

AMCO TERRACING PLOW MODEL TJ3

**OPERATOR'S MANUAL
PART IDENTIFICATION**



AMCO MANUFACTURING COMPANY

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FOREWORD

You've just joined an exclusive but rapidly growing club.

For our part, we want to welcome you to the group and thank you for buying an AMCO product.

We hope your new AMCO implement will help you achieve both increased productivity and increased efficiency so that you may generate more profit.

This operator's manual has been designed into five major sections: Foreword, Safety Precautions, Operation, Troubleshooting and Parts Identification.

It is important the owner/operator knows the implement model number and serial number. Write the serial and model number in the space provided and use it in all correspondence when referring to the implement.

Throughout the manual, references may be made to left side and right side. These terms are used as viewed from the operator's seat facing the front of the tractor.



This **SAFETY ALERT SYMBOL** indicates important safety messages in the manual. When you see this symbol, be alert to the possibility of **PERSONAL INJURY** and carefully read the message that follows.

The word **NOTE** is used to convey information that is out of context with the manual text. It contains special information such as specifications, techniques, reference information and other information of a supplementary nature.

The word **IMPORTANT** is used in the text when immediate damage will occur to the machine due to improper technique or operation. Important will apply to the same information as specified by **NOTE** only of an immediate and urgent nature.

It is the responsibility of the user to read the operator's manual and comply with the safe and correct operating procedure and to lubricate and maintain the product according to the maintenance schedule in the operator's manual.

The user is responsible for inspecting his machine and for having parts repaired or replaced when continued use of the product would cause damage or excessive wear to the other parts.

It is the user's responsibility to deliver his machine to the AMCO dealer who sold him the product for service or replacement of defective parts that are covered by the warranty policy.

If you are unable to understand or follow the instructions provided in the publication, consult your local AMCO dealer or contact:

AMCO MANUFACTURING, INC.

662-746-4464

800-748-9022

662-746-6825 (FAX)

Website: www.amcomfg.com

E-mail: sales@amcomfg.com
parts@amcomfg.com

AMCO Manufacturing warrants all products manufactured and sold by it against defects in material. This warranty being expressly limited to replacement at the factory of such parts or products as will appear to be defective after inspection.

This warranty does not obligate the Company to bear cost of labor in replacement of parts. It is the policy of the company to make improvements without incurring obligations to add them to any unit already sold. No warranty is made or authorized to be made, other than herein set forth. This warranty is in effect for one year after purchase.

Model Number: _____

Serial Number: _____

Dealer: _____

AMCO Manufacturing warrants its own products only and cannot be responsible for damage to equipment on which mounted.

SAFETY

A brief description of signal words that may be used in this manual:

CAUTION: Used as a general reminder of good safety practices or to direct attention to unsafe practices.

WARNING: Denotes a specific potential hazard.

DANGER: Denotes the most serious specific potential hazard.

SAFETY PRECAUTIONS

You can make your farm a safer place to live and work if you observe the safety precautions given. Study these precautions carefully and insist that they be followed by those working with you and for you.



WARNING

Never clean, lubricate or adjust a machine that is in motion. Always lower or block the implement before performing service.

If machine must be serviced in the raised position, jack or block it up to prevent it from accidentally falling and injuring someone.

Do not allow riders on the tractor or implement.

Use speeds and caution dictated by the terrain being traversed. Do not operate on any slope steep enough to cause tipping or loss of control.

Be sure all personnel are clear of the immediate area before operating.

Read and understand the operator's manual and require all other persons who will operate the equipment to do the same.

Be familiar with all the tractor and implement controls and be prepared to stop engine and implements quickly in an emergency.

CAUTION

Consult your implement and tractor operator's manual for correct and safe operating practices.

Beware of towed implement width and allow safe clearance.

FAILURE TO HEED MAY RESULT IN PERSONAL INJURY OR DEATH.

SPECIFICATIONS AND SUGGESTED HORSEPOWER REQUIREMENTS

Model	Cutting Width	No. of Disc Blades	No. of Bearings	Approx. Engine HP Required	Approx. Weight lbs*
TJ3-1826	16'10"	18	6	176-270	3,212

**To calculate weight/blade, divide the approximate weight of the model by the number of disc blades.*

Specifications for all models subject to change without notice.

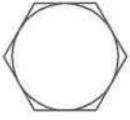
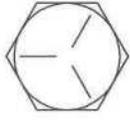
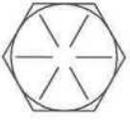
WARNING

Before making any adjustments, inspections, lubricating or repairing. Slowly lower the Terracing Plow until it is firmly in contact with the ground. Before dismounting from the tractor shut off the engine set the parking brake and remove the key.

READ THESE INSTRUCTIONS FIRST:

1. Improperly tightened bolts will result in damage, breakage, expense, and down time.
2. Always replace bolts with the specified grade and type.
3. Torque bolts using a torque wrench properly before first use of the machine and every 2-4 hours of use until you are sure bolts are staying tight.
4. The chart below is a guide for proper torque. Use it unless a specified torque is called out elsewhere in the manual.

The following table shows torque in ft. lbs.

BOLT DIA. AND THREADS PER INCH	 GRADE 2	 OR  GRADE 5 A-325	 GRADE 8
3/8-16	25	35	50
7/16-14	35	55	80
1/2-13	55	85	125
9/16-12	75	125	175
5/8-11	105	170	235
3/4-10	185	305	425
7/8-9	170	445	690
1-8	260	670	1030
1 1/8-7	365	900	1460
1 1/4-7	515	1275	2060
1 3/8-6	675	1675	2700
1 1/2-6	900	2150	3500
1 3/4-5	1410	3500	5600

Shear Bolt Torque Rating

Metric bolt torque for M12 Class 8.8 zinc plated is 55.1 foot-pounds.

WARNING DECALS

Familiarize yourself with the warning decals affixed to the plow. It is important for you to operate the plow safely. Read and follow the safety directions on all warning decals.

1. For operator safety make sure all warning decals are clean and legible.
2. Immediately replace any damaged or missing warning decals.
3. Never cover or obscure a warning decal.
4. Refer to the Parts Identification Section of this manual for correct warning decal locations.
5. Replacement warning decals can be obtained from your AMCO Dealer or by contacting AMCO at amcomfg.com.

TERRACING PLOW

MODEL TJ3

STANDARD SPECIFICATIONS (Metrics in Parentheses)

Axles	1-1/2" sq. high carbon cold rolled steel	Gang Angle:	21 to 29 degrees
Blades	26" x 1/4" (6mm) cutout or smooth with 10" backup blade behind outside blades	Tilt Indicator:	Allows positive setting of gangs from the tractor seat.
Scrapers	Includes 3/16" x 6-1/2" x 8", high-carbon steel replaceable adjustable scraper blades mounted on bars of 2-1/2" x 2-1/2" square tubing. The scrapers are attached to the 2-1/2" x 1/2" thick arms with heavy-duty u-bolts	Main Frame	7" x 7" x 3/8" Toolbar with ASAE Cat. II and Cat. III hitch for quick coupler and conventional three point
Gang tilt	Hydraulically controlled-on-the-go adjustment	Bearings	Six Protect-O-Shield®, extra heavy duty 1-1/2" (38mm) square bore greasable ball type, toggle mounted, with zerk guards and wear guards
Hyd Cyl	Two 4" x 16" independent cylinders	Spacing	10-1/2" on TJ3
Hyd hoses	3/8" dia. Hoses to mount from hydraulic cylinders to tractor	Spacer Spools	Welded steel
Wrench	One for gang bolts	Transport Width	9'

HITCHING THE TERRACING PLOW TO THE TRACTOR

WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

IMPORTANT

Using a 3-point quick hitch will make hitching and unhitching a one person operation plus add a measure of safety.

CAUTION

Do not stand or let anyone else let stand between the tractor and Terracing Plow when hitching to it.

WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

FOR TRACTORS WITHOUT 3-POINT QUICK HITCHES

1. Raise or lower tractor 3-point lift links as needed to match the lower Terracing Plow hitch pin holes. Install hitch pins.
2. Attach the upper 3-point hitch adjusting link to the Terracing Plow.
3. Slowly raise the Terracing Plow. Watch for tractor and tractor tire interference.

WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the

4. Pin up the parking stands.
5. Adjust the upper 3-point hitch adjusting link so that top of the Terracing Plow is level.

Do not stand or let anyone else stand between the tractor and Terracing Plow when hitching to it.

WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

FOR TRACTORS WITHOUT 3-POINT QUICK HITCHES

1. Raise or lower tractor 3-point lift links as needed to match the lower Terracing Plow hitch pin holes. Install hitch pins.
2. Attach the upper 3-point hitch adjusting link to the Terracing Plow.
3. Slowly raise the Terracing Plow. Watch for tractor and tractor tire interference.

WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the

4. Pin up the parking stands.
5. Adjust the upper 3-point hitch adjusting link so that top of the Terracing Plow is level.

FOR TRACTORS WITH 3-POINT QUICK HITCHES

HITCH: The AMCO terracing plow is designed to hitch to ASAE Standard Category III three-point hitches and to ASAE Standard Category III quick couplers.

1. Release locks on the lower lift hooks.
2. Position the lower lift hooks under the Terracing Plow lower hitch pins.
3. Raise the tractor 3-point quick hitch to engage the lower Terracing Plow hitch pins. The upper center link hook should be fully engaged with the Terracing Plow center link pin.

WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

4. Latch the lower lift hooks locks
5. Slowly raise the Terracing Plow. Watch for tractor and tractor tire interference.



WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

6. Pin up the parking stands.
7. Adjust the upper 3-point hitch adjusting link so that top of the Terracing Plow is level.

UNHITCHING THE TERRACING PLOW FROM THE TRACTOR



WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

1. Lower parking stands and securely pin into position.
2. Slowly lower the Terracing Plow until the parking stands and Terracing plow are on a firm level surface.



WARNING

Before dismounting from the tractor shut off the engine, set the parking brake and remove the key.

