OPERATION, PARTS AND SAFETY MANUAL

SIGNODE®

PSD-109

STRAP DISPENSER

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 U.S.A.

⚠WARNING

READ THESE INSTRUCTIONS CAREFULLY.

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

GENERAL SAFETY CONSIDERATIONS

1. **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.

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

3. **TRAINING.**
   This dispenser 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.

4. **DISPENSER CARE.**
   Take good care of this dispenser. Inspect and clean it weekly. Replace any worn or broken parts.

5. **WORK AREA.**
   Keep work areas uncluttered and well lighted.

SAFETY PROCEDURES FOR DISPENSER OPERATION

1. **Before loading a coil of strap into the dispenser, read the loading and safety instructions.**

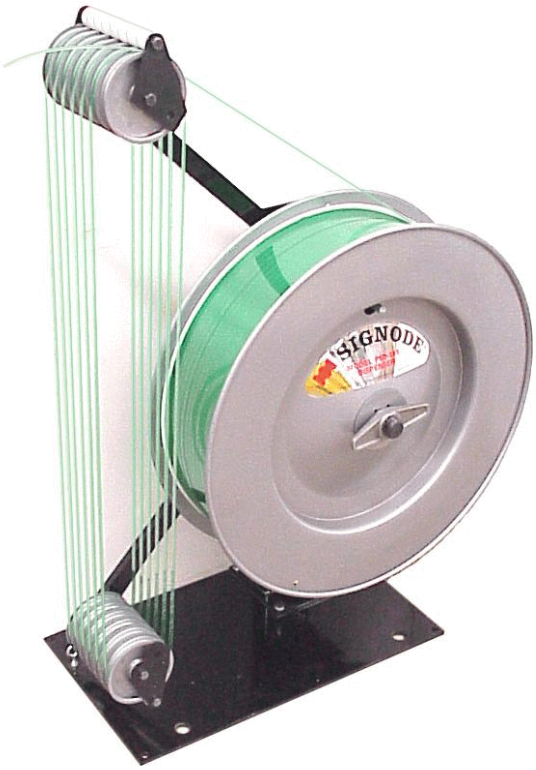
   - **Install dispenser properly before using it.**
   - **Maintain proper footing and balance when loading dispenser.**
   - **Do not load dispenser when you are in an awkward position. Use proper lifting techniques when loading a coil of strap into the dispenser.**
   - **When mounting dispensers on wall and/or columns, use the proper Signode suspension brackets.**

2. **Tuck strap end back into dispenser straptroller area 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



PSD-109 ACCUMULATING DISPENSER
RIGHT-HAND PAYOFF (P/N 513684)
LEFT-HAND PAYOFF (P/N 513685)

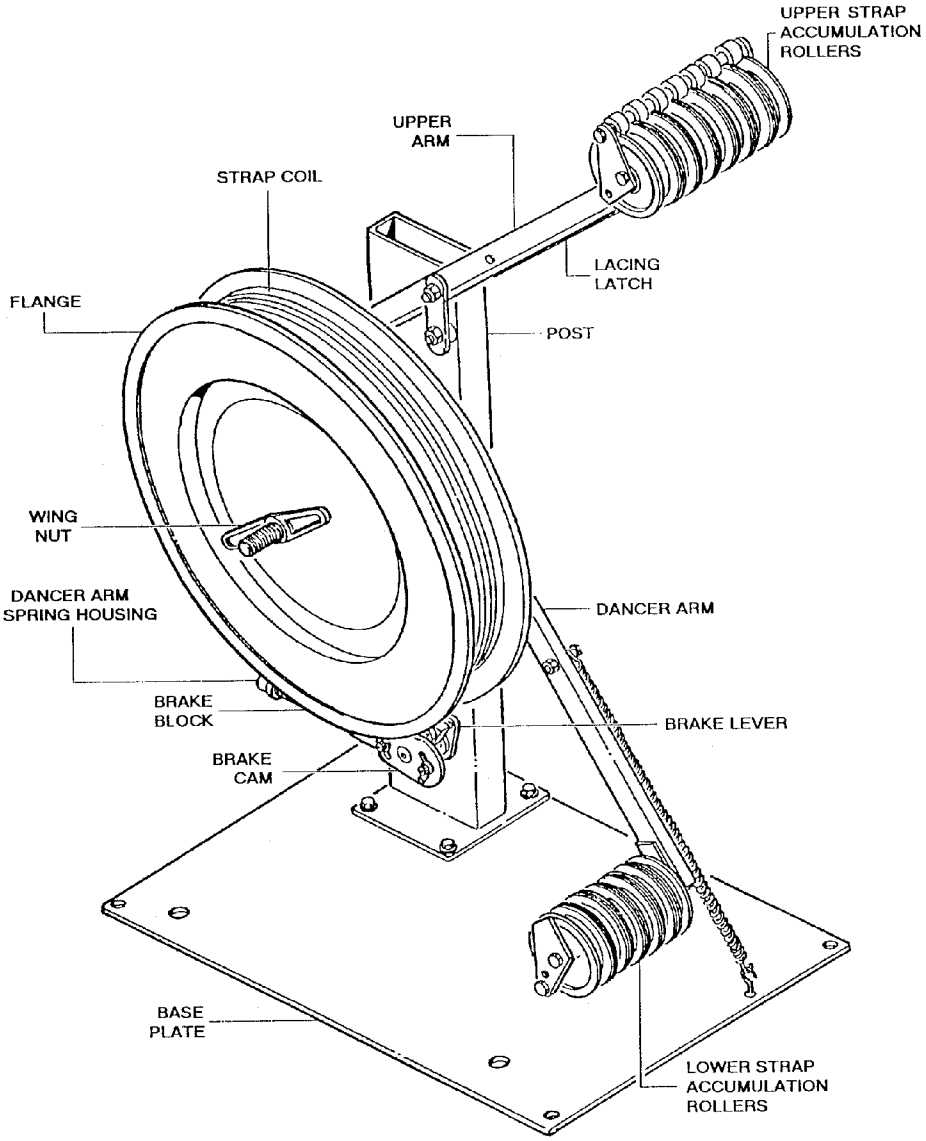
INTRODUCTION

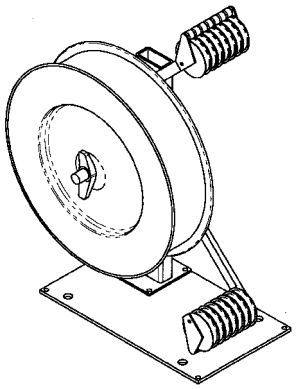
This dispenser is to be used with power strapping equipment only. It is tension actuated and multi-roller design can accumulate 30 feet of retracted strap available at an actuation force of 5 pounds.

