

OPERATION, PARTS AND SAFETY MANUAL



SIGNODE®

FN-114T

AIR POWERED TENSIONER

**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

SAFETY INSTRUCTIONS

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.

Read the tool's operating instructions. If the load corners are sharp use edge protectors. Place the strap correctly around a properly positioned load.

- 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.
- Using strap not recommended for this tensioner can result in strap breakage during tensioning. Use the correct Signode products for your application.

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, MAINTENANCE & PARTS REPLACEMENT

- Take good care of the tool. Inspect and clean it daily, lubricate it weekly and adjust when necessary. Replace any worn or broken parts.
- ALWAYS disconnect the pneumatic connection to the tool when performing part removal and/or replacement procedures. NEVER connect a pneumatic source to a disassembled tool unless otherwise specified.

7. WORK AREA.

Keep work areas uncluttered and well lighted.

Several combinations of strap, seals and tools can be used with this tensioner. 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.

SAFETY PROCEDURES FOR TOOL OPERATION

1. Before using this tool, read its Operation and Safety instructions.
 - Do not exceed the operating air pressures stated elsewhere in the manual.
 - Use Signode's approved filter-regulator-lubricator unit (P-008559).
 - Never operate a pneumatic tool with a bottled air or gas source.
 - For tension adjustments, follow instructions in this manual. For all other adjustments, repairs or cleaning of the tool, disconnect air supply.
 - Properly crimp or notch the seal(s).
 - Tuck strap end back into the dispenser when not in use.

CUTTING TENSIONED STRAP

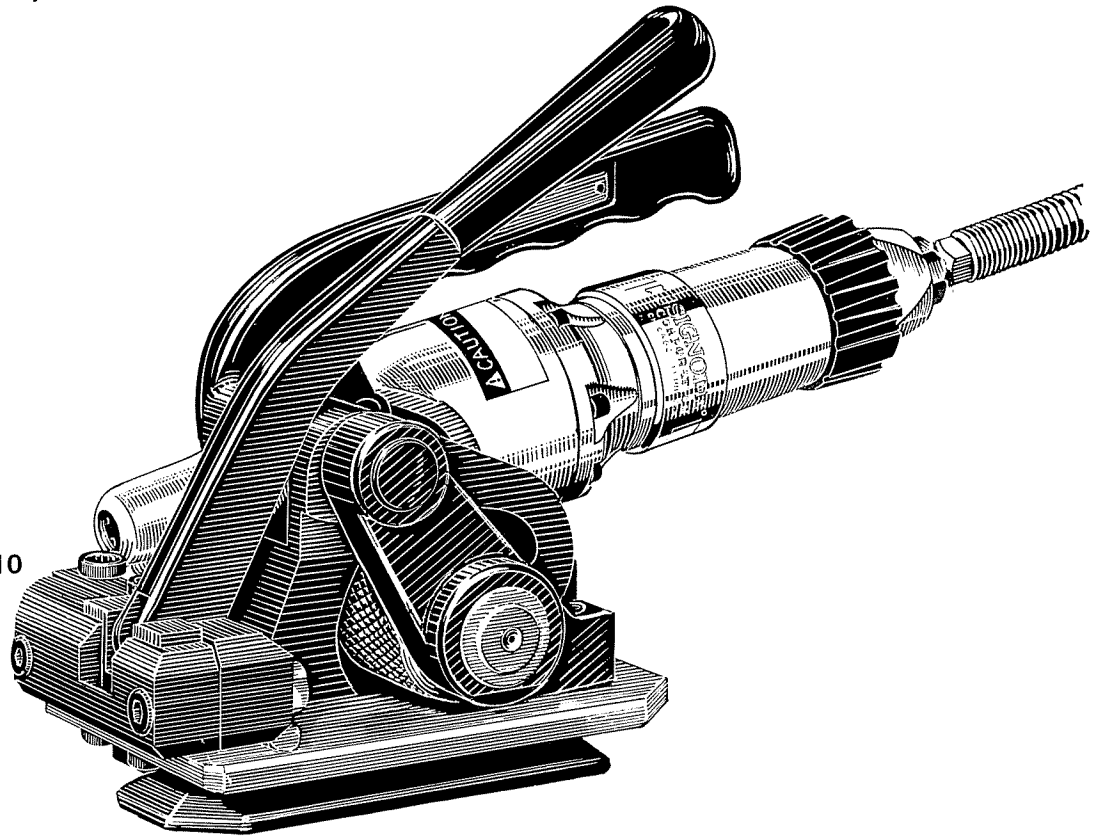
Use only cutters designed for cutting strap; never use claw hammers, crowbars, chisels, axes or similar tools. Such tools will cause the strap to fly apart with hazardous force. Before using any Signode product, read its Operation and Safety Manual.

