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OPERATOR'S MANUAL AB0311

ANGLE BROOM FOR SKID STEER LOADERS



DATE PURCHASED _____

DATE MFG. _____

MODEL NO. _____

SERIAL NO. _____

HYDRAULIC SPECIFICATIONS

Reversible Parker Motor 12 to 28 gpm - 3,000 PSI

Minimum Hydraulic Requirements 12 gpm @ 2000 PSI

DO NOT EXCEED 28 GALLONS PER MINUTE!!

CAUTION: NEVER store angle broom with weight on bristles. This will cause warping of bristles. **ALWAYS** store on stands keeping broom bristles off the ground.

NEVER operate an angle broom on a “high-flow” unless the broom is equipped with a “high-flow” motor. Motor failure can occur if such use is performed. Star Industries is **NOT RESPONSIBLE** for damage incurred to the hydraulic motor due to “high-flow” usage.

**ANGLE BROOM
OWNER'S MANUAL**

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Dear Customer,

Thank you and congratulations on the purchase of your new Star Industries Angle Broom! We strive to manufacture the best hydraulic angle broom for skid steer loaders on the market today. No matter which unit that you purchased, you can rest assured that it was manufactured to rigid quality standards, utilizing the highest technology in hydraulic system components that are available. All of our units are powered by a reversible Parker motor and have a 26" dia. replaceable broom. Our brooms are designed and manufactured to sweep away dirt, light snow, and other debris. When attached to your skid steer loader, it is highly maneuverable for close sweeping in tight areas.

Please take the time to thoroughly read this informative owner's manual. Be sure to pay particularly close attention to the safety portion of this manual. Remember, the safety guidelines that are mentioned in this manual are not only for your safety, but also for the safety of others. Only with a complete understanding of your broom will you be able to operate it to its full potential.

Thanks again for your purchase. As always, if you have any questions about your Star Industries Angle Broom, or would like to give us feedback, feel free to contact us. We will be happy to help you in any way that we can.

Sincerely,

Alec Dyer
Pres.



Star Industries Limited Warranty

Star Products are warranted to the original purchaser against defective workmanship and/or materials (when properly installed, used, and maintained) for a period as specified below from date of delivery to the customer by an authorized Star Dealer or direct from Star Industries. This warranty does not cover misuse, abuse, normal wear and tear, or accidental damage.

5 year Warranty: All Star products except as noted below (Includes HD Auger Drives and most non-hydraulic products)

2 year Warranty: Medium Duty Auger Drives

1 year Warranty: Auger Bits and Auger Accessories (excludes auger drives), Crane Forks, Grapples, 4 in 1 Buckets, Angle Broom, Mad Beaver Brush Cutters, Big Mouth Tree Shears, Self Dumping Hoppers, Replacement Forks, and Over the Bucket Forks.

6 months Warranty: Concrete Mixers

WARRANTY CLAIM NOTIFICATION: Product defects should be reported to the Star dealer from whom the product was purchased or to Star Industries in writing promptly after discovery. Preferably photographs showing the defect should also be provided along with a written report of circumstances involved. Warranty claims not made within 30 days after discovery of the defect shall be null and void.

WARRANTY DETERMINATION: If a warranty claim is found worthy and made within the warranty period we reserve the right at our discretion to repair existing defects or to replace it with the same or current model free of charge or to issue a credit for the reasonable cost of repair or take possession of the equipment and issue reimbursement for the calculated value.

WARRANTY PROCEDURE: Upon notification, Star Industries will determine if the product will need to be returned to Star Industries for inspection or repair or if the Star dealer or other entity can be authorized to make the repair at his location or if circumstances dictate other solutions. Dealer or other entity repairs must have prior written authorization. Reimbursement will be at the current “Star Warranty Labor Rate” and will not include reimbursement for offsite travel. A Warranty Claim Form must be submitted within 45 days of warranty repair authorization to receive credit for repair.

A return authorization number must be obtained from Star Industries before a product can be returned for inspection and/or warranty and that number must appear on the return shipping label. Upon inspection, Star Industries will determine if the product is defective and if so, whether it will be repaired or replaced. Repair or replacement is at the discretion of Star Industries. Transportation charges to Star Industries are not covered under the warranty and must be prepaid by dealer or customer unless it is within the first two years of warranty. In which case, if evidence acceptable to Star Industries, is provided that the product is defective and the return is from within the continental United States or Canada, Star will arrange for return shipment at Star Industries’ expense. Products found to be defective within the initial two year period and returned to Star Industries for repair or replacement will be returned to the dealer or customer freight prepaid providing it is within the continental United States or Canada. Warranted products to be shipped outside the United States or Canada and those warranted after the initial 2 years will be shipped freight collect. Unwarrantable products will be returned freight collect at the request of the dealer or customer, otherwise they will be destroyed.