3. Unpin the tractor lift arms from the Terracing Plow
4. Disconnect the upper 3-point hitch adjusting link from the Terracing Plow
5. Carefully pull the tractor forward away from the Terracing Plow

CHECKLIST BEFORE USING THE TERRACING PLOW



CAUTION

To insure safe steering at all times install proper ballast on the front of the tractor

1. Make sure the Terracing Plow is properly attached to the tractor
2. Read and understand the operator's manual.
3. Read and familiarize yourself with the safety and warning decals on the Terracing Plow.

4. Check all bolts to verify proper torque.

WARNING

Never operate the Terrace Plow at excessive ground speed. Excessive ground speed can cause personal injury or damage to your tractor and Terracing Plow!

5. Check the Terracing Plow for parts that are broken or have excessive wear. If any are found replace them.
6. Check to make sure the tractor 3-point hitch is securely attached to the Terracing Plow.
7. Verify the Terracing Plow has been properly lubricated.

TRANSPORTATION

CAUTION

Always comply with all federal, state and local laws when traveling on public roads whether at night or during the day. Use accessory lights and devices for adequate warning to operators of other vehicles.

WARNING

Before transporting over public roads, always lock pivot brackets to gangs in raised position. Failure to do so could result in serious accidental injury.

1. When raising the Terracing Plow to transport, be sure the parking stands are pinned in the full up position.
2. Raise the gangs for maximum ground clearance
3. Be sure to reduce tractor ground speed when turning. Leave enough clearance so that the Terracing Plow does not contact obstacles such as buildings, trees, or fences.
4. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely. When traveling over rough or hilly terrain, shift tractor to a lower gear.
5. Transport width for the Terracing Plow can be reduced to approximately 9' by a simple operation. Raise the plow on the three-point hitch with both gangs approximately level. Disconnect the angle adjusting slide links for one gang and swing the gang backward until it is straight behind the tractor. Align holes in the top of the pivot brackets and main frame, and insert the 1" transport (tee-handle) pin which was removed from the angle adjusting slide links to prevent the gangs from shifting sideways.
6. Next, fully retract the 4" x 16" hydraulic cylinders. Remove the 1" transport pin from its carrying slot on the main frame, and insert the pin in holes which connect the pivot bracket and gang frame. This connection will prevent the possibility of a serious accident in case of hydraulic circuit failure during transport.

7. Repeat the steps above for the opposite gang.
8. Lock pivot bracket in the raised position

LUBRICATION SCHEDULE

Grease weekly or after (50) hours of operation under normal conditions. It is recommended to grease at the beginning and end of each use season as well.

1. Gang Bearings.

Protect-O-Shield bearings should be greased until grease “pops” out around the bearings. The bearing will thus be purged of any dirt or foreign matter. The Protect-O-Shield prevents any possibility of blown seals.

Special notice: Daily greasing may be necessary under extreme conditions such as in wet ground, during hot dry weather or when operating at high speeds.

2. Pivot Bracket Pins

TERRACING PLOW EXTENDED STORAGE



CAUTION

Raise the Terracing Plow high enough so both parking stands can be securely pinned to prevent the Terracing Plow from falling forward while unhitching or in storage. Before dismounting from the tractor shut off the engine set the parking brake and remove the key.

1. Before unhitching the Terracing Plow from the tractor clean off any dirt or debris that may have accumulated on any of the moving parts. Scrape off any compacted dirt from the disc blades. Then use a power washer to clean the Terracing Plow.
2. Thoroughly inspect the entire Terracing Plow for missing, worn or damaged parts including decals. Repair or replace parts during the “off season” to assure dependable, trouble-free performance during the use season.
3. Lubricate the Terracing Plow as detailed in the Maintenance & Lubrication section of this manual.
4. Apply a rust preventative protective coating to the disc blades. Do the same for any exposed hydraulic cylinder rods or completely retract the cylinder rods.
5. The Terracing Plow should be stored on a solid flat surface in a dry location. It is best to store the plow inside a storage building. Doing so will reduce future maintenance requirements and prolong the life of the Terracing Plow.
6. To complete unhitching from the tractor follow the instructions in the Unhitching From The Tractor section in this manual.

ASSEMBLY INSTRUCTIONS

CAUTION

Use sturdy assembly stands with the correct weight load bearing capability. Secure the main frame to the assembly stands 40" high.

The Terracing Plow is shipped from the factory with maximum pre-assembly in the following bundles:

- A. Main Frame
- B. Two gang & frame bundles with scrapers & scraper bars attached
- C. Hydraulic cylinders and hoses

Place all bundles where they will be convenient. Arrange loose parts so they may be readily seen when needed. To insure good alignment of the units and parts, always insert all bolts leaving the nuts loose. Tighten the nuts evenly to prevent misalignment, distortion, or binding. Be sure all bolts are tight, all cotter pins properly spread and all pins properly inserted.



STEP 1

Select clean, level area for assembly. Place parking stand in main frame. Set main frame on sturdy assembly stands at least 40" high. Secure the main frame to the assembly stands.

STEP 2

Attach the pivot brackets to the center holes in the rear main frame plates by the 1-1/2" x 12-1/16" pins.

STEP 3

Attach gangs and frames to pivot brackets by the 1-1/2" x 10-1/2" pins. Connect outer slides to the anchor brackets on each gang frame. Bolt the adjusting slides to the lower ends of the main frame with 1" x 4-1/2" machine bolts.



STEP 4

Position adjusting slide from the main frame into the outer slide from the gang frame and pin with 1" transport pin.

STEP 5

Install 4" x 16" hydraulic cylinders on each gang frame; connect to the pivot brackets. Make sure the butt end of each cylinder is connected to the pivot brackets and the rod end attached to the gang frames. Install a tilt indicator on each of the 4" x 16" cylinders as shown in the picture. Secure with roll pins.



NOTE: Remember, the right and left hand sides of the plow are determined by standing at the rear of the plow and facing the direction of travel.

HYDRAULIC ASSEMBLY

WARNING

Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks-never use hands or parts of the body.

CAUTION

Relieve hydraulic pressure before disconnecting circuits. When reassembling make absolutely certain that all connections are tight.

CAUTION

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not given at once.

STEP 1

Install hydraulic fittings and hoses as follows:

- (A) Install four #10921 1/2" male to 1/2" female swivel elbows into the ports on the 4" x 16" cylinders. Turn fittings as shown in the picture. Coat fittings with pipe sealant before installation. **DO NOT** put sealant over end of fitting. This will keep the sealant out of the tractor hydraulic system. Tighten fittings!
- (B) Connect cylinders with hoses. Lay the hoses out where they will be readily accessible. Connect hoses and fittings as follows:

- (1) The two 10927 3/8" x 108" hoses connect the rod end of the 4" x 16" cylinders to the tractor. Route hoses through supports.
- (2) The two 10925 3/8" x 96" hoses are used to connect the butt end of the 4" x 16" cylinders to the tractor. Route hoses through supports.

This completes assembly of the hydraulic circuit for gang tilt. Carefully check your assembly and hose routing. All hoses must be routed through the support brackets to prevent damage.

When first hooking up the hydraulic hoses to the tractor, the hydraulic cylinder rods should be fully extended, and the hydraulic valve on the tractor should be held open for at least one minute. This operation will fill the hydraulic cylinders and hoses with hydraulic fluid. Check the tractor hydraulic fluid level afterward, since the Terracing Plow cylinders and hoses hold three quarts of fluid. Retract and extend the cylinders several times to purge the system of air.

FINAL ASSEMBLY AND CHECK POINTS

- (A) Check all bolts for proper torque.
- (B) Check scraper adjustment. Scrapers should be adjusted to run 1/16" to 1/8" from disk blades.
- (C) Check all hydraulic hoses and fittings for leaks. Repair as required. Replace fittings that continue to leak after tightening.
- (D) Lubrication for plow:
Raise plow to transport position. Use a good grade of clean lithium soap base chassis grease to grease the entire plow. Grease the plow as follows:
 - (1) Grease all pivot pins until grease appears.
 - (2) Grease the gang bearings with 4 or 5 shots of grease to purge any condensations that has accumulated during shipment and storage. If the harrow is in storage for four to six months, the entire plow should again be lubricated before placing in service. It should also be greased every 50 hours while in use, at the end of each session and at the start of each season.
- (E) Check decals to be certain they are in place and in good condition. Place operator's manual back into the manual tube attached to the frame
- (F) Review all steps of the assembly process to be certain the plow is properly assembled. Check all bolts to be sure they are properly torqued. Visually inspect the plow for any missing, damaged, or defective parts. Repaint any areas that need improvements.

Remember a little extra attention to details at this time can prevent problems after the plow is placed in service.

OPERATING INSTRUCTIONS



CAUTION

This operator's manual should be carefully and thoroughly read to enable the operator to care for and operate the plow properly. The right and left hand sides of the Terracing Plow as used in these instructions are determined by standing at the rear of the plow and facing the direction of travel.

Refer to your tractor operator's manual for complete tractor operating instructions.



WARNING

Never operate the Terracing Plow using excessive horsepower. Doing so can result in structural damage to the Terracing Plow.



WARNING

Never operate the Terracing Plow at excessive ground speed. Excessive ground speed can cause personal injury or damage to your tractor or Terracing Plow!



WARNING

Never operate the Terracing Plow using excessive horsepower. Doing so can result in structural damage to the Terracing Plow.

1. Never allow unsafe conditions or operating practices. Your safety is of prime importance.
2. Raise the Terracing Plow by the 3 point hitch when turning around. Failure to do so will result in broken blades, bent axles, and excessive strain on the hitch and main frame.
3. Reduce operating speed in any areas containing stumps, rocks or other obstacles. Avoid plowing up large clods on the first pass by limiting the depth of the cut. The core of the terrace should consist of fine soil particles to prevent water seepage.
4. Allow time for the soil to dry between passes unless it's unavoidable. Dry soil facilitates pulverizing large clods, which make a porous terrace and a poor seedbed for rice planted on the terrace.
5. Make the right number of passes. Under normal conditions, no more than three passes will be required to form a terrace. Depending on soil conditions and the depth of water to be held, a terrace may require only one pass.
6. Use the proper gang-tilt angle for all passes. During the first pass the two middle disc blades do most of the work of forming the terrace. By limiting gang tilt and primarily using the middle blades on subsequent passes, a narrow, steeply sloped terrace can be built with a shallow borrow furrow on the sides (a borrow furrow is formed when nearby soil is "borrowed" to build the terrace).
7. Install the optional feathering blade kit to reduce the effects of a steep borrow furrow.
8. Leverage the burrow furrow. It can be used as a channel to help drain the rice field.