SPECIFICATIONS

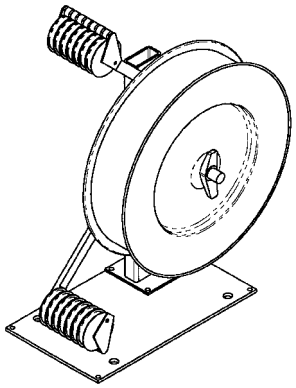
MODEL	STRAPPING		
	TYPE	WIDTH	COIL SIZE
PSD-109	Polyester or Polypropylene	Up to 16mm	24"OD x 16"ID x 6"W

MAJOR COMPONENTS





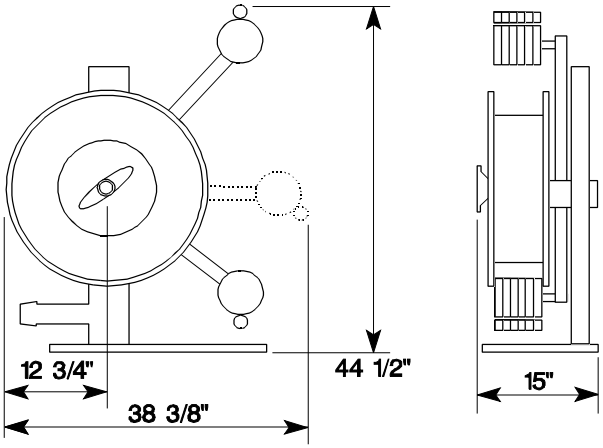
RIGHT-HAND ORIENTATION



LEFT HAND ORIENTATION

INSTALLATION

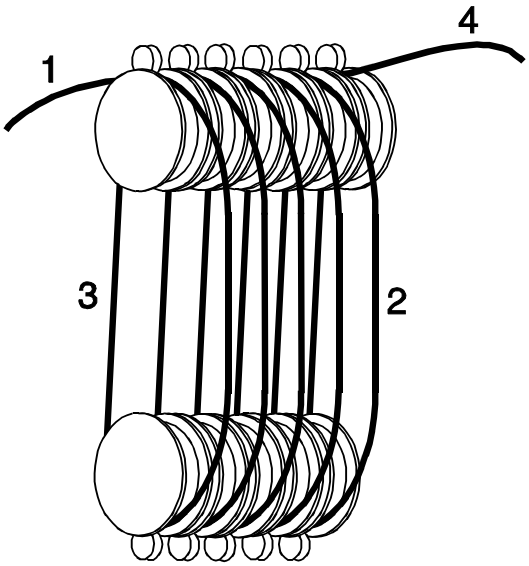
The dispenser should be placed at least 4 feet from the machinery that it will be serving.. The Options Section contains the optional hardware required to accommodate the less common locations relative to the machine. Once permanent location has been determined, use the base as a template to transfer the mounting hole locations to the floor to accept 3/8" anchors. Securely fasten the dispenser in place.



COIL LOADING INSTRUCTIONS

There are two methods used to load a coil of strap into the dispenser. The first assumes that there is no strap in the dispenser and requires hand threading the multi-roller accumulating system. The second method takes advantage of strap already threaded through the system.

NO STRAP IN THE DISPENSER



1. **Remove the wing nut then lift the outer flange from the dispenser.**

2. **Swing the lacing latch down from the upper arm. Raise the dancer arm and hook it onto the latch. This will release the brake and reduce the distance between the dancer arm and the upper arm.**

3. **Before installing the coil of strap, note the direction of pay-off of the lead end. The coil should be placed on the dispenser with the lead end of hte strap feeding off the top towards the upper roller stack, (1).**

4. **Leave the crossties and the face blocks intact. Place new coil on the step of the rear flange and reinstall the outer reel disc assembly. Snug the wing nut.**

5. **Cut the crossties on the coil, carefully remove the ties and the face blocks and securely tighten the wing nut.**

6. **Make sure there are no twists or kinks in the strap. Feed it around the outermost roller on the upper roller stack.**

7. **Direct the lead end down and around the outermost roller on the lower roller stack (2).**

COIL LOADING INSTRUCTIONS, Continued

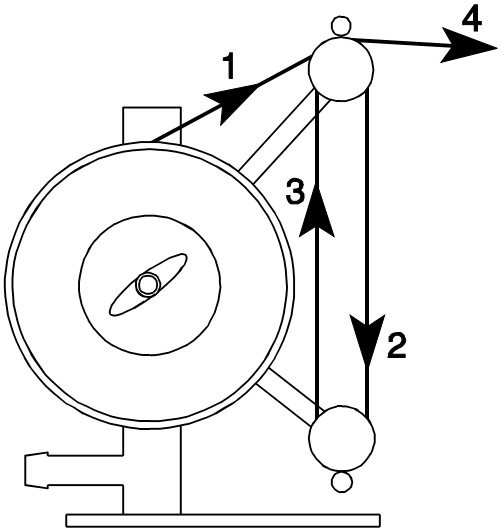
8. **Guide strap back up and over the next roller on the upper roller stack, (3). Repeat this process until all the rollers are loaded. The lead end of the strap should terminate at the innermost upper arm roller, (4).**

9. **Hold on to the strap lead end and release the dancer arm latch. The spring loaded dancer arm will return to its lower position and the strap is ready to be inserted into the machine.**

Return the lacing latch to its storage position on the upper arm.

STRAP IN THE DISPENSER

Strap threading can be simplified if the dispenser is reloaded just before the coil runs out.



1. **Re move the strap from the strapping machine and make sure the dancer arm is in its lowermost position.**

2. **Cut the strap at the coil and follow steps 1,3, and 5, Method One, to load a new coil on the dispenser.**

3. **Tape the lead end of the new coil to the trailing end of the old strap and manually draw the new strap through the roller stacks.**

4. **Remove and discard the old strap and the tape. <u>Tape must not be allowed to enter the strapping machine,</u>**

5. **Insert the new strap into the strapping machine.**

DISPENSER OPERATION

As strap is drawn from the dispenser, the dancer arm is raised and the flange brake is released. The multi-roller design permits the strap coil to accelerate smoothly to full speed and strap is dispensed. When strap demand is complete, the dancer arm returns to its lowermost position. The brake is engaged, the strap coil stops rotating and the excess strap is accumulated within the multi-roller configuration.

