# SOD HARVESTER

## Model 1580

**for John Deere 5065E Tractor**

# Operators Manual

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KM99194
March - '15

**Date of Purchase**: M……D……..Y

**Dealer Name** _____ **Phone**_____

**Serial Number** _____

**Model Number** _____

***ALWAYS GIVE MODEL AND SERIAL NUMBER WHEN ORDERING SERVICE PARTS***

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# INTRODUCTION Section 1

## DESCRIPTION

The 1580 Sod Harvester, mounted on a John Deere 5065E tractor, delivers exceptional maneuverability, along with small tractor economy and lasting value.

Operating off uncut turf, the Brouwer 1580 can harvest all types of grasses on all types of soil, in wet or dry, soft or hard conditions. It can produce Slabs, or with the optional Roll-Up system Rolls, in dimensions to suit your local market. You can adjust sod thickness on the go with the optional depth control.

The tractor mounted Auto-Steer assures accuracy and increases your harvest. Even the re-growth and maturity of successive sod crops is enhanced, since re-growth strips can also be cut accurately and consistently.

## HARVESTER SPECIFICATIONS

| | |
|---|---|
| Performance | Up to 1500 Sq. Yd. (1260 m sq.) per hour |
| Conveyor | Rubber or Metal Mesh |
| Width of Cut | 16 in. (406 mm)<br>18 in. (457 mm)<br>24 in. (607 mm) |
| Length of Cut | 24 in.(607 mm) to<br>100 in. (2540 mm) |
| Thickness of Cut | Adjustable<br>up to 2-1/8 in. (54 mm) |
| Pallet Sizes | 48 in.x 48 in., Standard<br>(1219 mm x 1219 mm) |
| Cutter Drive | Hydraulic |
| Conveyor Drive | Hydraulic |
| Cutting Knives | One Piece, Standard |
| Construction | High-strength<br>steel weldment |

Shipping Weight (Slab Unit): 10230 lbs. (4640kg.).

### OPTIONS

Rolling Attachment
Cross Conveyor for attachment
Piling wall extension, 12 in. (305 mm)
Tires - rear high flotation (19.5-24)
or turf tires (16.9-24)

### ACCESSORIES

Auto-Steer
Brush attachment
Counter for rolling attachment (Std. on slab).
Canopy and operating lights
Adjustable piling wall
Piling wall extension, 12 in. (305 mm)

## TRACTOR SPECIFICATIONS

### John Deere 5065E

53 hp (P.T.O.)
Diesel Power, upright muffler
9-speed transmission
H.D. rear axle
Hydrostatic power steering
Standard: 16.9-24 rear tires, 11L-15 front tires
Optional: 19.5-24 rear tires, 11L-15 front tires

Specifications subject to change without notice or obligation.

## SECTION 2

# SAFETY

# SAFETY

## SAFETY ALERT SYMBOL

Hazards are identified by this symbol followed by the signal words:
**DANGER, WARNING OR CAUTION.**

**DANGER**

Indicates an immediate hazardous situation which if not corrected or avoided, **WILL result in death or serious injury.**

**WARNING**

Indicates a potential hazardous situation which **COULD result in death or serious injury if not avoided.**

**CAUTION**

Indicates a potentially hazardous situation which **MAY result in a minor or moderate injury.**

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Always follow safe operating and maintenance practices to ensure your own safety and that of others.
Warning and safety signs/decals are prominently displayed and strategically placed on the machine.
Before operating the machine check that all safety signs and decals are in place, are not damaged and easily readable.

It is important to familiarize yourself with the safety signs/decals. They are shown in Section 1, pages 3 to 8.

Do not operate the machine if drugs, alcohol or medication are being used which can affect the alertness or co-ordination of the operator.
Seek professional advice before operating the machine if there is any doubt about the side effects of medication being taken that may put your safety at risk.

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**It is imperative that the warnings shown on all decals are strictly adhered to.**
**The driver and stacker(s) must pay particular attention to the decals illustrated here.**


**Located on the Rear Beam.**
See page 2-12.


**Located on the Controls Cover-**
See page 2-12.

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**WARNING**

**For clarity some safety guards are not shown. Do not operate machine if any safety devices are damaged or missing.**

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**The following safe operating procedures must be observed.**

- **It is important that the operator is in full control of the harvester at all times.**
- **Before reverse travel is engaged the Stacker(s) must remove themselves from the stacking platform to a safe location clear of the machine, in view of the operator, eg: on the uncut turf (conveyor side),clear of the path of the harvester.**
- **While reversing, the operator must monitor the path of travel to ensure the Stacker(s) are in sight at all times, while steering clear of any obstructions in the field.**
- **While harvesting reverse must be used only when absolutely necessary.**
- **The stacker(s) must not be on the rear of the harvester while transporting in reverse.**
- **Wear appropriate clothing and safety equipment. Loose clothing, long hair or jewelry may get tangled in moving parts. Do not put hands or feet near rotating parts.**

Never allow children or untrained people to operate this equipment. Local regulations can restrict the age of the operator.

Only allow the operator(s) on the machine, keep riders off. Never carry passengers. Riders on the machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders may obstruct the operator's view resulting in the machine being operated in an unsafe manner.


Keep warning labels and this operator's manual legible and intact. Replacement labels and manuals are available from the factory.

Do not operate the machine while under the influence of drugs or alcohol.

Keep pets and bystanders at a safe distance.

The owner / user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

**Machine preparation**

Check operator presence interlock system and brake operation. Adjust or repair any problems before using.

Do not tamper with or defeat safety devices. Keep guards, shields and interlock safety devices in place and in proper working condition. They are for your protection.

Keep all fasteners such as nuts, bolts and pins well secured.

Verify that the machine is in good operating condition.

Only use accessories and attachments approved by the manufacturer.

## OPERATING SAFELY

Keep hands and feet away from cutting unit.

Exercise extra care when loading and unloading the machine onto a trailer or truck.

Shut off fuel while storing or transporting.

Watch out for traffic when near or crossing roadways.

**WARNING**

Exhaust fumes contain carbon monoxide that is toxic and can be fatal when inhaled.
Never run an engine in an enclosed area, engine exhaust fumes can cause sickness or death.

**NEVER** operate an engine without proper ventilation. Work in ventilated area.

Exercise care when pulling loads or using heavy equipment.
Use only approved drawbar hitch points.

Limit loads to those you can safely control.

Do not turn sharply. Use care when reversing. Look behind and down below backing up.

Use counterweight(s) or wheel weights only as recommended in the operator's manual.

Put transmission in **PARK** before dismounting. Leaving transmission in gear with engine stopped will ***NOT*** prevent the harvester from moving.

Be sure everyone is clear of the harvester before starting engine.

Operating equipment requires the full attention of the operator. Do not wear radio or music head-phones while operating the machine.

**CAUTION**

Prolonged exposure to loud noise can cause impairment or loss of hearing.
The operator should wear suitable hearing protective devices to protect their hearing.

**CAUTION**

**NEVER** try to get on or off a moving harvester.

Before leaving operator position, place in PARK, lower implements to the ground, stop the engine and remove the key.

Do not change the engine governor setting or over speed the engine.

Inspect the area where the equipment is to be used and remove all objects which might or damage the machine.

Only operate with good light, keeping away from holes and hidden hazards.

**Starting**

Start only according to instructions in this manual or on the machine.

DO NOT use starting fluid.

**WARNING**

Avoid possible injury or death from runaway machine.

DO NOT start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on the ground. Start engine only from operators seat, with transmission in neutral or in park.

Before attempting to start the engine, make sure the transmission is in park.

**Interrupting operation**

Reduce throttle to slow, and allow engine to operate at no load for several minutes before shitting down engine.

To park harvester safely, stop on level ground, move machine controls to the “OFF” position, lower equipment to the ground, put gear shift lever in PARK, SET brakes, STOP the engine and remove key.

Before leaving the operator’s seat, wait for engine and attachment parts to stop moving.

Stop engine, move machine controls to the “OFF” position and remove the key, before checking, cleaning or working on the machine. If the machine begins to vibrate abnormally, inspect and make repairs as needed before restarting, except for repairs or adjustments as specifically noted, where the engine must be running. Keep clear of moving parts in these circumstances.

**Highway Operation**

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment and self-propelled machines on public roads. Frequently check for traffic from the rear, especially turns and use turn signal lights.

Slow down and use caution when making turns and crossing roads and railroad tracks.

Use headlights, flashing warning lights and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean and in good working order. Replace or repair lighting and marking that has been damaged or lost.

Couple brake pedals together for road travel.

**Prevent Tipping**

Avoid holes, ditches and obstructions which cause the harvester to tip, especially on hill sides.

**WARNING**

**NEVER** drive near the edge of a gully or steep embankment that may collapse and cave-in, causing the machine to tip.

Shift to a low gear before descending a steep hill to improve your control of the harvester with little or no braking. Use engine braking to reduce speed before applying harvester brakes. Runaway tractors often tip over. Never coast downhill.

Slow down and use caution when making turns and when changing directions on slopes.

**Freeing a mired machine**

Attempting to free a mired machine can involve safety hazards such as the mired machine tipping rearward, the towing tractor overturning and the tow chain or tow bar (a cable is not recommended) failing and recoiling from its stretched condition.

Back your machine out if it gets mired down in mud. Unhitch any towed implements. Dig mud from behind rear wheels to provide a solid base and try to back out slowly. If necessary, dig mud from the front of all wheels and drive slowly ahead.

If it is necessary to tow with another unit, use a tow bar or chain (a cable is not recommended). Inspect the chain for flaws/damage.

Make sure all parts of towing devices are of adequate size and strong enough to handle the load.

Always hitch to the drawbar of the towing unit. Do not hitch to the front push bar attachment point. Before moving, clear the area of people. Apply power smoothly to take up the slack: a sudden pull could snap any towing device causing it to whip or recoil dangerously.

**Stay clear of rotating drivelines**

**DANGER**

Entanglement in rotating driveline can cause serious injury or death.


**Maintenance Safety in general**

Maintain machine according to manufacturer's schedule and instructions for maximum safety and best harvesting results.

Park machine on firm level ground.

Never allow untrained personnel to service machine.

Adjust or repair only after the engine has been stopped and machinery has stopped moving

Replace parts if worn, damaged or faulty. For best results, always replace with parts recommended by the manufacturer.

Disconnect the battery (or remove the spark plug wire(s) ,if applicable) ,before making any repairs. Disconnect the negative terminal first. Reconnect positive first.

Carefully release pressure from components with stored energy.

**Support Machine Properly**

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, use jackstands. If left in a raised position, hydraulically supported devices can settle or leak down.

**WARNING**

Do not support the machine on cinder blocks, hollow tiles or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual

Do not put any body parts near rotating parts.

Clean up oil or fuel spillage thoroughly.

Replace faulty mufflers.

To reduce fire hazards, keep the engine, muffler, battery compartment and fuel storage area free of grass, leaves, debris buildup or grease.

**Fuel**

**Handle fuel with care, it is highly flammable.** Use an approved container. IF the spout does not fit inside the fuel filler neck, use a funnel.

**WARNING**

Use extra care when handling gasoline and other fuels, they are flammable and vapors are explosive.

**NEVER** remove the fuel cap from the fuel tank, or add fuel, when the engine is running or while the engine is hot.

Do not smoke when handling fuel. Never fill or drain the fuel tank indoors.

Use care to avoid spilling fuel. If fuel is spilled, clean it up immediately.

**NEVER** handle or store fuel containers near an open flame or any device that may create sparks and ignite the fuel or fuel vapors.

Be sure to reinstall and tighten fuel cap securely.

Be prepared if a fire starts. Keep a first aid kit and fire extinguisher handy.

Use only approved container.

**When refueling or checking fuel level:**

Stop the engine and allow to cool;

Do not smoke;

Never refuel or drain the machine indoors;

Do not overfill;

Clean up spills immediately. Do not attempt to start the engine until the spill is cleaned up and the vapors have cleared.

**WARNING**

Do not fill containers in a vehicle or on a truck or trailer bed with a plastic liner. Fill containers on the ground away from the vehicle.

Keep dispenser nozzle in contact with the rim of the fuel tank or container opening until fueling is complete. Do not use a nozzle lock-open device.

Replace caps on fuel cans and tanks securely.

## Hydraulic System

**WARNING**

The machine's hydraulic system operates under high pressure.

To prevent serious injury from hot, high pressure oil, never use your hands to check for oil leaks, use paper or cardboard.

Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin. If fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.


Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Always lower implements to ground, disengage all drives, engage parking brake, stop engine and remove key before inspecting or disconnecting hydraulic lines or hoses.

Check visible hoses and tubes daily. Look for wet hoses or oil spots. Replace worn or damaged hoses and tubes before operating the machine.

Replacement tubes or hoses must be routed in the same path as the existing hose, do not move clamps, brackets and ties to a new location.

Thoroughly inspect all tubes, hoses and connections every 300 hours.

**IMPORTANT: The hydraulic system can be permanently damaged if the oil becomes contaminated.** Before disconnecting any hydraulic component, clean the area around the fittings and the hose ends to keep impurities out of the system.

Before disconnecting any hydraulic component, tag or mark the location of each hose then clean the area around the fittings.

As you disconnect the component, be prepared to assembly plugs or caps to the hose ends and open ports. This will keep impurities out of the hydraulic system and also prevent oil spills.

Make sure 'O' Rings are clean and hose fittings are properly seated before tightening.

Keep the hose from twisting. Twisted hoses can cause couplers to loosen and the hose flexes during operation resulting in oil leaks.

Kinked or twisted hoses can restrict the oil flow causing the system to malfunction and the oil to overheat and also lead to hose failure.

### Service Cooling System

**CAUTION**

Do not pour cold water into a hot radiator. Do not operate engine without a proper coolant mixture. Install cap and tighten securely.

Add make-up coolant through the recovery tank, not directly to the radiator.

If radiator cap must be removed, do not remove it when engine is hot. Shut engine off and wait until cap is cool enough to touch with bare hands. To relieve pressure, slowly loosen cap to its first stop, before removing completely.

### Battery Service

**WARNING**

Sulfuric acid in battery electrolyte is poisonous.
It is strong enough to burn skin, eat through clothing, and cause blindness if splashed into eyes.

**CAUTION**

Always use insulated tools, wear protective glasses or goggles and protective clothing when working with batteries. Read and obey all battery manufacturer's instructions.

**WARNING**

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. **Wash your hands after handling.**

**Avoid the hazard by:**

1. Filling the batteries a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

**If you spill acid on yourself**

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid
3. Flush your eyes with water for 15-30 minutes. Get medical attention immediately.

**If acid is swallowed:**

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2L (2 quarts)
3. Get medical attention immediately.

**WARNING**

Batteries generate explosive hydrogen gas. To reduce the chance of an explosion, avoid creating sparks near a battery. Always connect the negative jumper cable to the frame of the tractor with the discharged battery away from the charged battery.

Charge batteries in an open, well ventilated area away from sparks or flame.
Unplug charger before connecting or disconnecting battery.

### Jump Starting.

Check all jumper cables are in good condition.
Turn 'off' the ignition and all accessories on both machines.

Position the machine with the charged battery next to, but not touching, the machine with the dead battery.

**Making Cable Connections.**
Ensure the cable clamps do not touch anywhere other except to intended connections.
Never connect positive (red) terminal to the negative (black) terminal.
Keep cables clear of any engine parts when starting.

Connect the one end of the red cable to the positive terminal of one battery, the other end to the positive terminal of the second battery.
Connect one end of the black cable to the negative terminal of the machine with the charged battery. Make the final connection of the black cable on the engine block of the machine to be started.

Start the machine with the charged battery, the start the machine with the discharged battery.

Remove the cables in the reverse order to above.
Take care when removing each cable clamp they do not touch any metal parts while the other end is connected still connected.

**Transporting and Storage Safety**

A disabled harvester is best transported on a flatbed carrier. Use chains to secure the harvester to the carrier.

Never tow a harvester at a speed greater than 16 km/h (10 mph). An operator must steer and brake the harvester under tow.

Stop the engine and allow to cool before storing.

Drain the fuel tank outdoors only.

Shut off fuel while storing or transporting.

Store fuel in an approved container in a cool, dry place.

Keep the machine and fuel containers in a locked storage place to prevent tampering and to keep children from playing with them.

Do not store the machine or fuel container near heating appliances with an open flame such as a water heater or an appliance with a pilot light.

**Service Harvester Safely**

Do not service the harvester while it is in motion or while the engine is running.

When servicing front-wheel-drive equipped harvester, with rear wheels supported off the ground, and rotating the wheels by engine power, always support the front wheels in a similar manner. Engaging front-wheel drive will pull the rear wheels off their support if front wheels are not raised.

Tighten wheel hardware to correct torque as specified in wheels, tires and treads section.

Torque at intervals shown in break-in period and lubrication and maintenance sections, to ensure that the wheel hardware does not loosen.

Reinstall shields removed during service.

**NOTE**

Refer to pages 2-09 and 2-10 for:

- Tire service.
- Handling chemical products.
- Disposal of waste products.
- Removal of paint before welding.
- Avoidance of heating pressurized fluid lines.

**Service Tire Safety**

**WARNING**

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion.

Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and not in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

**Practice Safe Maintenance**

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relive pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect batter ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from harvester before servicing electrical system components or welding on machine.

**Handle Chemical Products Safely**

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals include such items as fuels, lubricants, coolants, paints, and adhesives.

**A Material Safety Data Sheet (MSDS) provides specific details on chemical products:**

Physical and health hazards;

Safety procedures;

Emergency response techniques

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and use of recommended equipment.

**Dispose of Waste Properly**

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leak proof containers when draining fluids. Do not use food or beverage containers that may mislead someone from drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.
Air conditioning refrigerants can damage the atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste at your local environmental or recycling center or your dealer.

**Remove Paint Before Welding or Heating**

**CAUTION**

Avoid potentially toxic fumes and dust.
Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.

If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.

If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to dispense at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place. Do all work in an area that is well ventilated to carry toxic fumes and dust away. Dispose of paint and solvent properly.

**Avoid Heating or Pressurized fluid Lines**

**CAUTION**

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

# SAFETY

## Safety Decals


Location: Control Panel.


Location: Left Fender.


