits from building up. GALV-OFF cleans and lubricates, as well as protects the forming rolls.