TABLE OF CONTENTS

General Safety Instructions	2
Specifications	4
Air Line Piping	5
Tool Installation	7
Operating Instructions	8
Parts List, Tool	10
Parts List, Air Motor	12
Maintenance	14
Declaration of Conformity	15

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.

FN-114T
Part No. 008810



SPECIFICATIONS

MODEL	TYPE	STRAP *	
		WIDTH	THICKNESS
FN-114T	Magnus	3/4" to 1 1/4" (19mm - 32mm)	.031" to .044" (0.79mm - 1.11mm)

* Strap must be lubricated.

PNEUMATIC INFORMATION

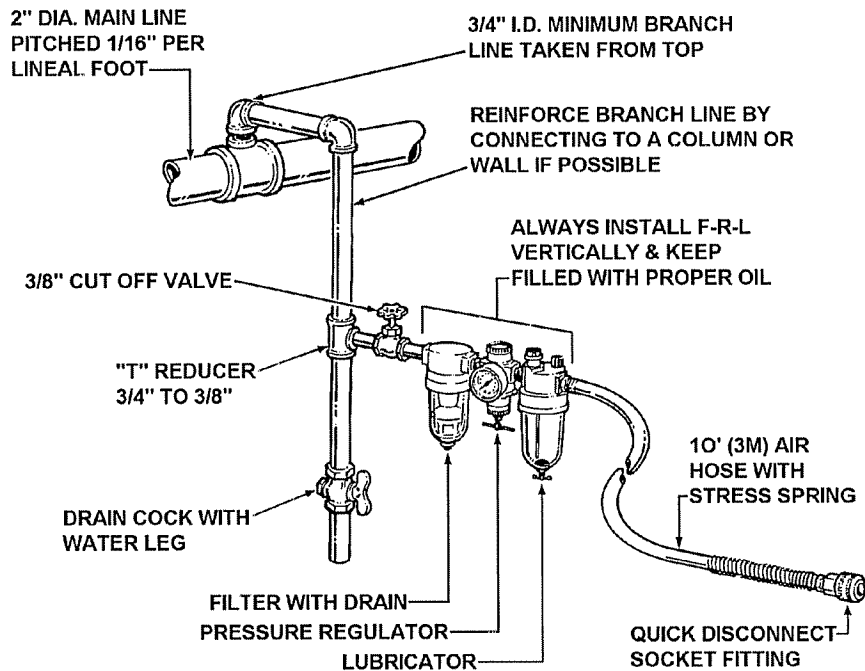
AIR SUPPLY INSTALLATION

If compressor has a good dryer unit, use black pickled pipe. When a dryer unit is not installed, use galvanized or copper pipe. To perform reliably, a pneumatic tool requires a continuous source of clean, water-free air at adequate pressure.

⚠ WARNING

Never operate this tool using a bottled air or gas source.
Bottled air/gas sources do not provide consistent operating pressure

A filter-regulator-lubricator unit (Signode Part No. 173111) must be installed as close to the air tool as possible, preferably within 10 feet. It should be placed in a convenient location where it can easily be drained, adjusted, and filled with oil. The air hose (Part No. 008556) must have at least a 3/8" I.D. A quick disconnect press-on socket is installed on the stress spring end of the hose for convenient hookup to the air tool.