ADJUSTMENTS

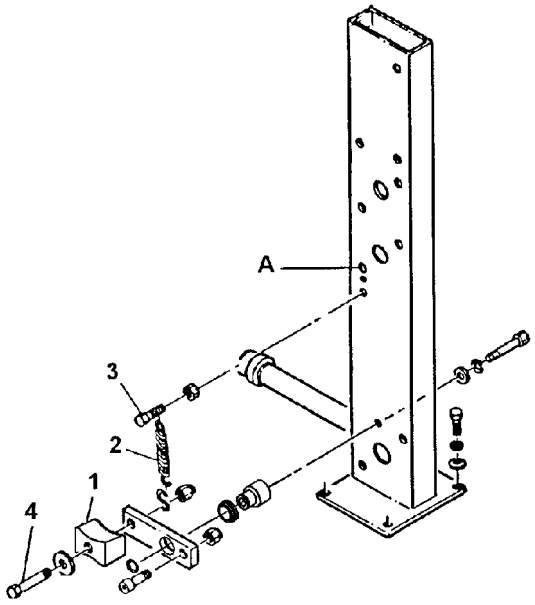
⚠WARNING

WEAR SAFETY GLASSES WITH SIDE SHIELDS WHICH CONFORM TO ANSI STANDARD Z87.1. FAILURE TO WEAR SAFETY GLASSES COULD RESULT IN SEVERE PERSONAL INJURY. PROTECT YOUR EYES. READ GENERAL SAFETY INSTRUCTIONS IN THE FRONT OF THIS MANUAL

- **Only trained people should service machine**
- **Unless specified, shutoff and lock out all electrical power.**
- **Follow all service instructions.**
- **Use Correct tools.**
- **Never adjust, repair or oil moving machinery**

DANCER ARM COMPRESSION SPRING
This adjustment has been factory made and should not be readjusted. Any additional preloading on this spring may cause chain or connecting link failure during operation.

BRAKE BLOCK PRESSURE
Pressure is applied to the brake block (1) by means of an extension spring (2) connected between the brake block mounting screw (4) and a 5/16 hex head cap screw (3) extending from the dispenser post (A) just beneath the dispenser shaft mounting hole. At this upper location are two 5/16-24 tapped holes. Additional spring tension can be gained by removing the 5/16 hex head screw and moving it to the upper hole. Make sure the screw extends no more than 3/4" and it is securely locked to the post with nut provided.



BRAKE BLOCK ROTATION
The friction surface on the brake block (1) will eventually wear to a point that proper pressure gained from the extension spring (2) is no longer possible. When that occurs, loosen the brake block mounting screw (4) and rotate the block 180 degrees. Make sure the mounting screw has been securely tightened. When both sides of the brake block are fully worn, replace the block.

ADJUSTMENTS, Continued

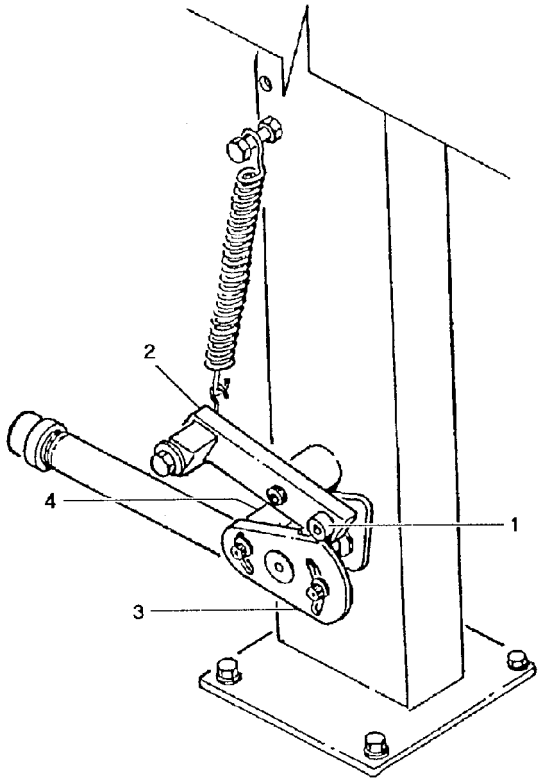
STRAP ACCUMULATION

The amount of strap retracted from the strapping machine by the dispenser is dependent upon the position of the dancer arm when the brake is engaged.

If the brake engages too near the lower end of the dancer arm travel, very little strap is retracted and accumulated. The loops between the roller stacks and the length of strap between the dispenser and the strapping machine can become excessively loose.

Brake engagement too near the upper end of the dancer arm travel will result in excessive coil acceleration and high back tension on the strap entering the strapping machine.

Since proper strap accumulation depends on the application, the factory setting must be considered nominal and some fine tuning may be required.



The brake is engaged when the cam follower (1) on the brake lever (2) is driven in an upward direction by the cam (3) on the dancer arm shaft (4). The amount of pre-travel adjusted into the cam will determine the point at which the brake is engaged.

To adjust the brake engagement point, loosen the two cam fasteners (5) and reposition the cam as needed. If more adjustment is needed than is available through use of the slots in the cam, reposition the fasteners in the adjacent tapped holes provided.

Make sure the cam fasteners are securely tightened to maintain the setting.

NOTE: If the release point s set to occur above the dancer arm latching position, the dispenser will not be free to turn during the strap threading procedure.

PARTS REMOVAL AND REPLACEMENT

⚠WARNING

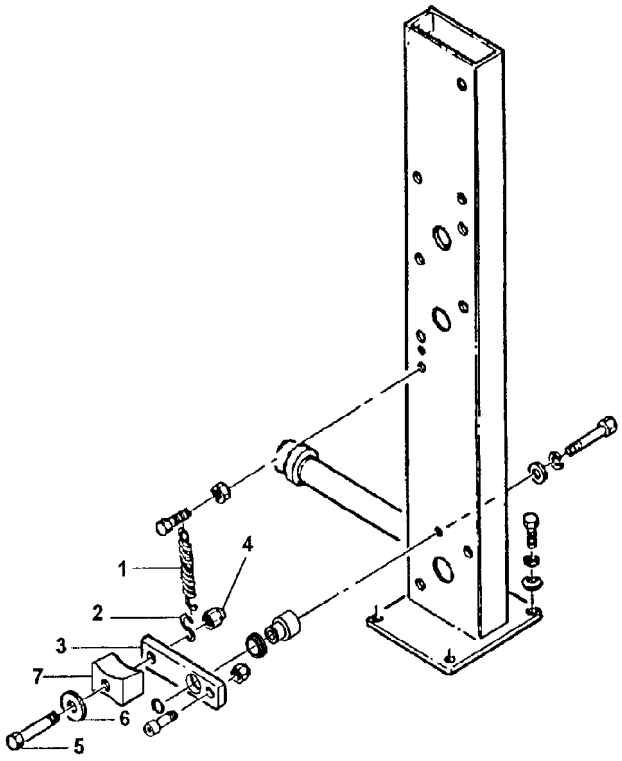
WEAR SAFETY GLASSES WITH SIDE SHIELDS WHICH CONFORM TO ANSI STANDARD Z87.1. FAILURE TO WEAR SAFETY GLASSES COULD RESULT IN SEVERE PERSONAL INJURY. PROTECT YOUR EYES. READ GENERAL SAFETY INSTRUCTIONS IN THE FRONT OF THIS MANUAL

