OPERATION, PARTS AND SAFETY MANUAL

SIGNODE®

AMP1-12/58/34, AMPR2-58

ALL-POWER COMBINATION
STRAPPING TOOLS

IMPORTANT!
DO NOT DESTROY

It is the customer's responsibility to have all operators and servicemen read and understand this manual.

Contact your local Signode representative for additional copies of this manual.

READ ALL INSTRUCTIONS BEFORE OPERATING THIS SIGNODE PRODUCT

SIGNODE • 3620 WEST LAKE AVENUE • GLENVIEW, ILLINOIS 60025

⚠WARNING

READ THESE INSTRUCTIONS CAREFULLY.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SEVERE PERSONAL INJURY.

GENERAL SAFETY CONSIDERATIONS

1. STRAP BREAKAGE HAZARD.
   Improper operation of the tool or sharp corners on the load can result in strap breakage during tensioning, which could result in the following:

   - A sudden loss of balance causing you to fall.
   - Both tool and strap flying violently towards your face.

   Failure to place the strap properly around the load or an unstable or shifted load could result in a sudden loss of strap tension during tensioning. This could result in a sudden loss of balance causing you to fall.

   - If the load corners are sharp use edge protectors.
   - Positioning yourself in-line with the strap, during tensioning and sealing, can result in severe personal injury from flying strap or tool. When tensioning or sealing, position yourself to one side of the strap and keep all bystanders away.

2. TRAINING.
   This tool must not be used by persons not properly trained in its use. Be certain that you receive proper training from your employer. If you have any questions contact your Signode Representative.

3. EYE INJURY HAZARD.
   Failure to wear safety glasses with side shields can result in severe eye injury or blindness. Always wear safety glasses with side shields which conform to ANSI Standard Z87.1 or EN 166.

4. FALL HAZARD.
   Maintaining improper footing and/or balance when operating the tool can cause you to fall. Do not use the tool when you are in an awkward position.

5. CUT HAZARD.
   Handling strap or sharp parts could result in cut hands or fingers. Wear protective gloves.

6. TOOL CARE.

   - Inspect and clean the tool daily. Replace all worn or broken parts.
   - Lubricate all moving parts daily.
   - *On air powered tools, always disconnect the pneumatic connection to the tool when* performing part removal and replacement procedures. NEVER connect a pneumatic source to a disassembled tool unless otherwise specified.

7. WORK AREA.
   Keep work areas uncluttered and well lighted.

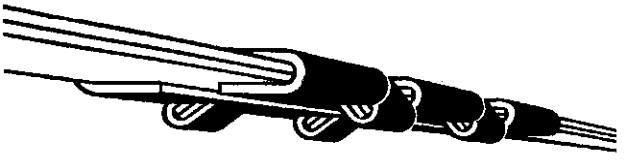
⚠WARNING

Use the correct Signode products for your application. If you need help contact your Signode Representative.

Signode tools and machines are designed and warranted to work together with Signode strapping and seals. Use of non-Signode strap, seals and/or manufactured or specified replacement parts may result in strap breakage or joint separation while applying strapping to a load or during normal shipping and handling. This could result in severe personal injury.

JOINT FORMATION

1. **Before using this tool, read its Operation and Safety Instructions contained in this manual.**
2. **This tool is a double notch type sealer. Each joint must be inspected to make certain it has four (4) good notches. A properly formed joint will appear as shown in the illustration. If the joint does not appear as shown, then the operator must proceed as follows:**



   A. **Ensure that the tool's operating instructions are being followed before applying another strap.**
   B. **Cut the strap off and apply another.**
   C. **An improperly formed seal which does not have four (4) good notches, could result in strap separation. Before moving any package be certain that the seal is formed as shown. Inspect the joint to make certain it appears as shown in the illustration. If not, remove the strap and check the tool for worn or broken parts. Repair the tool before applying another strap.**

MOVING AND STACKING STRAPPED LOADS

Before moving or stacking any strapped load, follow all standard industry practices regarding safe material handling procedures.

CUTTING TENSIONED STRAP

Using claw hammers, crowbars, chisels, axes or similar tools will cause tensioned strap to fly apart with hazardous force. Use only cutters designed for cutting strap. Read the instructions in the cutters manual for proper procedure in cutting strap. Before using any Signode product read its Operation and Safety Manual.

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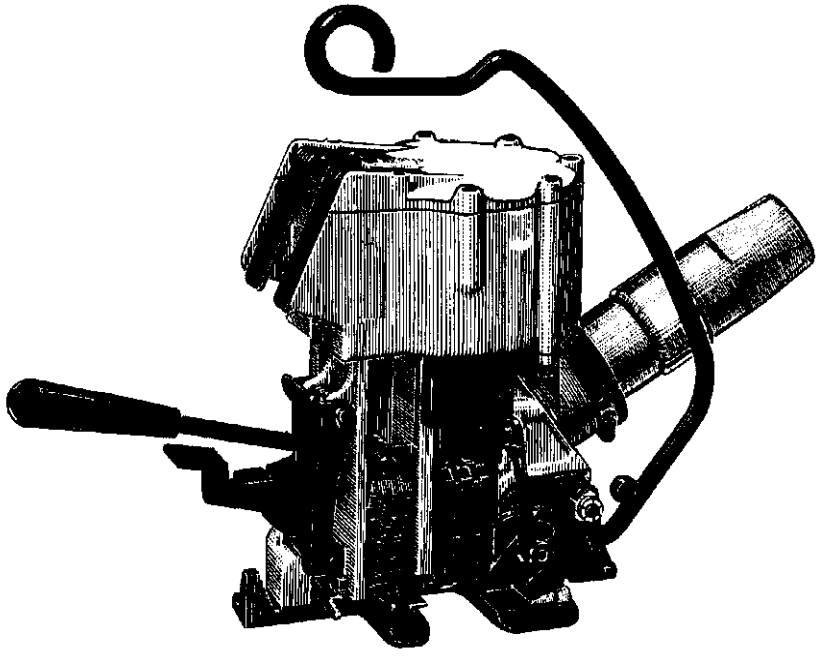
⚠WARNING

Signode tools and machines are designed and warranted to work together with Signode strapping and seals. Use of non-Signode strap and seals and/or manufactured or specified replacement parts may result in strap breakage or joint separation while applying strapping to a load or during normal shipping and handling. This could result in severe personal injury.

AMP1-12, Part No. 024780
AMP1-58, Part No. 024770
AMP1-34, Part No. 024760
AMPR2-58, Part No. 042361



TOOL INSTALLATION

To operate effectively, your tool must be installed properly. This installation includes proper suspension of the tool over the package to be strapped, correct placement of a strapping dispenser to provide a continuous easy supply of strap for the application, and a satisfactory air supply

PNEUMATIC INFORMATION, Continued

MOISTURE

Moisture is always present in air lines due to condensation within the lines as the air cools. Steps must be taken to remove this moisture and to keep it from the air tool. This is because water tends to wash away lubricants and cause corrosion, sticking and failure of internal parts.

The main line should be pitched so the far end terminates in a water leg. Branch lines are taken from the top of the main, never off the bottom. Every branch should have a water leg at its lowest point, with a drain cock which is drained daily.

If these precautions are taken and water is still present, an after cooler and a moisture separator are required between the compressor and the air receiver tank. A large air line separator can be installed in the air tool line, but precautions must be taken to insure that it will be drained daily, before the air tool is operated.

Water in air lines is a constant threat to the proper operation of air tools. Even near freezing operating conditions, a good refrigerant type dryer is essential. A good dryer will remove 95% or more of water right at the compressor. The remaining moisture is removed at the water leg in the piping system or in the filter (Signode Part No. 173111).

NOTE: Additional information is available in the Signode publication, "Air Supply Manual" (p. 25, E-186038). If you have any questions, contact your local Signode Representative.

LUBRICATION

The air motor must be properly lubricated. This is achieved by keeping the air line lubricator filled with oil and correctly adjusted. Without proper lubrication, the motor will become sticky and the tool will give low and erratic tension and be difficult to release from the strap.

Install the lubricator as close to the air tool as possible. The arrow on the lubricator's top surface must point in the direction of air flow.

For proper operation, oil must drop through the lubricator sight glass at a rate of 4 to 10 drops per minute. This rate is checked while the air tool is running free. Only 20% of this oil is actually delivered to the tool. The remaining oil drops back into the oil reservoir. The unit is factory set and should require no adjustment. If an adjustment is required, the adjusting screw on top of the lubricator may be turned as marked to reduce or increase the flow of oil.

The correct grade of oil must be used in the lubricator; too heavy an oil will not provide sufficient lubrication and will cause sticking and sluggish operation of the air tool.

Recommended oils are any good grade of rust and oxidation inhibiting oil with a viscosity of 80-120 S.U.S. at 100 degrees Fahrenheit. (0.15 to 0.25 cm^2 /sec. at 38 degrees Celsius), such as:

Non Fluid Oil Co., grade #LS-1236
Signode oil - Part No. 008556

If necessary, use SAE #5 or SAE #10 non-detergent, cut 1 to 1 with kerosene.

NOTE: Some oils contain anti-wear additives which may disable the air motor. Be certain to use recommended oil.

Several drops of lubricator oil added to the inlet of the air motor or into the air line each day will help insure good operation. A noticeable reduction of air motor performance can usually be corrected by squirting a few drops of oil into the air line.