Filter and lubricator bowls are made of polycarbonate material. Do not install where bowls may be exposed to materials incompatible with polycarbonate. Certain oils, solvents, and chemicals or their fumes can weaken these bowls and possibly cause them to burst. Clean only with warm water. A cut-off valve placed ahead of the filter will be useful when cleaning the filter or replenishing the lubricator.

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.

PNEUMATIC INFORMATION, Continued

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 (Part No. 173111).

NOTE: Additional information is available in the Signode publication, "Air Supply Manual" (Part No. 186038). If you have any questions, contact your local Signode Representative.

LUBRICATION

The air tool must be properly lubricated. This is achieved by keeping the air line lubricator filled with oil and correctly adjusted. Without proper lubrication, the tool will become sticky and will 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 cm² /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 tool. Be certain to use recommended oil.

Several drops of lubricator oil added to the inlet of the air line each day will help insure good operation. A noticeable reduction of 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. APPROXIMATE STRAP TENSION

Strap tension is accurately controlled by air pressure. Adjust the pressure regulator to give the desired tension. Once the regulator is set, the tension will be uniform on all straps, provided the operator allows the air motor to stall.

Use proper air line piping and lubricant as specified in this manual. The air pressure gauge must be accurate. Confirm its calibration by comparing the tool gauge to a master gauge.

Air line pressure must be maintained within the specified range:

<u>AIR PRESSURE (PSIG/BAR)</u>	<u>3/4" (19mm) STRAP (Lbs/Nm)</u>	<u>1 1/4" (32mm) STRAP (Lbs/Nm)</u>
90/6.1	Do not use	2,800/12,432
80/5.4	Do not use	2,450/10,878
70/4.7	2,100/9,324	2,100/9,324
60/4.0	1,800/7,992	1,800/7,992
50/3.4	1,450/6,428	1,450/6,428



WARNING

Strap breakage hazard. 3/4" (19mm) strap can break during tensioning if inlet air pressure to the tool exceeds 70 psig (4.7 Bar). 1-1/4" (32mm) strap can break during tensioning if inlet air pressure to the tool exceeds 90 psig (6.1 Bar). Strap breakage can result in severe personal injury. Maximum operating pressure is 90 psig (6.1 Bar).

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 with air line pressures being maintained within the specified range.

OPERATING INSTRUCTIONS

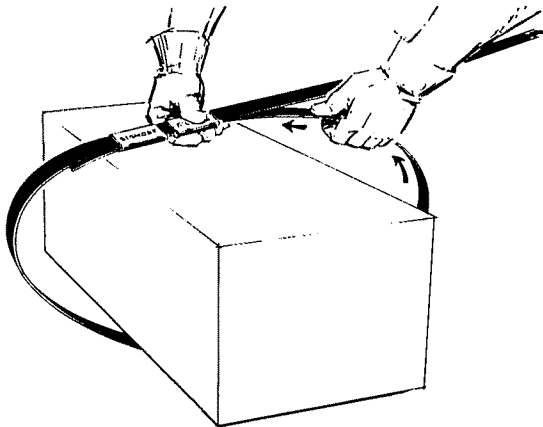
WARNING

Wear safety glasses.

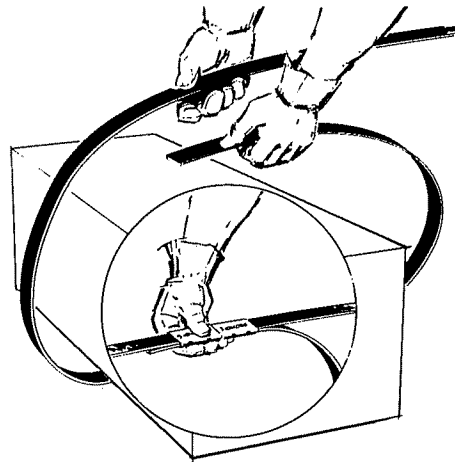
When tensioning strap, stand to one side of the strap line. Make sure all bystanders are clear before proceeding.

First review the Operation, Parts & Safety manual provided with your Sealer to determine the type of seals and number of seals (1 or 2) to use for each strap joint. These factors will change based on application and strapping being used. The following steps illustrate a 2 seal application for an example.

