

MM-2001 PINSETTER

**Adjusting the pin elevator drive chain.***December 1995 (revised February 2003)*

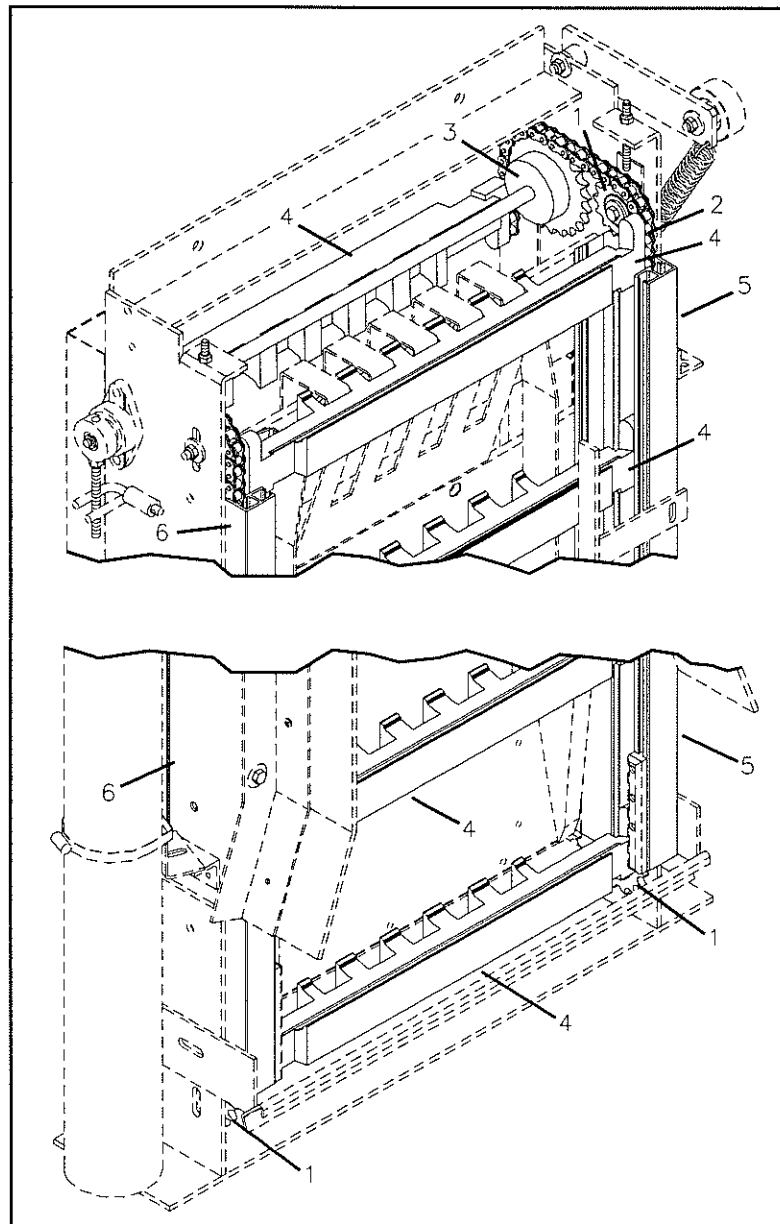
Failure to adjust the elevator's drive chain correctly will result in premature wearing of the elevator's left and right aluminum frame plates.

The elevator drive chain maintains tension on the pin lift arms. If the chains become too loose, the pin lift arms will come in contact with the aluminum frame plates at the top and bottom of the elevator. When this happens you can hear a knocking sound each time a pin lift arm makes it 180° turn at the top or bottom of the pin elevator.

The elevator's drive chain [adjustment number 5A] must be verified on a weekly basis during the first three months of operation. After the pinsetters have run for approximately three months, you may only need to verify this adjustment on a monthly basis.

Fenix Service Bulletin Number MM-001

ITEM	PART NO.	DESCRIPTION
1	302-8090-00	SPROCKET
2	302-8100-00	ELEVATOR CHAIN
3	302-8150-00	ELEVATOR SHAFT
4	303-8020-00	PIN LIFT ARM
5	308-8000-00	ELEVATOR FRAME [RIGHT SIDE]
6	308-8005-00	ELEVATOR FRAME [LEFT SIDE]



**Cleaning and lubrication of the magnetic clutches***December 1995 (revised February 2003)*

Cleaning and lubrication of the magnetic clutch assemblies and their partners (timing gear or pulley) is critical to proper pinsetter performance and must be performed on a bimonthly basis (every two months). Failure to have clean, well lubricated clutch assemblies will result in sweep jams, elevator jams and ball jams accordingly.

The constant friction on the coupling disk causes small dust-like particles to form a deposit on the clutch's facing.

The different clutch assemblies should be removed from the pinsetter and cleaned on a quarterly basis. The assemblies should be cleaned with a solvent such as a paint thinner. The assemblies should then be dried using a clean towel. The shaft of the machine where the clutch assembly is normally inserted should also be cleaned with a clean rag while the clutch assembly is out being cleaned as per the above.

To remove the clutch assemblies, you must first remove the corresponding belt which the assembly drives. The sweep's belt may be removed by loosening the three bolts which hold the sweep drive channel in place. The ball door's belt may be removed by simply removing the spring as shown in the diagram. The same method is also used for the elevator's belt.

Prior to re-assembly, **lightly**¹ lubricate the corresponding shaft with an anti-seize lubricant² such as Loctite Anti-Seize Brush Type No. 76764, and make sure that the clutch components travel freely on the shaft.

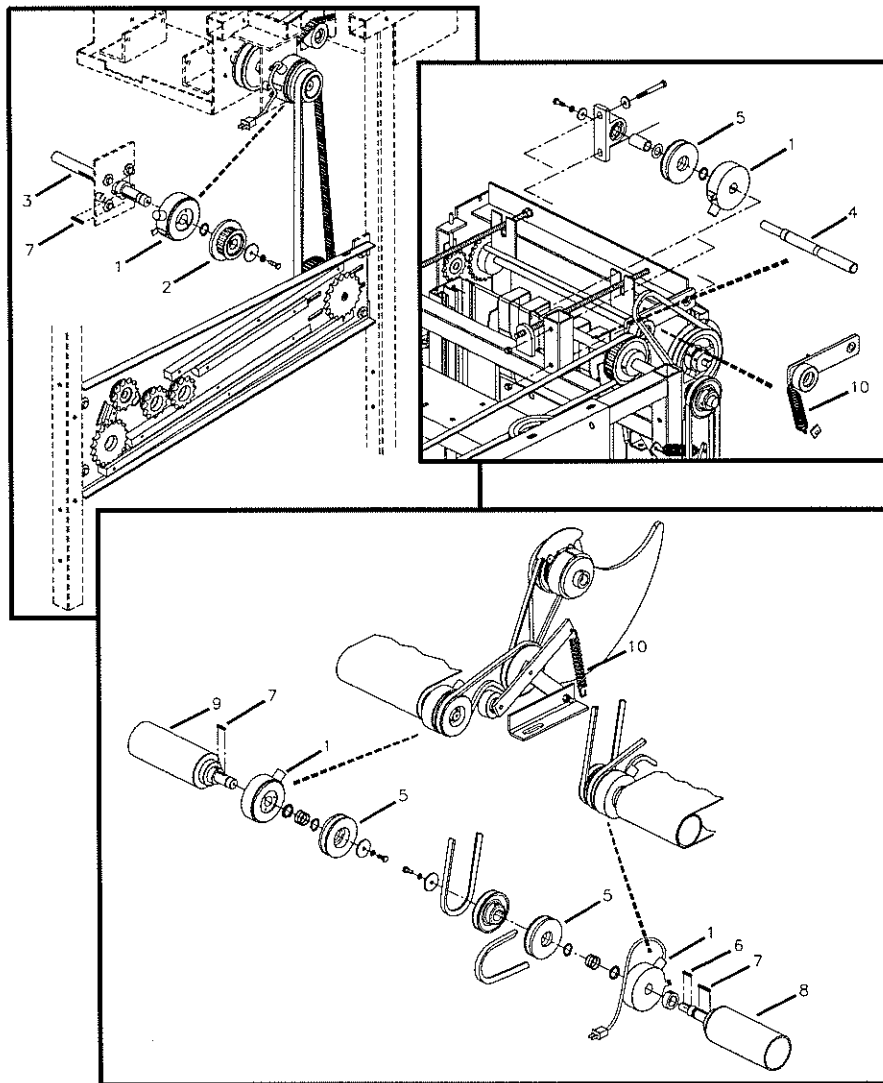
Following re-assembly of the sweep drive clutch assembly, make sure to re-adjust the tension on the timing belt as explained in adjustment 2E. The other clutch assemblies need only to have the spring replaced in order to re-establish tension on the belt.

¹ Do not apply too much lubricant so as to have it overflow from the shaft to the component's outer surfaces. The clutch's facing must **never** be lubricated.

² Available from Fenix and its affiliated distributors under part number Z-76764.

Fenix Service Bulletin Number MM-002

ITEM	PART NO.	DESCRIPTION
1	301-1400-00	MAGNETIC CLUTCH
2	302-2050-00	TIMING GEAR
3	302-2060-00	DRIVE TRAIN SHAFT
4	302-2080-00	DRIVE TRAIN SHAFT
5	302-2090-00	DRIVE TRAIN PULLEY
6	302-2410-00	MACHINE KEY
7	302-2430-00	MACHINE KEY
8	302-6050-00	REAR CONVEYOR ROLLER [LEFT LANE]
9	302-6075-00	REAR CONVEYOR ROLLER [RIGHT LANE]
10	S-080	TENSION SPRING



**Modification of the pit deflector blocks***December 1995 (revised March 1997)*

The pit deflector blocks are now produced with an extra hole in order to accommodate for an extra bolt. When replacing old deflector blocks with the newer model, you will have to drill a 3/8" [10mm] hole in the metal kickback in order to accommodate for the extra 5/16" bolt.

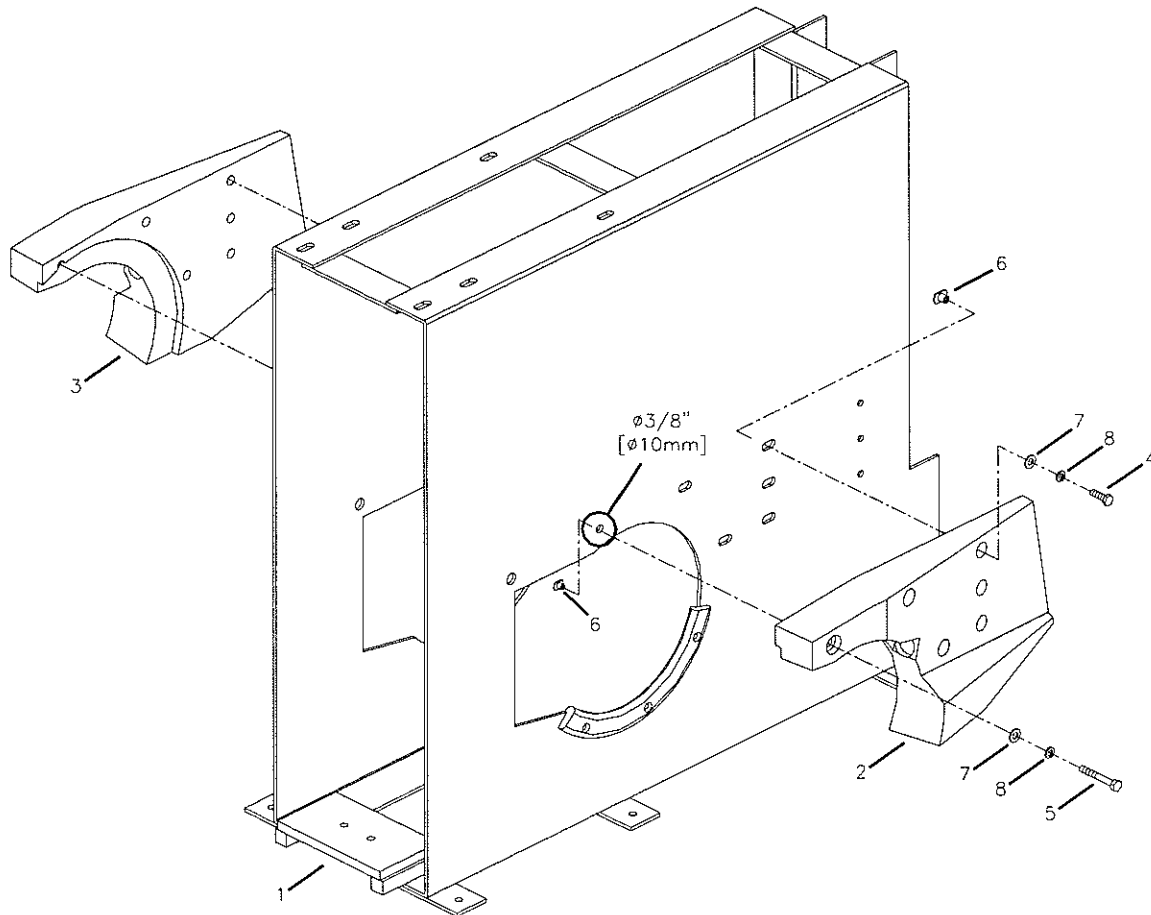
The extra hole has been added to the deflector block in order to reinforce its strength and resistance to the constant abuse which it is subject to through the impact of bowling balls.

When replacing old deflector blocks with the newer model, remove the old deflector block and then drill a 3/8" [10mm] hole in the metal kickback as shown in the diagram. Install the new deflector block, making sure that all bolts used to hold it in place are treated with a removable thread locker¹, such as Loctite 242.

¹ A removable thread locker is available through Fenix and its affiliated distributors under part number Z-24221.

Fenix Service Bulletin Number MM-003

ITEM	PART NO.	DESCRIPTION
1	302-6500-00	KICKBACK FRAME
2	303-6600-00	DEFLECTOR BLOCK [LEFT LANE]
3	303-6605-00	DEFLECTOR BLOCK [RIGHT LANE]
4	7010-003118-100	HEXAGON CAP SCREW
5	7010-003118-225	HEXAGON CAP SCREW
6	7046-003118-037	WELD NUT
7	7050-034068-006	FLAT WASHER
8	7060-031057-009	LOCK WASHER



**Modification of the drawer guide rollers***March 1996 (revised March 1997)*

The two rear plastic guide rollers (303-3300-00) have been replaced by aluminum (308-3300-00) ones.

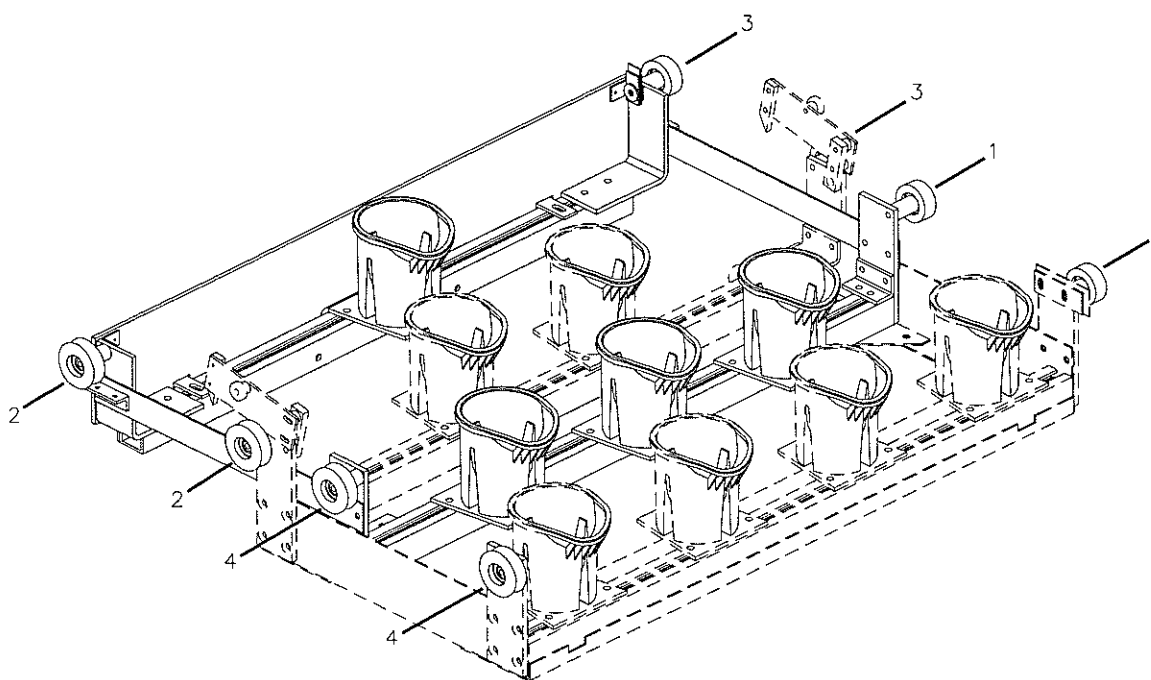
The two rear plastic guide rollers used on the right side of the drawer have a tendency to break due to the impact caused by the pins when the magazine loads the drawer's row of seven.

When replacing plastic guide rollers which support the row of seven on the right side of the drawer, use the new aluminum guide rollers. The plastic guide rollers are now only to be used for the drawer's row of three as shown in the diagram¹.

¹ The flat rollers (303-2340-00 and 308-2340-00) used on the left side of the drawer are shown for reference. Contrary to the right side, the aluminum rollers are used for the drawer's row of three, while the plastic rollers are used for the drawer's row of seven.

Fenix Service Bulletin Number MM-004

ITEM	PART NO.	DESCRIPTION
1	303-2340-00	FLAT ROLLER
2	303-3300-00	ROLLER GUIDE
3	308-2340-00	FLAT GUIDE ROLLER
4	308-3300-00	GUIDE ROLLER



**Important notice concerning the sweep boards***April 1996 (revised March 1997)*

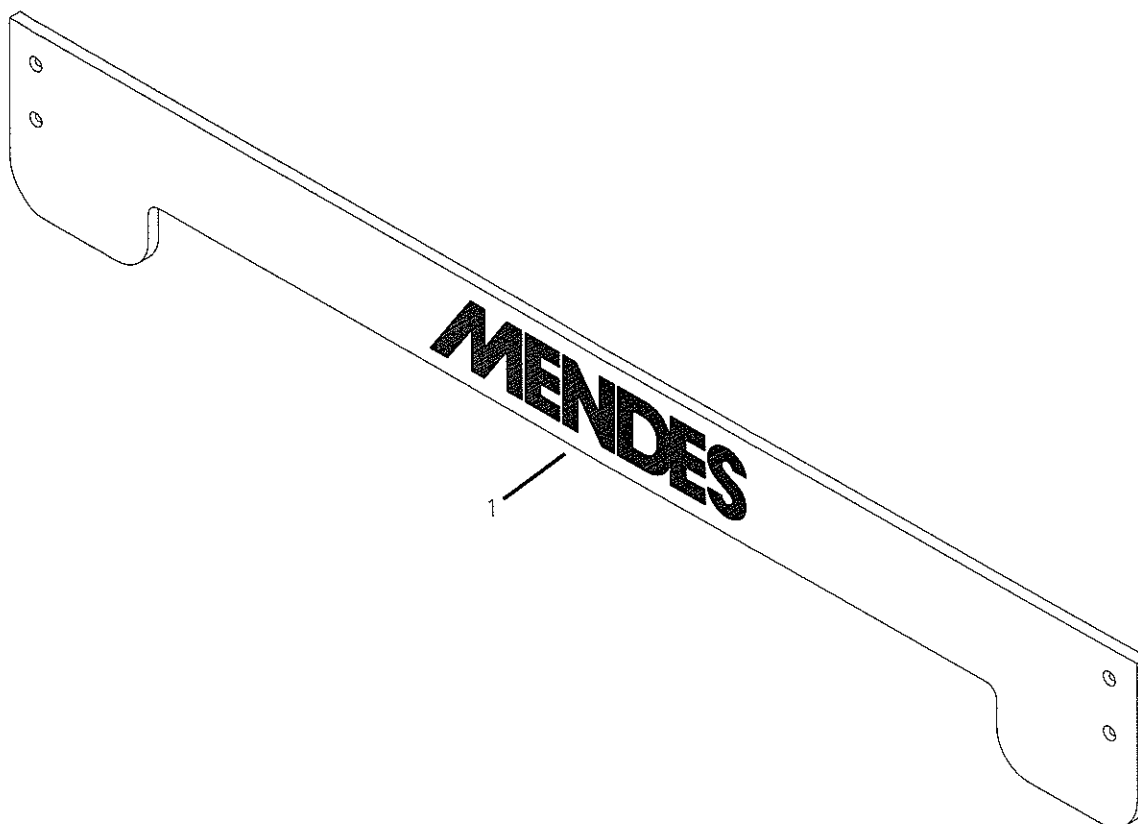
Numerous problems have been signaled pertaining to the sweep's ability to provide enough torque to lift itself.

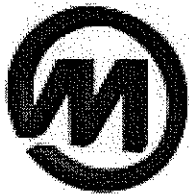
In all of these cases it has been found that extra weight has been added to the sweep boards.

The sweep board is an integral part of the MM-2001 pinsetter and was designed to perform its task of removing deadwood from the lanes with the greatest ease and the least amount of wear to the pinsetter itself. At no time should additional weight be affixed to the sweep board (e.g. publicity panels) since this will greatly reduce the life expectancy of all moving parts pertaining to the sweep and at the same time will void the Fenix Warranty.

Fenix Service Bulletin Number MM-005

ITEM	PART NO.	DESCRIPTION
1	303-4010-00	SWEEP BOARD



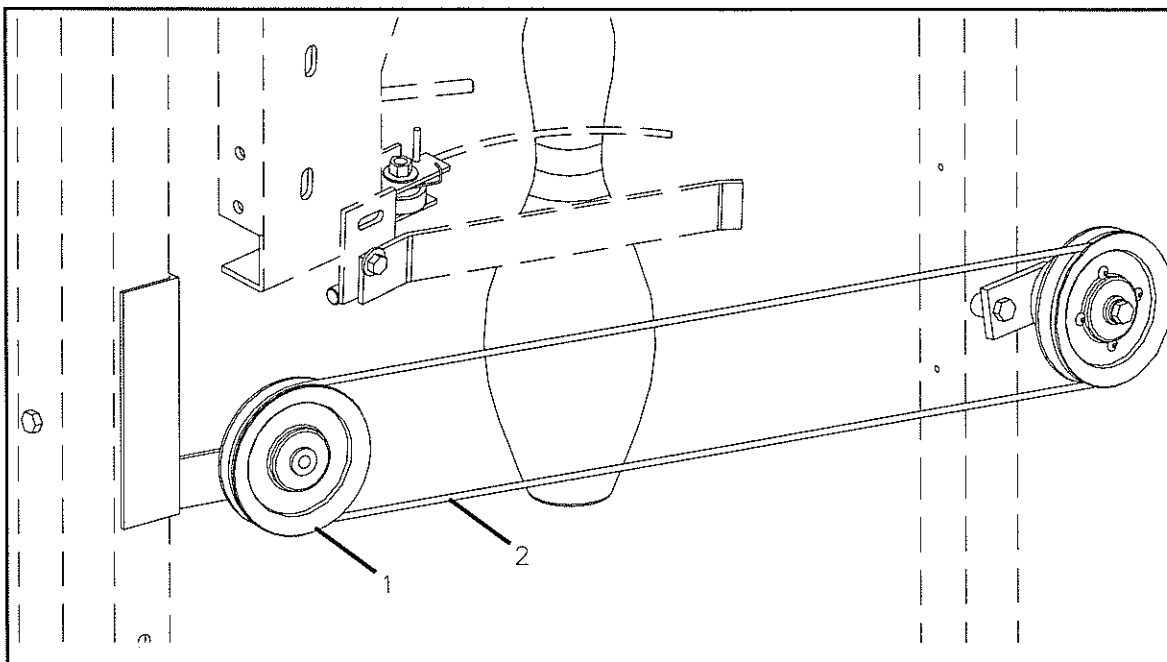
**Adjusting the carousel O-ring***April 1996 (revised March 1997)*

The carousel O-ring was designed to stabilize the bowling pins as they are picked up by the carousel from the carousel staging assembly. If the O-ring becomes too taut the pins will bounce off it and spin erratically as they travel.

To remedy this situation, loosen the bolt which holds the pulley in place and then remove a bit of tension on the O-ring by moving the pulley in the necessary direction. Retighten the bolt once the necessary tension has been obtained.

Fenix Service Bulletin Number MM-006B

ITEM	PART NO.	DESCRIPTION
1	302-1120-00	PULLEY
2	304-5010-00	CARROUSEL O-RING



**Lubrication of the carrousel drive chain***April 1996 (revised March 1997)*

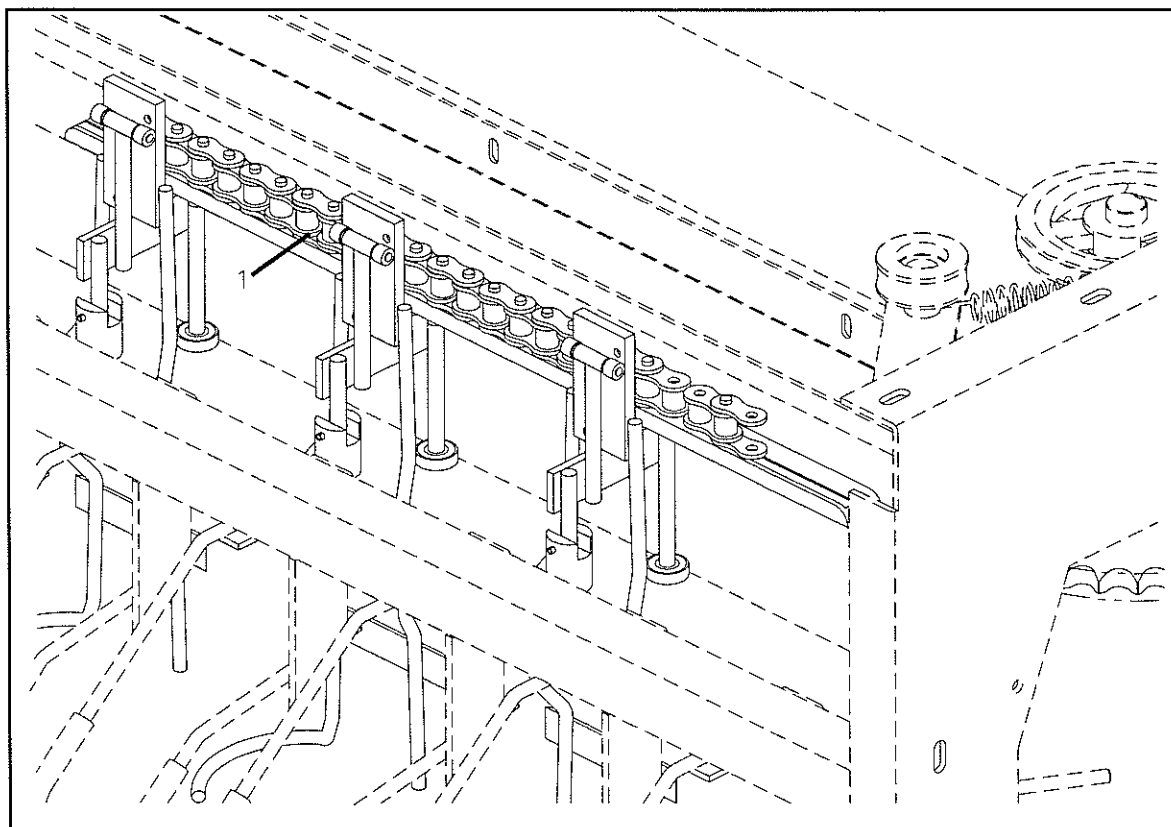
The carrousel's drive chain must be kept well lubricated in order to avoid unnecessary "SOLENOID TROUBLES".

