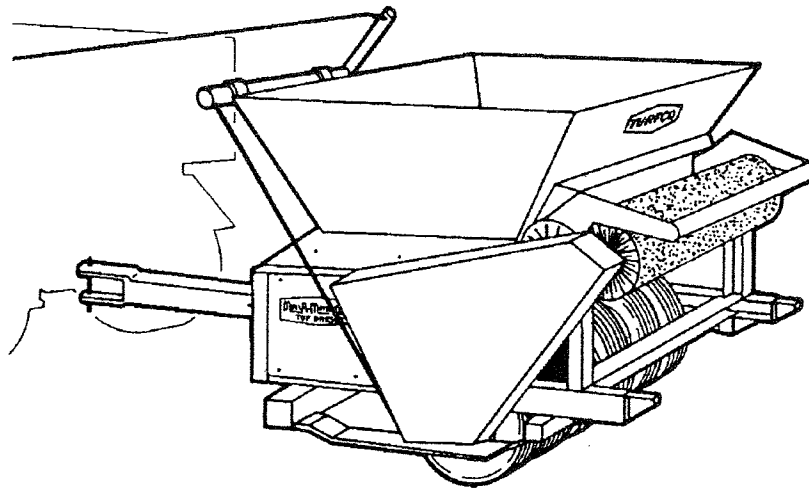


METE-R-MATIC® II AND III TOW TYPE TOP DRESSERS



F12A, F12B, F12C

OPERATOR'S MANUAL AND PARTS LIST



MODELS F12A, F12B and F12C

Product Numbers 85409, 85420, 85421, and 85422

Manual Number 658004

Includes 655136 Conveyor Instructions and
657106 Four to Six Wheel Conversion Kit

WARNING

IF INCORRECTLY USED THIS MACHINE CAN CAUSE SEVERE INJURY. THOSE WHO USE AND MAINTAIN THE MACHINE SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ THE ENTIRE MANUAL BEFORE ATTEMPTING TO SET UP, OPERATE, ADJUST OR SERVICE THE MACHINE.

TURFCO MFG. INC. 1655 101st Avenue NE • Minneapolis, MN 55449-4420 U.S.A.

Phone (612) 785-1000 • FAX (612) 785-0556

© 1992 Turfco Mfg., Inc.

IMPORTANT: Record the information from your Mete-R-Matic. Machine model, type, and serial numbers may be necessary when ordering service parts.	
Model #	
Serial #	
Date Purchased	
Purchased From	

Mete-R-Matic Top Dressers Covered in This Manual

Model	Product	Year	Serial #
F12A	85409	1981 -1984	188501 - 488548
F12B	85420	1984 -1989	488601 - 989000
F12C	85421/85422	1990 -1992	098501 - 299000

Table of Contents

Specifications	2
Introduction	3
Assembly	4
Operation	7
Safety	8
Lubrication and Adjustment	10
Maintenance and Adjustment	11
Four to Six Wheel Conversion Kit	14
655136 Conveyors	16
Parts Lists	20

Specifications

Hopper Capacity:	18.3 cubic feet level at top of hopper	Controls:	Rope operated conveyor/brush drive; metering gate opening
Hopper Dimensions:	72" x 36" at top, 60" x 20" at bottom, 17-1/2" deep	Drive:	Ground driven
Spreading Width:	60"	Wheels and Tires:	Four or six 16 x 6.50 x 8 four-ply rib tread turf tires
Top Dressing Speed:	Up to 8 mph	Hitch:	Pin hitch
Transport Speed:	Up to 15 mph when empty, 8 mph when loaded	Weight:	815 lbs.
Conveyor Belt:	60" wide composition belt	Shipping Weight:	990 lbs.
Metering Gate:	Up to 2-1/4" opening	Shipping Dimensions:	80-1/2" x 51" x 39-1/2", 93.9 cubic feet

INTRODUCTION

TOP DRESSING is the introduction of new soils to existing turf. Repetitive top dressing will level turf and promote the decomposition of thatch. Special mixtures of top dressing will improve poor soil drainage and stimulate growth in areas where turf is underdeveloped.

The Mete-R-Matics are specifically designed for the uniform application of top dressing to fine turf. Turfco manufactures the Mete-R-Matic in a variety of models and sizes. There are self propelled, tow type, and truck mounted units available. Capacities range from 11 to 60 cubic feet.

The Mete-R-Matics spread the top dressing with uniformity while spreading the weight of the load evenly over the turf. The ground wheel driven Mete-R-Matic II and III Tow Type Top Dressers assure that the application is uniform, even if the operator changes the speed of the tow vehicle.

This manual covers three models of the Mete-R-Matic II and III Top Dresser, the 655136 Conveyor, and the 657106 4 to 6 Wheel Conversion Kit.

Model F12A: This was the first model. It was introduced in 1981 and replaced by the Model F12B in 1984. The F12A had 4 wheels and did not have a skid plate under the chain guard on the left side of the machine. The gears and sprockets inside the

chain guard are different on this model, when compared with the F12B and F12C.

Model F12B: The Model F12B replaced the F12A in 1984. It also had 4 wheels, but the gears and sprockets changed inside the chain guard on the left side of the machine. The F12B was also the first model to have the skid under the chain guard.

Model F12C: This model replaced the F12B in 1990. This model was the first to use 6 wheels and a three piece axle. It had the same gears and sprockets as the F12B. A bridge was added in the hopper. A self cleaning front roller was added to the conveyor drive.

655136 Conveyor: The same conveyor fits all three models.

657106 Four to Six Wheel Conversion Kit: A kit was introduced at the same time as the Model F12C to enable owners of the previous models to add the three piece axle and the two extra wheels.

Since some of the F12A and F12Bs have been converted to six wheels, care must be taken to use the correct page of this manual when ordering service parts. Most of the pages address all three models. Beware of the notes on the pages that indicate which models use the parts listed on that page.

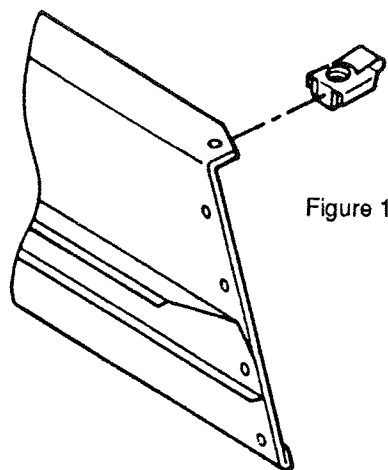


Figure 1

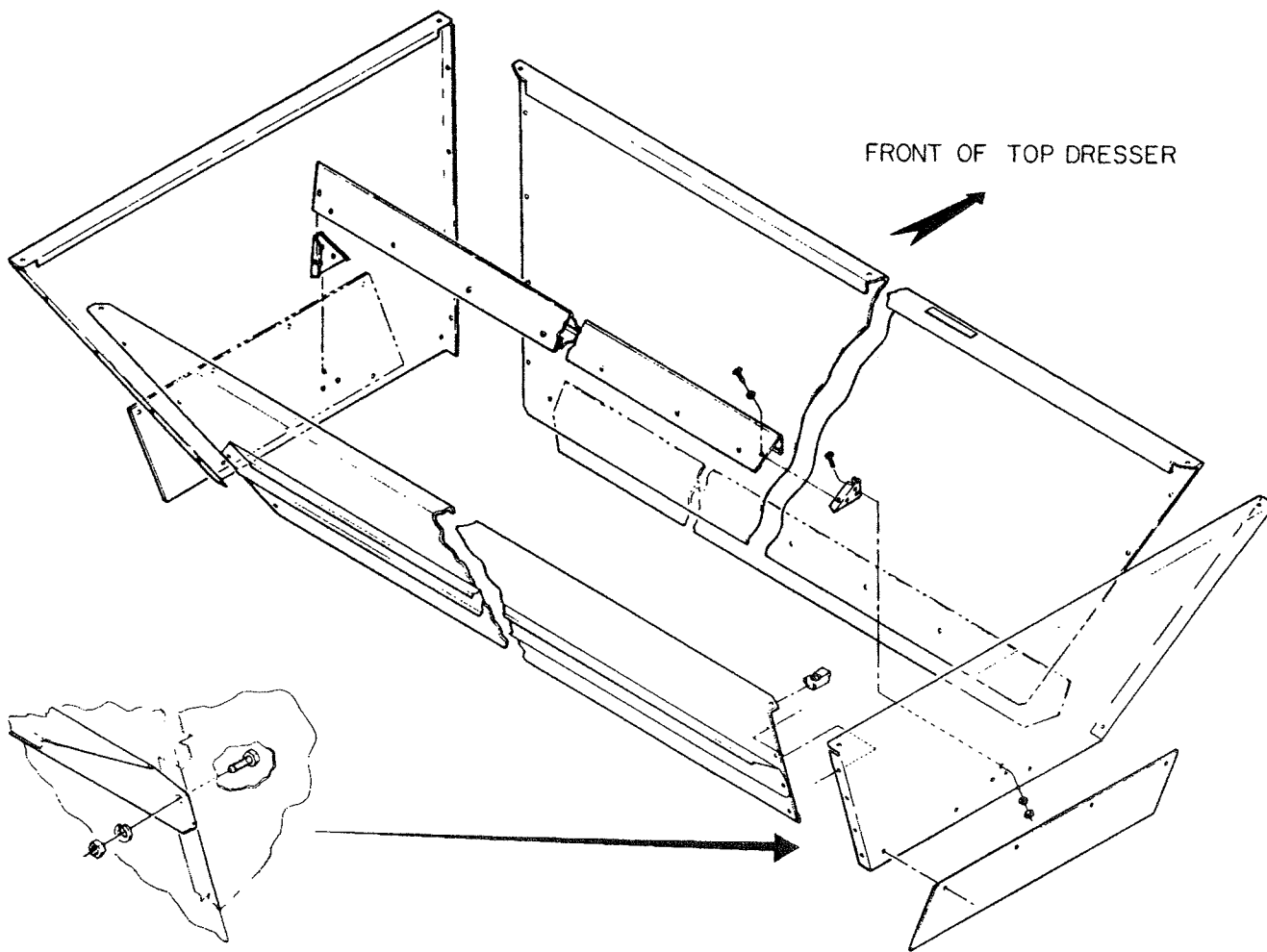


Figure 2

Figure 3

ASSEMBLY

Install the hitch to the frame by using two 1/2-20 x 4-1/2 screws, lock washers, and nuts.

Install the trap nuts on the upper corners of the front and rear panels. Slide the nut over the inner edge of the panels as shown on page 4, Figure 1, with the nut portion on the bottom and lined up with the hole in the flange.

Attach the hopper side panels and side seal strips to the frame. The seal strips fit between the hopper panels and the frame. Insert the screws with the flat washers from inside the hopper. Secure with lock washers and nuts. Do not tighten.

Install the rear panel by sliding it down, inside the flanges of the side panels.

The flanges of the side panels fit between the rear panel and the stiffener that is attached to the rear panel, see page 4, Figure 3. The top flange of the panel must be under the top flanges of the side panels. Attach the corners of the panels together with screws and lock washers through the top flanges of the side panels and into the trap nuts on the rear panel. Do not tighten.

Install the front panel by the same method.

Slide the front seal strip between the front panel and the frame. Work from the center of the hopper toward the sides and insert the screws with the flat washers through the front panel, the seal strip, and the frame. Attach with lock washers and nuts. Do not tighten.

Place the bridge over the brackets that are riveted to the side panels. Thread the screws with lock washers and flat washers into the press nuts in the brackets. Do not tighten.

For proper alignment, the screws and nuts on the hopper should be tightened in the following sequence: front panel to frame, corners to the top flanges, side panels to the frame, side panels to the front panel, side panels to the rear panel, and bridge to the bridge brackets.

There should be 1/32" to 1/16" clearance

655703 Hopper Kit Packing List

Part No.	Description	Qty.
655158	Front Panel	1
655162	Rear Panel with Stiffener	1
655159	Side Panel with Bracket	2
655175	Front Seal Strip	1
655176	Side Seal Strip	2
655368	Control Tube	1
655164	Clutch Rod	1
655329	Rope, 15 Feet	1
657077	Bridge	1
658004	Manual	1
655360	Parts Bag, Includes items below	1
400108	Screw, Hex, 1/4 x 20 x 5/8	43
443102	Nut, Hex, 1/4 x 20	35
446128	Washer, Lock, 1/4	43
499410	Nut, Trap, 1/4 x 20	4
452002	Washer, Flat, 1/4	59
453013	Washer, Flat, 7/16	2
460028	Pin, Cotter, 1/8 x 1	2
400458	Screw, Hex, 1/2 x 20 x 4-1/2	2
443820	Nut, Hex, 1/2 x 20	2
446154	Washer, Lock, 1/2	2

between the hopper and the metering gate. Adjust the gate forward or back by loosening the screws holding the pivot supports to the frame.

Remove the screw from the front left corner of the hopper. Using an additional 1/4-20 screw, lock washer, flat washer, and nut, mount the control lever assembly to the hopper. Position the longer lever toward the center of the hopper. The tube will extend beyond the front edge of the hopper.

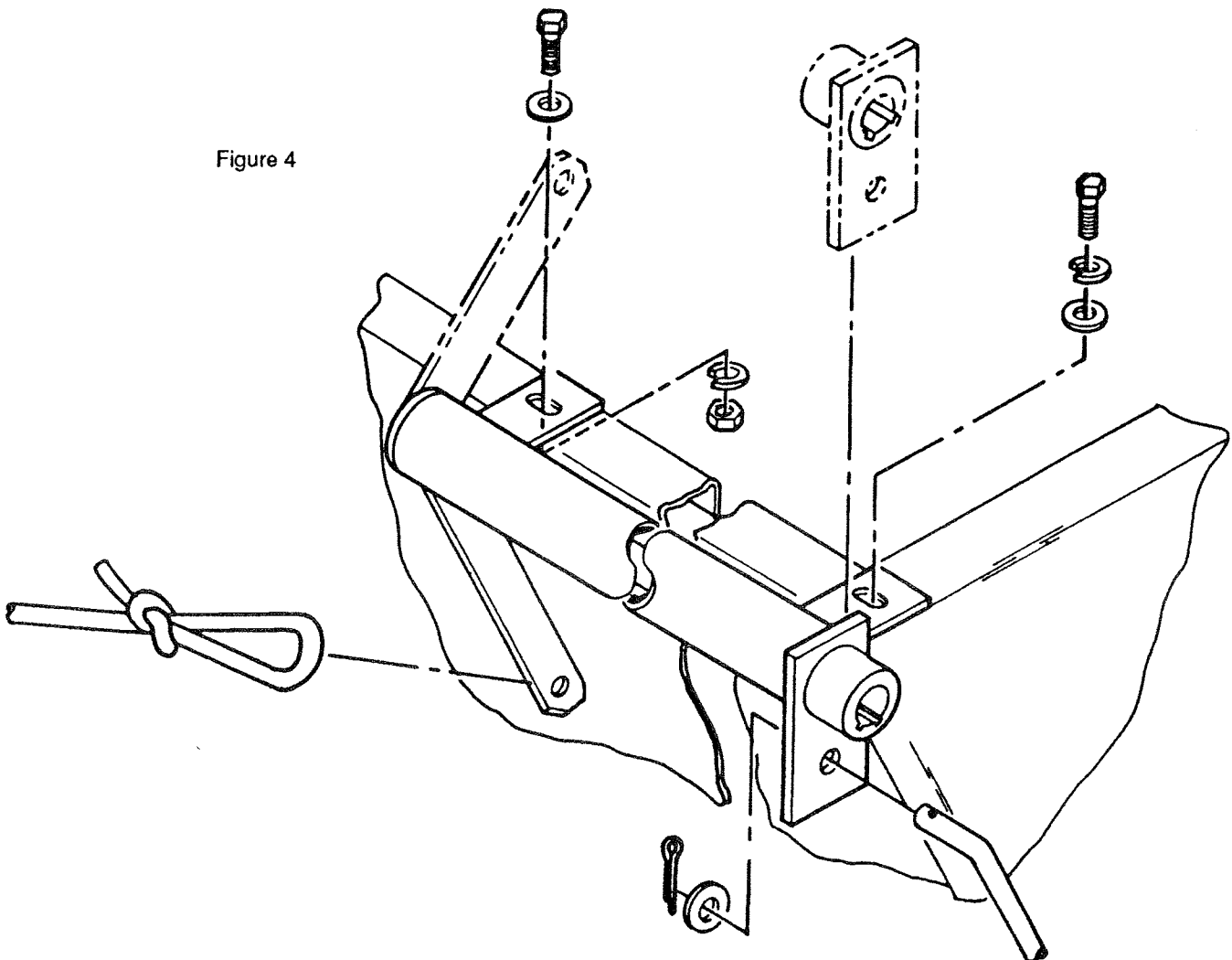
On Mete-R-Matics produced after October, 1990, there is a second keyway broached in the short arm of the control lever assembly. As shipped from the factory, the lever is assembled so that in operation, the long arm will point down. The down position is desirable to prevent damage to the control lever when loading the hopper.

However, dump boxes or other accessories on the pulling vehicle may require that the control lever be assembled to operate in the up position as on previous Mete-R-Matics, page 6, Figure 4. To do this, remove the nut from the shaft. Remove the short arm from the shaft. Rotate the long arm so that it points up. Install the short arm on the shaft with the hub aimed in, and the short arm pointing down. Install the nut on the shaft.