Location: Left Fender

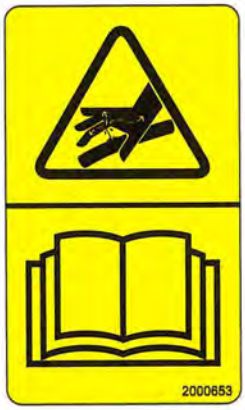

Location: Tractor Dash. (Auto-Steer only).


Location: Left Fender


Location: Panel Left of Operator's Seat.


Location: Panel Left of Operator's Seat

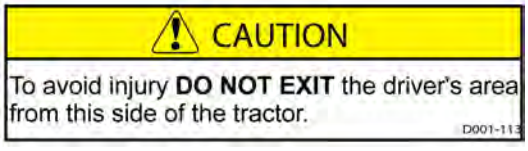

Location: Conveyor Rear Cross Beam.




Location: Drive Pump Guard.


Location: Rear Cross Beam.

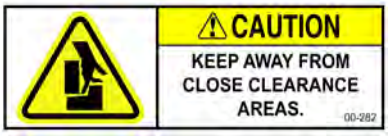

Location: Control Panel to Right of Operator.




Location: Guard Bar –To Right of Operator

## Safety Decals


Location: Cutting Head.




Location: Cutter Drive Belt Cover


Location: Cutting Head


Location: Auto –Steer Spring Column.


Location: Piling Wall.


Location: Conveyor Frame and Conveyor Drive Guard.


Location: Lift Cylinder Lock both sides.


Location: Conveyor Frame front


Location: Hydraulic Tank and left of Operator's Seat


Location: Left side of Hood.


Location: Shield on Head Guard.


Location: Belt Shaft Guard.


Location: Drive Belt Guard.

## TRAVEL SPEEDS
## SH 1580 SOD HARVESTER

The 1580Sod Harvester is mounted to a John Deere 52105065E Tractor which is built specially to Brouwer specifications, and is optimized for sod harvesting. It is recommended that a gear range is selected which will allow travel at the desired ground speed (MPH) with as low an engine speed (RPM) as possible. The lowest recommended engine speed is 1200 RPM. This reduces noise and wear, which results in a better work environment, and a longer life to the harvester and the tractor.

| GEAR | MPH @ 2400 RPM |
|---|---|
| A-1 | 1.17 |
| A-2 | 1.7 |
| A-3 | 2.5 |
| B-1 | 3.3 |
| B-2 | 4.7 |
| B-3 | 7.0 |
| C-1 | 7.6 |
| C-2 | 11.0 |
| C-3 | 16.5 |

## HYDRAULICS

### Hydraulic Oil Specification

The hydraulic system is filled at the factory with:

**Petro-Can Hydrex AW46. (Standard grade).**

When topping up or changing the oil, it is imperative that the oil used must conform to :

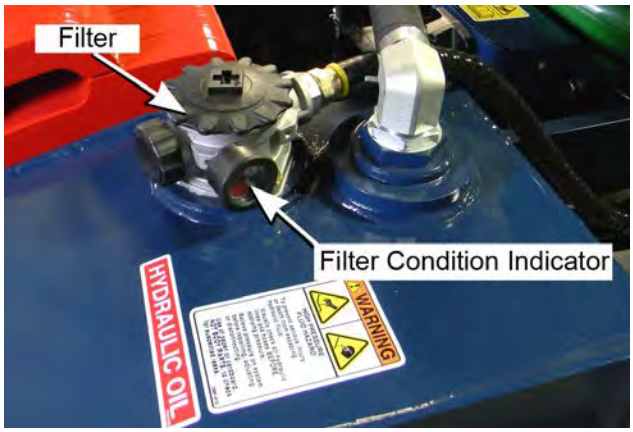
**International Standard ISO.G344. HV Grade.**

These oils have improved viscosity and temperature characteristics.
The oil used must meet these specifications.

Note that all oils break down with use. The oil in the system should only be in operation for one season, or approximately 750 hours.
For additional protection of the hydraulic motors a high efficiency filter is installed.

Replace the filter cartridge after the first **25 hours of operation and every 250 hours thereafter**, or at any time the condition indicator needle goes into the '**RED**' zone. Do not delay replacing the filter if this occurs.

**Replace only with a Brouwer High Efficiency Filter.**




When disconnecting hoses, or removing hydraulic parts, for any reason, or when filling the system with oil, extreme care must be exercised to ensure that no dirt enters the system, as this will damage the hydraulic pumps, motors and valves.

**IMPORTANT: To provide opportunity for maximum cooling, sod must NOT be piled on the front tractor weights. If more weight is required at the front of the machine, loaded front tires can be used.**

## CUTTER AND CONVEYOR CONTROLS

The 1580Sod Harvester has an independent oil supply to both the conveyor drive and the cutter drive. This will allow the optimum speed to be used for each motor.

The front hydraulic control operates the cutter knife.

The rear hydraulic control operates the conveyor mat.

### Cutter Knife Speed Setting

For best results, start at the maximum and work back to the lowest setting which will provide satisfactory results. This will produce a minimum of vibration.

The tractor ground speed may have to be reduced when cutting in rough or stoney ground, to avoid damage. The cutting blade and cut-off blade should always be kept sharp. In soft soils, the cutting blade may have to be honed to obtain a proper cut.

### Conveyor Speed Setting

When cutting rolls it should be adjusted to provide a space of 4"in. to 6in. between the sod pieces as they come up the conveyor. The conveyor speed should be increased to enlarge the gap when cutting slabs, so that they do not pile up one on top of the other. When setting this motor speed, it is essential that the tractor RPM is at the speed at which the unit will be operated, and that the tractor is in the desired gear. Any appreciable change in ground speed will require an adjustment of the conveyor motor.

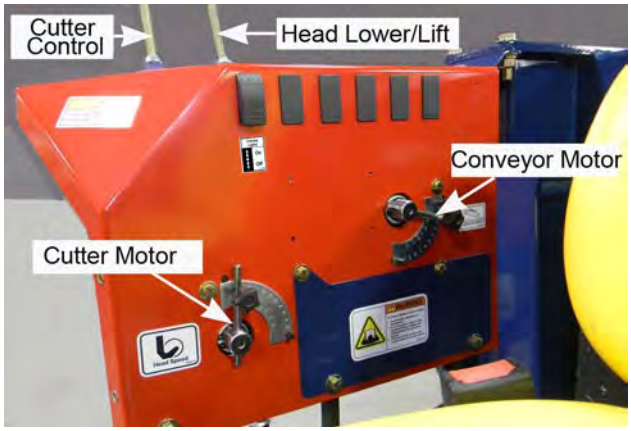
It is essential that the tractor operator drive at a constant speed in order to maintain the proper spacing between the sod as it travels up the conveyor, since variations in the spacing will result in poorly rolled sod.

It is desirable to operate in as straight a line as possible to minimize steering problems. The Auto-Steer accessory will ensure that this objective is met

## HARVESTER ENGAGE & LIFT ARM CONTROLS

For ease of operation, the lever to raise and lower the cutting head is grouped with the lever which engages the harvester, in a convenient location on top of the control panel.

When starting to cut, the cutter motor should be started before the cutting head is lowered to the ground, to reduce the 'shock' to the cutter motor. The cutting head must be lowered gently to the ground, not dropped, and the lift chain must be slack at all times, while the harvester is in operation.



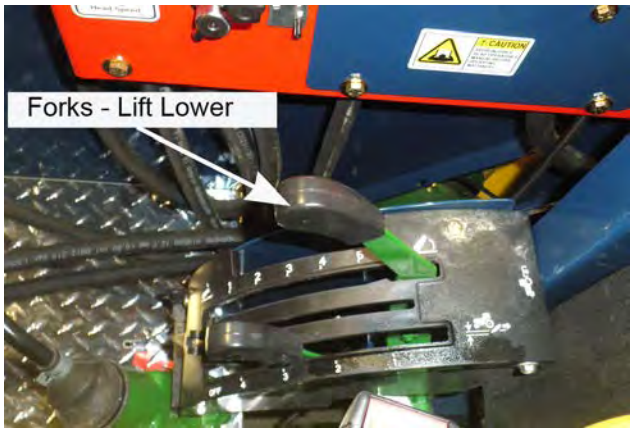
## REAR FORK LIFT

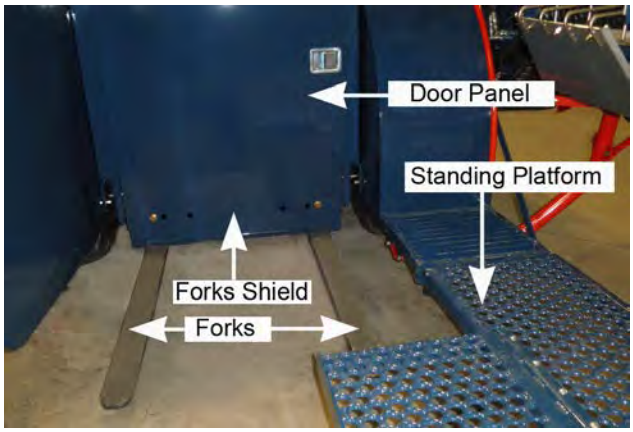
The lift control for the rear forks is located to the right of the driver's seat. The draft lever is not used, and is usually left in the OFF position (out of the way). The lever on the right controls the forks, and is usually used full up, or down, but will hold any position, if required.

The rear fork frame has sets of holes for fastening the forks in position. These holes provide a means of width adjustment of the forks, for different size pallets.

***NOTE:***

**The illustrations are for reference only. For more detail, and a complete breakdown of parts, refer to the appropriate section of the parts manual.**

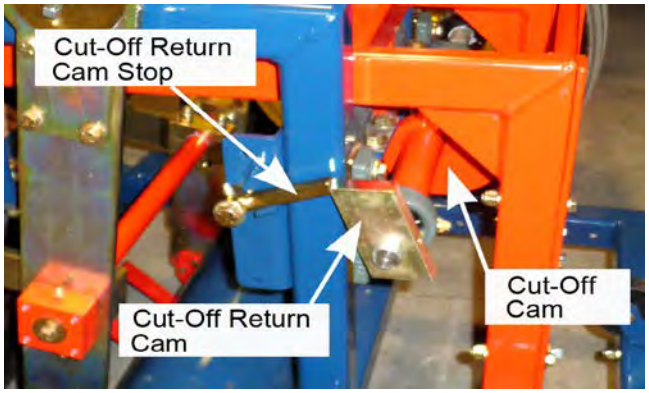



## CUT-OFF: RETURN CAM STOP & CUT-OFF RETURN CAM

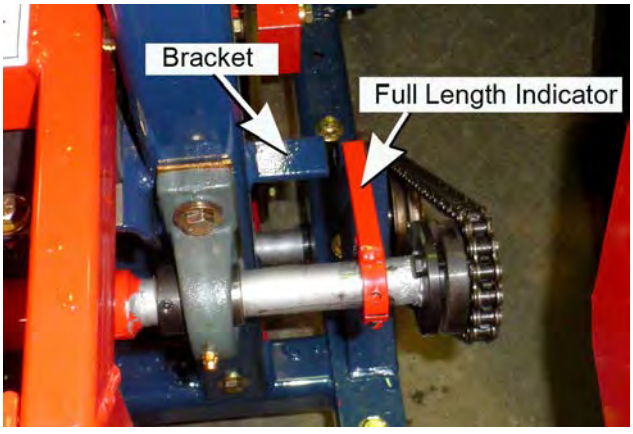
Since the sod is cut off to length before the bottom blade has cut under the full length of it, a cut-off return cam and a return cam stop are provided to ensure a uniform length of the first piece of sod cut on each pallet. This cam is mounted on the outside end of the cam shaft, and the cam stop is mounted on the cutting head of the machine.

When the full length indicator reaches the correct position, the return cam is engaged by the cut-off return cam stop. This prevents the spring pressure on the cut-off frame from rotating the cut-off cam shaft backwards. This backward rotation would cause the first piece of sod to be cut too long.




### FULL LENGTH INDICATOR

When the Full Length Indicator, mounted on the cut-off cam shaft, is parallel with the bracket on the side of the head frame, this indicates the point at which the cutter knife has completed cutting to the end of the length. This indicator should be at this point, indicating the end of a full length before the harvester is lifted from the ground.



## CUT-OFF DEPTH ADJUSTMENT

The cut-off blade should be sharp at all times. The cut--off depth should be set only deep enough to ensure a clean cut through whatever thickness of sod is being cut and the cut-off frame should make solid contact with the rubber stops. Excessive pressure will cause the cut-off frame to bounce on the rubber stops and wear them out. The spring adjustment shaft can be set in one of three positions. It is set in the center one when the machine is shipped from the factory. Moving the spring adjustment shaft forward increases the pressure on the cut-off frame, and moving it towards the rear reduces the pressure. The center position usually provides the correct pressure. If the cut-off blade does not cut through the sod, and the spring shaft has been moved into the forward position, lower the cut-off blade frame on the front of the machine one hole. Care should be taken to see that the edge of the cut-off blade holder, where bolts are located, does not hit the sod on the down stroke, as it will damage the end of the sod and cause problems when the sod is laid.

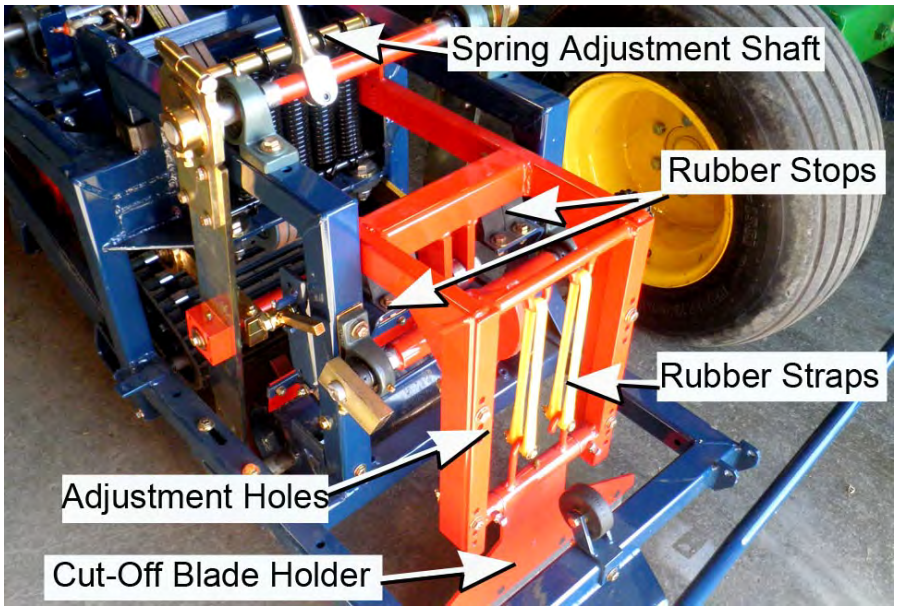
**NOTE:**

**Always operate the harvester with the Cut-Off spring bar in the rearmost position required to make clean cut-off.**

The cut-off blade is reduced in depth by sharpening and wear. There are holes in the blade frame and cut-off frame to permit lowering the blade frame to compensate for this wear. Blades less than 2-1/2" in height should be replaced.

The front springs (rubber straps) on the cut-off frame correct the cut-off blade position after each cut. They should be adjusted so that the blade swings free, and the blade hangs approximately 15 degrees back at the bottom from a vertical position after the cut. Also, be sure that the shape or position of the hooks to which these rubber straps are attached are not changed, since this would change the angle of the blade.

To operate on peat soil, the harvester can be equipped with serrated cut-off blades for more positive cutting in this springy type of soil.



## SOD THICKNESS AND PITCH ADJUSTMENT

The cutter blade should be kept sharp for best results. The blade can be adjusted to produce sod of different thickness, the angle of the blade to the ground (the pitch) can be adjusted. When the ground is soft, it is desirable to adjust the pitch so that the blade is as flat to the ground as possible. The pitch may have to be increased in harder soil in order to maintain a proper cutting action. When cutting in stony ground, the pitch should be increased to provide a "scooping action" to pick up small stones, rather than sliding over them.

If the pitch has to be increased more than a few degrees, the eccentrics adjustment shaft bearings should be moved forward into the holes '**A**' provided in the frame. Care should be taken when the shaft is in this position, to make sure that the sod guide bracket does not interfere with the conveyor mat. If this does not produce enough pitch, move back to the rear holes and rotate the Adjusting Shaft '**B**'. Adjustment is made by loosening the Bolts '**C**' on the Eccentrics '**D**' and moving the Adjusting Shaft '**B**' by rotating the Adjusting Handle '**E** forward or backward, this moves the Side Arms '**F**' forward or back to obtain the pitch required for the soil conditions.

When adjustment has been made, the Bolts '**C**' on the eccentric arms should be tightened.

A periodic check should be made to see that the Bolts '**G**' on the eccentric arm plates do not loosen while the harvester is working.

After adjustment is made the Adjusting Handle '**E**' should be loosened and set to the vertical position, it then serves as an indicator and the operator can note the amount of any subsequent adjustment that is made.

If the pitch adjustment is increased, the 8in. Roller should be moved back towards the Cutter Blade to maintain the same spacing between the Roller and the Cutter Blade. (See page 3-08).

The factory pitch setting produces satisfactory results for most applications.

**NOTE**

**Refer to page 3-06 for the optional Hydraulic Depth of Cut Controls.**

**Fig.1**

When the eccentrics are in this position, the pitch of the blade is relatively flat., and the harvester will cut well in most soils and conditions. (Factory setting).

The depth of cut can be varied by rotating the Adjusting Handle '**E**' forward or back and rotating the eccentrics through the front half of the adjusting range. When tightening the bolts, DO NO OVERTIGHTEN, as this may result in damage to the eccentrics.

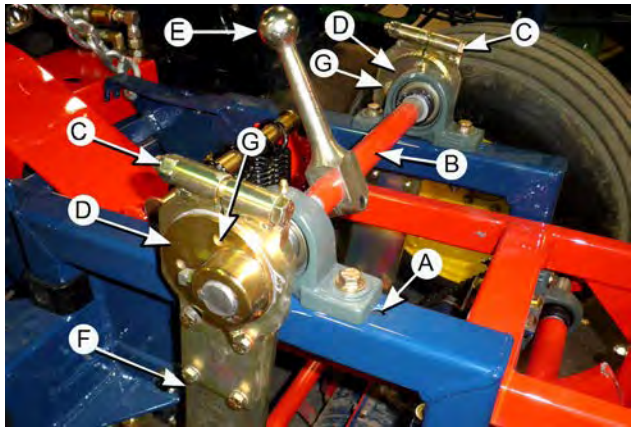



**Fig.1**

**Fig.2**

When the eccentrics are in this position, the pitch of the blade is steeper. Cutting in hard or stony ground requires this pitch setting.

