

# OPERATION, PARTS AND SAFETY MANUAL



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## PN-114 and PNR-114

### AIR POWERED TENSIONERS

## **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***

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**SIGNODE • 3620 WEST LAKE AVENUE • GLENVIEW, ILLINOIS 60025 U.S.A.**

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# **⚠️ WARNING**

**READ THESE INSTRUCTIONS CAREFULLY. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS PERSONAL INJURY.**

## **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.

## **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.

## **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.



## **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.

## **CUT HAZARD**

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



## **TOOL CARE**

- Inspect and clean the tool daily. Replace all worn or broken parts.
- Lubricate all moving parts weekly unless otherwise specified.
- 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.

## **WORK AREAS**

Keep work areas uncluttered and well lighted.

# **WARNING**

**READ THESE INSTRUCTIONS CAREFULLY. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS PERSONAL INJURY.**

- Use 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 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.

## **JOINT FORMATION**

- Before using this tool, read its Operation and Safety Instructions contained in this manual.
- This tool can be used with a variety of Signode sealer tools. Read the sealer's manual thoroughly to inspect a formed seal joint. Each joint must be inspected to make certain it has been properly made. A properly formed joint is shown in every sealer's manual. If the joint does not appear to have been made properly, then the operator must proceed as follows.
  1. Make certain that the tool's operating instructions are being followed before applying another strap.
  2. Cut the strap off and apply a new strap and seal.
  3. An improper formed seal which does not have good notches or crimps, could result in strap separation. Before moving any package be certain that the seal is formed as shown in the sealer's manual. Inspect the joint to make certain it appears as shown in the sealer's manual. If not, remove the broken strap and check the tool for worn or broken parts. Repair 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**

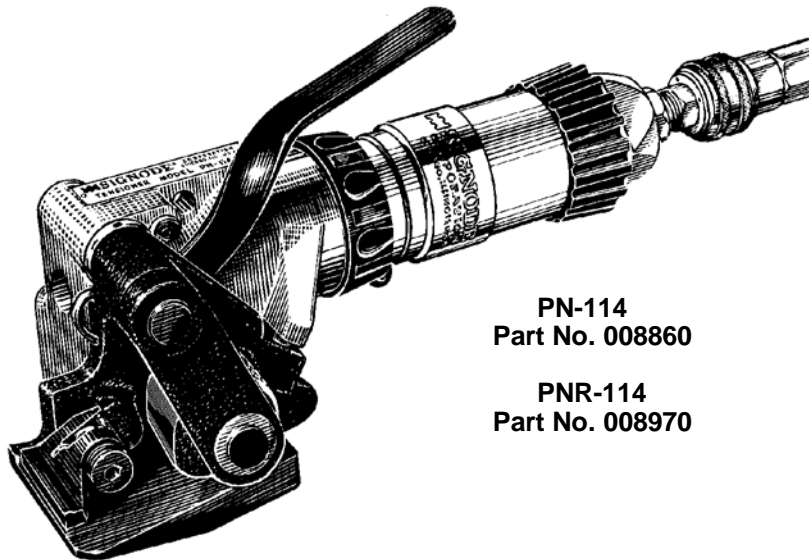
Use only cutters designed for cutting strap; never use claw hammers, crowbars, chisels, axes or similar tools. Such tools will cause the strap to fly apart with hazardous force. Before using any Signode product read its Operation and Safety Manual.