9. Consider center packing. It can be an effective way to pack the center of the terrace with one or two passes of the tractor wheels to provide an impervious core before making the final pass.

Never tilt the Terracing Plow forwards or backwards. Operating the Terracing Plow tilted forward or backward will result in excessive blade wear. Plus, it will increase horsepower requirements.

CAUTION

After parking the terracing plow, always check to make sure that it cannot be overturned either forward or backward accidentally.

ADJUSTMENTS: Before operating the Terracing Plow, adjust the top link on the three-point hitch so that the main frame is approximately when the gangs are flat on the ground. To provide freedom of terrace construction, adjustment of gang angle and gang tilt is independent for each gang.

GANG ANGLE ADJUSTMENT: Under normal conditions, a setting about halfway between extremes is advisable. Increased cutting angle will generally increase cutting depth, move soil further and cover residue better. Increased angle is advisable in very hard ground or heavy cover. Decreased cutting angle will generally reduce the occurrence of large clods, will help to prevent “balling up” in wet conditions and will reduce tractor horsepower requirement. To decrease gang angle, remove the tee-handle pins in the angle adjusting slide links at each end of the main frame. Shift the gangs forward and replace the pins at the desired setting. Adjust gangs rearward to increase gang angle.

GANG TILT ADJUSTMENT: Vertical gang tilt for the terracing plow is adjusted hydraulically from the tractor. Two valve outlets are required on the tractor. When operating the plow, tilt for each gang is controlled individually. By completely retracting one cylinder to raise a gang out of the ground, the other gang can be operated like a one-way disk plow. Tilt indicators are provided to show accurate settings of gang tilt while building terraces and to enable both gangs to be set the same.

IMPORTANT

When changing gang tilt, always lower the three point hitch so that the gangs are forced into the ground somewhat. This procedure will insure a positive setting of gang tilt, by removing slack in the gangs due to frame deflection and pinned connections. Failure to set tilt with gangs in the ground may result in the gangs riding up out of the ground.

TERRACE SYSTEMS

Although there are several types of terrace systems, the three major classifications of terrace systems are narrow base, broad base, and steep back slope.

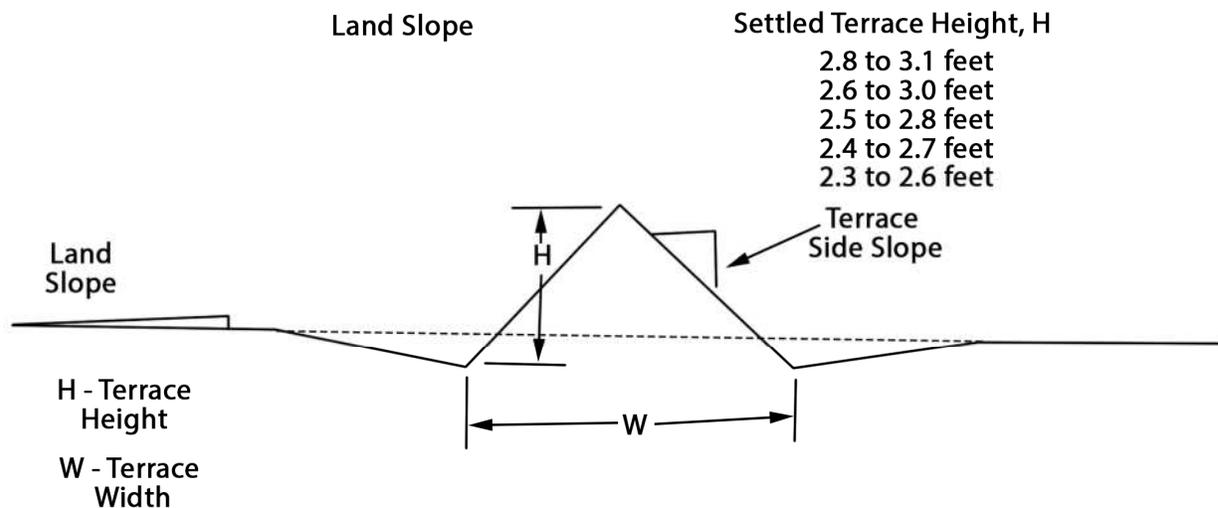
NARROW BASE terraces have relatively steep side slopes and a narrow width.

BROAD BASE terraces are wide with low side slopes so that they can be farmed, but are generally limited to use on gently sloping land.

STEEP BACK SLOPE terraces have steep back slopes (downhill side) which are grassed and gentle front slopes (uphill side) which are farmed. The application of the Terracing Plow for building several types of terraces is discussed below. Construction techniques are discussed in the section on terrace construction.

NARROW BASE TERRACES The AMCO Terracing Plow was designed primarily for construction of narrow base terraces. The plow is operated for several passes up and down the length of the terrace line, with each pass increasing the height of the terrace until sufficient height is achieved. Narrow base terraces vary somewhat depending on field conditions and climate; however, the Terracing Plow is designed to meet most requirements.

Terrace height after settling is measured from the bottom of the channel to the top of the terrace ridge and will vary depending on conditions, with land slope being the major factor. (Allowance for settling of the terrace is very important and is discussed in the section on terrace construction). The following table shows expected terrace height depending on land slope for terraces built with the Terracing Plow.



Terrace side slopes are generally between 2-1/2:1 and 3:1. Terrace width, W, at construction is about 15 feet; however, terrace width in many cases can be reduced to 13 or 14 feet by farming closely against the base of the terraces. Several types of narrow base terraces that can be built with the AMCO terracing plow are described below.

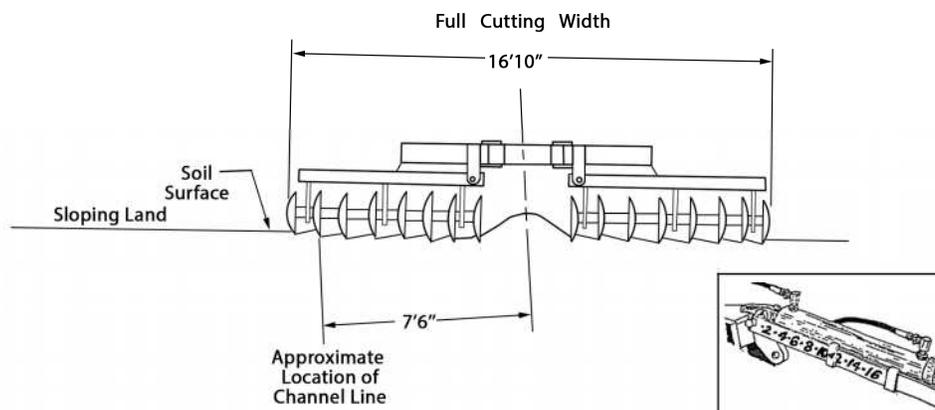
GRADIENT TERRACES are built on an established grade, and the Terracing Plow can generally be used to do 100% of the construction. In some cases, a blade or other tool may be helpful to connect the terrace channel into an outlet waterway. It is generally best to fill gullies or depressions along the terrace line prior to terrace construction, since they will case a low place in the terrace and will hamper tractor operation somewhat.

PARALLEL GRADIENT TERRACES are designed so that terraces are parallel to each other to avoid short rows and unfarmed cropland in fields with relatively even slopes. The terraces are kept parallel by cutting high spots and filling low spots to obtain grade or by varying channel grade where appropriate.

A land scraper, blade or bulldozer is required only in order to make cuts or fills. Cuts and fills can be made prior to operation of the terracing plow to get the complete terrace to grade. This method of cut and fill will insure that terrace height is even for the length of the terrace. If it is important to achieve only a minimum height with no concern about excessively high areas, cuts and fills may be made in the terrace channel only. If cuts and fills are minor, they can be made after the terrace ridge is completed with the terracing plow and in the terrace channel only. However, it is important to make sure that the terrace height is adequate at fill areas in the channel.

STORAGE TERRACES are usually built parallel and require cuts and fills. They are designed so that rain water flows to a central portion of the terrace and is stored behind the terrace ridge like water behind a pond dam. The water is drained slowly from the field through underground pipes laid perpendicular to the terraces. This system allows soil particles to settle out of the water and remain in the field. The water will drain fast enough to avoid crop damage. Cuts and fills in the terrace line can be made as described about for parallel gradient terraces using bulldozers, scrapers, or blades. Also, a machine other than the terracing plow is generally required to give additional ridge height in the storage area and to lay underground pipe. Underground pipe can be installed either before or after building the terrace with the terracing plow.

TERRACE CONSTRUCTION

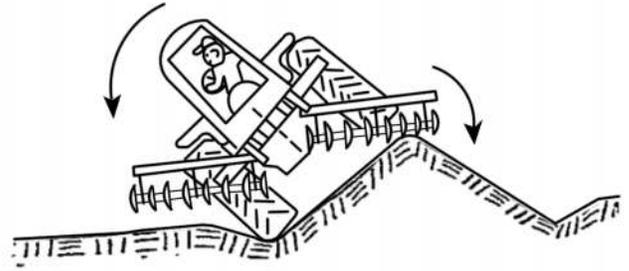


Several important points to remember concerning terrace construction are:

1. One gang can be operated alone like a one-way disc plow to move extra soil toward the terrace centerline after the first one or two passes with both gangs down. The one-way operations will reduce the depth of furrows on each side of the terrace and will increase the height of the terrace above the original ground level. Also the tractor tires will pack the core of the terrace on passes made in this manner therefore reducing future settling. The single gang feature can be used to work soil from greater distances in order to build broad base or steep-back slope terraces.

DANGER!

When operating the Terracing Plow with a single gang on steep slopes, use extreme caution in setting gang tilt. The powerful hydraulic cylinders can tilt a tractor sideways with the gangs, causing an overturn.