COLD WEATHER OPERATION

If a tool does not operate satisfactorily in freezing temperatures, certain steps can correct the problem. The following steps can be taken to improve cold weather operation of the tool:

a. An air line dryer adjacent to the compressor.

b. Use lubricant recommended by Signode. Signode has tested the use of anti-freezes, none work well in air tools; the tool will gum up when anti-freezes are introduced and will not function properly. The best lubricant for freezing weather is the 1 to 1 oil and kerosene combination.

c. If possible, run the air supply line to a indoor located Filter-Regulator-Lubricator or relocate the F-L-R to a warmer operating area.

AIR PRESSURE vs. STRAP TENSION

A minimum air pressure setting of 65 psig must be maintained to ensure that the tool will seal properly. Input air pressure to tool must not exceed 90 psig. Strap tension is controlled by air pressure. Use the proper air line piping and lubrication as specified in this manul. Your air pressure gauge must be accurate, therefore, confirm its accuracy by comparing it to a calibrated master gauge.

Adjust the pressure regulator to achieve the tensions listed below. Once the regulator is set, the tension levels will be consistent on all straps, provided the operator allows the air motor to stall. If the air pressures do not result in tension levels that satisfy the needs of the application, then increase the air pressure in increments of 5 psig until the desired tension level has been achieved.

The following tool models have been factory adjusted, at an input air pressure of 90 psig, to draw the following tensions:

AMP1-12: 860 Lbs. AMP1-58: 1060 Lbs. AMP1-34: 1280 Lbs. AMPR2-58: 1060 Lbs.

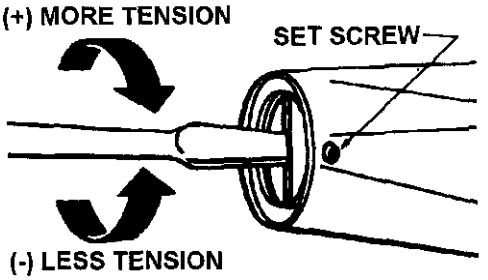
ADJUSTING STRAP TENSION

NOTE: Make sure the input air pressure to the tool is set between 65 and 90 psig.

⚠WARNING

Strap breakage hazard. 3/4" strap can break during tensioning if inlet pressure to the tool exceeds 70 psig. Strap breakage can result in sever personal injury. Maximum operating pressure is 90 psig.

PNEUMATIC INFORMATION, Continued



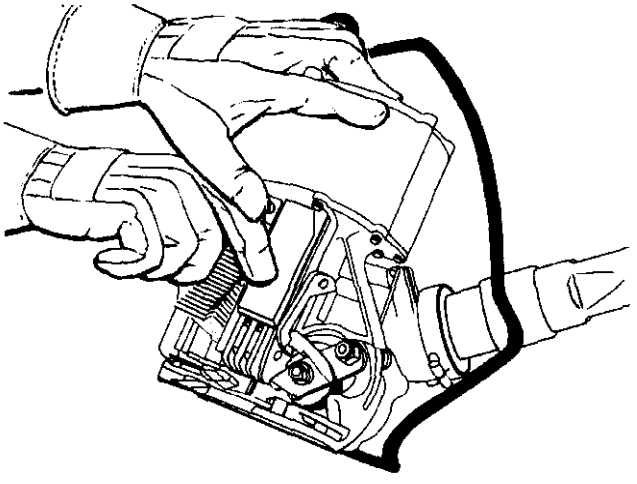
To adjust the strap tension, use the following instructions:

1. **Loosen the set screw on the side of the air motor.**
2. **Turn the pressure adjustment screw in increments of 1/4 turns clockwise to decrease strap tension and counter-clockwise to increase strap tension.**
3. **Turn the adjustment screw until the desired tension level has been reached.**
4. **When a satisfactory tension level has been reached tighten the set screw.**

The tool is now set to operate at a given air pressure in combination with a particular strap size. Any change in air pressure or strap size could result in unsatisfactory tool performance or strap breakage.

OPERATING INSTRUCTIONS - LOADING SEALS

To load seals, raise the seal pad assembly and insert a stack of seals inside the seal magazine. Release the seal pad. Activate the sealing mechanism by depressing then releasing the sealing lever. A seal will be ejected into the sealing jaws. An extension on the seal pad closes the top strap loading slot as a reminder to add seals.



OPERATING INSTRUCTIONS - APPLYING A STRAP

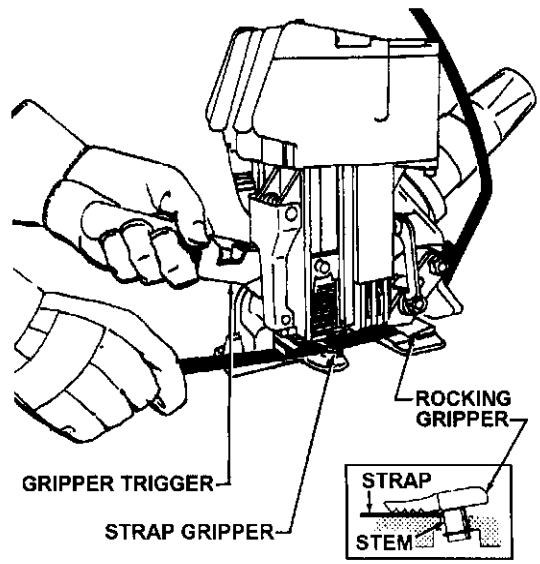
⚠WARNING

Wear safety glasses which conform to ANSI Standard Z87.1 or EN 166.

Stand to one side of the strap while tensioning.
Make sure all bystanders are clear before proceeding.

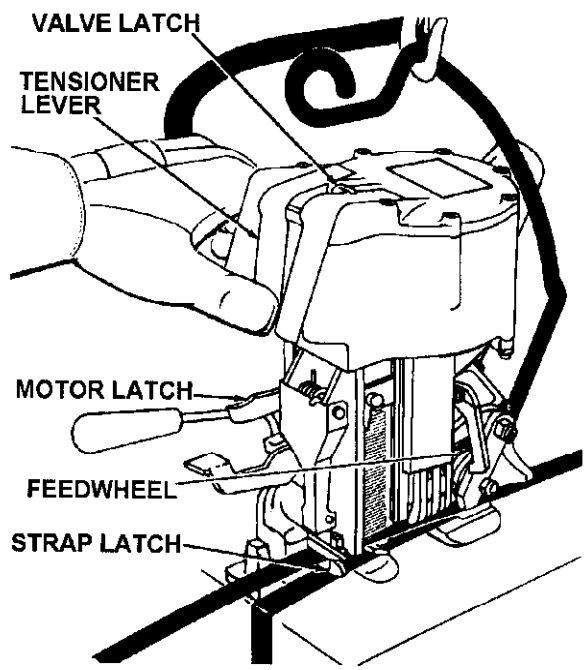
Failure to follow the above could result in severe personal injury.

1. **Encircle the package with strap and insert the bottom end under feedwheel so that it extends at least ½" (25mm) beyond the gripper plug. Depress the gripper trigger to actuate the strap gripper.**



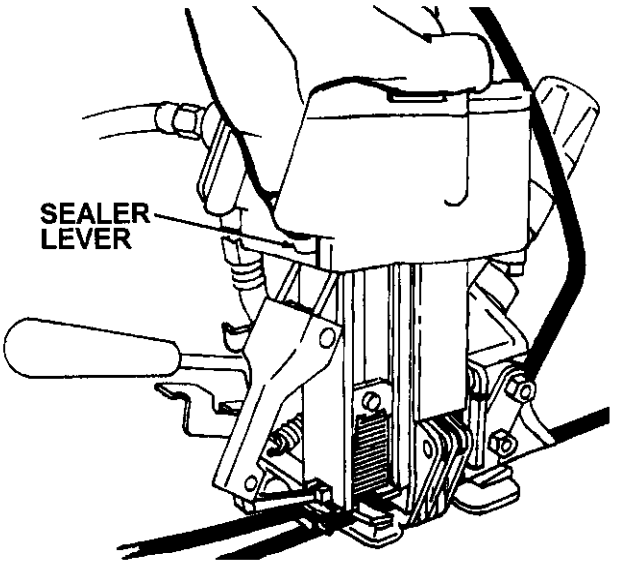
2. **Insert the top strap between the feedwheel and the gripper plug and insert it into the slot of the strap latch. Pull excess slack from the strap. Make sure you are not standing in line with the strap and press the tensioner lever all the way down. It will lock in place. The feedwheel will engage automatically and the tool will begin tensioning. Should it become necessary to stop the tensioning cycle, press the valve latch forward.**

   NOTE: The feedwheel can be lowered manually, without starting the motor, by pressing the motor latch. To start the motor, press the tensioner lever.



OPERATING INSTRUCTIONS, Continued

3. **The motor will stall when the pre-set tension level has been reached. Press the sealer lever all the way down, then release. Do not hold tensioner lever down while pressing the sealer lever as the tensioning lever will be released automatically. The tool will automatically seal the straps together, cut off the top strap and eject a new seal into the jaws. Inspect the joint to make sure the tool has properly notched the seal.**



4. **After the tool has sealed and the sealing mechanism retracts, the feedwheel will automatically raise off the straps. Swing the rear of the tool away from the completed tie to free the tool.**

5. **If the resulting tension level is not satisfactory for your strapping needs, then proceed to adjust the tension as described earlier in this manual.**

JOINT FORMATION

1. **Before using this tool, read its Operation and Safety Instructions contained in this manual.**

2. **This tool is a double notch type sealer. Each joint must be inspected to make certain it has four (4) good notches. A properly formed joint will appear as shown in the illustration. If the joint does not appear as shown, then the operator must proceed as follows:**

   A. **Make certain that the tool's operating instructions are being followed before applying another strap.**

   B. **Cut the strap off and apply a new strap and seal.**

   C. **An improperly formed seal which does not have four (4) good notches, could result in strap separation. Before moving any package be certain that the seal is formed as shown. Inspect the joint to make certain it appears as shown in the illustration. If not, remove the strap and check the tool for worn or broken parts. Repair the tool before applying another strap.**

⚠WARNING

NEVER HANDLE OR SHIP ANY LOAD WITH IMPROPERLY FORMED JOINTS. Misformed joints may not secure the load and could cause serious injury. Follow the joint inspection procedures in each sealers's manual.