Install the control rod between the short arm of the control lever assembly and the lever near the bottom of the chain guard. Use a washer and a cotter pin to secure each end of the rod.

Tie one end of the rope to the long arm of the control lever. Tie a loop in the other end of the rope to provide a secure grip for the operator.

Figure 4



OPERATION

Attach the tongue of the Mete-R-Matic to a suitable towing vehicle, such as a turf truck with a 5/8" pin hitch.

WARNING! When loaded with top dressing, the Mete-R-Matic weighs over 2600 lbs. The pulling vehicle **must** have adequate brakes.

Arrange the trip rope so it is easily accessible to the operator of the vehicle. Make certain that the rope cannot get caught in the mechanisms of either the pulling vehicle or the Mete-R-Matic.

When operating the clutch, be sure to pull the rope all the way to the stop. Pulling the rope part way will position the clutch cam out of time. To reset the timing of the clutch cam, pull the rope gradually until you feel the cam drop into place. Release the rope. **Do not** pull the rope the rest of the way to the stop.

Disengage the clutch by pulling the rope. The indicator by the chain guard should move to the disengaged or outboard position.

The width of the Mete-R-Matic hopper permits loading with a front end loader. This is normally done from a central location. When loaded, the Mete-R-Matic can be transported to the application site at speeds up to 8 mph. When empty, it can be transported at up to 15 mph.

Because the moisture content of the top dressing material varies, it may be necessary to use different metering gate settings. Normally, the higher the moisture content of the top dressing material, the larger the gate opening required for a specific

application rate. The Mete-R-Matic's ground driven conveyor and brush assure an even distribution of material, regardless of operating speed.

If the Mete-R-Matic is being used to distribute grass clippings, the bridge should be removed from the hopper.

WARNING! the pulling vehicle must have adequate brakes.

DO read the instruction manual before operating.

DO check the tire pressure before use; 21 psi/1.47 kg per cm sq/1.4 atm.

ALWAYS pull off the putting green before stopping.

DO NOT overload the hopper.

DO NOT exceed 8 mph/13 kph with the hopper loaded.

DO NOT exceed 15 mph/24 kph with the hopper empty.

DO NOT disconnect the hitch when the hopper is loaded.

DO NOT disconnect the hitch when on a slope.

DO NOT allow the rope to enter the hopper.

DO NOT haul tools or debris in the hopper. Damage to the conveyor belt may result.

DO NOT ride in or on the Mete-R-Matic Top Dresser.

GENERAL SAFETY RECOMMENDATIONS

Safety on the job should always be top priority. Training and experience are important factors in the safe operation of equipment. Please consider the following information and realize that safe operation is a matter of using common sense as it relates to the machine, its maintenance, the operator, the training, and the operating conditions. These are general safety instructions that apply to most turf maintenance equipment.

TRAINING

Always read the manual before operating a machine for the first time.

Always read the warning decals before operating a machine for the first time.

Always check the location and use of each control before operating a machine for the first time.

Practice the operation of the machine in a safe area with no obstructions until familiar with the controls.

If you have questions, ask your supervisor, or call the factory.

CLOTHING

Clothes should be snug fit. Loose fitting clothing is hazardous because it may get caught in the mechanism during service or operation.

Remove jewelry before operation. Again, they may get caught in the mechanism.

Wear shoes that will protect your feet. In most cases sneakers do not afford the protection of leather shoes or boots. Steel toed safety shoes should be considered for many situations.

Hard Hat: The use of a hard hat should be considered when using equipment on a golf course. The danger of being hit by a golf ball should be a major concern as well as protection while driving under tree limbs.

Eye Protection: Safety glasses and face shield should be considered when operating as well as working in close proximity to high speed rotary equipment. Watch for rotary mowers, edgers, brushes and string trimmers. Rotary mowers can

throw debris at speeds up to 200 MPH.

Hearing: If the noise level of the equipment is too loud, consider the use of ear plugs.

Do not use stereo head sets during operation. This is a distraction that may lead to an accident. They also make it difficult to hear other people or equipment in the area.

Respirators: When operating in dusty, windy conditions, wear a respirator. This is also an important consideration if operating equipment while spraying chemicals and fertilizers.

Gloves: Use gloves when handling sharp or hazardous objects.

THE OPERATOR

The operator should never use a machine while under the influence of alcohol or drugs that may interfere with the safe operation of the equipment.

The operator should be aware of the hazards of working in the sun and use sun screen products when necessary.

The operator should be aware of the hazards of working in hot weather and should take precautions to avoid heat stress and dehydration.

The operator should never attempt to ride a machine that is not designed for that purpose. Do not allow others to ride a machine that is not designed for passengers. Do not allow more passengers to ride the unit than the machine was designed to carry.

Care should always be taken when mounting and dismounting a riding machine. Prevent injuries and falls by making sure the operator does not slip. Unless it is an emergency, do not jump off a machine. Injury may result when the operator's foot slips trying to jump from a machine.

Do not operate any equipment at unsafe speeds. Speed should be reduced when turning or operating on slopes. The operator must use common sense to determine a safe speed based on the equipment, the load, the slope, the surface and other conditions that may affect safe operation.

The operator must be aware of the hazards around the area. Be careful to observe other people and machines. You may be a hazard to them. They may be a hazard to you.

Beware of slippery conditions. Wet turf can be hazardous on slopes, when turning or stopping, or at higher speeds.

Keep hands and feet away from cutting devices and drive components. Shut off the engine and remove the key or ignition wire when servicing cutting devices or drive components.

Do not overload machinery. The components of each machine are designed for certain weights and capacities. Overloading machines will cause unsafe conditions.

Tow vehicles must have adequate hitches and brakes to control any towed machine. Check the weight and capacity of the tow vehicle and the machine that will be towed by that vehicle. Do not exceed the capacity of the tow vehicle.

If required to lift, an operator should ask for help when something is too heavy. The operator should lift with the legs, instead of the back. Care should be taken to avoid twisting the back while lifting a heavy object.

Never allow children to operate the machine.

THE MACHINE

Always check the machine to make sure it is in good working order.

Inspect to make sure all guards are in place.

Check to assure that all controls are in good operating condition.

Make sure the brakes are working properly.

Check the tire pressure.

Check the fuel level. Do not over fill. Do not add fuel while the machine is hot when spilled fuel may fall onto the engine or muffler and cause a fire.

Check the condition of hydraulic hoses. Leaks and worn hoses should be fixed or replaced before the machine is put in service.

Do not use your fingers or hands to check for hydraulic leaks. High pressure leaks can puncture the skin and force oil into the body. This can cause severe injury or death.

Shut off the engine before servicing the machine.

It is best to check machines on a level area. Machines on a slope may roll even when the engine is off.

Do not modify the machine in any manner.

Refer unfamiliar repairs and adjustments to mechanics that have been trained to do them properly.

Replace decals that have become damaged or illegible.

This list includes many general safety instructions as they relate to turf equipment. This list however does not encompass all hazards. Common sense must always be used to determine that safest way to operate a machine under specific conditions.

LUBRICATION

When in use, the Mete-R-Matic should be lubricated daily with a good quality No. 1 Bentone or Lithium grease. There is a total of 10 grease fittings on the machine:

- One on each wheel hub between the tires
- One on each wheel clutch to the right of each wheel hub.

The following four grease fittings are located inside the large guard on the left side of the Mete-R-Matic:

- One on the end of the axle for the main clutch
- One on the end of the deadshaft for the double sprocket
- One on the end of the rear roller shaft
- One on the lower chain idler.

There are also four springs on the axle which actuate the clutches. Grease should be applied to the surface of the axle inside these springs to prevent rust.

METERING GATE ADJUSTMENT

The metering gate rotates up and down to regulate the amount of top dressing applied to the turf. The lock nuts on the control arm pivots provide friction so the gate remains in the selected position. If the gate is difficult to move, loosen the nuts slightly. If the gate moves during operation, the nuts should be tightened. Nuts on both ends of the gate should be adjusted uniformly. For the proper metering gate opening, see the chart on the back cover of this manual.

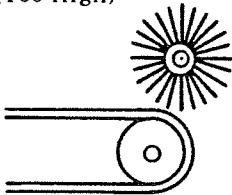
BRUSH ADJUSTMENT

The brush mounting brackets provide a means of adjusting the brush position. The brush may require readjustment to compensate for wear. It should be positioned as shown below relative to the conveyor belt. A sheet of wrapping paper may be used as a gauge to check clearance.

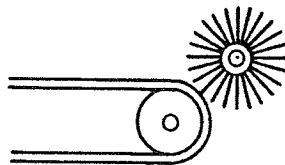
TIRES

Air pressure in all of the tires should be maintained at 21 psi/1.47 kg per cm sq/1.4 atm. Check the tire pressure periodically.

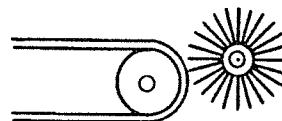
Incorrect
(Too High)



Correct



Incorrect
(Too Low)



Brush Adjustment

MAIN CLUTCH ADJUSTMENT

The main clutch on the Mete-R-matic is a ratchet, designed to disengage automatically when the machine is moved backwards. This ratcheting prevents the conveyor from being driven backward. Engagement of the clutch is maintained by a compression spring. Disengagement of the clutch under load may be a result of normal wear or engagement of the clutch at excessive speeds. Spring pressure can be increased to some extent to compensate for normal wear, but if the clutch dogs are badly worn or broken, replacement is necessary. Use the following procedure to adjust or replace the main clutch.

Shift the clutch to the engaged position by pulling on the rope. The indicator rod should be in the engaged position.

Remove the guard from the left side of the Mete-R-Matic to expose the drivetrain as shown Figure 1.

Release the chain idler by disconnecting spring A.

Remove chain B.

Remove the indicator rod C. During reassembly, make certain that the slot in the plate of the rod fits over stud D on the clutch actuator E.

Remove pivot pin F and pull the clutch actuator up and away from the clutch. During reassembly, make certain that the studs on the actuator fit into the groove on the clutch.

See Figure 2 (Page 12). Remove the retaining ring G from the end of the axle.

Remove clutch driver H and the washer, key and next retaining ring.

Check the driven half of clutch I for side play on the axle. If the play is excessive (more than .015), the sleeve bearings should be replaced. Remove the clutch from the axle.

Examine the dogs on the face of each half of the clutch.

To reassemble the clutch, reverse this procedure. After assembly, proceed with the wear plate adjustment.

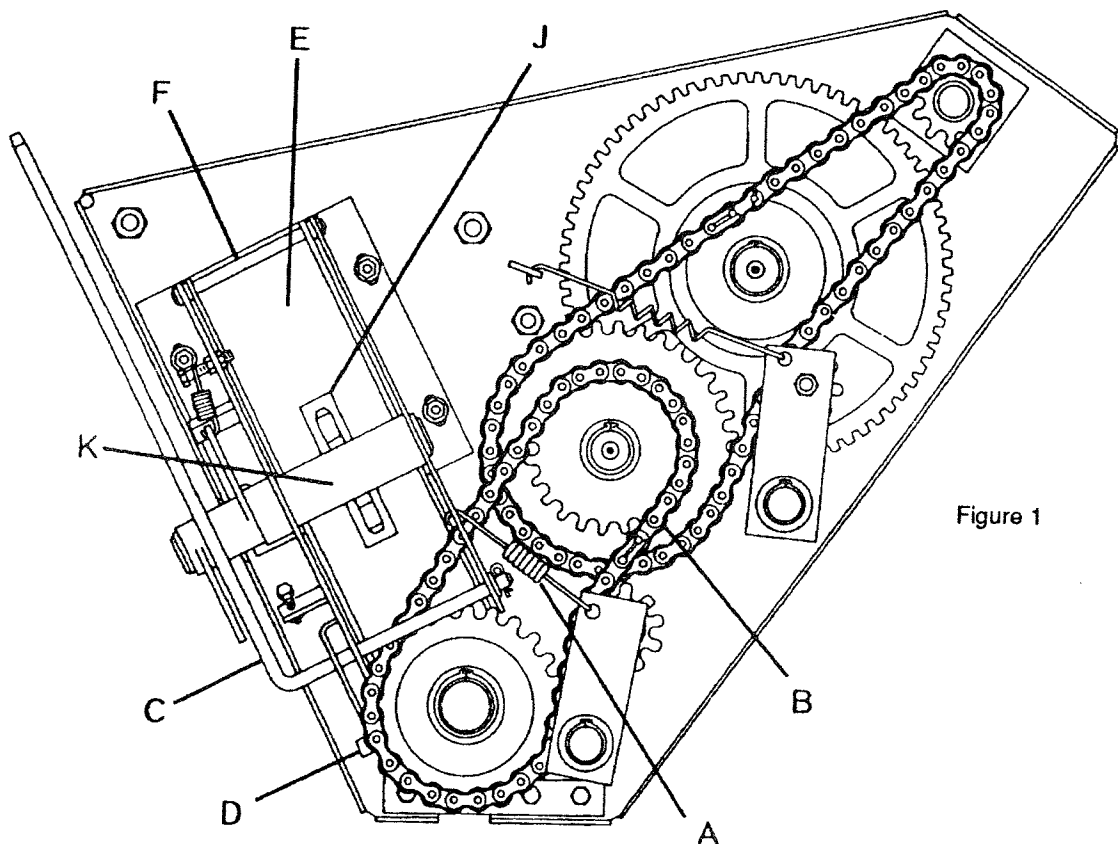
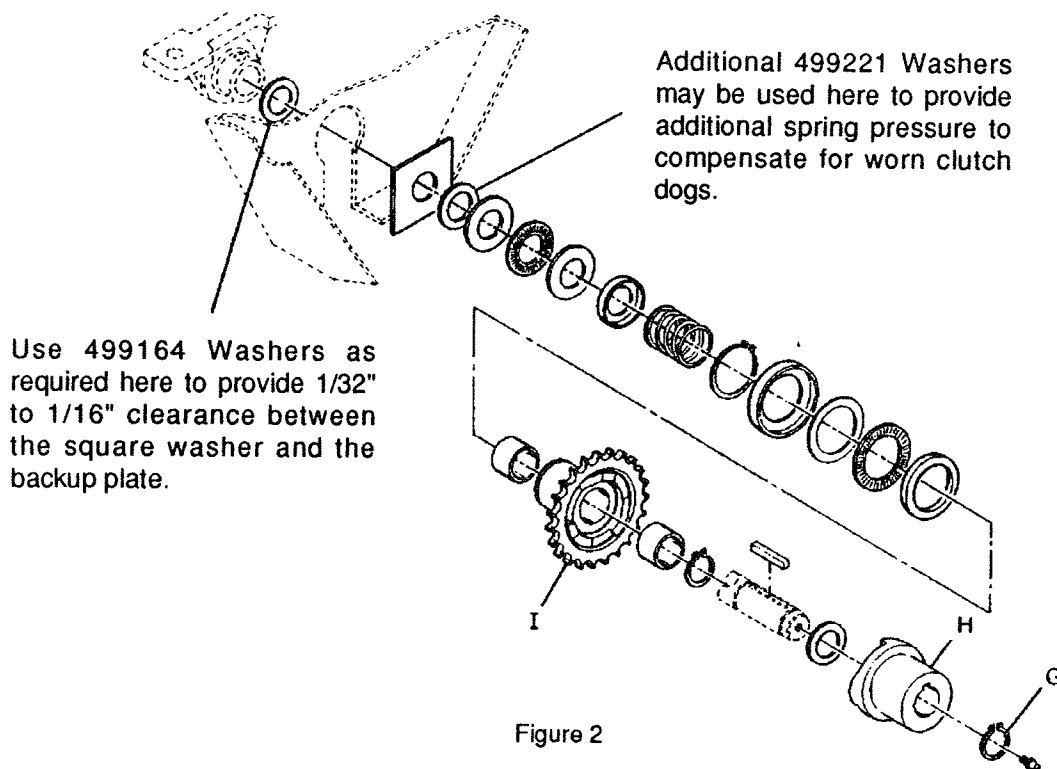


Figure 1



Profile of Clutch Dogs

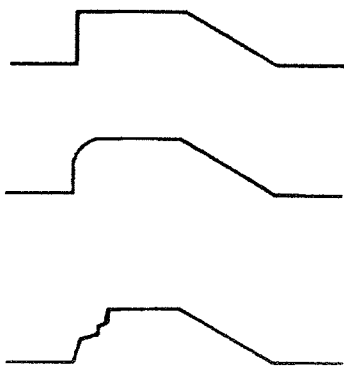


Figure 3

If the clutch dogs are in good condition, the edges will be square.

If the edges are rounded, the clutch may disengage under load. Increasing spring pressure by adding washers as shown in Figure 2 may compensate for some wear, but if disengagement still occurs, it will be necessary to replace the clutches.

If the clutch dogs are broken, the clutches must be replaced. Broken clutch dogs frequently result from engagement of the clutch at excessive speed with the hopper loaded.

WEAR PLATE ADJUSTMENT

Shift the clutch to the engaged position. The clutch dogs should be fully engaged. If they are only partially engaged, remove the shims from behind the wear plate J (Figure 1, Page 11) until full engagement is obtained. Clearance is permissible between cam K and the wear plate when the clutch is engaged.