The depth of cut can be varied by rotating the Adjusting Handle '**E**' forward or back and rotating the eccentric through the rear half of the adjusting range.

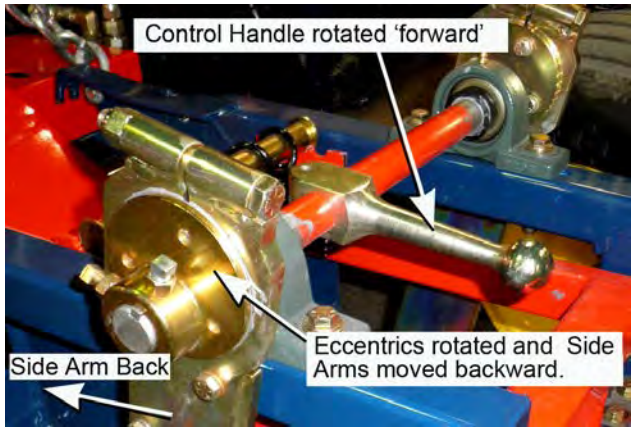
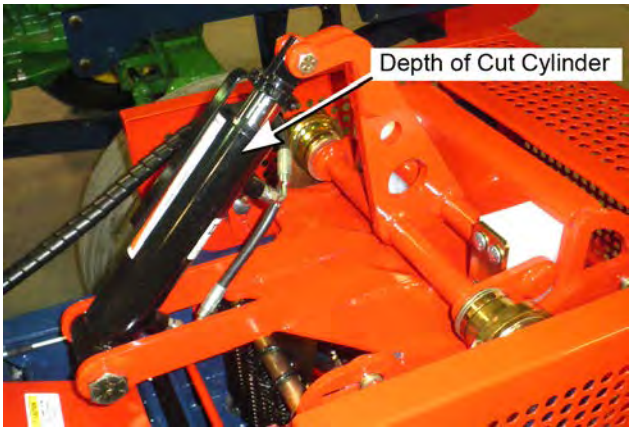


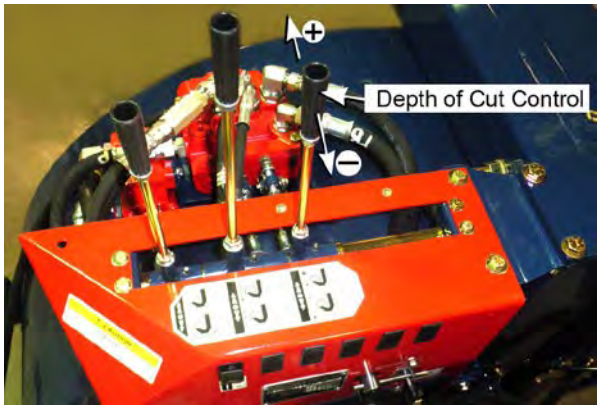

**Fig.2**

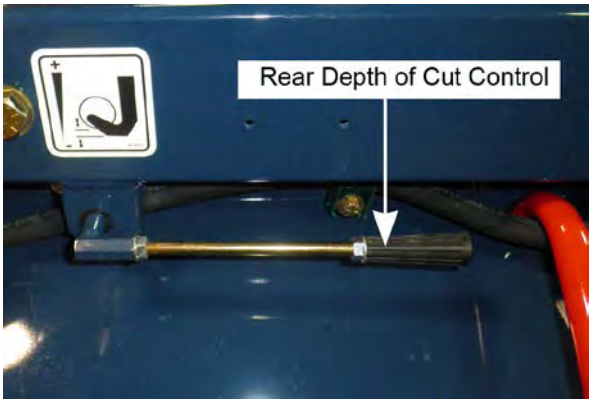
### Optional - Hydraulic Depth of Cut Control.

The Hydraulic Depth of Cut Control gives the operator the convenience to change the cut depth 'on the go'. This is useful when the soil conditions change in the field or when changing locations.

A second control is located on the rear beam that also allows the piler to change the cut setting

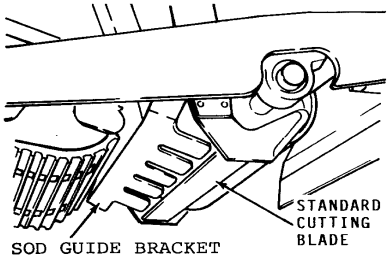


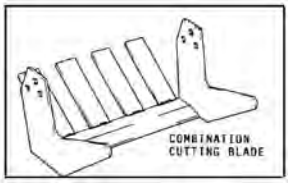




## GUIDE BRACKET

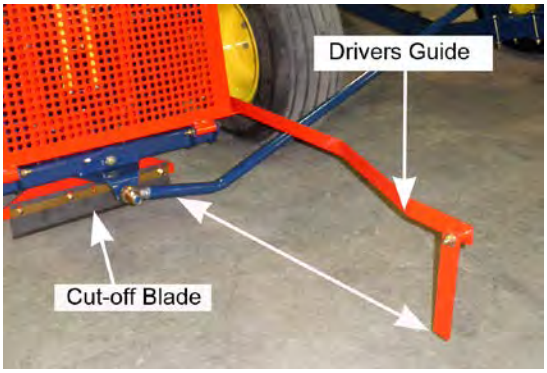
The bracket between the cutter knife and conveyor, guides the sod onto the conveyor after it has been cut. A standard bracket has 5 fingers when on a 16in. conveyor, and 6 when on a 18in. conveyor. These fingers should lie in perfect line with, and just behind, the blade.




## DRIVER'S GUIDE

The drivers is mounted to the cutting head, and allows the driver to follow the edge of the sod. The Guide should be aligned with the inner edge of the Cut-off Blade as shown.
A transport position is provided, and should be used when the unit is not cutting. The driver's guide is not used when the Auto-Steer accessory is installed.



## Conveyor to Tractor –Parallel Setting.

The Tie-Rod keeps the Conveyor/Cutter Head parallel and correctly spaced from the Tractor.

The Tie-Rod length will be changed if it hits an obstruction hard enough to bend it. This will pull the Conveyor out of parallel with the tractor.

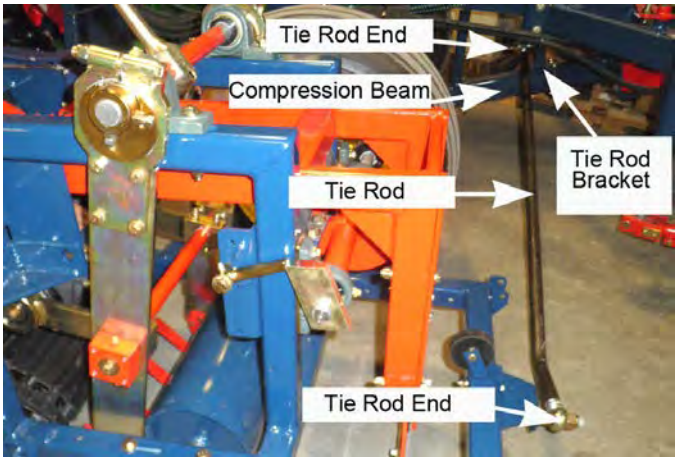
To reset the conveyor parallel to the tractor :
Disconnect the outer Tie-Rod end from the conveyor frame.
Carefully move the Conveyor Cutter Head until it is **42.5 inches** from the tractor frame – as shown.


To adjust the Tie-Rod length :
Loosen the Tie-Rod End jam nut, and turn the Tie-Rod End either in or out of the tie-rod until it fits onto the conveyor frame bracket bolt. Tighten the jam nut.

If the Tie-Rod is badly bent and adjustment is not possible it will be necessary to install a new one.

Adjustment should not be made in the field unless a level place can be used. Adjustment should be made on a firm level floor so that measurement is accurate. The cutting head should be resting on the ground when the measurements are taken.

If the tractor and the conveyor/cutter head are not parallel, the sod may be cut thicker on one side than the other, or the sod may start up the conveyor closer to one side. Either of these conditions could produce cone shaped , or rolls that are not uniform in shape and size.



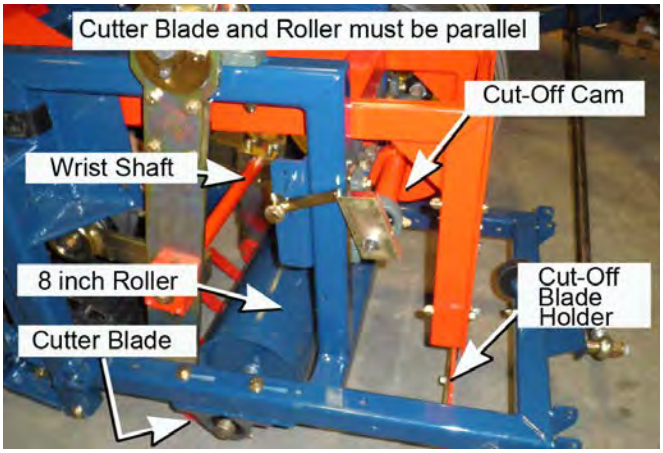
## 8in. ROLLER ADJUSTMENT

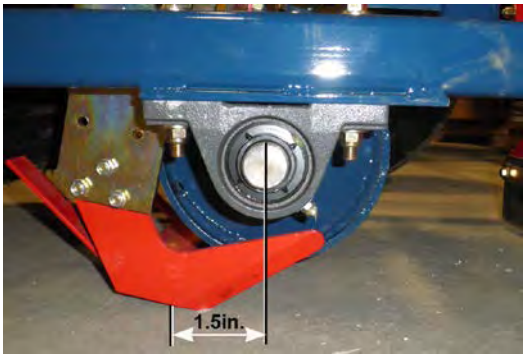
The 8in. Roller supports the front end of the harvesting unit, and also applies pressure to the sod immediately ahead of the cutting blade. The roller can be adjusted 'forward or backward' on the frame and should be set so that the vertical centerline of the roller is 1-1/2in. ahead of the edge of a new cutter blade, when the blade is at the maximum forward position of the cutting stroke. The roller and blade must be parallel to each other, to avoid sod that is tapered.

The roller and the blade can be viewed from the top of the head to see that they are parallel. Exceptions to this 1-1/2in. spacing might exist when sod is being cut in stony ground, and it is often advisable to move the 8in. roller forward to provide more space between the blade and the roller for small stones to pass through. This distance may increase up to 2in.or 2-1/4. If stones jam between the cutting knife and the roller, the roller will stop temporarily with each stroke of the knife, and sod being cut will be too long. The roller may also need to be moved forward when cutting thick sod, since the sod may be pinched between the roller and blade, causing the sod to break or to be too long. a space less than 1-1/2in. in normal cutting conditions will cause the same problems.

The roller should be exactly midway between the side arms of the cutting blade, so that the bolts on the cutting blade do not strike it when in operation. The roller can be adjusted sideways to accomplish this by an adjustment of the bearing collars.

The adjustments to the roller can be made by lifting the cutting head up with the lifting arm. Care should be taken to block it up, so that if the lifting mechanism fails, the cutter will not injure the person working on the machine.




**⚠ CAUTION**

**Use the cylinder lock safety support shown on page 3-10 when working on the machine.**

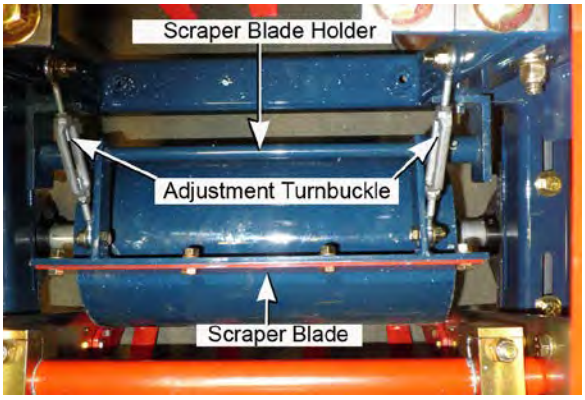
Since the 8in. roller measures the length of the sod, it must be kept clean at all times, as an increase in the size of this roller, due to a collection of mud and dirt, would increase the length of the sod being cut. Build-up could also result in the sod being cut thinner in some spots than others.

## 8 inch Roller Scraper.

### Scraper Adjustment

The scraper is provided to prevent accumulation of mud and grass on the 8in. Roller. The scraper is held in position and adjusted by two turnbuckles between the scraper frame and the cutting head. Adjust the scraper so that the blade is just clear (approx.1/32in.) of the roller face.

In frosty weather, the amount of ice build-up on the 8in.roller can be reduced by using the tractor's exhaust. Attach a length of suitable flexible hose to the tractor's exhaust stack, and direct the exhaust over the surface of the roller.




## Cutter Drive Belts.

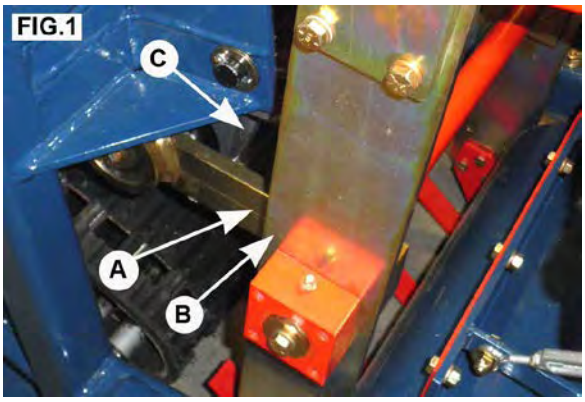
If a Belt has to be replaced all three must be replaced. To replace the Belts:

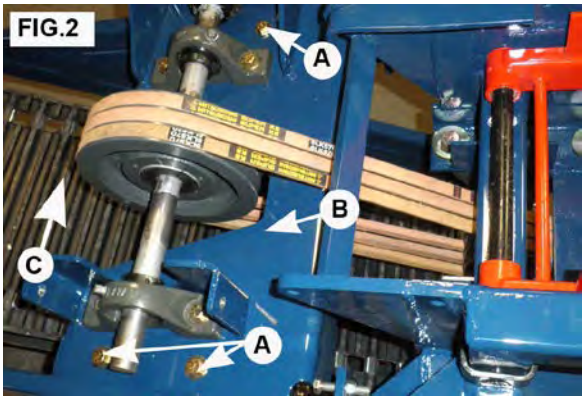
FIG.1. Remove the Connecting Rods 'A' from the Side Arms 'B'. Remove the Crankshaft Bearings 'C' and lower the Crank Shaft and remove the Belts from the crankshaft pulley.

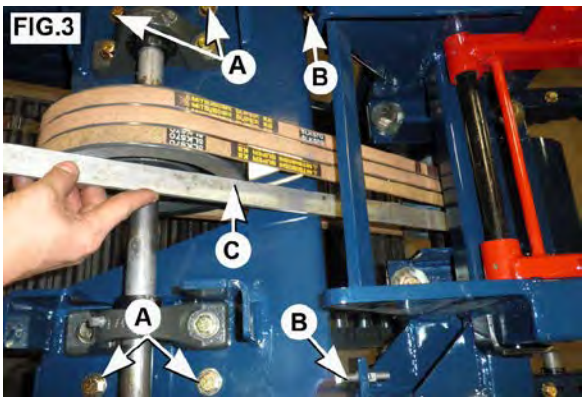
FIG.2. Remove the frame Bolts 'A'. Slide the Frame 'B' in direction of arrow 'C' sufficient to allow the Belts to be removed.

FIG.3. Install new belts in the reverse order to above. Before fully tightening the Frame Bolts 'A' adjust the Belts tension with the Adjusting Bolts 'B'. Correct tension should be ½ inch deflection midway between the pulleys. Check the alignment of the pulleys by placing a 'straight edge' 'C' across their faces.

Fully tighten the Fame Bolts 'A'.



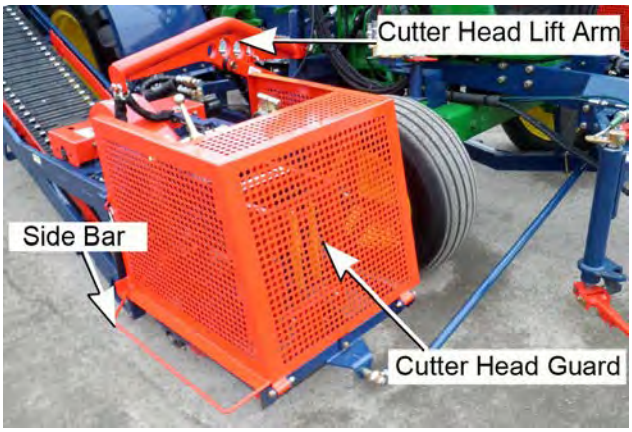



## HEAD GUARD

The Cutter Head Guard is installed on all Model 1580 Harvesters. It provides additional protection for people working near the machine when it is running, as well as for those who may have to work on the machine.

The side bar on the guard provides a warning if a person's feet get too close to the cut-off blade area.

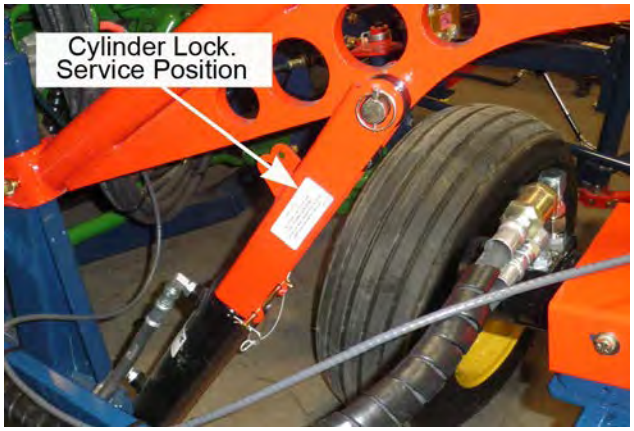
Designed to reduce the possibility of injury, this guard should be kept in place whenever the harvester is in operation.