PARTS LIST, BASE ASSEMBLY

KEY	PART NAME	QTY.	MODEL AMP1-12	MODEL AMP1-58	MODEL AMP1-34	MODEL AMPR2-58
29A	Tru-Seal, 1-1/4 NPT	1	023097	023097	023087	023087
29B	90° Elbow, 1/4 Tube x 1/4-18 NPS	1	023524	023524	023524	023524
35	O-Ring	1	020728	020728	020728	020728
36	O-Ring	1	020680	020680	020680	020680
57	Flexloc Nut 5/16-18	3	023765	023765	023765	023765
73	Truarc #5100-31	1	005054	005054	005054	005054
102	Handle Assembly	1	016931	016931	016931	016931
103	Knob	1	008852	008852	008852	008852
104	Hose Assembly	1	020708	020708	020708	020708
105	Motor Latch Pin	1	020642	020642	020642	020642
106	Motor Latch Spring	1	020645	020645	020645	020645
107	Support Shaft	1	008539	008539	008539	008539
108	Strap Guide Spring	1	020643	020643	020643	020643
109	SHCS, 1/4-20 x 3/4	3	009041	009041	009041	009041
110	FHSCS, 5/16-18 x 3/4	2	008153	008153	008153	008153
111	Tensioner Frame (Note #2, pg 13)	1	422777	422777	422777	422777
112	Rocking Gripper	1	023762	023763	023764	023763
113	Spring Washer	1	006566	006566	006566	006566
114	Feedwheel	1	006564	006564	006564	006564
115	Motor Spring	1	020644	020644	020644	020644
116	Side Plate	1	024752	024753	024754	024753
117	Flexloc Nut, 3/8-24	2	003868	003868	004499	003868
118	Bushing	1	006567	006567	006567	006567
119	Washer	1	005208	005208	005208	005208
120	Hex Nut (L. H.) 5/16-24 x 1/4	1	005209	005209	005209	005209
126	Wear plug	2	261854	261853	-	261853
127	Wear plug	1	-	-	266907	-
128	Rear guide pad	1	263383	263384	266908	263384

- When ordering parts show tool model, part number and name.
- Common hardware parts may be obtained from local hardware suppliers.
- All recommended spare parts are underlined and should be stocked.
- Lubrication of moving parts with a light machine oil will increase service life.

PART REMOVAL AND REPLACEMENT

FEEDWHEEL

1. To change a dirty or worn feedwheel, remove the left hand nut (120) from the feedwheel shaft and lock nut (117) from the support shaft.

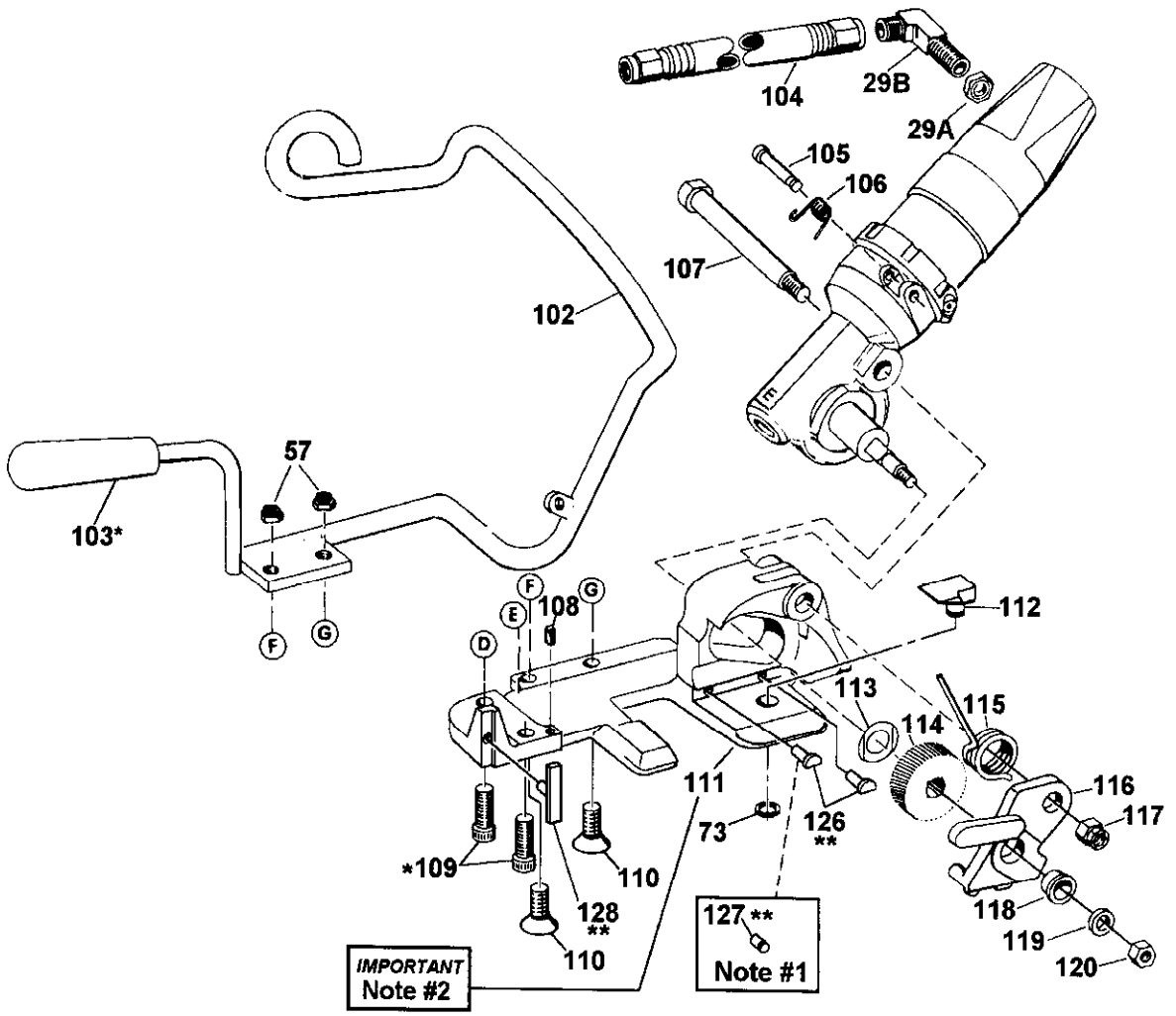
2. With motor and gear housing latched in up position, remove washer (119), side plate (116) and feedwheel (114). Replace the feedwheel and reassemble the parts in reverse order.

ROCKING GRIPPER

1. Turn the tool on its side. Motor and gear housing should be latched in up position. With a Truarc pliers remove the Truarc (73) from the rocking gripper stem (112).

2. Push the rocking gripper up and out.

3. Insert a new rocking gripper and install the Truarc.



* Use Loctite #242 (or equivalent).
* Use Loctite #271 (or equivalent).

NOTES:

1. Key 127 replaces Keys 126 on 5/8" tools. Only one Key 127 is used and is installed into the rear mounting holes.

2. If replacing the Tensioner Frame (Key 111, Part No. 422777), please remember to order the Rear Guide Pad (Key 101) and Wear Plug (Key 103) for the appropriate strap size.

3. For applications requiring a longer length of bottom strap, an alternate gripper (Signode Part No. 023295) is available by special order. When using alternate gripper, tool is threaded with both straps on top of gripper.