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## **⚠ WARNING**

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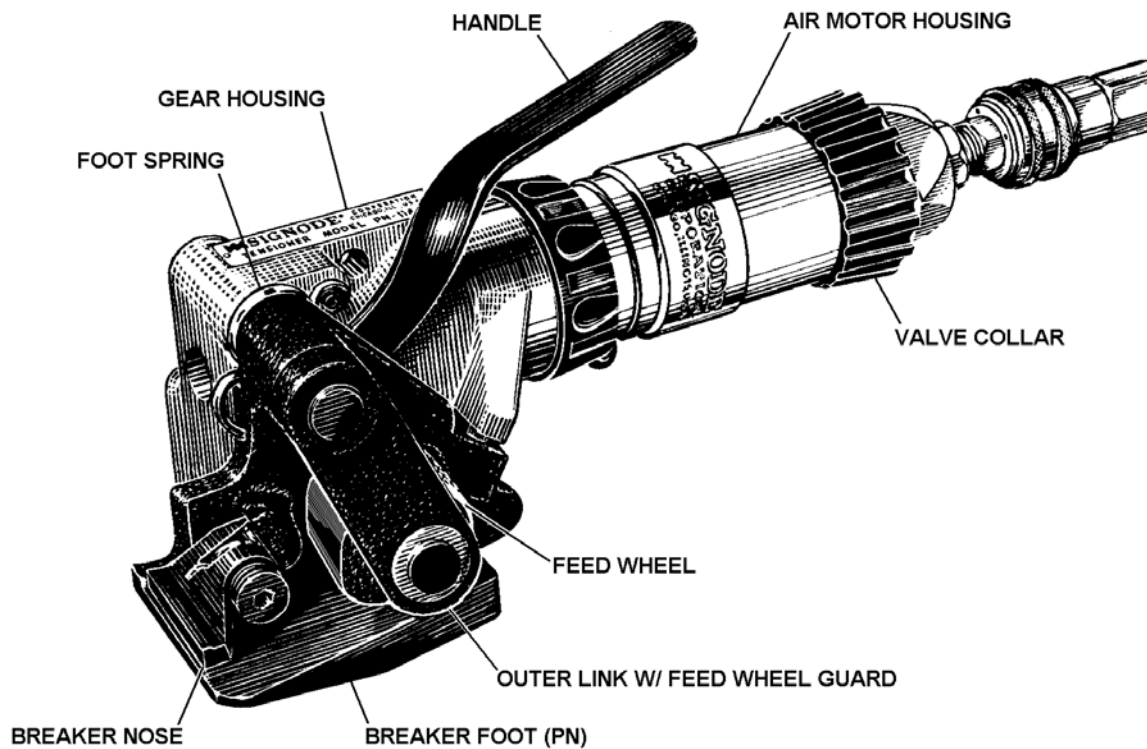
PN-114  
Part No. 008860

PNR-114  
Part No. 008970

## SPECIFICATIONS

MODEL	STRAP			SEALS
	TYPE	WIDTH	THICKNESS	
PN-114	Apex & Magnus	3/4"(19mm)	.020"(0.5mm)	34SYC, 34PNSC, 34HOC, 34SHOC, 114P
PNR-114		to 1-1/4"(31.75mm)	to .044"(1.12mm)	

## MAJOR COMPONENTS, PN-114 & PNR-114



### TOOL INSTALLATION

To work effectively, the tool must be properly installed. This installation includes the proper placement of a strapping dispenser to provide a continuous supply of strap for the application and a satisfactory air supply.

### TOOL MAINTENANCE

Clean the tool daily with a brush and apply light machine oil to all the moving surfaces. The feed wheel can be cleaned by holding a wire brush parallel to the face of the wheel while the tool is running.

## PNEUMATIC INFORMATION

### AIR SUPPLY INSTALLATION

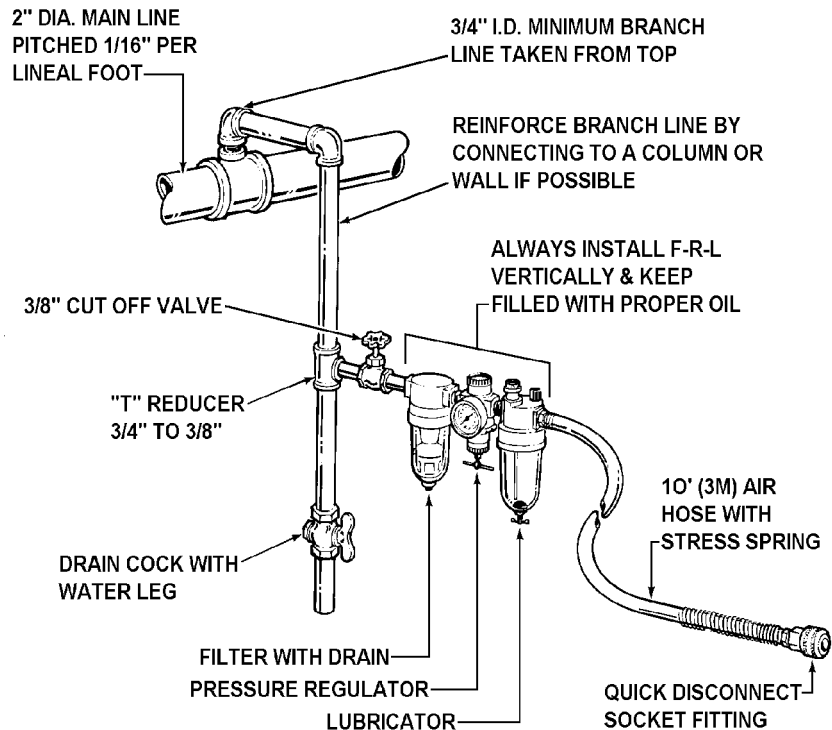
If compressor has a good dryer unit, use black pickled pipe. When a dryer unit is not installed, use galvanized or copper pipe. To perform reliably, a pneumatic tool requires a continuous source of clean, water-free air at adequate pressure.

# ! 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. 008559) 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 must have at least a 3/8" I.D. A quick-connect 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. 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. 008559).

**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 cm<sup>2</sup> /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.