The jerky movement of a badly lubricated carrousel drive chain will inevitably cause problems and greatly reduce the parts' life expectancy.

Use a motorcycle chain oil or equivalent in order to lubricate this chain. Such an oil is available through Fenix under part number Z-PJ1-8.

Fenix Service Bulletin Number MM-006A

ITEM	PART NO.	DESCRIPTION
1	302-5050-00	CARROUSEL CHAIN



**Fine tuning the carousel adjustments***April 1996 (revised March 1997)*

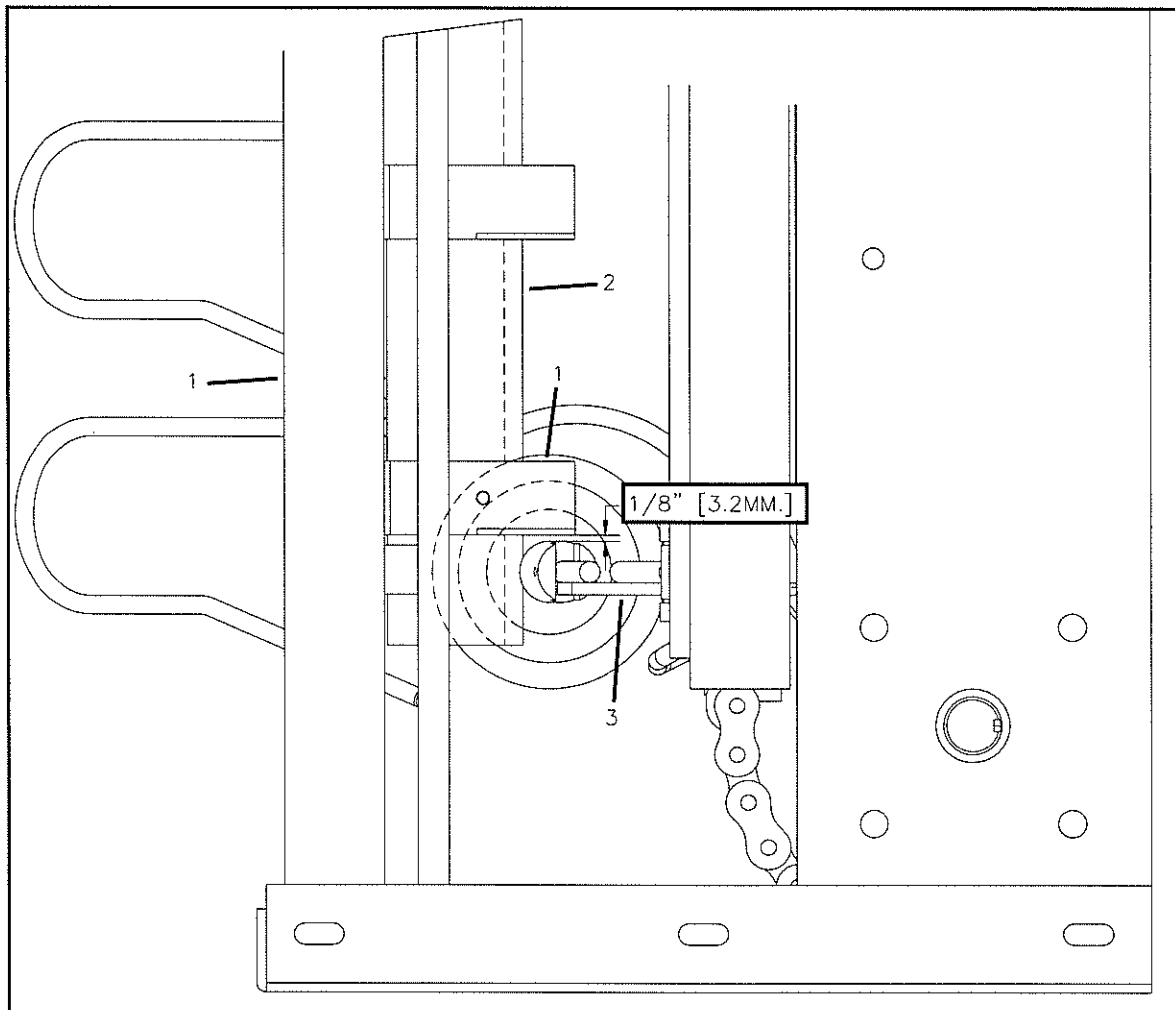
In some cases, using the templates supplied with the MM-2001 spare parts kit to perform the various carousel adjustments is not enough to obtain maximum performance.

The adjustment templates were designed to facilitate the adjustment of the carousel's components, but sometimes a fine-tuning is also required.

Following adjustments 6G, 6H and 6I; place a bowling pin in one of the carousel buckets and gently rotate the carousel. As the carousel rotates, the bowling pin should touch the magnet disengagement plate 1/8" [3mm] before coming in contact with the knife part of the head rest frame. If the 1/8" [3mm] distance is not present after having performed the adjustments with the templates, repeat adjustment 6G using the procedure described here.

Fenix Service Bulletin Number MM-006C

ITEM	PART NO.	DESCRIPTION
1	302-5130-00	CARROUSEL PIN LOADER
2	302-5700-00	HEAD REST FRAME
3	303-5700-00	MAGNET DISENGAGEMENT PLATE



**Cleaning the drawer guide rollers and slides***April 1996 (revised March 1997)*

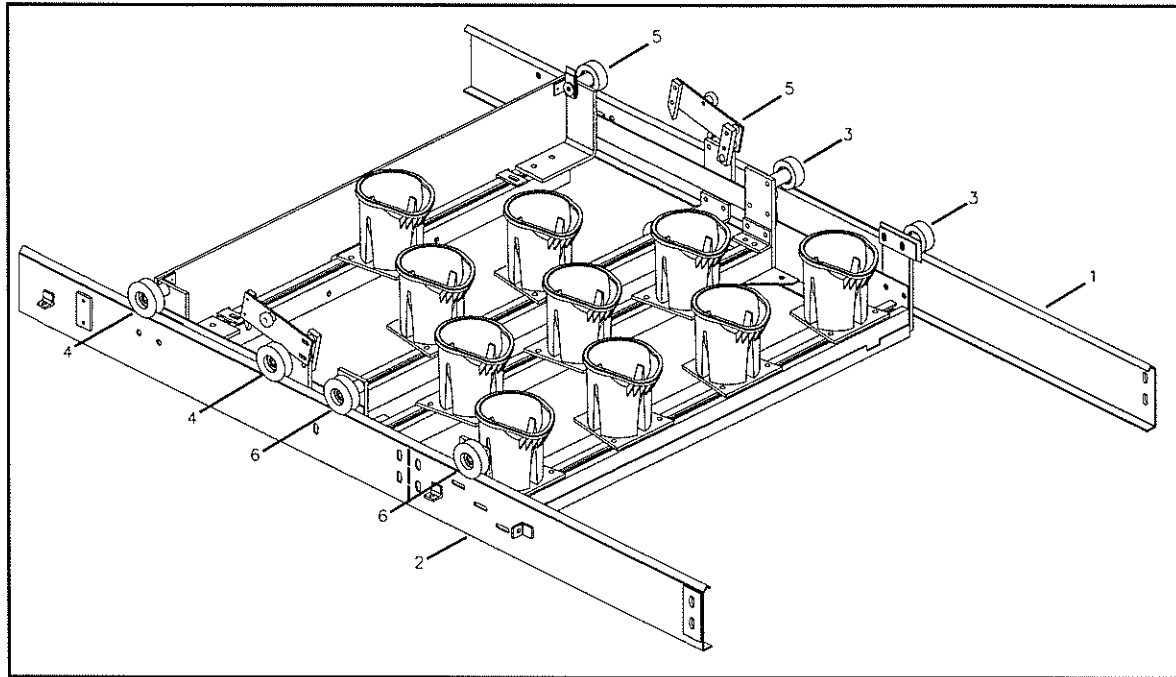
An efficient grounding system is integrated with all of the MM-2001 pinsetter components. If your equipment is not properly grounded, the central processing units [CPU] can literally blow their electronic chips when they receive a static electricity discharge, be it from bowlers or a defective part.

Dirt and grime buildup on the drawer's guide rollers and slides act as a deterrent to the pinsetter's electrical grounding system.

Keep the drawer's guide rollers and slides clean in order to avoid buildup and eventually cause damage to the pinsetter's electronic components.

Fenix Service Bulletin Number MM-007A

ITEM	PART NO.	DESCRIPTION
1	302-3010-00	DRAWER SLIDE [RIGHT SIDE]
2	302-3015-00	DRAWER SLIDE [LEFT SIDE]
3	303-2340-00	FLAT ROLLER
4	303-3300-00	ROLLER GUIDE
5	308-2340-00	FLAT GUIDE ROLLER
6	308-3300-00	GUIDE ROLLER



**Adjusting the drawer back limit optical sensor***April 1996 (revised March 1997)*

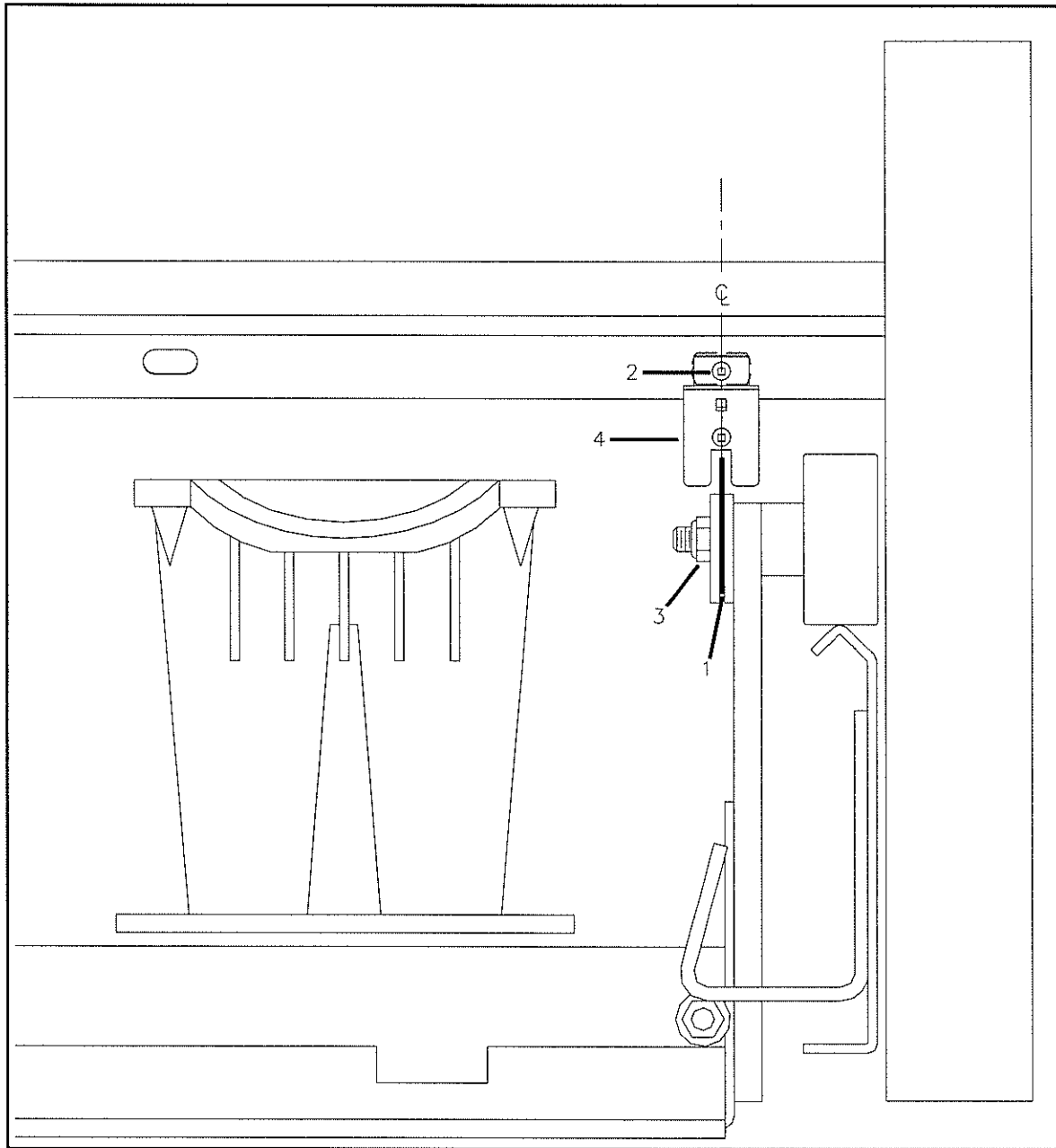
The Drawer SPI Communication Trouble message is used simply to inform the user that a communication problem or glitch has occurred with the drawer's DC drive. In some cases, there is no communication problem and there is no glitch.

The drawer's back limit optical sensor and actuator, if badly adjusted, may cause unnecessary "DRAWER SPI COM TROUBLES".

To avoid this problem, the drawer's back limit optical sensor must be kept centered with its actuator as explained in adjustment 8G. Place the drawer in its rear position, loosen either the nut, which holds the actuator, or the bolt, which holds the sensor, and adjust the two components until perfectly aligned.

Fenix Service Bulletin Number MM-007B

ITEM	PART NO.	DESCRIPTION
1	304-3530-00	BACK LIMIT ACTUATOR
2	7016-410632-100	ROUND SOCKET HEAD MACHINE SCREW
3	7044-003716-000	THIN NYLON LOCKNUT
4	SB-ECIL-325-FS	OPTICAL SENSOR ASSEMBLY



**Corrections to service manual***April 1996*

A few items were erroneously input in the last printing of the MM-2001 Pinsetter Service Manual (March 1996). If your manual is a more recent release, the corrections have already been made.

- 1) There is a belt tension correction to be made in Table 4 on page 72 of the MM-2001 Pinsetter Service Manual. The tension given for adjustment number 8E (Drawer Motor Belt, 255L075) should read 3/8" (10mm) instead of 1/4" (6mm).
- 2) Index number 8 on page 239 of the MM-2001 Pinsetter Service Manual should read 305-8550-00 ACTUATOR SPRING. Part number 308-8550-00 does not exist.
- 3) Index number 39 on page 224 of the MM-2001 Pinsetter Service Manual should read 7010-005013-325 HEXAGON CAP SCREW, 1/2"-13 X 3-1/4".

Make the necessary changes in your service manual.

**Removal of the deck detection plate foams***January 1997 (revised March 1997)*

The detection plate foams are no longer installed on new productions of the pinsetter. These foams were initially installed in order to reduce vibration, which could possibly activate the out-of-range input signal. In some cases these foams actually cause false "out-of-range and deck troubles". If you are plagued with inexplicable "out-of-range and deck troubles", the elimination of the deck plate foams will resolve this problem.

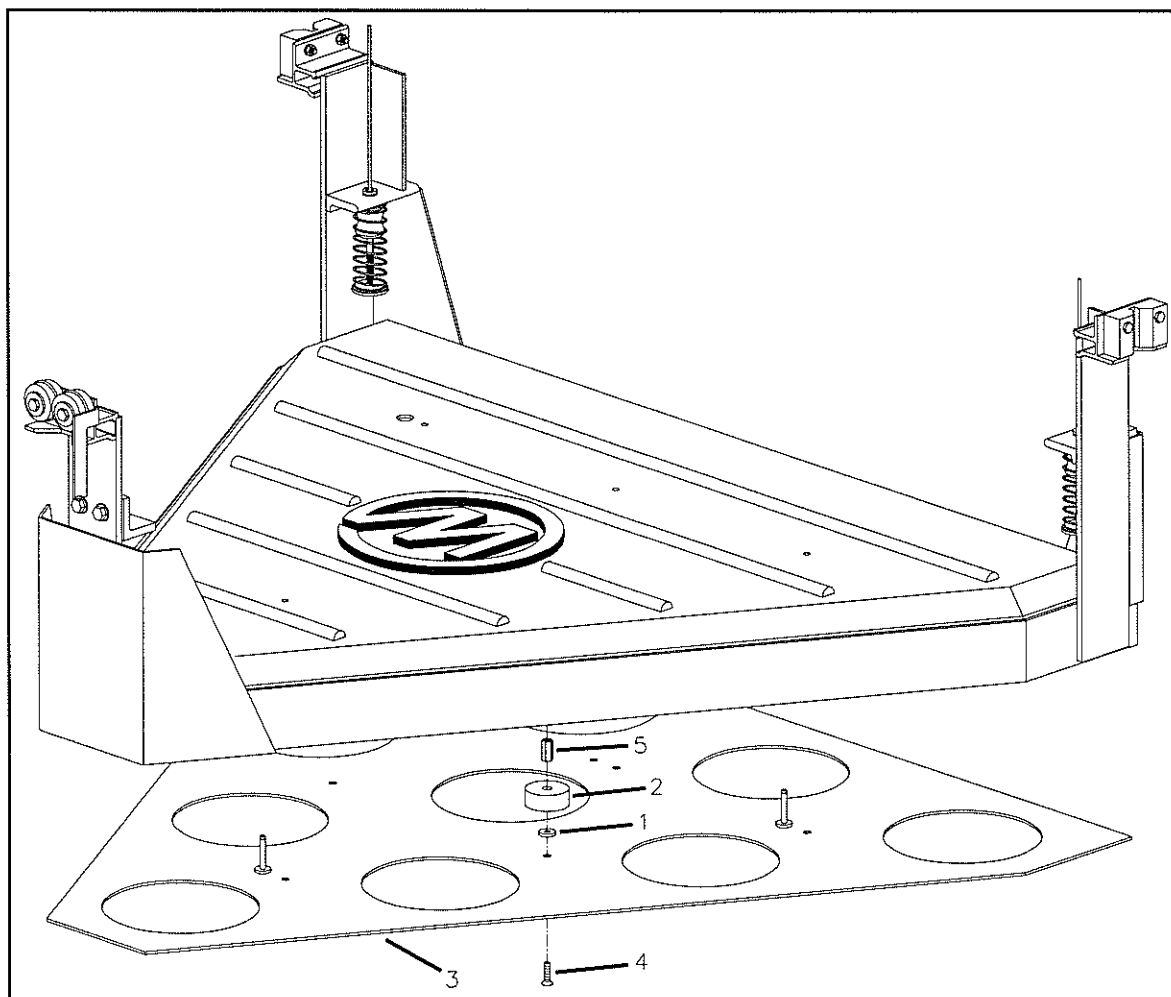
These foams have a tendency to absorb the liquid used in the dishes as the liquid splashes around inside. Once the detection plate foams become saturated with the dish liquid, they become highly conductive. This conductivity closes the out-of-range circuit and signals false "out-of-range and deck troubles" on the Magnet 2001 Controller.

In both of the above instances, use the Magnet 2001 Controller to verify the input signal generated from the out-of-range detector at the time of the displayed trouble.

- A) If the out-of-range input signal's value is "0", the trouble message is correct and you should refer to the troubleshooting section of your service manual.
- B) If the out-of-range input signal's value is "1", the out-of-range circuit has caused the problem. To rectify the situation, dismantle the out-of-range plate and remove the detection plate foams along with their accompanying hardware [coupling, washer, and machine screw]. Do not replace the detection plate foams since the distance between the out-of-range plate and the detection unit is large enough to compensate for the minimal vibration.

Fenix Service Bulletin Number MM-009

ITEM	PART NO.	DESCRIPTION
1	302-1510-00	SPECIAL WASHER
2	304-1590-00	DETECTION PLATE FOAM
3	308-1600-00	OUT OF RANGE PLATE
4	7016-312520-100	FLAT SOCKET HEAD MACHINE SCREW
5	7064-002520-087	COUPLING



**Adjusting the carousel solenoids***January 1997 (revised March 1997)*

The carousel solenoids are used to deposit pins into the magazine stations. As a pin activates the pin detector optical sensor located on the right side of the pinsetter, it lets the electronics know that a pin is on its way to the front. The electronics then activates the appropriate solenoid cam in order to push the pin loader to the front, releasing the pin into the magazine station.

In order to perform this complex operation, the solenoid cams must be able to move freely and must descend to their original position immediately after the solenoid is deactivated. Adjustment 6E of the pinsetter service manual must also be performed as precisely as possible.

After having performed the above, numerous "sole. (?) carrou troubles" may still occur if the carousel bucket's ball bearings are passing underneath the solenoid cams at the end of their run causing the pin to dump incorrectly.

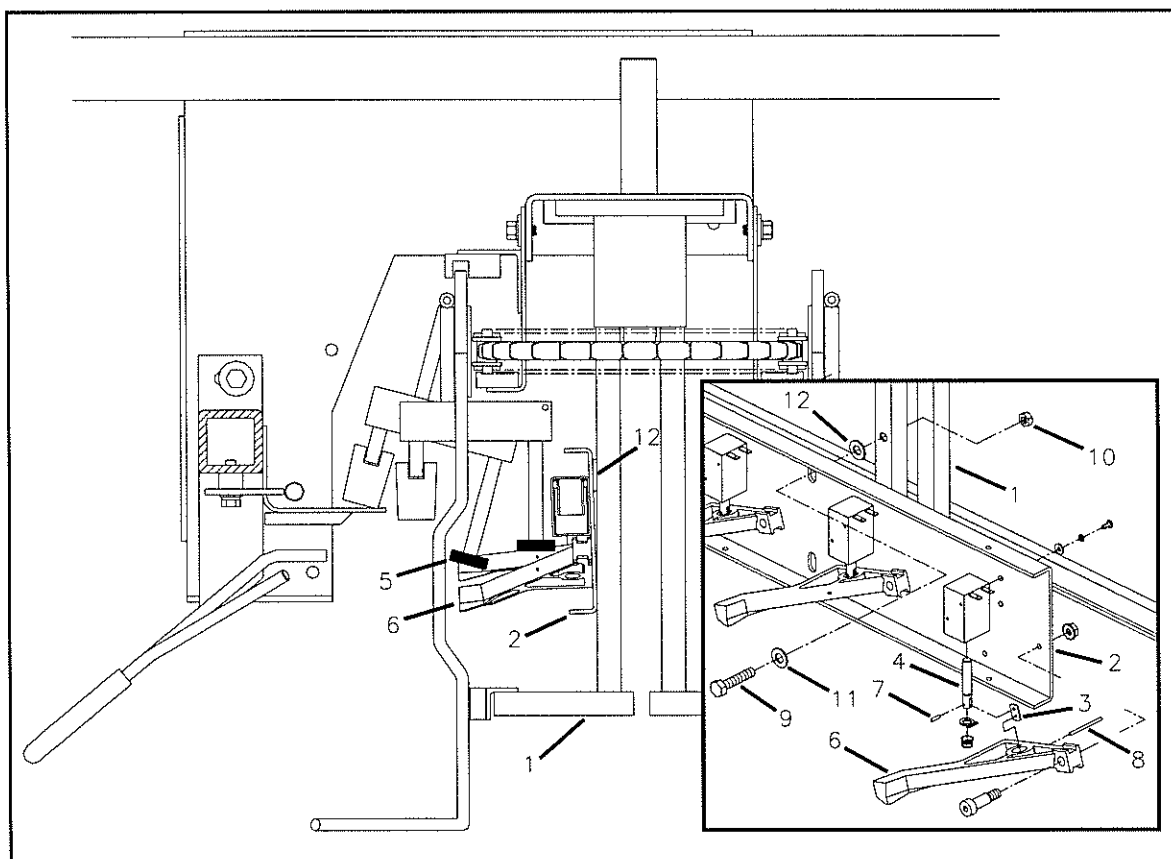
There exist two possible solutions in order to remedy the situation.

- 1) Replace the attachment plate used to join the solenoid shaft and the carousel cam.
- 2) Insert 1/8" spacer washers between the center carousel frame and the mounting plate in order to incline the mounting plate toward the ball bearings¹.

¹ Perform adjustment 6E once again after having performed this procedure.