2. When building a terrace, if only the outside blades are cutting, the gang tilt should be reduced so that all blades on the gang are cutting. Gang tilt should be increased if only the inside gangs are cutting. This procedure will speed terrace completion.
3. When using a two-wheel drive tractor with the Terracing Plow, a maximum number of front end weights or other front-end ballast will help to steady the tractor during operation of the plow. A tractor equipped with a differential lock and dual rear wheels may be useful to improve control of the terracing plow when used with smaller two-wheel drive tractors or on steep or rough ground.
4. For best results, maintain tractor speed at or above 5 miles per hour. High speeds improve movement of soil upward and inward on the terrace, reducing construction time. Excessive slippage or inadequate horsepower could be detrimental to efficient terrace construction due to reduced speed.

The steps on the following pages are suggested for constructing narrow base terraces. Variations of this method can be adapted to meet your individual needs.

STEP I. START FORMING TERRACE

Begin to form the terrace by making one or two passes along the terrace centerline at 4 to 6 inches deep with both gangs set at 10 to 11 inches on the indicators (see insert of left hand indicator above). This step will mark the terrace line, will begin to move soil toward the centerline of the terrace and will form the core of the terrace.

IMPORTANT

When changing gang tilt, always lower the three point hitch so that the gangs are forced somewhat into the ground.

It is important to carefully follow survey stakes for the terrace center line to keep from causing high and low spots in the terrace. If stakes are placed along the terrace channel line (for grading

purposes) the terracing plow should be operated on a line one half the completed terrace width (about 7'6") below the channel line (see sketch above).

In fields where topsoil is very shallow, it may be necessary to remove the topsoil prior to making STEP 1. The Terracing Plow can be operated with one gang like a one-way disc plow to move some of the topsoil to each side of the construction site (25 to 30 feet wide). When the terrace is near completion, the topsoil can be worked back into the cut areas. A couple of finishing passes on the terrace ridge will move more topsoil onto the terrace.

STEP II. MOVE ADDITIONAL SOIL INTO BASE OF TERRACE

Move soil into the base of the terrace from the area on each side by using only one gang. Lower the right hand gang and operate the left hand rear tractor tire just to the right of the terrace centerline which was formed into a small ridge during Step I. The gang should extend 4 to 6 feet beyond the furrow left by the outside disc blade on the previous pass as shown above. The tilt indicator should be set on about 11 to 12 inches.

Make two or three rounds to work both sides of the terrace, moving soil inward on each round until extra soil is worked into the base of the terrace. When soil has been worked inward such that the tractor is almost centered on the terrace, the terrace is ready for Step III. **NOTE:** Be sure on occasion to use the left hand gang in the opposite manner as just described so as not to wear one gang more than the other.



IMPORTANT

Be sure to keep up with the location of the terrace centerline.

Step II serves two important functions. First, it provides soil for the terrace from outside the terrace base. The furrows cut on either side of the terrace ridge will not be as deep as they would if Step II were omitted, and the terrace ridge will stand higher above the original ground level. Second, during the process of working with the single gang, the rear tractor tires pack the core of the terrace ridge. Settling of the terrace is therefore greatly reduced, such that this terrace settles no more than a terrace built and packed with a bulldozer. In situations where deep furrows are not undesirable and terrace channel capacity is more than adequate, Step II may be eliminated.

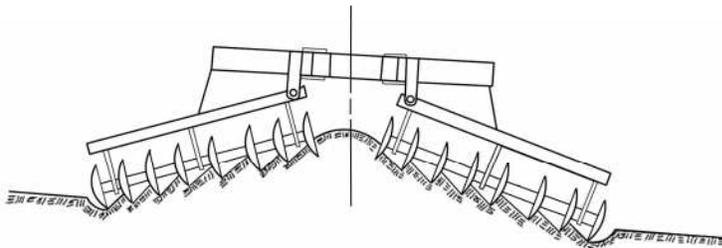


DANGER

When operating the terracing plow with a single gang on steep slopes, use extreme caution in setting gang tilt. The powerful hydraulic cylinders can tilt a tractor sideways with the gang, causing an overturn.

STEP III. FORM TERRACE

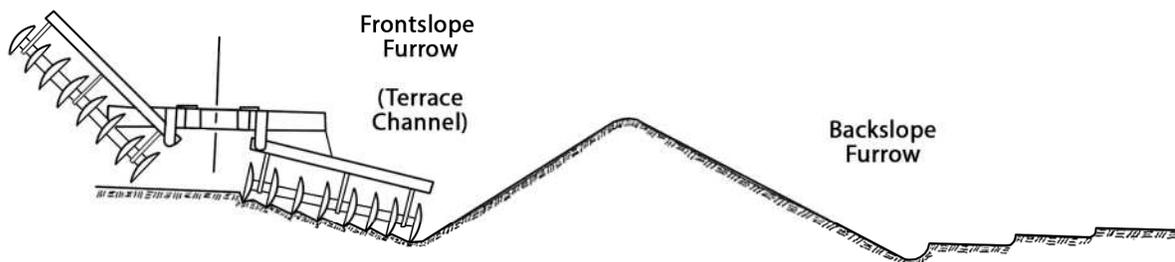
With both gangs set at about 12 or 13 inches on the tilt indicators, further build and shape the terrace. Make several passes increasing gang tilt about 1 to ½ inches each pass.



IMPORTANT

Tilt the gangs in such a way that all blades on the gang are moving soil. If only one end of the gang is cutting, increase or decrease gang tilt to provide more nearly even cutting up and down the gang.

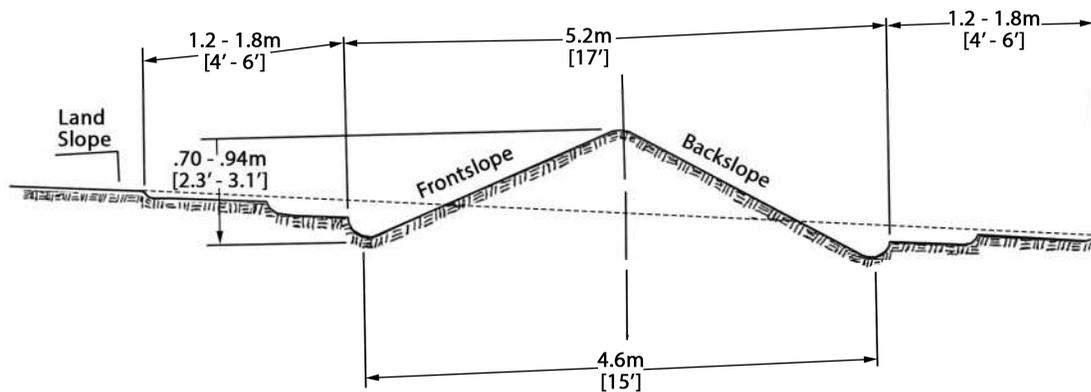
Continue to build the terrace higher until a pass at full tilt is completed. At this point, another pass or two with tilt set at 15 inches will generally help to smooth up the side slopes and “crown off” the terrace.



STEP IV. FINISH TERRACE

In order to prepare the field for cropping and to insure proper erosion control, it will likely be important to perform minor operations with the Terracing Plow or other equipment. The sketch above shows how to smooth and broaden the terrace channel and back slope furrow for cropping.

This can also be done with a disc harrow or other equipment. Using the terracing plow or a blade, it may be necessary to tie the terrace channel into a waterway or do other finishing operations.



FORMED TERRACE

The above sketch shows approximate dimensions of a narrow base terrace built with the Terracing Plow. Note that terrace side slopes are smooth. Maximum terrace height, H, should be between 26 and 40 inches depending on land slope and other factors. (See approximate settled heights in the section on NARROW BASE TERRACES). Terrace channel capacity is also important to adequate terrace construction. If your terrace is rough or has inadequate height or channel capacity, you may need additional passes of the terracing plow. Review suggestions on TERRACE CONSTRUCTION. Additional operations to complete the terrace are discussed in Step IV.

RECONSTRUCTION OF EXISTING TERRACES

The need for terrace construction equipment is not over once a new terrace is completed. Terrace channels collect sediment and the terrace ridge erodes, reducing terrace height and channel capacity. On grassed terraces, weeds and sprouts must be controlled. Neglect of proper maintenance may result in failure of the system. The Terracing Plow is especially well suited for maintenance work on narrow base terraces. Generally, only two or three passes of the plow over an old terrace will rebuild the terrace to its original condition. The tractor and plow straddle the terrace ridge without disturbing cropland on either side. By doing maintenance work with the plow during slow summer months while a crop grows to either side, there is no interference with important tillage or planting schedules.

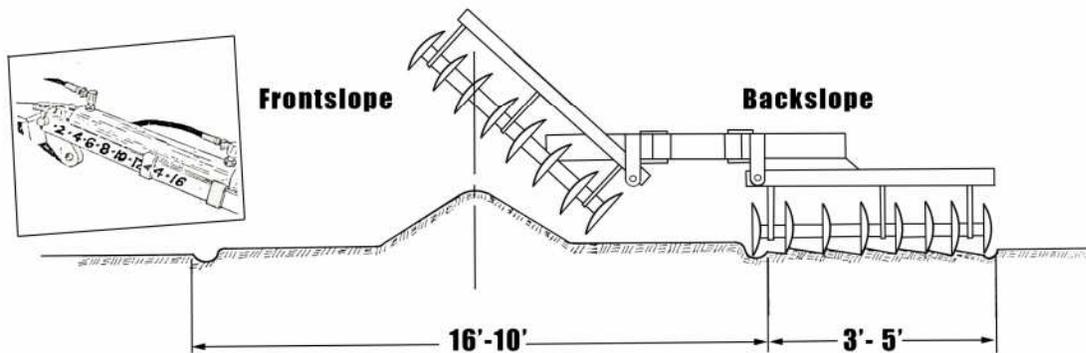
BROAD BASE TERRACE CONSTRUCTION

STEP I. START FORMING BROAD BASE TERRACE

First make sure that you read important points concerning terrace construction. Next follow the same procedure as is described for starting to form narrow base terraces in STEP I.