## STRAP TENSION

**⚠ WARNING**  
 Failure to use the proper strap/seal/tool combination for the load being strapping can result in an improperly secured load which can result in severe personal injury. If you have any questions, contact your local Signode Representative.

Strap tension is controlled by air pressure. Adjust the pressure regulator to give the desired tension level. Once the regulator is set, tension will be uniform on all straps provided the operator allows the air motor to stall. The air pressure gauge must be accurate. Confirm calibration by comparing it to a master gauge.

**⚠ WARNING**  
 Strap breakage hazard. Increasing the tension can result in strap breakage. If a strap breaks during tensioning, reduce the air pressure by 5 psi (0.35 Bar) increments until the strap does not break.

## APPROXIMATE STRAP TENSIONS

AIR PRESSURE		TENSION	
psig	Bar	lbs.	Newtons
90	6.2	1600	7104
80	5.5	1425	6327
70	4.8	1200	5328
60	4.1	1050	4662
50	3.4	900	3996

## RECOMMENDED AIR PRESSURE

APEX	psig	Bar
3/4 x .020 (19 x .51mm)	55	3.7
3/4 x .023 (19 x .58mm)	55	3.7
3/4 x .028 (19 x .71mm)	80	5.5
3/4 x .035 (19 x .89mm)	80	5.4

MAGNUS	psig	Bar
3/4 x .020 (19 x .51mm)	75	5.1
3/4 x .025 (19 x .64mm)	80	5.5
3/4 x .031 (19 x .79mm)	85	5.8
3/4 x .035 (19 x .89mm)	85	5.8
3/4 x .044 (19 x 1.1mm)	90	6.2
1-1/4x.031 (31.75 x .79mm)	90	6.2
1-1/4x.035 (31.75 x .88mm)	90	6.2
1-1/4x.044 (31.75 x 1.1mm)	90	6.2

If the above air pressures do not result in tension levels that satisfy your strapping needs, then increase the air pressure in increments of 5 psig (.34 Bar) until desired tensions are achieved.

**⚠ WARNING**  
 Do not exceed 90 psig (6.2 Bar) input air pressure to the tool.



## OPERATING INSTRUCTIONS

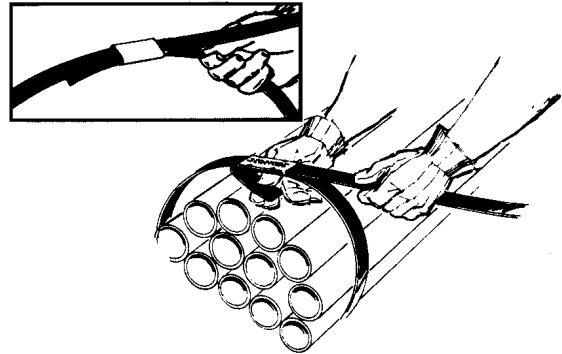
### **! WARNING**

Before operating this tool, make sure it has been properly maintained as noted in the Maintenance section of this manual.

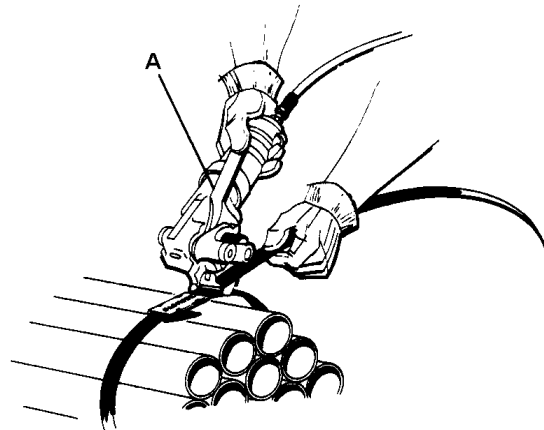
Wear safety glasses. Always position yourself to one side of the strap. Make sure all bystanders are clear before proceeding.

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

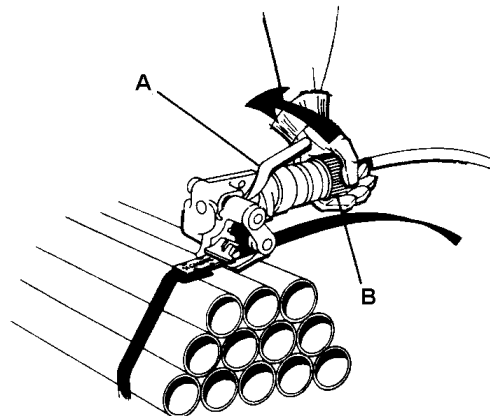
1. Thread the strap through a Signode full overlap push type seal. Encircle the bundle and rethread the strap end through the seal as shown. Bend the strap end back sharply under the seal, about 2 1/2 inches, and pull out the slack strap.