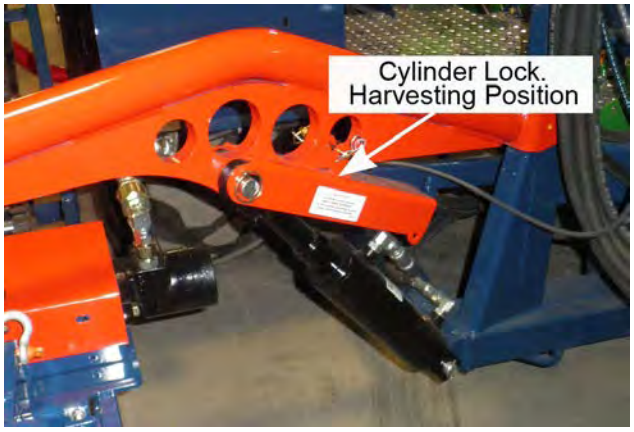



**⚠ CAUTION**

**A Cylinder Lock is fitted on the Lift Arm to eliminate the possibility of the Lift Arm lowering the conveyor by the loss of hydraulic pressure, due to equipment malfunction or human error.**

**For the safety of service personnel, the operator, or any other person in the vicinity of the machine undergoing repair, the cylinder lock *must be in place, in the service position, before any adjustments or repairs are begun.***



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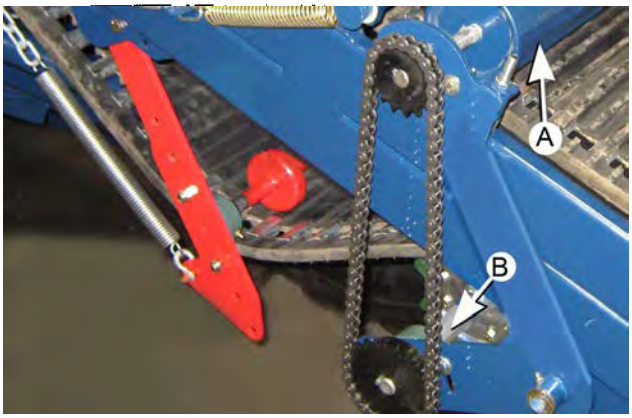
## MID IDLER ASSEMBLY:
## Rubber Mat Conveyor

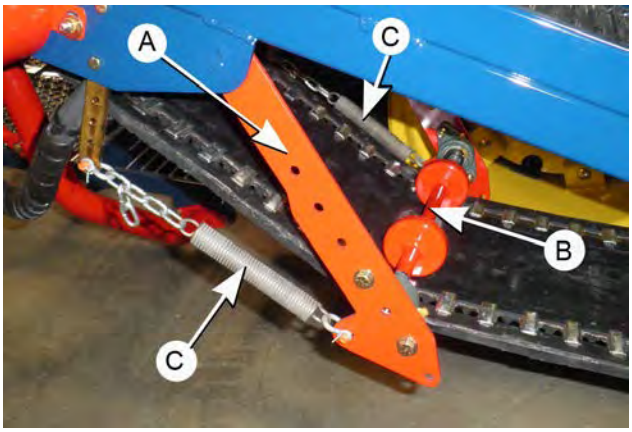
The mid idler assembly is used on units equipped with the roll up option to support the mat under the conveyor. It is also used to drive the 4in. Feed Roller '**A**'. Refer to the roll up section.

The Sprocket Teeth '**B**' should be centered in the holes of the conveyor mat, to prevent excessive wear. Check after each belt alignment. Replace sprockets when teeth are worn.




## BELT TENSIONING IDLER:
## Rubber Belt Conveyors

The Mat Tension Idler '**A**' maintains the proper tension on the belt. A series of seven holes allows the Idler Shaft '**B** to be set in five different positions to allow for stretch or shrinkage in the belt. The idler arm must be kept from exceeding a 90 degree angle with the harvester frame, or the idler arm will be pulled 'over center' by the tension springs '**C**', and all mat tension will be lost.




**NOTE**

**The illustrations are for reference only. For more detail, and a complete breakdown of parts, refer to the appropriate section of the parts manual.**

## HARVESTING SOD

### PREPARING TO START A FIELD

1. Roll the field immediately before cutting.

2. Measure off an equal distance from the edge of the field (anything up to 100 ft.) and at three points down the length of the field, put stakes in a straight line.

3. Cut a strip down this line the full length of the field. See illustration.

4. As skids are loaded, they can be set off to the side, or taken out the end.

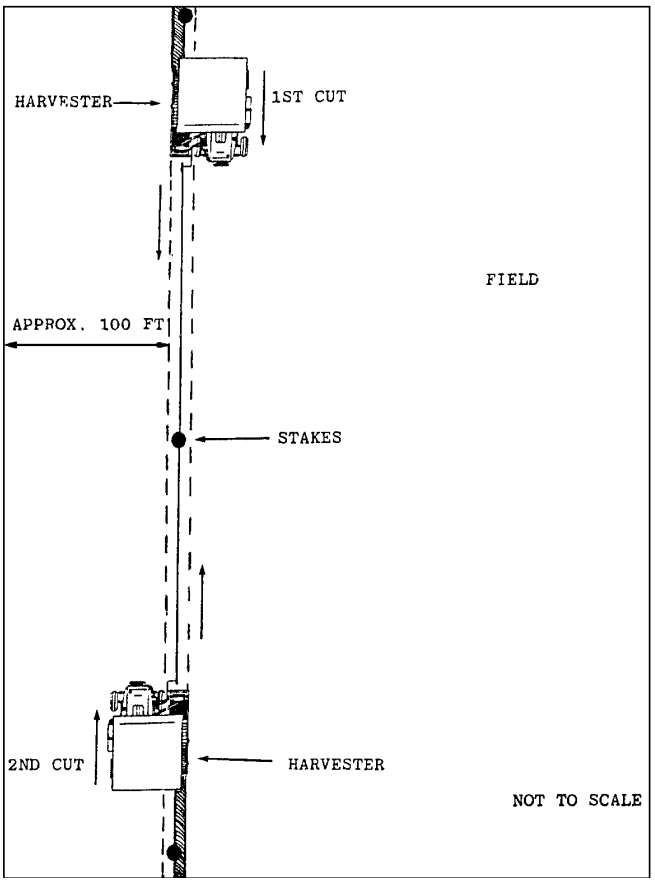
5. On reaching the end of the field, turn and come back, cutting a strip beside the first cut. Sometimes it is necessary to roll out the marks made by the tractor as it made the first cut.

6. Repeat until the area is completely cut.

7. This method provides easy access for trucks to load without travelling over uncut sod.

8. If a starting point of more than 100 ft. is chosen, the distance the harvester must travel from one cut to the next is increased, resulting in wasted time.

9. Choosing too narrow a width creates too many “starts” and could increase the amount of rolling required to remove the wheel marks left by the harvester as it starts a new area.



Stacking configuration for an 80-roll pallet of 16-inch rolls. Follow the same stacking pattern and eliminate the fourth layer (Fig.10, 11 &12) for a 65-roll pallet, see Fig. 17.

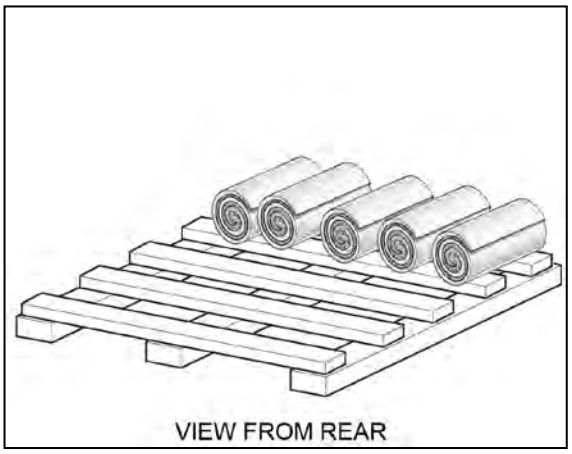



Fig. 1 Row 1

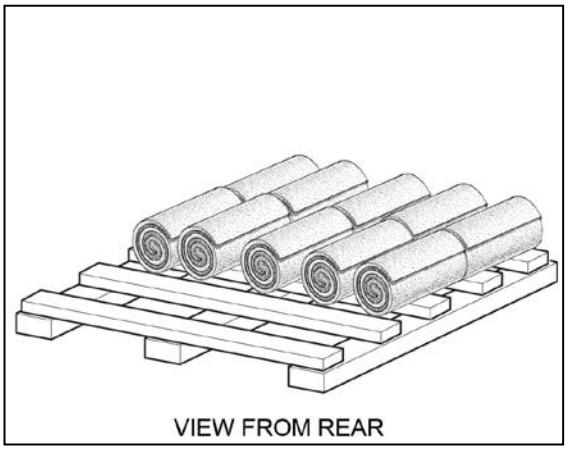



Fig. 2 Row 2

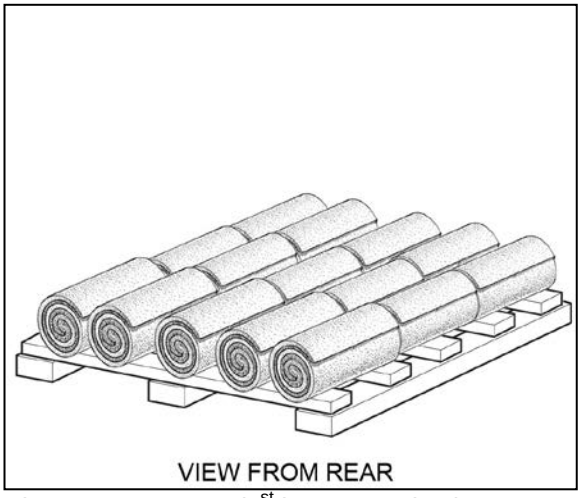



Fig. 3 Row 3 (1st layer complete)

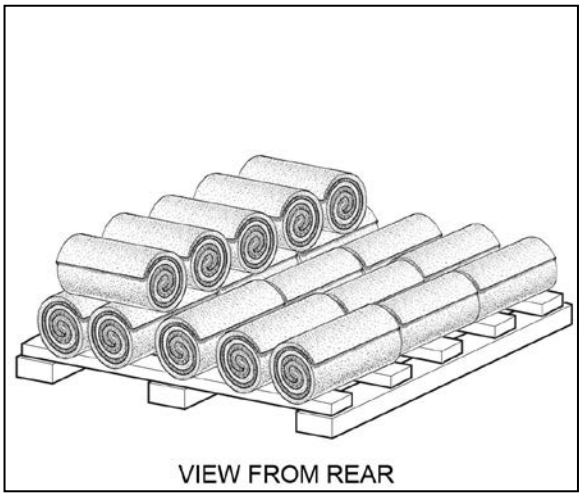



Fig. 4 Row 4

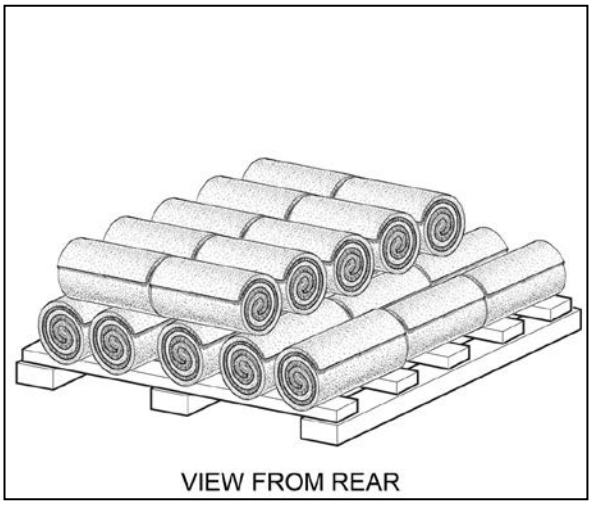



Fig. 5 Row 5

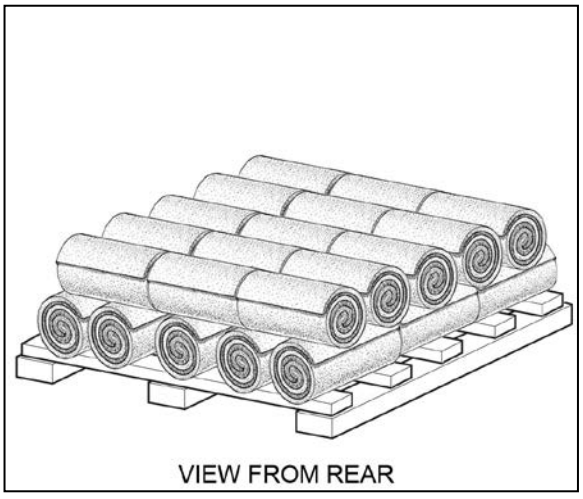



Fig. 6 Row 6 (2nd layer complete)

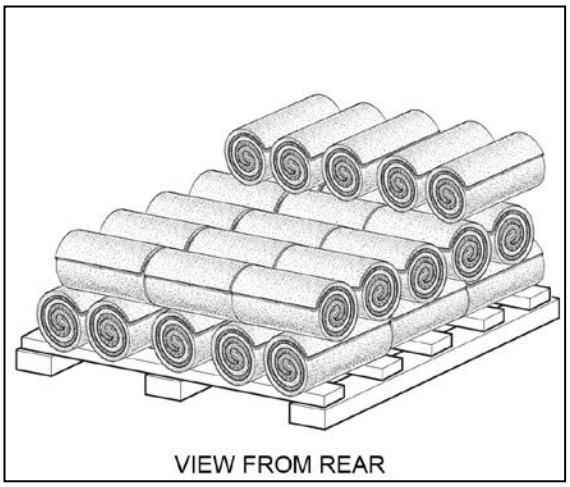



Fig. 7 Row 7

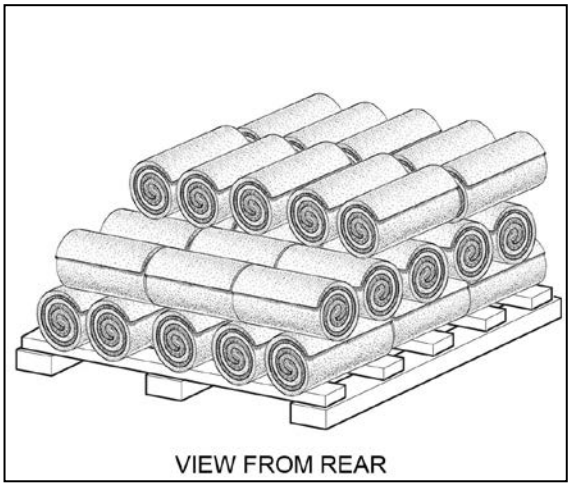



Fig. 8 Row 8

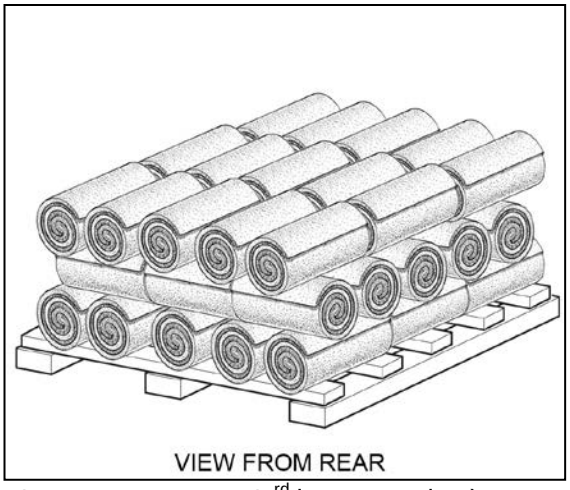



Fig. 9 Row 9 (3rd layer complete)

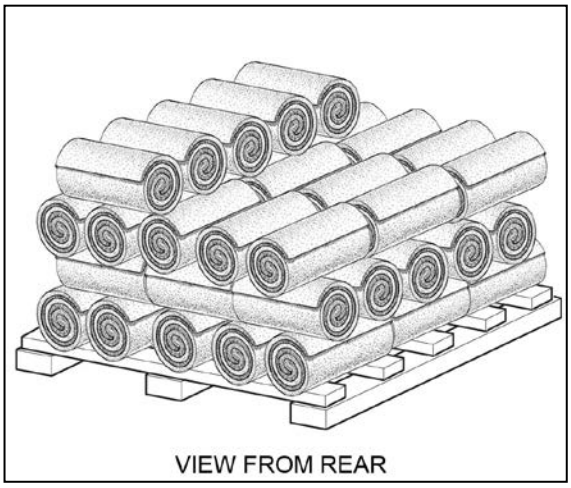



Fig. 10 Row 10

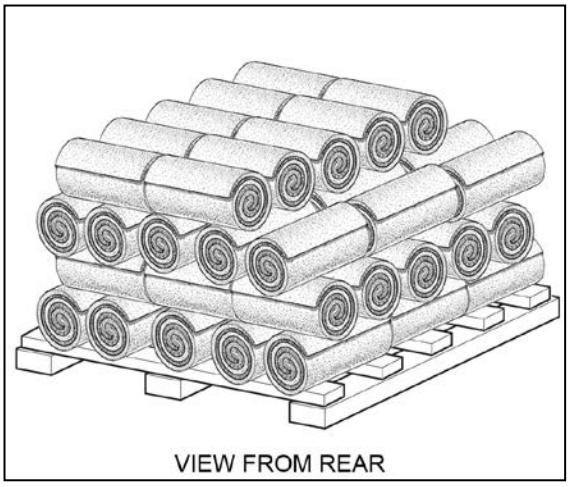



Fig. 11 Row 11

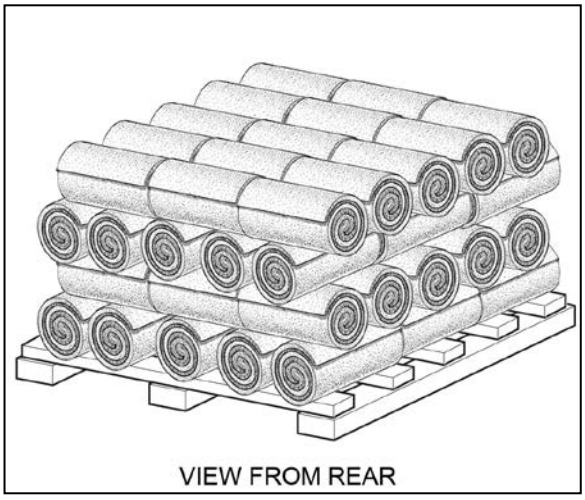



Fig. 12 Row 12 (4th layer complete)