- **Only trained people should service machine**
- **Unless specified, shutoff and lock out all electrical power.**
- **Follow all service instructions.**
- **Use Correct tools.**
- **Never adjust, repair or oil moving machinery**

BRAKE BLOCK

To remove and replace the brake block:

1. **Lift the dancer arm and hang it on the lacing hatch. This will discharge the brake.**
2. **Disconnect the extension spring (1) at the S-hook (2) on the brake lever (3).**
3. **Remove the 1/2-20 stop nut (4), the hex head cap screw (5), the flat washer (6) and the worn brake block (7) from the brake lever.**
4. **Install the brake block and reassemble all parts. At this point, just snug the stop nut.**
5. **Turn the brake block so that the rolled edge of the inner flange will make as much contact with the brake block as possible.**
6. **Attach the extension spring to the S-hook.**
7. **Tighten the stop nut until the brake block is firmly held between the flat washer and brake lever.**

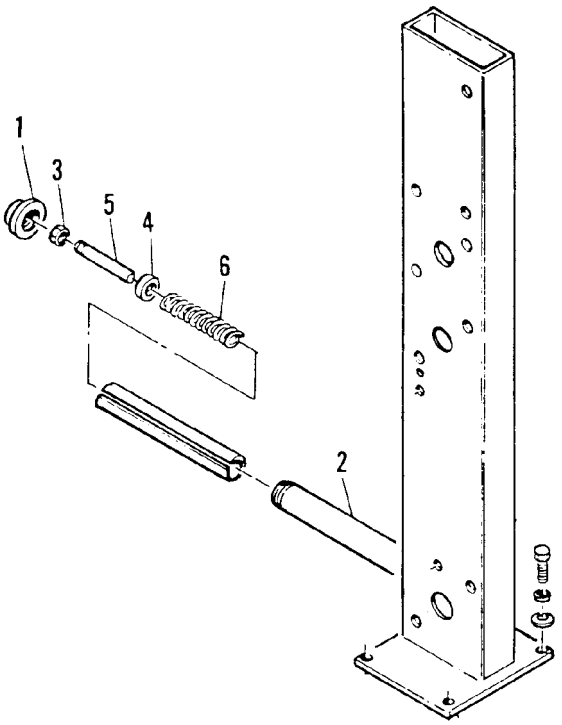


8. **Release the dancer arm and return the lacing latch to its storage position on the upper arm.**
9. **Readjust the brake block pressure, if needed. Refer to the Adjustments Section for details.**

PARTS REMOVAL AND REPLACEMENT, Continued

DANCER ARM COMPRESSION SPRING

To remove and replace the dancer arm compression spring (6):



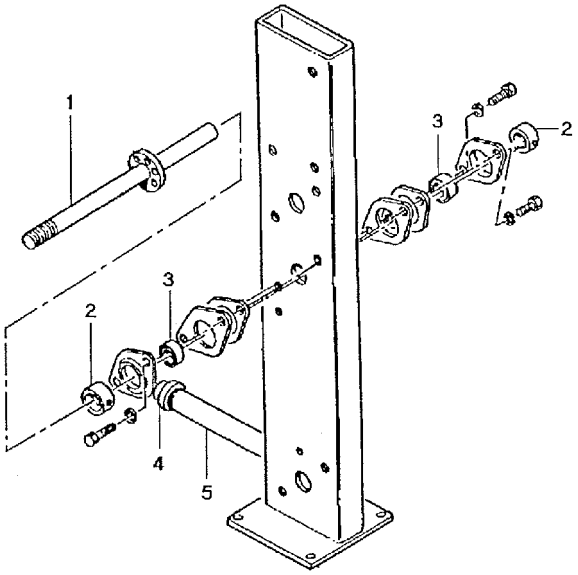
1. **Place dancer arm in its lowest position.**
2. **Remove the pipe cap (1) from the spring housing (2).**
3. **Remove hex nut (3) and the spring stud (5). This may be difficult to do as thread sealant was applied during factory assembly.**
4. **Remove and replace the dancer arm compression spring. NOTE: Make sure the chain remains on the brake camshaft sprocket during this procedure.**
5. **Apply thread adhesive, Loctite 242 or equivalent, to the spring stud and reassemble the spring bushing and hex nut.**
6. **Tighten the hex nut until the slack is removed from the chain-then tighten no further. If the dancer arm compression spring is overtightened, the chain or the connecting link may fail during operation.**
7. **Reinstall the pipe cap.**

⚠WARNING

Failure to install the pipe cap could result in injury to personnel if the chain or connecting link should fail during operation. A sudden release of dancer arm compression should propel the spring stud, bushing, etc. from end of the spring housing at high velocity.

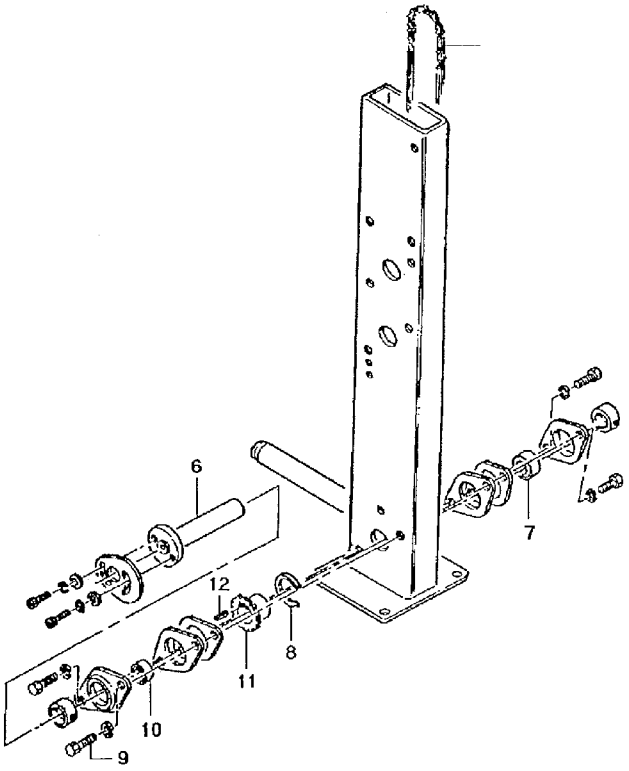
ACTUATION CHAIN

To remove and replace the actuation chain first remove the dispenser shaft (1):



1. **Position the dancer arm at its lowest position.**
2. **Loosen the collars (2) on the dispenser shaft bearings (3). Remove the shaft assembly from the post and set it to the side.**
3. **Remove the pipe cap (4) from the spring housing (5).**
4. **Remove the hex nut and the spring bushing from the stud. This may be difficult to do as thread sealant was applied during factory assembly.**

The dancer arm shaft (6) must then be removed:



5. **Remove the rear bearing assembly (7) and the retaining ring (8) from the dancer arm shaft.**
6. **Remove the fasteners (9) that attach the dancer arm front bearing (10) assembly to the post.**
7. **Remove the dancer arm assembly, with front bearing intact, from the post, sliding the shaft out of the dancer arm sprocket (11). Note the sprocket key (12).**
8. **Remove the sprocket and the chain assembly (13) from the post.**
9. **Disassemble the sprocket-chain-stud assembly then replace the chain and reassemble the parts.**
10. **Reassemble the dancer arm assembly in reverse order of disassembly.**
11. **Separate the post assembly from the base plate by removing the post mounting fasteners.**
12. **Insert and direct the spring stud through the dancer arm compression spring in the spring housing. Make sure the chain is sealed on the brake arm camshaft sprocket and replace the spring bushing. Apply thread adhesive, Loctite 242 or equivalent, to the spring stud and reinstall the hex nut.**

PARTS REMOVAL AND REPLACEMENT, Continued

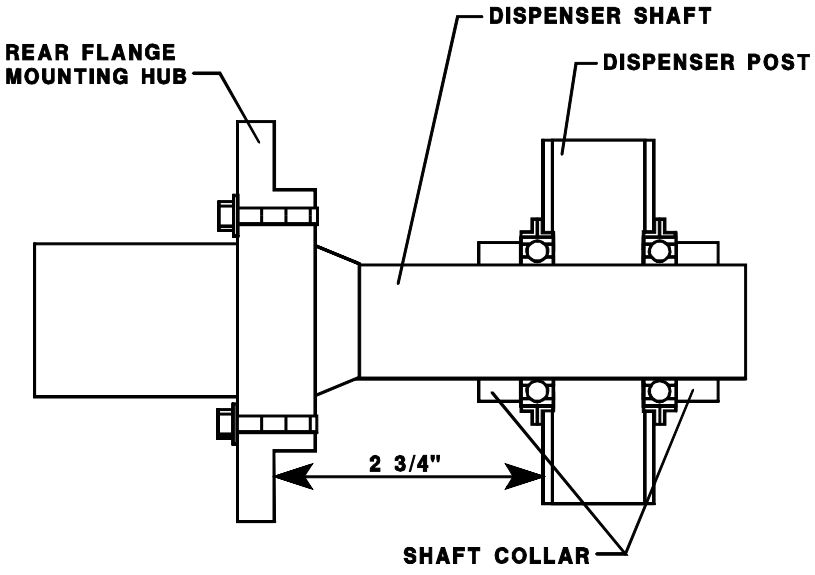
13. **Tighten the hex nut until the stack is removed from the chain- then tighten no further. Chain slack can be detected as free rotational movement of the brake cam. If the dancer arm compression spring is overtightened, the chain or the connecting link may fail during operation.**

14. **Reinstall the pipe cap.**

15. **Remount the post assembly to the base plate.**

16. **Reinstall the dispenser shaft assembly. Position this assembly so that the mounting hub on the rear flange is 2-3/8" from the near face of the post.**

17. **Readjust the strap accumulation. Details are in the Adjustment Section.**



TROUBLESHOOTING

The following items are the most common tool symptoms if problems should occur. For symptoms or remedies not shown, contact your Signode service representative for additional information and details. The following tool symptoms are shown in this manual:

#1 SYMPTOM: Loose strap between roller stacks.
#2 SYMPTOM: Strap between dispenser and machine too loose following strapping cycle.
#3 SYMPTOM: Loose wraps on strap coil.
#4 SYMPTOM: Dispenser 'Jerk' stops.
#5 SYMPTOM: Dispenser 'Jerk' starts.
#6 SYMPTOM: Strap pulls out of machine.
#7 SYMPTOM: Dancer arm hits bumper when actuated.
#8 SYMPTOM: Dancer arm swings upward with little or no resistance.
#9 SYMPTOM: Dancer arm motion is erratic.

#1 SYMPTOM: Loose strap between roller stacks.	
CAUSE	**REMEDY**
Dispenser accumulation improperly adjusted.	See Adjustments Section.

#2 SYMPTOM: Strap between dispenser and machine too loose following strapping cycle.	
CAUSE	**REMEDY**
Dispenser accumulation improperly adjusted.	See Adjustments Section.

#3 SYMPTOM: Loose wraps on strap coil.	
CAUSE	**REMEDY**
1. Brake block pressure too low.	1. Increase brake block pressure. See Adjustments section.
2. Brake block friction surface worn out.	2. Rotate brake block 90 to new friction surface. See Adjustment Section. If brake block is worn on all four sides it must be replaced. See Parts Removal and Replacement Section.

#4 SYMPTOM: Dispenser 'Jerk' stops.	
CAUSE	**REMEDY**
Brake pressure too high.	Reduce the brake block pressure. See Adjustments Section.

TROUBLESHOOTING, Continued

#5 SYMPTOM: Dispenser 'Jerk' starts.	
CAUSE	**REMEDY**
The dancer arm is traveling too high before the brake is released.	Adjust the brake cam to release the brake sooner. See Adjustments Section.

#6 SYMPTOM: Strap pulls out of machine.	
CAUSE	**REMEDY**
The dancer arm is traveling too high before the brake is released.	Adjust the brake cam to release the brake sooner. See Adjustments Section.

#7 SYMPTOM: Dancer arm hits bumper when actuated.	
CAUSE	**REMEDY**
Broken dancer arm extension spring.	Replace dancer arm extension spring. See Parts Removal and Replacement Section.

#8 SYMPTOM: Dancer arm swings upward with little or no resistance.	
CAUSE	**REMEDY**
Check for broken external dancer arm extension spring, chain or connecting link.	Replace broken parts as needed. See Parts Removal and Replacement Section.

#9 SYMPTOM: Dancer arm motion is erratic.	
CAUSE	**REMEDY**
Check for broken dancer arm compression spring.	Replace broken parts as required. See Parts Removal and Replacement Section.