2. Press the gripper lever (A) with the thumb. Place the top strap into the front nose opening and slide the tool forward until it butts against the seal.

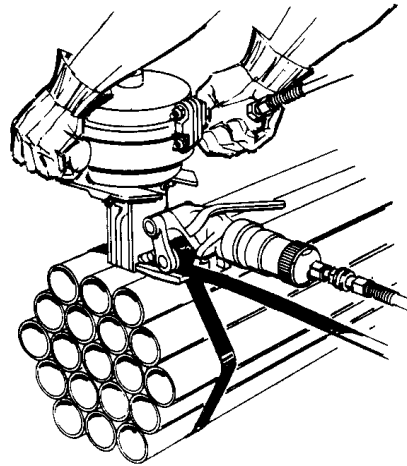


3. While standing to one side of the strap line, release the gripper lever (A) and turn the air control ring (B) in the direction of the arrow with the palm of the hand. The tool will automatically tension the strap and hold it taut.

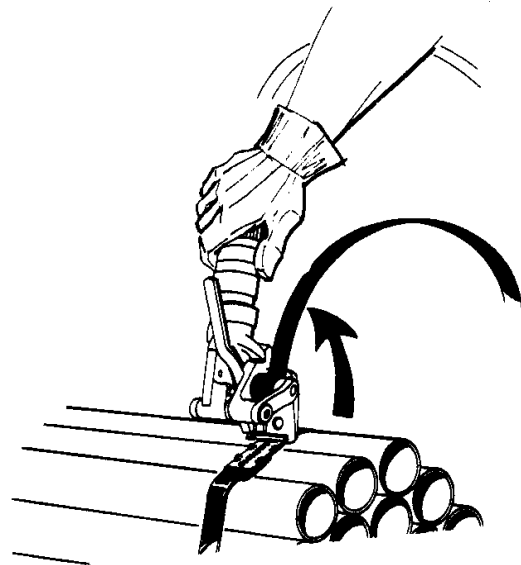


## OPERATING INSTRUCTIONS, Continued

4. Notch the seal with a sealing tool. Note that the tensioner automatically keeps tension on the strap. Inspect the seal to make sure the sealing tool has properly formed a joint.



5. Before shutting of the air , break the strap at the seal by swinging the tensioner up and down as shown. **DO NOT EXCEED 90° MOVEMENT.** If the tool is swung too far forward, damage to the seal will occur and the strap will not break off.



## PART REMOVAL & REPLACEMENT

Refer to pages 12 and 13 of this manual for part identification and additional information. With the exception of the breaker nose, the tool must be disassembled as follows to remove and replace the below mention parts.

2. Drive the 3/16 x 1 roll pin (2) from the outer link (22) and the pivot shaft (3).
3. Press down on the handle (7) and pull the outer link from the pivot shaft and the feed wheel drive shaft.
4. Pull the feed wheel (20) from the drive shaft and set all parts to the side for reassembly.

Removing these parts allows access to the wear plug (13) and, if working on a pnr tool, the roller (26).

## **FEED WHEEL**

If a new feed wheel is needed, simply install the new one on the drive shaft and reassemble the tool. Adjust the feed wheel to wear plug clearance.

## **WEAR PLUG**

1. From the bottom of the tool, tap up on the wear plug to drive it free of the breaker foot (16).
2. Drive the 1/8 x 7/16 roll pin (12) from the old plug and drive it into the new one, making sure the pin is set just below the working surface of the wear plug.
3. Set the wear plug into the breaker foot and firmly set it in place.
4. Reassemble the tool and adjust the feed wheel to wear plug clearance.

## **ROLLER (PNR-114 ONLY)**

1. Drive out the 1/8 x 7/8 roll pin (24) that contains the roller pin (28) and the roller assembly (26, 27) within the breaker foot. Withdraw the roller pin. The roller assembly will fall free of the tool.
2. Inspect the working surfaces of the roller pin (28) and the roller bearing (27). Replace any parts found to be worn. Note that the roller has the word OUT stamped on one end. This end must face towards the outer link (22) when it is reassembled within the breaker foot.
3. Reassemble the tool and adjust the feed wheel to roller clearance.

## **FEED WHEEL TO WEAR PLUG CLEARANCE**

Set the clearance between the feed wheel and the wear plug to within a range of .001" to .005" (.025mm - .13mm). To obtain this clearance:

1. Loosen the locking screw (11) that holds the lock screw (8) in place.
2. Turn the lock screw out until the feed wheel contacts the wear plug.
3. Press down on the handle (7) to raise the feed wheel. Insert a gauge of the proper size between the feed wheel and the wear plug. Release the handle.
4. Tighten the lock screw (8) until the gauge can be withdrawn from between the two and secure the setting by tightening the locking screw (11).