STEP II. MOVE ADDITIONAL SOIL INTO BASE OF BROAD BASE TERRACE

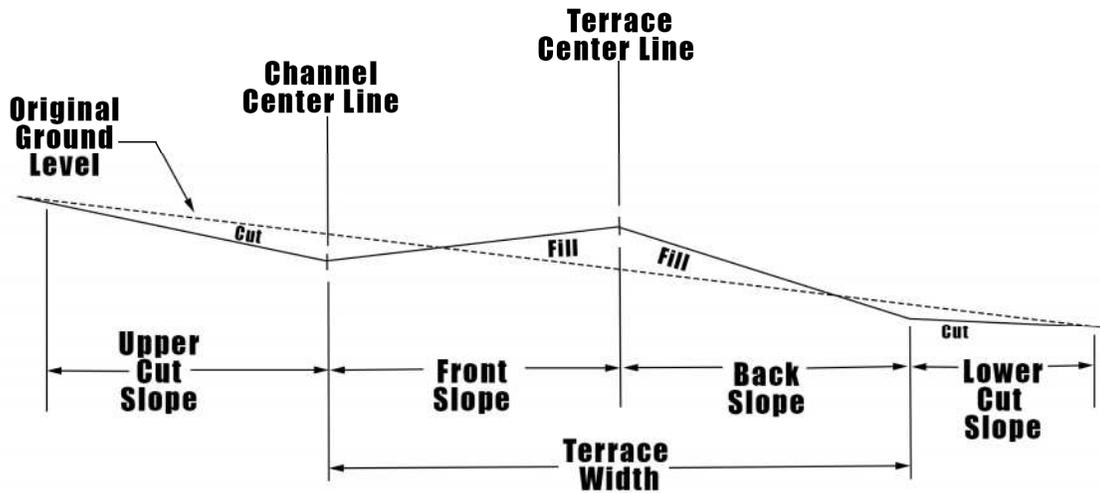
This step is similar to STEP II for constructing narrow base terraces; however, it must be repeated more for broad base terraces because of the greater width of the terrace. Construction of broad base terraces will take longer than construction of narrow base terraces.



Begin moving soil into the base of the terrace from the areas on each side by using only one gang. Raise the left hand gang and operate only the right hand gang 3 to 5 feet beyond the furrow left by the outside disc blade on the previous pass as shown above. The tilt indicator should be set on about 11 to 12 inches. Make two or three complete rounds to work both sides of the terrace, moving soil inward on the terrace in increments of 1 to 2 feet for each successive round. When the soil has been moved enough to add height to the terrace center line, repeat the procedure above. Operate the right hand gang 3 to 5 feet beyond the widest of the previous passes, and again move soil inward with successive passes to further build terrace height. This process of starting further away from the center line and moving soil inward with successive passes should be repeated until terrace height and width are as desired. When terrace height becomes adequate as the center line, there is no need to move soil further inward than additional “fill” is needed.

Several important factors to remember concerning broad base terrace construction by this method are listed below.

1. Soil cut below the terrace line cannot be moved uphill as efficiently as soil cut above the terrace and moved downhill. For this reason, it is generally good to make more passes on the uphill side of the terrace. In this way a greater amount of the “cut” material comes from above the terrace line. Some of this cut material should be moved below the terrace center line to help build the back slope of the terrace. Right hand then left hand gangs can be operated alternately for successive passes make on the same side of the terrace line.
2. Note the drawing below showing the cross section of a typical broad base terrace constructed as described above. Note that the greatest depth of cut below original ground level occurs at the channel center line. A greater number of passes are required to make the deeper cuts near the channel center line. This can be accomplished by repeating passes or by making successive passes closer together in that area. Note also that this drawing show must cut material coming from the upper side of the terrace.



CROSS SECTION OF COMPLETED BROAD BASE TERRACE

3. If a terrace channel will need cuts and fills to insure adequate grade to prevent runoff water from ponding in the channel, it is generally more efficient to make cuts and fills after building the terrace ridge and channel along the surveyed line. High areas in the channel should be cut to grade and fill material deposited in low areas of the terrace ridge. Sometimes, cutting and filling may be required on the terrace ridge to insure adequate terrace height to prevent topping by runoff. Grading should be done immediately following construction of the ridge in order to avoid damage from rainfall prior to completion.

MAINTENANCE

WARNING

Before making any adjustments, inspections, lubricating or repairing. Slowly lower the Terracing Plow until it is firmly in contact with the ground. Before dismounting from the tractor shut off the engine set the parking brake and remove the key.

CAUTION

Never clean, adjust or service when the Terracing Plow is in motion. Block up all elevated components to prevent accidental lowering or lower to rest on the ground when adjusting or repairing.

CAUTION

Always wear hand protection such as gloves when working around the disc blades to avoid coming in contact with sharp edges.



WARNING

Replace any missing, illegible or damaged safety decals.

1. Keep all bolts tight.
 - A. Check before placing in service.
 - B. Visually inspect all bolts daily.
 - C. Check after first 50 hours or one week's operation.
 - D. Check each season.
2. Do not run with loose disc blades. Keep gang bolts tight! Tighten gang bolts to 1200 ft./lbs. of torque.
3. Grease gang bearing and pivot bracket pins every week or 50 hours, under normal conditions, at the start of each season, and at the end of each season. Grease more often under extreme conditions such as in wet ground, during hot, dry weather or when operating at high speeds. Use good No. 2 gun grease (Lithium Base). Rotate gangs while greasing for best results.
4. Disc blade, bearing, and spool replacement.
 - A. Remove the nuts that hold the gang bearing housing trunnion clamps.
 - B. Remove clamps.
 - C. Raise the plow and roll the gang away from the frame.
 - D. Remove the gang nut lock plate.
 - E. Remove the gang hex nut from the end of the shaft.
 - F. Slide off the bearing, spools, spacers, and blades.
 - G. Avoid thread damage.
 - H. Tear the entire gang down and clean off all parts. Check disc axle for straightness. Bowed, bent or worn axles must be replaced.
 - I. Check spacer spools for damage caused by running plow with loose gangs or hitting underground obstructions. Replace spool if it is damaged.
 - J. Carefully check all end bells. The large end must contact the disc blade around the entire circumference of the end bell. The small end must be smooth and perpendicular to the axle. The end bells must be replaced if they are cracked or worn on the surface adjacent to the bearing.
 - K. Check all the bearings on the gang. Running a plow for one hour or more after bearing failure will seriously damage other bearings on the gang. This damaged bearing will then fail within a few hours after the failed bearing has been replaced. Continued operation with this failed bearing will damage the new bearing; thus, it will fail after a few hours of use. In most cases, it will be best to replace all bearings on a gang when it is torn down for repairs. An AMCO triple lip sealed, regreasable bearing should always be used for bearing replacement.

- L. To replace the bearing, the snap ring must be removed. The old bearing and washers should be pressed out of the housing. Clean and wash out old grease and carefully check the housing. Replace the housing if it is damaged. Press the washers and new bearing straight into the housing. Always press against the outer race of the bearing. **NEVER** press against the seal or inner race of the bearing. Check location of the grease hole in the outer race of the bearing. This hole must align with the grease groove in the bearing housing. Rotate the bearing in the housing after it is pressed in to be sure it turns freely. Install the snap ring in the housing.
5. **SCRAPER BLADES:** Bent scraper blades or legs should be replaced or straightened if possible. The blades can be replaced when they wear to the extent they are not performing properly. Keep the blades adjusted 1/4" from the disc blades. The scrapers can be adjusted by loosening the mounting bolt and sliding the scraper to the proper position, then tighten the mounting bolt. For all AMCO products equipped with scraper blades, do not allow the scraper blades to run on the end bells or spacer spools as immediate damage to both will occur.
6. When working with only one gang down, avoid letting the outside blades cut deeper than the inside blades, since this contributes to higher side draft on the tractor.
7. It is best to set a line of reference stakes parallel to the terrace prior to starting construction. These stakes should be placed a distance from the terrace center line which approximately equals the finished terrace width plus 10 feet. These stakes can be used to check for proper location of the terrace center line and the channel line during construction.

NOTE

Be sure on occasion to use the left hand gang in the opposite manner as described above so as not to wear one gang more than the other.

IMPORTANT

Be sure to keep up with the location of the terrace center line and channel line during construction.

STEP III. FINISH BROAD BASE TERRACE

In order to prepare the field for cropping and to insure proper erosion control, it will likely be important to perform minor operations with the Terracing Plow or other equipment. Using the terracing plow or a blade, it may be necessary to tie the terrace channel into a waterway or do other finishing operations. The Terracing Plow can be operated with both gangs down to "crown off" the center of the terrace ridge. A disc harrow or other field finishing tool may be used to smooth and level the completed terrace.

8. After cleaning, checking and replacing all damaged parts, the gang should be assembled. Be sure the grease fittings in the bearing housings face to the rear. Be sure the snap ring in the bearing housing is turned toward the convex (back) side of the disk blade. The 1-

1/2" gang bolt nut should be torqued to 1200 ft./lbs. The axle nut should be locked in place with the lock strap.

9. After the gang is assembled, it should be attached to the plow. The bearing risers should be carefully spaced to match the bearing housings. Poorly spaced bearing risers will overload the bearings and cause premature failure. The gang should be rotated 4 or 5 complete revolutions to be sure that all parts are aligned and the gang turns freely.
10. The bearings should normally be greased each week or every 50 hours of use with a good grade of clean, No. 2 lithium soap base grease. Grease more often under extreme conditions such as in wet ground, during hot, dry weather or when operating at high speeds.

It is essential that gang bolts be kept tight to prevent axle bending, blade breakage, spacer spool breakage and damage to other gang parts. Gang parts tend to wear on a bevel when the plow is operated with a loose gang bolt. This reduces the area of contact between mating gang parts. Therefore, it is often difficult to keep a gang bolt tight if it has been operated in a loose condition.

After such a gang bolt has been properly torqued, it should be re-torqued after about 30 minutes of operation, again after 4 or 5 hours of operation and again after 8 to 10 hours of use. This will assure that proper gang bolt tension is maintained while the mating components are reseating. If the gang bolt will not stay tight, the gang should be completely disassembled and all parts carefully inspected. All damaged parts should be replaced before reassembling the gang.