BLANK

PARTS LIST

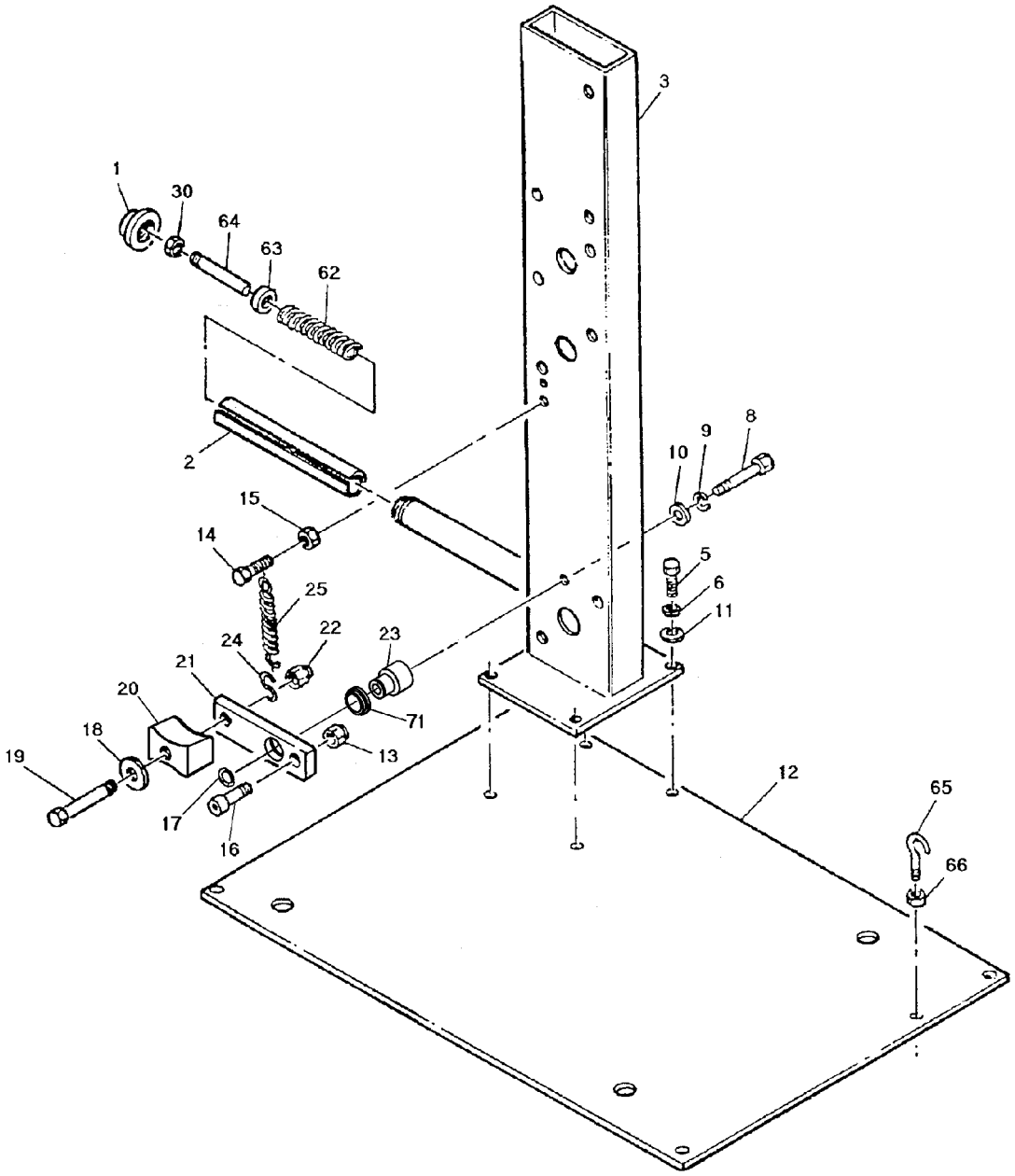
MAIN FRAME, LEVER ASSEMBLY AND DANCER ARM SPRING ASSEMBLY

KEY	QTY.	PART NO.	DESCRIPTION
1	1	426364	Spring housing cap
2	1	426365	Spring housing liner
3	1	426366	Post
5	4	426368	Hex head cap screw, 5/16-24 x 3/4
6	6	426369	Lockwasher, 5/16
8	1	426371	Hex head cap screw, 3/8-16 x3
9	1	426372	Lockwasher, 3/8
10	1	426373	Flatwasher, 3/8
11	1	426374	Flatwasher, 5/16
12	1	426375	Base plate
13	1	426376	Elastic stop nut, 3/8-24, thin
14	4	426378	Hex head cap screw, 5/16-24 x 1
15	1	426379	Hex nut, 5/16-24
16	1	426380	Brake cam follower, 3/4 dia.
17	1	426381	Retaining Ring, external, 3/4
18	1	426382	Flat Washer, 1/2
19	1	517766	Hex head cap screw, 1/2-20 x 3 3/4
20	1	517765	Brake block
21	1	510379	Brake lever
22	1	426386	Elastic stop nut, 1/2-20, thin
23	1	510378	Brake lever pivot
24	1	426388	S-Hook
25	1	517767	Brake Spring
30	1	426390	Hex nut, 3/8-16
62	1	426391	Dancer arm compression spring
63	1	426392	Spring bushing
64	1	426393	Spring stud
65	1	426394	Eye bolt
66	1	426395	Hex nut, 1/4-20
71	1	510380	Bushing

- When ordering parts, please show model, part number and name.
- Common hardware parts may be obtained at any local hardware supply.

⚠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.


1
30
64
63
62
2
3
15
14
25
22
24
23
21
20
18
19
17
16
71
13
12
10
9
8
5
6
11
65
66