LIMITATION OF DAMAGES: Star's obligation under this warranty shall not include costs of installation, duty, taxes or any other charges whatsoever or any liability for direct, indirect, incidental or consequential damages or delay. Star's liability for any and all losses and damage to purchaser resulting from any cause whatsoever, including negligence or breach of form of warranty, express or implied, by Star, alleged damage for defective goods, irrespective of whether such defects are discoverable or latent, shall in no event exceed the purchase price of the particular goods. Products repaired or replaced under this warranty are warranted only for the remainder of the original warranty. Any improper use including operation after discovery of defective or worn parts not approved by Star or any alteration or repair by others in such manner as in Star's judgment affects the product materially and adversely shall void this warranty.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES (WHETHER WRITTEN, ORAL OR IMPLIED) INCLUDING WARRANTIES OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

IMPORTANT SAFETY PRECAUTIONS

GENERAL WARNINGS

- 1 **NEVER** operate this or any other equipment under the influence of drugs or alcohol.
- 2 **NEVER** carry passengers on an angle broom.
- 3 **NEVER** leave the angle broom unattended in a raised position.
- 4 **ALWAYS** stop and inspect both the skid steer loader and broom for damage after striking a foreign object. Any damage should be repaired prior to restarting the skid steer loader engine and resuming sweeping.
- 5 Sweep only in daylight or well-lit artificial light.
- 6 Keep all nuts, bolts and screws tight and be sure the equipment is in safe operating condition and check the broom mounting bolts for proper tightness at frequent intervals.
- 7 After attaching to your skid steer loader, visually inspect your lock-on pins to ensure that the angle broom is locked onto your skid steer loader. Remember, the angle broom is made of all steel components and rotating parts that could be dangerous if not properly attached.
- 8 When working under the cowling of the angle broom, always securely block it up to reduce the risk of falling. (Use stands attached to broom.)
- 9 Reduce speeds on slopes and make turns gradually to prevent tipping or loss of control. Exercise extreme caution while making turns on slopes.
- 10 Stay alert for holes or drop-offs on all terrains.
- 11 **NEVER** make sudden turns
- 12 **NEVER** operate your angle broom raised more than two (2) feet.
- 13 **ALWAYS** operate with safety in mind.
- 14 **Never Allow Personnel To Stand In Front Of An Operating Broom Or In The Path Of The Flying Debris.**
- 15 **KEEP CHILDREN AWAY FROM THE SWEEPING AREA AT ALL TIMES.**
- 16 **NEVER** store on ground with weight on broom. This will cause warping of bristles. **ALWAYS** store on stands keeping broom bristles off ground.

DEBRIS DISCHARGE WARNINGS

- 1 Angle Brooms discharge debris out the front of the machine. When sweeping with the angle broom, **NEVER** discharge material toward bystanders. All bystanders must be **AT LEAST** 75 feet away when operating the angle broom. **NEVER** allow bystanders near the machine while it is in operation.
- 2 **ALWAYS** clear the sweeping area of objects (bottles, rocks, fencing, wire, etc.) that may be picked up and thrown.
- 3 When sweeping with the angle broom **ALWAYS** use a shatterproof cab door or the 3/8" thick Poly Carbonate safety door optionally available from Star Industries. The door is used not only to protect the operator from flying debris, but also from overhanging or protruding objects (tree limbs, rebar, vines, etc.) from entering the cab and causing operator injury.

IMPORTANT SAFETY PRECAUTIONS

ROTATING PARTS WARNINGS

- 4 **ALWAYS** disengage power to the angle broom and shut the skid steer loader engine off prior to leaving the operator's cab or performing any inspection or maintenance to either the angle broom or the skid steer loader.
- 5 **NEVER** place hands or feet under the angle broom cowling or near the broom system while the unit is in operation.
- 6 **NEVER** articulate (roll) the cowling downward to a degree that exposes the operator to the broom system.

HYDRAULIC SYSTEM WARNINGS

- 1 **ALWAYS** release the pressure on the hydraulic system of the broom prior to removing the attachment from the skid steer loader or working on any part of the hydraulic system. Hydraulic hoses and components operate under extreme pressure and heat. A small stream of fluid from a pinhole leak in a hydraulic hose can penetrate the skin and/or cause burns. Whenever hydraulic fluid is injected into the body, seek medical attention at once to reduce chances of a dangerous infection. **ALWAYS** wash skin with soap and water after contact with hydraulic fluid, as it is an irritant to skin and eyes.
- 2 Star angle brooms have been designed to reduce the likelihood of hydraulic system leakage. Each and every hydraulic system is checked prior to shipment. However, over time, any hydraulic system may develop fluid leaks. Very small leaks may produce high-pressure discharge flows capable of causing injury should skin come in contact with such discharge.
- 3 Leaking fluid can make the cowling and ground surfaces very slippery, causing difficulty in using tools and also increasing the possibility of slips and falls. **ALWAYS** wipe away all fluid that may have leaked during maintenance.
- 4 **NEVER** operate an angle broom on "high-flow" unless the broom is equipped with a "high-flow" motor. Motor failure can occur if such use is performed. Star Industries is **NOT RESPONSIBLE** for damage incurred to the hydraulic motor due to "high-flow" usage. Please refer to the front cover of the manual for the maximum allowable flow for your Star Industries Angle Broom.