Shift the clutch to the disengaged position. The clutch dogs should clear each other by 1/16" to 1/8". See Figure 4, page 13. If the dogs do not clear each other, add shims behind the wear plate as necessary to provide proper clearance.

Repeat the above procedures until both conditions are met.

Check the shift linkage travel. Observe the cam and

actuator while pulling the rope all the way forward. Adjust the limit screws to eliminate any over or undertravel of the cam.

Put the chain guard back in place.

TRIP MECHANISM (ROPE PULL)

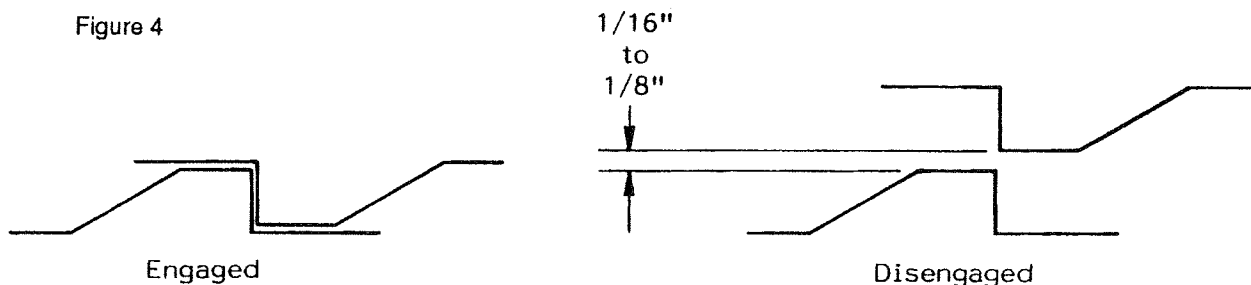
In order to operate effectively, the parts in this mechanism must rotate freely to activate the clutch properly. Clean, lubricate and align the components so that the spring is able to return the trip lever and bellcrank to their original positions quickly.

WARNING! DO NOT leave the rope in the hopper. If the Mete-R-Matic is moved with the clutch engaged while the rope is in the hopper, the rope may get caught in the brush and damage may result.

ROLLER CHAINS

The roller chains in the drive train are automatically tensioned by spring loaded idler sprockets. After considerable use, the idlers may not be able to provide adequate tension. If this occurs, the chains should be replaced. Cleaning and lubricating the drive chains periodically will greatly extend their life.

Figure 4



657106 FOUR TO SIX WHEEL CONVERSION KIT

When working on golf and sports turf, it is important to minimize compaction and wheel marks by spreading the load over the largest possible area. The F12A and F12B were made with four wheels and a one piece axle. We added two more wheels and a three piece axle to the F12C. The additional wheels can be added to the F12A and F12B by the installation of Kit 657106. This kit includes the three piece axle and additional parts necessary to convert from 4 to 6 wheels.

657279 SIX WHEEL AXLE ASSEMBLY

For machines that have been in the field a long time, where many of the parts on the axle show significant wear, we also offer the six wheel axle as an assembly. The 657279 includes all the parts on the axle except for the main drive clutch parts.

DISASSEMBLY INSTRUCTIONS

Remove the chain guard, page 22, item 12.

Release the chain idler spring, page 40, item 23.

Remove the drive chain, page 46, item 4.

Remove the cotter pin from the indicator, page 44, item 7. Pull the indicator toward the front of the machine until it is free from the rear hole in the shift bracket, page 44, item 18.

Remove the pivot pin, page 44, item 24.

Move the clutch throw out bracket, page 44, item 2, up and out of the grooves in the jaw clutch on the axle.

Remove the main drive clutch from the front end of the axle. (Remove all parts shown on page 38.)

Use a hoist to raise the hitch of the Mete-R-Matic until the machine is nearly upright. The rear of the frame should remain on the floor. This will make it easy to remove the axle.
CAUTION: Do not deform or damage the brush.

Packing Lists

Part No.	Description	Qty.
----------	-------------	------

657106 Conversion Kit, 4 to 6 Wheels

446142	Washer, Lock, 3/8, Spring	8
458035	Ring, Retaining, 1-1/4 Ext	3
471215	Fitting, Lubrication, 1/4-28 x 45°	1
499154	Key, Square, 1/4 x 1-1/2	1
499164	Washer, 1-17/64 x 2 x 3/32	3
499221	Washer, 1-1/4 x 1-7/8 x 1/8	2
499223	Washer, 1-1/4 x 1-1/8 x 1/16	2
499405	Nut, Lug	10
654738	Spring, Dog Clutch	1
654924	Hub, Wheel	1
654931	Spacer, Axle	1
654932	Clutch, Wheel	1
654936	Clutch, Wheel	1
655145	Wheel and Tire, 16 x 6.5 x 8	2
656962	Axle, RH	1
656963	Axle, Center	1
656964	Axle, LH	1
656966	Coupling, Axle	2
658004	Manual	1

657279 Axle Replacement Kit for the F12C

440194	Bolt, Carriage, 1/2-13 x 1-1/2	8
443118	Nut, Hex, 1/2-13	8
446142	Washer, Lock, 3/8, Spring	8
446154	Washer, Lock, 1/2, Spring	8
458035	Ring, Retaining, 1-1/4 Ext	8
471215	Fitting, Lubrication, 1/4-28 x 45°	3
499154	Key, Square, 1/4 x 1-1/2	3
499164	Washer, 1-17/64 x 2 x 3/32	5
499221	Washer, 1-1/4 x 1-7/8 x 1/8	6
499223	Washer, 1-1/4 x 1-7/8 x 1/16	3
499405	Nut, Lug	30
653392	Spacer, Axle	1
654738	Spring, Dog Clutch	3
654924	Hub, Wheel	3
654931	Spacer, Axle	2
654932	Clutch, Wheel	3
654936	Clutch, Wheel	3
655145	Wheel and Tire, 16 x 6.5 x 8	6
655174	Bearing, Sealmaster LP20R	4
656962	Axle, RH	1
656963	Axle, Center	1
656964	Axle, LH	1
657054	Key, Square, 1/4 x 5	2
658004	Manual	1
657651	Coupling Assembly, Axle	2

Remove all screws, page 36, item 26, holding the axle support bearings to the main frame.

Drop the axle down and away from the frame on the side opposite the main drive clutch to allow the tires to clear the frame.

Remove the axle assembly from the Mete-R-Matic.

Remove all parts from the existing axle. For convenience during assembly, keep track of the order in which they were removed from the axle.

Clean and inspect all parts for wear or damage. Replace worn or damaged parts.

ASSEMBLY INSTRUCTIONS

Clean and deburr the ends of the axles.

Assemble the hub, page 32, item 18, to the wheels and tires, item 16. The flats of the two adjoining lug nuts must be parallel to each other to allow the assembly of the wheel clutch driver, item 11.

Assemble the parts in the kit to the center axle, page 32, item 4. The bar on the clutch driver, page 32, item 9, must fit between the lug nuts with the flats parallel to each other.

Remove the screws and nuts from the coupling and discard the temporary shims.

IMPORTANT: The coupling is manufactured as a single unit and the halves must be installed or replaced as a matched set. Mixing the parts from one coupling to another will result in poor clamping

and possible damage.

Clean the bore of the couplings.

Install the left axle to the center assembly by placing the key, page 32, item 2, in the keyseat of both axles and install the coupling so that it is centered over the junction of the axles.

Use Service Removable Loctite on the threads of the screws that hold the couplings together.

Install the screws, nuts and lock washers. Do not tighten the screws.

Check to assure that the axles are aligned properly.

Tighten the coupling screws evenly in a crisscross pattern to 23 ft/lbs (276 in/lbs).

NOTE: The coupling halves should not touch each other when the screws are tightened to the proper torque. This is normal. Exceeding the recommended torque can result in damage to the couplings and/or related parts.

Install the right axle to the center and left axle assembly by the same method.

Assemble parts onto the left axle as shown on page 34.

Assemble parts onto the right axle as shown on page 30.

Assemble the complete axle to the Mete-R-Matic.

655136 Conveyors

**This conveyor fits Mete-R-Matic II and III
Models F12A, F12B and F12C
Product #85409, 85420, 85421, 85422**

The design of the conveyor for the Mete-R-Matic II and III is unique. Because it is different than the design of the conveyors in other pieces of equipment, many people have questions about the way it works, as well as how it should be maintained and operated.

The Design: Turfco designed and built the first top dresser in 1961. Through our many years of experience we have refined our products to increase performance, durability, and, ultimately, customer satisfaction. We recently surveyed the top 100 golf courses in the USA and found that 72% owned and used Mete-R-Matic Top Dressers. We also discovered that 92% of those super-intendents that responded were satisfied with the performance of the Mete-R-Matic.

The design of the conveyor in the Mete-R-Matic II and III is unique in that it does not move because of tension between the belt and the roller. It is propelled by chains on the edges of the belt.

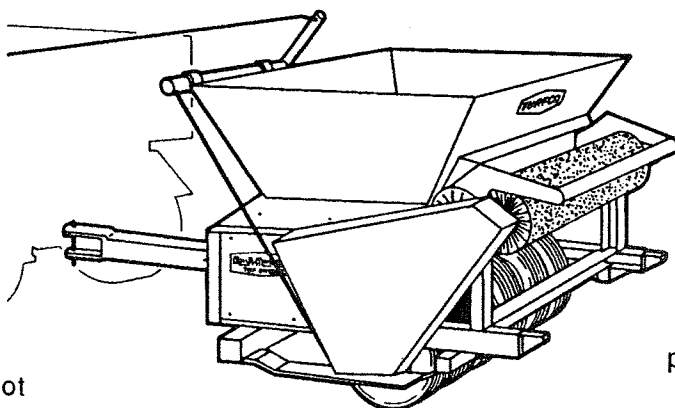
Our design works well as long as the belt has slack in it. The slack eliminates all the stresses that try to move the belt to the side. It also eliminates the excessive tension that it would require to drive the belt without slipping. Another advantage of our belt design is that it eliminates the need to tension and adjust the belt for use, and release the tension for storage.

It is important to keep the belt slack. It is also important to make sure that material does not build up on the front roller or under the belt. The problem is that if the belt becomes tight, the roller will start to

drive the belt, it will drive it at a different rate than the chains, then the chains will try to climb the sprockets, and the belt will buckle. It is important to keep the belt slack. Just like any other machine, the Mete-R-Matic must be maintained properly to achieve maximum durability and performance.

In the event that the conveyor does fail in a Mete-R-Matic II or III, it is important to determine the cause. Very few conveyors fail because of old age. More often they are the victim of poor maintenance, operator abuse, or adjustment by someone that does not understand the design. On new machines there is also the possibility of a manufacturing defect.

When the conveyor fails, it is most often a symptom of another problem. It is important to determine the cause, so that more problems can be prevented in the future.



Proper Maintenance: The conveyor must be adjusted properly.

It must be slack. Running the belt under tension will increase the possibility of damage to the belt. The seam in the belt should be kept sealed. We use silicone caulk for this purpose. This prevents sand from working its way through the seam and building up under the belt. The rollers should be kept clean. If material builds up on the rollers, it will cause the conveyor to become tight. If the belt becomes tight, the roller will start to drive the belt, and it will drive it at a different rate, forcing the chains to climb the sprockets. It may also force the belt off center. Starting with the Mete-R-Matic III Model F12C we have changed the design of the front roller so that material cannot build up on it. It is still a good idea to check the rear roller and keep it clean. This can be

easily done by removing a small panel on the side of the machine. Keeping the conveyor adjusted slack, the seam sealed, and the rollers clean will eliminate most maintenance related problems.

Proper Operation: Another possible cause of conveyor problems is engaging the clutch at excessive speed. If the hopper is not overloaded, you should be able to top dress at up to 8 MPH. However, it is best if the clutch is engaged at reduced speed and then increase the speed. The mechanism is a straight gear and chain drive system. If the clutch is engaged at excessive speed with an excessive load, something has got to give. Unfortunately, the conveyor is going to receive most of the punishment.

Do Not Extend the Hopper: The hopper has been designed to hold a certain amount of material. If sideboards are added to the hopper, the increased capacity may overload the conveyor. Sideboards or hopper extensions should not be added to the hopper. Extending the hopper voids the warranty on the Mete-R-Matic II & III.

The Conveyor: The least likely problem is that the conveyor was made defective during the manufacture process. We make these belts with very tight quality control. We use precision gages and check at critical steps in the process. However, nothing is impossible. If you have a questionable belt, you are welcome to send it to the factory and we will inspect it for possible warranty consideration.

Warranty: Our warranty is a one year warranty against defects in materials and workmanship. We do not warranty worn or abused parts. In most cases we do not make warranty decisions without seeing the parts in question along with the serial number of the machine.

Inspection: If the chain links have ripped off the side of the belt and the rivets have pulled through the conveyor material, the probable cause is a build up of material under the belt or on the rollers. This may be due to improper maintenance and may not be warranty.

If the chain links have broken and the seam in the belt has pulled apart, the probable cause is engaging the clutch at above the recommended speed, or perhaps overloading the hopper. This may be due to improper operation and may not be warranty.

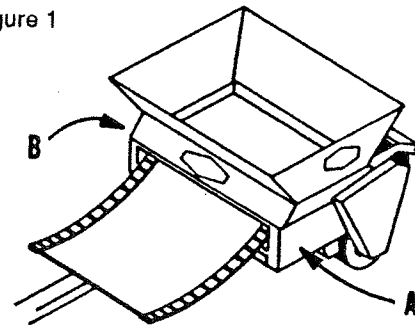
Summary: Turfco's experience in the design and manufacture of top dressers has resulted in the best

equipment on the market. We have a large number of top dressers in use all over the world. Every machine must be properly designed, manufactured, maintained and operated to assure optimum performance. That makes the successful operation of every machine a partnership between the user, the distributor and the factory. We devote our efforts daily to the improvement of the design and manufacture of our products. The distributor has a responsibility to provide the initial set up of the machine, as well as a service department and service parts. It is also important that the end user understands the responsibility they have toward proper maintenance and operation.

Conveyor Replacement and Adjustment

For conveyor **replacement**, do steps 1 through 16. For conveyor **adjustment**, do only steps 1, 3, 4, 8 and 11 through 16.

Figure 1



1. Remove guards A and B from the sides of the machine, exposing the front roller bearings.

2. Remove the old belt. Inspect the white plastic bearing surface on the bottom of the hopper. Replace it if it is damaged or badly worn.

IMPORTANT: The life of the conveyor belt on the Mete-R-Matic can be greatly increased by replacing a worn, damaged or missing pan cover. The pan cover reduces friction between the conveyor belt and the pan. Turfco has developed a new pan cover with a raised surface that will further reduce the friction between the belt and the pan. Order part number 655214 for the new pan cover.

3. Loosen nuts C and D on both sides of the machine.

4. Move the roller E all the way back in the

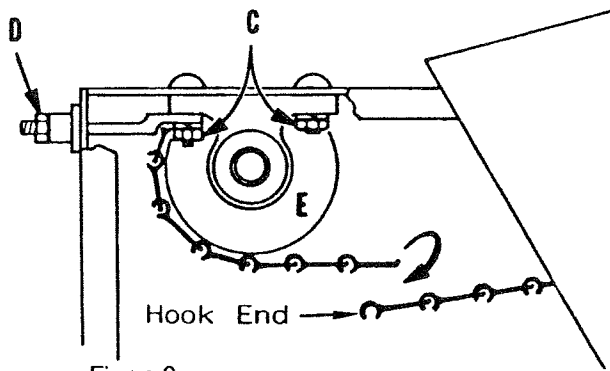


Figure 2

adjustment slots.

5. Disengage the drivetrain of the machine by pulling and releasing the trip rope until the indicator rod is in the neutral (outermost) position.

6. Feed the end of the belt with the hook ends of the chain links into the front of the machine. Guide the belt over the front roller and across the bottom of the hopper.

7. Feed the belt over the rear roller and under the pan assembly until the ends of the chains are aligned as shown in Figure 2.

8. Make certain the chain links are centered and seated on the sprockets of the rear roller.

9. Hook the chains together on both sides of the belt.

10. Feed the 5 foot long splicing wire through the lacing on the belt to join the ends of the belt. When the wire is centered, bend the ends of the wire over to prevent it from working out of the lacing.

11. Using nuts D (Figure 2), pull the front roller forward to adjust the belt tension. **DO NOT OVERTIGHTEN THE BELT!** The belt must be allowed to sag on the bottom. Pull the roller forward until the bottom of the belt clears the tires by 1/2" (Figure 3). If the belt is adjusted too tight, it will not stay centered on the rollers and it will not tolerate any buildup of material on the rollers. The rollers should be parallel with both sides tensioned equally when the adjustment is complete.

WARNING! Check the belt adjustment frequently during operation. The belt may become tight due to a buildup of top dressing material on the rollers. This buildup must be removed to prevent damage to the belt. Maintaining the silicone caulk seal on the lacing will help minimize this buildup.