## **FEED WHEEL TO ROLLER CLEARANCE (PNR-114 ONLY)**

The feed wheel to roller clearance on the PNR tool is set in a manner similar to the PN tool, although there is NO CLEARANCE to be established between the two parts. The parts are to come together but without undue feed wheel pressure being applied to the roller.

## **BREAKER NOSE**

1. Remove the 5/16-18 Flexloc nut (15) from the breaker nose pivot shaft (18). Withdraw the shaft then remove the breaker nose (17) and torsion spring (19).
2. Replace parts as needed, being sure to preload the torsion spring during reassembly.

## PARTS LIST, TOOL

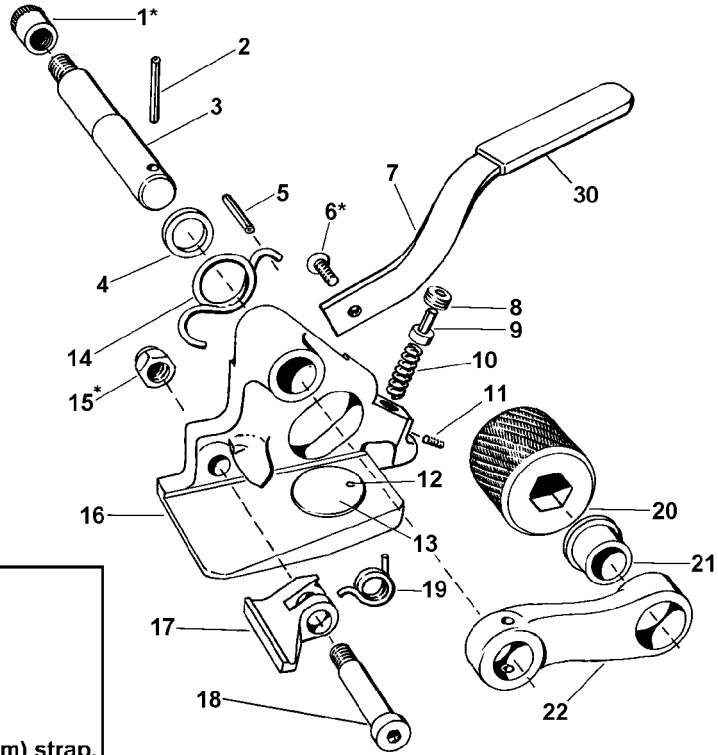
<u>KEY</u>	<u>QTY.</u>	<u>PN-114 PART #</u>	<u>PNR-114 PART #</u>	<u>DESCRIPTION</u>
1	1	<u>009044</u>	<u>009044</u>	<u>Allen nut, 3/8-24</u>
2	1	<u>006787</u>	<u>006787</u>	<u>Roll pin, 3/16 x 1</u>
3	1	008873	008873	Pivot shaft
4	1	009584	009584	Washer
5	1	005756	005756	Roll pin, 3/16 x 3/4
6	1	080257	080257	Flat head socket cap screw, 10-32 x 3/4
7	1	<u>008897</u>	<u>008897</u>	<u>Handle</u>
8	1	008799	-----	Hollow lock screw, 3/8-24 x 3/16
9	1	008865	-----	Detent assembly
10	1	008868	-----	Detent spring
11	1	<u>006428</u>	<u>006428</u>	<u>Socket head set screw, 8-32 x 1/4</u>
12	1	008148	-----	Roll pin, 1/8 x 7/16
13	1	<u>008678</u>	-----	<u>Wear pad assembly</u>
14	1	<u>008899</u>	<u>008899</u>	<u>Foot spring</u>
15	1	<u>005211</u>	<u>005211</u>	<u>Flexloc, thin nut, 5/16-18</u>
16	1	<u>008859</u>	<u>008971</u>	<u>Breaker foot</u>
17	1	<u>008677</u>	<u>008677</u>	<u>Breaker nose</u>
18	1	008683	008683	Socket head shoulder screw, 3/8 dia. x 1-1/4
19	1	008679	008679	Nose spring
20	1	<u>008898</u>	<u>008898</u>	<u>Feed wheel</u>
21	1	<u>008863</u>	<u>008863</u>	<u>Outer bearing</u>
22	1	422203	422203	Outer link
23	1	-----	008940	Socket head flat point set screw, 3/8-24 x 1/2
24	1	-----	004958	Roll pin, 1/8 x 7/8
25	1	-----	006667	Roll pin, 5/16 x 7/8
26	1	-----	008972	Roller
27	1	-----	<u>008973</u>	<u>Bearing</u>
28	1	-----	008974	Roller pin
29	1	004963	004963	Flexloc nut, thin, 10-32
30	1	172545	172545	Grip

- When ordering parts please show tool model, part number and description.
- Recommended spare parts are underlined and should be stocked.
- Common hardware parts can be obtained at any local hardware supply.