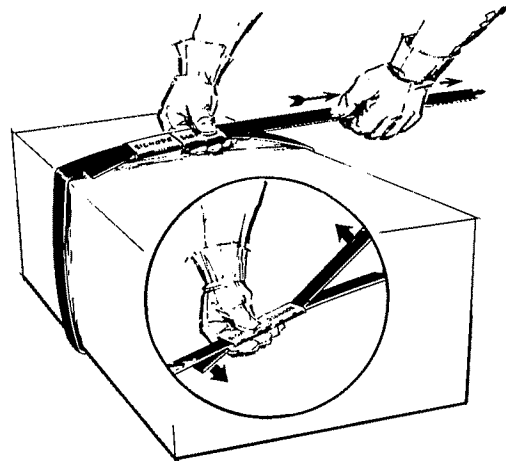
1. When using thread-on seals, begin with steps a and c, then follow with steps 2 through 7. When open-flange seals are used, begin with steps b and c, then follow with steps 2 through 7.
 - a. **THREAD-ON SEAL:** Thread seal(s) on strap, pass lead end around package and back up through underside of seal(s). Allow two (2) inches of lower strap to extend beyond seal(s).



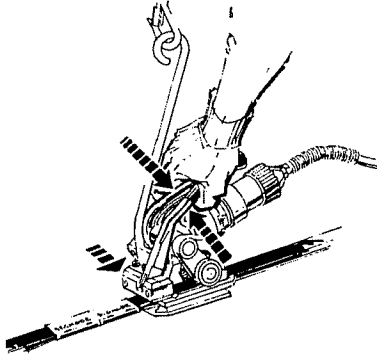
- b. **OPEN-FLANGE SEAL:** Pass the lead end of strap around the package and up beneath top strap. Snap seal(s) over both layers, allowing two (2) inches of lower strap to extend beyond seal(s).



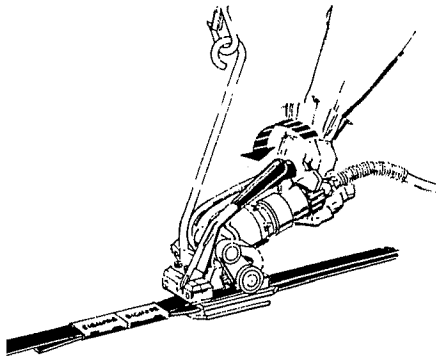
- c. Hold seal(s) in place by bending down lower strap. Pull out slack strap and slightly bend the upper strap to maintain position of seal(s).



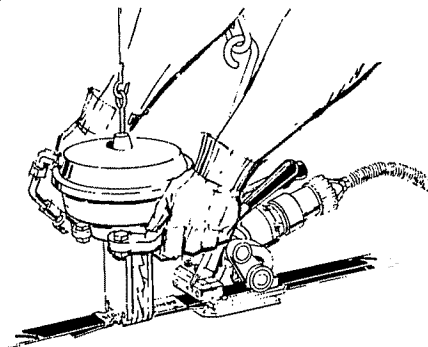
2. Grasp the FN Tensioner with your right hand and squeeze the handles together to raise the feedwheel and the wear plate. Insert the top strap between the feedwheel and the wear plate and insert the lower strap between the wear plate and the base. Both straps must be fully seated against the inner strap slot. Release the handles.



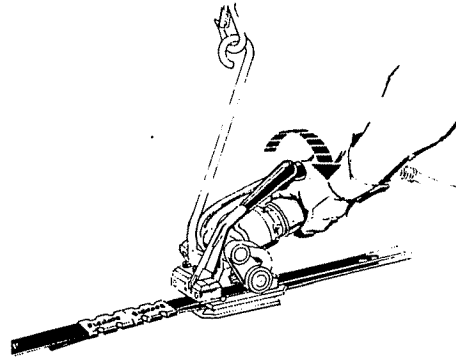
3. While standing to one side of the strap line, rotate the air valve collar, as shown, to tension the strap. Be careful not to lift up on the motor. Instead, press down to assist the gripper wheel action.