12. Tighten nuts C on both sides of the machine.

13. Pull the Mete-R-Matic a short distance with the clutch engaged to assure that the belt is tracking properly.

14. Stop the Mete-R-Matic with the belt lacing exposed in the bottom of the hopper.

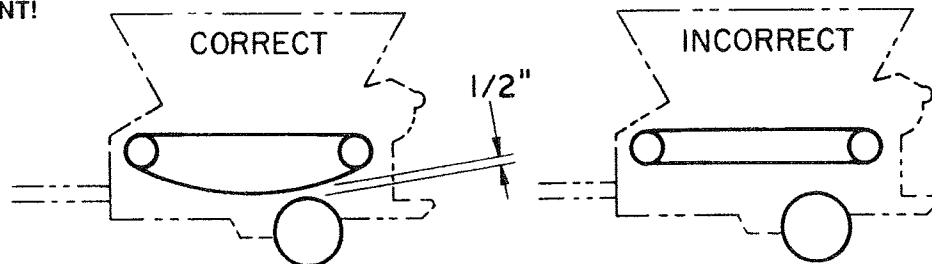
15. Use silicone caulk to seal the lacing. This will help to prevent rust and sand from damaging the joint. Allow time for the caulk to dry before using the machine.

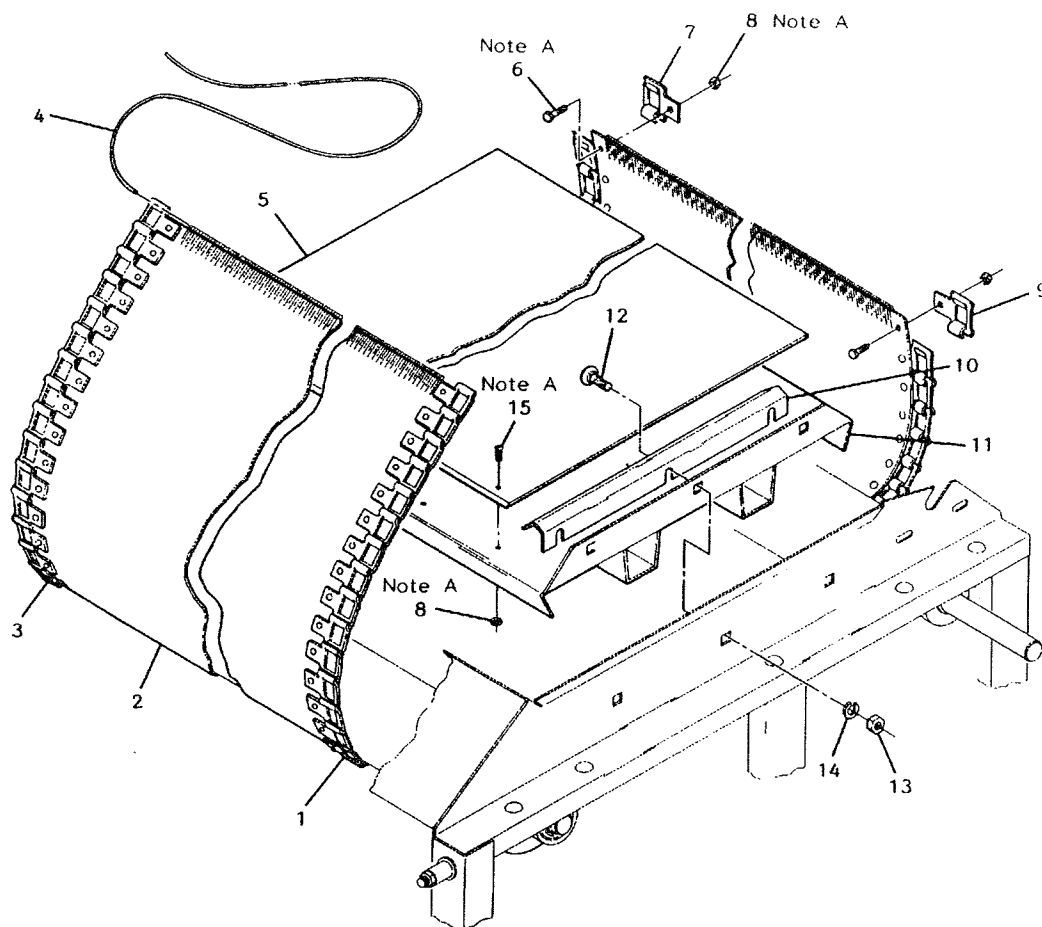
16. Reinstall the sideguards.

The life of the belt will be prolonged if the machine is stored out of the sun and with the belt clean. Inspect the condition of the silicone seal on the lacing after each use and renew as necessary using silicone caulk.

IMPORTANT!

Figure 3

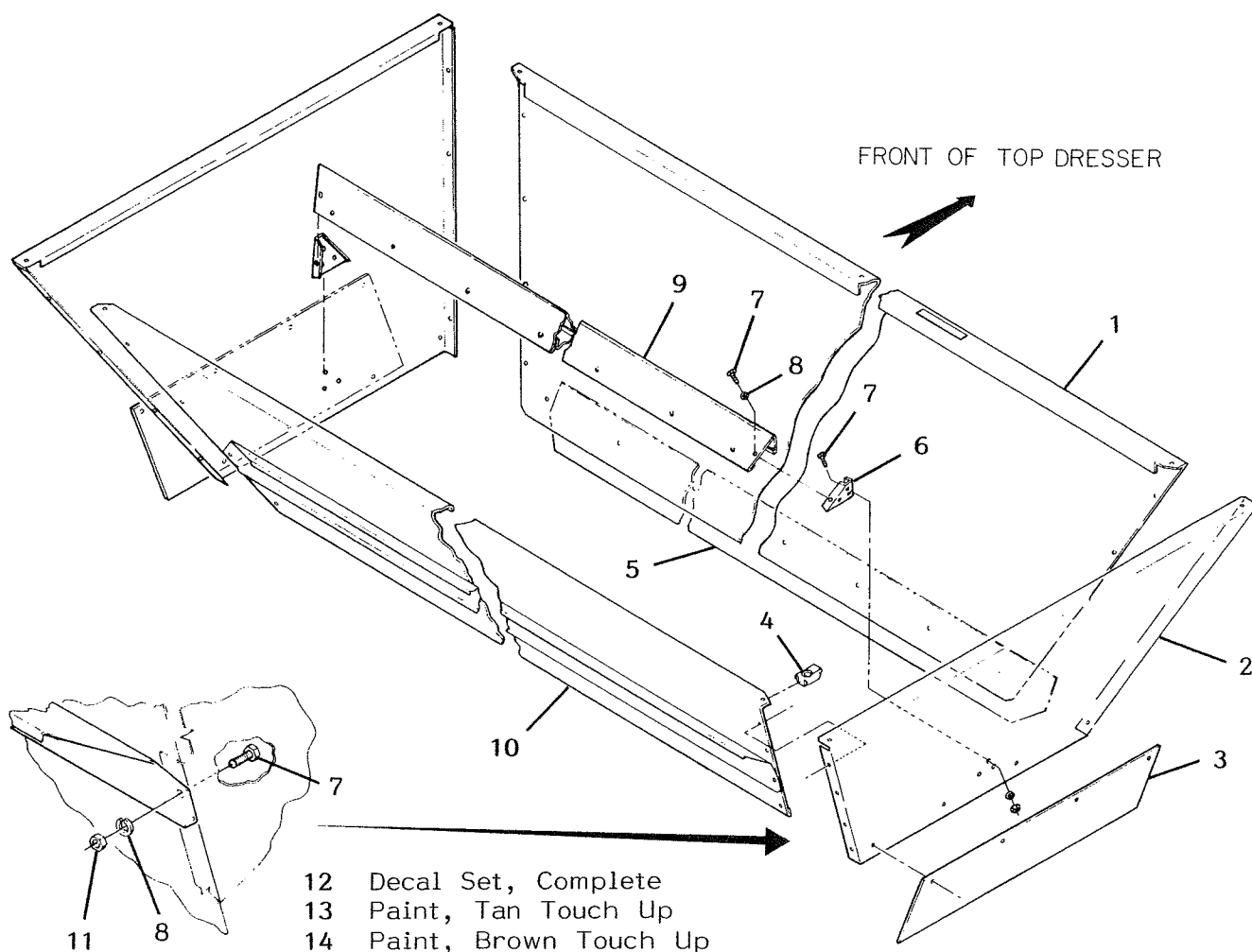




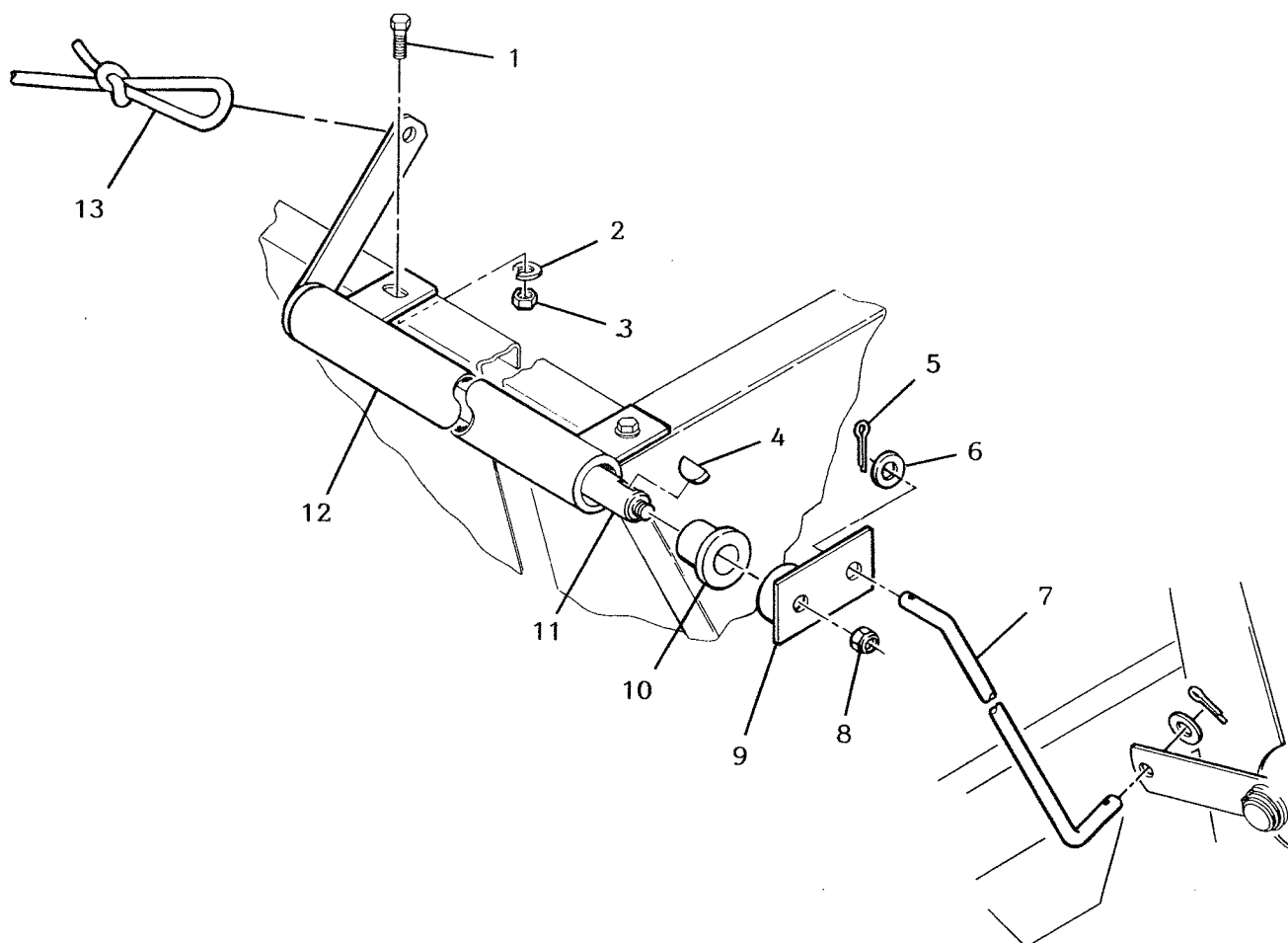
Item	Part No.	Description	Qty.
1	655138	Chain Assembly, LH, 43 Links	1
2	655136	Conveyor Belt Assembly, Includes items 1, 3 and 4 with items 1 and 3 installed	1
3	655137	Chain Assembly, RH, 43 Links	1
4	655363	Wire, Splice	1
5	655214	Cover, Pan	1
6	400102	Screw, Hex, 1/4-20 x 3/8	Note A
7	655139	Link, RH Repair, No. 55A1D-R	43
8	499413	Nut, KEPS, 1/4-20	Note A
9	655140	Link, LH Repair, No. 55A1D-L	43
10	655129	Support, Seal Strip	2
11	655361	Pan Assembly, Includes item 5 installed	1
12	440118	Bolt, Carriage, 3/8-16 x 1	6
13	443110	Nut, 3/8-16	6
14	446142	Washer, Lock, 3/8	6
15	499025	Screw, Slotted Pan Head, 1/4-20 x 5/8	Note A

NOTE A: Service part only. Use as necessary to replace factory installed rivet.

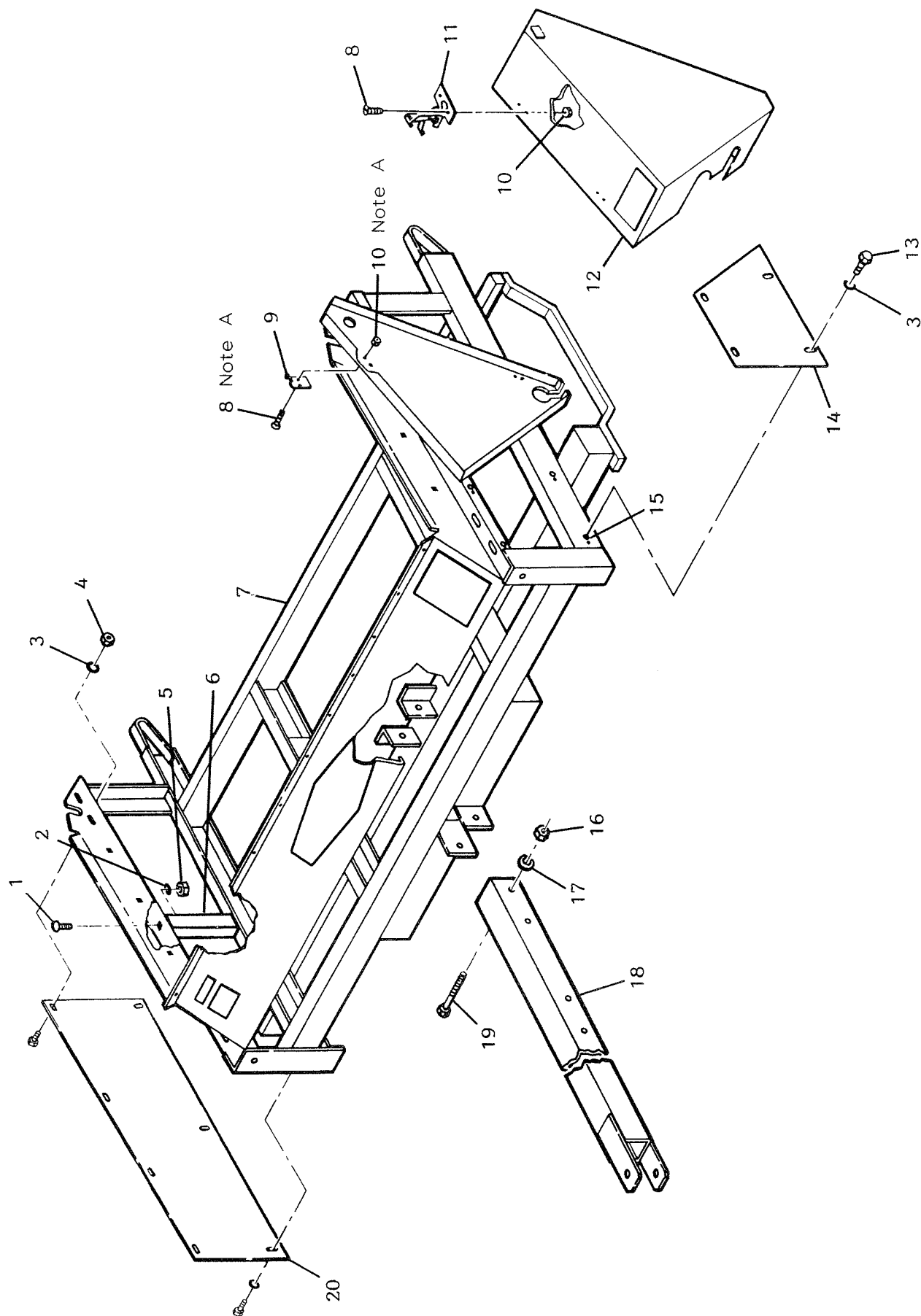
Use standard Silicone Caulk to seal the belt splice after installation and recaulk as necessary during use. Additional caulk may be obtained locally.