Fenix Service Bulletin Number MM-010

ITEM	PART NO.	DESCRIPTION
1	302-5200-00	CARROUSEL FRAME
2	302-5210-00	MOUNTING PLATE
3	302-5220-00	ATTACHMENT PLATE
4	302-5270-00	SPECIAL SOLENOID SHAFT
5	302-6200-00	BALL BEARING
6	303-5210-00	SOLENOID CAM
7	7006-000900-037	SPRING TENSION PIN
8	7006-000900-100	SPRING TENSION PIN
9	7010-003118-150	HEXAGON CAP SCREW
10	7036-003118-000	NYLON LOCKNUT
11	7050-028062-006	FLAT WASHER
12	7050-034100-012	FLAT WASHER



**Modification of the pit table***March 1997*

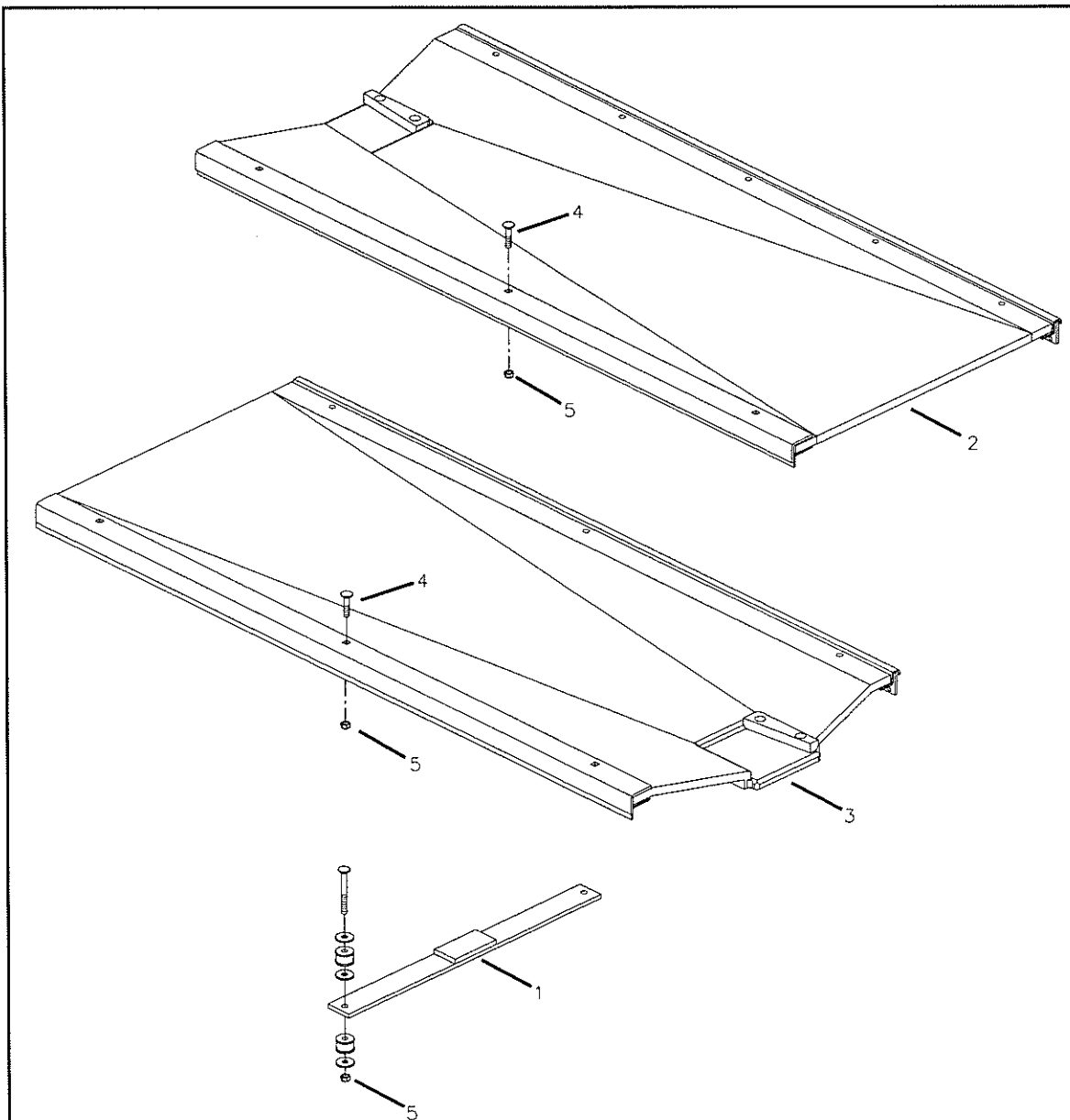
The pit table center supports are no longer installed on new productions of the pinsetter. These supports were initially installed in order to better support the pit table on its frame. Due to a high breakage level of the bolts used to fasten the support to the table, these center supports have been eliminated.

The constant impact and the violent shocks caused by the bowling ball falling on the pit table eventually breaks the bolts used to fasten the center supports.

If you have broken bolts at this location, remove the pit table center supports and corresponding hardware. Replace the 2-1/2" carriage bolt you removed with a 1-1/2" one. Fasten the bolt in place using the existing nylon nut.

Fenix Service Bulletin Number MM-011

ITEM	PART NO.	DESCRIPTION
1	302-6176-00	TABLE SUPPORT
2	333-6170-00	PIT TABLE ASSEMBLY - COMPLETE
3	333-6175-00	PIT TABLE ASSEMBLY - COMPLETE
4	7012-003716-150	CARRIAGE BOLT
5	7036-003716-000	NYLON LOCKNUT



**Modification of the carrousel sprockets***March 1997*

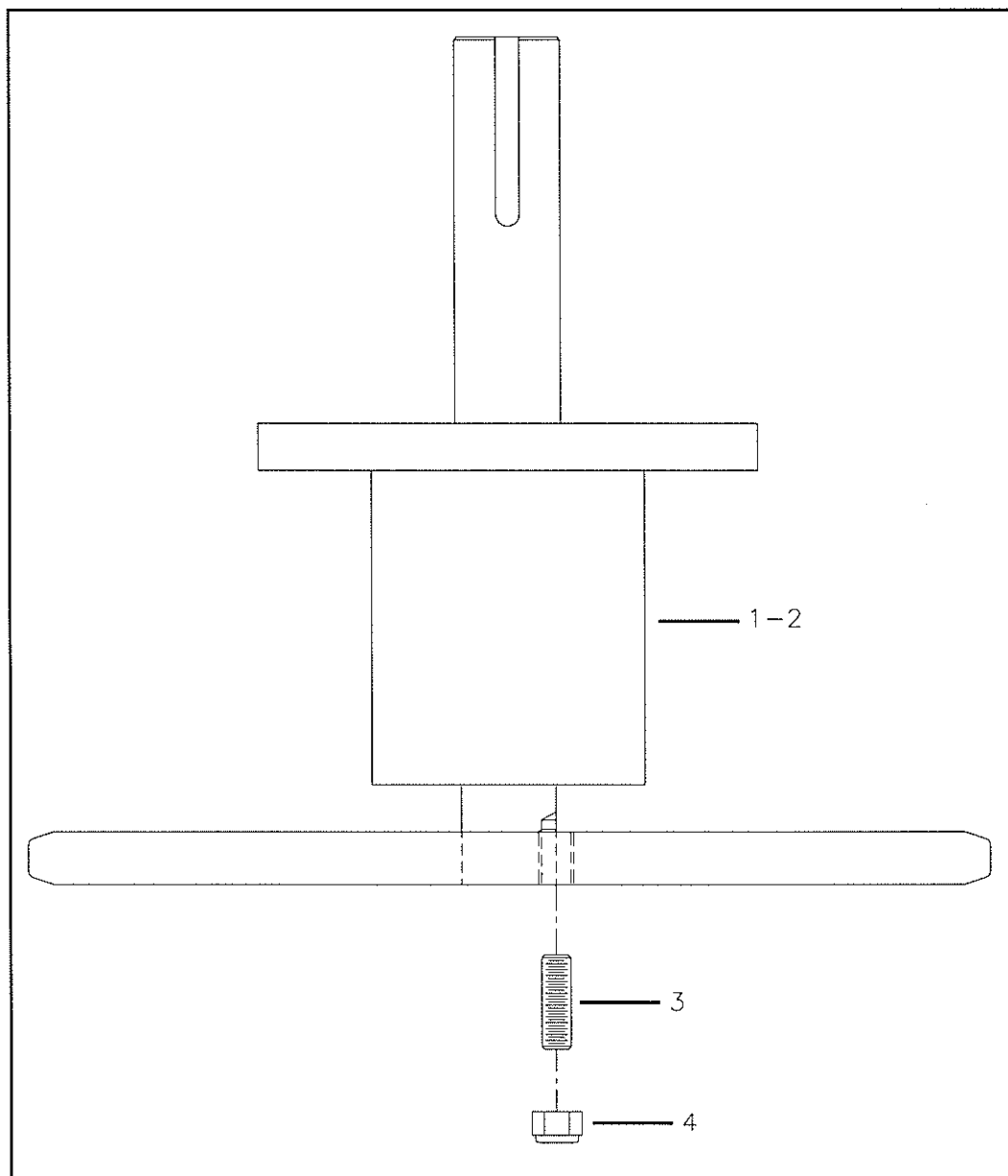
Starting with MM-2001 pinsetter serial number MMP-00787, the carrousel sprockets have been modified from their original design in order to rectify the small problem caused by the set screws becoming loose. The complete sprocket assemblies retain the same number since they remain compatible with the older models. It must be noted that some of the individual parts which make up the complete assemblies have changed. The new carrousel sprockets parts listings will be in the third edition of the MM-2001 Pinsetter Service Manual.

If you have the older model sprockets, simply verify that the set screws are still solidly engaged in place. Remove any loose set screws and replace them with longer ones as shown on the flip side of this bulletin. Make sure that all set screws replaced are treated with a removable thread locker¹, such as Loctite 242. Lock the new set screw in place using a nylon nut.

¹ A removable thread locker is available through Fenix and its affiliated distributors under part number Z-24221.

Fenix Service Bulletin Number MM-012

ITEM	PART NO.	DESCRIPTION
1	322-5060-00	SHAFT SPROCKET ASSEMBLY - COMPLETE
2	322-5070-00	IDLER SPROCKET ASSEMBLY - COMPLETE
3	7014-003118-100	HEXAGON SOCKET SET SCREW
4	7036-003118-000	NYLON LOCKNUT



**Addition of the ball deviators***March 1997*

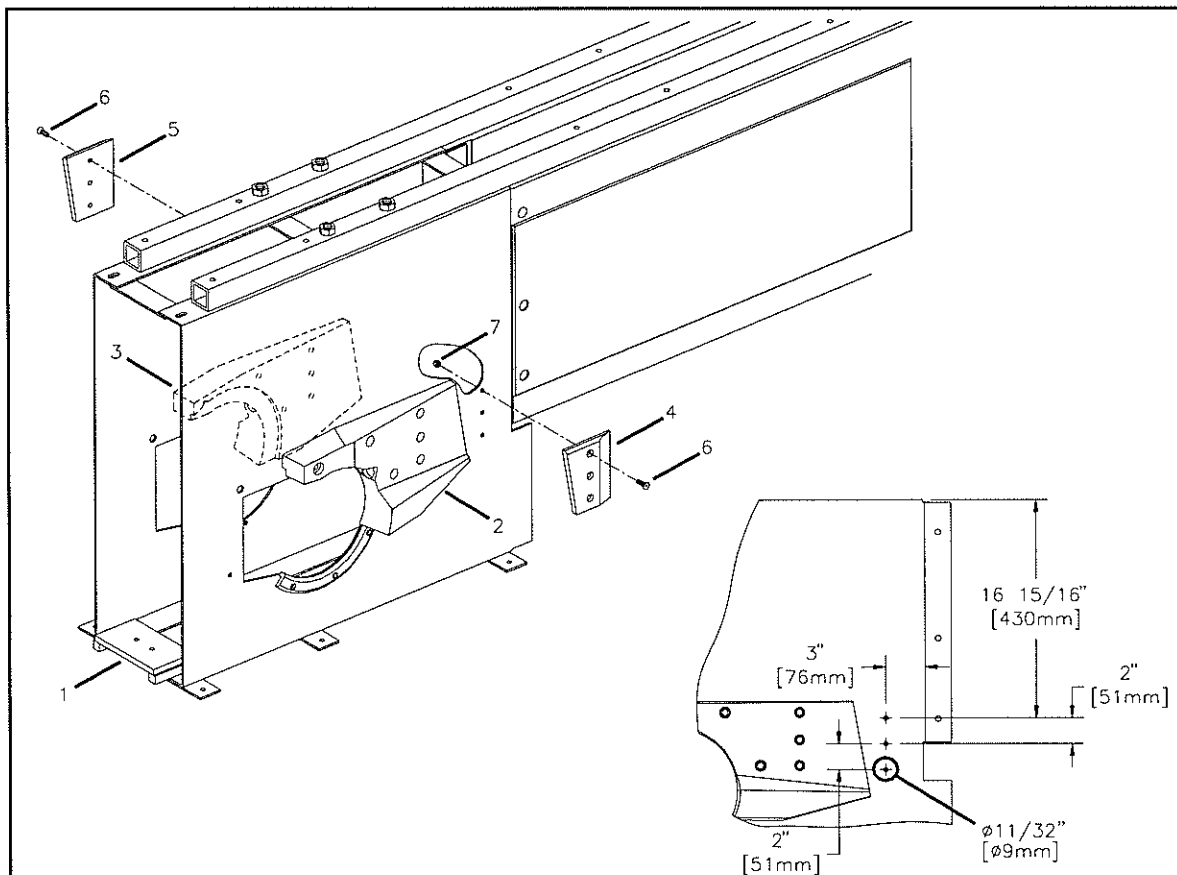
Starting with MM-2001 pinsetter serial number MMP-00717, ball deviators have been added to the front of the pit deflector blocks.

This measure was proven necessary in order to absorb the brunt of the ball impact thus extending the life expectancy of the deflector blocks. The new ball deviators must be installed on older models of the MM-2001 pinsetter in order to uphold the existing warranty on the deflector blocks.

When adding the new ball deviators, drill three 11/32" [9mm] holes in the metal kickback as shown in the diagram. Install the new ball deviators, making sure that all bolts used to hold it in place completely engage the nylon nut.

Fenix Service Bulletin Number MM-013

ITEM	PART NO.	DESCRIPTION
1	302-6500-00	KICKBACK FRAME
2	303-6600-00	DEFLECTOR BLOCK [LEFT LANE]
3	303-6605-00	DEFLECTOR BLOCK [RIGHT LANE]
4	303-6620-00	BALL DEVIATOR [LEFT LANE]
5	303-6625-00	BALL DEVIATOR [RIGHT LANE]
6	7016-313118-100	FLAT SOCKET HEAD MACHINE SCREW
7	7036-003118-000	NYLON LOCKNUT



**Modification of the carousel O-ring guard***March 1997*

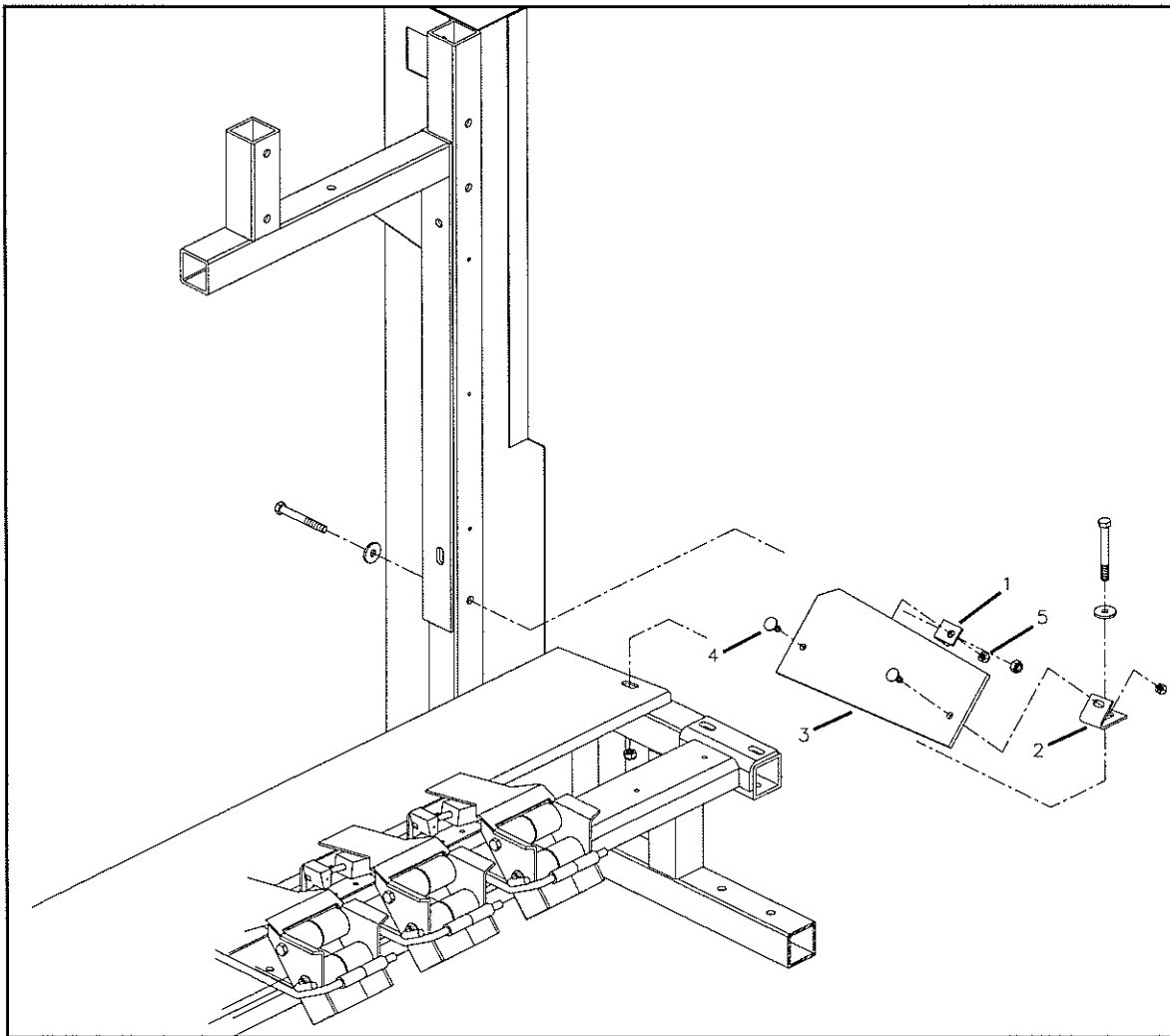
Starting with MM-2001 pinsetter serial number MMP-00779, the carousel O-ring guards have been modified. Although its design has changed drastically, the newer model is 100% compatible with the older pinsetters.

This measure was proven necessary in order to reduce the number of pins which were falling onto the drawer slides causing "drawer troubles".

If you experience this problem, simply replace the older model O-ring guard with the new one.

Fenix Service Bulletin Number MM-014

ITEM	PART NO.	DESCRIPTION
1	302-0080-00	BRACKET
2	302-5380-00	ATTACHMENT BRACKET
3	303-5380-00	O-RING GUARD
4	7012-003118-075	CARRIAGE BOLT
5	7036-003118-000	NYLON LOCKNUT



**Adjusting the deck load pulley***Adjusting the deck load pulley*

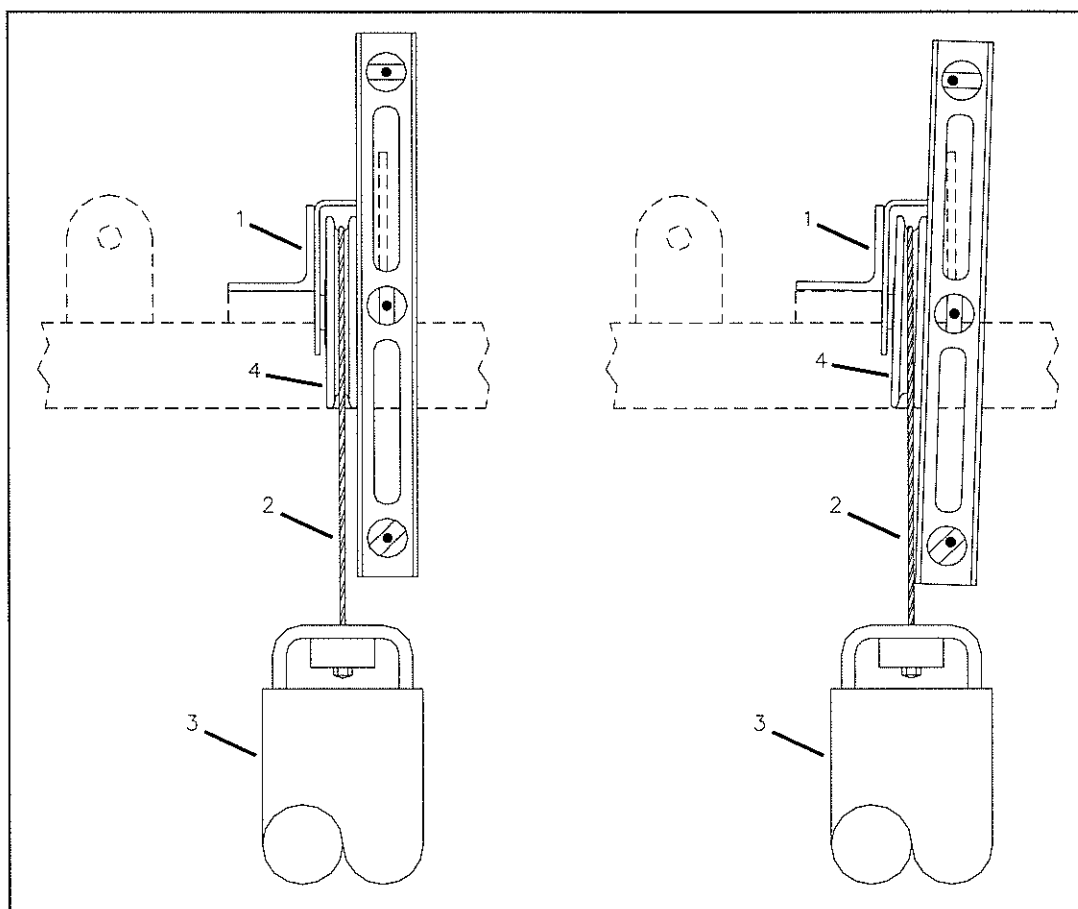
The deck load wire carries a considerable weight and if not properly aligned with its pulley, the wire will fray and eventually break.

The constant movement and considerable weight of the deck load eventually causes the U-shaped bracket which supports the pulley to bend out of shape.

Use a carpenter's level to verify the U-shaped bracket located on the end of the load arm on a quarterly basis. Correct the situation if necessary.

Fenix Service Bulletin Number MM-015

ITEM	PART NO.	DESCRIPTION
1	302-0170-00	LOAD ARM
2	302-1180-00	DECK LOAD WIRE
3	302-1190-00	DECK LOAD
4	302-1120-00	PULLEY



**Modification to the pit apron, small***March 1997*

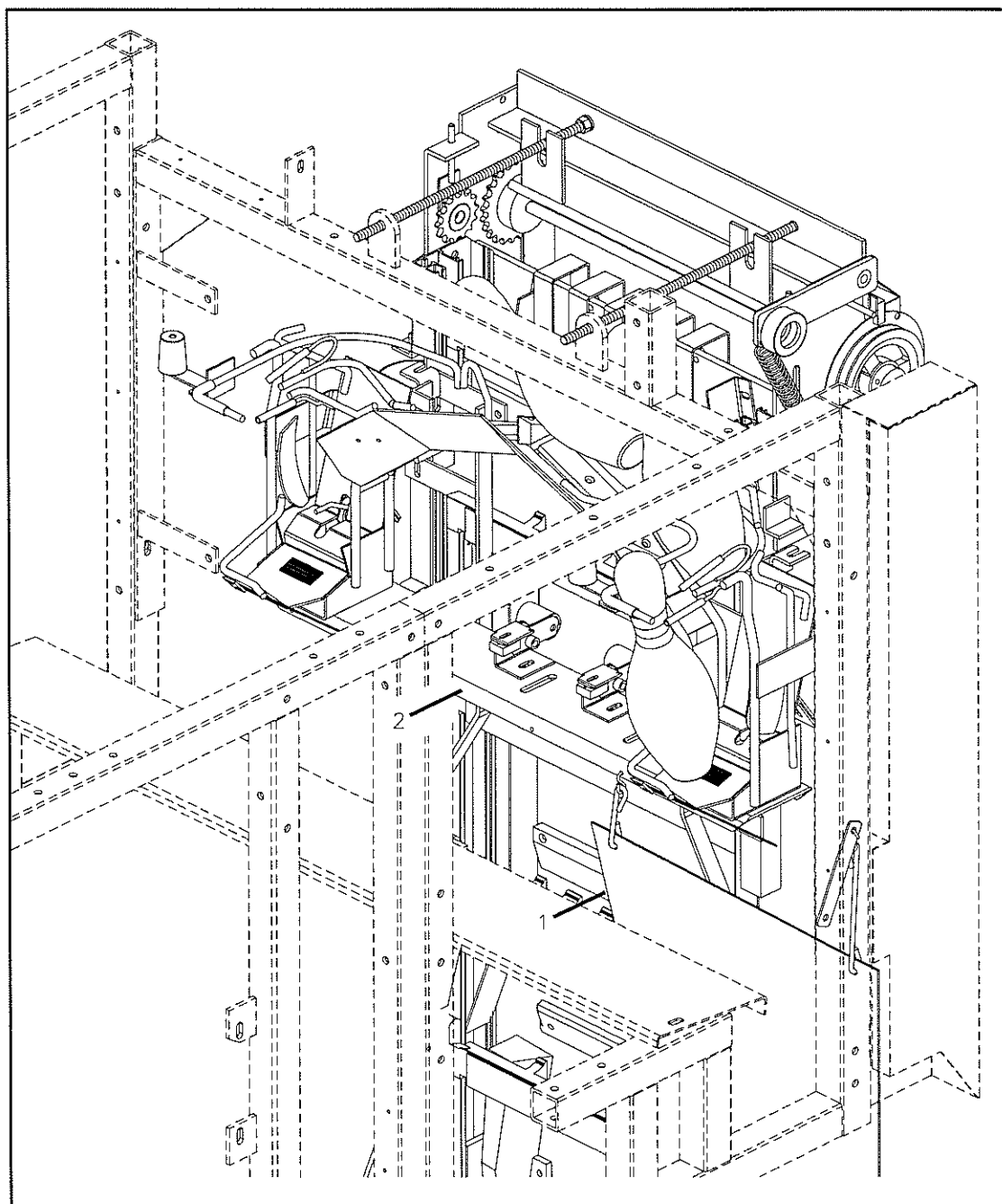
A slight modification has been made to the right pinsetters with regard to the attachment of the small pit apron to the pin elevator. This modification was deemed necessary in order to reduce the number of aprons being ripped by pins falling from the carousel staging assembly.

All small pit aprons located on the right pinsetters [even numbered lanes] **must** be corrected as shown in the diagram on the flip side of this bulletin in order to uphold the existing warranty on the aprons.