HYDRAULIC SYSTEM TROUBLE SHOOTING



WARNING

Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks-never use hands or parts of the body.



CAUTION

Relieve hydraulic pressure before disconnecting circuits. When reassembling make absolutely certain that all connections are tight.



CAUTION

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not given at once.

When first hooking up the hydraulic hoses to the tractor, the hydraulic cylinder rods should be fully extended, and the hydraulic valve on the tractor should be held open for at least one minute. This

operation will fill the hydraulic cylinders and hoses with hydraulic fluid. Check the tractor hydraulic fluid level afterward, since the terrace plow cylinders and hoses hold three quarts of fluid. Retract and extend the cylinders several times to purge the system of air.

Should the cylinders fail to operate together, check the hose installation as shown on page 21.

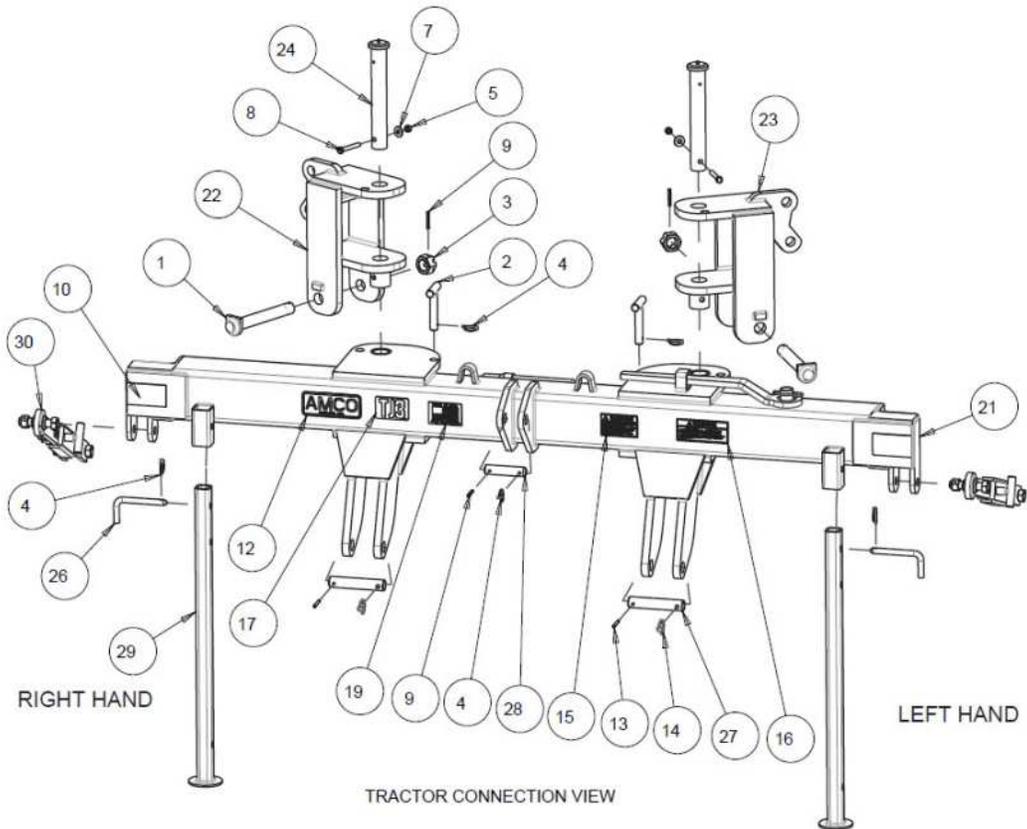
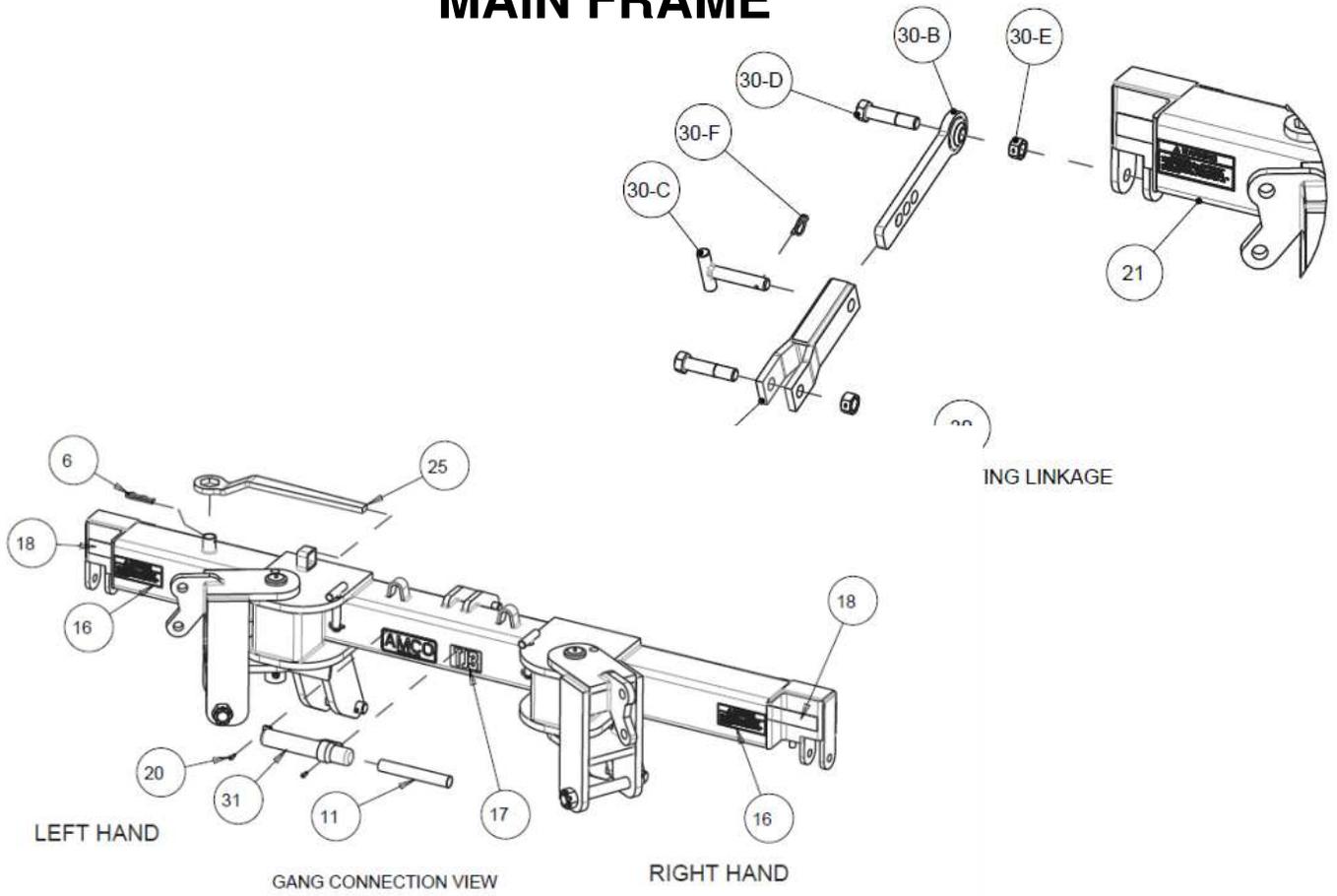
It may be necessary to rephrase the hydraulic cylinders during field use. The two cylinders can get out of phase if fluid leaks out of the system, and the gangs will not work together. Should this occur, fully extend or fully retract the cylinders holding the tractor hydraulic valve open for a few seconds. This will allow additional fluid to pass through the system replacing any fluid that may have leaked out. By occasionally, either fully retracting or fully extending the cylinders during field use, the system will be rephrased continually thereby assuring that the gangs work together.

