

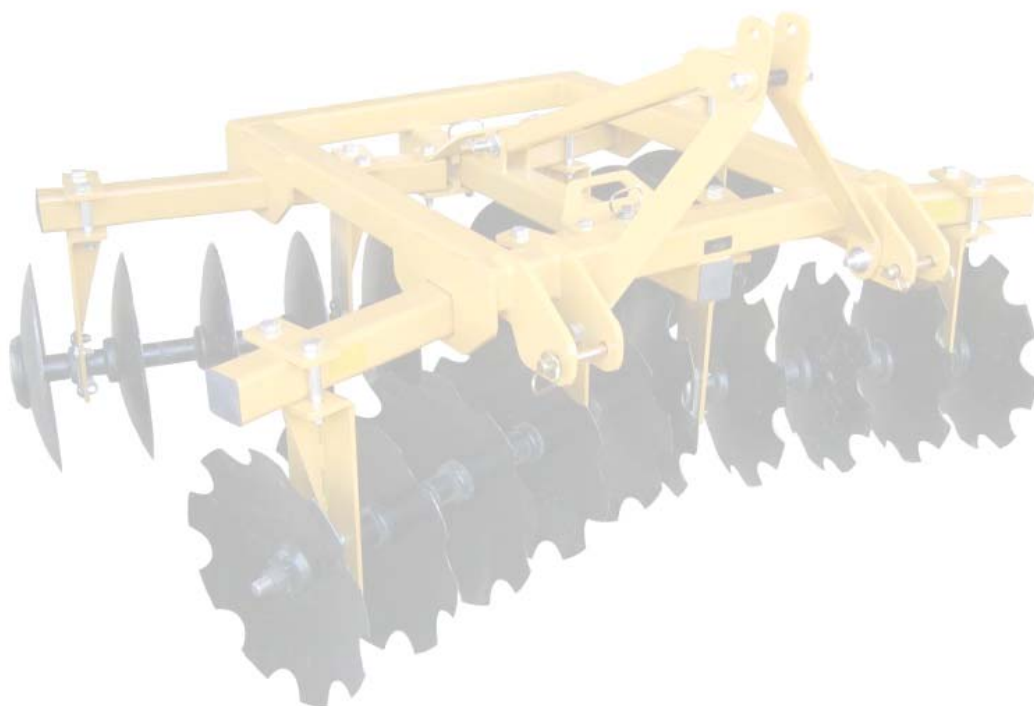


## Operation and Service Manual

### Tandem Disc Harrow

for models:

DH30-60, DH30-72 & DH30-84



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The purpose of this manual is to assist you in operating and maintaining your implement for years of service. The information and instructions in this manual may be general in nature do to unknown and varying field conditions and operating conditions, However, through experience and these instructions you should be able to develop procedures suitable to your situation.

Throughout this manual, references are made to the right and left direction. These are determined by standing behind the equipment facing the direction of forward travel. Blade rotation is counterclockwise as viewed from the top of the mower.

## General Safety Information

Note the use of the signal words Danger, Warning and Caution with the safety messages. The appropriate signal word each has been selected using the following guidelines:



### **Danger!**

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components, which, for functional purposes, cannot be guarded.

### **Warning!**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

### **Caution!**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Safety of the operator is one of the main concerns when designing and developing a new piece of equipment. You, the operator, can avoid many accidents by observing the following precautions in this section.

- Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing.
- Do not attempt to operate this equipment under the influence of drugs or alcohol.
- Review the safety instructions with all users.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with the equipment and its operation. Do not allow persons to operate this unit until they have developed understanding of the safety precautions and of how it works.

To prevent injury or death, use a tractor equipped with a Roll Over Protective System (POPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment, Observe all safety signs and practice instructions on them.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – Don't try it.

Remember - Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local dealer or manufacturer.

If you have questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Cammond Industries.



**Warning!**

For non-agricultural use OSHA, ASAE, SAE and ANSI standards require the use of appropriate protective guards at all times. The manufacturer strongly recommends the use of such guards for agricultural uses as well, to reduce the risk of property damage, serious bodily injury or even death from objects thrown out by or from contact with the cutting blades.

## Preparation

Before Operation - Carefully study and understand this manual.

- Do not wear loose-fitting clothing, which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable protective hearing and eye protection be worn.
- The operator may come in contact with certain materials, which may require specific safety equipment, relative to the handling of such materials.
- Keep wheel lug nuts or bolts tightened to specific torque.
- Assure that agricultural implement tires are evenly inflated.
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the unit until you are sure that the area is clear, especially children and animals.
- Because it is possible that this equipment may be used in dry areas or in the presence of combustibles, special precautions should be taken to prevent fires and fire-fighting equipment should be readily available.
- Clear area of debris.
- Never permit any person, other than the operator, to ride on board the tractor at any time.
- DO NOT allow riders on implement at any time. Operate only in daylight or good artificial light. ALWAYS wear relatively tight and belted clothing when operating implement. Loose clothing should not be worn, as it could get caught in the moving parts or controls.
  