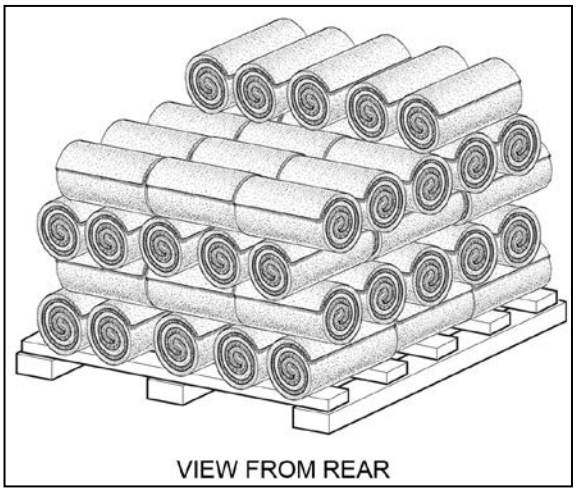



Fig. 13 Row 13

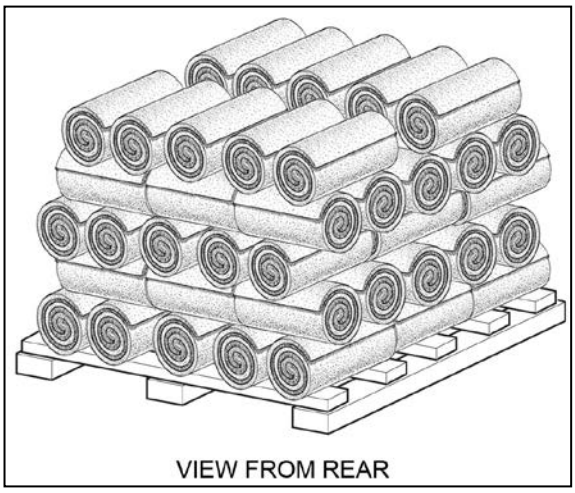



Fig. 14 Row 14 (5th layer complete)

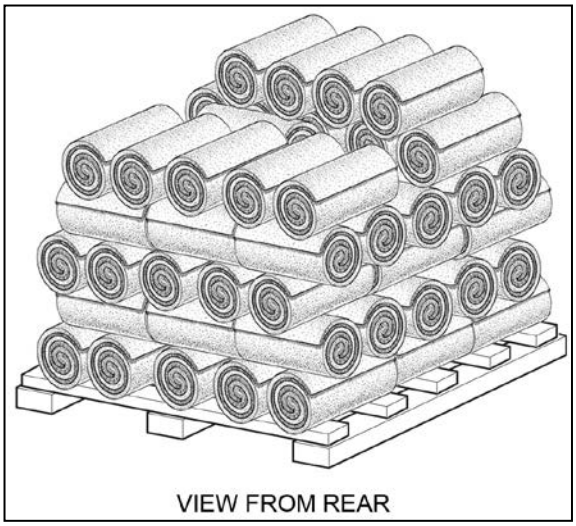



Fig. 15 Row 15

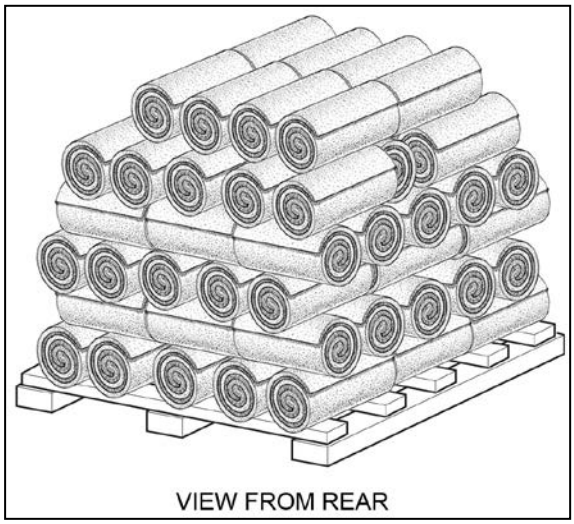



Fig. 16 Row 16 (6th layer complete)

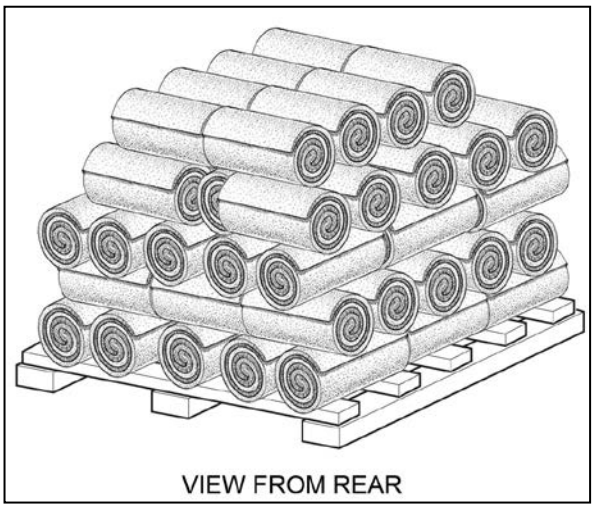
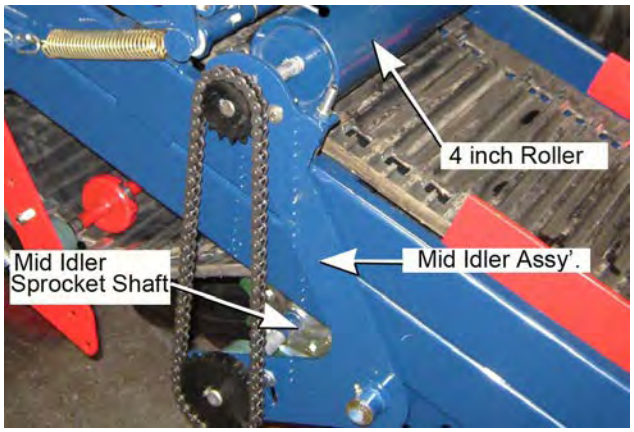



Fig.17 View of 65 Roll Pallet

## ROLL HARVESTING

### 4in. FEED ROLLER

The 4in.Feed Roller is used to feed the sod into the gate of the starter tray on all Roll-Up machines. The roller should be kept clean at all times for best operation. It is mounted on the Mid Idler assembly and is driven by the conveyor belt moving over the sprockets of the idler shaft.




**Roller Adjustment**:

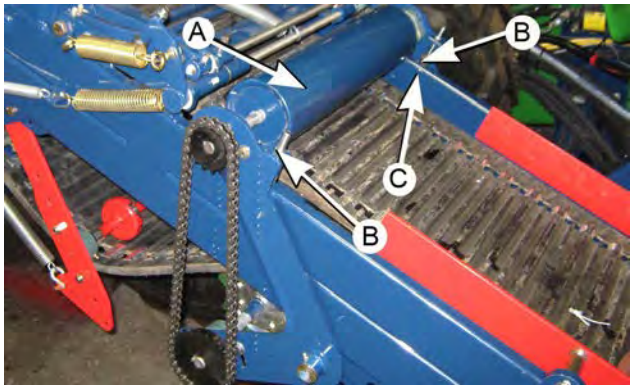
The Roller '**A**', should rest on the sod.

Adjust the Bolts '**B**' to give approximately 1/8in. clearance between the head of the bolt and the Harvester Frame '**C**', when the sod is under the roller.

Weaker sod may require the pressure to be reduced, by screwing the adjusting bolts 'down' to lift the roller.

Pressure between the roller and the mat forces the sod solidly against the starter tray gate.

The leading edge of the sod forces the gate to lift, raising the end of the sod, which being forced from behind, starts to roll up.

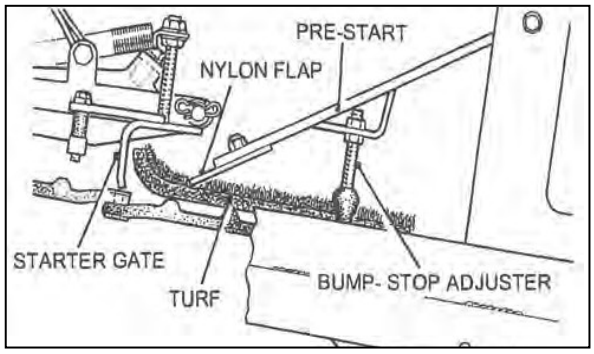



**NOTE**

See P4-06 for settings and adjustments for the: Roll-Up Pre-Start; Starter Gate; and Starter Tray.

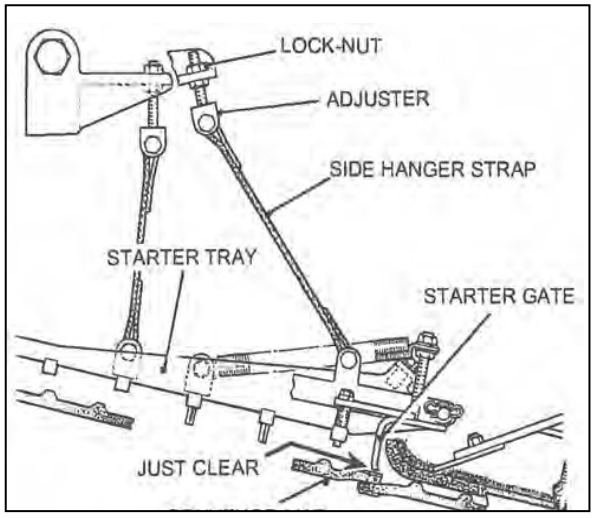
**ROLL-UP PRE-START**

The Pre-Start 'curls' the turf into the Starter Gate, as it passes. This starts the rolling action, and also prevents the turf from jamming between the gate and the mat.
To set the Pre-Start **:**
Place a piece of turf on the Mat, just past the nylon flap on the bottom of the Pre-Start. Adjust the Bump Stops until the flap 'firmly' brushes the turf, but does not compress it. Tighten the Bump Stop lock-nuts.
Field trial will determine the best setting.




**STARTER GATE**

To set the Starter Gate clearance from the Mat, adjust the two side hanger straps. Loosen the Strap Adjuster lock-nuts and adjust both top nuts until the bottom edge of the starter gate is **just clear** of the Mat, at a point where the Mat is joined, ( its thickest point).
The hanger straps must be adjusted equally.
Tighten the lock-nuts.

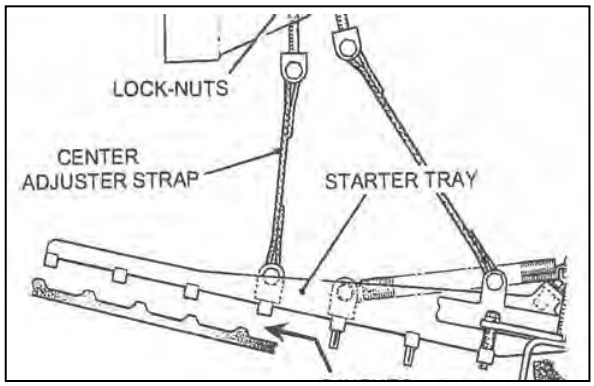



**STARTER TRAY**

A center strap sets the distance between the back edge of the Starter Tray Frame and the Mat.
To adjust **:** Loosen the lock-nuts. Adjust the top nut until the back edge of the frame is approximately two inches from the Mat. Tighten the lock-nuts.

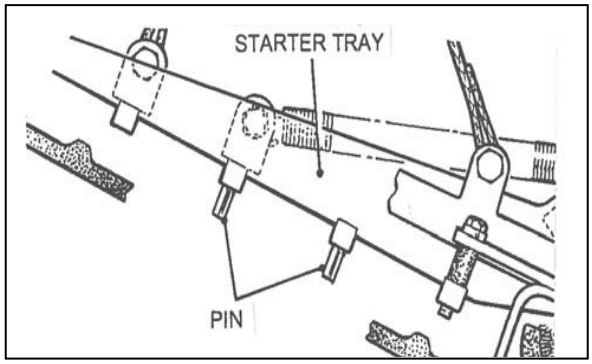
**NOTE**

Certain conditions require the optional 'two starter gate' frame. Adjustment is the same as above.



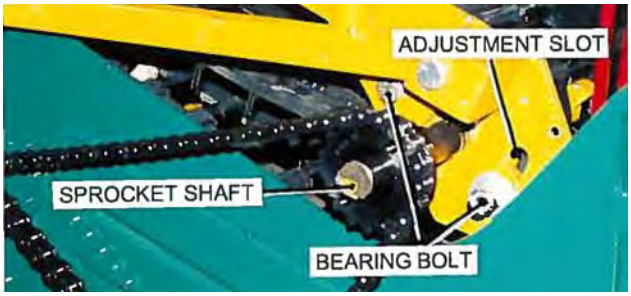

**STARTER GATE PINS**

Pins, that protrude from two cross bars in the Starter Tray, grip the turf as it starts to roll. The pins normal setting is 3/8 in. below the bars.
If the turf passes through, but does not 'roll-up', tap the pins 'DOWN' until they are ½ to 5/8 of an inch below the bars. If a roll-flap is in the wrong position, rolls are not fully rolled, or are loose,(if the turf is tender), the pins are holding the turf too long and should be pushed 'UP'
until they are less than 1/2 inch below the bars.
Replace pins that are worn down, and are no longer adjustable..
Maintain 4 to 6 inches between turf pieces on the conveyor. Do not allow dirt to build up on the conveyor, this will cause the Starter Gate to open early.

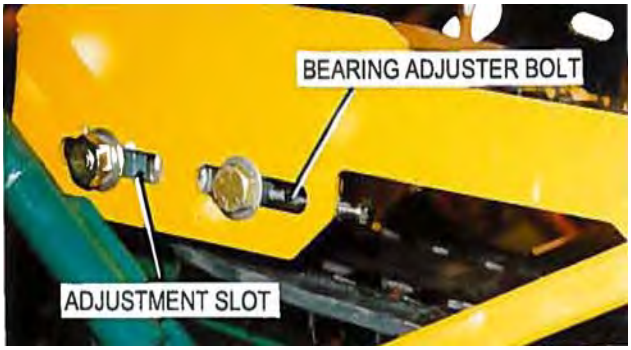


## Roll-Up conveyors

The Roll-Up conveyor completes the 'roll-up' after the turf has passed the Starter Tray. The Roll-Up mat is driven by chain and sprockets from the main conveyor drive. The speed of the Roll-up Mat is determined by the sprocket combination fitted at the factory. Sprockets can be changed to suit operator requirements. See the sprocket option list on page 11.
The Roll-Up Mat has metal inserts and joining clips, the same as the main conveyor mat.




Set the mat tension by **FIRST :** Loosening the bearing bolts, at both ends of the **front** sprocket shaft, and setting the FRONT bolts at the mid-point
of their adjusting slots. Tighten the four bearing bolts. If the rolls tend to jam between the Roll-up mat and the curved guide bar frame, adjust the front bearing bolts down toward the bottom of the adjusting slots until the mat is just clear of the frame.




**SECOND :** With both **rear** bearings loose, tighten the bearing adjusting bolts**,** equally on each side, until the mat, when pressed firmly at its center, has approximately 2 1/2 inches between the top and bottom sections of the mat. Tighten all bolts when adjustment is complete.
If the mat tends to 'run-off' to one side, adjust the bolts to center the mat, until it runs square on the sprockets.

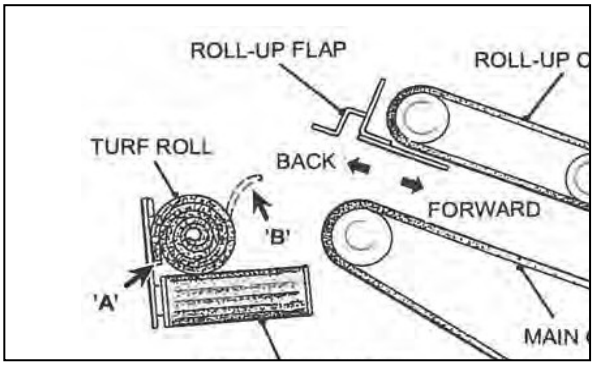
**ROLL-UP FLAP**

The Roll-Up Flap determines the position of the flap on the roll as it leaves the conveyor.
The Flap Adjuster is positioned by a threaded crank. The 'roll-up' of the turf should be completed just as it
leaves the conveyor and should not require an extra turn.


The height of the flap is adjusted according to the thickness of the sod and the diameter of the rolls.