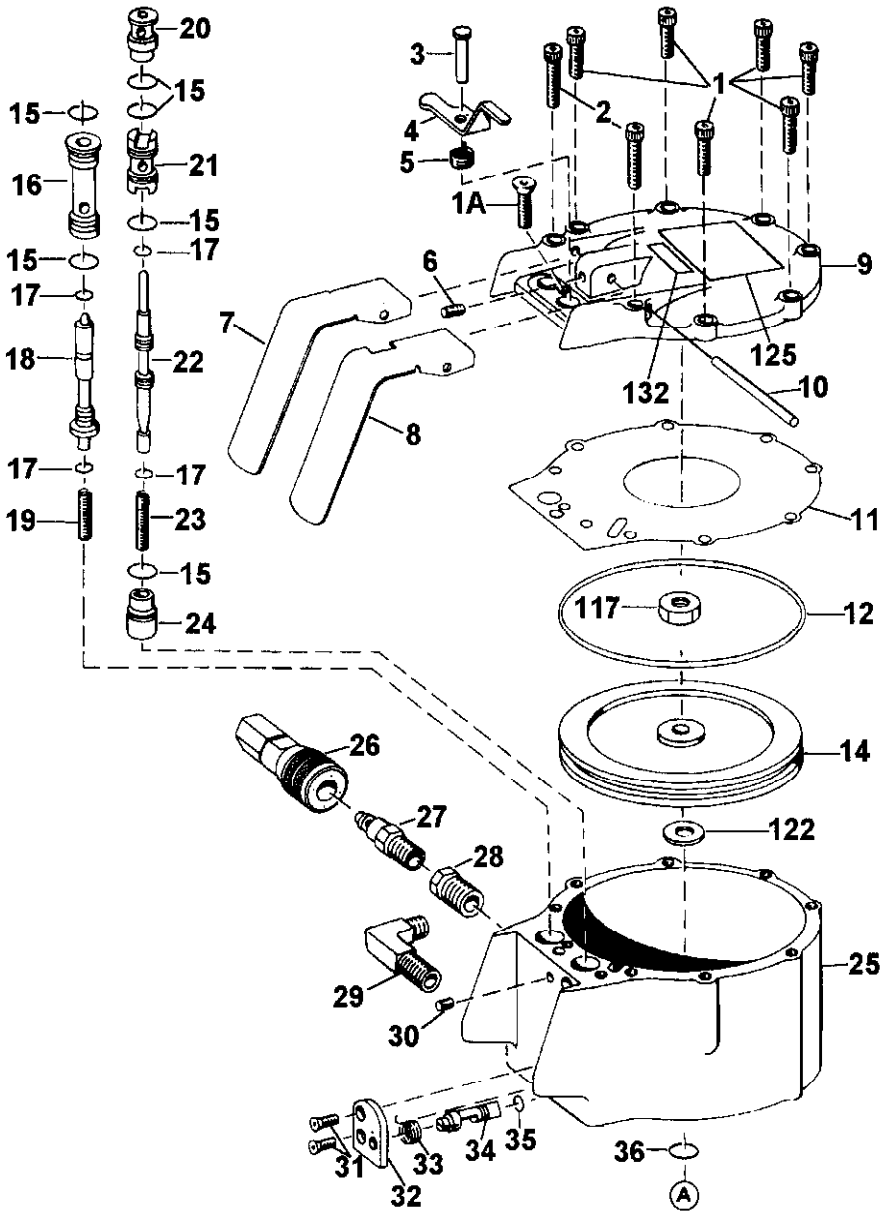
⚠WARNING

Inspect all parts daily and replace them if they are worn or broken. Failure to do this can affect a product's operation and could result in serious personal injury.

PARTS LIST, CYLINDER ASSEMBLY

KEY	PART NAME	QTY.	MODEL AMP1-12	MODEL AMP1-58	MODEL AMP1-34	MODEL AMPR2-58
1	SHCS, 10-24 x 13/16	11	180600	180600	180600	180600
1A	FHSCS, 10-24 x 3/4	1	008757	008757	008757	008757
2	SHCS, 10-24 x 1	2	004061	004061	004061	004061
3	Valve Latch Pin	1	020658	020658	020658	020658
4	Valve Latch	1	020653	020653	020653	020653
5	Valve Latch Spring	1	020654	020654	020654	020654
6	SHSS, 10-24 x 7/16	1	004913	004913	004913	004913
6	SHSS, 1/4-28 x 7/16	1	004361	004361	004361	004361
7	Tensioning Lever	1	020656	020656	020656	020656
8	Sealing Lever	1	020655	020655	020655	020655
9	Cover	1	020691	020691	020691	020691
10	Valve Lever Pin	1	020671	020671	020671	020671
11	Cover Gasket	1	016906	016906	016906	016906
12	O-Ring	1	020702	020702	020702	020702
14	Piston	1	020648	020648	020648	020648
15	O-Ring	6	020699	020699	020699	020699
16	Tensioner Valve Sleeve	1	020651	020651	020651	020651
17	O-Ring	5	020701	020701	020701	020701
18	Tensioner Valve	1	020652	020652	020652	020652
19	Valve Spring	1	020665	020665	020665	020665
20	Sealer Valve Sleeve	1	020660	020660	020660	020660
21	Sealer Valve Sleeve	1	020657	020657	020657	020657
22	Sealer Valve	1	020731	020731	020731	020731
23	Sealer Valve Spring	1	020725	020725	020725	020725
24	Sealer Valve Sleeve	1	020732	020732	020732	020732
25	Cylinder	1	020734	020734	020734	020734
27	Hansen Plug	1	020704	020704	020704	020704
28	Pipe Bushing	1	008478	008478	008478	008478
29	Elbow	1	020710	020710	020710	020710
30	SHSS, 10-24 x 1/4	1	020694	020694	020694	020694
30	SHSS, 1/4-28 x 1/4	1	003465	003465	003465	003465
31	FHSCS, 10-24 x ½	2	020729	020729	020729	020729
32	Cover Plate	1	020726	020726	020726	020726
33	Sure-Seal Spring	1	020724	020724	020724	020724
34	Sure-Seal Pawl	1	020727	020727	020727	020727
35	O-Ring	1	020728	020728	020728	020728
36	O-Ring	1	020680	020680	020680	020680
117	Flexlock nut, 3/8-24	1	003868	003868	003868	003868
122	Thrust Washer	1	024729	024729	024729	024729
125	Warning Sign	1	267596	267596	267596	267596
132	Safety sign	1	286373	286373	286373	286373

- When ordering parts show tool model, part number and name.
- Common hardware parts may be obtained from local hardware suppliers.
- All recommended spare parts are underlined and should be stocked.
- Lubrication of moving parts with a light machine oil will increase service life.



⚠WARNING

Inspect all parts daily and replace them if they are worn or broken. Failure to do this can affect a product's operation and could result in serious personal injury.

PARTS LIST, SEAL MAGAZINE & EJECTOR ASSEMBLY

KEY	PART NAME	QTY.	MODEL AMP1-12	MODEL AMP1-58	MODEL AMP1-34	MODEL AMPR2-58
1	SHCS, 10-24 x 13/16	11	180600	180600	180600	180600
37	Motor Plunger	1	020668	020668	020668	020668
38	Plunger Spring	1	020669	020669	020669	020669
39	Shoulder Bolt	1	024726	024726	024726	024726
40	Roll Pin, 1/8 x 13/16	2	020669	020669	020669	020669
41	Motor Latch	1	020639	020639	020639	020639
42	SHCS, 5/16-18 x 1	2	004658	004658	004658	004658
43	Sealer Frame	1	267632	267632	267632	267632
44	SHSS, 1/4-20 x 1/2	1	023352	023352	023352	023352
45	Roll Pin, 3/16 x 1	1	006787	006787	006787	006787
46	Roll Pin, 3/16,x 1-1/2	1	020707	020707	020707	020707
47	Motor Latch Stop	1	020638	020638	020638	020638
48	Jaw Support Stop	1	070528	070528	070528	070528
49	Drive Screw #2-3/16	2	004939	004939	004939	004939
50	Magazine Spring	1	020640	020640	020640	020640
51	Seal Pad Assembly	1	423342	423342	423342	423342
53	Truarc #5133-25	1	023766	023766	023766	023766
54	Gripper Trigger	1	023756	023756	023756	023756
55	Trigger Pivot	1	023765	023765	023765	023765
56	Gripper Spring	1	020635	020635	020635	020635
58	Gripper Lever	1	023758	023758	023758	023758
59	Ejector Arm Spring	1	020664	020664	020664	020664
60	Ejector Lever	1	024706	024706	024706	024706
61	Ejector Spring	1	020629	020629	020629	020629
62	Ejector	1	020619	020619	020619	020619
63	Ejector pin	1	020621	020621	020621	020621
64	Truarc	1	026866	026866	026866	026866
65	Strap latch pin	1	020662	020662	020662	020662
66	Strap Latch (Fixed)	1	020601	020601	020601	026866
67	Strap Latch (Moveable)	1	020858	020604	020603	020662
68	SHCS, 5/16-18 x 3/4	2	003914	003914	003914	003914
69	Dowel Pin 3/16 x 7/8	1	007150	007150	007150	007150
70	Strap Gripper	1	020628	020628	020628	020628
71	Cutter Block	1	020853	020620	020620	020620
72	Ejector Arm Pm	1	020622	020622	020622	020622
73	Truarc #5100-31	2	005054	005054	005054	005054
74	Magazine	1	020862	020689	020689	020689
123	Finger Guard	1	422131	422131	422131	422131
131	Nameplate	1	251668	251669	251670	251674