PARTS LIST, Continued

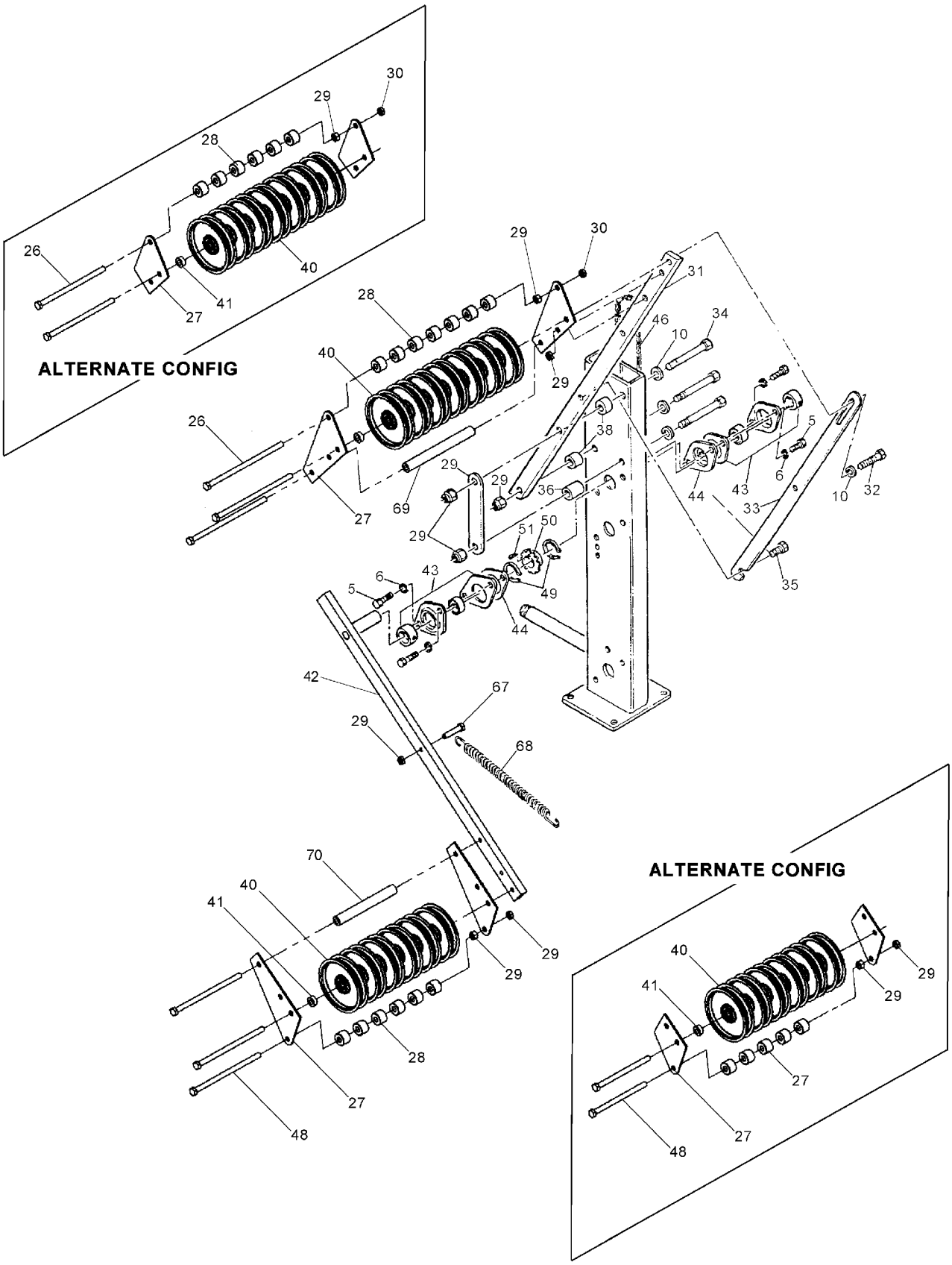
UPPER ARM AND DANCER ARM ASSEMBLY

KEY	QTY.	PART NO.	DESCRIPTION
5	4	426368	Hex head cap screw, 5/16-24 x 3/4
6	4	426369	Lockwasher, 5/16
9	1	423372	Lockwasher, 3/8
10	4	426373	Flat washer, 3/8
26	3	426396	Hex head cap screw, 3/8-16 x 8
	2	426396	Hex head cap screw, 3/8-16 x 8 (Alternate)
27	4	517779	Keeper roller mounting plate
	4	426397	Keeper roller mounting plate (Alternate)
28	13	426398	Keeper roller
29	5	426399	Elastic stop nut, 3/8
30	2	426390	Hex nut, 3/8-16
31	1	426400	Upper arm
32	1	426401	Hex head cap screw, 3/8-16 x 1 1/2, full threads
33	1	426402	Lacing latch
34	3	426403	Hex head cap screw, 3/8-16 x 4 1/2
35	1	426404	Hex head cap screw, 3/8-16 x 3/4
36	1	517780	Dancer arm bumper
37	1	426406	Bumper spacer
38	2	426407	Upper arm spacer
39	1	426408	Bumper bracket
40	13	426409	Strap accumulation roller
41	2	426410	Spacer
42	1	426411	Dancer arm
43	2	426412	Flanged cartridge bearing, 1 dia.
44	2	426413	Bearing alignment plate
45	1	426414	Connecting link, #35 chain
46	1	426415	Actuation chain
46	1	426416	Hairpin clip
48	3	426417	Hex head cap screw, 3/8-16 x 7
	2	426417	Hex head cap screw, 3/8-16 x 7 (Alternate)
49	2	426418	Retaining ring, external,1
50	1	426419	Dancer arm sprocket
51	1	426420	Sprocket key
67	1	426421	Hex head cap screw, 3/8-16 x 1 3/4
68	1	426422	Dancer arm extension spring
69	1	517778	Spacer
70	1	517777	Spacer

- When ordering parts, please show model, part number and name.
- Common hardware parts may be obtained at any local hardware supply.

⚠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.