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

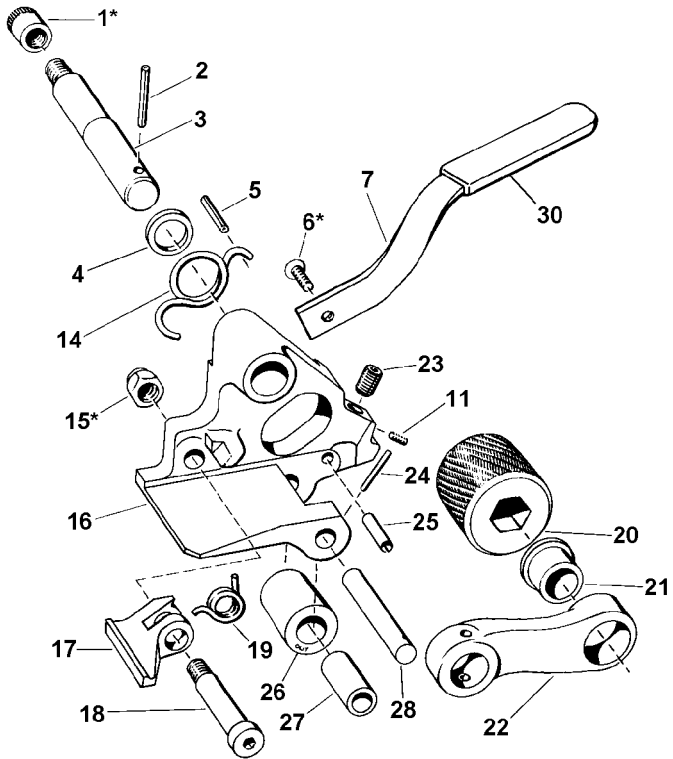


PN-114



  
ALTERNATE KEY 17  
For use with 2" (50mm) strap.  
Available by special order  
Part No. 045151.