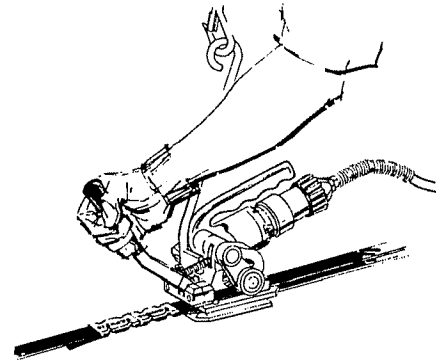
4. Crimp (or notch) the seal(s) while the strapping is under tension. An air powered sealer, as shown, or a manually operated sealer can be used.



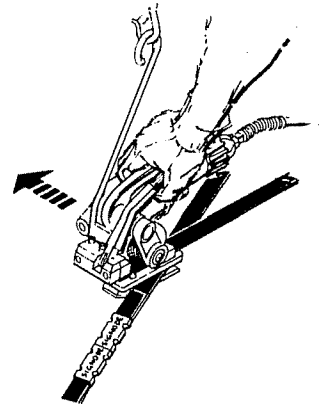
5. Rotate the air valve collar, as shown, to release the air pressure before cutting the strap.



6. Strapping is then cut off by moving the cutter handle forward.



7. To remove the tool raise the motor and twist the front end of the tool away from the tensioned strap.



PARTS LIST, TOOL

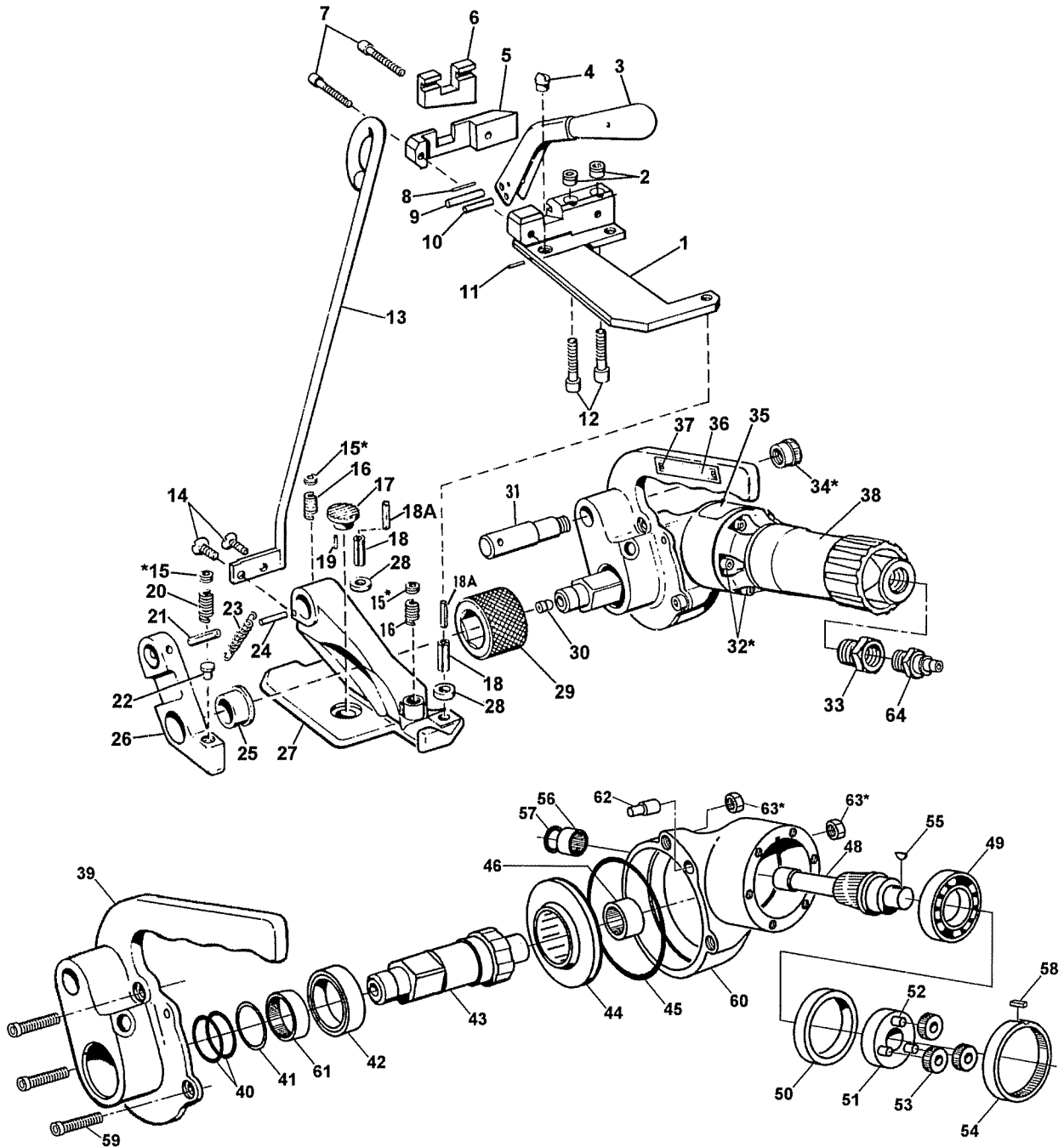
<u>KEY</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	008820	<u>Wear plate</u>
2	2	008849	Allen nut, 5/16-24
3	1	008850	<u>Cutter handle assembly</u>
4	1	008804	<u>Strap guide pin</u>
5	1	008801	Cutter retainer
6	1	008822	<u>Cutter blade</u>
7	2	008833	SHCS, 1/4-28 x 1 1/4
8	1	008837	Roll pin, 1/8 x 9/16
9	1	008840	Dowel pin, 1/4 x 1 1/2
10	1	008839	Dowel pin, 1/4 x 1
11	1	008582	<u>Roll pin, 5/64 x 7/16</u>
12	2	008851	SHCS, 5/16-18 x 1 1/2
13	1	008855	Hanger assembly (optional)
14	2	008853	FHCS, 5/16-18 x 5/8
15	3	008799	Hollow set screw, 3/8-24 x 3/16
16	2	008813	Wear plate spring
17	1	008808	<u>Clutch plug</u>
18	2	008998	<u>Roll pin, 7/32 x 3/4</u>
18A	2	008901	<u>Roll pin, 1/8 x 3/4</u>
19	1	008148	<u>Roll pin, 1/8 x 7/16</u>