- A minimum of 20% of the tractor and equipment weight must be on the tractors front wheels with the box scraper in transport position. Without this weight, the tractor could tip over causing personal injury or death. The weight may be attained with front wheel weights, ballast in tires or front tractor weights. When attaining the minimum 20% weight on the front wheels, you must not exceed the Roll Over Protection Structure (ROPS) weight certification. Weigh tractor and equipment. Do not guess or estimate.

Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment. Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operations before using

## Attaching Unit

- With the hitch in the lowered position, adjust lower link arms until lower link ball ends are approximately 10" from ground.
- Attach stabilizer chains to lower pin position at tractor. Do not tighten.
- Attach disc to lower links of hitch (inside pins for CAT I, outside pins for CAT II) and secure with spring pins.
- Connect upper link of tractor hitch to the mounting holes on upper part of mainframe. Secure with hitch pin and spring pin.
- When using a tandem disc, place the hitch in "float" and adjust upper link so that the front and rear gangs are on the ground.
- Raise disc with lift and adjust stabilizer chains to prevent side sway in the transport position.

## Operating Safety

- NO PASSENGERS ALLOWED- Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Practice raising and lowering the disc when learning to operate the Tandem disc. Become familiar with controls before operating.
- If a safety shield or guard is removed for any reason, it must be replaced before the machine is again operated.
- Always operate disc with hydraulic control lever in lowered "float" position.
- Do not operate near the edge of drop-offs or banks.
- Do not operate at an angle on steep slopes. Drive up or down but not across. **Always lift disc before turning at ends of field.**
- Make allowances for increased length and weight of tractor during operation and moving.
- Remove all sticks, stones, roots and wires from working area before starting. Take care not to contact overhead obstructions during operation.
- Never operate controls from the ground. Operate only from the operators seat to prevent unexpected movement that can lead to crushing between frame members.
- Start operation at a slower comfortable speed; Increase tractor speed as clods reduce size.
- Never allow disc to be left in the "up" position when unattended.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it's moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and remove the ignition key.
- Be especially observant of the terrain. Always inspect the area prior to operation.
- Do not operate near the edge of drop offs or banks.
- Maneuver the equipment at safe speeds.
- Do not walk or work under raised components unless securely positioned and blocked.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside or unit.
- Never leave running equipment attachments unattended.

**Prior to use, it is recommended that the following items be checked:**

- Check all nuts, bolts and other fasteners.
- Tighten to their specified torque level.
- Clean the unit of dirt and trash to minimize rusting and wear.
- Inspect all bearings for wear. Replace any worn out bearings.
- Replace any decals that are worn or damaged.
- Use only an Agricultural tractor of the appropriate horsepower on the machine.
- Check that the Disc is properly attached to the tractor.
- Be sure extra weights are mounted on the front end of the tractor to prevent wheels from coming off the ground when starting suddenly with a load.
- Check all parts for damage. Repair or replace as required
- Check for entangled material. Remove this material.



**IMPORTANT:**

Torque disc gang axle nuts to 250 ft. lbs. after the first initial 5 hours of operation. Failure to tighten the axle nuts may result in the nut becoming loose or lost resulting in possible damage to the axle and/or disc gang.

## Operating Instructions

Disc should run level when 3-point hitch is readjusted and disc blades are running between 3" - 5" deep. Depth of cut will vary depending on soil type, moisture content and weight of implement. Start operation at a slower comfortable speed; increase tractor speed as clods reduce size. The types of soil, moisture and weight on disc will determine how many times you will have to go back and forth to get the kind of seed bed desired. For harder or dryer soils, additional weight may be added to improve penetration. Always operate disc with hydraulic control lever in lowered "float" position. Ridging, sometimes caused by rear outer discs, can be reduced or eliminated by changing tractor speed, shortening upper link, or a combination of both. **Always lift disc before turning at ends of field.**

- *Be careful when working with Disc blades, as the edges are sharp. Wear gloves when working around disc blades.*
- After initial adjustments have been made and tractor is hooked up to Disc, you are ready to start.
- Lower disc to ground and start moving forward. Your travel speeds will be determined by soil conditions. You may find you want more or less angle on the discs to do the job. Refer to Disc Gang Angle Adjustment.
- When turning, always lift implement up out of ground.



### CAUTION!

*Damage to the disc can occur if it is not lifted out of the ground before turning.*

- Do not operate in reverse (travel backwards). The disc is designed for working the soil while traveling forward only. Damage to the implement may occur. Recommended procedure for corners or tight places is:
  - Lift unit up
  - Back up into corner or other tight areas
  - Lower disc to ground and proceed with forward
- Do not cross a ditch at a 90° angle (straight on). Damage to the disc and/or tractor may occur while crossing at a 90° angle. Always cross a ditch on a diagonal.