**ROLL-UP FLAP ADJUSTMENT**

The Roll-Up Flap is correctly adjusted when the flap on the roll is at position '**A**'.
If the flap falls toward the conveyor , position **'B'**, move the Flap Adjuster **'FORWARD'**.
If the roll is not completed, move the adjuster **'BACK'.**

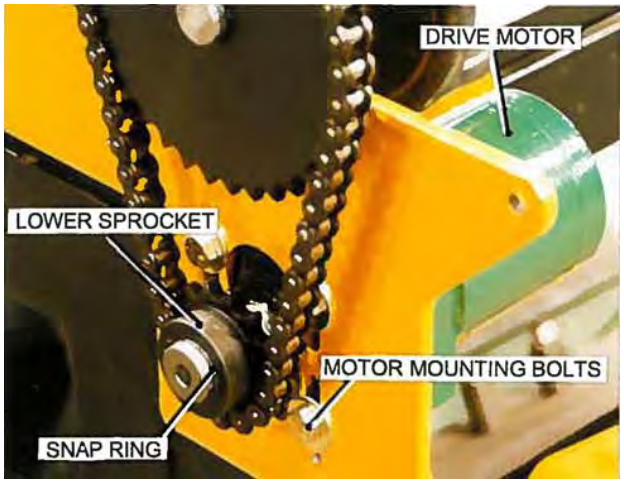



**NOTE**

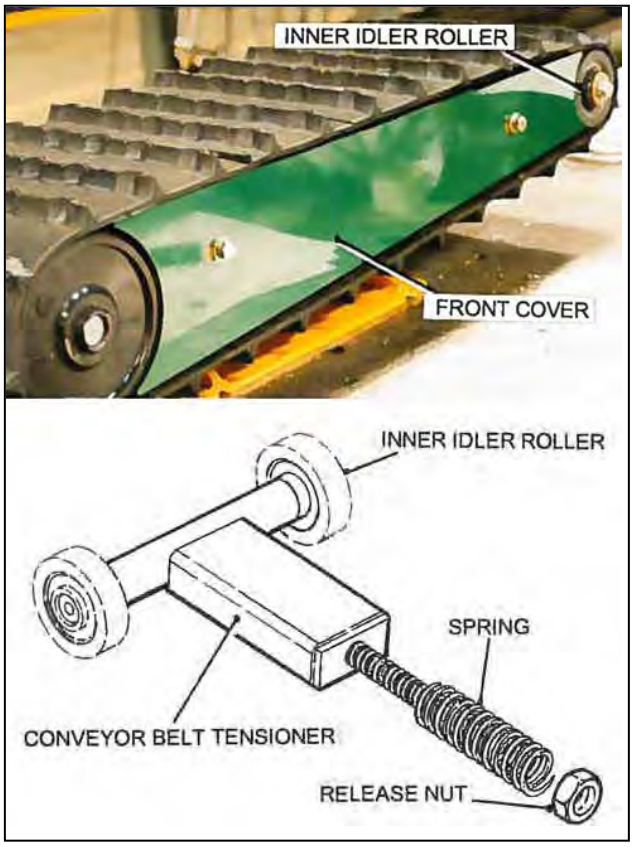
If the correct flap position cannot be obtained by the Flap Adjuster, the Roll-Up drive sprockets must be changed.

## ROLL CROSS CONVEYOR

The Roll Cross Conveyor moves the turf rolls away from the main conveyor making it easier for the 'piler' to transfer the rolls to the pallet. The one piece conveyor mat is driven by a hydraulic motor, with sprockets and chain, to sprocket shafts that run on sealed bearings. The idler shaft is spring loaded to maintain belt tension. The standard top sprocket for 16, 18 & 24 inch machines has 36 teeth. The bottom sprocket for a 24 inch machine has 17 teeth, with 16 tooth option. On 16 & 18 inch machines the bottom sprocket has 16 teeth, with a 15 tooth option. The optional sprockets allow the conveyor speed to be reduced, if required.




To change a sprocket **:** Remove the rear cover. Loosen the four Drive Motor mounting bolts and slide the motor **'upward'** to slacken the chain. Remove chain from bottom sprocket. Remove the snap ring, loosen the sprocket set screw and remove the sprocket, leaving the key in the shaft. Fit the new sprocket, using a straight edge across the sprockets to align the teeth. Refit the chain. Tighten the sprocket set screw and fit the snap ring. Remove slack from the chain by pushing down on the motor, tighten the motor bolts and replace the rear cover.

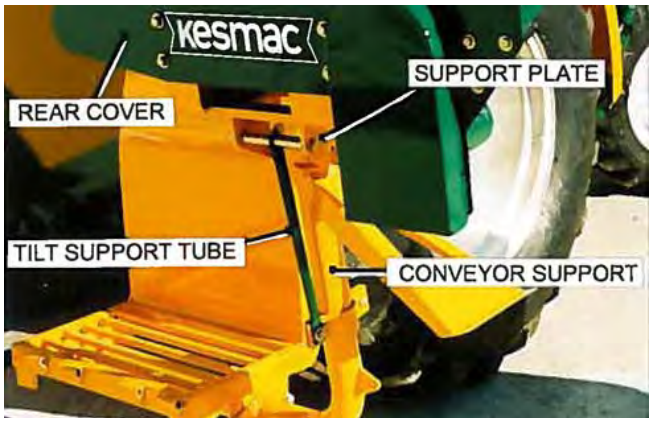



## CROSS CONVEYOR BELT REPLACEMENT

To replace the conveyor belt **:** Pull the Conveyor assembly back, and also tilt it up as high as possible on its support stand. Remove the front cover. Slacken the belt by tightening the belt tension release nut, this compresses the belt tensioner. Remove the inner Idler Roller. This will allow the belt to be taken off the drive sprockets and outer Idler Roller. Fit the new belt over the drive sprockets and the outer Idler Roller. Refit the inner Idler Roller. Loosen the release nut **right-off**. Replace the front cover and re- position the Cross Conveyor as required.

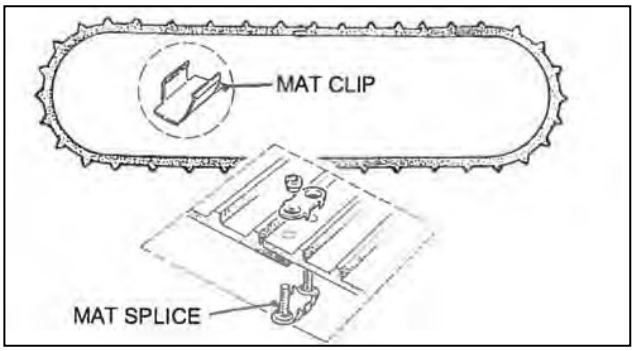
## CROSS CONVEYOR SUPPORT STAND ADJUSTMENT

The Cross Conveyor can be adjusted in four directions, and also tilted. Slots in the conveyor base plate, in the support plate and a tilt support tube allow a wide range of adjustment to accommodate the pilers requirements.



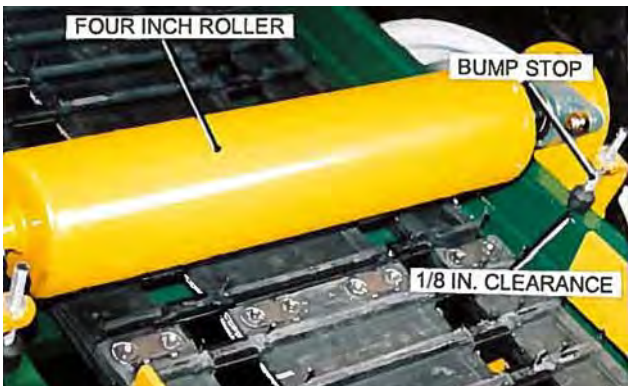
**ROLL- UP MAT**

The Roll-Up Mat is joined with four mat splices.
The sprocket holes have replaceable mat clip inserts.




**ROLL- UP**
**4-INCH ROLLER**

The optional Four Inch Roller is used when the standard Pre-Start system is not fitted. It assists in feeding the turf into the Starter Gate on the Starter Tray.
The roller drive is by sprockets and chain, driven by the main conveyor. Do not allow dirt build up on the roller.
To adjust the roller **:** Place a piece of turf on the conveyor mat and **under the roller.** Adjust the left and right side Bump Stops to give 1/8 inch clearance between the stops and the frame.
For weak, or thin turf, that require less roller pressure, adjust the Bump Stops down **onto** the frame to raise the roller, reducing roller pressure on the turf.

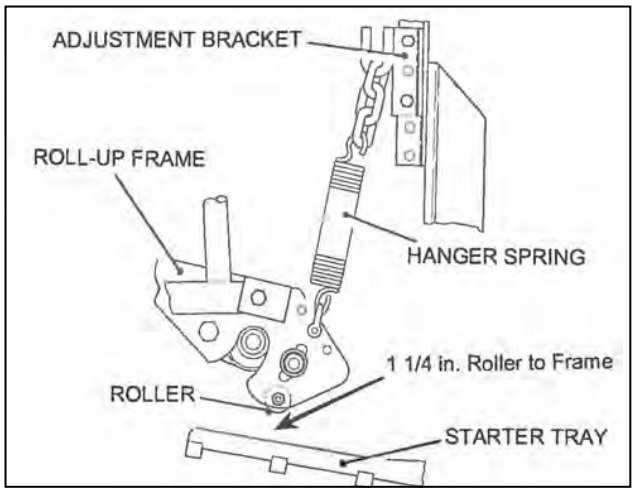



**VARIABLE SPEED**
**HYDRAULIC ROLL-UP**

The optional Variable Speed Hydraulic Roll-Up has a hydraulic drive via a chain to a sprocket shaft.
The mat speed is synchronized to the main conveyor speed, but the system also has a 'Micro Adjust' control that allows the piler to adjust the Roll-Up Mat speed, this in turn determines the position of the flap on the roll.
Adjust the flap position as follows:
Turn the control knob 'counter clockwise' to increase the mat speed. Turn it 'clockwise' to decrease the mat speed.
Field trial will determine the best setting for prevailing turf and soil conditions.

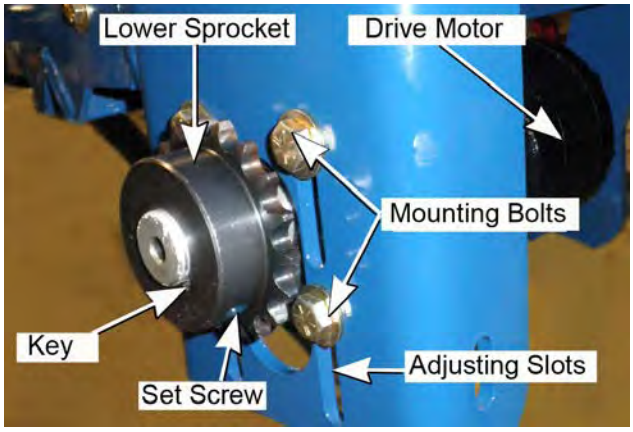

**ROLL-UP CONVEYOR.**
**HANGER SPRING.**

The Hanger Spring Adjustment Bracket and Chain are set for average roll diameter turf , this puts the Frame Roller at approximately 1 1/4 in. above the Starter Tray. Larger or smaller rolls may require the chain links and or the Adjuster Bracket to be adjusted up or down, for the Starter Tray to work properly.
The Roller Bearing should not be any closer than 1/4 in. to the Starter Tray frame



**CURVED CONVEYOR**

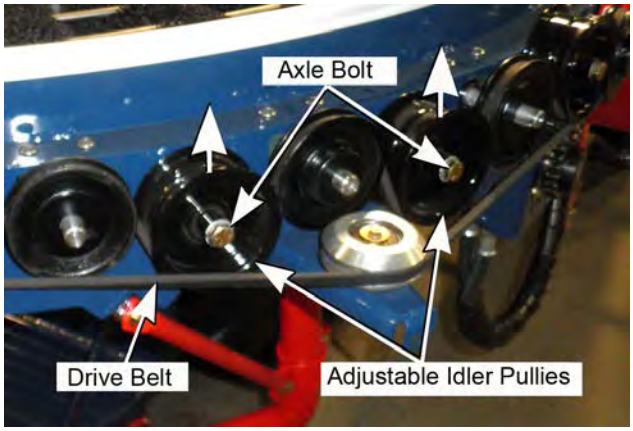
The Curved Conveyor moves the turf slabs away from the main conveyor, for the stackers to easily transfer the slabs to the pallet.
A hydraulic motor drives the conveyor rollers by sprocket and chain to 'vee' belt driven pullies
The standard top sprocket has 18 teeth. The standard bottom sprocket 16 teeth.
An optional 18 tooth lower sprocket can be fitted if the conveyor speed needs to be increased.




To change the lower sprocket **:**
Remove the conveyor cover.
Loosen the four Drive Motor mounting bolts and push the motor **'upward'** to slacken the chain.
Remove the chain from the bottom Sprocket.
Loosen the Sprocket retaining set-screw and remove the Sprocket, leaving the key in the shaft.
Fit the new Sprocket, using a straight -edge across the sprocket faces to align the teeth.
Tighten the Sprocket retaining set-screw.
Refit the chain. Push **'down'** on the motor to tighten the chain. Tighten the four motor mounting bolts and replace the cover.

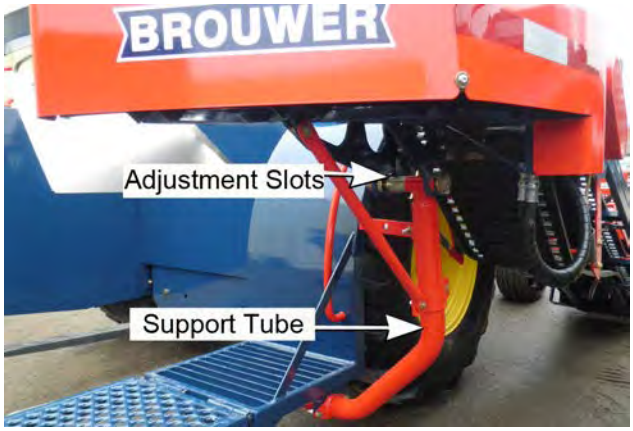
**IMPORTANT**

Do not over tension the drive chain. This will cause premature chain wear and possible damage to the
drive motor.




To replace a drive belt **:**
Remove the conveyor cover.
Loosen the Axle Bolts in the two Idler Pullies and push the sheaves **' upward '** to slacken the drive belt.
Remove the belt from the sheaves.
Fit the new belt and push the Idler Sheaves **'down firmly'**, to tension the belt.
Tighten the Idler Sheave bolts. Replace the cover.

The Curved Conveyor is set at its highest point of adjustment at the factory. There is a second adjustment slot in the conveyor frame to allow the conveyor to be lowered on the support tube. There is also allowance for adjustment that sets the conveyor brush approximately 1 1/2 inches from the main conveyor mat.




**NOTE**

On Conveyor s fitted with optional Rollers. the roller scrapers should be adjusted to be no less than 1/8in. clear of the rollers.

## ROTARY BRUSH

The rotary brush is used to sweep grass clippings, stones or other debris from the turf, immediately before cutting. The unit installs to the front plate of the cutting head, and is powered by a hydraulic motor.

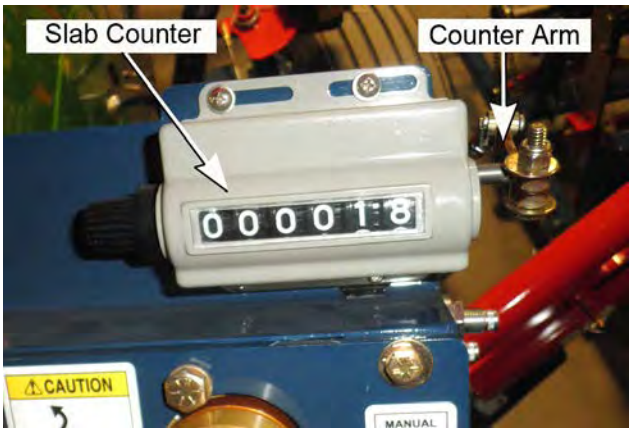
The motor is 'plumbed' in line with the cutting head motor, so that it will start when the cutting head is engaged.

For installation or repairs, refer to the rotary brush section of the parts manual for a full layout and parts description.

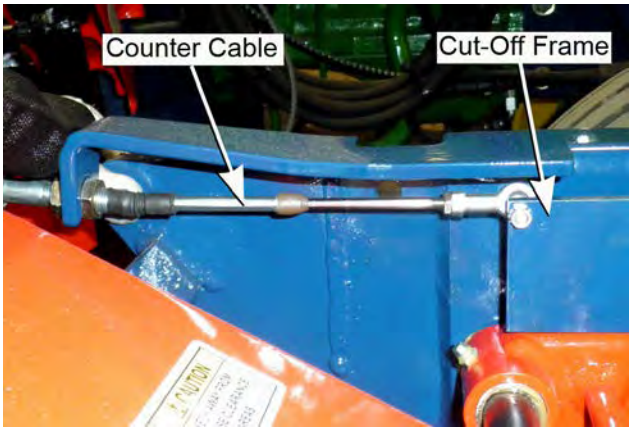

Typical Rotary Brush

## COUNTER

The counter is standard equipment on the slabbing machine and is available as an accessory on the Roll-Up option. The unit will count slabs or rolls. Refer to the counter section of the parts manual for a full layout and parts description.




The counter is activated by the cut off stroke of the cut off frame. The counter arm has a slot to prevent variations in the stroke of the cutting frame from causing damage to the counter.



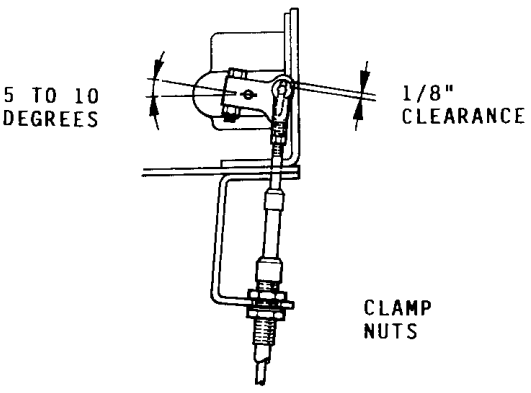

The following set-up procedure should be followed:

1. Set the counter arm at a position 5 to 10 degrees below horizontal. (See diagram.)

2. Set the cable ends flush with inside thread end of the yokes.

3. Set the cut off frame so that it is sitting on the rubber bumpers.

4. Using the adjustment provided by the clamp nuts on both ends of the cable housing, set the cable so that the clevis pin at the counter arm has 1/8in. clearance to the upper end of the slot.



## CANOPY & LIGHTS

The canopy provides some degree of protection from the elements and the sun.

The canopy frame provides convenient mounting points for three work lights. The work lights allow increased operating hours.

Refer to the Canopy & Lights section of your parts manual for part numbers, a full layout, and parts description.

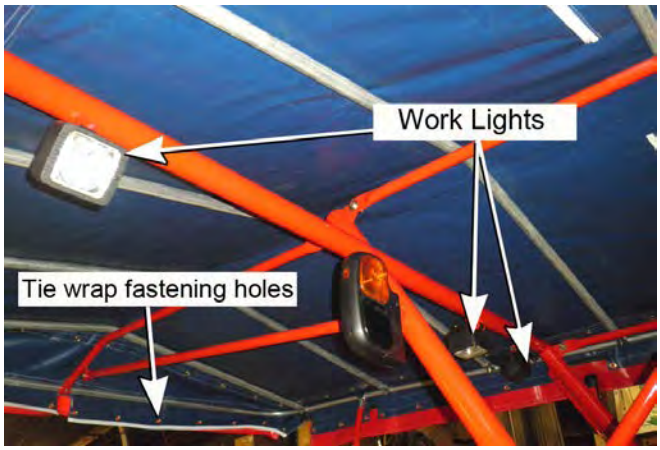
The canopy is fastened to the frame with zip pockets and nylon tie-wraps

Position the work lights in appropriate positions to highlight the piling cavity, Slab Curved Conveyor, the Cutting Head, and, if installed, the Roll Cross Conveyor,.