20	1	008819	Stop spring
21	1	008836	Roll pin, 7/32 x 1 1/8
22	1	008821	Stop pin
23	1	008824	<u>Handle spring</u>
24	1	006787	Roll pin, 3/16 x 1
25	1	008805	<u>Bushing</u>
26	1	008817	End plate
27	1	008818	Base
28	2	008999	Pivot block
29	1	008807	<u>Feedwheel</u>
30	1	008844	Alemite fitting
31	1	008806	Support pin
32	6	008731	SHCS, #10-14 x 3/4
33	1	024631	<u>Strainer inlet</u>
34	1	008834	Allen nut, 7/16-20
35	1	003132	Caution sign
36	1	002485	Nameplate
37	2	002163	Drive screw
38	1	024660	Air motor
39	1	008848	Gear case head
40	2	008842	Oil seal, Trostel #B-124-108-2
41	1	008811	Washer
42	1	008832	Ball bearing, ND #00L06
43	1	008809	Feedwheel shaft
44	1	008846	Spiroid gear
45	1	008841	O-Ring, Precision #909-10
46	1	008831	Needle bearing, Torrington #M-12121
48	1	008847	Spiroid worm
49	1	008854	Ball bearing, Fafnir #7304W
50	1	008825	Spacer
51	1	008827	Idler plate
52	3	008531	Stud
53	3	008815	Idler gear Assembly
54	1	008829	Ring gear
55	1	008774	Woodruff key, #3
56	1	008751	Needle bearing, Torrington, M-781
57	1	008752	Truarc ring, #5000-62
58	1	008826	Key
59	3	008986	SHCS, 5/16-24 x 2 1/2

WARNING

All parts must be periodically inspected and replaced if worn or broken. Failure to do this can affect a product's operation and can result in personal injury.