Simply detach the small pit apron from the rear of the pin elevator and attach it to the front of the carousel staging assembly as indicated.

Fenix Service Bulletin Number MM-016

ITEM	PART NO.	DESCRIPTION
1	304-6200-00	PIT APRON, SMALL
2	322-8500-00	CARROUSEL STAGING ASSEMBLY - COMPLETE



**Modification of the ball door tension spring***March 1997*

MM-2001 pinsetter serial number MMP-00701 introduced a slight modification concerning the attachment of the tension spring on the ball door's drive tension plate. It is now attached to a hole in the tension plate itself instead of being attached to the hexagon cap screw. This modification was made necessary in order to better control the tension of the belts following an increase in the ball door torque.

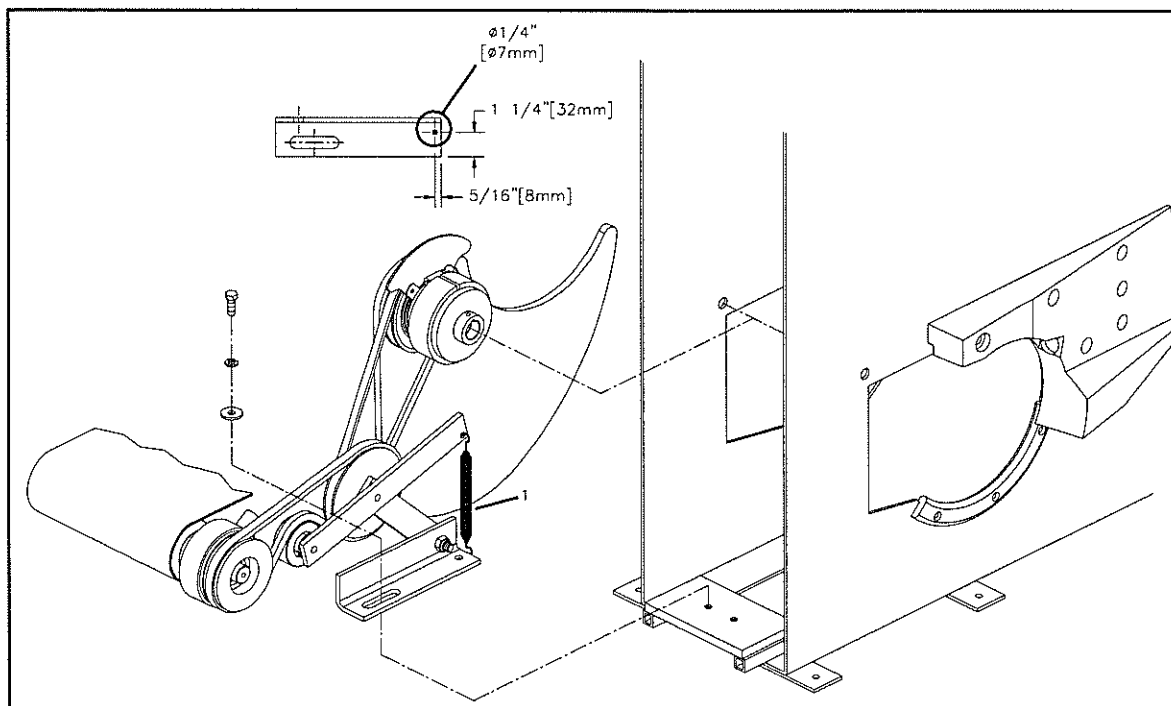
Ball door troubleshooting notes

If you have problems with bowling pins exiting the pit through the ball doors, the following items should be verified in order:

- 1) Adjustment 3E - ball door clutch cleaning and lubrication;
- 2) Adjustment 3A - ball ready optical sensor;
- 3) Adjustment 4D - ball door torque [If you have older pinsetters and have a problem with the ball door drive belts slipping after having increased the ball door torque, drill a 1/4" (7mm) hole in the tension plate as shown in the diagram on the flip side and attach the tension spring to this new hole].
- 4) Adjustment 4E - ball door cam [this adjustment should be performed in a manner which causes the ball door to close immediately following the passage of the ball without the door touching the ball].
- 5) Adjustment 4F - ball door actuator.

Fenix Service Bulletin Number MM-017

ITEM	PART NO.	DESCRIPTION
1	S-080	TENSION SPRING



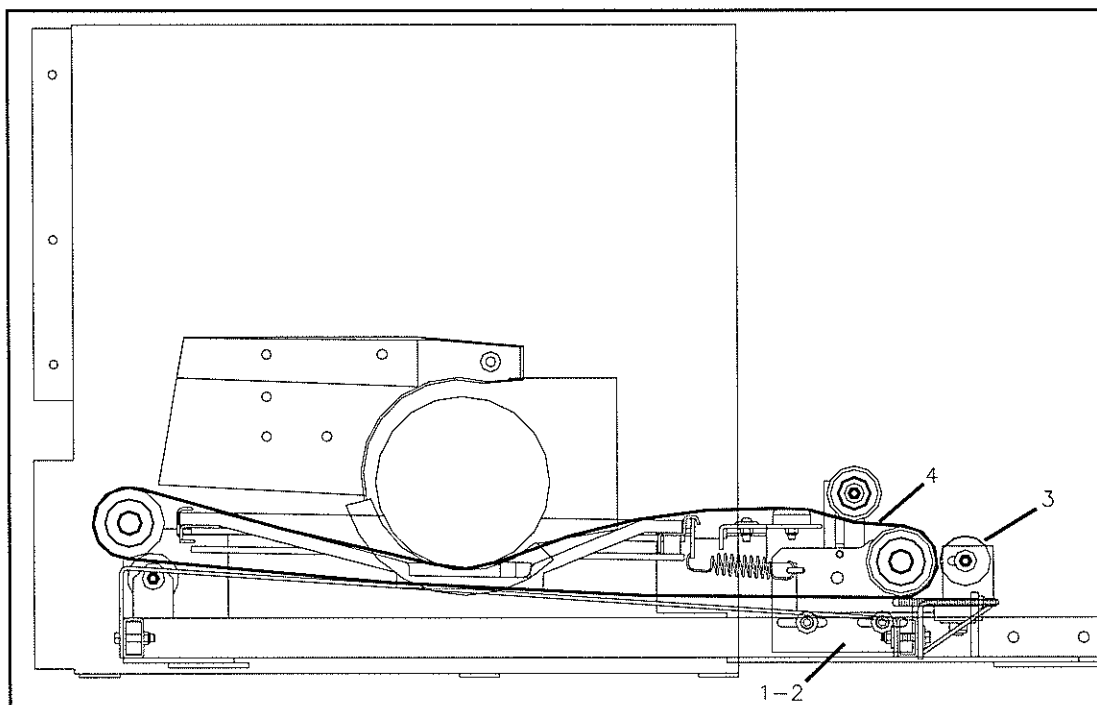
**Adjusting the pit conveyor belt's tension guide***March 1997*

With the introduction of the new tension guide on MM-2001 pinsetter serial number MMP-00695, adjustment number 3D is incomplete. The following procedure must be added to adjustment 3D in order to maintain the correct tension on the conveyor belts equipped with the new tension guides.

- 1) Following adjustment 3D, move the outside tension plate $\frac{1}{4}$ " (6mm) in the direction of the bowler.
- 2) Adjust the tension guide so as to have it rest on the conveyor belt. Make sure that the tension guide remains parallel to the rear conveyor roller at all times.
- 3) Return the outside tension plate to its original position.

Fenix Service Bulletin Number MM-018

ITEM	PART NO.	DESCRIPTION
1	302-6040-00	OUTSIDE TENSION PLATE [RIGHT LANE]
2	302-6045-00	OUTSIDE TENSION PLATE [LEFT LANE]
3	303-6090-01	TENSION GUIDE
4	304-6000-00	PIT CONVEYOR BELT



**Replacement of the elevator's metal straps***September 1997*

Subject to different degrees of friction from the pin lift arms (303-8020-00), the elevator's 4 metal straps (302-8005-00) may eventually wear and ultimately break. Although the pin elevator will function normally without these metal straps, it is important to replace them in order to protect the aluminum tracks from the constant movement of the drive chains. When replacing these metal straps, it is not necessary to replace all 4 at the same time. You may replace only the broken strap, but it should be noted that since this is not an easy procedure, you should take advantage of the fact that parts have been removed from the pin elevator. With these parts removed, you may want to verify the other straps and replace them if you judge that they too will break on a short-term basis.

Preparation for Replacement

Refer to **Figure 2** on the flip side of this bulletin in order to distinguish the difference between Groove A and Groove B.

If replacing the metal strap in Groove A, remove the following parts from the pin elevator (See **Figure 1**):

- elevator cover (302-8080-00)
- pin lift arm (303-8020-00)
- interior wedge right (303-8220-00) **or**
- interior wedge left (303-8225-00)
- base block (303-8230-00)

If replacing the metal strap in Groove B, remove the following parts from the pin elevator in addition to the parts listed for removal under Groove A:

- pin deflector right (302-8300-00) **or**
- pin deflector left (302-8305-00)
- interior guard (303-8010-00)

Once these parts have been removed, use a wood chisel to cut the elevator frame as indicated by the dotted lines in **Figure 2**.

Replacing the metal straps

- 1) Insert the metal strap (302-8005-00) into the groove from the bottom of the pin elevator as illustrated in **Figure 2**.
- 2) When the end of the metal strap reaches the top of the elevator, re-insert the interior wedge to its original position. (Do not tighten it in place at this point)
- 3) The opposite end of the metal strap [the end with the locking collar] must now be worked up to the top of the pin elevator in order to meet the other extremity.
- 4) Using the locking collar, attach both ends of the metal strap together at the top of the pin elevator. Tighten the collar firmly to ensure that you have maximum pressure on the collar and make sure that the collar itself is located inside the groove.
- 5) Important: bend and flatten the metal strap to a U-shape at both extremities [top and bottom] in a manner to have it mould the contour of the elevator frame.
- 6) Tighten the interior wedge in place and re-install the base block (303-8230-00), the pin lift arms (303-8020-00), and the elevator cover (302-8080-00).

Fenix Service Bulletin Number MM-019

ITEM	PART NO.	DESCRIPTION
1	302-8005-00	SPECIAL COLLAR
2	302-8080-00	ELEVATOR COVER
3	302-8300-00	PIN DEFLECTOR, RIGHT
4	302-8305-00	PIN DEFLECTOR, LEFT
5	303-8010-00	INTERIOR GUARD
6	303-8020-00	PIN LIFT ARM
7	303-8220-00	INTERIOR WEDGE, RIGHT
8	303-8225-00	INTERIOR WEDGE, LEFT
9	303-8230-00	BASE BLOCK
10	308-8000-00	ELEVATOR FRAME, RIGHT
11	308-8005-00	ELEVATOR FRAME, LEFT

Figure 1

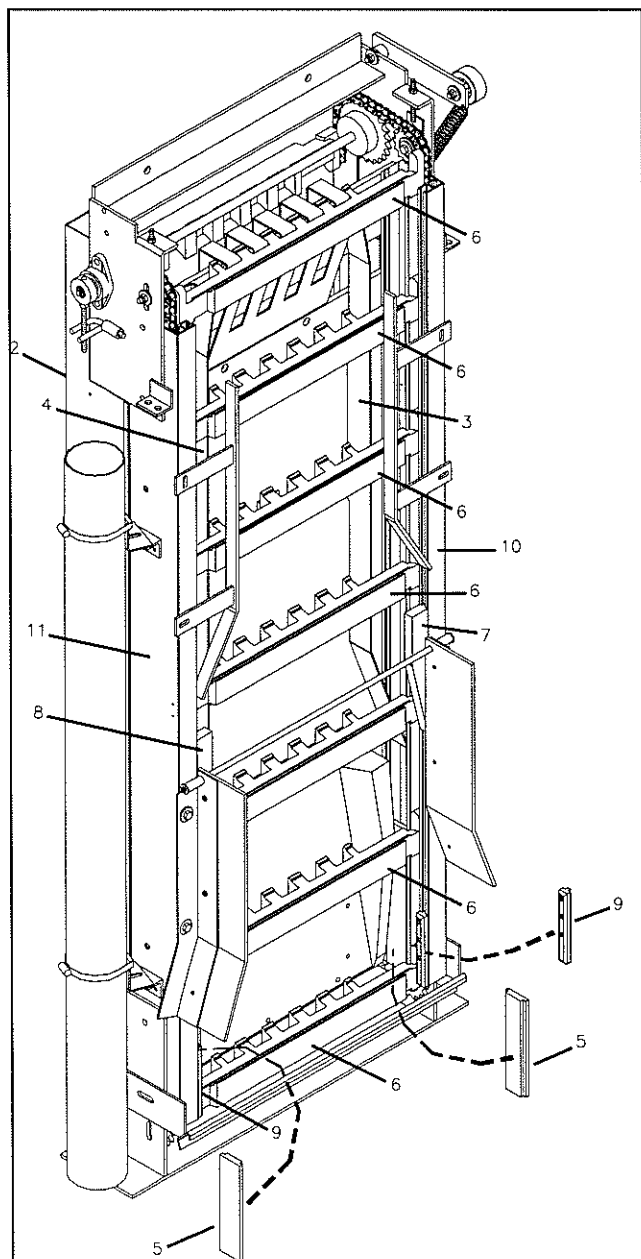
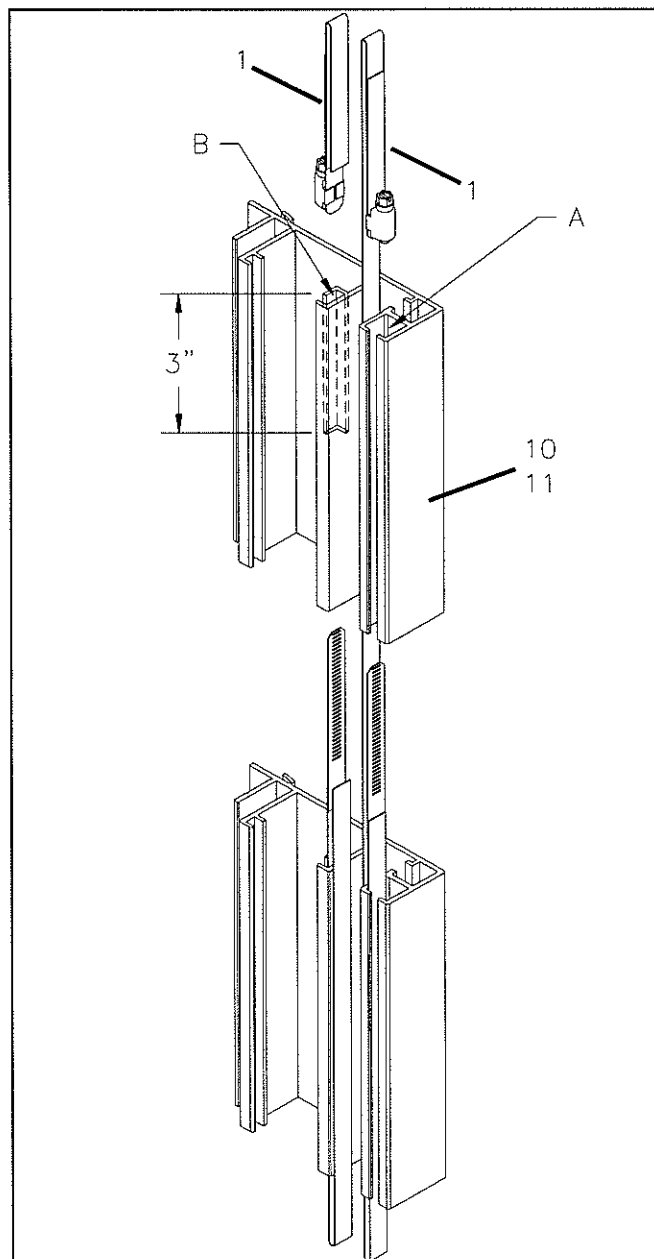


Figure 2



**Addition of the pin deviator***September 1997*

Starting with MM-2001 pinsetter serial number MMP-00717, pin deviators have been added to the back of the ball door opening. This measure was proven necessary in order to extend the life of the pit deflectors.

The wearing of the pit deflector (303-6330-00 & 303-6335-00) will cause pins to stay in front of the ball door when a ball needs to exit. This will result in a longer time to get the ball out of the pinsetter and back to the bowler.

The modification kit is available from Fenix under the number 399-6570-00 and includes all necessary parts required for a **pair of lanes**.

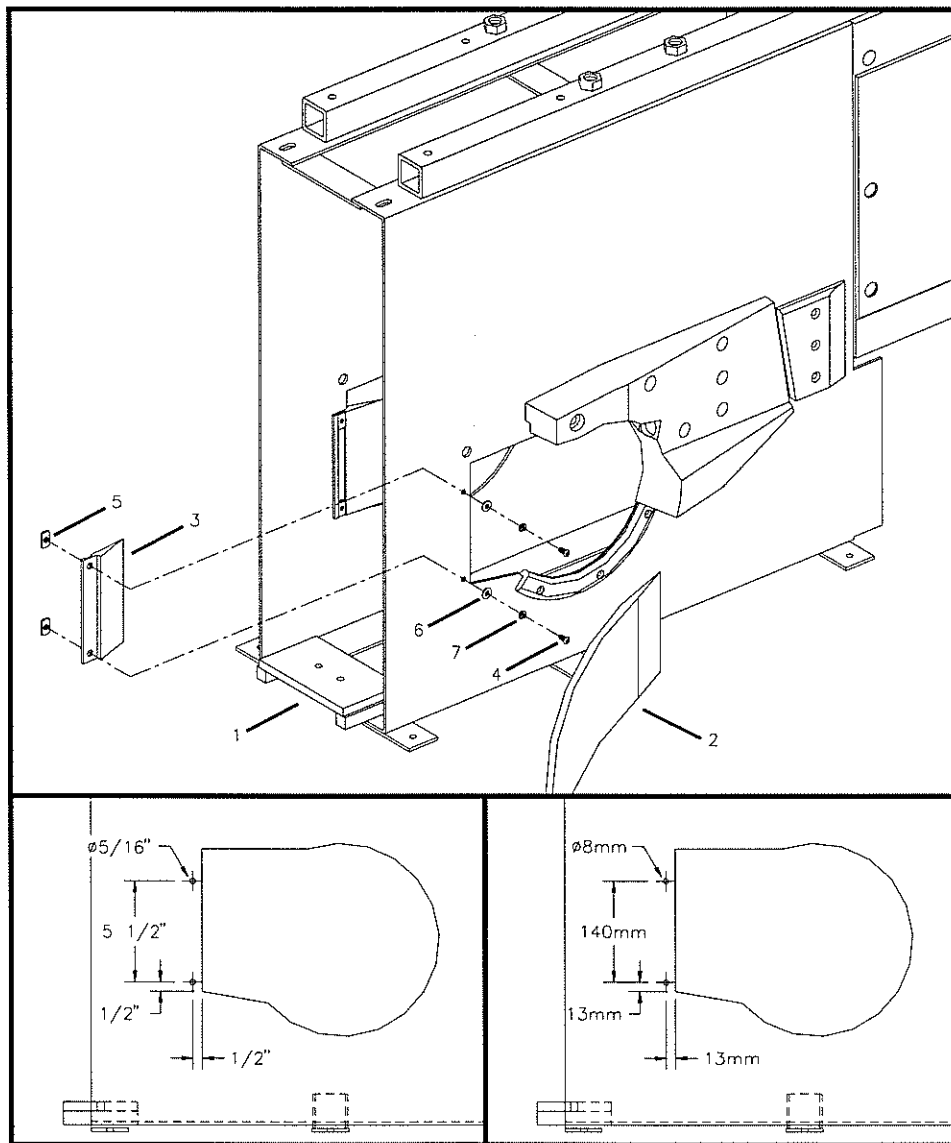
N.B. : When performing this modification, you **must** replace the 2 old pit deflectors with the 2 new pit deflectors included in the modification kit.

- 1) Remove the old pit deflectors (303-6330-00 & 303-6335-00).
- 2) Drill 2 holes in the metal kickback as indicated in **Figure 1**. Each of these holes must be 5/16"(8mm) in diameter.
- 3) Install the pin deviator (303-6570-00) inside the metal kickback and attach them in place using the hardware as indicated in **Figure 1**.
- 4) Install the new pit deflector (303-6300-00 & 303-6305-00) in the same position occupied by the old ones which were removed in step 1.

Fenix Service Bulletin Number MM-020

ITEM	PART NO.	DESCRIPTION
1	302-6500-00	METAL KICKBACK
2	303-6300-00 / 303-6305-00	PIT DEFLECTOR RIGHT / PIT DEFLECTOR LEFT
3	303-6570-00	PIN DEVIATOR
4	7018-502520-050	1/4"-20 X 1/2" HEX AGON SOCKET CAPS BUTTON HEAD
5	7046-002520-006	1/4"-20 X 1/16" WELD NUT
6	7050-028062-006	9/32" X 5/8" FLAT WASHER
7	7060-025046-006	1/4" X 15/32" LOCK WASHER

Figure 1



**Magnet 2001 controller ground cable***September 1997*

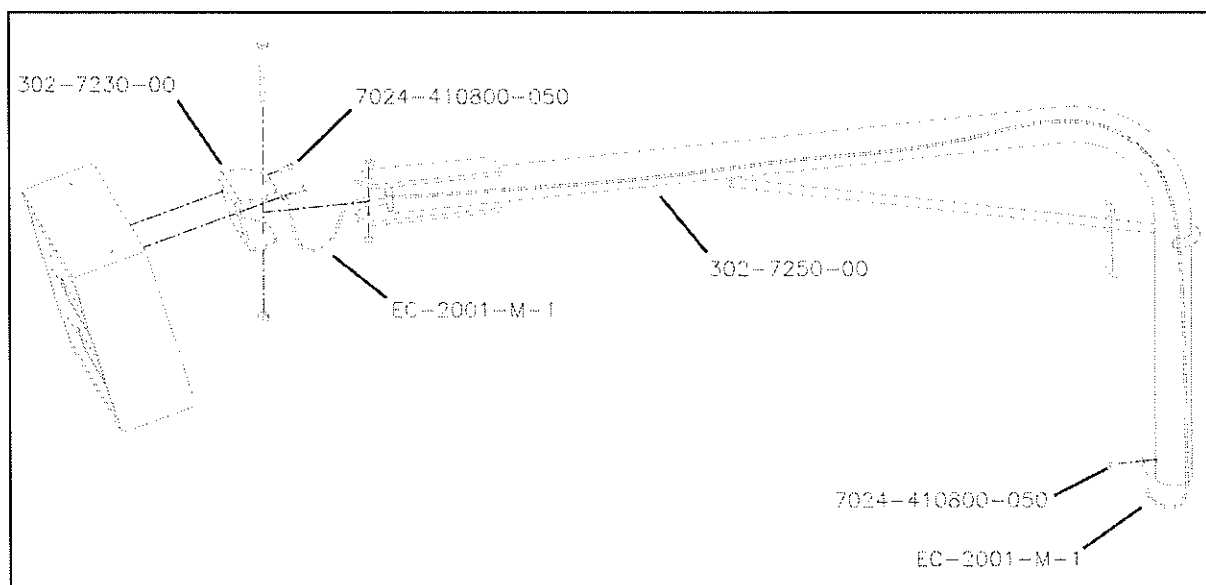
A properly grounded installation is essential for all the Fenix equipment. If your equipment is not properly grounded, the electronic circuits can blow when they receive a static discharge.

If a problem should arise with the Magnet 2001 Controller, always check to ensure that its ground wire (EC-2001-M-1) is securely in place as illustrated in Figure 1. This simple verification may save you precious time trying to resolve an impossible situation.

Fenix Service Bulletin Number MM-021

ITEM	PART NO.	DESCRIPTION
1	302-7230-00	MOUNTING BRACKET
2	302-7250-00	PIVOT ARM
3	7024-410800-050	ROUND SOCKET HEAD MACHINE SCREW, #8 X 1/2"
4	EC-2000-M-1	CABLE ASSEMBLY GROUND MONITOR

Figure 1



**Modification of the pit conveyor belt tensioner***September 1997*

The pit conveyor belt tensioner has been modified in order to facilitate its adjustment. This modification was introduced with serial number MMP-00695.

For older models, a modification kit is available from Fenix under the number 399-6250-01. This kit includes all necessary parts for the modification of 1 pinsetter (odd or even).

Failure to adjust the conveyor belt properly will result in slower time to return the ball to the bowler and in some circumstances, a premature wearing of the conveyor belt itself.

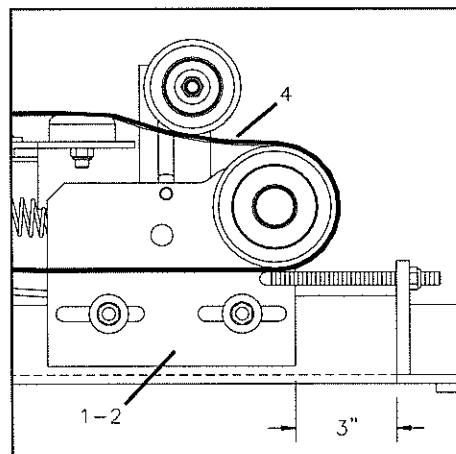
Adjusting the new model tensioner.(Figure 1)

Adjust the tensioner to have a distance of 3" between the pit frame (302-6000-00) and the tension plate (302-6030-00...302-6045-00) on both sides. Start the main motor (MENU-IO-OUTPUT-220VT-MAIN MO.-SET ON). Place a 6 pound ball on the conveyor belt on the opposite side of the ball return. Remove the tension on the pit conveyor belt (ball return side) until the ball moves toward the ball door easily on its own. Once this side is done, take the measurement between the pit frame and the tension plate on this side and place the other side at the same measurement.

Centering of the pit conveyor belt.

If the conveyor belt is not centered on the conveyor roller, re-adjust the level of the new tensioner to keep the conveyor belt in the center.

THE DISTANCE FROM THE PIT FRAME AND TENSION PLATE SHOULD ALWAYS BE MAINTAINED BETWEEN 3" AND 3-3/8".