PNR-114



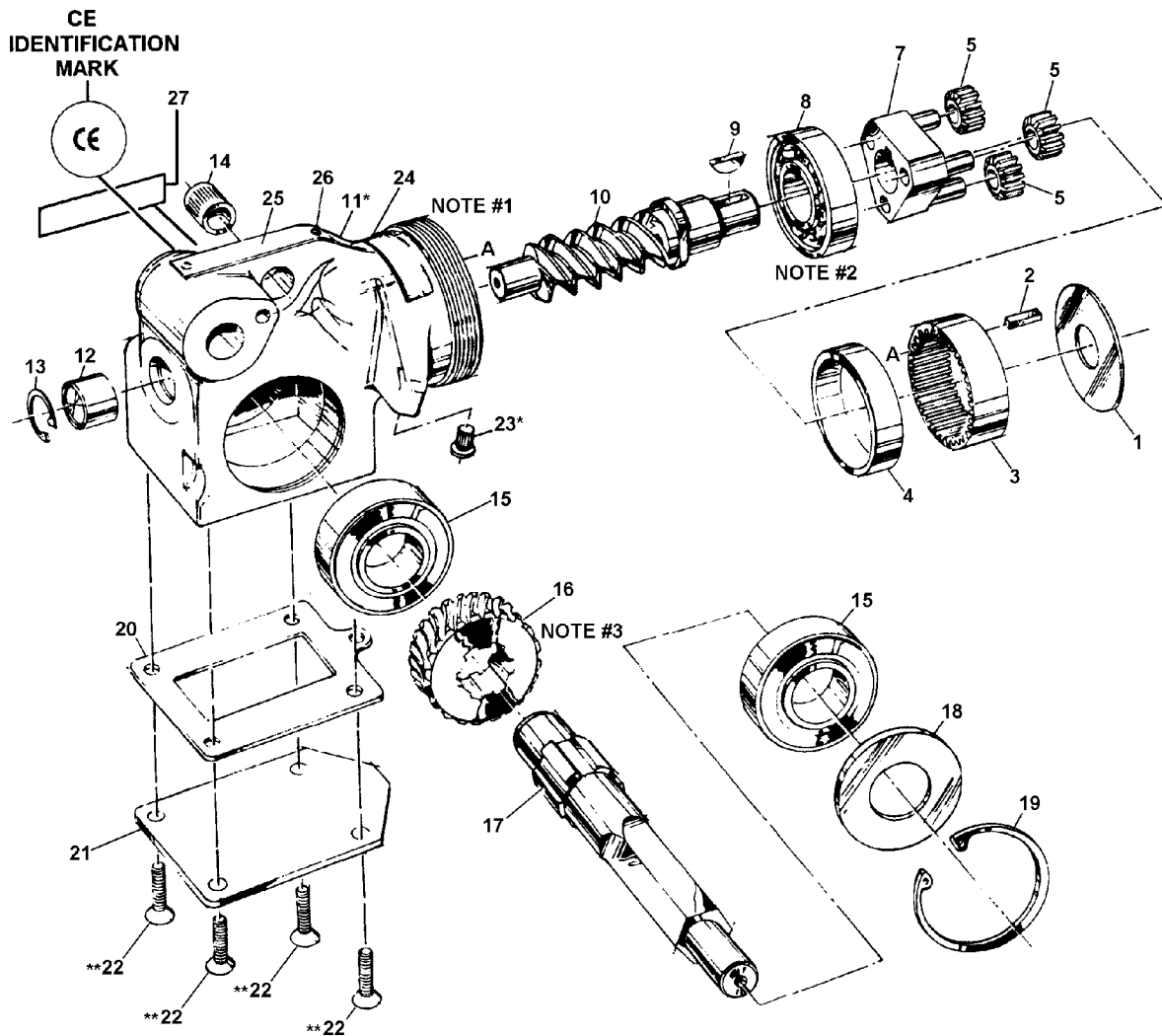
## PARTS LIST, GEAR HOUSING

<u>KEY</u>	<u>QTY.</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	008781	Thrust washer
2	1	008872	Ring gear key
3	1	008871	Ring gear
4	1	008769	Spacer
5	3	<u>008766</u>	<u>Idler gear</u>
7	1	306389	Idler gear plate assembly
8	1	008756	Bearing, Fafnir 7203
9	1	008774	Key
10	1	008772	Worm
11*	1	008858	Gear housing
12	1	008751	Needle bearing
13	1	008752	Truarc ring
14	1	008672	Bushing
15	2	008754	Bearing, Fafnir KPI2A
16	1	<u>008779</u>	<u>Worm - gear</u>
17	1	008862	Feedwheel shaft
18	1	008869	Cover
19	1	008753	Truarc ring
20	1	008989	Gasket
21	1	008874	Base plate
22	4	008757	Flat head socket cap screw, #10-24 x 3/4
23*	1	008838	Stop pin
24	1	003132	Caution sign
25	1	280531	Nameplate, PN-114 tool
	1	280532	Nameplate, PNR-114 tool
26	2	002163	Drive screw
27	1	286373	Information sign

- When ordering parts please show tool model, part number and description.
- Recommended spare parts are underlined and should be stocked.
- Common hardware parts can be obtained at any local hardware supply.

\* Always order stop pin (008838) when replacing gear housing.





**NOTES:**

1. Pack the gear housing (11) about 1/3 full with Non-Fluid Oil #K55 or equivalent.
2. Bearing must be installed with wide shoulder away from worm.
3. When assembling the worm gear, the side stamped 'T' must face towards the back of the housing.

**\*\* Use Loctite #271 (Red).**

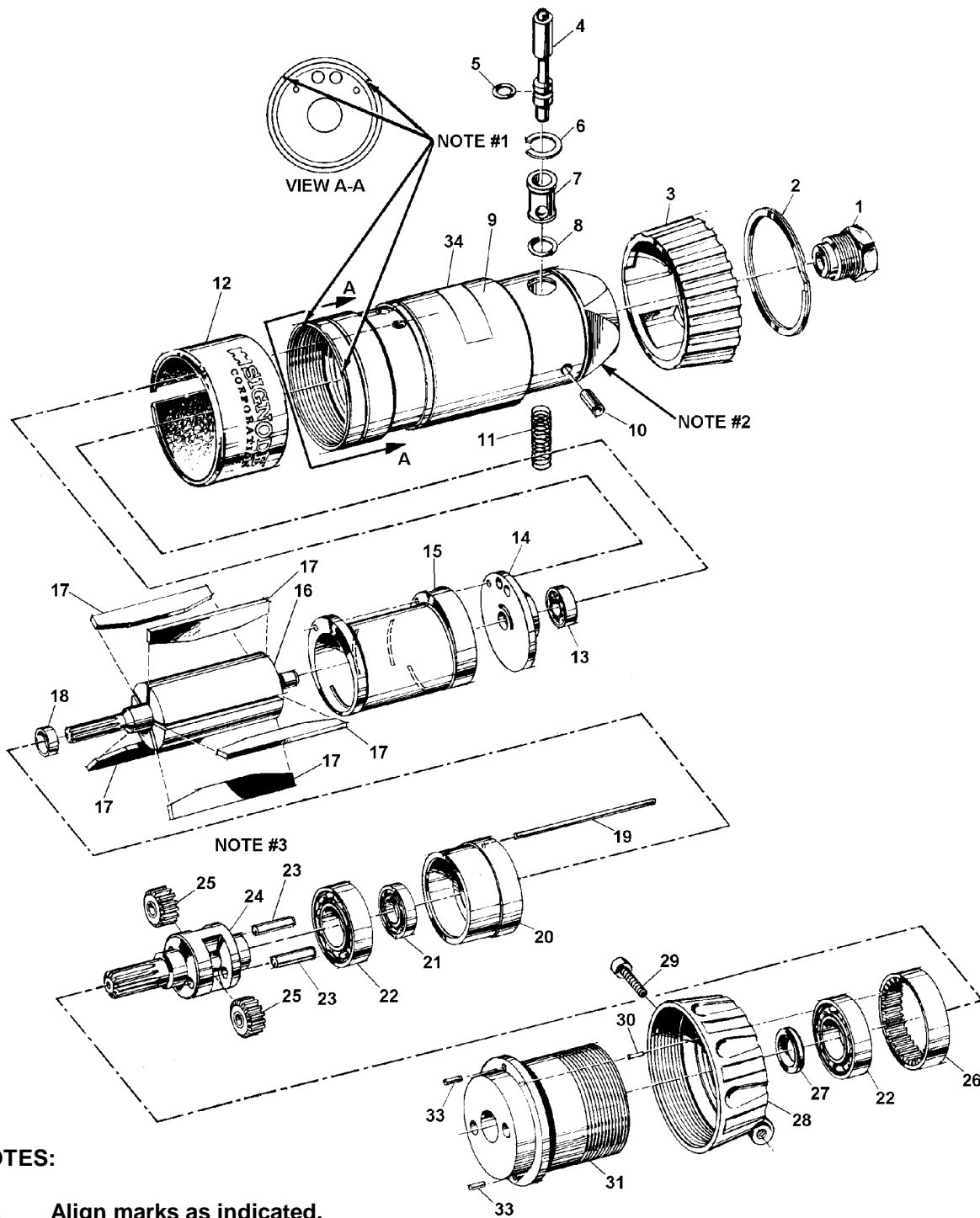
## PARTS LIST, AIR MOTOR, 105L14, PART NO. 024650