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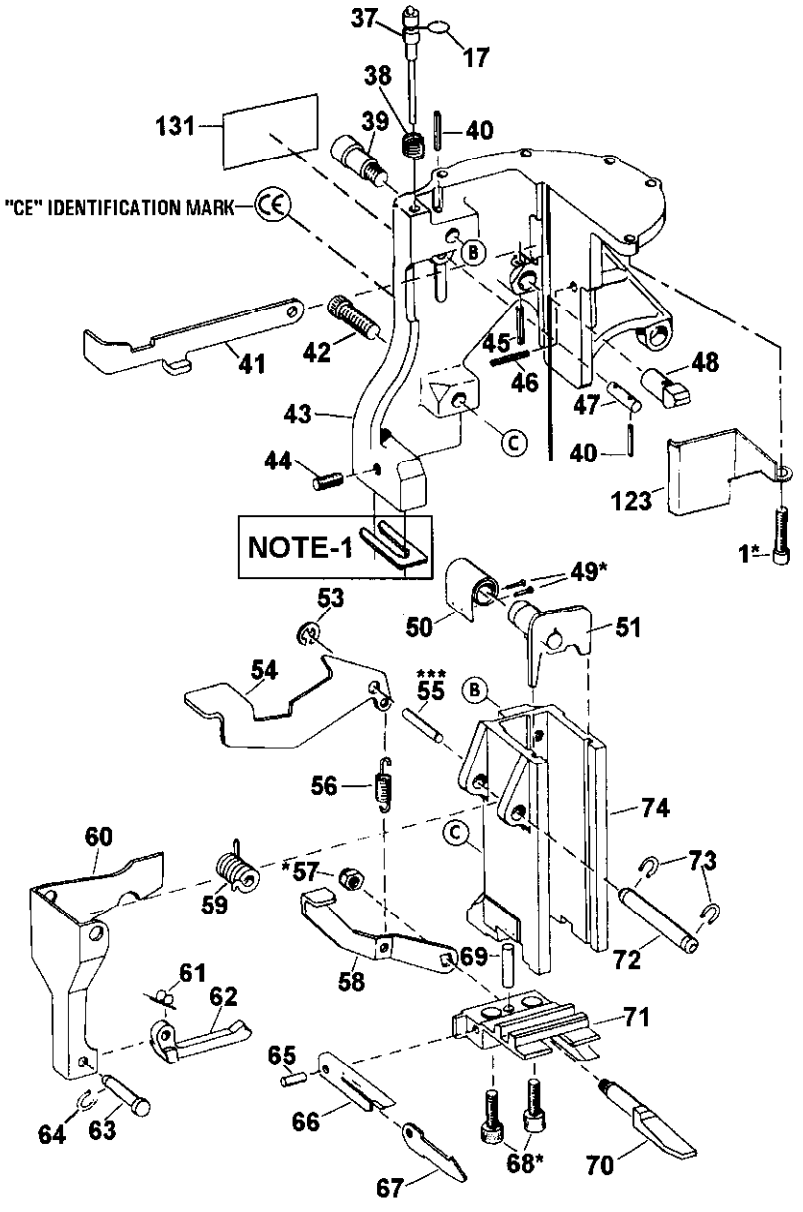
⚠WARNING

Inspect all parts daily and replace them if they are worn or broken. Failure to do this can affect a product's operation and could result in serious personal injury.



* Use Loctite #242 (or equivalent).

NOTES:

1. Add shims as required to allow for strap to be easily inserted under the holding gripper. Remove shims as required if strapping pulls out from holding gripper during tensioning.

   Shims are available in the following sizes:

   .015"(0.38mm), P/N 024772
   .020"(0.50mm), P/N 024773
   .025"(0.63mm), P/N 024774

PART REMOVAL AND REPLACEMENT

SEALER (AND MAGAZINE) - DISASSEMBLY

Disconnect the air supply from tool and remove the seals from the magazine and sealer mechanism. Release the gripper lever (58) by pressing the gripper trigger (54). Press motor latch (41) to drop feedwheel.

Loosen cutter adjustment set screw (44). Remove the two magazine screws (39 & 42) on the side of the sealer frame. Remove the two socket head cap screws (109) from the bottom of the base. With the tool lying on its left side, swing the rear of the base down and away from the sealer frame. Tilt the top of the magazine away from the sealer mechanism and lift the magazine assembly out.

Continued . . .

PART REMOVAL AND REPLACEMENT, Continued

The magazine and sealer mechanisms are now accessible for examination and replacement of worn or broken parts. The sealer mechanism is serviced by removing the cutter blade. Clean the parts. Jaws and notchers are replaced as required. Note that the outer jaws can be reversed front to back to provide new cutting edges, doubling the life of the parts. After the necessary repairs have been made grease the parts or apply light machine oil. The tool is now ready for assembly.

SEALER (AND MAGAZINE) - ASSEMBLY

With the sealer mechanism fully assembled and in place, insert the magazine by placing the lower portion of the magazine between the sealer mechanism and frame. Tilt the top forward to align properly with the sealer mechanism. Swing the base up against the sealer frame. Be sure the strap guide spring (108) is in its proper position in the base. Insert and tighten the two socket head cap screws (109) through the base. Insert the top and bottom shoulder screw (39 & 42) through the sealer frame and into the magazine. Snug - do not tighten.

Connect air supply and hold in sealer lever (8). With jaws in fully downward position, adjust the cutter adjustment screw (44). See Figure 4. Tighten both magazine screws (39 & 42) through the sealer frame.

Insert seals into the magazine and operate the sealer mechanism at its prescribed P.S.I. through 3 or 4 cycles to check tightness of the cutter adjustment screw and see that seals feed properly. If the sealer mechanism is excessively tight, back off the cutter adjustment set screw slightly. Next, apply a strap under tension to be sure that all elements of tool operate properly.

EJECTOR - DISASSEMBLY

Remove the seals from the magazine. Remove the Truarc (73) from the left side of the ejector arm pin (72) then drive out ejector arm pin (72) from the left side of tool. Remove ejector arm spring (59). Hold gripper lever (58) down, pull out ejector lever (60).

Drive out roll pin (63) from ejector pin (64). Be sure to support ejector lever. See Figure 6. Remove pin (64), ejector (62) and spring (61). Replace the ejector lever and/or the ejector as necessary. Re-assemble with new ejector following these steps in reverse order. NOTE: If the ejector only needs to be replaced, it can be removed without removing the ejector lever following the 3 steps above.

EJECTOR - REASSEMBLY

Insert ejector (62) into cutter block (71) slot, hold gripper lever (58) down and slide ejector lever (60) into position. Insert ejector arm spring (59) ahead of the top of the ejector arm so it will slide under the edge of the cylinder.

Start ejector arm pin (72) through right side of ejector lever and magazine. Insert a punch from the left side to hold the spring in alignment. Tap ejector arm pin (72) in from the right side, while removing the aligning punch at the same time. Push on lower part of ejector lever (60) to align holes on left side of tool. Finish tapping in ejector arm pin (72). Replace Truarc (73).

Insert seals in the magazine. Operate the sealer mechanism through 3 or 4 cycles to check and see that seals feed properly. Next, apply a strap under tension to be sure that all elements of tool operate properly.

BLANK

PARTS LIST, JAW STACK

KEY	PART NAME	QTY.	MODEL AMP1-12	MODEL AMP1-58	MODEL AMP1-34	MODEL AMPR2-58
46A	Roll Pin, 1/4,x 1-1/2	1	006787	006787	006787	006787
76	Ram	1	020647	020647	020647	020647
77	Roll Pin, 3/32 x I 1/16	1	005709	005709	005709	005709
78	Ram Release Pin	1	020625	020625	020625	020625
79	Ram Release Spring	1	020646	020646	020646	020646
80	Roll Pin, 1/4 x 3/4	1	005214	005214	005214	005214
82	Roller Pin	1	020613	020613	020613	023241
83	Cutter Blade	1	020618	020618	020618	020618
84	Jaw Spacer	1	020659	020659	020659	-
85	Outer Jaw	4	020855	055930	020609	-
85A	Outer Notcher	2	-	-	-	034012
86	Ram Pin	1	020649	020649	020649	020649
87	Notcher	2	306537	020607	020606	-
87A	Jaw	4	-	-	-	042364
88	Center Jaw	2	020856	055925	020611	-
88A	Inner Notcher	1	-	-	-	034013
89	Flat Link	2	020608	020608	020608	-
89A	Flat Link	1	-	-	-	042362
90	Forked Link	1	020616	020616	020616	042363
91	Toggle Pin	2	020627	020627	020627	034024
92	Notcher Pin	2	020605	020605	020605	020605
93	Jaw Pin	2	020615	020615	020615	020615
94	Jaw Support	1	020863	020688	020688	020688
98	Pickup Spring	1	020630	020630	020630	020630
99	Pickup Latch Assembly	1	020641	020641	020641	020641
100	Roll Pin, 1/8 x 9/16	1	008837	008837	008837	008837

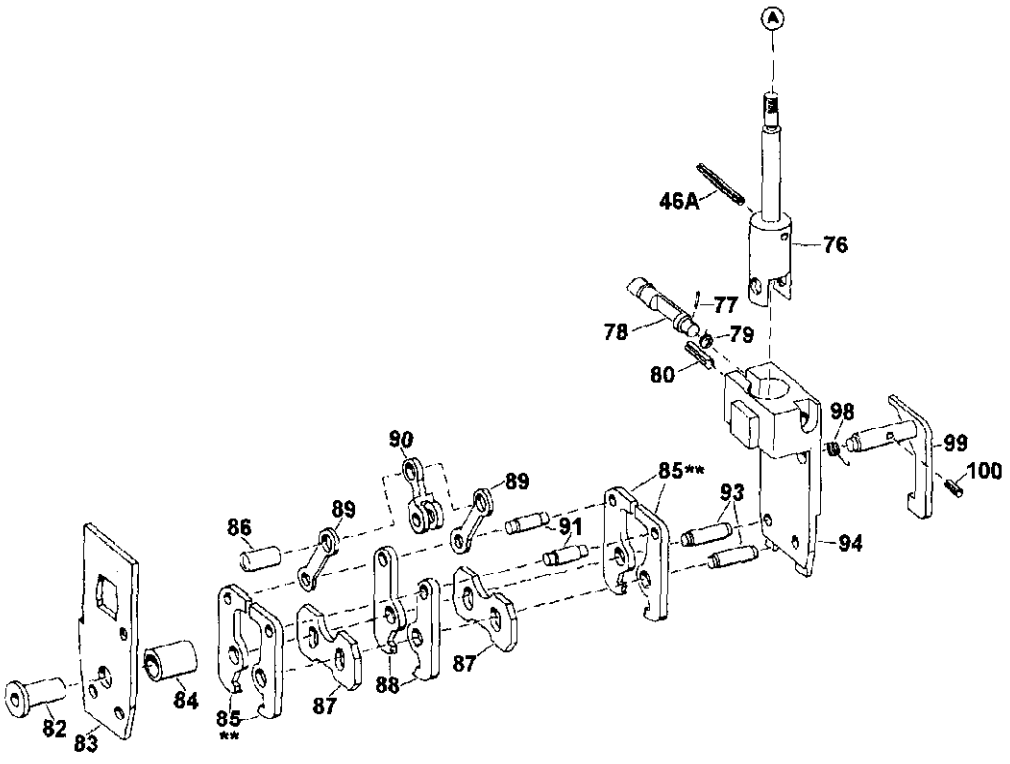
- When ordering parts show tool model, part number and name.
- Common hardware parts may be obtained from local hardware suppliers.
- All recommended spare parts are underlined and should be stocked.
- Lubrication of moving parts with a light machine oil will increase service life.