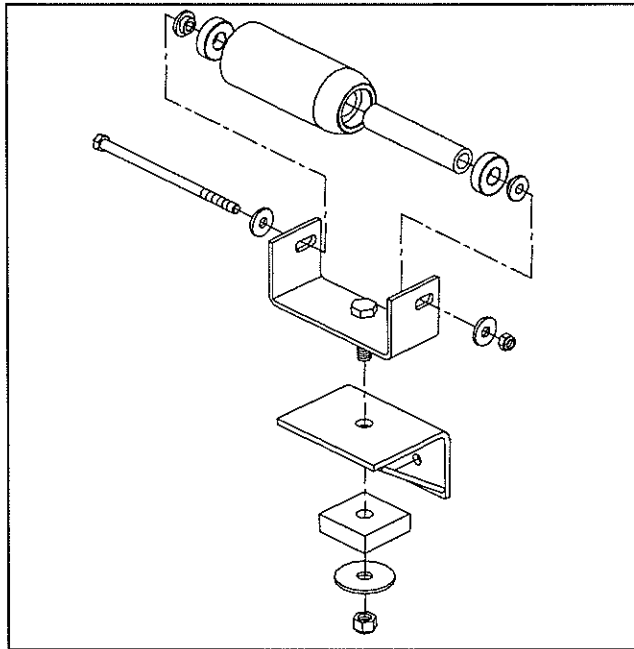
Figure 1

Installing the new model tensioner.

If you have the tensioner 302-6260-00 as shown in Figure 2, follow these steps.

- 1) Remove the old tensioner located on the opposite side of the ball return and bolt the new one in place using the same hole.
- 2) Go to step 7 (page 4).

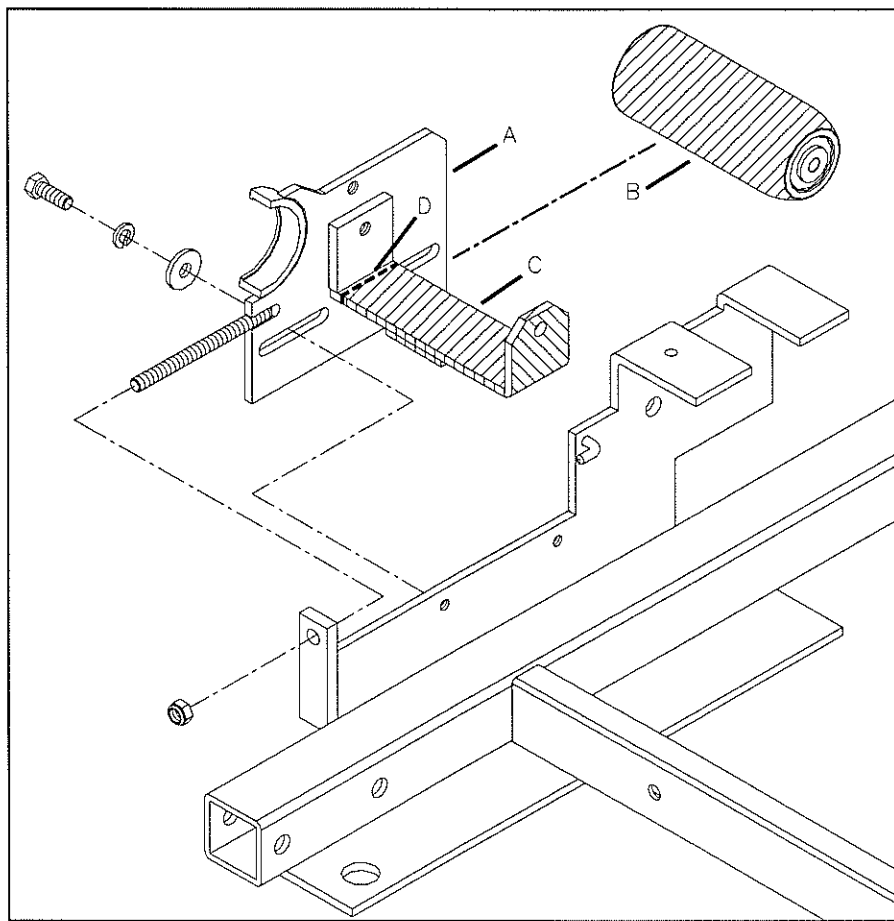
Figure 2



If you have the tension plate 302-6040-00 / 302-6045-00 as shown in Figure 3, follow these steps.

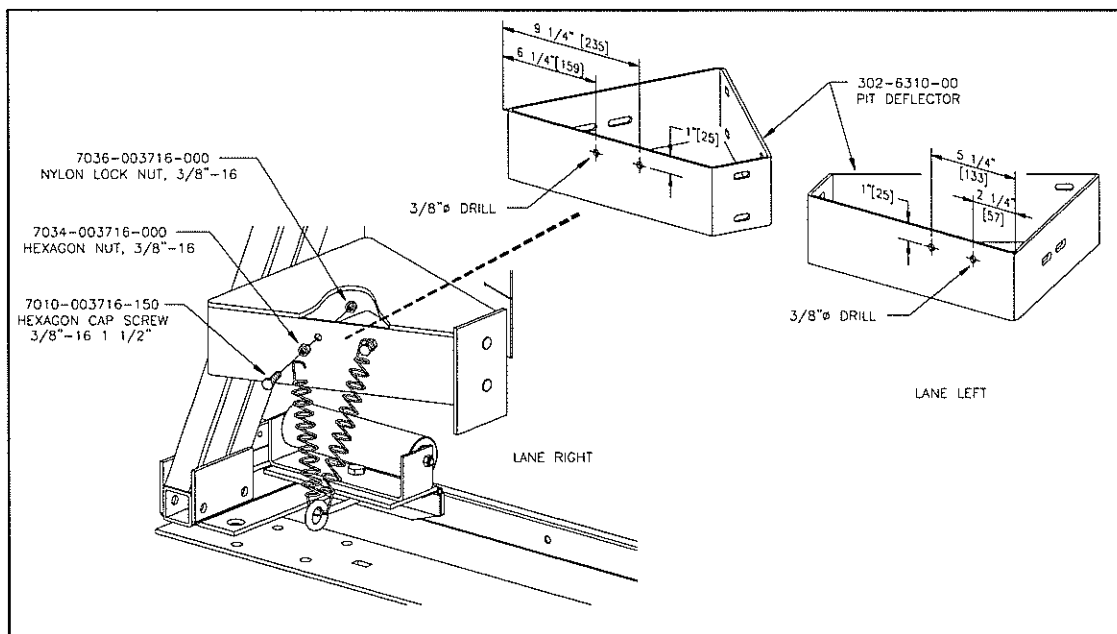
- 3) Remove the old tension plate "A" located on the opposite side of the ball return, remove the roller "B" and cut the bottom flat bar "C" as indicated by line "D" on the plan.
- 4) Re-install the tension plate in place (without the roller "B").
- 5) Tighten the new tensioner in place with one hexagon cap screw, adjust the roller to be exactly at the same level as the conveyor roller (302-6050-00 / 302-6075-00).
- 6) Drill the second hole for the tensioner and tighten with the other hexagon cap screw.

Figure 3



- 7) On the odd lane, drill 2 holes in the pit deflector (302-6310-00), one at 5 1/4"(133mm) and the other at 2 1/4"(57mm). These two holes must be 1"(25mm) from the top of this part.(figure 4)
- 8) On the even lane, drill 2 holes in the pit deflector (302-6310-00), one at 6 1/4"(159mm) and the other at 9 1/4"(235mm). These two holes must be 1"(25mm) from the top of this part.(figure 4)
- 9) Install the 2 hexagon cap screws and the hexagon nuts from the outside, and tighten with the nylon lock nuts from the inside.
- 10) Install the 2 springs on the tensioner. Do not overextend the springs.
- 11) Install the guide wheel (303-6070-00) on top of the conveyor roller (302-6050-00 / 302-6075-00) to keep the conveyor belt from touching the metal frame of the pit.

Figure 4



N.B.: Before starting the pinsetter, verify the adjustment of the new tensioner, it must be adjusted exactly at the same level as the conveyor roller (302-6050-00 / 302-6075-00).

**Adjustment of the drive train belt 304-2020-00***October 1997*

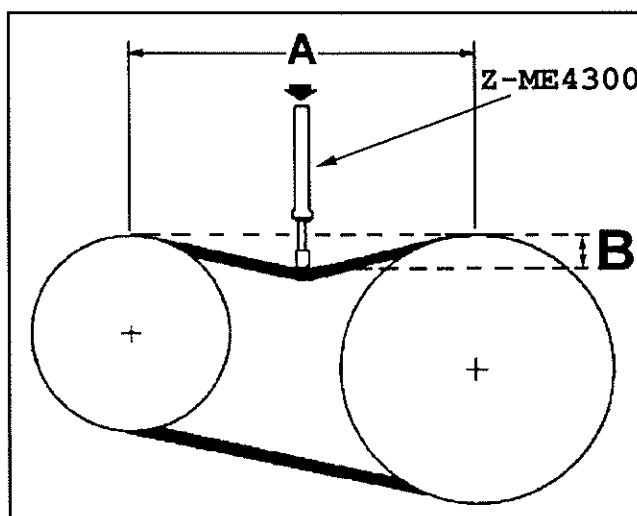
Following a few difficulties encountered by our customers when replacing the drive train belt (304-2020-00) for the elevator, we would like to refresh your memory on the installation and adjustment procedure of the drive train belt (304-2020-00).

To install the new belt:

- 1) Loosen the bolt holding the tensioner pulley (302-2350-00) and move the tensioner to its lower position. **Figure 2**
- 2) Place the belt on the drive train shaft (302-2080-00) of the elevator command. You will have to remove the elevator belt (304-8000-00) and unplug the magnetic clutch (301-1400-00) in order to pass the drive train belt (304-2020-00) over it.
- 3) Place the belt on the timing gear (302-2015-00) of the main motor (301-1200-00).
- 4) Position the belt on the timing gear (302-2020-00) of the elevator command.
- 5) Without stretching the belt, place it on top of the tensioner pulley (303-2350-00).
- 6) Position the tension gauge (Z-ME4300) in the center between the two timing gears. Press on the tension gauge to have a pressure of 5 pounds (2.25kg) (**A**, **Figure 1**) on the tension gauge. Adjust the tensioner pulley to have a recession depth (**B**, **Figure 1**) of exactly $\frac{1}{2}$ " (13mm).
- 7) Make sure that the belt is perfectly aligned on both timing gears..



Figure 1

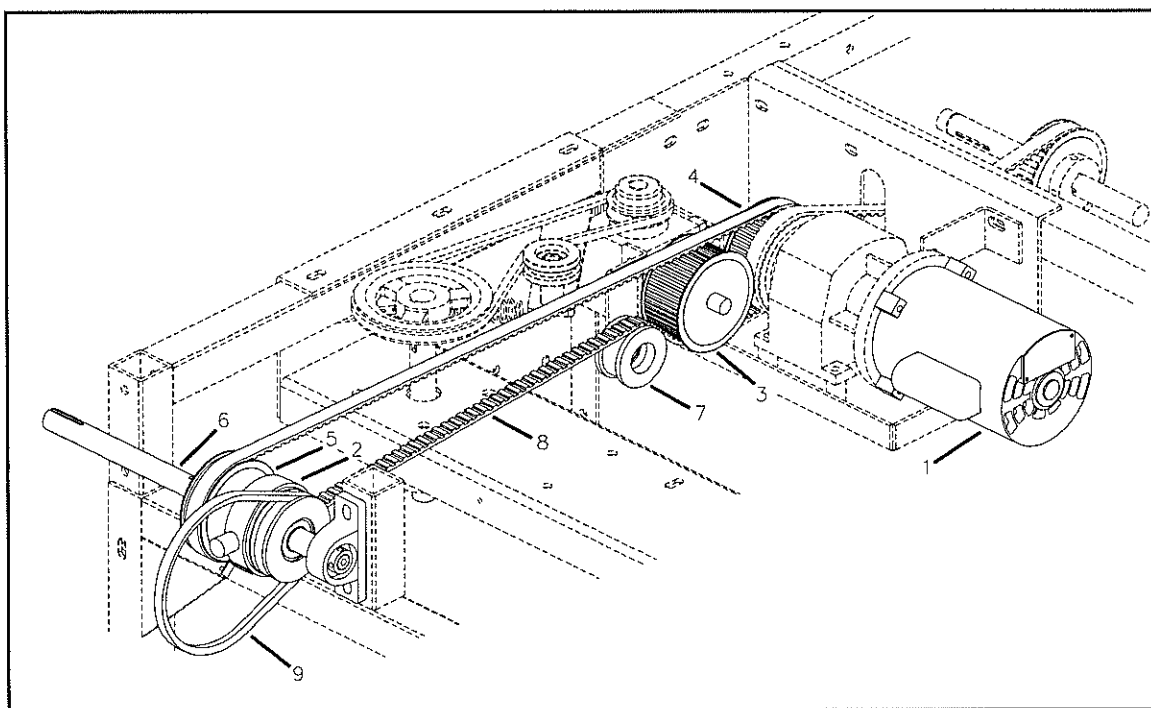


Mendes
Mendes

Mendes Service Bulletin Number MM-023

ITEM	PART NO.	DESCRIPTION
1	301-1200-00	MAIN MOTOR, 208/230 VAC 1/2 HP
2	301-1400-00	MAGNETIC CLUTCH
3	302-2010-01	TIMING GEAR
4	302-2015-00	TIMING GEAR
5	302-2020-00	TIMING GEAR
6	302-2080-00	DRIVE TRAIN SHAFT
7	303-2350-00	TENSIONER PULLEY
8	304-2020-00	DRIVE TRAIN BELT 800H075
9	304-8000-00	ELEVATOR BELT 4L 460

Figure 2



**Verification of the oil level in the deck motor reducer***October 1997*

A properly lubricated motor reducer (302-1000-00) is very important in order to maintain a smoothly-running deck.

A semi-annual verification of the oil level in the motor reducer is very important.



- 1) Slowly remove the plug (#2, Figure 1) on the front side of the reducer as indicated in Figure 1,
- 2) If oil overflows from this hole, the oil level is fine, you do not need to go to the next step. Simply replace the plug.
- 3) Using an oil-can, pump a recommended oil (see table 1) into the reducer until the oil level is higher than the plug hole.
- 4) Remove the oil-can and replace the plug rapidly.



N.B.: It is recommended to change the oil in this reducer every two years. The capacity of the reducer is 26oz (800ml).

- 1) Drain the oil from the reducer by removing the drain plug (#4, Figure1).
- 2) Replace the drain plug.
- 3) Follow the instructions above to replenish the oil.

**Table 1**

Manufacturer	Lubricant
Amoco Oil Co.	Cylinder Oil #680
Chevron USA, Inc.	Cylinder Oil #680X
Exxon Co. USA	Cylesstic TK-680
Gulf Oil Co.	Senate 680D
Mobile Oil Corp.	Extra Hecia Super
Shell Oil Co.	Valvata Oil J680
Sun Oil Co.	Gear Oil 8C
Texaco	650T Cylinder Oil
Union Oil Co. Of California	Worm Gear Lube 140

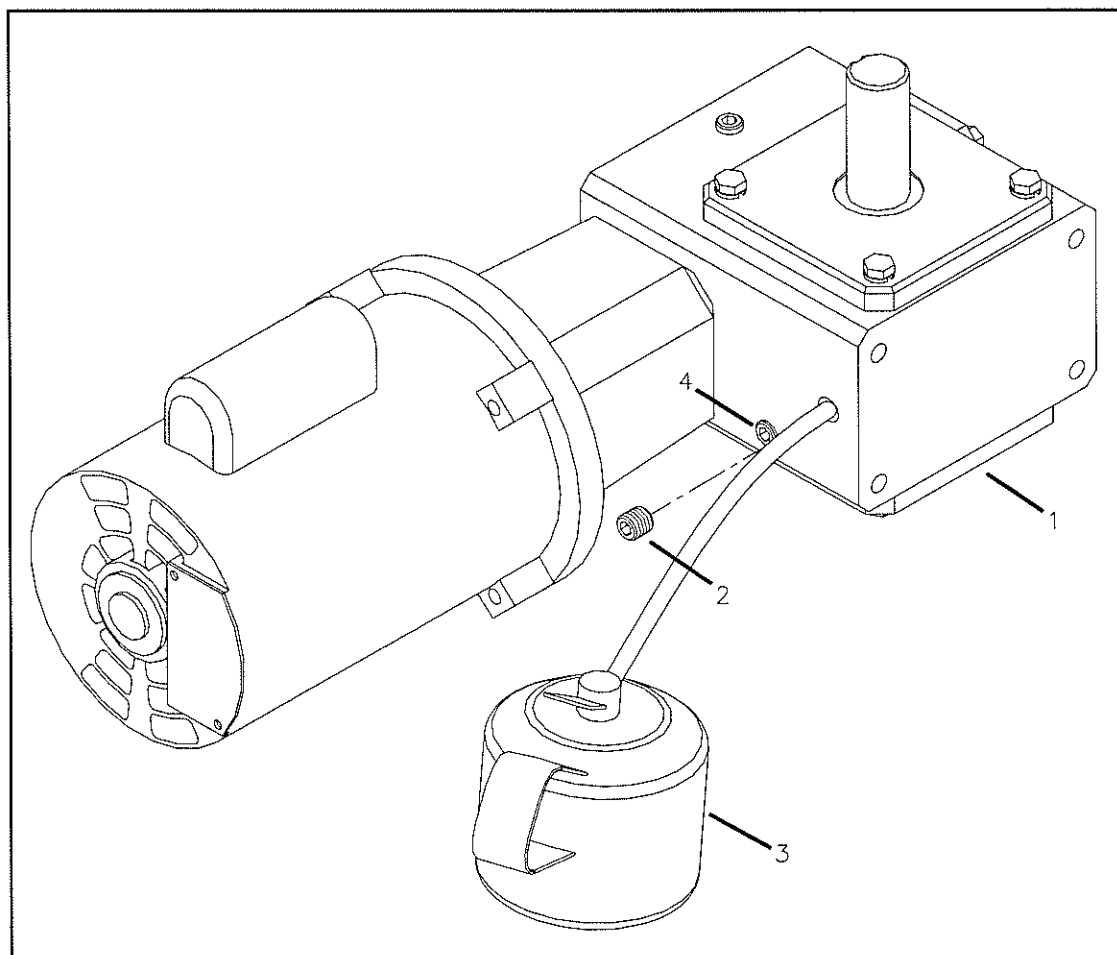


Mendes
Mendes

Mendes Service Bulletin Number MM-024

ITEM	PART NO.	DESCRIPTION
1	302-1000-00	MOTOR REDUCER
2		FILLING PLUG
3		OIL CAN
4		DRAINING PLUG

Figure 1



**Replacement of the deck cover***October 1997*

Starting with MM-2001 pinsetter serial number MMP-00755, new support brackets have been added to the deck cover (303-1520-00). The design of the deck cover has not changed, these new supports are 100% compatible with the older pinsetter. This measure was implemented in order to solidify the deck cover and protect it from the impact of foreign objects falling on it.

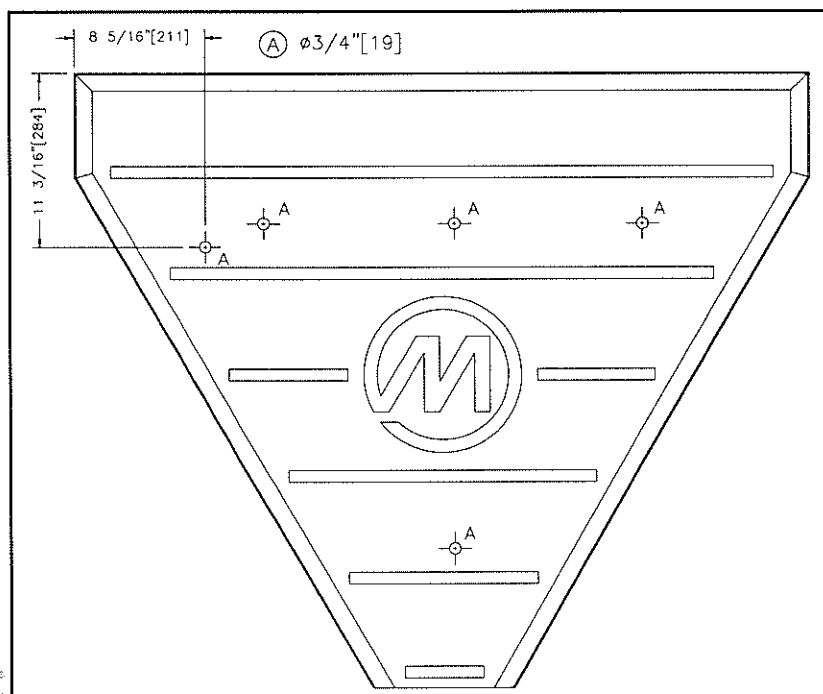


For the installation of the deck cover with the new support, you will need to order the deck support modification kit # 399-1505-00. All the parts listed in **Figure 2**, with the exception of these 3 items (303-1520-00, 304-1580-00 and E-PH113-14), are included in the modification kit.

Please take note, when ordering a deck cover (303-1520-00), none of the parts from the deck support modification kit are included with the deck cover.

Modification of the deck cover.

- 1) Enlarge the existing holes and drill an additional one as shown in figure 1. All 5 holes are to have a diameter of 3/4" (19mm).
- 2) Remove the out of range cable (E-PH113-14) and the deck grommet (304-1580-00) and re-position in the new hole which was drilled in step 1.
- 3) Follow the plan in Figure 2 to re-install the deck cover and its components.

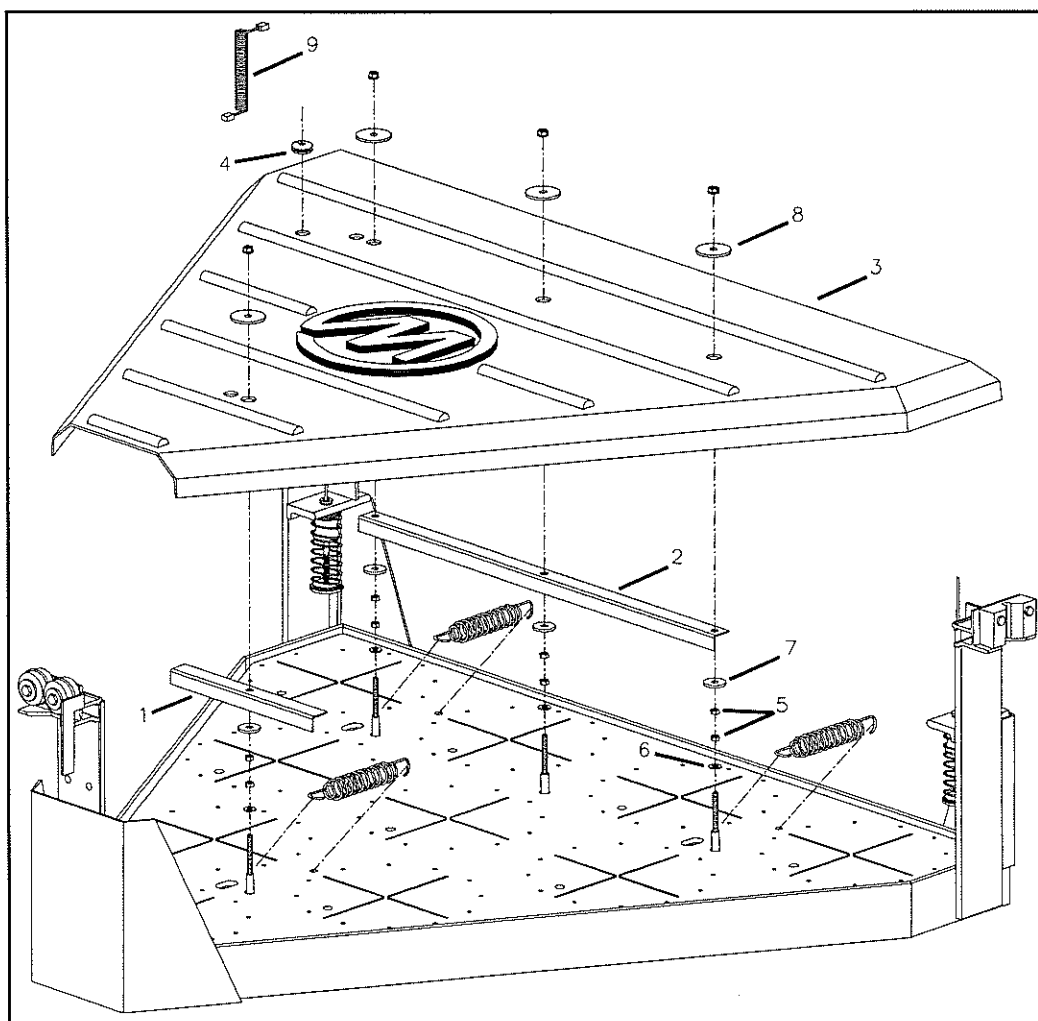
**Figure 1**

Mendes
Mendes

Mendes Service Bulletin Number MM-025

ITEM	PART NO.	DESCRIPTION
1	302-1505-00	FRONT SUPPORT
2	302-1515-00	REAR SUPPORT
3	303-1520-00	DECK COVER
4	304-1580-00	DECK GROMMET
5	7038-002520-000	HEXAGON K-LOCK NUT 1/4"-20
6	7050-040081-006	FLAT WASHER 13/32" X 13/16" X 1/16"
7	7050-034100-012	FLAT WASHER 11/32" X 1" X 1/8"
8	7050-034175-012	FLAT WASHER 11/32" X 1-3/4" X 1/8"
9	E-PH113-14	COILED CORD

Figure 2



**NEW TROUBLESHOOTING PROCEDURES FOR DC MOTORS**

March 1998



After verification of some drawer motor assemblies (311-1000-00) and deck motor assemblies (311-1100-00) received for repair, we need to add a new item to the **Troubleshooting** guide of the **MM-2001 Service Manual**.



Following an undetermined *DECK TROUBLE* or *DRAWER TROUBLE*, you need to verify the two spring clips (Figure 1 & 2, Item # 2) for motor brush **before** replacing the motor. In some cases, these clips could be unlocked and sitting against the brush cover (Figure 1 & 2, Item # 3). This has the consequence of lowering the pressure on the motor brush, creating some power glitch from the motor.



For the brush verification: **Shut down the pinsetter and remove the twist lock connector from the power box.** Open the two metal covers (Figure 1 & 2, Item # 3) and check if the two hooks of the spring clips (Figure 1 & 2, Item # 2) are locked into position (Figure 3, A).