TERRACING PLOW COMPONENTS AND PARTS LIST

**TJ3 TERRACING PLOW
MAIN FRAME**

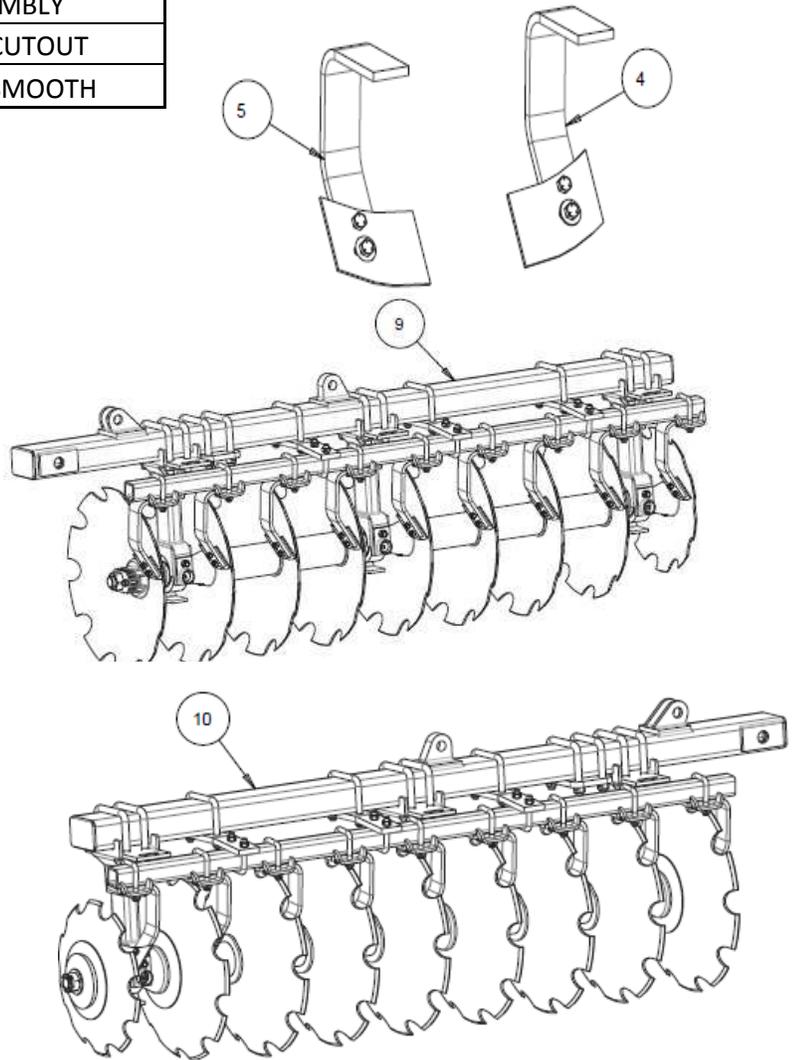
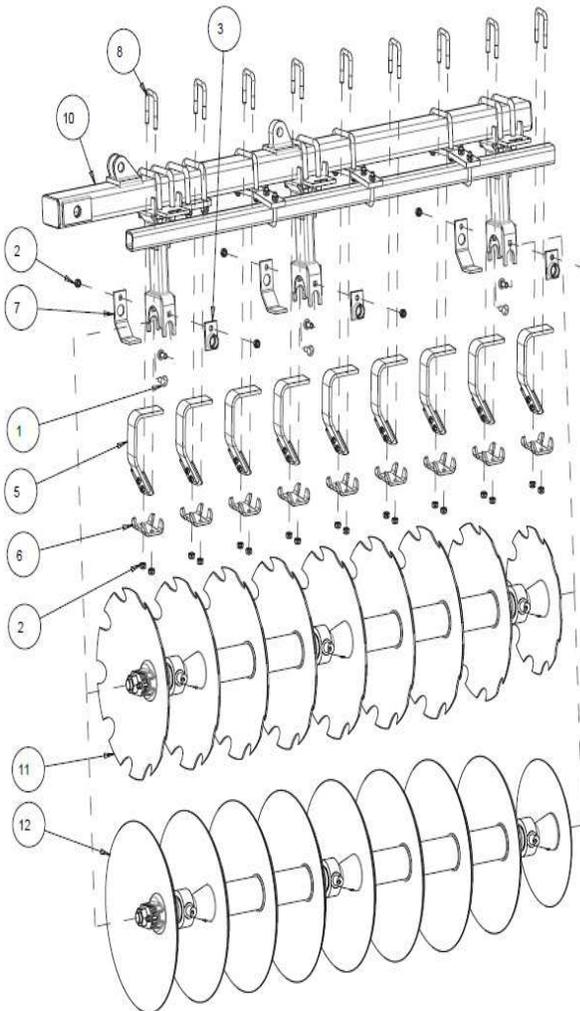
ITEM NO.	PART NO.	DESCRIPTION	QTY
1	0545	PIVOT PIN - WELDMENT	2
2	0871	TRANSPORT PIN - WELDMENT	2
3	10232	1 1/2-6 SLOTTED NUT	2
4	10317	KLIK PIN - 1/4"	5
5	10395	1/2-13 LOCK HEX NUT	2
6	10803	HAIR PIN #19	1
7	10832	1/2 FLAT WASHER - 12GA	2
8	10833	1/2-13 X 3.50 BOLT GRD 5	2
9	10910	5/16 X 2.25 ROLL PIN	3
10	11118	DECAL - AMBER REFLECTOR	2
11	11432	OPERATOR'S MANUAL & PARTS CAT.	1
12	11465	DECAL - "AMCO" LOGO	2
13	11659	5/16 X 2.50 ROLL PIN	2
14	11697	KLIK PIN - 7/16"	2
15	11741	DECAL - "WARNING"	1
16	11743	DECAL - "WARNING"	3
17	11770	DECAL - "TJ3"	2
18	12541	DECAL - RED REFLECTOR	2
19	19021	DECAL - "MADE IN THE USA"	1
20	19028	1/4" SELF-TAPPING SCREW	2
21	20171	MAIN FRAME - WELDMENT	1
22	20178-A	PIVOT BRACKET, RH - WELDMENT	1
23	20179-A	PIVOT BRACKET, LH - WELDMENT	1
24	20588	PIN - WELDMENT & ASY	2
25	100134	NUT WRENCH	1
26	100683	LOCK PIN	2
27	101380	PIN, LOWER HITCH	2
28	101381	PIN, TOP HITCH	1
29	20166A	PARKING STAND - WELDMENT	2
30	AE-05-0001	ANGLE ADJUSTING LINKAGE ASY	2
30-A	20172	OUTER SLIDE - WELDMENT	1
30-B	20173	ADJUSTING SLIDE - WELDMENT	1
30-C	0871	TRANSPORT PIN - WELDMENT	1
30-D	10228	1-8 X 4.50 BOLT GRD 5	2
30-E	10868	1-8 LOCK HEX NUT	2
30-F	10317	KLIK PIN - 1/4"	1
31	MT-01-0001	MANUAL TUBE & WARRANTY	1

TJ3 TERRACING PLOW MAIN FRAME



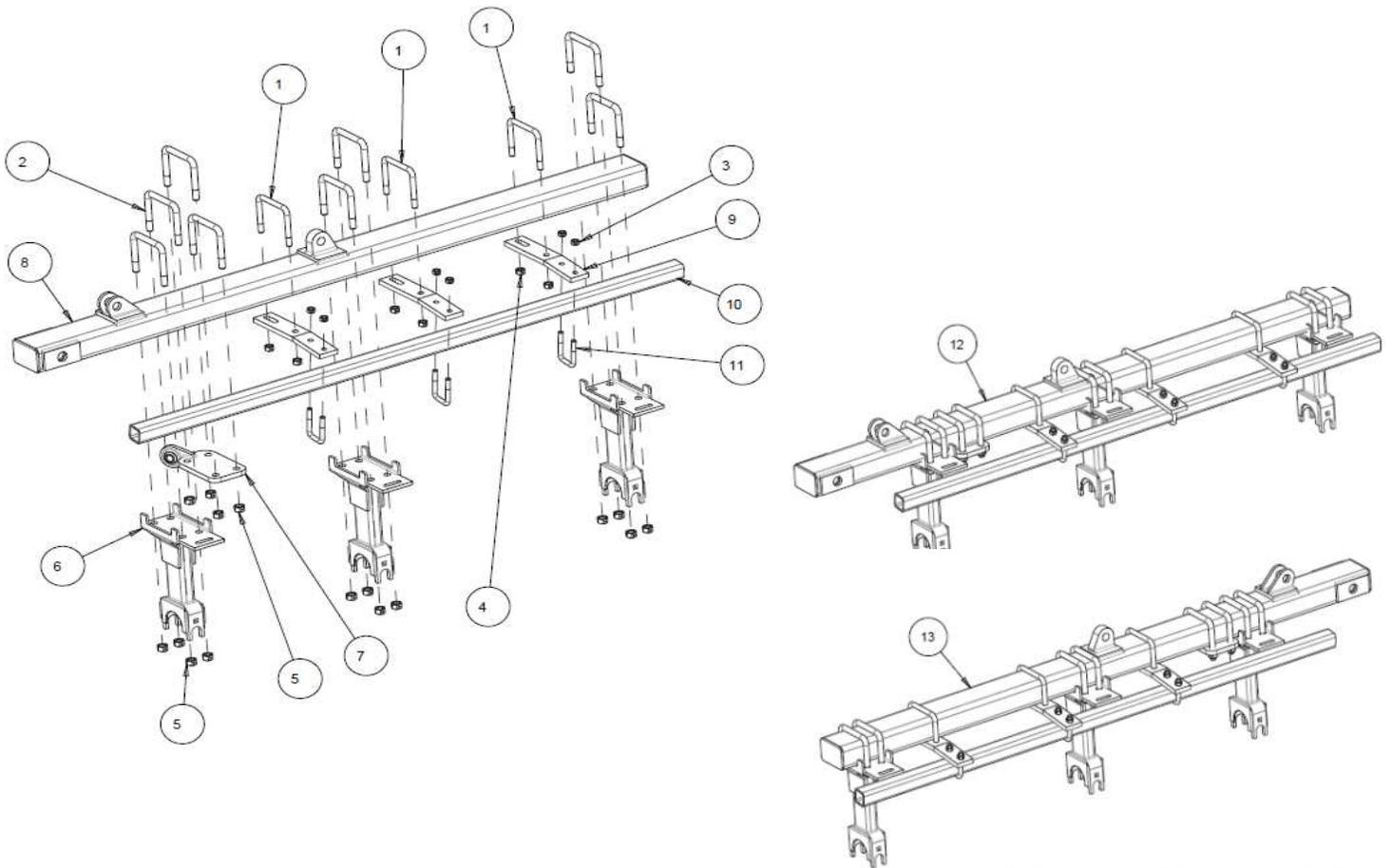
**TJ3 TERRACING PLOW
GANG & FRAME SETS
(LH/RH)**

ITEM NO.	PART NO.	DESCRIPTION	QTY (RH)	QTY (LH)
1	10135	5/8-11 X 1.750 CARRIAGE BOLT	6	6
2	10299	5/8-11 LOCK HEX NUT	24	24
3	20579	GREASE ZERK GUARD - WELDMENT	3	3
4	21040	SCRAPER - RH	0	9
5	21041	SCRAPER - LH	9	0
6	101055	CLAMP BRACKET	9	9
7	102489	WEAR GUARD	3	3
8	100002A	5/8-11 U-BOLT	9	9
9		GANG & FRAME RH ASSEMBLY		
10		GANG & FRAME LH ASSEMBLY		
11		GANG SET 9-BLADE 26" CUTOUT		
12		GANG SET 9-BLADE 26" SMOOTH		



TJ3 TERRACING PLOW GANG FRAME SETS (LH/RH)