## Disc Angle Adjustment

- To adjust the gang angle cut, raise the disc a few inches off the ground and block it up.
- Loosen the hex head bolts in each disc gang mounting bar, where it mounts to the main frame.
- Remove the bolts from the bar and move the gang to the front or back. Re-install the bolts and tighten.

**NOTE:** The more angle you have, the more aggressive the cut will be and the more horsepower will be required to pull your unit.

- For better ground finish, angle the rear gangs at a lesser angle than the front.

**NOTE:** The rear discs should be centered between the front discs for optimum performance.

## Maintenance Safety

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and trouble-free use. Like all mechanical products, it will require cleaning and upkeep. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

Before working on this machine, stop the towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.

Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.

- Always use a safety support to block the wheels.
- Always use the proper tools or equipment for the job at hand.
- Use extreme caution when making adjustments.
- Never use your hand to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.
- Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by the escaping hydraulic fluid, see a doctor at once. Without immediate medical treatment, serious infection can occur.
- After servicing, be sure all tools, parts and service equipment are removed.
- Do not allow grease or oil to build up on any step or platform.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment

## Servicing Instructions

- Inspect your implement periodically and replace any worn or broken parts in order to have it ready for use when needed.
- Store the implement out of the weather when it is not in use. This helps prevent rusting of the blades and other components.
- Thoroughly wash the machine using a pressure washer to remove all the dirt, mud, debris and residue.
- Inspect the disc and frame for damage or entangled material. Repair or replace damaged parts.
- Inspect all bearings for wear. Replace any worn out bearings.
- There are no parts on the disc that requires lubrication.

## Shut Down/Removal and Storage

Following operation, or when unhitching, stop the tractor or towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.

### Removal

- Lower the implement to the ground with 3-point lift arm in “position control”.
- Remove top link from top hitch mount, disconnect hitch arms from bottom clevis pins and pull tractor away from implement.

### Shut Down and Storage

- Store the unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock for long periods of time.
- Do not permit children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Store the unit in a dry, level area. Support the frame with planks or blocks if needed.
- Wheel chocks may be needed to prevent unit from rolling.

## Highway and Transportation Operations

- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use appropriate accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.
- Various safety lights and devices are available from your dealer.

# CAMMOND INDUSTRIES PRODUCT WARRANTY

Cammond Industries warrants its new equipment to be free of defects in material and workmanship at the time of delivery to the first retail purchaser. All equipment is warranted for six (6) months from the date of purchase by the first retail customer. Cammond will repair or replace, at its option, without charge for parts and labor, any defective part of the equipment during the six (6) months. All warranty work will be done by an authorized dealer or at the factory. Any work performed by the dealer must be authorized by the factory and charges will be determined based on the factory-approved rate. This warranty does not include transportation of equipment to the dealer or the factory, or the removal or replacement of any products attached to Cammond equipment. It is the responsibility of the owner, at the owner's expense, to transport the equipment to the service shop or an authorized dealer or alternatively to reimburse the dealer for any travel or transportation expense involved in fulfilling this warranty.

EXCEPTIONS TO THIS WARRANTY: This warranty will not apply in the following cases:

1. Warranty registration card is not completed and returned to Cammond Industries, 902 Arlington Center, PMB 225, Ada, OK. 74820
2. Normal wear of components and structure.
3. Damage caused by accident, fire, flood, abuse, negligence, alterations, lack of performance or lack of required maintenance.
4. Replacement of maintenance items such as hoses, hydraulic cylinders, etc. is not covered
5. Any unauthorized alteration of equipment or use of unauthorized parts.
6. Use of equipment in rental fleets.

This warranty is in lieu of all warranties of merchant ability, fitness for a purpose or other representations, warranties on conditions, expressed or implied. The remedies of the owner set forth herein are exclusive. Cammond Industries neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the sale of covered equipment. Correction of defects in the manner and for the applicable period of time provided above will constitute fulfillment of all responsibilities of Cammond Industries to the owner and Cammond will not be liable for negligence, under contract or in any other manner with respect to such equipment. **IN NO EVENT WILL THE OWNER BE ENTITLED TO RECOVER FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES SUCH AS LOSS OF CROPS, PROFITS, REVENUE OR RENTAL COST.**

If you have any warranty claim contact your dealer within 30 days of the occurrence. Your dealer will contact Cammond Industries and together they will determine the manner that it will be handled. DO NOT HAVE UNAUTHORIZED REPAIRS COMPLETED AND THEN CLAIM A WARRANTY REIMBURSEMENT.

*If equipment has been altered in anyway from original design, Cammond does not accept any liability for warranty.*