Item	Part No.	Description	Qty.
1	655158	Panel, Hopper Front	1
2	655159	Panel, Hopper Side	2
3	655176	Strip, Side Seal	2
4	499410	Nut, Trap, 1/4-20	4
5	655175	Strip, Front Seal	1
6	657074	Bracket, Bridge Mounting	2
7	400106	Screw, Hex, 1/4-20 x 5/8	49
8	446128	Washer, Lock, 1/4	49
9	657077	Bridge	1
10	655162	Panel, Hopper Rear	1
11	443102	Nut, 1/4-20	41
12	655565	Decal Set, Complete for the F12A	1
	655766	Decal Set, Complete for the F12B	1
	656967	Decal Set, Complete for the F12C	1
13	654681	Paint, Tan Touch Up, Spray Can	
14	654682	Paint, Brown Touch Up, Spray Can	

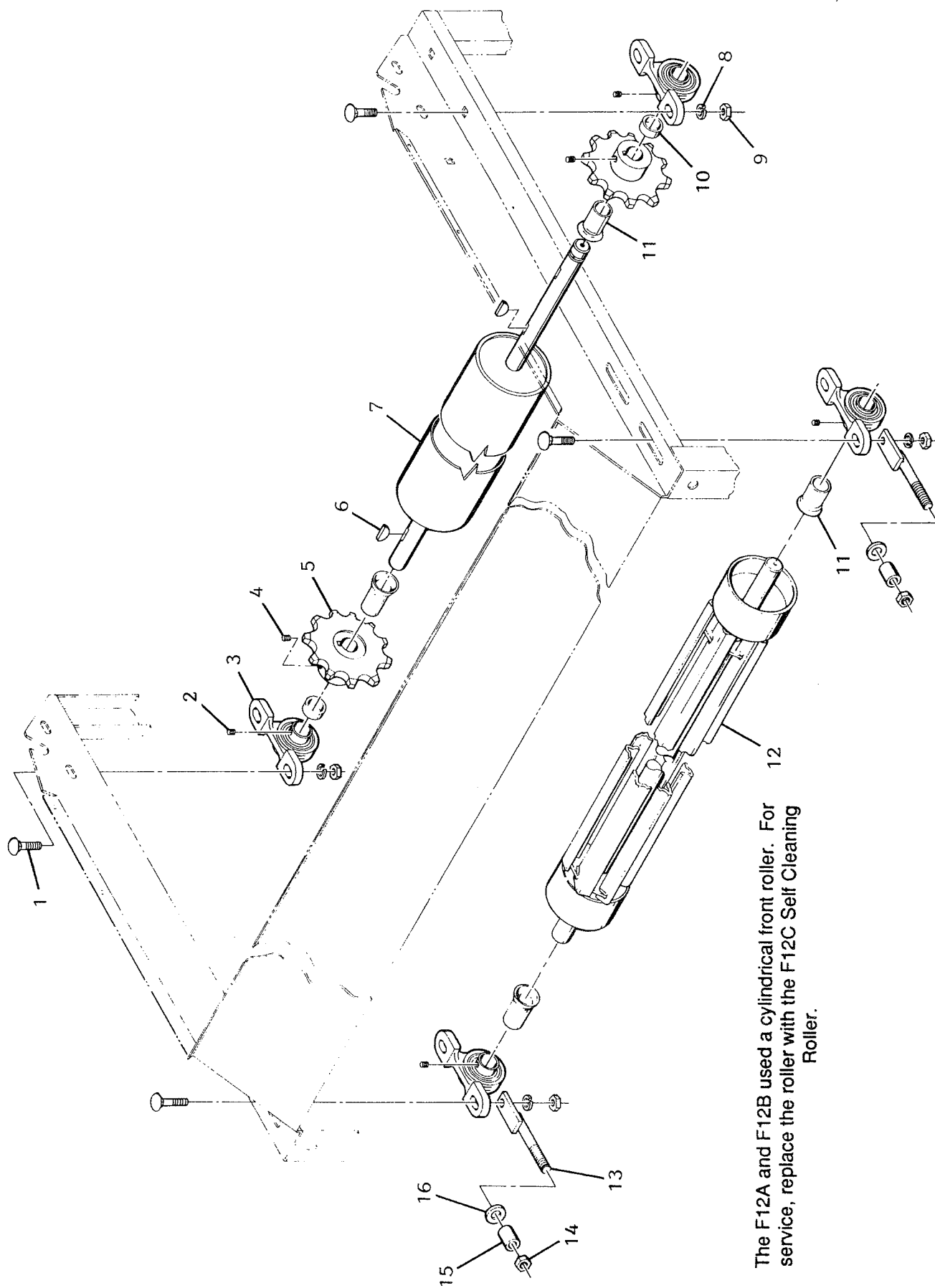


Item	Part No.	Description	Qty.
1	400106	Screw, Hex, 1/4-20 x 5/8	2
2	446128	Washer, Lock, 1/4	2
3	443102	Nut, 1/4-20	1
4	463007	Key, Woodruff, 1/8 x 3/4	1
5	460028	Pin, Cotter, 1/8 x 1	2
6	453013	Washer, 15/32ID x 15/16OD x 1/16	2
7	655164	Rod, Control	1
8	499035	Nut, Thin Flex lock, 1/2-20	1
9	654970	Arm, Short	1
10	655367	Bearing, Oilite, No. FF718-3	2
11	654977	Shaft, Actuator	1
12	653400	Tube, Actuator, Includes item 10	1
13	655329	Rope	1



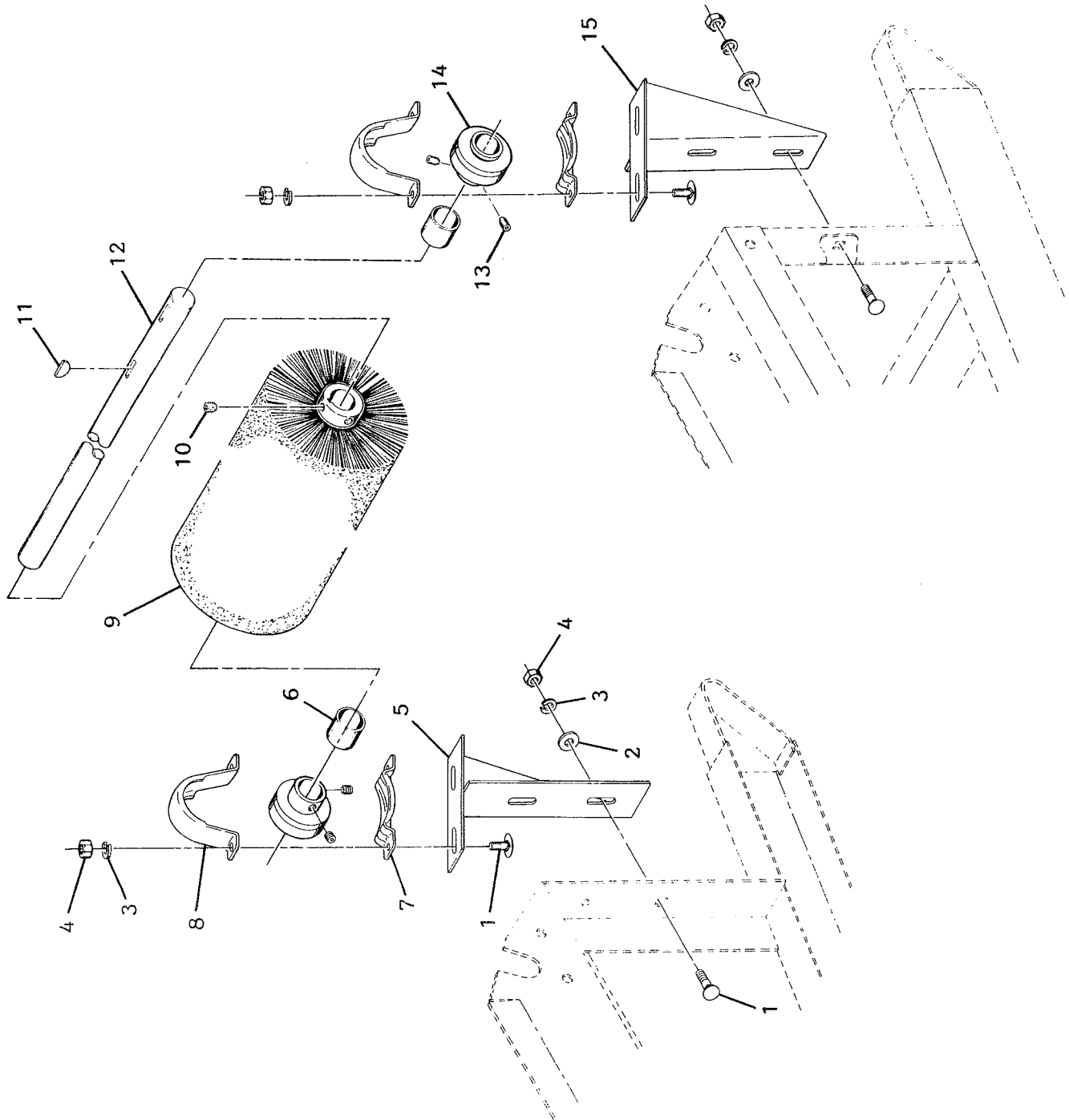
Item	Part No.	Description	Qty.
1	440118	Bolt, Carriage, 3/8-16 x 1	2
2	446142	Washer, Lock, 3/8	2
3	446128	Washer, Lock, 1/4	14
4	443102	Nut, 1/4-20	1
5	443110	Nut, 3/8-16	2
6	655018	Support	1
7	655731	Frame for the F12B and F12C	1
	655020	Frame for the F12A	1
8	402058	Screw, Round Head, 8-32 x 1/2	Note A
9	655756	Latch, Keeper	3
10	444702	Nut, Flex Lock, 8-32	Note A
11	655757	Latch, Draw for F12B and F12C	3
	655052	Latch, Draw for F12A	3
12	655742	Guard, Chain for F12B and F12C, Includes item 11	1
	655485	Guard, Chain for the F12A, Includes item 11	1
13	400106	Screw, Hex, 1/4-20 x 5/8	14
14	655169	Guard, Side	1
15	499126	Nut, Trap, 1/4-20	13
16	443820	Nut, Thin, 1/2-20	2
17	446154	Washer, Lock, 1/2	2
18	86119	Tongue	1
	86120	Fifth Wheel Hitch (Not Shown)	
19	400458	Screw, Hex, 1/2-20 x 4-1/2	2
20	657103	Guard, Side	1

NOTE A: Service part only. Use as necessary to replace factory installed rivet.



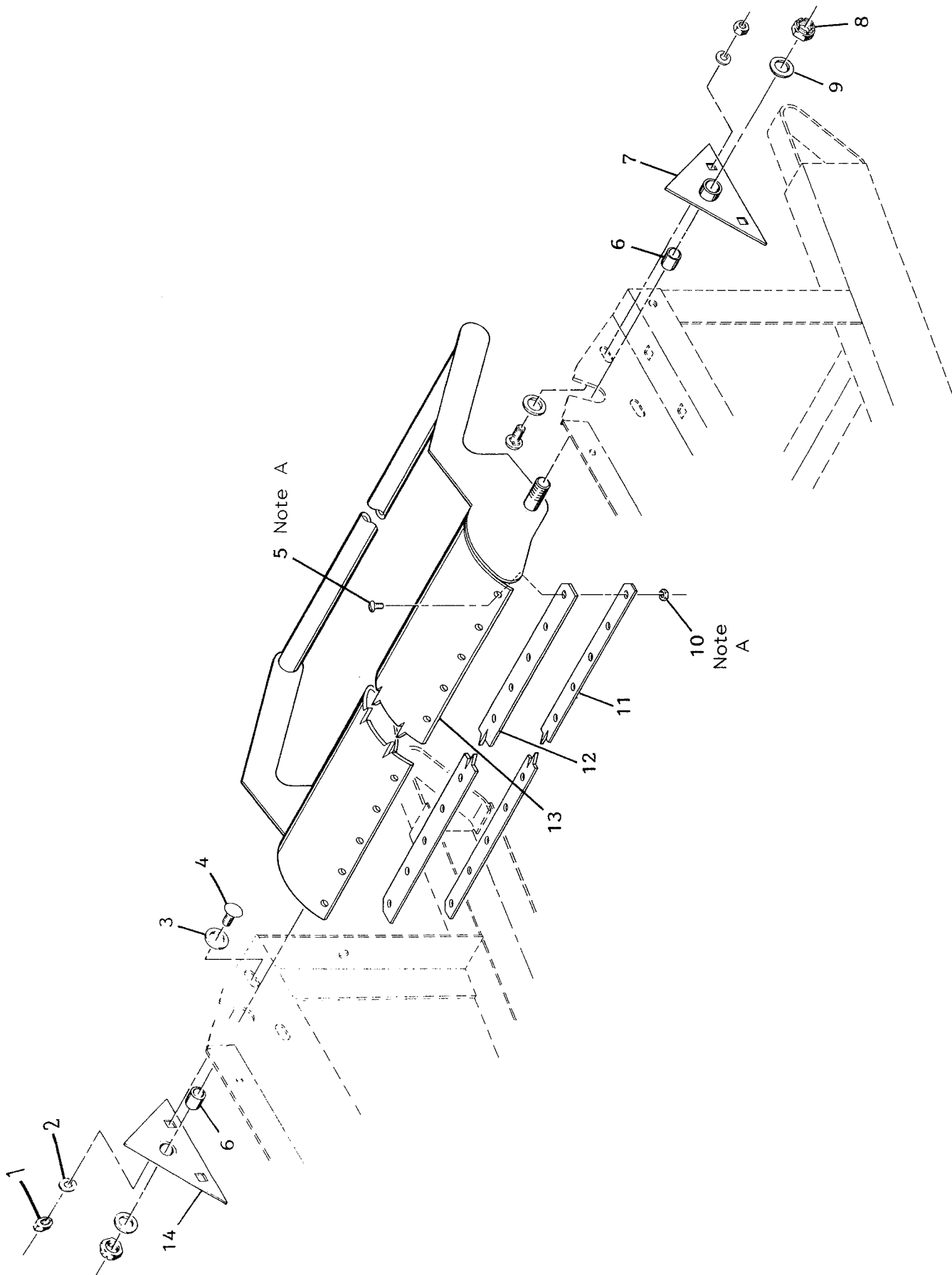
The F12A and F12B used a cylindrical front roller. For service, replace the roller with the F12C Self Cleaning Roller.

Item	Part No.	Description	Qty.
1	440194	Bolt, Carriage, 1/2-13 x 1-1/2	8
2	499051	Screw, Set, 1/4-28 x 1/4	8
3	655174	Bearing, Ball, Includes item 2	4
4	415529	Screw, Set, 3/8-16 x 3/8	2
5	655206	Sprocket, 55B11, Includes item 4	2
6	463031	Key, Woodruff, 1/4 x 1	2
7	657282	Roller, Rear, Drive for F12B and F12C	1
	655474	Roller, Rear, Drive for F12A	1
8	446154	Washer, Lock, 1/2	8
9	443118	Nut, 1/2-13	8
10	653393	Spacer, Straight	2
11	655560	Spacer, Flared	4
12	656965	Roller, Front	1
13	655141	Tightener, Belt	2
14	499407	Nut, Nylock, 5/8-18	2
15	655209	Spacer, Belt Tightener	2
16	499099	Washer, 5/8ID x 2OD x 1/8TK	2



Grease shaft during assembly.