More than three lights will cause a drain on the electrical system.

**NOTE**

If more than three lights are desired, remove the factory Halogen lights and replace them with LED lights.



## Contents.

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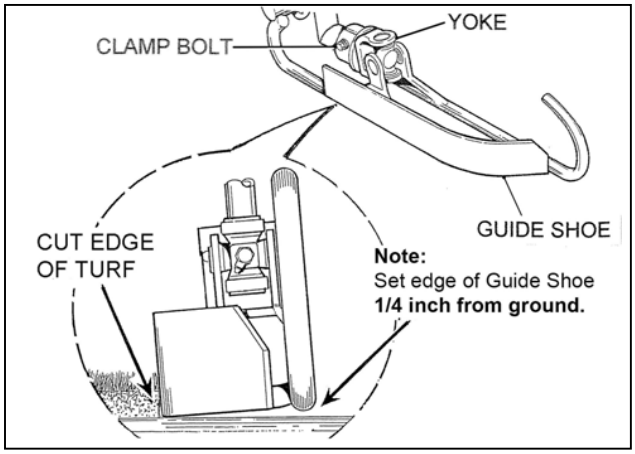
# Auto-Steer

**Set-up and Operation.**



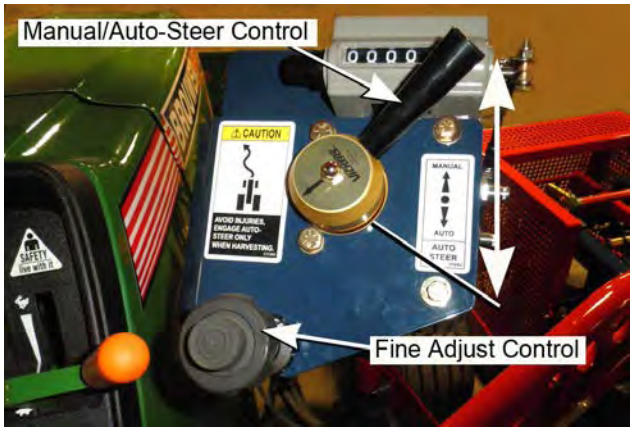

When the **Auto-Steer** System has been initially Set-Up, and the machine is ready to commence harvesting, it is important before starting, that the Auto-Steer final set-up is carried out by following the instructions below.

**Cutting the Starting Strip.**

A starting strip of turf must be cut '**manually steering**', this creates the turf 'edge' for the Guide Shoe to follow.

- Start the tractor and set the engine at 1400 rpm, Select 1st Gear and engage the transmission clutch.
- Push the Joystick Control Handle 'forward', to lower the Cutter Head.(Fig.2).

Using **manual steering,** proceed to cut the starting strip. The starting strip **must be cut straight,** to ensure the **correct operation of the Auto-Steer.**



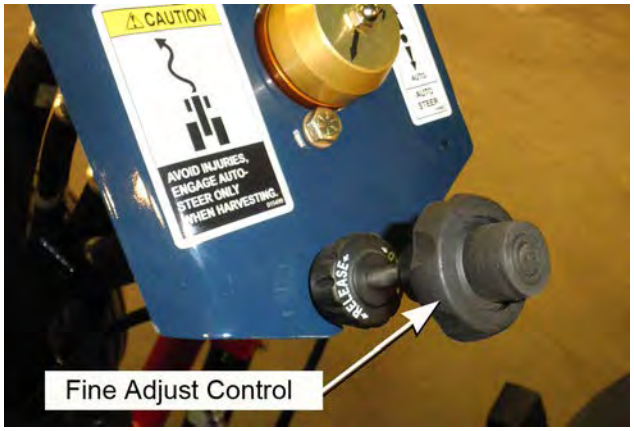

When the starting strip has been cut :

- Position the harvester parallel to the start strip, with the Cutter Side Blade aligned with the 'cut edge' of the turf.
- Engage the Auto-Steer with the Control Handle.

**NOTE**

If the Guide Shoe lowers on the 'un-cut' turf, when the Auto-Steer is engaged move the control back to Manual. The re-set cylinder will move the Guide Shoe 'off ' the un-cut turf, then re-engage the Auto-Steer

- Select 1st Gear, and engage the transmission clutch.
- Lower the Cutter Head.
- Continue cutting the second strip, use the 'Fine Adjust' Control to trim any waste. Each revolution of the Control Knob will give approximately ¼ inch of lateral movement of the Guide Shoe.




If the Auto-Steer works satisfactory but the 'Fine Adjust' Control Cable has run out of adjustment, re-set the cable

**NOTE**

If there is a problem with the Auto-Steer during harvesting, re-set the Auto-Steer in the following sequence

**Cam Roller and Roller Arm Position.**

**IMPORTANT**

The Cam, Roller and Stop Pin **must be set-up** with the Stop Pin at the '**mid-point** ,' of its travel in the cavity, in the Sensor Valve End Plate. This is the 'NEUTRAL' positionin the Sensor Valve.

**The Fine Adjust Control must be at Mid-Point of travel. See P4-17.**

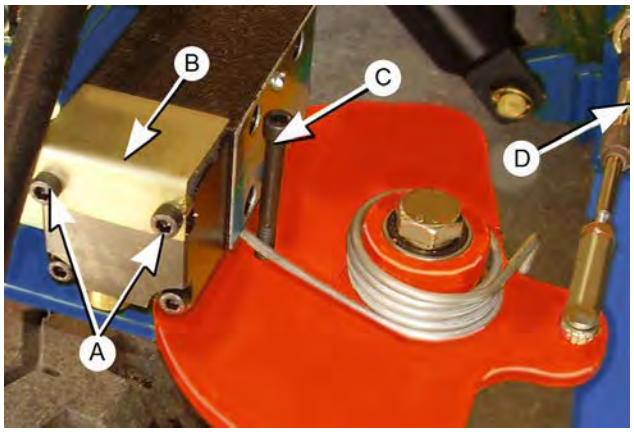
Continued on the following page.

**Cam and Roller Arm Set-Up.**
The recommended method of setting the Auto-Steer is:

- Position the Harvester 'ready to cut'.
- With the Auto-Steer '**OFF**', cut a strip of turf, for a minimum distance of 20 feet. **It must be cut straight.**
- Stop the harvester.

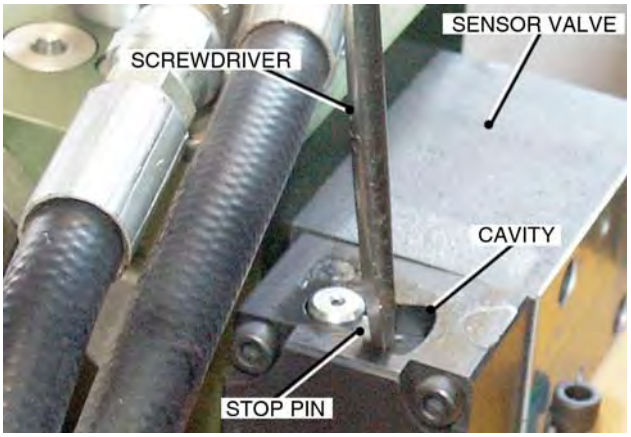
The harvester will be parallel to the cut edge, the steering wheels 'straight ahead', and the Cutter Head 'down'.
**Switch the Auto-Steer 'ON'. Turn the Tractor 'OFF'.**

- Remove the two 5x40mm Socket Head Screws '**A**', from the Sensor Valve End Plate and remove the End Plate Cover '**B**', complete with Rubber Seal




- Swing the Auto-Steer Guide Shoe '**left or right'**, to align the ¼ inch hole in the Cam, with the hole in the Support Plate.
- Insert a ¼ inch Bolt '**C**', through the holes to lock the Cam in position.
- Adjust the Cable '**D**' (attached to the Cam), to the 'mid-point' of its stroke travel, and lock it in place.

- Back-off the Setscrew that clamps the Roller Arm to the Roller Shaft, (See Fig.7).
  se a 'flat blade' screwdriver to turn the Stop Pin to its **'mid-point' of travel, in the cavity**. Hold the Stop Pin in this position.
- The Sensor Valve Internal Spool will now be in the '**NEUTRAL**' position.




- Push the Roller Arm until the Roller is '**hard**' against the Cam.
- Adjust the Roller Arm 'up or down' on the shaft, to get maximum surface contact between the Roller and the Cam.
- Check that the Roller Arm is fully engaged on the knurled portion of the Roller Shaft.
- Tighten the Roller Arm Setscrew.

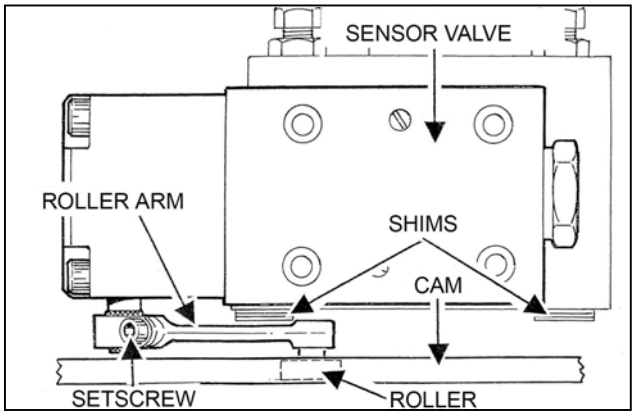
**IMPORTANT**

Before operating the Auto-Steer **remove the ¼ inch Bolt from the Cam**. Failure to do so will result in damage to the system.

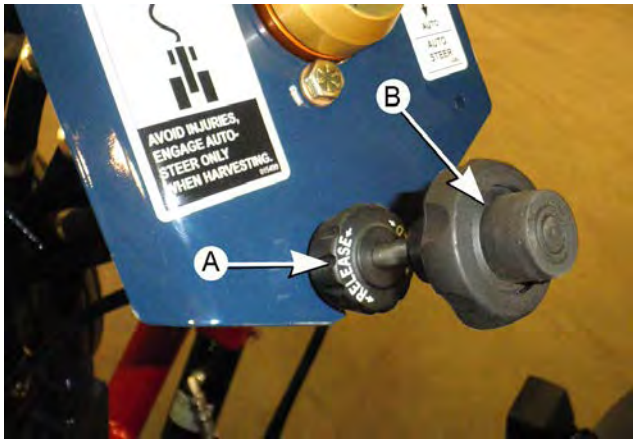
**Also**

Fill the Stop Pin Cavity with 'white grease' to prevent **corrosion forming on the Roller Shaft, causing it to 'stick' and adversely affecting the operation of the Auto-Steer**

- Position the Sensor Valve End Plate Cover, complete with the rubber seal, re-fit the 40mm Lg. Socket Head Screws.



**Fine Adjust Control.**
As noted on page4-15, the Fine Adjust Control allows the operator to trim the waste strip.
It is recommended that it is set-up as follows:



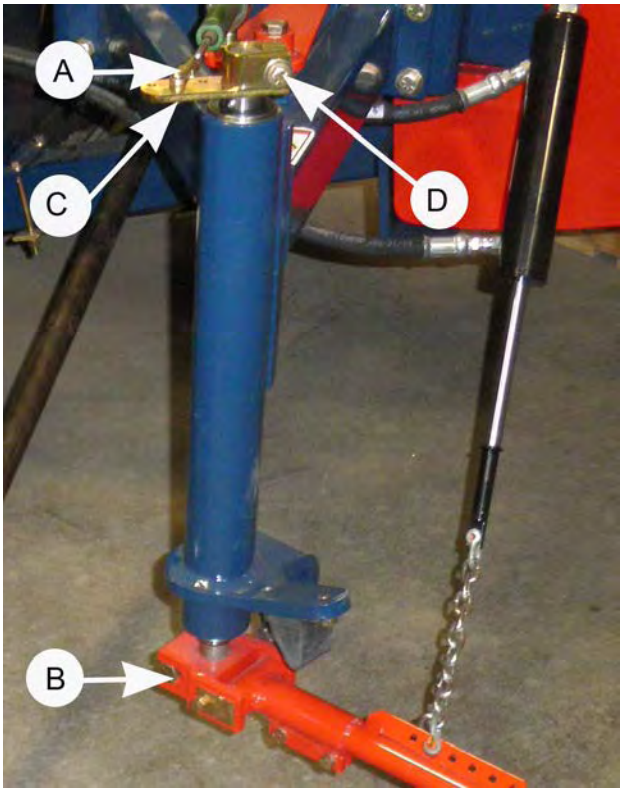

**Set the Fine Adjust Control to its 'Mid-Point' by:**

- Releasing the Control Lock '**A**'.
- Press the End Button '**B**', and slide the Control Knob '**IN'** or '**OUT**,' to find the mid-point of travel.
- Re-tighten the Control Lock.

**Actuator Column.**
**Spring Tension Adjustment.**

**CAUTION**

The Top Lever Arm is under spring tension.
Exercise care when removing the Cable Clevis End from the Top Lever Arm, or loosening the Lever Arm Clamp Bolt.




**Position the Guide Shoe against the cut edge of turf :**

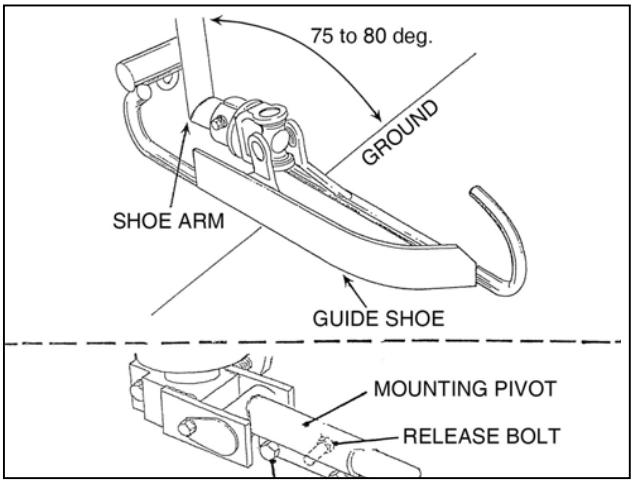
- Remove Clevis End '**A**', from Top Lever Arm '**C**'.
- Loosen the Shoe Arm Clamp Bolt '**B**'.

The Top Lever Arm '**C**', should rotate **'clockwise'** approximately **80 to 90 degrees**, releasing the spring tension.
If the Lever Arm rotates 'back' **less than 80 degrees,** re-set it by loosening the Clamp Bolt '**D**', and turning the Lever Arm the required **80 to 90 degrees.**

- Tighten the Clamp Bolt **D**'.
- Fit a 1¼ in. wrench on the Lever Arm Boss and rotate the Top Lever Arm 'back' **80 to 90 degrees**, **against spring pressure**.
- Refit the Clevis End '**A**'.

**Shoe Arm Adjustment**

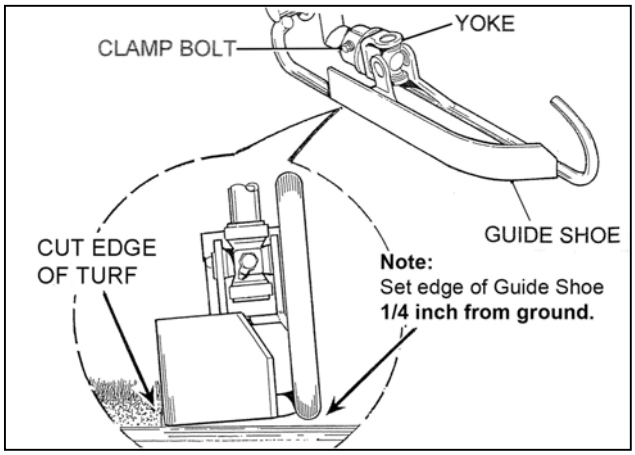
The Guide Shoe Arm must be at a **75 to 80 degree** angle to the ground.




**To adjust the Shoe Arm angle :**

- Loosen the two Clamp Bolts in the Mounting Pivot.
- Tighten the Release Bolt to 'open up' the clamp and rotate the Shoe Arm to the correct angle.
- Back-off the Release Bolt and tighten the Clamp Bolts.

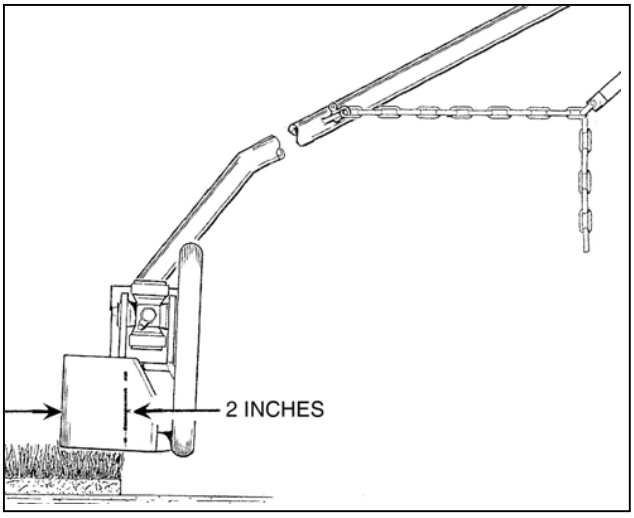
**Guide Shoe Adjustment.**




The Guide Shoe must be correctly adjusted as follows :

- Loosen the Yoke Clamp Bolt and rotate the Guide Shoe until there is ¼ **inch** clearance between the **inside edge** of the shoe and the ground.
- Tighten the Yoke Clamp bolt.