⚠WARNING

Inspect all parts daily and replace them if they are worn or broken. Failure to do this can affect a product's operation and could result in serious personal injury.

STRAP CUTTER ADJUSTMENT

If the cutter (Key 83) on the tool does not cut properly, loosen the shoulder bolt (39) and cap screw (42), and adjust set screw (44) to remove clearance between the cutter blade and the cutter block. Adjust with the jaws in the down position. Do not over tighten as the sealing mechanism can be bound by this adjustment. When adjustment has been made, retighten the shoulder bolt and cap screw.



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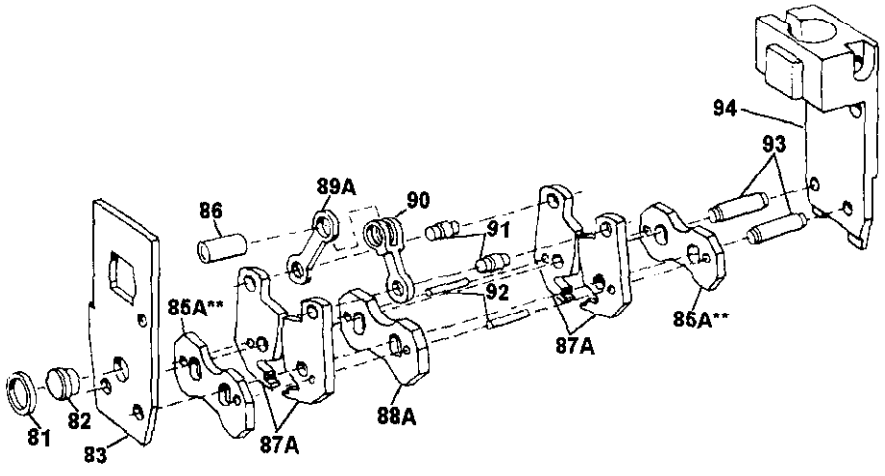

PARTS LIST, GEAR HOUSING

KEY	PART NAME	QTY.	PART NO.
1	SHCS, 1/4-20 x 3/4	3	009041
2	Gear Housing Cover	1	020623
3	O-Ring	1	008546
4	Needle Bearing	1	008549
5	Truarc #5008-75	1	008547
6	Feedwheel Shaft	1	006585
7	Worm Wheel	1	023561
8	Wheel Bearing	2	006563
9	Gear Housing Bushing	1	006581
10	O-Ring	1	006594
11	Gear Housing	1	023564
12	Lock Screw	1	008581
13	Roll Pin 5/64 x 7/16	1	008582
	or Cotter pin, 1/16 x 5/8	1	181482
14	Needle Bearing	1	008751
15	Thrust Bearing	1	023754
16	Worm Assembly	1	023563
17	Spacer Ring	1	008534
18	Idler Gear Assembly	3	008815
19	Ring Gear	1	008524
20	Washer	1	008536

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⚠WARNING

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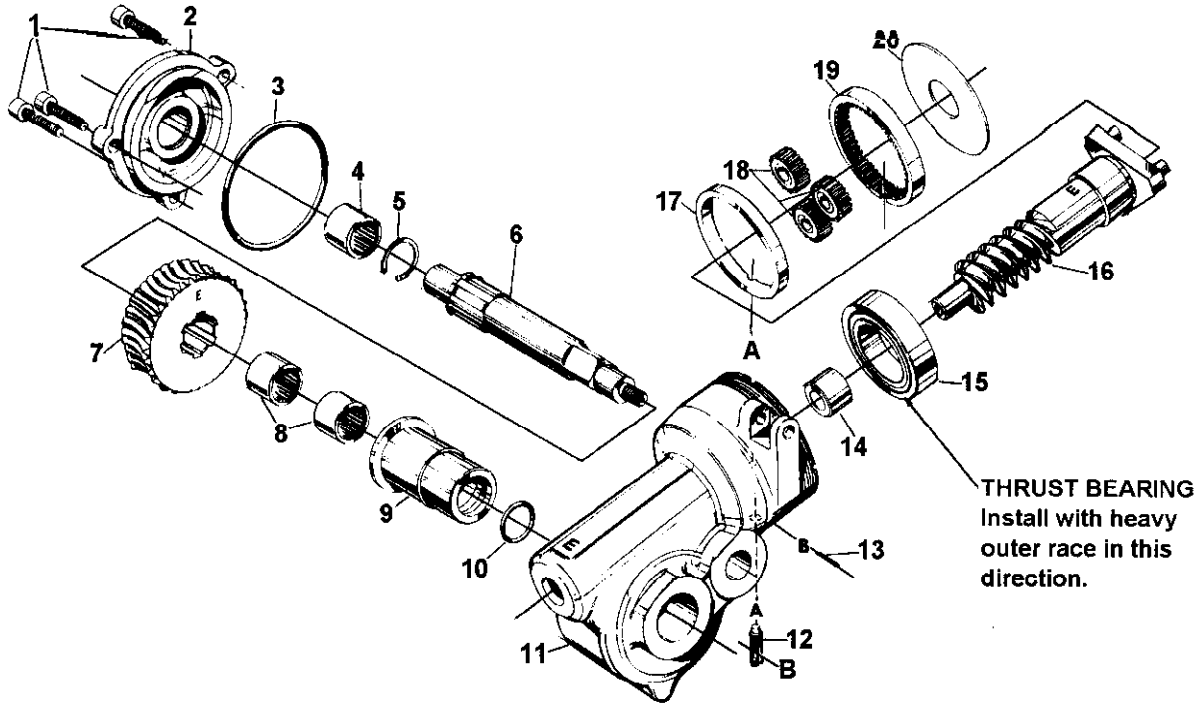

PART REMOVAL AND REPLACEMENT

1. Remove the washer (20) the ring gear (19) and the idler gear assembly (18).
2. Remove the roll pin (13) and loosen the lock screw (12) to permit removal of the spacer ring (17).
3. Remove the worm assembly (16). Note that the thrust bearing (15) must be reinstalled with the heavy side of the outer race positioned as shown.
4. Remove the three gear housing cover mounting screws (1), then remove the housing cover (2). Withdraw the feedwheel shaft (6) and the worm wheel (7). Note that the worm wheel (7) must be reinstalled with the letter "E" positioned as shown.
5. Parts and housing must be free of metallic particles. Clean as required and regrease using non-fluid oil K-55. Fill gear housing to approximately ½ full.
6. When reassembled, check gearing for freeness by turning worm assembly (16) clockwise before attaching air motor.

PARTS LIST, AIR MOTOR 85R15 (Part No. 023500)

KEY	PART NAME	QTY.	PART NO.
1	Pressure Adjusting Screw	1	023512
2	Regulator Spring	1	020166
3	Slip Ring	2	023543
4	Diaphragm Nut	1	023511
5	Pressure Regulator Assembly	1	023570
6	Valve Seat	1	023537
7	Pressure Regulator Valve	1	023572
8	Valve Spring	1	023536
9	Motor Housing	1	023501
11	SHSS, 10-24 x 3/16, Nylon tip	1	423370
12	Filter	1	024630
13	Tru-Seal Miller, 1/4-18 NPT	1	023087
14	90° Elbow, 1/4 Tube x 1/4-18 NPS	1	023524
15	Deflector Assembly	1	161171
16	Ball Bearing Fafnir #ASIK7 SRI #2	2	024633
17	Back End Plate	1	023515
18	Cylinder	1	023507
19	Rotor	1	023513
20	Vane	5	024651
21	Front End Plate	1	023514
22	Align Pin	1	023510
23	Ball Bearing Fafnir #8533	1	023521
24	Gear Case	1	023503
25	Idler Assembly	2	023516
26	Pin 3/16 x 3/4, Torr #Q8320	2	023518
27	Thrust Spacer	1	023506
28	Ring Gear	1	023504
29	Retaining Ring "Spirolox" RS 106	1	023532
30	Cap Screw	1	008731
31	Ring Nut	1	023534
32	Ball Bearing, Fafnir #8541	1	023520
33	Roll pin, 1/16 x ½	1	012543
34	Seal	1	023519
35	Gear Housing	1	023533
36	Pin, 7/64 x 1/4, Drive-Loc, Type U	1	023533

- When ordering parts show tool model, part number and name.
- Common hardware parts may be obtained from local hardware suppliers.
- All recommended spare parts are underlined and should be stocked.