ALTERNATE CONFIG
ALTERNATE CONFIG
26
27
28
29
30
40
41
31
46
10
34
38
36
5
6
44
43
33
32
35
69
51
50
49
42
67
68
70
48

PARTS LIST, Continued

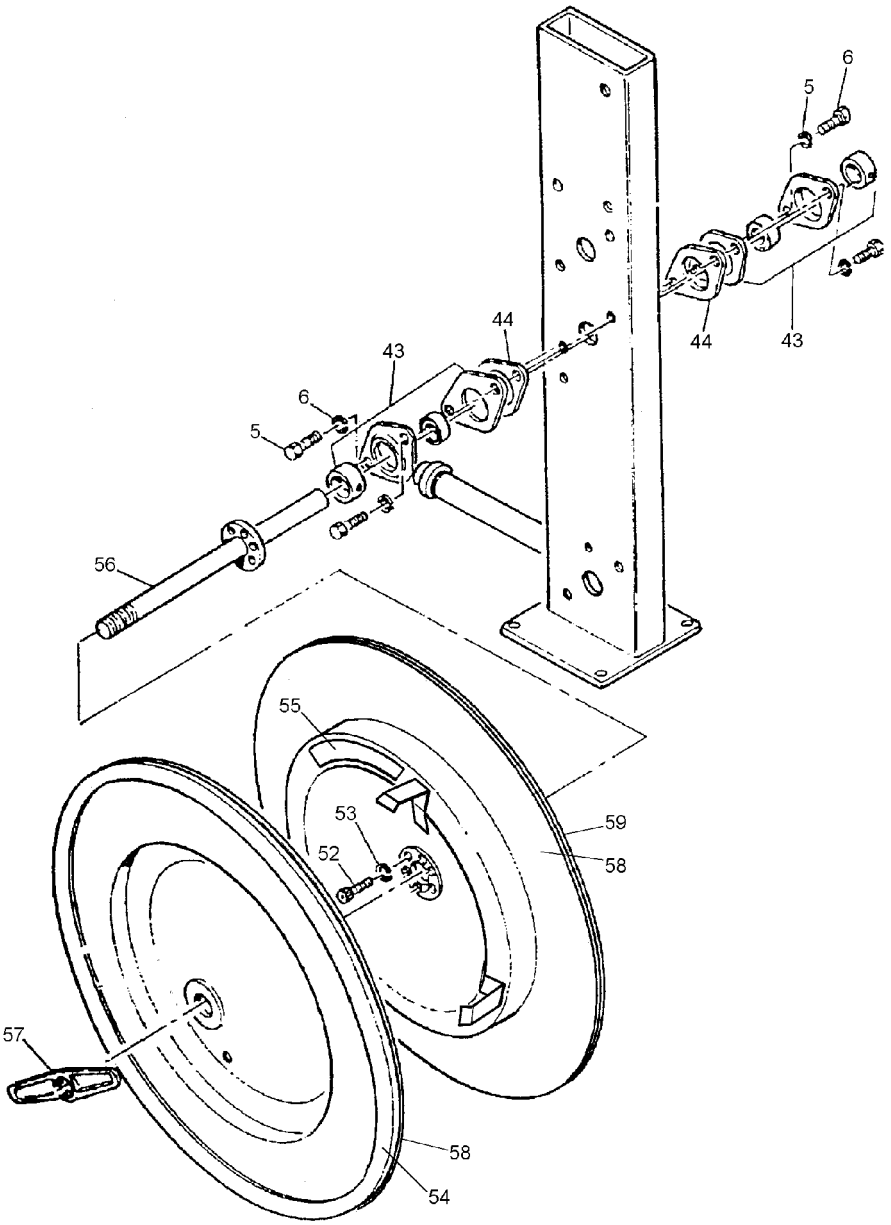
DISPENSER SHAFT ASSEMBLY

KEY	QTY.	PART NO.	DESCRIPTION
5	4	426368	Hex head cap screw, 5/16-24 x 3/4
6	4	426369	Lockwasher, 5/16
43	2	426412	Flanged cartridge bearing, 1 dia.
44	2	426413	Bearing alignment plate
52	6	426423	Socket head machine screw, 10-24 x 5/8
53	6	426424	Lockwasher #10
54	1	426425	Dispenser flange
55	1	426426	Strap direction arrow decal
56	1	426427	Dispenser shaft, right hand payoff
	1	426428	Dispenser shaft, left hand payoff
57	1	426429	Wing nut, right hand payoff
	1	426430	Wing nut, left hand payoff
58	2	517783	Flange liner
59	1	427597	Rear flange assembly

- When ordering parts, please show model, part number and name.
- Common hardware parts may be obtained at any local hardware supply.

⚠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.


6
5
44
43
6
5
44
43
56
55
53
52
59
58
57
58
54

PARTS LIST, Continued

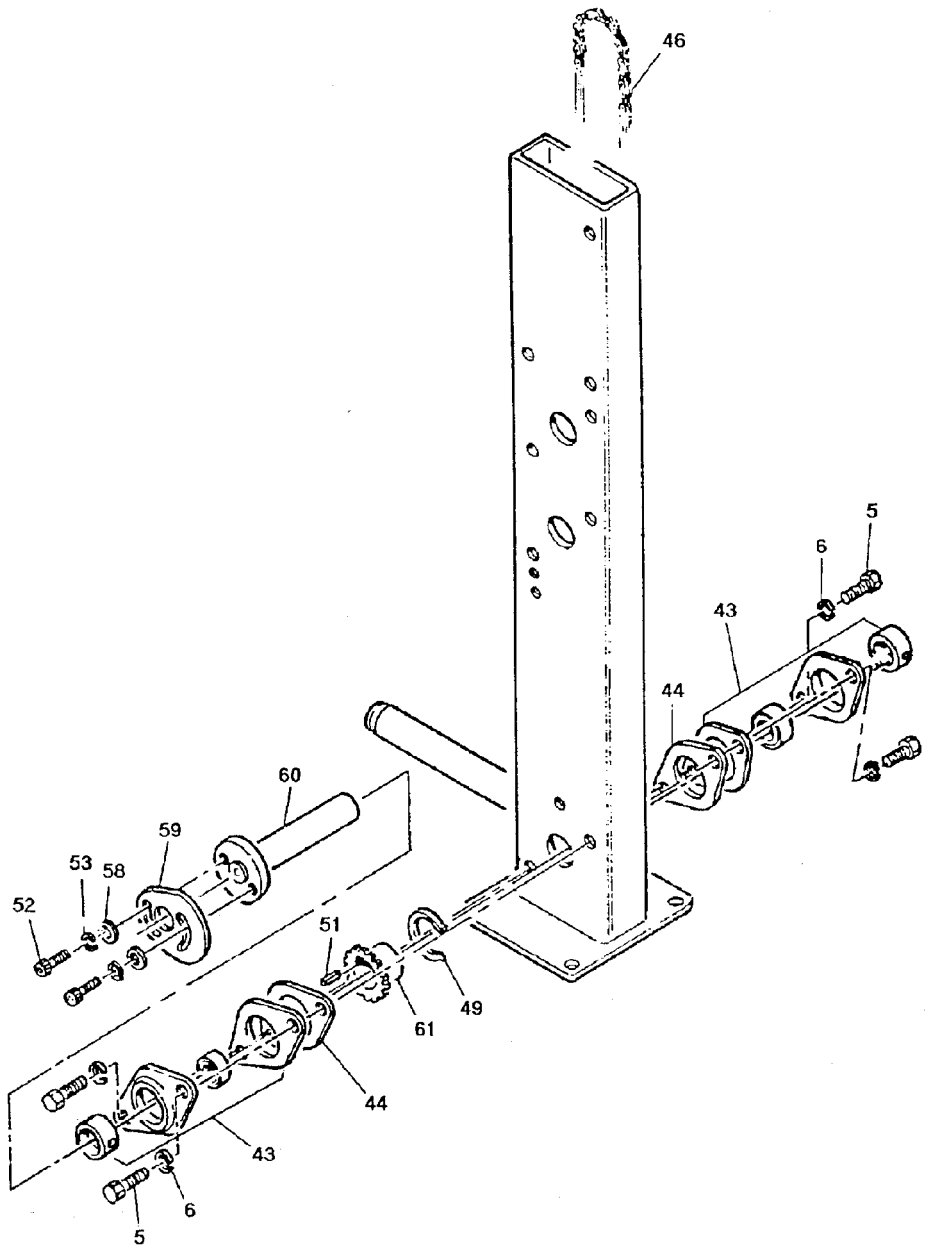
BRAKE CAMSHAFT ASSEMBLY

KEY	QTY.	PART NO.	DESCRIPTION
5	4	426368	Hex head cap screw, 5/16-24 x 3/4
6	4	426369	Lockwasher, 5/16
43	2	426412	Flanged cartridge bearing, 1 dia.
44	2	426413	Bearing alignment plate
46	1	426415	Actuation chain
49	2	426418	Retaining ring, external, 1
51	1	426420	Sprocket key
52	2	426423	Socket head machine screw, 10-24 x 5/8
53	2	426424	Lockwasher, #10
58	2	426431	Flat Washer, #10
59	1	426432	Brake Cam
60	1	426433	Brake cam shaft
61	1	426434	Camshaft sprocket

- When ordering parts, please show model, part number and name.
- Common hardware parts may be obtained at any local hardware supply.

⚠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.


46
5
6
43
44
60
59
53
58
52
51
49
61
44
43
6
5

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