Item	Part No.	Description	Qty.
1	440118	Bolt, Carriage, 3/8-16 x 1	8
2	452006	Washer, 3/8ID x 7/8OD x 5/64TK	4
3	446142	Washer, Lock, 3/8	8
4	443110	Nut, 3/8-16	8
5	655043	Bracket, Brush, RH	1
6	655461	Spacer	2
7	650806	Base, Bearing	2
8	650807	Cover, Bearing	2
9	653391	Brush, Includes item 10	1
10	415553	Screw, Set, 5/16-18 x 5/16	4
11	463021	Key, Woodruff, 1/4 x 7/8	1
12	653394	Shaft, Brush	1
13	499051	Screw, Set, 1/4-28 x 1/4	4
14	650808	Bearing, EBA-16, Includes item 13	2
15	655044	Bracket, Brush, LH	1

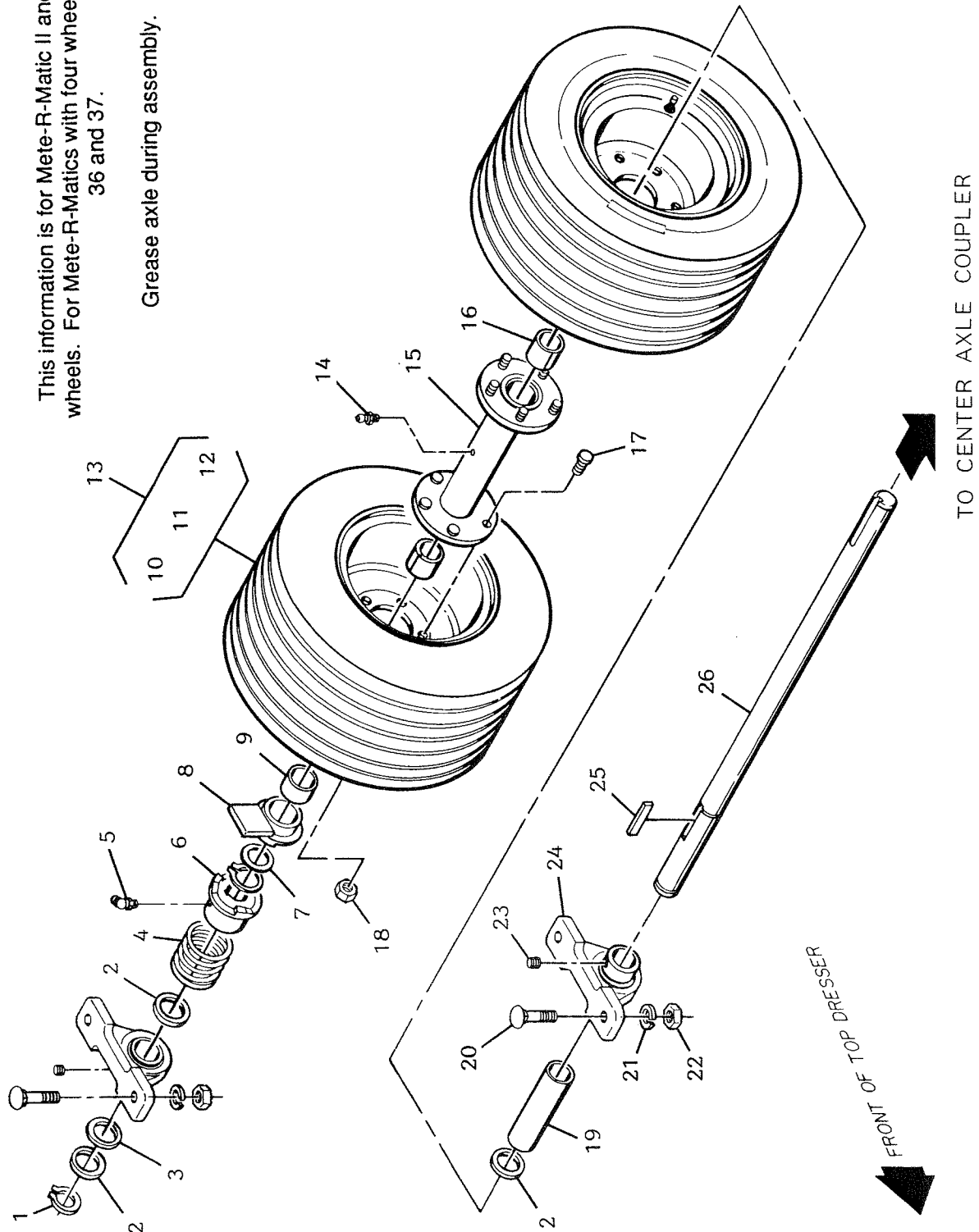


Item	Part No.	Description	Qty.
1	443110	Nut, 3/8-16	4
2	446142	Washer, Lock, 3/8	4
3	499436	Washer, 1/2ID x 1-3/4OD x 5/64	2
4	440118	Bolt, Carriage, 3/8-16 x 1	4
5	499335	Screw, Slotted Truss Head, 10-24 x 3/4	Note A
6	650780	Bearing, Oilite, No. AA839-1	2
7	655104	Bracket, LH, Includes item 6	1
8	444828	Nut, Thin Flex Lock, 3/4-16	2
9	499074	Washer, 4964 x 1-5/16 x 3/64	2
10	499244	Nut, KEPS, 10-24	Note A
11	655123	Strip, Metal	1
12	655122	Strip, Rubber	1
13	655121	Gate, Metering, Includes items 11 and 12, Assembled	1
14	655103	Bracket, RH, Includes item 6	1

NOTE A: Service part only. Use as necessary to replace factory installed rivet.

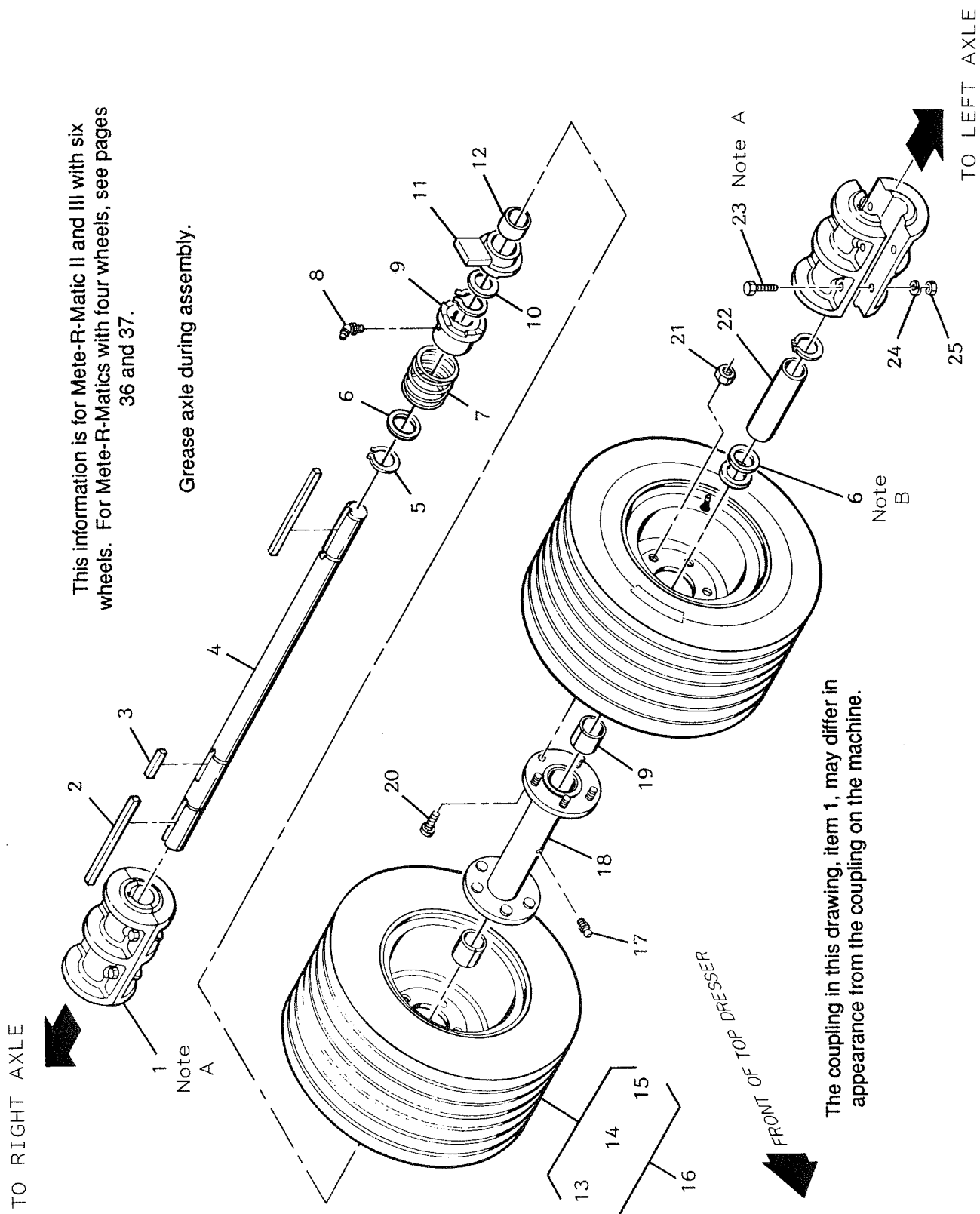
This information is for Mete-R-Matic II and III with six wheels. For Mete-R-Matics with four wheels, see pages 36 and 37.

Grease axle during assembly.



Item	Part No.	Description	Qty.
1	458035	Ring, Retaining, 5100-125	2
2	499221	Washer, 1-9/32ID x 1-7/8OD x 5/32	3
3	499223	Washer, 1-9/32ID x 1-7/8OD x 3/64	1
4	654738	Spring	1
5	471215	Fitting, Grease, 1/4-28 x 45°	1
6	654932	Clutch, Wheel, Driven	1
7	499164	Washer, 1-17/64ID x 2OD x 3/32	1
8	654936	Driver, Wheel Clutch, Includes item 9	1
9	650778	Bearing, Oilite, AA1512-15	1
10	655146	Tire Only, 16-6.5 x 8	2
11	655147	Wheel Only	2
12	651285	Valve Stem	2
13	655145	Wheel-Tire Assembly, Includes items 10, 11 and 12	2
14	471214	Fitting, Grease, 1/4-28 Straight	1
15	654924	Hub Assembly, Includes items 14, 16 and 17	1
16	655362	Bearing, Oilite, Modified	2
17	499404	Stud	10
18	499405	Nut, Lug	10
19	653392	Spacer	1
20	440194	Bolt, Carriage, 1/2-13 x 1-1/2	4
21	446154	Washer, Lock, 1/2	4
22	443118	Nut, 1/2-13	4
23	499051	Screw, Set, 1/4-28 x 1/4	4
24	655174	Bearing, Ball, Includes item 23	2
25	499154	Key, 1/4 Sq x 1-1/2	1
26	656962	Axle, Right	1
	657279	Six Wheel Axle without Main Clutch	

NOTE: This information is for Mete-R-Matic II and III with six wheels. For Mete-R-Matics with four wheels, see pages 36 and 37.



The coupling in this drawing, item 1, may differ in appearance from the coupling on the machine.

Item	Part No.	Description	Qty.
1	656966	Coupling, Includes items 2, 23 and 25, See Note A	2
2	657054	Key, 1/4 Sq x 5-1/4	2
3	499154	Key, 1/4 Sq x 1-1/2	1
4	656963	Axle, Center	1
5	458035	Ring, Retaining, 5100-125	3
6	499223	Washer, 1-9/32ID x 1-7/8OD x 3/64TK	Note B
7	654738	Spring	1
8	471215	Fitting, Grease, 1/4-28 x 45°	1
9	654932	Clutch, Wheel, Driven	2
10	499164	Washer, 1-17/64 x 2 x 3/32	1
11	654936	Driver, Wheel Clutch, Includes item 12	1
12	650778	Bearing, Oilite, AA1512-15	1
13	655146	Tire Only, 16-6.6 x 8	2
14	655147	Wheel Only	2
15	651285	Valve Stem	2
16	655145	Wheel-Tire Assembly, Includes items 13,14 and 15	2
17	471214	Fitting, Grease, 1/4-28 Str.	1
18	654924	Hub Assembly, Includes items 17, 19 and 20	1
19	655362	Bearing, Oilite, Modified	2
20	499404	Stud	10
21	499405	Nut, Lug	10
22	654931	Spacer	1
23	400264	Screw, Hex, 3/8-16 x 1-1/4, See Note A	8
24	446142	Washer, Lock, 3/8	8
25	443110	Nut, 3/8-16	8

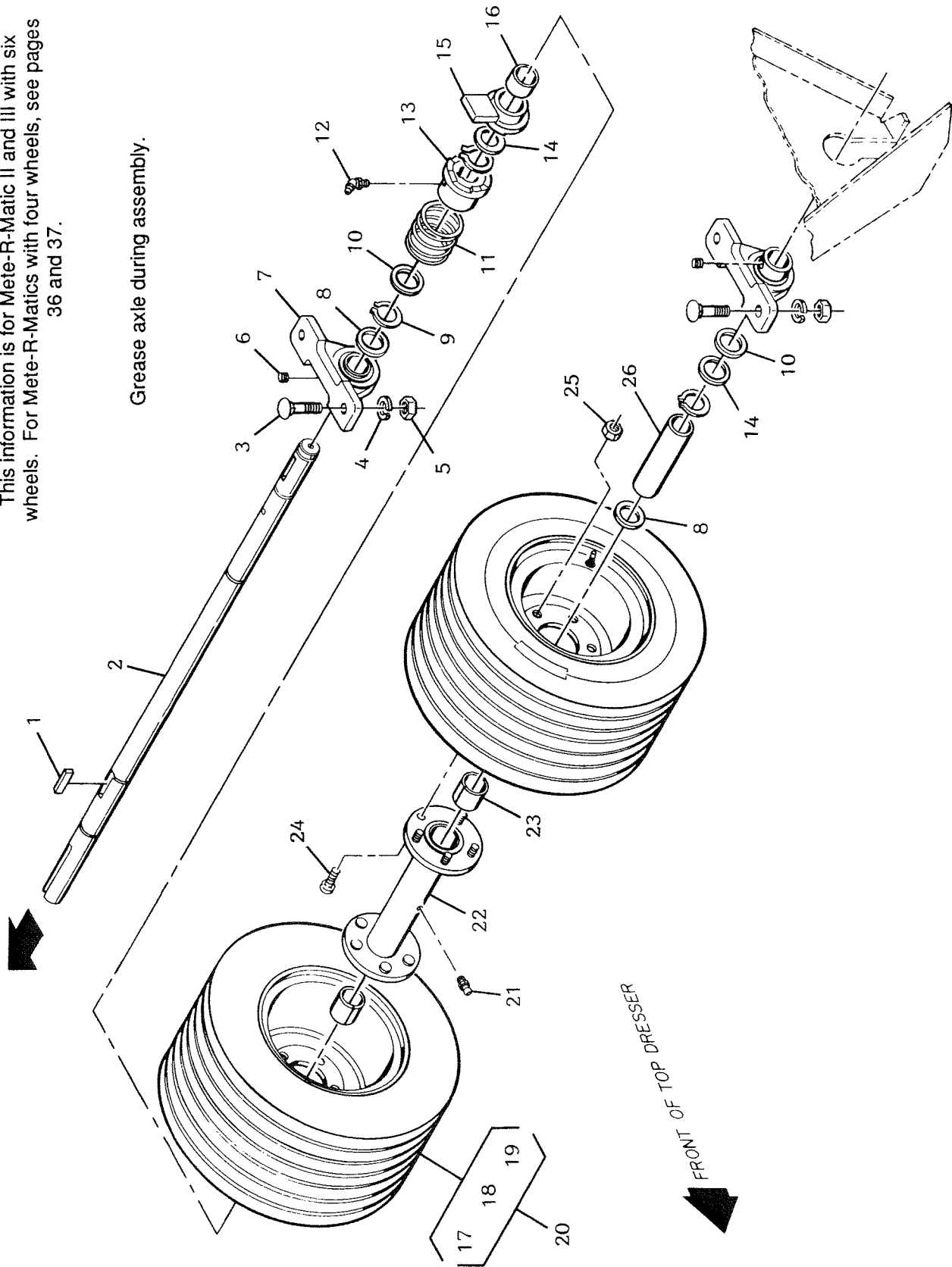
NOTE: This information is for Mete-R-Matic II and III with six wheels. For Mete-R-Matics with four wheels, see pages 36 and 37.

NOTE A: Coupling halves are in matched sets. **DO NOT MIX.** Make certain the axles are butted together and aligned before tightening the couplings. Replacement couplings are shipped with two temporary shim; remove and discard on shim when assembling. Tighten the bolts uniformly so the gap between the coupling halves is uniform along the length and on both sides of the coupling. Torque bolts in an X pattern to 240 pound-inches.

NOTE B: Use washers as required so that the snap ring seats securely and there is minimum gap between the spacer (item 22) and the snap ring.

This information is for Mete-R-Matic II and III with six wheels. For Mete-R-Matics with four wheels, see pages 36 and 37.