⚠WARNING

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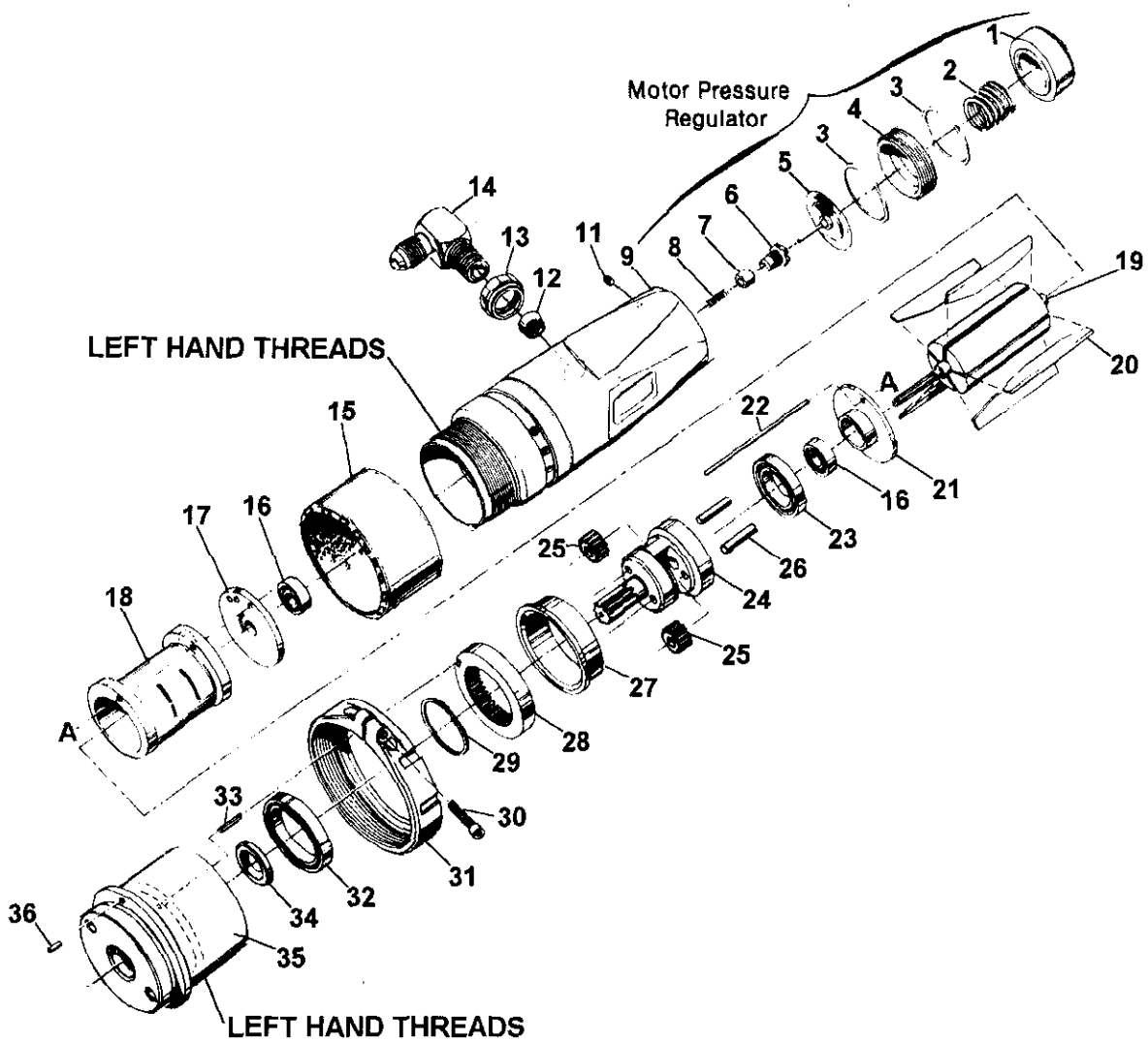

PART REMOVAL AND REPLACEMENT

Considerable care must be used when an air motor is disassembled. Lack of lubrication and dirty unfiltered air are the main causes of malfunctions, which are corrected by proper maintenance of the filter, regulator and lubricator unit. Review pages 5 through 7 of this manual for installation and maintenance recommendations.

REGULATOR DISASSEMBLY:

1. **Remove the motor pressure regulator parts, clean and replace if necessary.**
2. **Reassemble and test tool before proceeding with the Motor Disassembly.**

MOTOR DISASSEMBLY:

1. **Loosen cap screw (30). Loosen ring nut (31) and remove motor from tool gear housing.**
2. **Hold motor housing (9) lightly in a vise, and remove gear housing (35) by rotating clockwise when facing gearing end.**

PART REMOVAL AND REPLACEMENT, Continued

3. Keep groups of parts together without separating bearings unless their replacement is necessary.

4. Wash out any dirty parts using a fresh clean oil base type solvent.

5. Rotate bearings to make certain parts are clean. Apply a light coating of grease, #K-55, non-fluid oil, or an equivalent light cup grease. Do not apply grease on rotor (19) since this will cause sticking of vanes (20). Do not grease bearing (16) located in back end plate (17). Lubricate rotor, vanes and end bearing with air line oil only.

6. Replace worm gearing (24, 25, 19) and vanes (20) if worn or cracked. Apply a light coating of grease to gearing and air line oil to rotor and vanes.

REASSEMBLY:

1. Begin reassembly by making certain that the alignment pin (22) is correctly positioned to align the back-end plate (17), the cylinder (18) and the front-end plate (21) with the hole in the motor housing (9).

2. Assemble parts (23 through 29) and place them in the gear housing (35) with bearing (32). Make certain that the roll pin (33) enters into the slot of the ring gear (28).

3. Assemble the gear housing (35) and the ring nut (31) to the motor housing (9). Hand tighten. Rotate the pinion of the gear case (24) by hand in the clockwise direction to be certain all parts are free. If parts are not free, gears are not properly meshed.

4. Add one teaspoon or squirt air line lubricating oil into the motor. Connect the air hose with the pressure set at approximately 20 p.s.i.g. With motor housing in vise, slowly tighten motor in a counterclockwise direction while the motor is rotating. Tighten the motor, noting an increase in speed. The correct adjustment is about 400-600 inch lbs. If the motor is over tightened it will slow down. When set, attach the air motor to the gear housing.

TROUBLESHOOTING

The following items are the most common types of tool malfunctions. For symptoms or remedies not shown, contact your Signode service representative for additional information and details. The following tool conditions are shown in this manual:

TENSIONING
- **#1 - Motor will not start when tensioning lever is pressed.**
- **#2 - Air motor runs slowly or sluggishly.**
- **#3 - Air motor runs slowly or sluggishly.**
- **#4 - Feedwheel slips on top strap during tensioning.**
- **#5 - Bottom strap slips out of tool during tensioning.**
- **#6 - Feedwheel will not drop onto strap when tensioning lever is pressed.**
- **#7 - Feedwheel will not lift off strap after cycle is completed.**
- **#8 - Motor runs slowly as soon as air is connected to tool.**
- **#9 - Tool breaks strap during tool removal or tensioning.**

SEALING
- **#10 - Joints failing after tool removal.**
- **#11 - Sealing mechanism crushes or deforms seals.**
- **#12 - Tool won't complete sealing cycle unless sealing lever is held down manually.**
- **#13 - Sealing mechanism stalls in down position.**

STRAP CUT-OFF
- **#14 - Tool will not cut off strap after sealing.**

SEAL EJECTION
- **#15 - Seals do not eject fully and/or cutter blade cuts off seal ends.**
- **#16 - Ejector does not pick up seals.**

#1 CONDITION: Motor will not start when tensioning lever is pressed.

CAUSE	REMEDY
1. No air reaching tool.	1. Check gauge on filter-regulator-lubricator (FRL) for proper 65-90 psig pressure setting. Check air line from FRL to tool for blockage.
2. Air motor filter screen (12) is blocked with rust or dirt.	2. Check air motor filter screen for obstruction then clean or replace as required.
3. Air motor is dry. Oil has evaporated leaving sticky varnish which prevents motor vanes from extending.	3. Add teaspoon air line oil directly into motor at elbow. Reconnect air line and test. Tap motor lightly w/rubber mallet to free vanes. Check function of lubricator.

TROUBLESHOOTING, Continued

#2 CONDITION: Air motor runs slowly or sluggishly.	
CAUSE	**REMEDY**
1. Air supply to tool is restricted.	1A. Check gauge on FRL for proper 65-90 psig pressure setting. 1B. Check air line from FRL for blockage 1C. Check for satisfactory air volume reaching tool by either of the following methods: a. Install an in-line air gauge at the tool if one is available. Hook up air and record pressure reading. With no strap in tool, press tension lever and record gauge reading. If pressure drops more than 15 psig, air supply is inadequate. Remedy is to improve air flow by shortening length of line from FRL to tool, increasing size of air lines, or checking for obstructions to or from FRL unit. Example: If piping system equipped with shutoff valves, ensure valve are fully open. b. If no in-line gauge available, repeat step "a", above, except use gauge on FRL unit.
2. Air motor filter screen (12) is blocked with rust or dirt.	2. Check air motor filter screen for obstruction then clean or replace as required.
3. Air motor is dry, unlubricated, causing motor to run slowly.	3. Add teaspoon air line oil directly into the motor at elbow. Place rag around motor, reconnect air and test. If motor speed increases, motor was dry. Check lubricator for proper adjustment, quantity and type of oil.