<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
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, Fafnir, #ASIK7-SRI #2</u>
14	1	<u>024653</u>	<u>Back end plate</u>
15	1	024652	Cylinder
16	1	024668	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	Ball bearing
22	2	023547	Ball bearing
23	2	<u>023518</u>	<u>Pin</u>
24	1	024674	Gear cage
25	2	<u>024658</u>	<u>Idler assembly</u>
26	1	024659	Ring gear
27	1	023558	Seal
28	1	024678	Ring nut
29	1	008731	Socket head cap screw, #10-24 x 3/4
30	1	023556	Pin
31	1	024671	Gear housing
33	2	023533	Pin
34	1	280537	On-Off label

- When ordering parts please air motor model, part number and description.
- Recommended spare parts are underlined and should be stocked.
- Common hardware parts can be obtained at any local hardware supply.







**NOTES:**

1. Align marks as indicated.
2. Location of air motor number (underside).
3. Idler assemblies and bearings, except (13), are to be lubricated with Non-Fluid Oil #K55 or equivalent. Idler assemblies (25) and vanes (17) must soak in air line oil overnight before assembling air motor.
4. If the rear motor housing (9) becomes loose, it must be retightened while the motor is running at 20 to 30 psig (1.6 to 2.0 Bar) air pressure. This will ensure proper alignment and rotor freedom.





**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: PN/PNR

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

PART #	DESCRIPTION	AREA OF USE
<b>LUBRICANTS</b>		
177029	BROWN K-55 GREASE	CLUTCH DRIVES, INTERNAL GEARS, GEAR SETS
422792	WHITE LUBRIPLATE GR-132 GREASE	PNEUMATIC PARTS, AIR CYLINDERS, AIR VALVES, O-RINGS
422793	BLACK LUBRIPLATE 3000W GREASE	MOVING INTERNAL PARTS, JAWS, LINKS
432322	EP ACCROLUBE GREASE	HIGH FRICTION CONTACT PARTS
008556	LS-1236 AIR LINE OIL	AIR MOTORS, AIR VALVES
<b>ADHESIVES</b>		
422794	LOCTITE #222, PURPLE	LOW STRENGTH, SCREWS 1/4" (6MM) OR SMALLER SIZES
422795	LOCTITE #242, BLUE	MEDIUM STRENGTH, SCREWS 5/16" (8MM) OR LARGER SIZES
422796	LOCTITE #271, RED	HIGH STRENGTH, SEMI-PERMANENT SCREW APPLICATION
422797	LOCTITE #609, GREEN	PERMANENT, CURVED SURFACE PART CONTACT
274111	LOCTITE #380, BLACK MAX	PERMANENT, FLAT SURFACE PART CONTACT
<b>CLEANING BRUSHES</b>		
023963	SMALL BRUSH	FEEDWHEEL & GRIPPER TEETH
269589	LARGE BRUSH	FEEDWHEEL & GRIPPER TEETH