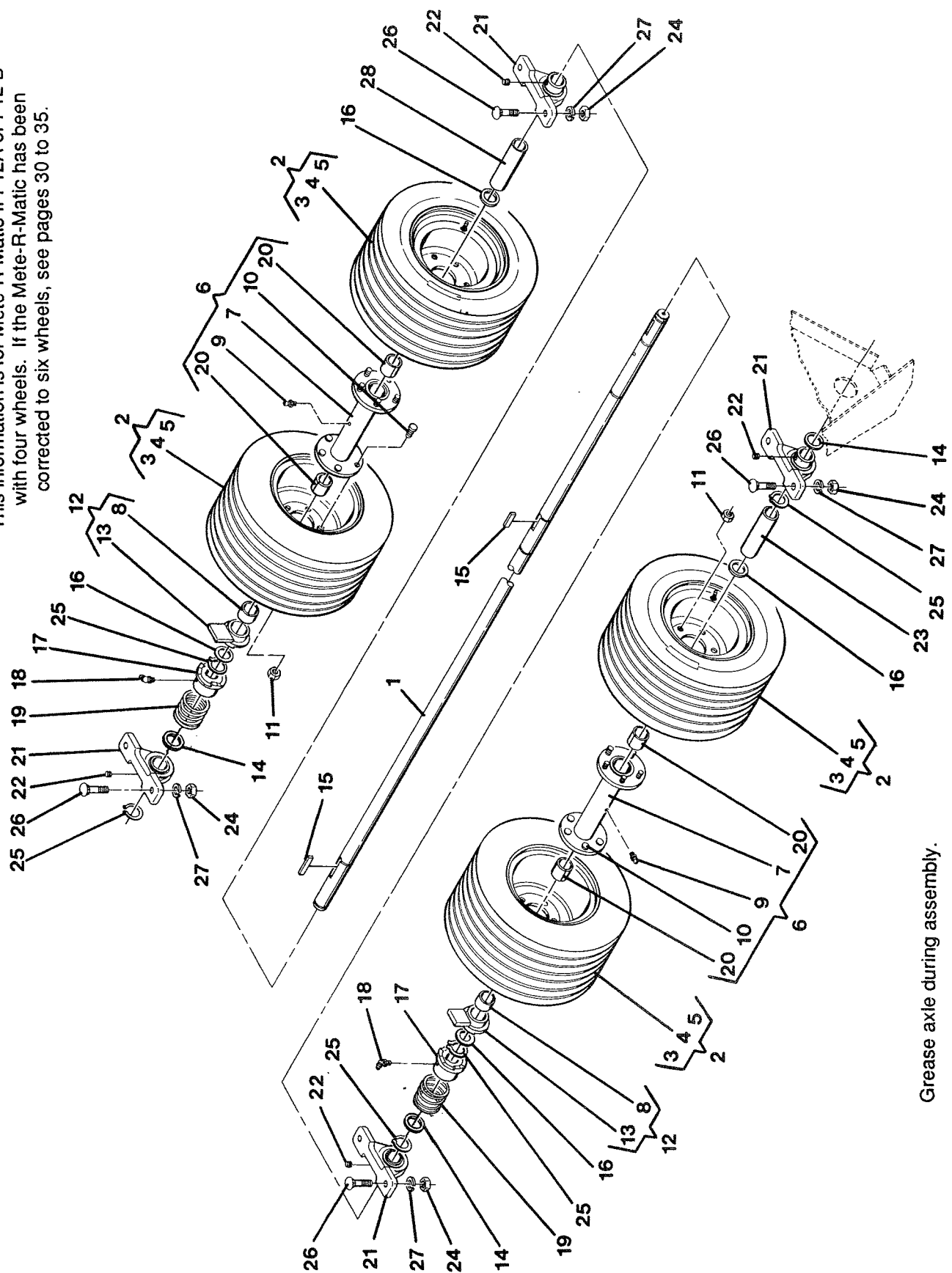
TO CENTER AXLE COUPLER



Item	Part No.	Description	Qty.
1	499154	Key, 1/4 Sq x 1-1/2	1
2	656964	Axle, Left	1
3	440194	Bolt, Carriage, 1/2-13 x 1-1/2	4
4	446154	Washer, Lock, 1/2	4
5	443118	Nut, 1/2-13	4
6	499051	Screw, Set, 1/4-28 x 1/4	4
7	655174	Bearing, Ball, Includes item 6	2
8	499223	Washer, 1-9/32ID x 1-7/8OD x 3/64	2
9	458035	Ring, Retaining, 5100-125	3
10	499221	Washer, 1-9/32ID x 1-7/8OD x 5/32	2
11	654738	Spring	1
12	471215	Fitting, Grease, 1/4-28 x 45°	1
13	654932	Clutch, Wheel, Driven	1
14	499164	Washer, 1-17/64ID x 2OD x 3/32	2
15	654936	Driver, Wheel Clutch, Includes item 16	1
16	650778	Bearing, Oilite, AA1512-15	1
17	655146	Tire Only, 16-6.5 x 8	2
18	655147	Wheel Only	2
19	651285	Valve Stem	2
20	655145	Wheel-Tire Assembly, Includes items 17, 18 and 19	2
21	471214	Fitting, Grease, 1/4-28 Straight	1
22	654924	Hub Assembly, Includes items 21, 23 and 24	1
23	655362	Bearing, Oilite, Modified	2
24	499404	Stud	10
25	499405	Nut, Lug	10
26	654931	Spacer	1

NOTE: This information is for Mete-R-Matic II and III with six wheels.
For Mete-R-Matics with four wheels, see pages 36 and 37.

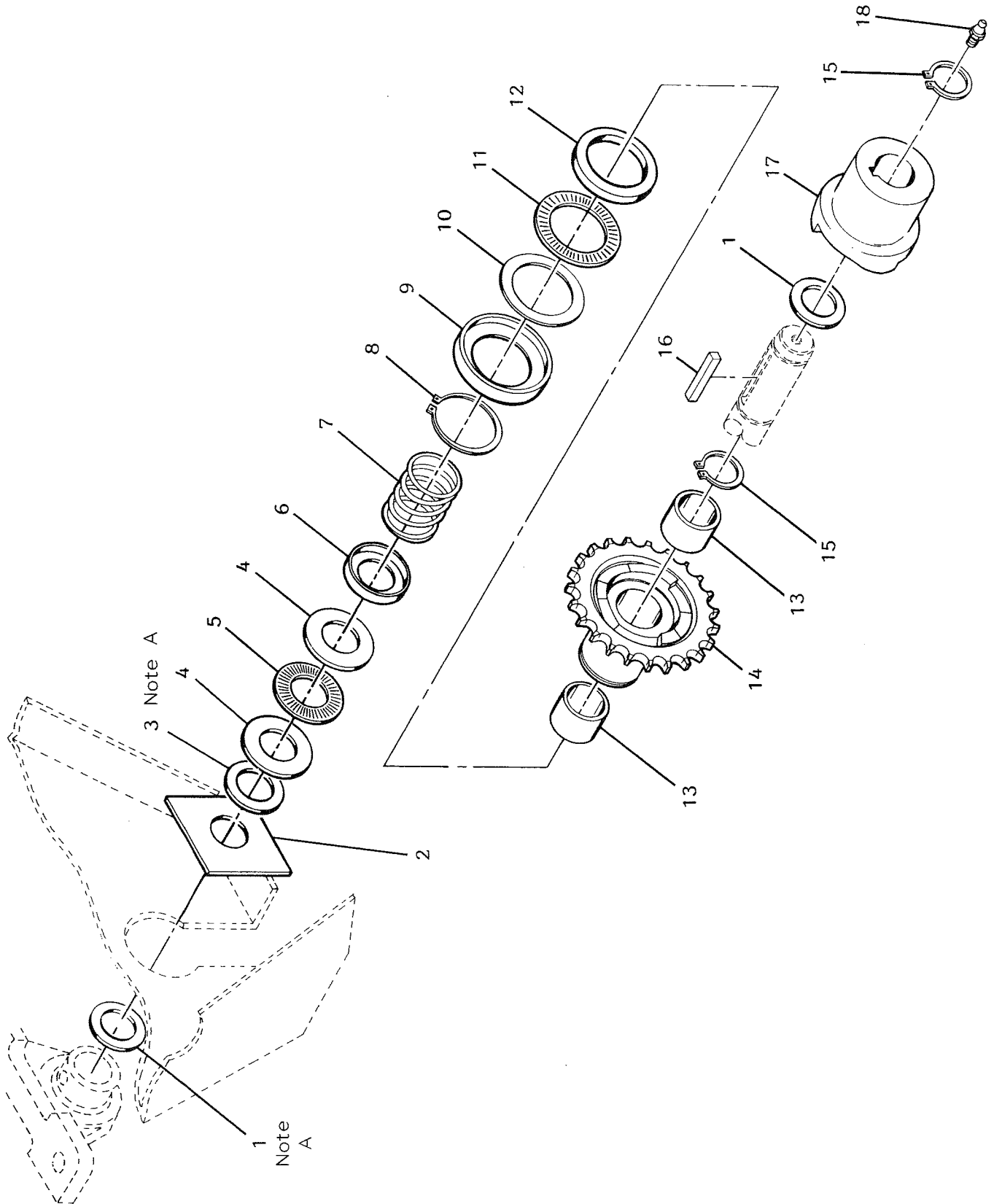
This information is for Mete-R-Matic II F12A or F12 B with four wheels. If the Mete-R-Matic has been corrected to six wheels, see pages 30 to 35.



Grease axle during assembly.

Item	Part No.	Description	Qty.
1	655144	Axle	1
2	655145	Wheel-Tire, Includes items 3, 4 and 5	4
3	655146	Tire, 16-6.50 x 8	4
4	655147	Wheel	4
5	651285	Valve Stem	4
6	654924	Hub Assembly, Includes items 7, 9, 10 and 20	2
7	654925	Hub	2
8	650778	Bearing, Oilite, AA1512-15	2
9	471214	Fitting, Grease, 1/4-28 Straight	2
10	499404	Stud	20
11	499405	Nut, Lug	20
12	654936	Wheel Clutch Driver Assembly, Includes items 13 and 8	2
13	654935	Driver, Wheel Clutch	2
14	499221	Washer	3
15	499154	Key, 1/4 x 1/4 x 1-1/2 Long	2
16	499164	Washer, Flat, 2OD x 1-17/64ID x 3/32TK	4
17	654932	Wheel, Clutch Driven	2
18	471215	Fitting, Grease, 1/4-28 x 45°	2
19	654738	Spring	2
20	655362	Bearing, Oilite, AA1512-15 with groove	4
21	655174	Bearing, Sealmaster, LP 20 R, Includes item 22	4
22	499051	Screw, Set, 1/4-28 x 1/4	8
23	654931	Spacer	1
24	443118	Nut, Hex, 1/2-13	8
25	458035	Snap Ring, 5100-125	5
26	440194	Bolt, Carriage, 1/2-13 x 1-1/2	8
27	446154	Washer, Lock, 1/2	8
28	653392	Spacer	1

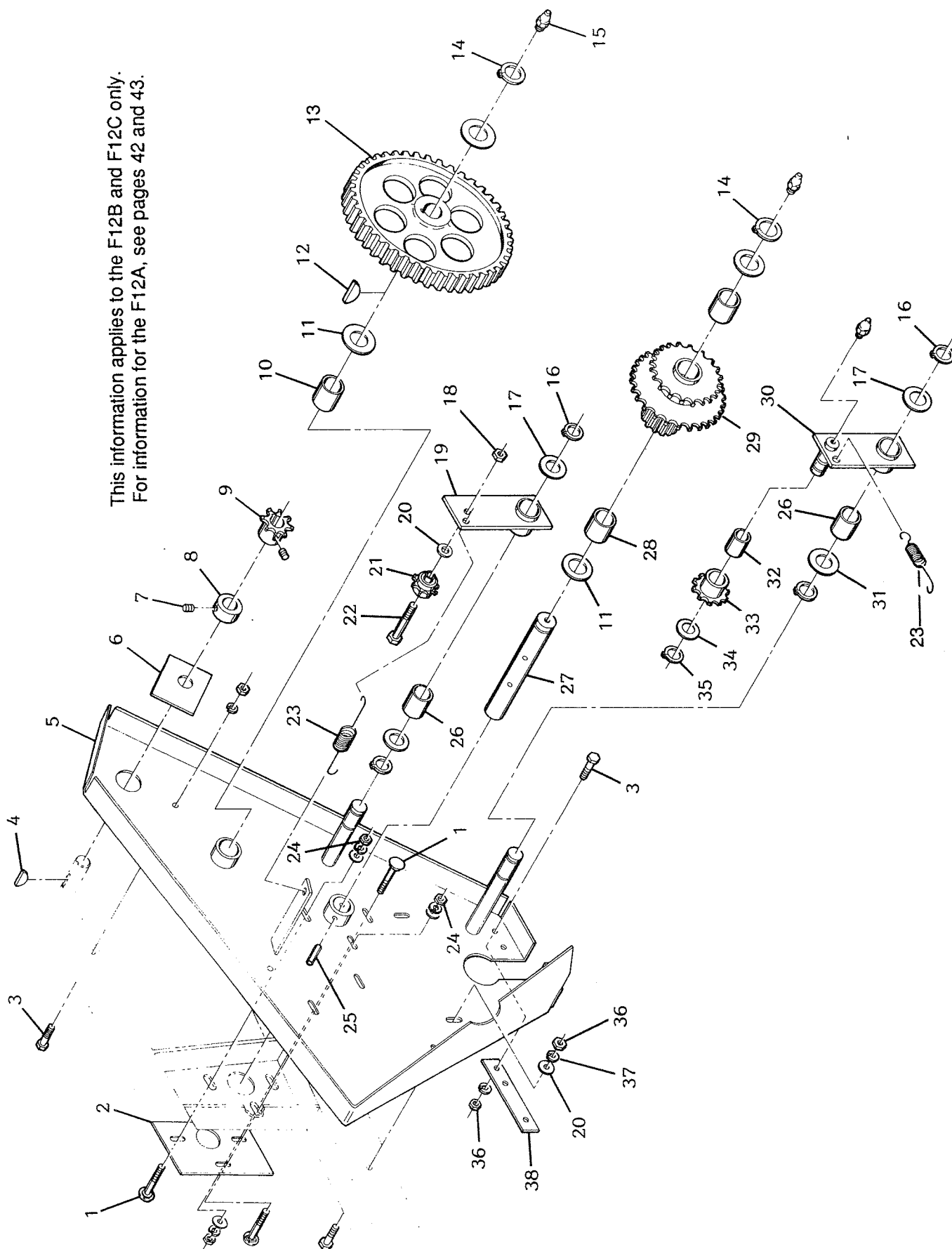
NOTE: This information is for a Mete-R-Matic II F12A or F12B with four wheels. If the Mete-R-Matic has been converted to six wheels, see pages 30 to 35.



Item	Part No.	Description	Qty.
1	499164	Washer, 1-17/64ID x 2OD x 3/32	Note A
2	655205	Washer, 1-5/16ID x 3Sq x 1/16	1
3	499221	Washer, 1-9/32 x 1-7/8 x 9/64	Note A
4	651293	Washer, Torrington TRB 2031	2
5	651292	Bearing, Torrington NTA 2031	1
6	655208	Washer, Cupped, Spring Retainer	1
7	651081	Spring, Clutch Actuating	1
8	499402	Ring, Retaining, 5100-200	1
9	655355	Washer, Cupped	1
10	655155	Washer, Torrington TRA 3244	1
11	655154	Bearing, Torrington NTA 3244	1
12	655156	Washer, Torrington TRC 3244	1
13	655459	Bearing, Super Oilite, S1503-7	2
14	655151	Clutch, Driven, Includes item 13	1
15	458035	Ring, Retaining, 5100-125	2
16	499154	Key, 1/4Sq x 1-1/2	1
17	655153	Clutch, Driver	1
18	471214	Fitting, Grease, 1/4-28 Straight	1

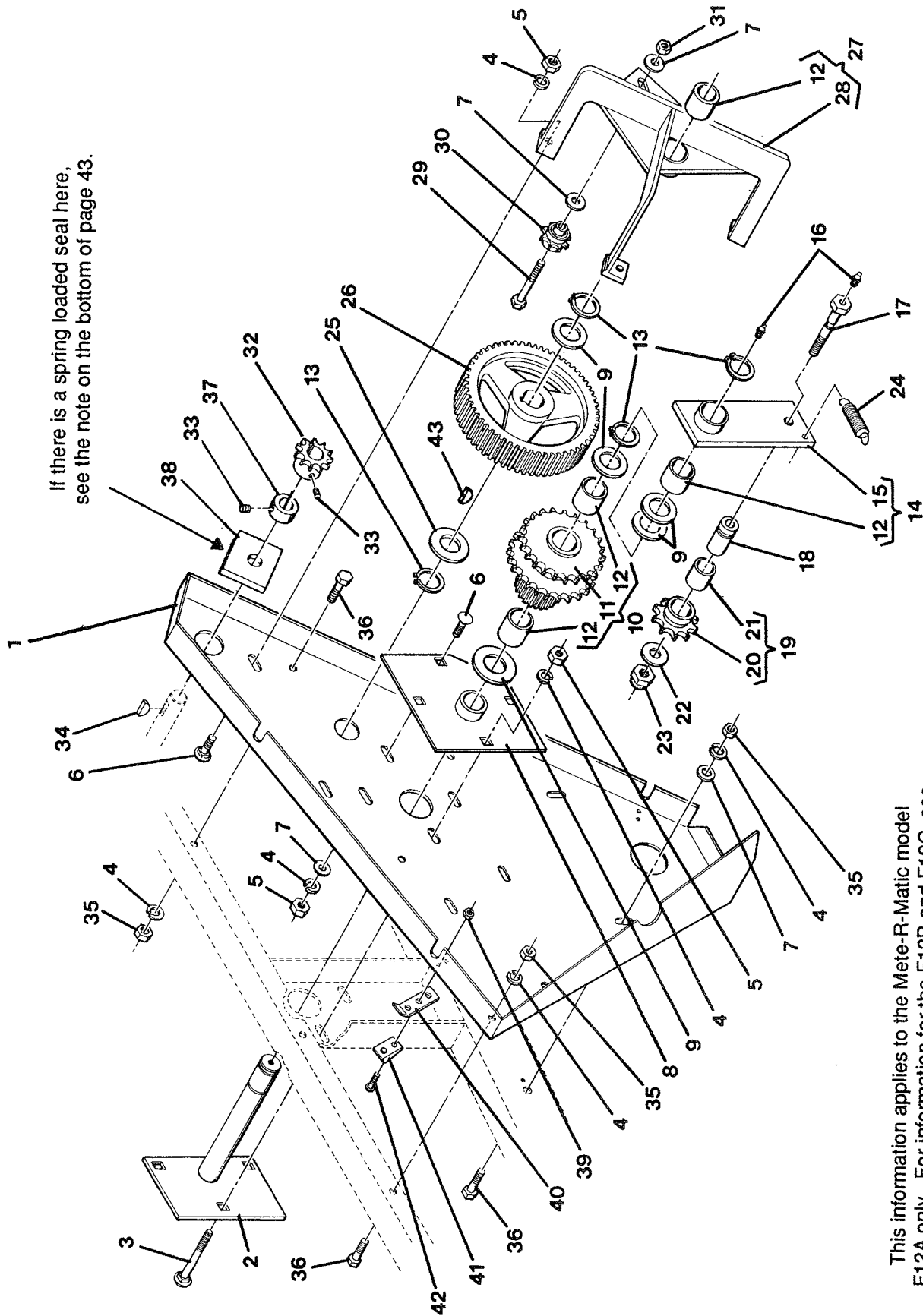
NOTE A: Use washers (item 1) as required to provide 1/32" to 1/16" clearance between the square washer (item 2) and the backup plate. Use washers (item 3) as necessary to provide adequate spring pressure. See pages 11 and 12.