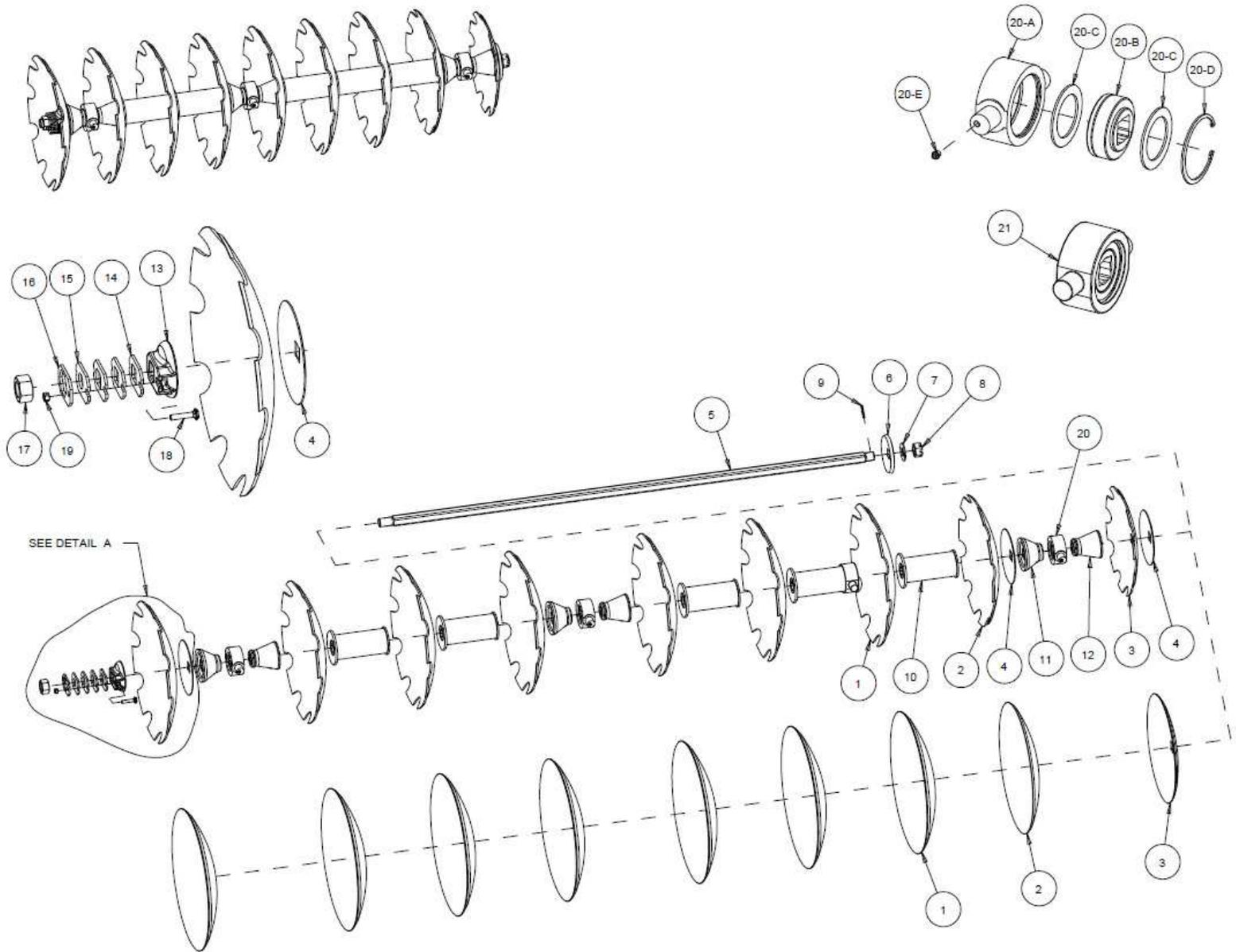
ITEM NO.	PART NO.	DESCRIPTION	QTY (LH/RH)
1	9212	3/4-10 U-BOLT	3
2	9752	7/8-9 U-BOLT	8
3	10299	5/8-11 LOCK HEX NUT	6
4	10300	3/4-10 LOCK HEX NUT - TOP	6
5	10396	7/8-9 LOCK NUT - TOP	16
6	20070	BEARING RISER	3
7	20169	ANCHOR BRACKET	1
8	20352	GANG FRAME - WELDMENT	1
9	103374	SCRAPER BAR SUPPORT	3
10	103446	SCRAPER BAR 2-1/2 SQ. TUBE	1
11	100002A	5/8-11 U-BOLT	3
12		GANG FRAME RH ASSEMBLY	
13		GANG FRAME LH ASSEMBLY	



TJ3 TERRACING PLOW 26" BLADES

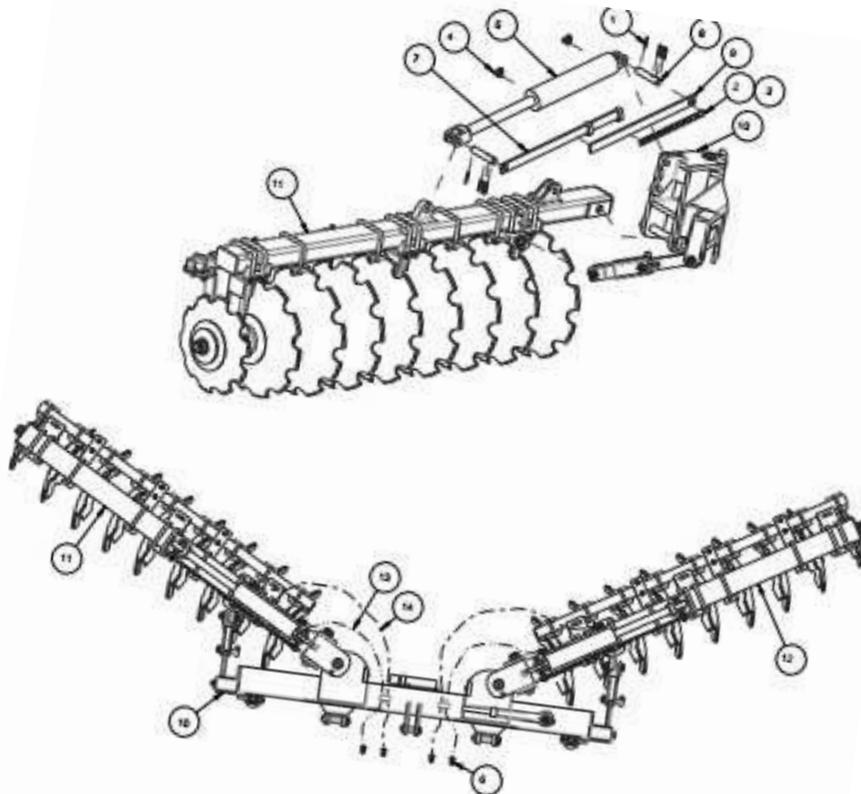
		9 BLADE GANG SETS	SMOOTH BLADES	CUTOUT BLADES
ITEM	PART NO.	DESCRIPTION	QTY	QTY
1	3263	26 X 1/4 PLAIN BLADE, 1-1/2 AXLE	7	
1	2456	26 X 1/4 C.O. BLADE, 1-1/2 AXLE		7
2	3255	24 X 1/4 PLAIN BLADE, 1-1/2 AXLE	1	
2	3250	24 X 1/4 C.O. BLADE, 1-1/2 AXLE		1
3	11588	20 X 1/4 PLAIN BLADE, 1-1/2 AXLE	1	
3	11589	20 X 1/4 C.O. BLADE, 1-1/2 AXLE		1
4	3278	10" PLAIN BLADE, 1-1/2 AXLE	3	3
5	9454	1.50 x 92.50 SQUARE AXLE	1	1
6	2404	BUMBER WASHER	1	1
7	10872	1-3/8" FLAT WASHER	1	1
8	10226	1 1/2-12 SLOTTED NUT	1	1
9	10910	5/16 X 2 1/4 ROLL PIN	1	1
10	1296	SPACER SPOOL - WELDMENT (10.5")	5	5
11	17006	END BELL, LARGE	3	3
12	17007	END BELL, SMALL	3	3
13	1222A	END WASHER	1	1
14	100099	SPACER PLATE (QTY MAY VARY PER ASM)	3	3
15	100098	BEARING PLATE	1	1
16	5622A	LOCK PLATE, NUT	1	1
17	10489	1 1/2-12 NF GRADE 8 HEX NUT	1	1
18	10238	1/2 X 2.50 CARRIAGE BOLT	1	1
19	10395	1/2-13 LOCK HEX NUT	1	1
20	FB-09-0015	BEARING HOUSING ASSEMBLY	3	3
20-A	16003	HOUSING - BEARING (1PC)	3	3
20-B	11503	BEARING, 1 1/2 INCH SQUARE BORE (1PC)	3	3
20-C	100104	WASHER (2PCS)	6	6
20-D	11064	SNAP RING (1PC)	3	3
20-E	12384	1/8 NPT GREASE FITTING, STRT. (1PC)	3	3
21	FB-09-0021	BEARING HOUSING ASSEMBLY (MAINTENACE FREE)	3	3

TERRACING PLOW 26" BLADES



TJ3 TERRACING PLOW HYDRAULICS

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	10910	5/16 X 2-1/4 ROLL PIN	16
2	11695	TILT INDICATOR DECAL, RH	1
3	11696	TILT INDICATOR DECAL, LH	1
4	12180	6901-08-08 #8 ORB FEM PIPE SWVL 90	4
5	2204	4 X 16 CYLINDER, HYDRAULIC	2
6	19010	1/2" MALE QUICK DISCONNECT	4
7	20175	INDICATOR - WELDMENT	2
8	101379	PIN - SPECIAL	4
9	101382	INDICATOR	2
10		MAIN FRAME ASSEMBLY	1
11		GANG & FRAME ASSEMBLY - RH	1
12		GANG & FRAME ASSEMBLY - LH	1
13	10925	3/8 X 96" HOSE - 1/2 MALE NPT ENDS	2
14	10927	3/8 X 108" HOSE - 1/2 MALE NPT ENDS	2



TROUBLE SHOOTING GUIDE

Problem	Solution
Terrace plow is pulling to one side (Manual Terracing Plow with ratchets)	One side of the Terracing Plow is set deeper than the other. Find level ground and make sure both sides match evenly.
Terrace plow is pulling to one side (Hydraulic)	Fully raise 3-point hitch. Then fully lower and raise your level plow arm to reset your phasing cylinder - repeat 3 times.
Terrace plow is not holding down pressure	Fully raise then fully lower your phasing cylinder – repeat 3 times. Inspect for hydraulic leaks If leads are not found unplug hydraulic lines from tractor to determine if the problem is the tractor or the plow If problem persists you could have air in your hydraulic line If the problem is still present then you will need to determine what cylinder is not holding pressure