#3 CONDITION: Air motor runs slowly or sluggishly.	
CAUSE	REMEDY
1. Valve latch (4) has popped up.	1. Check by pressing tension lever fully and then releasing lever. Press tension lever and hold lever fully in. If motor speed increases, valve latch is popped up, correct by first loosening lock screw (30). Push valve latch pin down and hold while tightening lock screw.
2. Insufficiently lubricated strap.	2. Use lubricated strapping.

#4 CONDITION: Feedwheel slips on top strap during tensioning.	
CAUSE	REMEDY
1. Feedwheel teeth packed with dirt or grit.	1. Clean feedwheel teeth with wire brush.
2. Feedwheel teeth worn or chipped.	2. Replace feedwheel.
3. Bushing in outer link worn.	3. Check I.D. of bushing to determine if hole is elongated. Replace if visually elongated.
4. Strap not aligned properly - outer link coming down on strap.	4. Align strap in tool properly.

#5 CONDITION: Bottom strap slips out of tool during tensioning.	
CAUSE	REMEDY
1. Rocking gripper teeth packed with dirt or grit.	1. Clean rocking gripper teeth with wire brush.
2. Rocking gripper teeth worn or chipped.	2. Replace rocking gripper.

#6 CONDITION: Feedwheel will not drop onto strap when tensioning lever is pressed.	
CAUSE	REMEDY
Motor plunger (37) binding.	Invert tool. Add a few drops of air line oil to the hole in sealer frame for the motor plunger.

TROUBLESHOOTING, Continued

#7 CONDITION: Feedwheel will not lift off strap after cycle is completed.	
CAUSE	**REMEDY**
1. Motor pickup latch (99) is worn.	1. Check wing of motor pickup latch that contacts outer link, for wear. Replace if severely worn.
2. Motor is dry, preventing motor from backing up and causing feedwheel teeth to remain imbedded in strap.	2. Add teaspoon of air line oil directly into motor at elbow. Reconnect air line and test as follows: a. Load tool with strap. b. Press tension lever and allow to tension until motor stalls. c. Press valve latch (4). Tool must release tension by feedwheel rolling back. If tool does not release tension, problem exists in motor or gear housing gearing.

#8 CONDITION: Motor runs slowly as soon as air is connected to tool.	
CAUSE	**REMEDY**
Lower O-ring on tensioner valve stem (18) is ripped or has blown off.	Replace lower tensioner valve O-ring (17).

#9 CONDITION: Tool breaks strap at feedwheel, rocking gripper, corner of load, or at joint during tool removal or tensioning.	
CAUSE	**REMEDY**
1. Excessively applied tension.	1A. Reduce air pressure. 1B. Adjust motor to produce less tension by loosening lock screw on motor, and then turning adjusting screw out, counterclockwise. Tighten lock screw after making adjustment.
2. Strap in use is insufficiently lubricated.	2. Use lubricated strap.
3. Strap not aligned properly - outer link coming down on strap.	3. Align straps in tool properly.

#10 CONDITION: Joints failing after tool removal.	
CAUSE	REMEDY
1. Low joint strength caused by worn sealer mechanism parts.	1. Examine sealer mechanism for worn jaws, crimpers and pins. Replace as required.
2. Application related; i.e., strap not strong enough to contain load; load subjected to impact; load expands after strapping.	2. Review application to determine that strap-seal-tool in use is adequate for application.
3. Strap tension set too high.	3. Readjust tension to a lower setting per adjustment instructions.

#11 CONDITION: Sealing mechanism crushes or deforms seals.	
CAUSE	REMEDY
1. Worn ram and/or ram release pin.	1. Disassemble tool. Examine ram (76) and ram release pin (79). Replace as required.
2. Wrong size jaws in tool.	2. Check jaws to ensure they are proper size for tool.

#12 CONDITION: Tool won't complete sealing cycle unless sealing lever is held down manually.	
CAUSE	REMEDY
1. Broken sure seal pawl spring (33).	1. Replace sure seal pawl spring.
2. Worn sure seal pawl (34).	2. Replace sure seal pawl.
3. Worn sealer valve stem (22).	3. Replace sealer valve stem.

#13 CONDITION: Sealing mechanism stalls in down position.	
CAUSE	REMEDY
1. Insufficient air pressure to complete sealing.	1. Increase air pressure until sealing is completed. WARNING - Air pressure must be maintained in the 65-90 psig range.
2. Broken sealer mechanism part.	2. Carefully inspect sealer mechanism for broken parts. Jaw stack can be returned to the up position by inserting screw driver in slot in sure seal pawl and rotating clockwise. WARNING - Stand to side of and hold tool securely when rotating pawl on jammed tool.

#14 CONDITION: Tool will not cut off strap after sealing.	
CAUSE	REMEDY
1. Cutter blade out of adjustment.	1. Adjust cutter.
2. Cutter blade worn.	2. Replace cutter blade.
3. Cutting leg on cutter block worn or broken.	3. Replace cutter block.

#15 CONDITION: Seals do not eject fully and/or cutter blade cuts off seal ends.	
CAUSE	**REMEDY**
1. Broken ejector spring (61).	1. Replace ejector spring.
2. Severely worn tip on ejector (62).	2. Replace ejector.
3. Severely worn cutter blade (83).	3. Replace cutter blade.
4. Bent or cracked ejector lever (60).	4. Check by first examining ejector lever for cracks. If no cracks are found, hook air to tool and note position of lugs on ejector in relation to cutter block. Front of lugs must contact rear of cutter block. If lugs do not contact cutter block, ejector lever is bent and must be replaced.
5. Screws (68) securing cutter block to magazine are loose.	5. Disassemble tool, remove screws. Add one drop of Loctite #242 to each screw. Reassemble.
6. Seal jam.	6. Disconnect air source. Pull back ejector lever and secure in retracted position. Attempt to remove tool from completed joint.

#16 CONDITION: Ejector does not pick up seals.	
CAUSE	**REMEDY**
1. Seals improperly seated in cutter block track.	1. Position seals properly.
2. Dirt in cutter block rear track.	2. Brush dirt out of cutter block rear track.
3. Broken ejector tip.	3. Replace ejector.
4. Screws securing cutter block to magazine are loose.	4. Disassemble tool and tighten screws.
5. Ram roll pin bent.	5. Install new roll pin (46).
6. Broken or bent ejector lever (60) wing behind jaw stack.	6. Replace ejector lever.
7. Ejector lever.	7. Lightly tap the seal back into the magazine. Discard the seal and any plastic filament lodged in the cutter block area.

SIGNODE®

EU Declaration of Conformity

The Supply of Machinery (safety) Regulations
1992 (S.I. 1992/3073)

It is hereby declared that the undermentioned machinery has been designed and constructed to comply with the health and safety requirements defined in EC Directive 89/392/EEC

Machine Supplier: Signode, Division of ITW Ltd.
Queensway, Fforestfach
Swansea SA5 4ED

Machine Description: AMP Series

Machine Type: Pneumatic Combination Hand Strapping tool.

Provisions with which machine complies:

89/392/EEC, 91/368/EEC

Harmonized EuroNorms with which machine complies:

EN 292:1, EN 292:2, EN 294, EN 349

Technical Standards with which machine complies:

NA

Signature:  Date: 1 JULY 2000

(Peter Oseland)

SIGNODE
NEW TOOL WARRANTY

Signode Engineered Products Warrants that a new Signode strapping tool will operate per functional specifications for a period of sixty (60) days after the date of shipment to the owner's place of business. Normal wearing parts, as outlined in the Operation, Parts & Safety manual, are covered by a thirty (30) day warranty unless, in Signode's judgement, these parts have been subjected to abnormal or extreme usage. Signode's sole liability hereunder will be to repair or replace, without charge, F.O.B. Signode's Glenview, Illinois plant, any tool which proves to not operate per functional specifications within the stated period. Signode reserves the right to replace any tool which proves not to operate per functional specifications with a new or like-new tool of the same model if in Signode's judgement such replacement is appropriate. Any new replacement tool provided to an owner will carry a full sixty (60) day warranty. Any warranty repaired tool or like-new replacement tool will carry a warranty for the balance of the time remaining on the initial sixty (60) day warranty. This warranty will be extended to compensate for the time the tool is in Signode's possession for warranty repairs.

This warranty is void as to any tool which has been: (I) subjected to mis-use, misapplication, accident, damage, or repaired with other than genuine Signode replacement parts, (II) improperly maintained, or adjusted, or damaged in transit or handling; (III) used with improperly filtered, unlubricated air or improper strapping material, (IV) in Signode's opinion, altered or repaired in a way that affects or detracts from the performance of the tool.

SIGNODE MAKES NO WARRANTY, EXPRESSED OR IMPLIED, RELATING TO MERCHANTABILITY, FITNESS OR OTHERWISE EXCEPT AS STATED ABOVE AND SIGNODE'S LIABILITY AS ASSUMED ABOVE IS IN LIEU OF ALL OTHERS ARISING OUT OF OR IN CONNECTION WITH THE USE AND PERFORMANCE OF THE TOOL. IT IS EXPRESSLY UNDERSTOOD THAT SIGNODE SHALL IN NO EVENT BE LIABLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES WHICH MAY ARISE FROM LOSS OF ANTICIPATED PROFITS OR PRODUCTION, SPOILAGE OF MATERIALS, INCREASED COSTS OF OPERATION OR OTHERWISE.

Considerable effort has be made to ensure that this product conforms to our high quality standards. However, should you experience any difficulties, please contact your Sales Representative providing samples and the manufacturing code specified on the tool.

Thank you for your help.

SIGNODE ENGINEERED PRODUCTS
Hand Tool Division
3620 W. Lake Avenue, Glenview, Illinois 60025