To lock the spring clips in place, press down on the spring clip and release it in order to have the two hooks (Figure 3, A) engage under the metal plate.

If the brushes are correctly seated with the spring clips, re-install the two metal covers and perform the following verification of the motor.



Make sure that the pinsetter has been shut down and unplug the twist-lock connector from the power box.

Remove the motor cover (Figure 4, Item # 5) and then, remove the two torsion type connectors from the cables, separate the power sources wires (figure 4, Item # 4) from the motor's wires (figure 4, Item # 6) and then join the 2 motor wires together using one of the torsion type connector. Place the deck crank (Z-ME4100) on the motor and turn the motor manually **with the deck crank**, you should feel a greater resistance when the motor cables are connected together. If you feel a greater resistance, your motor is not defective.



Replace the wires in their original position.

- The **Black** cable from the motor with the **black** cable from the power source.
- The **Red** cable from the motor with the **white** cable from the power source.

Turn the power back on!



Mendes
Mendes

Mendes Service Bulletin Number MM-026

ITEM	PART NO.	DESCRIPTION
1	311-1000-00	DRAWER MOTOR ASSEMBLY 180VDC 1/2HP
1	311-1100-00	DECK MOTOR ASSEMBLY 180VDC 3/4HP
2		SPRING CLIPS
3		BRUSH COVER
4		POWER SOURCE CABLE
5		MOTOR COVER
6		MOTOR CABLE
7	Z-ME4100	DECK CRANK

Figure 1

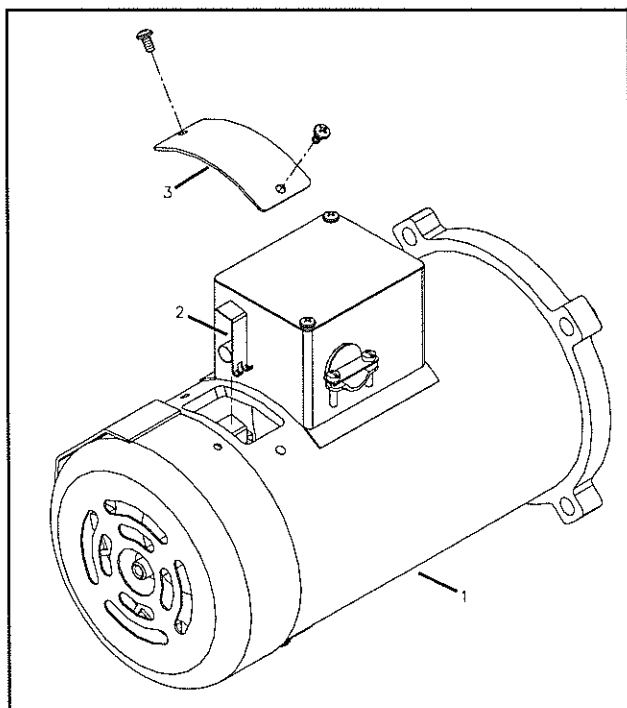


Figure 2

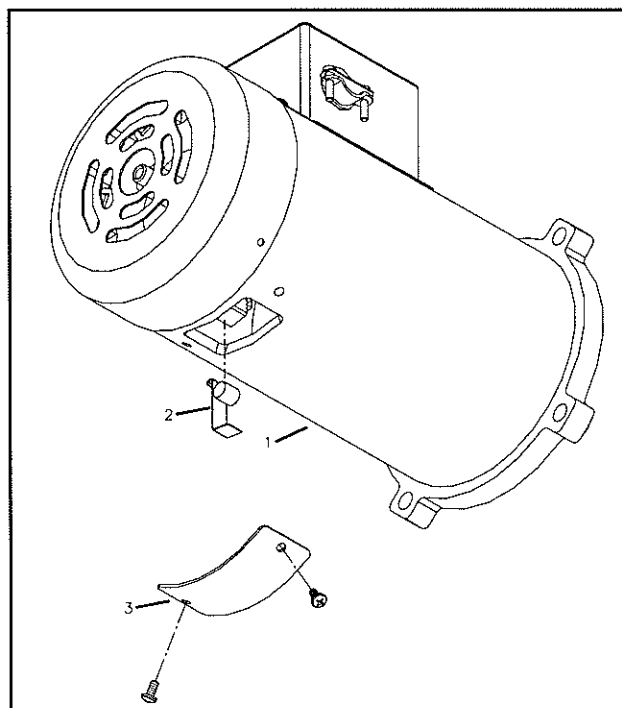


Figure 3

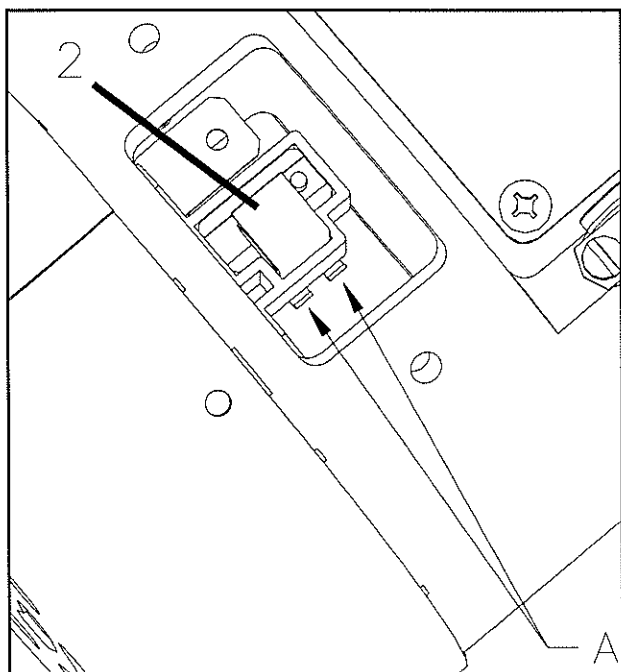
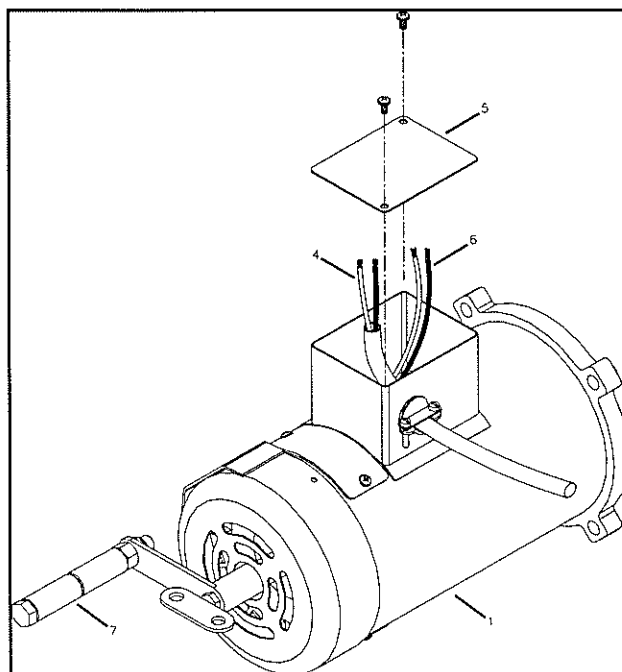


Figure 4



**NEW TROUBLESHOOTING PROCEDURES FOR DC MOTORS**

November 1998



After verification of some drawer motor assemblies (311-1000-00) and deck motor assemblies (311-1100-00) received for repair, new items to the Troubleshooting guide of the **MM-2001 Service Manual** will be added.

Displayed problems : « **Drawer Trouble !** »

or

« **Deck Trouble !** »



These problems appeared after the DC motors were removed or replaced.



After replacement of the drawer motor or the deck motor, one of the following message is displayed on the Controller Magnet 2001: **DECK TROUBLE** or **DRAWER TROUBLE**. When the motor was removed, the dust from the motor brush shifted within the motor. This is keeping the motor from working properly by limiting the contact between the motor brush and the driving shaft. This has the consequence of lowering the pressure on the motor brush, creating power losses to the motor.



Cleaning process for the motor: Shut down the pinsetter and remove the twist lock connector from the power box. Open the two metals covers (Figure 1 & 2, Item # 3) and unlock the two spring clips (Figure 1, 2 and 3, Item # 2). **Before removing the motor brush**(Figure 4, Item # 4), **take note of the brush orientation inside the conduit.** Then remove the two motor brushes slowly. Clean the motor by blowing compressed air inside the motor brush conduit to remove the dust. Turn the motor with the deck crank(Z-ME4100) and restart the process with compress air until the dust is no longer coming out of the motor. Re-install the motor brush (in the same orientation), the spring clips and the motor covers.



To lock the spring clips in place, press down on the spring clip and release it in order to have the two hooks (Figure 3, Item A) engage under the metal plate.



P.S.: Use this opportunity to check the motor brush for wear. The minimum length for the motor brush is 1/4"(6.5mm) (Figure 4, Item D). If the motor brush is shorter than this measurement, proceed to the replacement of the **TWO** motor brushes.

Mendes
Mendes

Mendes Service Bulletin Number MM-027

ITEM	PART NO.	DESCRIPTION
1	311-1000-00	DRAWER MOTOR ASSEMBLY 180VDC 1/2HP
1	311-1100-00	DECK MOTOR ASSEMBLY 180VDC 3/4HP
2		SPRING CLIPS
3		BRUSH COVER
4		MOTOR BRUSH
A		SPRING CLIPS HOOKS
D		MINIMUM LENGTH OF THE MOTOR BRUSH

Figure 1

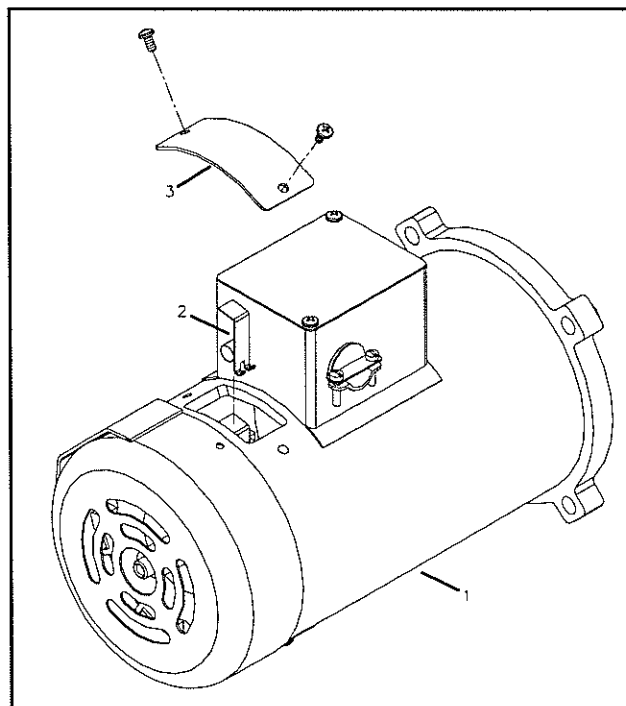


Figure 3

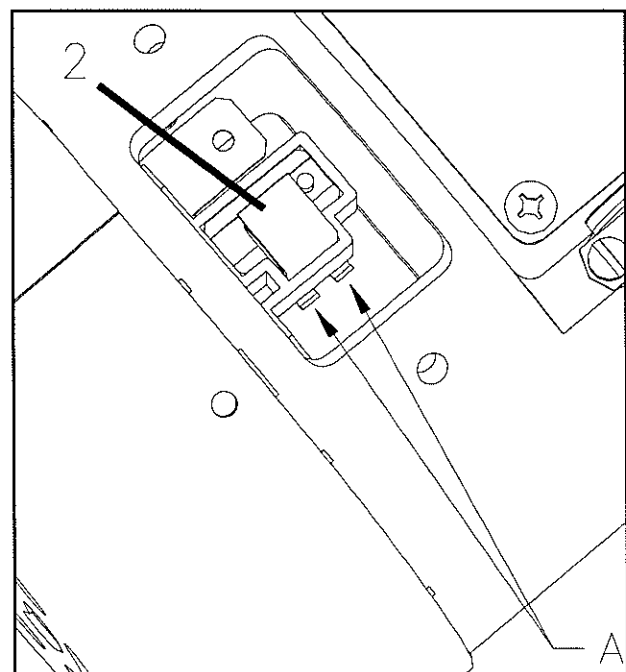


Figure 2

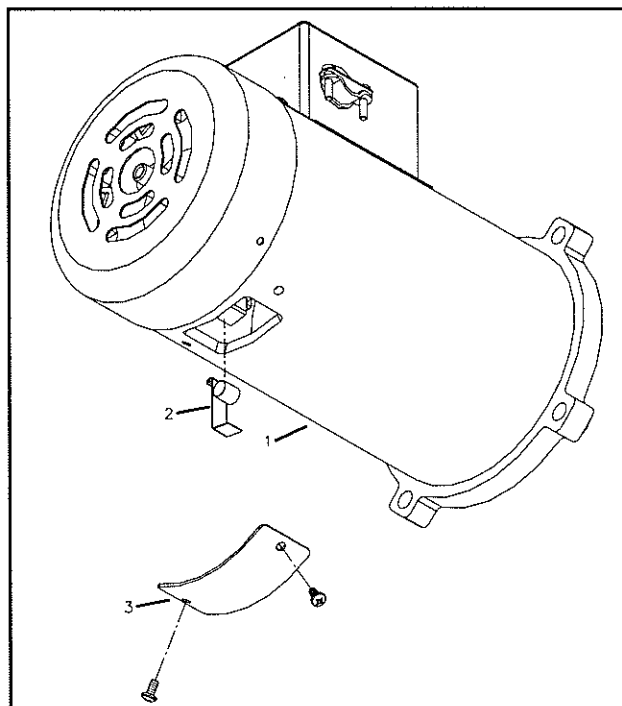
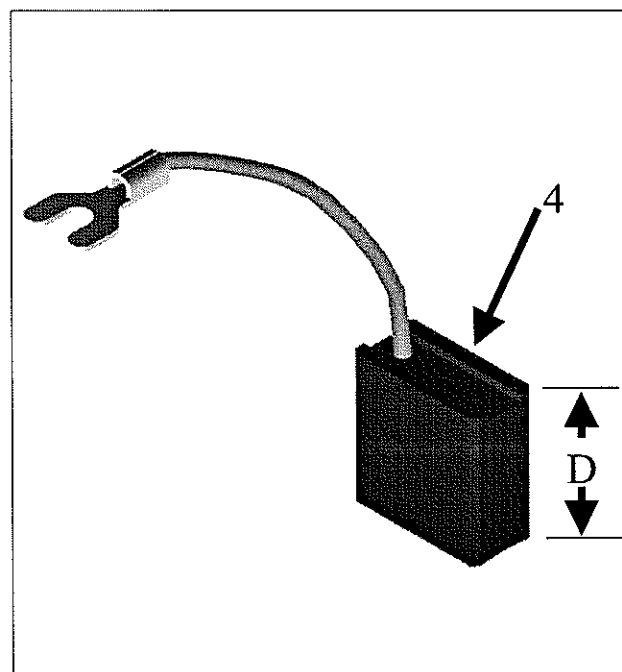


Figure 4



**Replacement of the Elevator Pin Lift Arm.**

November 98



Starting with MM-2001 pinsetter serial number MMP-00298, the Pin Lift Arm (302-8020-00) has been replaced. This new Pin Lift Arm (3002-8020-00) is compatible with the older pinsetter and is keeping the same part number. This measure was implemented in order to solidify the pin lift arm.

Old Model (White): For all the Pinsetters with a serial number inferior to MMP-00298, the pin lift arm is made of white nylon.



New Model (Black): For all the pinsetters with a serial number equal or superior to MMP-0298, the pin lift arm (303-8020-00) is made of black urethane and require a Support Rod (302-8340-00). (**Figure A, Item 1 & 2**)

N.B.: When you order a black Pin Lift Arm to replace a white Pin Lift Arm, you have to order a Support Rod (302-8340-00) for each of the black Pin Lift Arm ordered.



Before you install the black Pin Lift Arm inside an elevator, it is very important to make the following modification:

- Installation of an Interior Wedge Right (303-8220-00) and an Interior Wedge Left (303-8225-00). (**Figure B, Item # 3 & 4**)

Both of these Wedges are installed on the inner side of the elevator (towards the pinsetter) and must be bearing on the Interior Block Right (303-8070-00) and Left (303-8075-00). (**Figure B, Item # 3 & 4**)



- **Figure C** is showing the position and size of the hole to be drilled in the Interior Panel Bottom (303-8045-00).

N.B.: If these modifications are not done as required, the black Pin Lift Arm could be damaged, and consequently, would not be covered under the warranty.



ITEM	PARTS NUMBER	DESCRIPTION
1	302-8340-00	SUPPORT ROD
2	303-8020-00	PIN LIFT ARM
3	303-8070-00	INTERIOR BLOCK, RIGHT
4	303-8075-00	INTERIOR BLOCK, LEFT
5	303-8220-00	INTERIOR WEDGE, RIGHT
6	303-8225-00	INTERIOR WEDGE, LEFT
7	7016-311032-125	FLAT SOCKET HEAD MACHINE SCREW, #10-32 X 1-1/4"
8	7022-201400-125	HEX WASHER HEAD WOOD SCREW, #14 X 1-1/4"
9	7036-001032-000	NYLON NUT, #10-32
10	7150-019075-009	ALUMINIUM FLAT WASHER, 0,193" X 3/4" X 3/32"



Mendes
Mendes

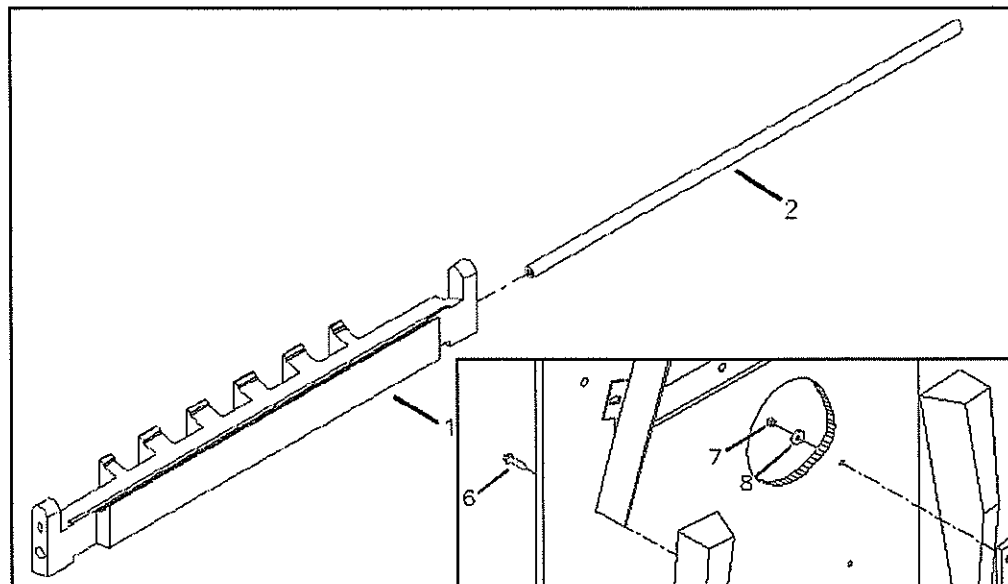


Figure A

Figure B

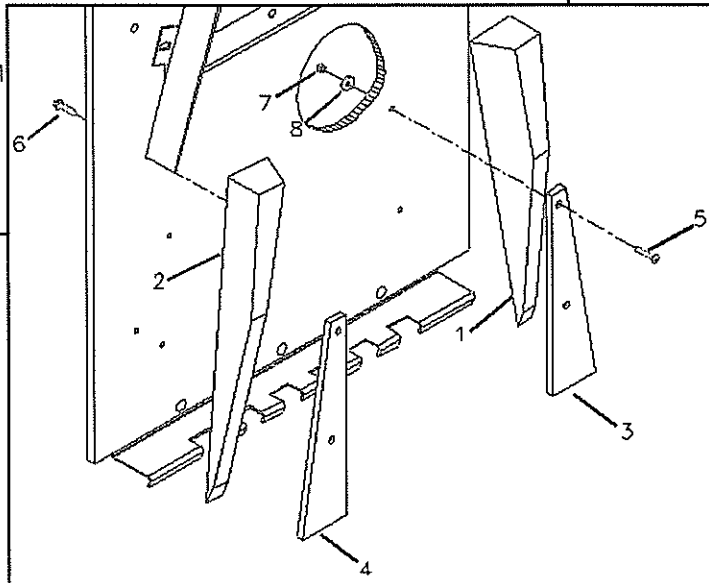
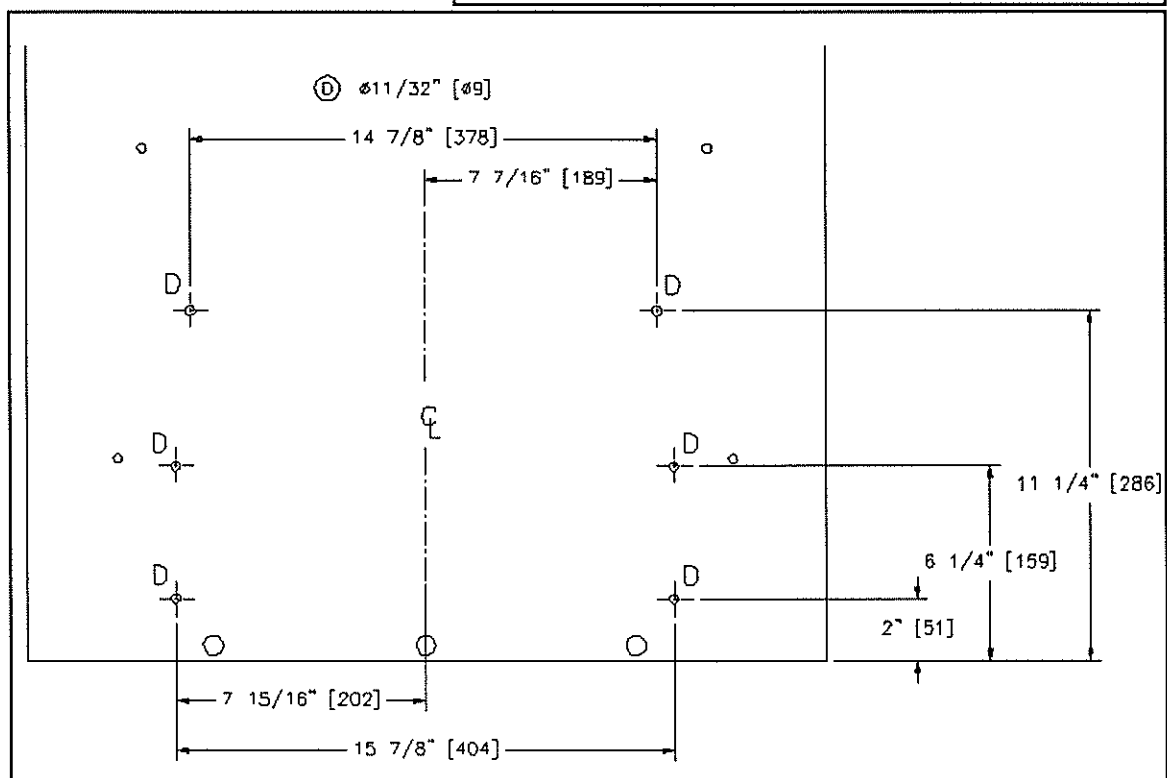


Figure C



**Modification of the Carrousel Solenoid.***November 98*

Starting with MM-2001 pinsetter serial number MMP-00985, a new system was introduced for the carrousel solenoids & cam. This measure was implemented in order to make the solenoid shaft assembly more durable.

Old Model: For all the Pinsetter with a serial number inferior to MMP-00985, the solenoid shaft (302-5270-00) is attached to the solenoid cam (303-5210-00) with an attachment plate (302-5220-00).



New Model: For all the pinsetter with a serial number superior to MMP-00985, the solenoid shaft (302-5270-01) is attach to the solenoid cam (303-5210-00) with a solenoid hose (304-5270-00) and a shaft attachment (302-5220-01).

This new modification is fully compatible with any pinsetter with a serial number inferior to MMP-00985.



A modification kit is available from Mendes under the part number 399-5210-00 (Carrousel Solenoid Modification Kit).

The kit number 399-5210-00 (Carrousel Solenoid Modification Kit) includes all the parts to complete the modification of one pinsetter.

Part listing for modification kit # 399-5210-00:



PARTS NUMBER	DESCRIPTION	Qty
302-5210-01	SOLENOID MOUNTING PLATE	1
302-5220-01	SHAFT ATTACHMENT	7
302-5270-01	SPECIAL SOLENOID SHAFT	7
304-5270-00	SOLENOID HOSE	7
7002-710000-025	EXTERNAL RETAINING RING [1/4"]	7
7006-000900-100	SPRING TENSION PIN [3/32" X 1"]	7
7650-031050-003	NYLON SPACER WASHER [5/16" X 1/2" X 1/32"]	7



If you need to replace any other parts not listed on the previous list, you must order them separately. All those additional parts will be charged to your account.

Once the modification is complete, refer to your PINSETTER MM-2001 SERVICE MANUAL, (adjustment 6E).