**Re-Set Cylinder Chain Adjustment.**

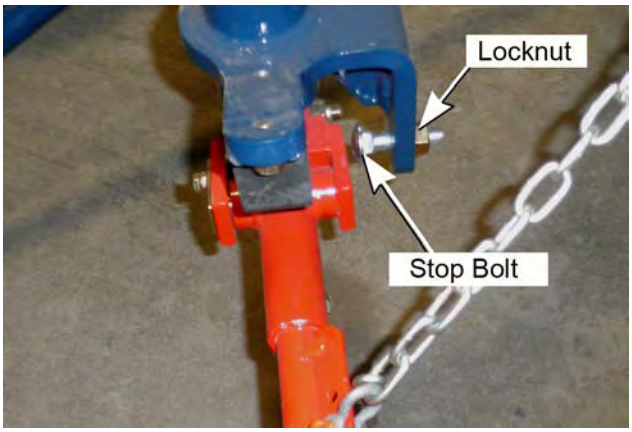



The Re-Set Cylinder must be attached to the chain links at a point that allows the Guide Shoe to travel no more than **2 inches past the 'cut edge'** and onto the uncut turf.

**IMPORTANT**

The Reset Cylinder chain links must be adjusted before the adjustment to the Stop Bolt. .

**STOP BOLT ADJUSTMENT.**




The Stop Bolt determines where the Guide Shoe will 'drop' on the **ground** when the Auto-Steer is activated. For most harvesting conditions the Stop Bolt is adjusted to position the Guide Shoe 1 to 2 inches away from the 'cut edge'

If the conditions require adjustment to the Guide Shoe :
**'Away'** from the cut edge :

- Back-off the Locknut and turn the Stop Bolt '**IN**'.

**'Closer'** to the cut edge :

- Turn the Stop bolt '**OUT**'.

After adjustment **fully tighten the Locknut.**

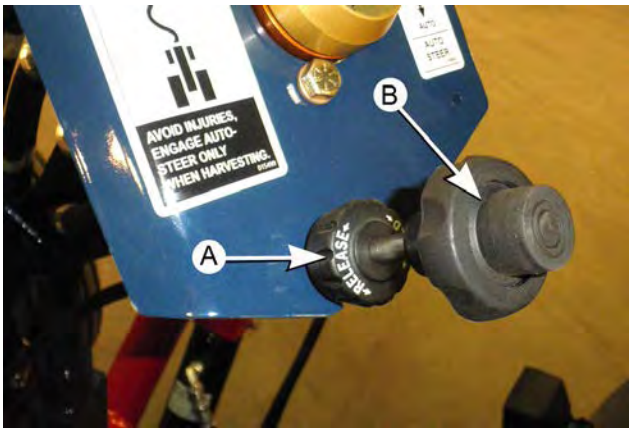
**Tracking Adjustment.**

The recommended method of setting the tracking is :

- Position the harvester 'ready to cut'.
- With the Auto-Steer switched '**OFF**,' cut a strip of turf, for a minimum distance of 20 feet, **it must be cut straight.**
- Stop the harvester.

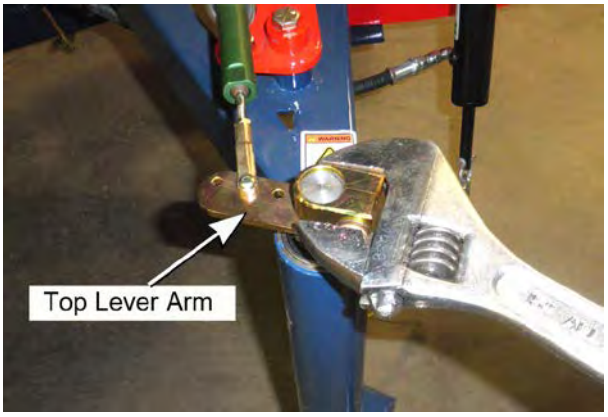
The harvester will be parallel to the cut edge, the steering wheels 'straight ahead', and the Cutter Head down.

- Engage the Auto-Steer , the Guide Shoe will 'drop'.




To Set the Fine Adjust Control to '**Mid-Point**':

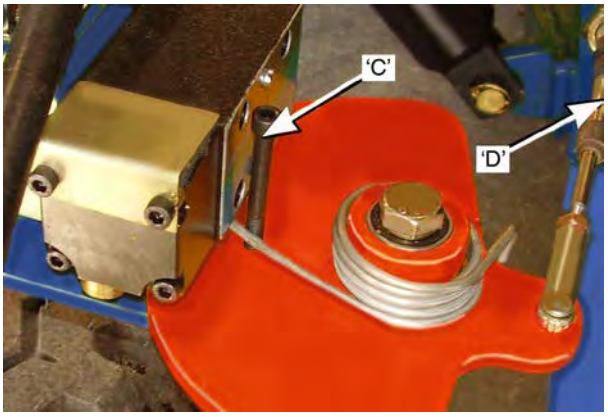
- Release the Fine Adjust Control 'lock' '**A**'.
- Press on the End Button '**B**' and slide the Control Knob Rod '**in or out'**, to find its mid-point of travel.
- Re-tighten the Control 'lock' '**A**'.




- Position the Guide Shoe against the 'cut edge' of turf.
- Fit a wrench on the Top Lever Arm.

- Use the wrench on the Lever Arm to rotate the Cam until the ¼ inch hole in the Cam aligns with the hole Support Plate.
- Insert a ¼ in. Bolt '**A**', in the holes to lock the Cam in place.

The Sensor Valve will now be in the '**NEUTRAL**' position.

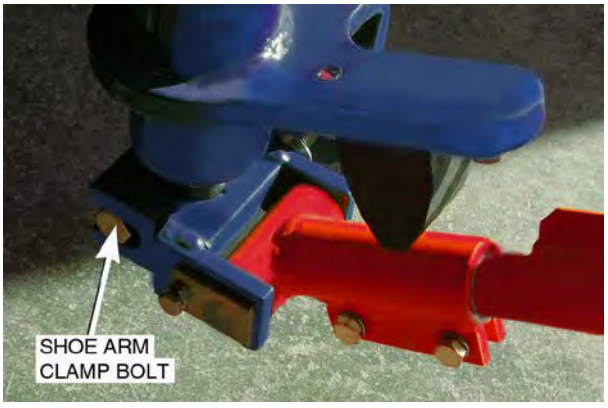



To prevent **any movement** of the Top Lever Arm and Spring Column Shaft, use the wrench to hold the Top Lever Arm firmly, against spring pressure and :

- Loosen the Shoe Arm Clamp Bolt, and move the Guide Shoe against the 'cut edge' of the turf.
- Tighten the Shoe Arm Clamp Bolt.

**IMPORTANT**

Before operating the Auto-Steer the ¼ in. bolt **must be removed** from the Cam. Failure to do so will result in damage to the Auto-Steer mechanism.



**Sensitivity Adjustment**

**CAUTION**

The Top Lever Arm is under spring tension.
Exercise care when removing the Cable Clevis End from the Top lever Arm, or when loosening the Lever Arm Clamp Bolt.

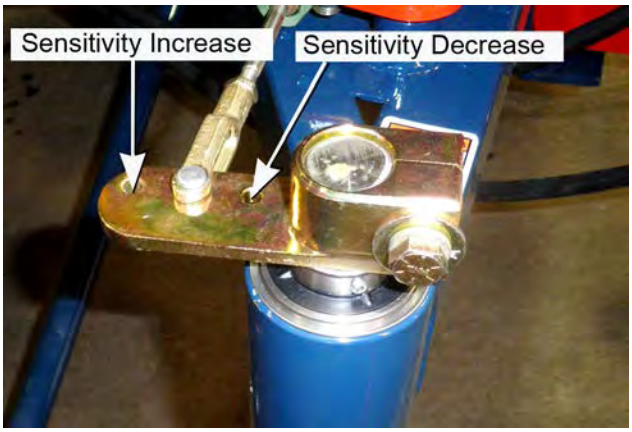



Fig.18
On initial set-up the Cable End from the Sensitivity Valve is attached at the 'center' hole in the Top Lever Arm.

- To '**increase**' sensitivity, re-position the Rod End Clevis in the '**outer**' hole in the Lever Arm.

- To '**decrease**' sensitivity, re-position the Rod End Clevis in the '**inner**' hole in the Lever Arm.

.

**It is important that a regular service schedule is followed.**

Regular cleaning and maintenance will keep the machine in good working condition, prolong its working life and help in reducing costly repairs.

**DAILY.**
**Apply oil to the: (**Do not use grease).

Conveyor Cut-Off Sprocket, and if applicable, the Roll-Up drive sprocket chains; 4 inch Roller Drive Chain: Rotary Brush Drive Chain.(If installed). .
Lightly oil the Auto-Steer cable end at the spring column.

**WEEKLY**.
Grease the following bearings and bushings with a good quality grease.

- Main Conveyor upper and lower bearings.
- Conveyor Idler Roller Shaft bearings.
- Curved Conveyor – Brush Shafts Bearings
- Curved Conveyor Drive Chain.
- Pre-Start Shaft and Starter Gate Shaft Bushings (Roll-Up option).
- Upper and lower Roll-up Conveyor bearings (Roll-Up option).
- 4 inch Roller Bearings (Roll-Up option).
- Cut-Off Cam Shaft bearings
- Cut-Off Blade Shaft bushings
- Ground Roller Shaft bearings
- Side Arm Connecting Rod bearings
- Stop Cam bushing
- Connecting Rod Eccentric Shaft bearings
- Cut-off Frame bushings
- Rear Door Hinges
- Rotary Brush Bearings ( If installed).

If bearing or bushings are removed for repair or service, so exposing bare metal, apply Anti-Seize to the shafts when re-assembling. This will prevent the shafts from rusting and make it easier for future service work.

## Conveyor Mat.

On average the Conveyor mat will last two or three Seasons.
Under certain soil conditions the Metal Clip Inserts wear out and have to be replaced.

Following are the recommended methods for replacing the Mat Splices and Inserts.

The Mat is joined using Metal Mat Splices.
There are special tools available for the easy removable and replacement of the Splices.

Part No. KD89999 is used with air power.
Part No. KD90000 is for use with a hand tool.

These tools speed up the removal and replacement of Mat Splice.

The Mat Clips can be removed using a chisel.
The Clip Installer, KD89998 is available for easy fitting of Mat Clips.

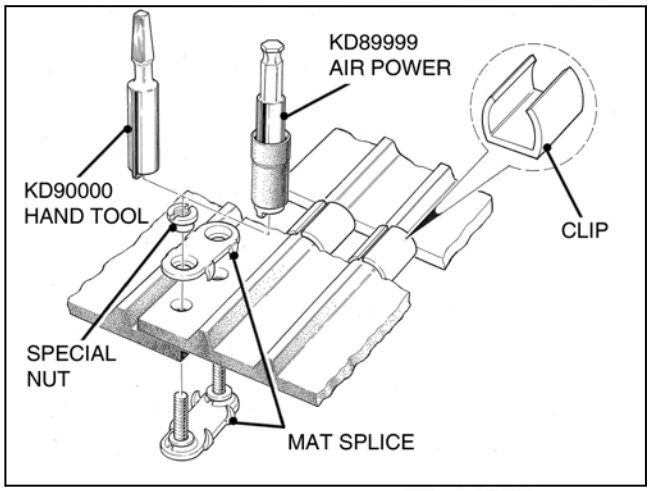
**To replace the Conveyor Mat:**

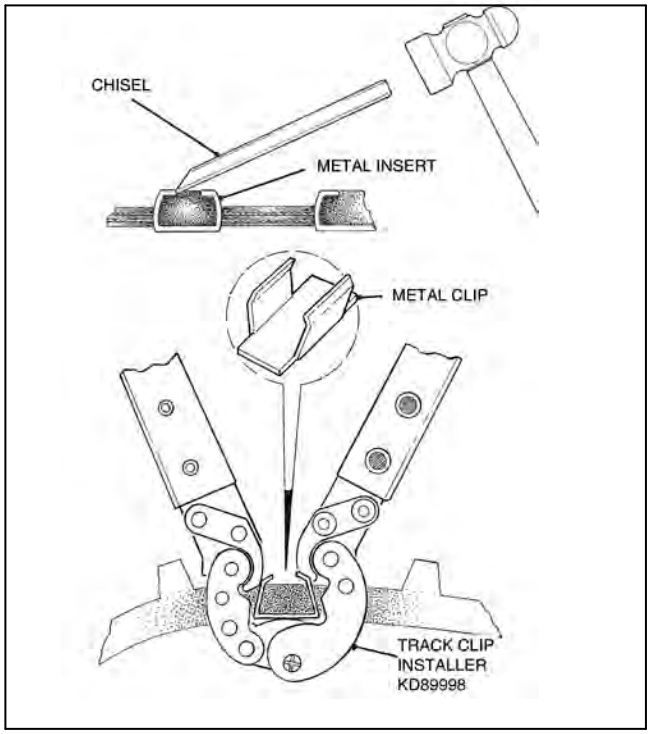
Release the Mat Tension Idler. Cut through the mat and remove it from the frame.
Install the new mat over the sprockets and position the join half way up the conveyor frame.
The mat must be installed with the lower section under the upper section.
Use Expanding Grips '**A**' as shown, to pull the mat ends together and secure them with ties or wire, until the Splices have been fitted.
When installing the Mat Splices it is important that the excess portion of the threaded stud is broken off above the nut when the splice is installed.

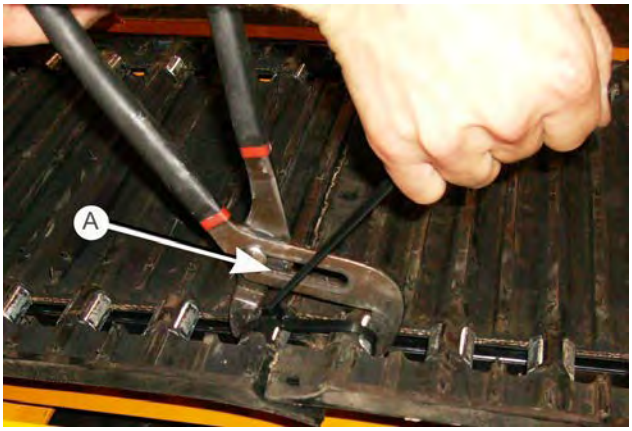
**WARNING**

**Do not operate the machine until the Stud Ends have been broken off.**
Failure to observe this precaution may result in serious injury to the operator and /or damage to the machine.

Refit the Mat tension Idler on completion of installation.

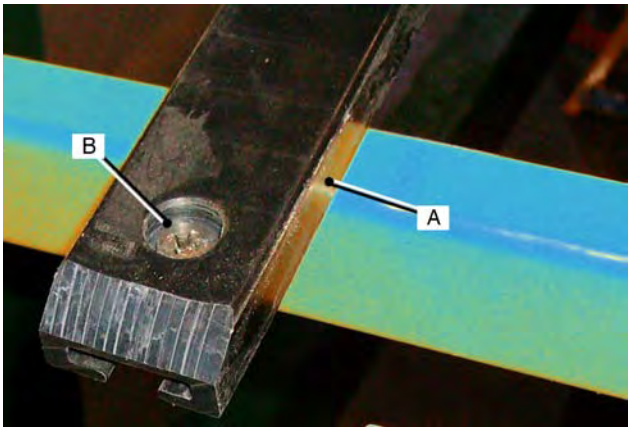


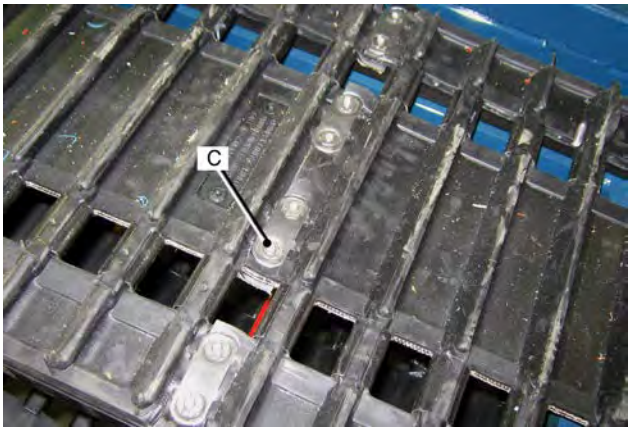
**Conveyor Mat Sliders.**

The service life of Conveyor Sliders varies, depending on the soil conditions.
Inspect them for excessive wear when replacing the Mat, and at major service.
(Particularly under the Roll-up Tray if Roll-Up is installed).
The Sliders '**A,**' fit onto 'T-Section' Rails and fastened at the
lower end with Flat Head S.S. Screws '**B**' and Locknuts.
Excessive wear will be evident when the rails show through the Sliders.
Wear thickness, (**3/8 inch**), is less than the overall thickness.




**Remove/Replace Upper Slides.**

- Locate a join in the Mat and position it at the mid-point of the Conveyor Frame.
- Remove the Idler Tension Springs,see page 3-12
- Remove the Mat Splices '**C**', see page 5-02
- Pull the Mat clear of the top Drive Sprockets and off the bottom sprockets.
- Remove the Screws '**B**' and Locknuts fastening the Sliders to the frame rails, and pull the Sliders up and off the Rails. It may be easier and quicker to cut badly worn Sliders off the Rails. Clean up the Rails for easier fitting of the Sliders.
- Feed the Slider onto the rail, from the top. 'Knock' it down the rail until the bottom fasteners can be fitted.



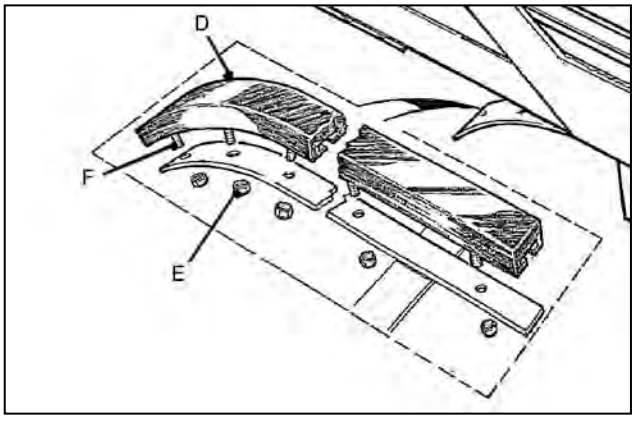

**NOTE**

Always replace the Sliders as a set.

**Lower Sliders.**

To replace the Lower Mat Sliders '**D**' :

- Remove the five Locknuts '**E',** and lift the Sliders off the rails
- Remove 'T-Bolts' '**F**', from the Sliders and fit them into the new Sliders, and bolt them into place.



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