<u>KEY</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
60	1	008835	Gear housing
61	1	008843	Needle bearing, Torrington #b-1818
62	1	008987	Shoulder pin
63	3	002099	5/16-24 Hexnut
64	1	020704	Hansen plug #10

- When ordering parts, please show tool model, part number and description.
- Wearing parts are usually limited to those underlined and should be stocked.
- Standard hardware may be obtained at any local hardware supply.



* Apply one drop of Loctite #242 (P-422795) sealant to cleaned parts. Allow 12 hours to set if possible. Do not apply to small screws or close to moving parts as the liquid spreads easily.

PARTS LIST, AIR MOTOR, NO. 60R-25

Signode Part No. 024660

<u>KEY</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	024631	Filter assembly
2	1	023557	Retainer, Spirolox #RS-181
3	1	024676	Valve collar
4	1	024662	Valve stem
5	1	023559	O-Ring
6	1	023549	Retainer, Spirolox #UR-50
7	1	024663	Valve sleeve
8	1	004164	O-ring
9	1	024656	Motor housing
10	1	023372	Roll pin, 3/16 x 3/8
11	1	024661	Valve spring
12	1	024655	Deflector assembly
13	1	<u>024633</u>	<u>Bearing</u>
14	1	<u>023515</u>	<u>Back end plate</u>
15	1	023507	Cylinder
16	1	024667	Rotor
17	5	<u>024651</u>	<u>Vane</u>
18	1	024602	Spacer
19	1	023510	Align pin
20	1	<u>024669</u>	<u>Front end plate</u>
21	1	023481	Bearing, General #R-06-00-04
22	2	023547	Bearing, Fafnir #9102
23	2	<u>023518</u>	<u>Pin</u>
24	1	024675	Gear Cage
25	2	<u>024665</u>	<u>Idler assembly</u>
26	1	024666	Ring gear
27	1	023558	Seal
28	1	023556	Pin
29	1	024672	Gear housing