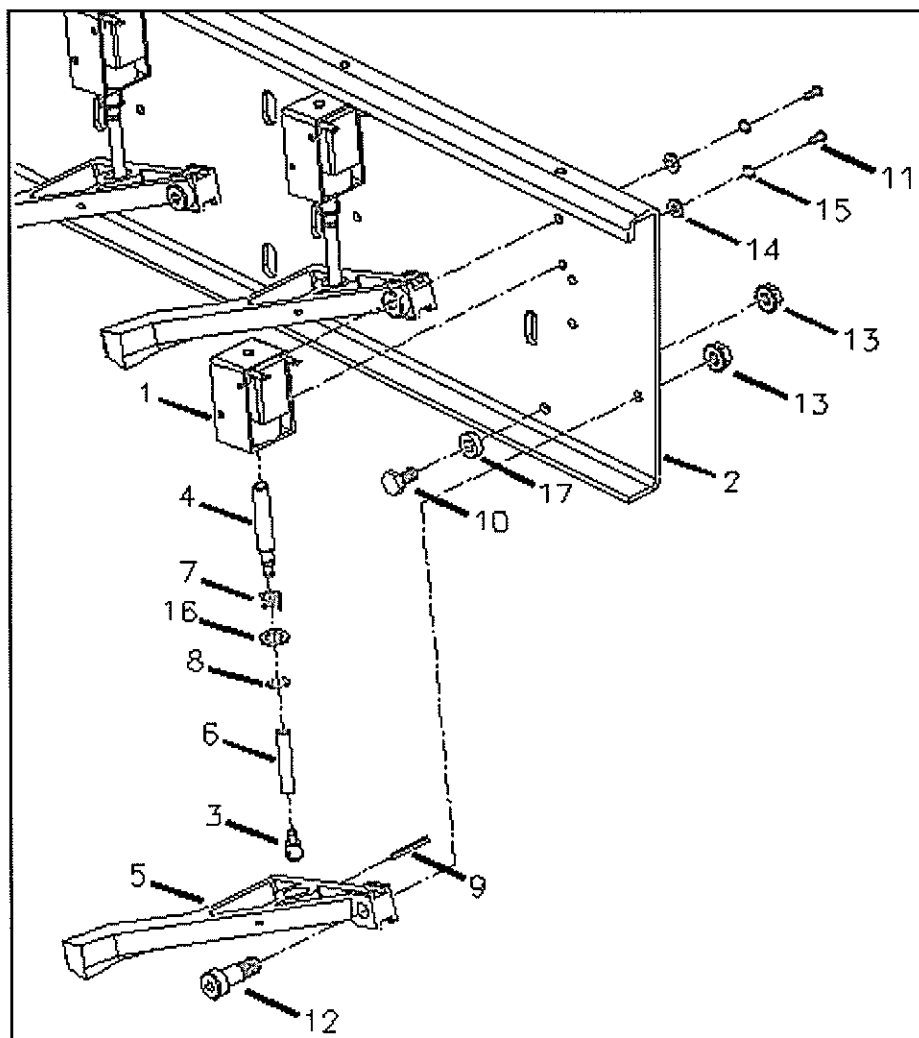


Mendes
Mendes

Mendes Service Bulletin Number MM-029

ITEM	PARTS NUMBER	DESCRIPTION
1	301-5170-00	SOLENOID [24VAC]
2	302-5210-01	SOLENOID MOUNTING PLATE
3	302-5220-01	SHAFT ATTACHMENT
4	302-5270-01	SPECIAL SOLENOID SHAFT
5	303-5210-00	SOLENOID CAM
6	304-5270-00	SOLENOID HOSE
7	305-5200-00	COMPRESSION SPRING
8	7002-710000-025	EXTERNAL RETAINING RING [1/4"]
9	7006-000900-100	SPRING TENSION PIN [3/32" X 1"]
10	7010-002520-050	HEXAGON CAP SCREW [1/4"-20 X 1/2"]
11	7016-410632-031	ROUND SOCKET HEAD MACHINE SCREW [#6-32 X 5/16"]
12	7020-003100-050	SHOULDER SCREW [5/16" X 1/2"]
13	7038-002520-000	HEXAGON K-LOCKNUT [1/4"-20]
14	7052-015037-004	SPACER WASHER [5/32" X 3/8" X 3/64"]
15	7060-006046-003	LOCK WASHER [1/16" X 15/32" X 1/32"]
16	7650-031050-003	NYLON SPACER WASHER [5/16" X 1/2" X 1/32"]
17	E-W5007	NYLON SPACER

Figure A



**Modification of the stations Solenoid.***November 98*

Starting with MM-2001 pinsetter serial number MMP-00985, a new system was introduced for the carousel solenoids & blocks. This measure was implemented in order to make the solenoid shafts assembly more durable.

Old Model: For all the Pinsetter with a serial number inferior to MMP-00985, the solenoid shaft (302-5540-00) is attached to the solenoid block (302-5560-00) with an attachment plate (302-5570-00).



New Model: For all the pinsetter with a serial number superior to MMP-00985, the solenoid shaft (302-5270-01) is attach to the solenoid block (302-5560-01) with a solenoid hose (304-5270-00) and a shaft attachment (302-5220-01).

This new modification is fully compatible with any pinsetter with a serial number inferior to MMP-00985.



A modification kit is available from Mendes under the part number 399-5560-00 (Solenoid Station modification kit).

The kit number 399-5560-00 (Solenoid Station modification kit) includes all the parts to complete the modification of one pinsetter.

Part listing for modification kit # 399-5560-00:



PARTS NUMBER	DESCRIPTION	Qty
302-5220-01	SHAFT ATTACHMENT	7
302-5270-01	SPECIAL SOLENOID SHAFT	7
302-5560-01	SOLENOID BRACKET	7
303-5560-01	SOLENOID BLOCK	7
304-5270-00	SOLENOID HOSE	7
7002-710000-025	EXTERNAL RETAINING RING [1/4"]	7
7006-000900-100	SPRING TENSION PIN [3/32" X 1"]	7
7052-025050-003	SPACER WASHER [1/4" X 1/2" X 1/32"]	7



If you need to replace any other parts not listed in the previous list, you must order them separately. All those additional parts will be charged to your account.

Once the modification is complete, refer to your PINSETTER MM-2001 SERVICE MANUAL, (adjustment 6E).

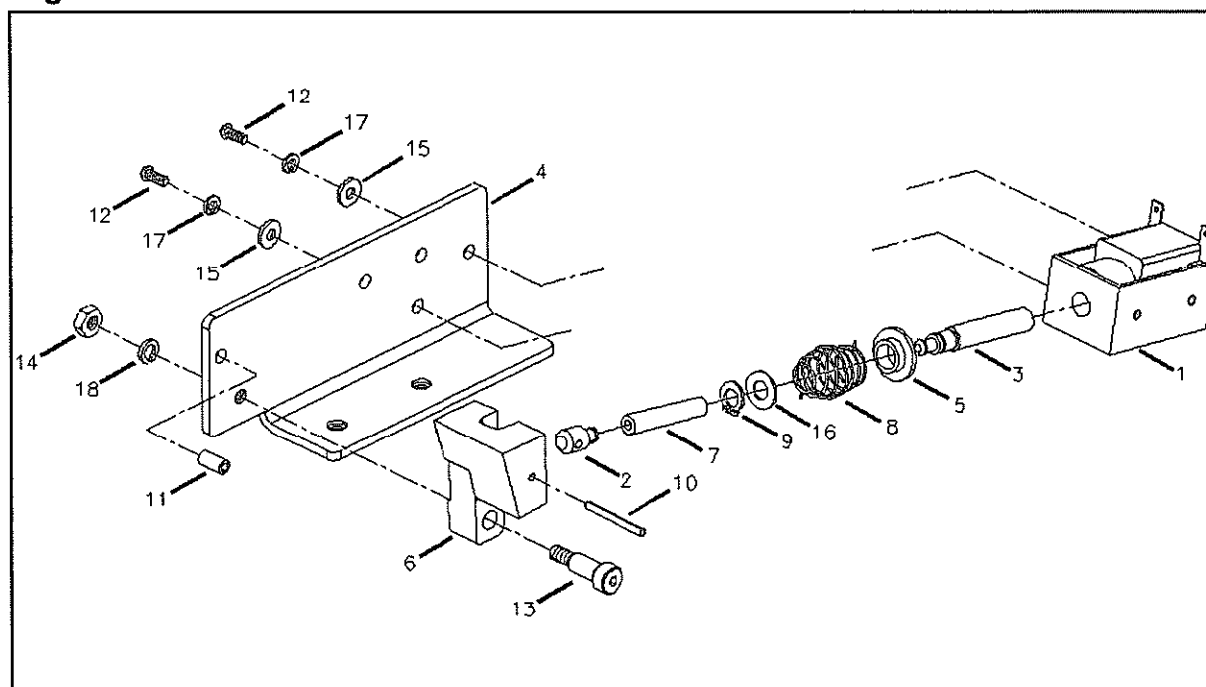


Mendes
Mendes

Mendes Service Bulletin Number MM-030

ITEM	PARTS NUMBER	DESCRIPTION
1	301-5170-00	solenoid [24VAC]
2	302-5220-01	shaft attachment
3	302-5270-01	special solenoid shaft
4	302-5560-01	solenoid bracket
5	303-5530-00	spring retainer
6	303-5560-01	solenoid block
7	304-5270-00	solenoid hose
8	305-5500-00	shaft spring </td
9	7002-710000-025	external retaining ring [1/4"]
10	7006-000900-100	spring tension pin [3/32" x 1"]
11	7006-001800-037	spring tension pin [3/16" x 3/8"]
12	7016-410632-031	round socket head machine screw [#6-32 x 5/16"]
13	7020-002500-050	shoulder screw [1/4" x 1/2"]
14	7034-001024-000	hexagon nut [#10-24]
15	7052-015037-004	spacer washer [5/32" x 3/8" x 3/64"]
16	7052-025050-003	spacer washer [1/4" x 1/2" x 1/32"]
17	7060-006046-003	lock washer [1/16" x 15/32" x 1/32"]
18	7060-018003-006	lock washer [3/16" x 1/32" x 1/16"]

Figure A



**Installation of a Pin Deflector.**

November 98



Starting with MM-2001 pinsetter serial number MMP-00985, a new system was introduced for the pit conveyor belt (304-6000-00). This measure was implemented in order to prevent balls from being stopped by a pin in front of the ball door (303-6560-00/303-6565-00).

This modification is fully compatible with any pinsetter and is available from Mendes under the part number 399-6000-00 (Pin Deflector Modification Kit).



The kit number 399-6000-00 (Pin Deflector Modification Kit) includes all the necessary parts to complete the modification of one pinsetter.

Part listing for modification kit # 399-6000-00:

PARTS NUMBER	DESCRIPTION
302-6005-00	ELEVATOR BOLT [1/4"-20 X 9/16"]
303-6000-00	PIN DEFLECTOR
7044-002520-000	THIN NYLON LOCKNUT [1/4"-20]

**Installation Process:**

Measure 10" 1/2 (267mm) (**Figure 1, A**) from the ball door (303-6560-00 / 303-6565-00). Punch a 5/16" (8mm) diameter hole in the pit carpet. Put together the elevator bolt (302-6005-00), the pin deflector (303-6000-00) and the thin nylon nut (7044-002520-000) as shown in **Figure 1** and tighten them together.



Remove the pit deflector (303-6300-00/303-6305-00) and make a notch as shown in **Figure 1**.

Before running the machine; check for clearance between the front of the pit conveyor belt (304-6000-00) and the tailplank (**Figure 1 & 2, Item B**). The clearance has to be at least 1/2" (13mm) to clear the path for the pin deflector (303-6000-00). If not, make a groove in the tailplank to allow safe passage.



ITEM	PARTS NUMBER	DESCRIPTION
1	302-6005-00	ELEVATOR BOLT [1/4"-20 X 9/16"]
2	303-6000-00	PIN DEFLECTOR
3	303-6300-00	PIT DEFLECTOR [RIGHT]
4	303-6305-00	PIT DEFLECTOR [LEFT]
5	303-6560-00 / 303-6565-00	BALL DOOR [RIGHT / LEFT]
6	304-6000-00	PIT CONVEYOR BELT
7	7044-002520-000	THIN NYLON LOCKNUT [1/4"-20]



Mendes
Mendes

Figure 1

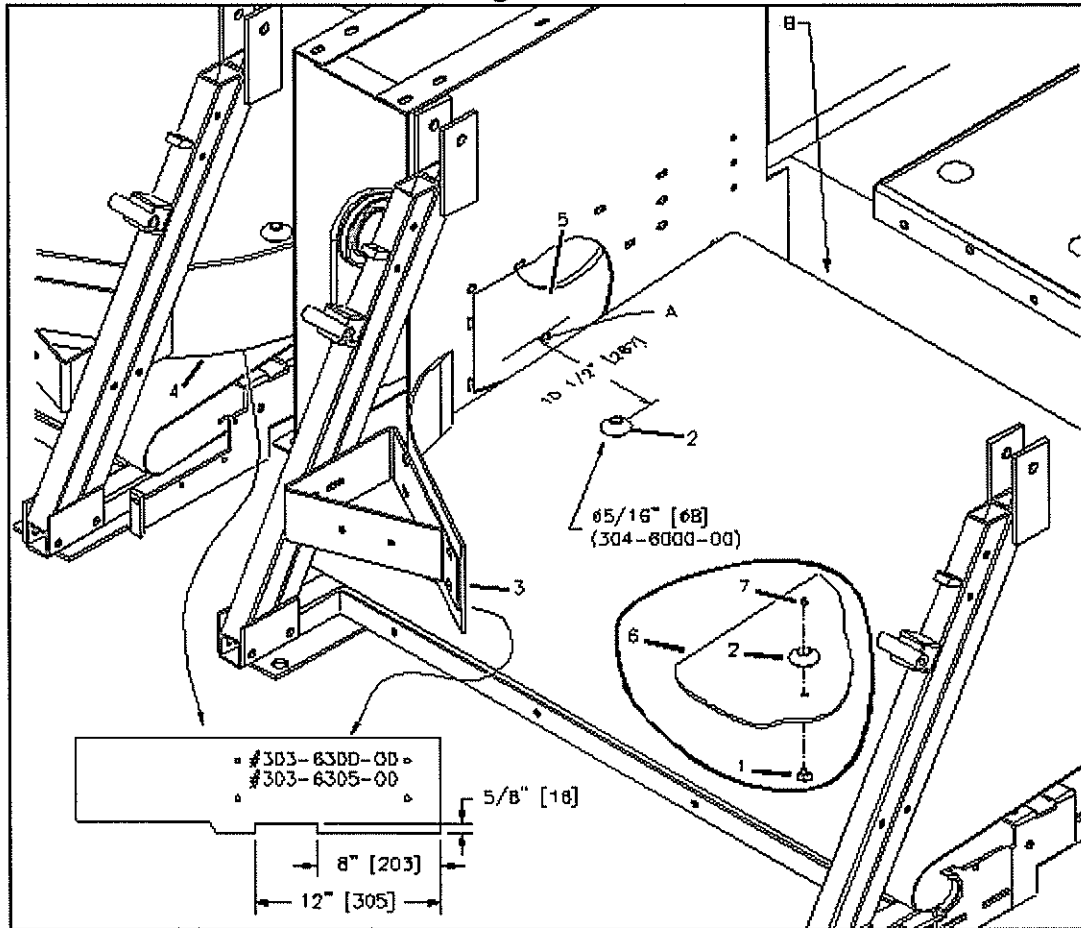
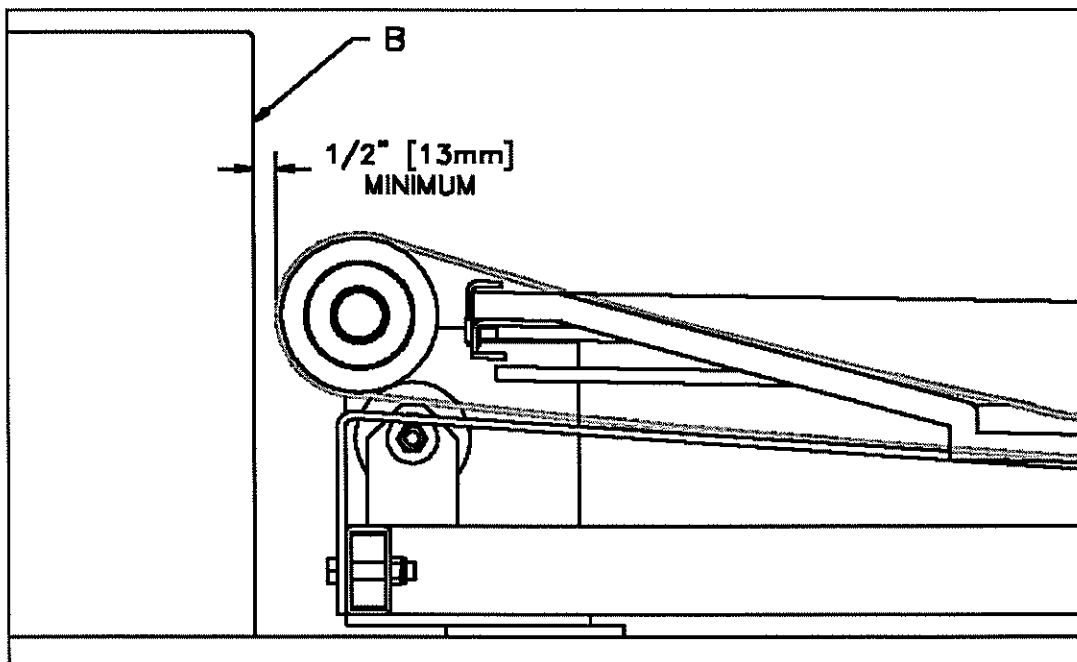


Figure 2



**Replacement of the Elevator Up Deflector***Décember 1998*

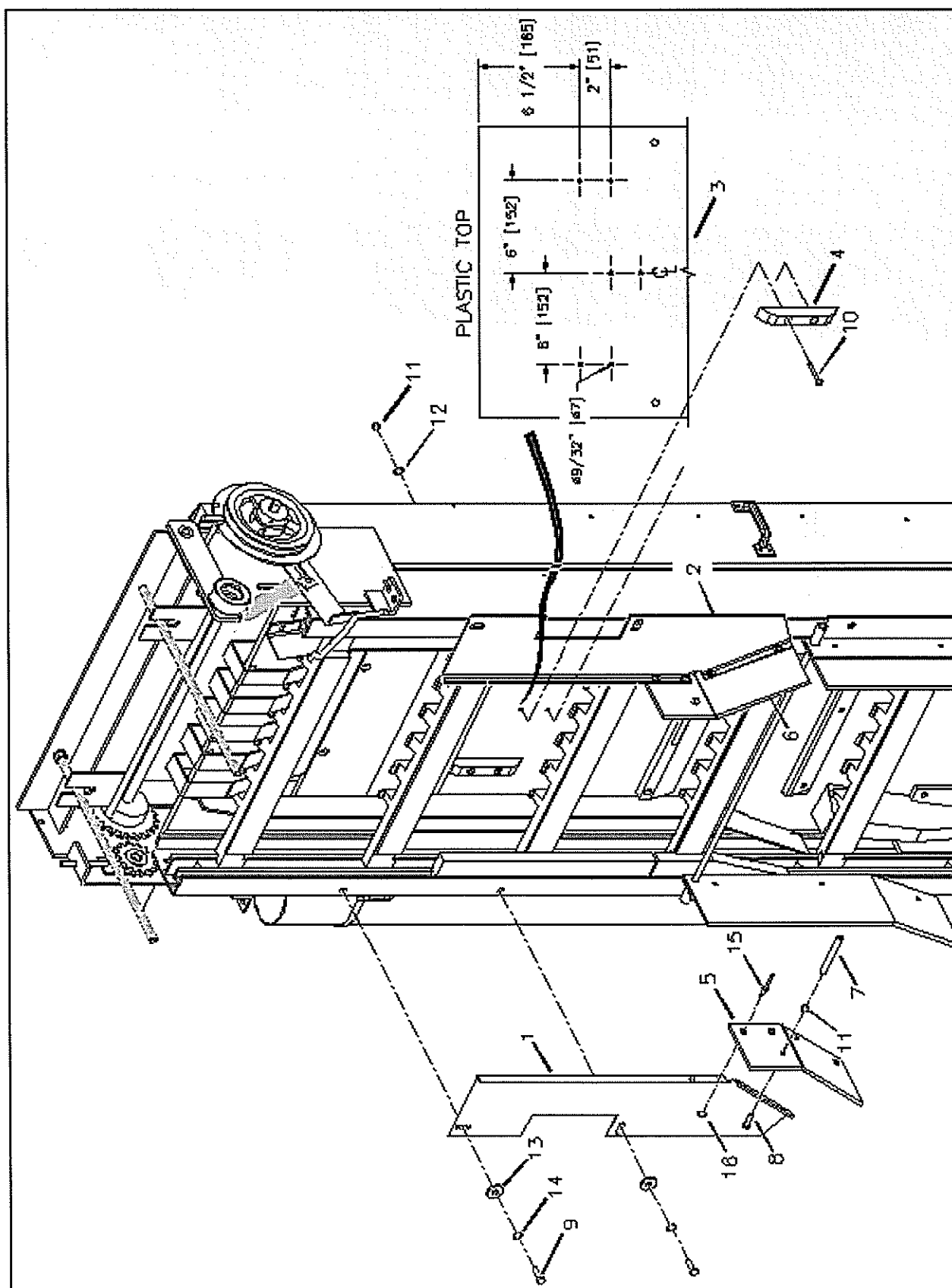
Starting with MM-2001 pinsetter serial number MMP-00978, a new system was introduced for the pin elevator. This measure was implemented in order to prevent pins from being crushed between the pin lift arm (303-8020-00) and the carrousel staging assembly (322-8500-00).

This modification is fully compatible with any pinsetter and is available from Fenix under the part number 322-8310-00 & 322-8315-00. (Parts for the modification of one pinsetter)

Installation Process:

- Remove the old "Up Deflector" and install the new one in the same position.
- If you install the new "Up Deflector", you also need to install two positioning plates (303-8110-01) as described in **Figure 1**. Each of the elevator already as one "Positioning Plate" (303-8110-01) installed (Check if it is the same model). You need to remove this one and instal it with the new one, in the correct position. (**Figure 1**)

ITEM	PART NUMBER	DESCRIPTION	QTY. BEFORE MMP-0978	QTY. AFTER MMP-0978
1	302-8310-00	UP DEFLECTOR, RIGHT		
2	302-8315-00	UP DEFLECTOR, LEFT		
3	303-8045-00	INTERIOR PANEL, BOTTOM		
4	303-8110-01	POSITIONING PLATE	1 OR 2	1
5	303-8310-00	PIN PROTECTOR, RIGHT		1
6	303-8315-00	PIN PROTECTOR, LEFT		1
7	304-8310-00	STAGING HOSE 3/8"		2
	322-8310-00	UP DEFLECTOR, RIGHT ASSEMBLY	1	
	322-8315-00	UP DEFLECTOR, LEFT ASSEMBLY	1	
8	7010-002520-100	HEXAGON CAP SCREW, 1/4"-20 X 1"		2
	7010-003118-100	HEXAGON CAP SCREW, 5/16"-18 X 1"		0
10	7016-312520-175	FLAT SOCKET HEAD MACHINE SCREW, 1/4"-20 X 1-3/4"	2	2
11	7036-002520-000	NYLOCK NUT, 1/4"-20	2	4
12	7050-028062-006	FLAT WASHER 9/32" X 5/8" X 1/16"	2	2
13	7050-034100-012	FLAT WASHER 11/32" X 1" X 1/8"		
14	7060-031057-009	LOCK WASHER, 5/16" X 37/64" X 3/32"		
15	7108-401800-062	DOME HEAD ALUMINIUM POP RIVET, 3/16" X 5/8"	8	8
16	7150-019050-006	ALUMINIUM FLAT WASHER, 0.193 X 1/2" X 1/16"	8	8



**Replacement parts for the installation of the deflector block.***Month and Year*

Starting with MM-2001 pinsetter serial number MM-_____, we replaced the « Weld Nut » (7046-003118-037) inside the « Kickback Assembly ». This modification is fully compatible with any pinsetter.



This measure was implemented after some of the « weld nut » (7046-003118-037) broke inside the « Kickback Assembly » (302-6500-00).



If you encountered this problem, remove the « weld nut » inside the « kickback Assembly » and install the two « Deflector Block Mounting Plate » (302-6680-00 & 302-6690-00). With these new parts in place, it will be necessary to use « thin nylon nut » (7044-003118-000) and the « washer » (7050-034068-008).

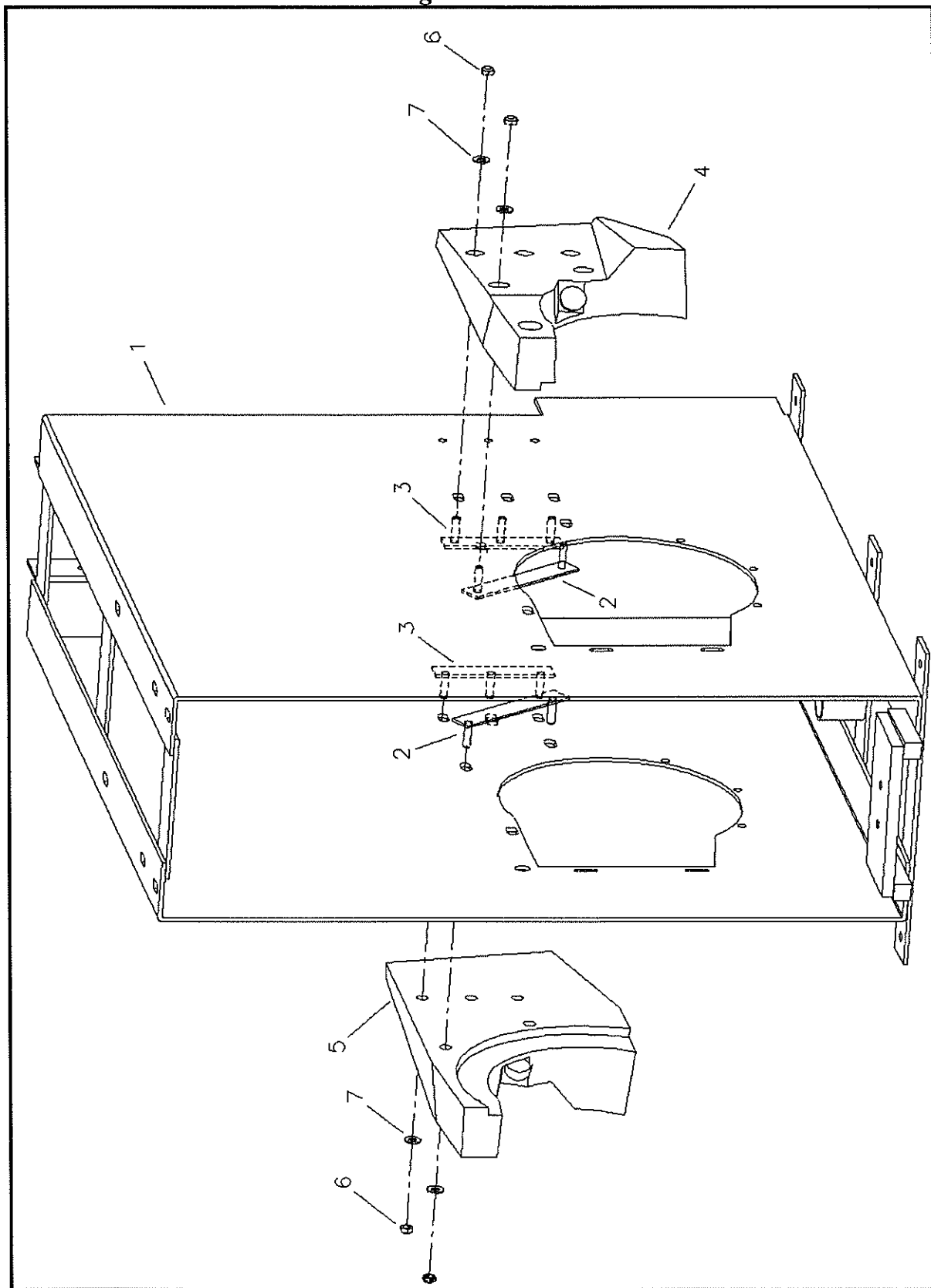


ITEM	PART NO.	DESCRIPTION
1	302-6500-00	KICKBACK ASSEMBLY
2	302-6680-00	DEFLECTOR BLOCK MOUNTING PLATE
3	302-6690-00	DEFLECTOR BLOCK MOUNTING PLATE
4	303-6600-00	DEFLECTOR BLOK RIGHT
5	303-6605-00	DEFLECTOR BLOK LEFT
6	7044-003118-000	5/16"-18 THIN NYLON NUT
7	7050-034068-006	WASHER 11/32" X 11/16" X 1/16"



Mendes
Mendes

Figure 1



**Carousel Staging Modification.***May 1999*

Starting with MM-2001 pinsetter serial number MMP-_____, two new reinforcements were added to the « Carousel Staging » (302-8500-00).