This information applies to the F12B and F12C only.
For information for the F12A, see pages 42 and 43.



Item	Part No.	Description	Qty.
1	441632	Bolt, Carriage, 3/8-16 x 2-1/4	3
2	655732	Plate	1
3	400298	Screw, Hex, 3/8-16 2-1/4	5
4	463021	Key, Woodruff, 1/4 x 7/8	1
5	655724	Plate, Backup, Includes item 10	1
6	653396	Seal	1
7	415553	Screw, set, 5/16-18 x 5/16	1
8	650631	Collar, Set, Includes item 7	1
9	655197	Sprocket, 40B12, Includes Set Screw	1
10	655754	Bearing, Oilite, AA1512-16	1
11	499164	Washer, 1-17/64 x 2 x 3/32	4
12	463031	Key, Woodruff, 1/4 x 1	1
13	655736	Gear, 88 Tooth	1
14	458035	Ring, Retaining, 5100-125	2
15	471214	Fitting, Grease, 1/4-28 Straight	3
16	458021	Ring, Retaining, 5100-100	4
17	499128	Washer, 1-1/64 x 1-3/4 x 3/64	4
18	444760	Nut, Thin Flex Lock, 3/8-24	1
19	655715	Idler, Includes item 26	1
20	452006	Washer, 3/8 x 7/8 x 5/64	6
21	650811	Sprocket, NH S810	1
22	400302	Screw, Hex, 3/8-24 x 1-1/2	1
23	655771	Spring	1
24	443110	Nut, 3/8-16	3
25	499054	Rollpin, 3/16 x 1-5/8	1
26	654996	Bearing, Oilite, AA1325-10	2
27	655733	Shaft, Pinion	1
28	650778	Bearing, Oilite, AA1512-15	2
29	655728	Pinion/Sprocket, Includes item 28	1
30	655712	Idler, Includes item 26	1
31	650759	Spring	1
32	654995	Bearing, Oilite, AA1009-3	1
33	655064	Sprocket, 50B11, Includes item 32	1
34	499428	Washer, 5/764 x 1-1/2 x 3/64	1
35	499045	Ring, Retaining, 5100-87	1
36	443112	Nut, 3/8-24	8
37	446142	Washer, Lock, 3/8	9
38	655740	Stiffener, Backup Plate	1

NOTE: This information applies to the Mete-R-Matic models F12B and F12C only. For information for the F12A, see pages 42 and 43.

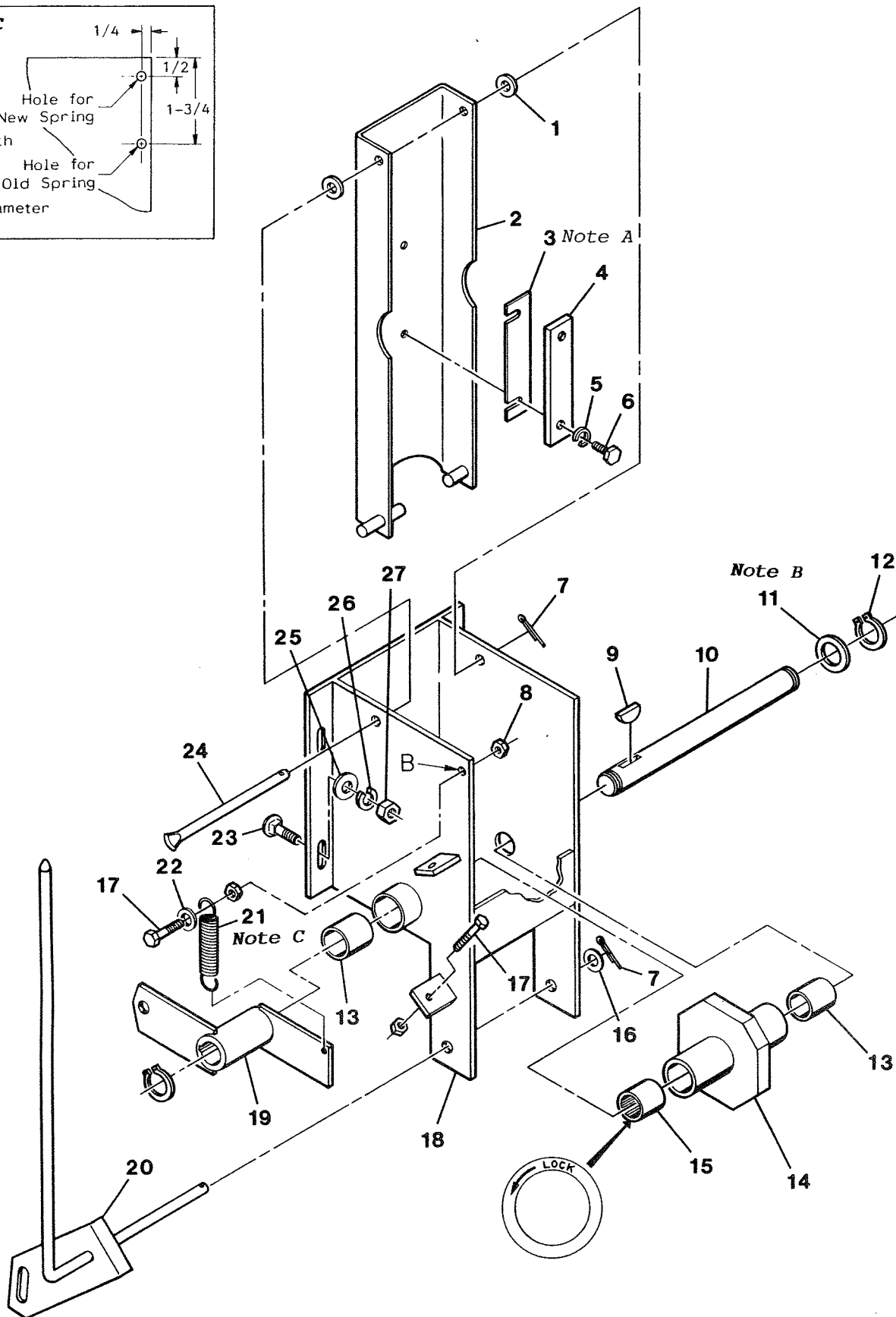
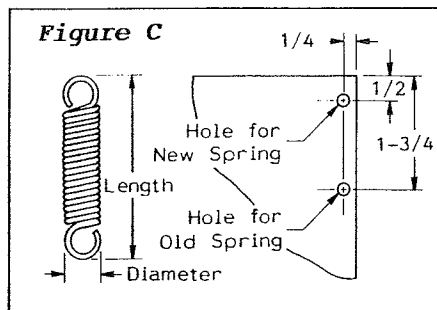


This information applies to the Mete-R-Matic model F12A only. For information for the F12B and F12C, see pages 40 and 41.

Item	Part No.	Description	Qty.
1	655049	Plate, Back Up	1
2	655198	Shaft, Pinion	1
3	499416	Bolt, Carriage, 3/8-16 x 2-3/4	3
4	446142	Washer, Lock, 3/8	12
5	443110	Nut, 3/8-16	7
6	440118	Bolt, Carriage, 3/8-16 x 1	4
7	452006	Washer, 5/16ID x 7/8OD x 3/32TK	5
8	655055	Plate, Outer	1
9	499164	Washer, 1-17/64ID x 1-7/8OD x 1/16TK	AR
10	655057	Pinion/Sprocket, Includes items 11 and 12	1
11	655058	Pinion/Sprocket	1
12	650778	Bearing, Oilite, AA1512-15	4
13	458035	Snap Ring, 5100-125	4
14	655063	Chain Idler Bracket, Includes items 12 and 15	
15	655070	Idler Bracket	1
16	471214	Fitting, Grease, 1/4-28	2
17	655066	Screw, Chain Idler	1
18	655065	Bushing, Chain Idler	1
19	655064	Idler Sprocket, Includes items 20 and 21	1
20	655067	Sprocket, 11 Tooth, RC-50	1
21	654995	Bearing, Oilite, AA1009-3	1
22	452010	Washer, Flat, 7/16ID x 1-1/4OD x 3/32TK	1
23	499035	Nut, Self Lock, 1/2-20	1
24	650759	Spring	1
25	499222	Washer, 1-17/64ID x 1-7/8OD x 1/16TK	1
26	655195	Gear, Rear Roller, 60 Tooth	1
27	655359	Support, Bearing Assembly, Includes items 28 and 12	1
28	655210	Bearing Support	1
29	400268	Screw, Hex, 3/8-16 x 1-3/4	1
30	650811	Sprocket, Idler NH S810	1
31	499357	Lock Nut, 3/8-16 Thin	1
32	655197	Sprocket, 12 Tooth, RC-40	1
33	415553	Set Screw, 5/16-18 x 5/16 Cup Point	1
34	499004	Key, Woodruff, 1/4 x 3/4	1
35	443112	Nut, Hex, 3/8-24	5
36	400298	Screw, Hex, 3/8-24 x 1	5
37	650631	Collar, Set, Includes item 33	1
38	653396	Seal	1
39	444702	Nut, Lock, 8-32	3
40	655352	Shim	3
41	655052	Latch Keeper	3
42	402058	Screw, Round, 8-32 x 1/2	3
43	463031	Key, Woodruff, 1/4 x 1	1

NOTE: This information applies to the Mete-R-Matic model F12A only. For information for the F12B and F12C, see pages 40 and 41.

NOTE: If the Mete-R-Matic II being serviced has a spring loaded seal on the brush shaft, remove the spring, square steel washer, and the two standard washers. Replace with one 650631 Set Collar to gently hold the plastic seal against the Back Up Plate.



Item	Part No.	Description	Qty.
1	499021	Washer, 25.64ID x 5/8OD x 1/16TK	2
2	655073	Bracket, Clutch Throw Out	1
3	655356	Shim	Note A
4	655076	Plate, Wear	1
5	446128	Washer, Lock, 1/4	2
6	400150	Screw, Hex, 1/4-28 x 1	2
7	460028	Pin, Cotter, 1/8 x 1	2
8	443104	Nut, 1/4-28	4
9	463021	Key, Woodruff, 1/4 x 7/8	1
10	655093	Shaft, Cam Actuator	1
11	499128	Washer, 1-1/64ID x 1-3/4OD x 3/64	Note B
12	458021	Ring, Retaining, 5100-100	2
13	654996	Bearing, Oilite, AA1325-100	2
14	655084	Cam, Includes items 13 and 15	1
15	655085	Clutch, Torrington 162117 RCB	1
16	453013	Washer, 15/32ID x 15/16OD x 1/16	1
17	400152	Screw, Hex, 1/4-28 x 1-1/4	3
18	655077	Bracket, Includes item 13	1
19	655089	Arm, Indexing	1
20	655095	Indicator	1
21	656803	Spring	Note C
22	452004	Washer, 5/16ID x 3/4OD x 1/16TK	1
23	440118	Bolt, Carriage, 3/8-16 x 1	4
24	651074	Pin, Pivot	1
25	452006	Washer, 3/8ID x 7/8OD x 5/64TK	4
26	446142	Washer, Lock, 3/8	4
27	443110	Nut, 3/8-16	4

NOTE A: Use shims (item 3) as required to provide proper clutch dog engagement and clearance. See Wear Plate Adjustment, pages 12 and 13

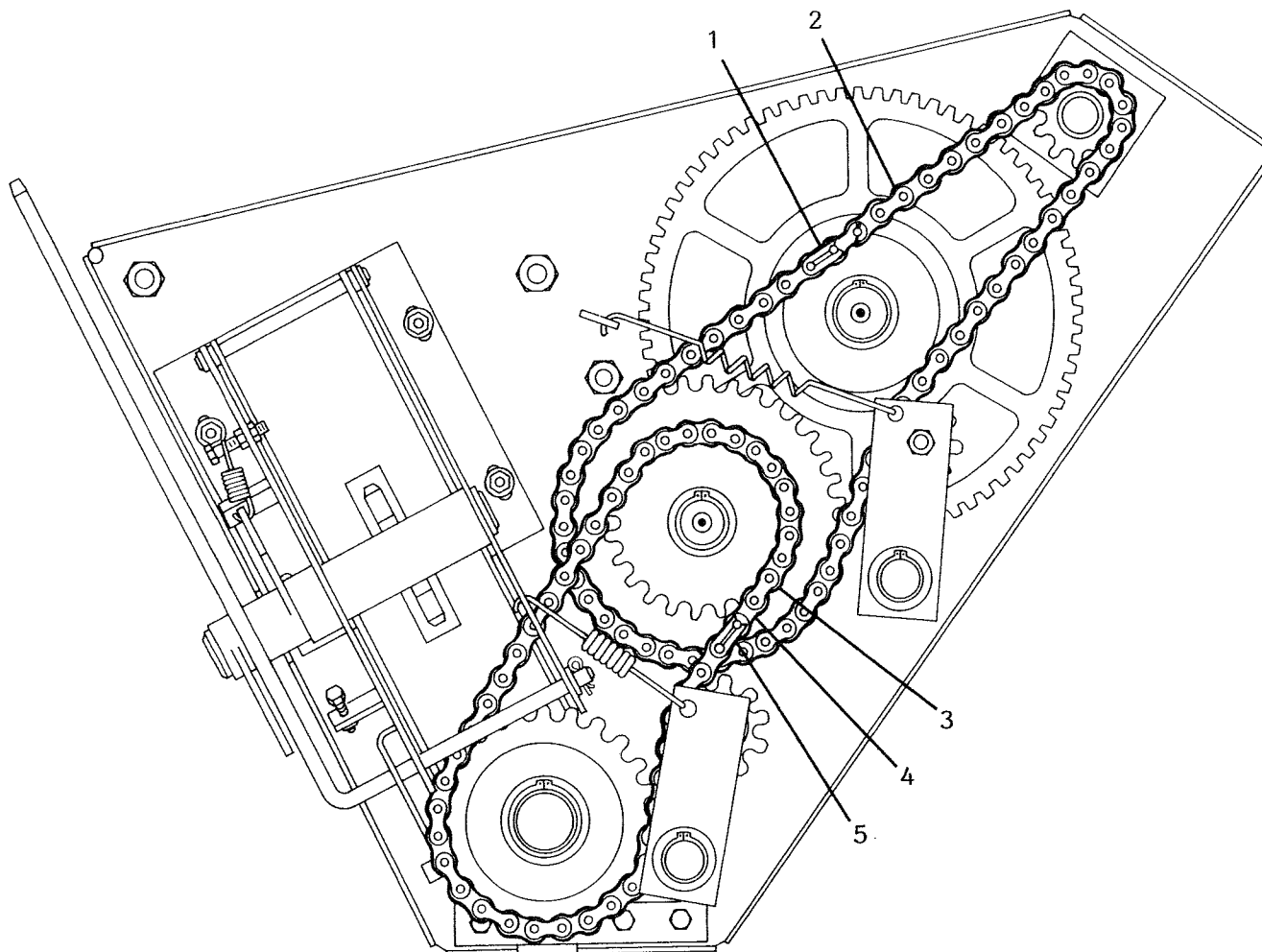
NOTE B: Use washers (item 11) as required to optimize alignment between the indexing arm (item 19) and the stop screws (item 17).

NOTE C: The indexing arm return spring has been enlarged to provide a more positive return when the clutch is engaged and disengaged.

The new spring 656803 is 3/4" OD x 3-3/8" long. The old spring 650759 is 5/8" OD x 2-1/2" long.

The location of the upper mounting hole has been changed to accommodate the longer spring. See Figure C for old and new hole locations.

If the clutch does not return consistently, make certain that the indexing arm is not rubbing on the guard. Older machines can be modified to use the new spring by drilling a 9/32" hole at the location shown in Figure C and moving the spring anchor screw to the new hole.



Item	Part No.	Description	Qty.
1	650703	Link, Master, RC-40	1
2	655765	Chain, RC-40 x 86 Pitches for the F12B and F12C, Includes item 1	1
	655217	Chain, RC-40 x 69 Pitches for the F12A, Includes item 1	1
3	655764	Chain, RC-50 x 53 Pitches for the F12B and F12C, Includes items 4 and 5	1
	655157	Chain, RC-50 x 59 Pitches for the F12A, Includes items 4 and 5	1
4	470515	Link, Half, RC-50	1
5	650013	Link, Master, RC-50	1

Mete-R-Matic Top Dressing Material Requirements

Application	Square Feet	1/32"	1/16"	1/8"	1/4"
	1,000	0.10	0.19	0.39	0.78
Golf Green	5,000	0.48	0.97	1.94	3.88
	10,000	0.97	1.94	3.88	7.75
	25,000	2.42	4.84	9.69	19.38
Acre	43,560	4.22	8.44	16.88	33.76
	50,000	4.84	9.69	19.38	38.75
Football Field	54,000	5.23	10.46	20.93	41.85
	75,000	7.27	14.53	29.06	58.13
	100,000	9.69	19.38	38.75	77.50
Square Feet x Thickness of Application in inches x .0031 = Cubic Yards of Top Dressing					