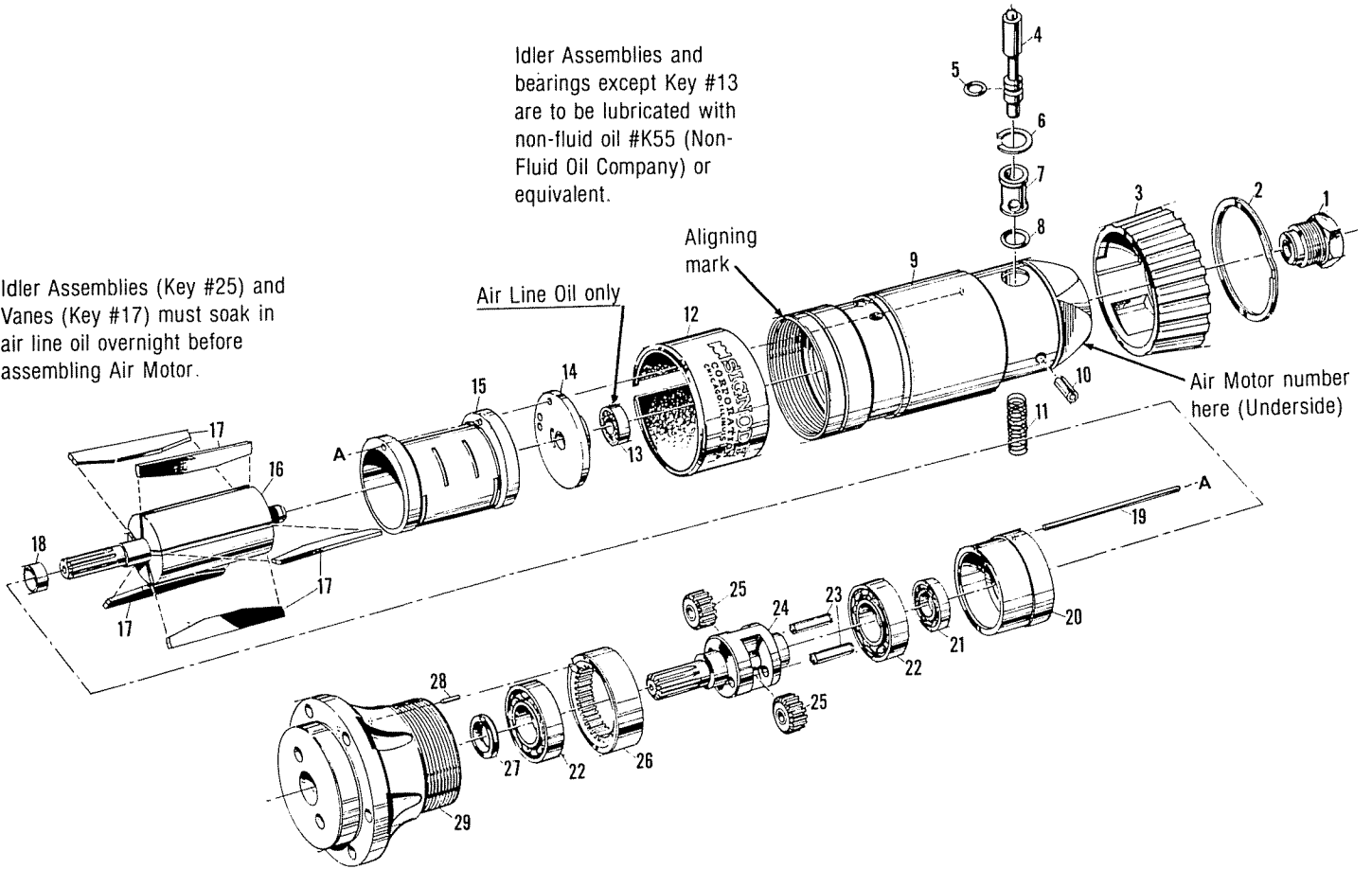
- When ordering parts, please show air motor number, part number and description.
- All recommended spare parts are underlined and should be stocked.
- Standard hardware parts may be obtained from any local hardware supply.

⚠ WARNING

All parts must be periodically inspected and replaced if worn or broken. Failure to do this can affect a product's operation and can result in personal injury.

Idler Assemblies and bearings except Key #13 are to be lubricated with non-fluid oil #K55 (Non-Fluid Oil Company) or equivalent.

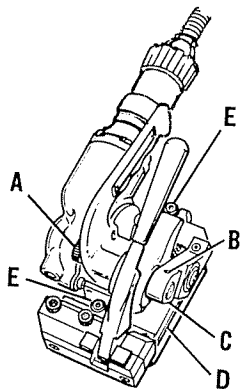
Idler Assemblies (Key #25) and Vanes (Key #17) must soak in air line oil overnight before assembling Air Motor.



MAINTENANCE

FEEDWHEEL AND CLUTCH PLUG

1. To replace the feedwheel, either remove the Allen nut (A) or the pin (B) allowing the end plate (C) to slip off, making the feedwheel accessible.
2. To replace the clutch plug beneath the wear plate (D), remove the Allen set screws (E) permitting removal of the wear plate (D), thus making the clutch plug accessible.



LUBRICATION

Clean and apply a light weight machine oil to all moving parts on a weekly basis. Refer to the Air Line Piping Instructions for lubricant recommendations with regard to the air motor.



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: FN-114T

Machine Type: Pneumatic Tensioner Hand Strapping tool.

Provisions with which machine complies:

89/392/EEC, 91/368/EEC

Harmonised EuroNorms with which machine complies:

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

Technical Standards with which machine complies:

NA

Signature: 
(Peter Oseland)

Date: 19 DEC 1994

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 been 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

SIGNODE • 3610 W. LAKE AVENUE • GLENVIEW, ILLINOIS 60025