This measure was implemented in order to prevent the breaking of the « Carousel Staging » (302-8500-00). Please take note that this modification is possible even if the « Carousel Staging » (302-8500-00) is not damaged.

Installation Procedure:**A- Left Reinforcement : (Figure 2 & Figure 4)**

- 1- Bolt together the following parts: 302-8510-00, 302-8520-00 and 302-8530-00. For the "carriage bolt" (7012-003716-150), please take note that it should pass between the two rods of the "Carousel Staging".
(Figure 2 & 4)
- 2- To finalize the adjustment of the part "staging frame brace" (302-8510-00), it is necessary to move it (up / down & front / back) in order to have the head of the pin supported by the rod and the "staging frame brace" (302-8510-00) at the same time.

**B- Right Reinforcement : (Figure 1 & Figure 3)**

- 1- Remove the "Slide Guide, Top" (303-8510-00).
- 2- Re-install the "Slide Guide Top" (303-8510-00) with the "Shim Absorber" (304-8545-00) and the "Staging Frame Brace" (302-8545-00). (Figure 1 & 2)
- 3- Install the "Staging Frame Brace" (302-8540-00) on the "Staging frame Brace" (302-8545-00).
- 3- To finalise the adjustment of part two staging frame brace (302-8540-00 & 302-8545-00), it will be necessary to move it (up / down & front / back) in order to have the head of the pin supported by the rod and the "staging frame brace" (302-8540-00) at the same time.



Mendes
Mendes

Mendes Service Bulletin Number M-034 (Page 2)

ITEM	NO. DE PIECES	DESCRIPTION
1	302-8510-00	STAGING FRAME BRACE
2	302-8520-00	STAGING BRACE SUPPORT
3	302-8530-00	STAGING SPECIAL WASHER
4	302-8540-00	STAGING FRAME BRACE
5	302-8545-00	STAGING FRAME BRACE
6	303-8510-00	SLIDE GUIDE, TOP
7	304-8545-00	SHIM ABSORBER
8	7010-002520-100	HEX CAP SCREW 1/4"-20 X 1"
9	7012-003716-150	CARRIAGE BOLT 3/8"-16 X 1 1/2"
10	7016-412520-125	ROUND HEAD 1/4" X 1 1/4"
11	7016-412520-150	ROUND HEAD 1/4" X 1 1/2"
12	7018-303716-150	HEX SOCKET CAP SCREW 3/8"-16B X 1-1/2"
13	7036-002520-000	NYLON NUT 1/4"-20
14	7036-003716-000	NYLON NUT 3/16"-16
15	7050-028062-006	WASHER 9/32" X 5/8"
16	7050-034100-012	WASHER 11/32" X 1"
17	7050-040112-012	WASHER 13/32" X 1 1/8"

Figure 1

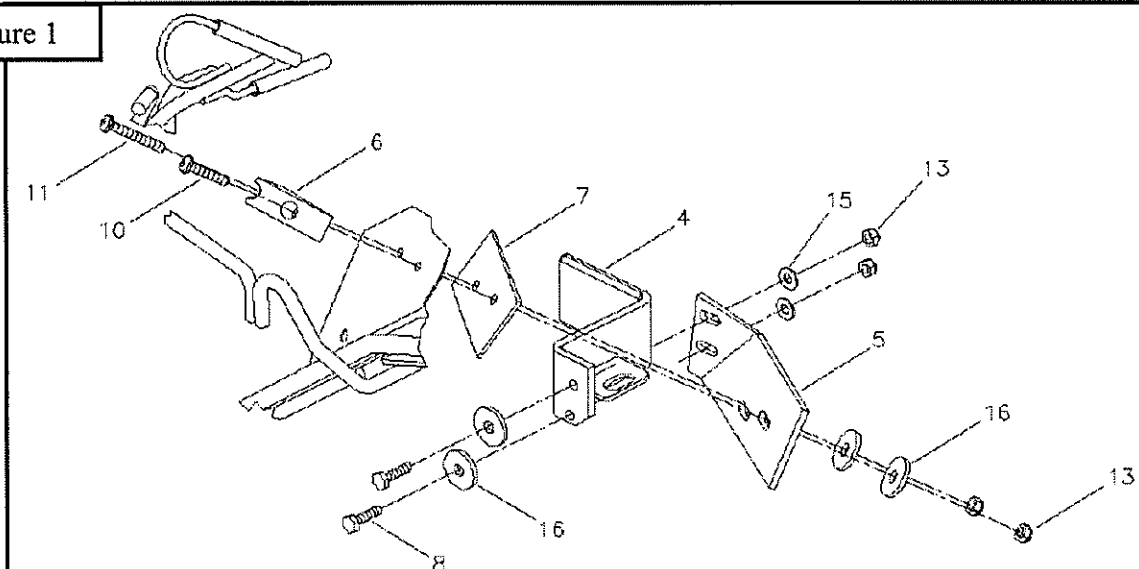


Figure 2

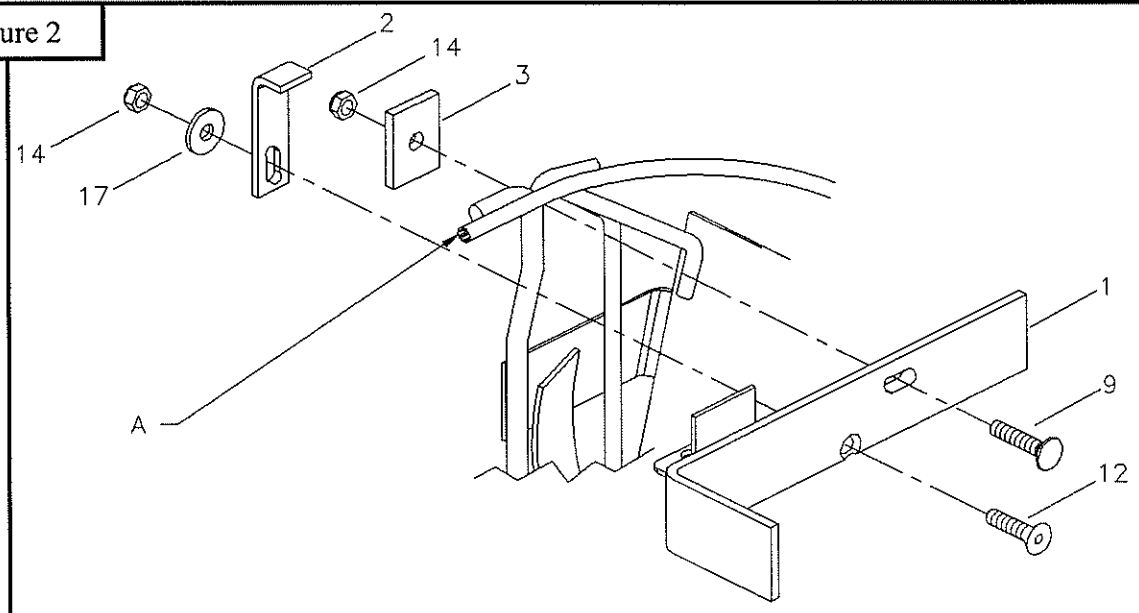


Figure 3

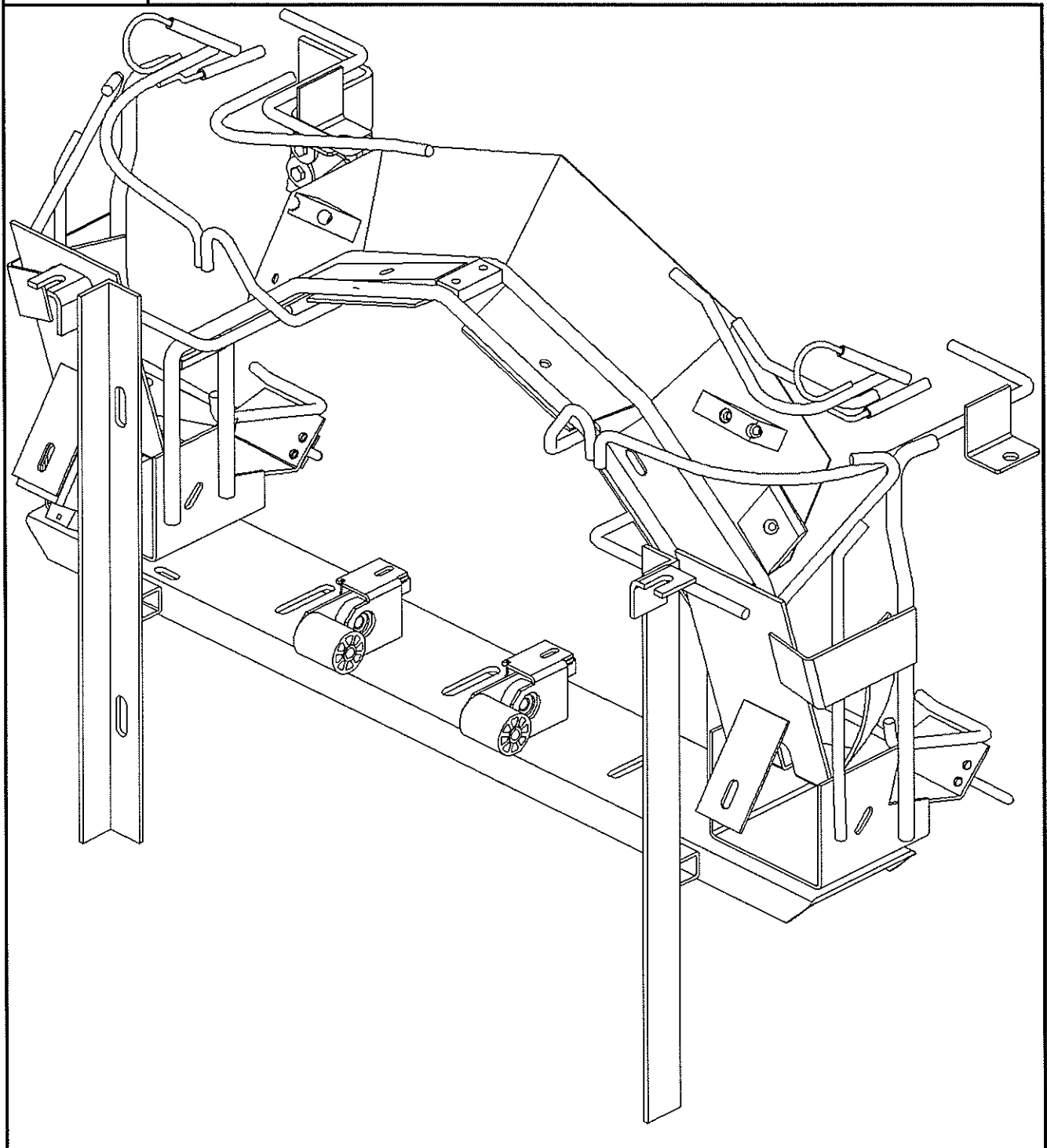
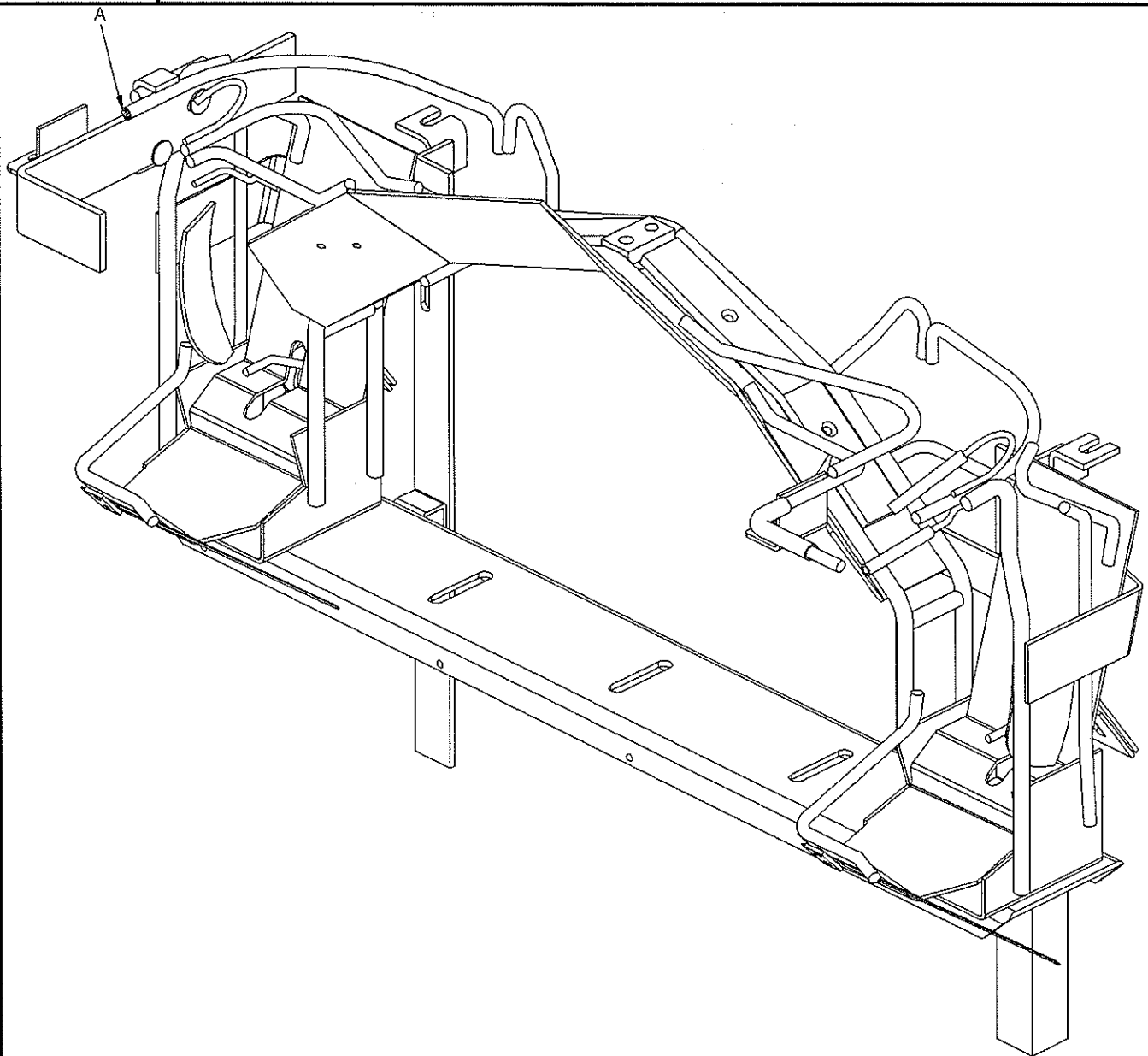


Figure 4





MM-2001 PINSETTER

NUMBER MM-035

The Bowling Professionals Since 1962

Replacement of the Carrousel Shaft Spring

Février 2000



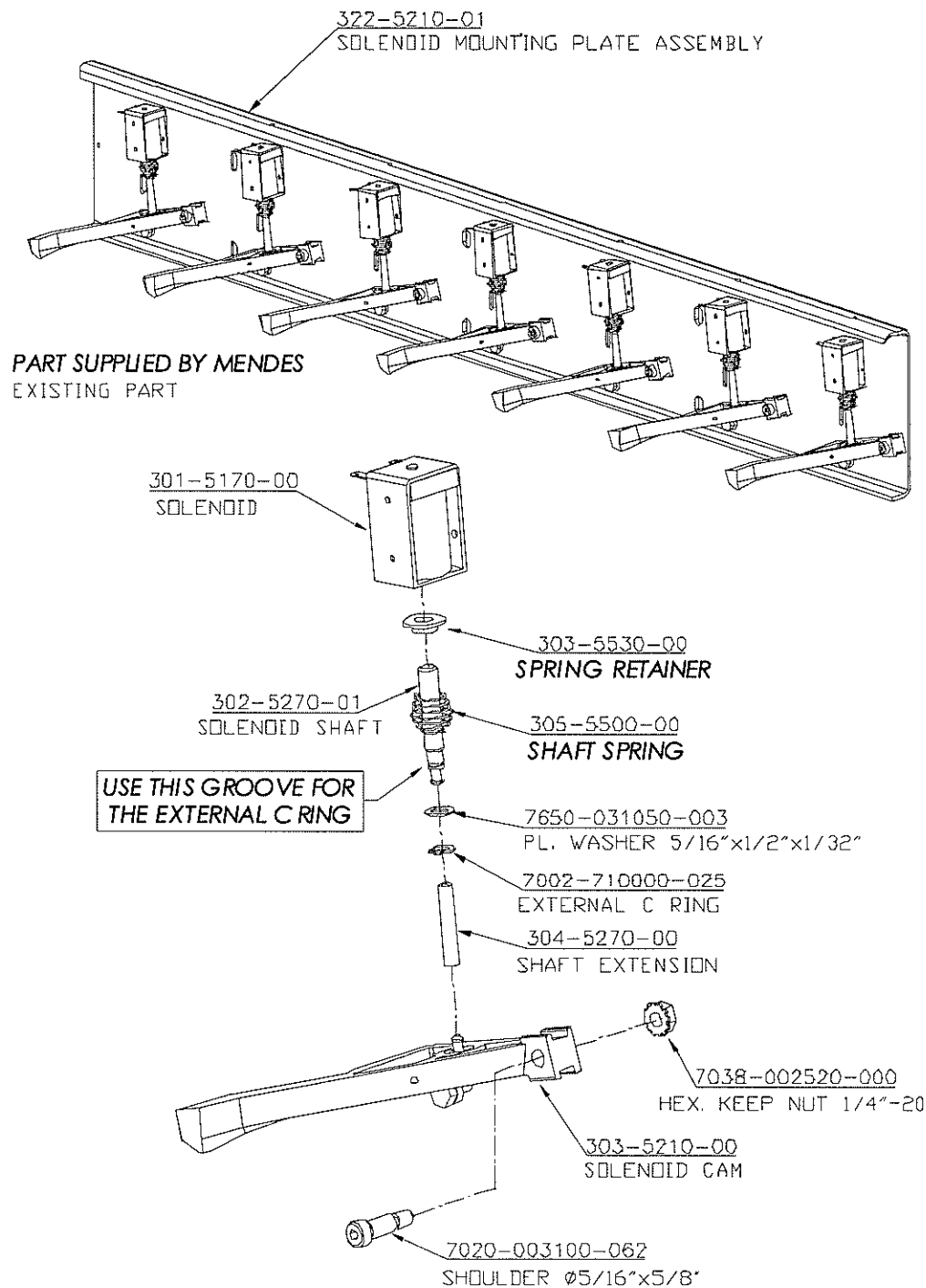
Mendes
Mendes

Mendes inc. • 2425 Watt • Sainte-Foy QC • Canada G1P 3X2

Phone: (418) 650-2425 Fax: (418) 650-3341 E-mail: mendes@mendes-inc.com Web Site: www.mendes-inc.com

Mendes Service Bulletin Number MM-035

ITEM	PART NO.	DESCRIPTION
1		
2		





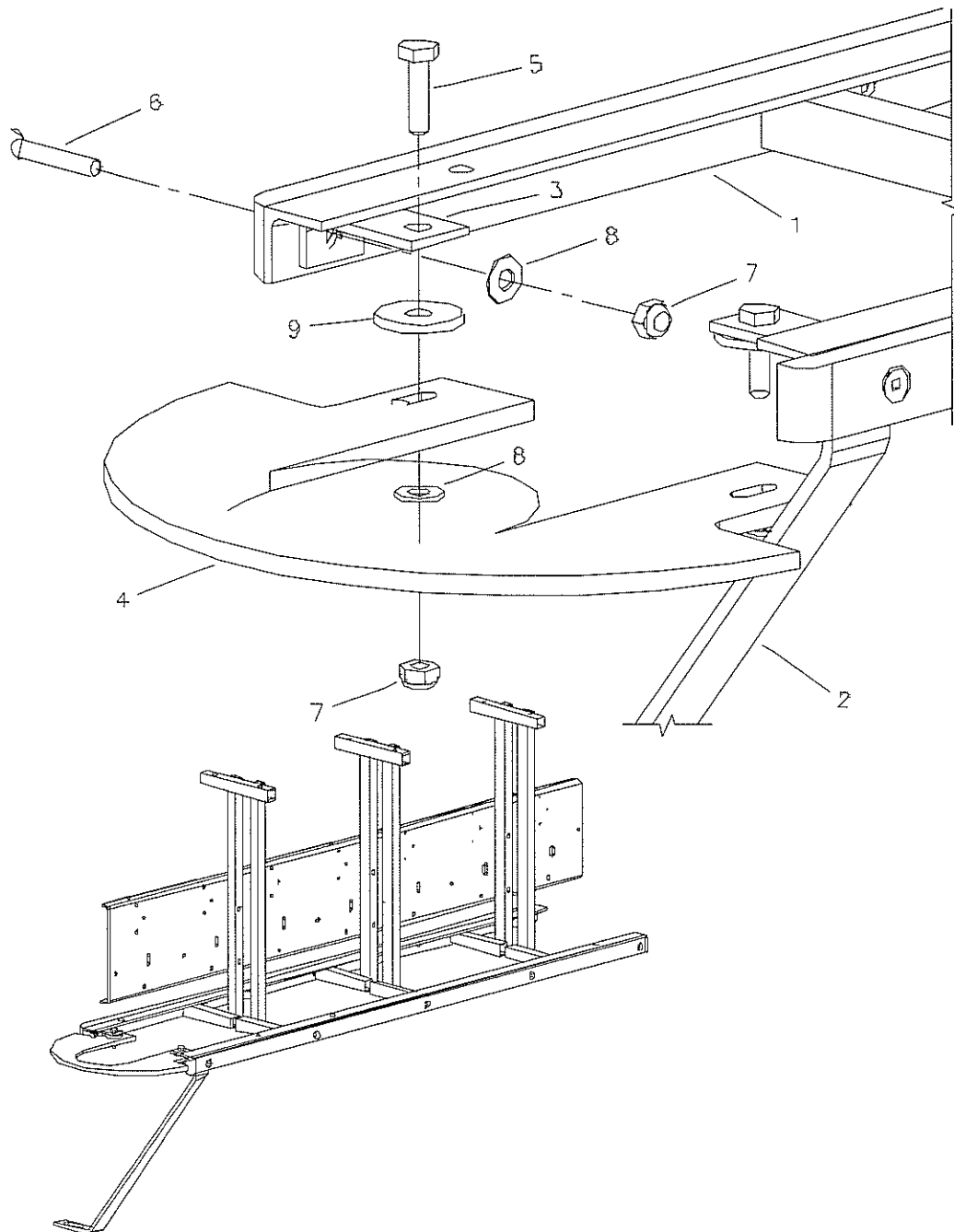
Addition of Carousel Bucket Guide
Février 2000



Mendes
Mendes

Mendes Service Bulletin Number MM-036

ITEM	PART NO.	DESCRIPTION
1	302-5200-00	CARROUSEL FRAME (CENTER)
2	302-5215-00	CARROUSEL BRACE
3	302-5225-00	GUIDE BRACKET
4	303-5200-00	CARROUSEL BUCKET GUIDE
5	7010-002520-100	HEXAGON CAP SCREW 1/4"-20 X 1"
6	7016-312520-150	FLAT HEAD MA. SO. 1/4"-20 X 1-1/2"
7	7036-002520-000	HEXAGON NYLON NUT 1/4"-20
8	7050-028062-006	FLAT WASHER 9/32" X 5/8" X 1/16"
9	7050-034100-012	FLAT WASHER 11/32" X 1" X 1/8"



**Addition of a Solenoid Cover***Février 2000*

Starting with MM-2001 pinsetter serial number MMP-_____, a new reinforcement was added to the « Solenoids » (301-5170-00). This new part is fully compatible with all the MM-2001 Pinsetter

This measure was implemented in order to prevent the breaking of the Solenoids metal casing. Please take note that this modification is available under the following part number:

399-5160-00 Solenoid Cover Modification Kit.

If you require a complete assembly (Solenoid and Cover), use the following part number:

399-5170-00 Solenoid 24 VAC with Cover (Plunger not Included)

Installation Note:

- When installing, it is absolutely necessary to use two flat washers (7016-410632-025) and the lock washer (7060-006046-003) according to the included diagram. Failure to do so may damage the solenoid unit.

Mendes Service Bulletin Number MM-037

ITEM	PART NO.	DESCRIPTION	QTY
1	301-5170-00	SOLENOID	
2	302-5160-00	SOLENOID COVER	1
3	7016-410632-025	ROUND HEAD MA. SCREW 6-32 X 1/4"	1
4	7052-015037-004	FLAT WASHER 5/32" X 3/8" X 3/64"	2
5	7060-006046-003	LOCK WASHER 5/32" X 29/64" X 1/32"	1