OPERATING INSTRUCTIONS

ATTACHMENT OF MACHINE

The installation of your Star Industries angle broom is the same for any other powered attachment for your skid steer loader:

1. Pull up to the angle broom and connect it to your skid steer loader.
2. Secure the lock down lever or levers.
3. Connect the hydraulic hoses from the angle broom to your machine. The hoses provided are equipped with quick-disconnect fittings (both male and female) for ease of use.

SWEEPING OPERATION

The Star Industries angle broom is capable of, and in fact intended to be utilized for, sweeping away dirt, light snow and other debris. Directions for use are as follows:

To sweep:

1. Adjust broom in direction you want to sweep debris.
2. Raise broom so bristles are clear of ground with loader engine at idle.
3. Engage broom, lower to ground and gradually increase engine rpm.
4. Proceed forward slowly (5 mph or less)
5. Note: excessive down pressure on bristles will cause accelerated broom wear.

REPAIR AND MAINTENANCE INSTRUCTIONS

PRE-MAINTENANCE & REPAIR STEPS

Warning! NEVER CHANGE OR MODIFY ANGLE BROOM IN ANY WAY AS INJURY COULD RESULT. CONTACT DEALER OR STAR INDUSTRIES IF YOU HAVE ANY QUESTIONS.

1. Perform repairs in safe and secure area.
2. Before maintenance or repair, lower broom to ground, set brake or block wheels on skid-steer, relieve hydraulic pressure, shut down unit attached and remove key.
3. When working on broom, make sure it is secure from falling, moving, or shifting by using stands.
4. Never set or store broom on ground. Weight of unit will warp bristles causing damage to the extent the broom will not work properly.

BROOM REMOVAL

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” above.**
2. Remove bolts from bearing at non-motor end and loosen set screw.
3. Pull end of shaft outward from holder. (Note: Requires 2 persons to avoid injury)
4. Continue to pull broom at slight angle until free from spline at motor end.
5. Remove hubs from end of broom if replacing broom. Make sure hubs go to proper ends to new broom replacement.

Safety Note: NEVER WORK UNDER ANGLE BROOM. UNIT COULD FALL CAUSING DEATH.

BROOM INSTALLATION

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” above.**
2. Replace hubs back in proper end of new broom replacement (motor end and non motor end). Note: Use rubber mallet if needed to tap hub inside broom. **DO NOT USE METAL HAMMER.** This may cause damage to hub and possible failure.
3. Slide broom into place, positioning motor side first making sure to align spline on motor end. Note: You may have to loosen hydraulic motor mounting bolts to adjust broom into place. Make sure to tighten bolts when complete.

HYDRAULIC HOSE REMOVAL

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” above.**
2. Mark or otherwise document the proper location of each hose. The hoses can be identified by either having a male or a female quick-disconnect coupling.
3. Using a crescent wrench, loosen the hose connectors at the motor.

HYDRAULIC HOSE INSTALLATION

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” above.**
2. Identify the proper location for each hose on the hydraulic motor.
3. Hand-tighten each hose connector. Perform final tightening with a crescent wrench. Note: **DO NOT** use Teflon tape or any other thread bonding material when installing the hoses into the hydraulic motor. These are JIC and O-Ring fittings and are self sealing.

REPAIR AND MAINTENANCE INSTRUCTIONS CONT'D

QUICK-DISCONNECT COUPLING REMOVAL

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” on previous Page.**
2. Using masking tape, label each hose with a mark indicating which coupling was on it.
3. Use two crescent wrenches to remove the quick-disconnect couplings. One will be used on the hose end and the other will be used on the coupling.

QUICK-DISCONNECT COUPLING INSTALLATION

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” on previous page.**
2. Refer to the masking tape used in the previous step for reference of the location of each quick-disconnect coupling.
3. Apply either Teflon tape or another thread bonding material to the threads of the hose end.
4. Hand-tighten each quick-disconnect coupling onto each hose. Use two crescent wrenches to tighten each coupling. One will be used on the hose end and the other will be used on the coupling.

HYDRAULIC MOTOR REMOVAL

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” on previous page.**
2. Remove the hydraulic hoses (if required) according to the directions above.
3. Loosen the bolts that attach the hydraulic motor to the motor bracket and remove the motor.

HYDRAULIC MOTOR INSTALLATION

1. **Follow all steps in the “Pre-Maintenance & Repair Steps” on previous page.**
2. Place in the original position, then slide motor into place, making sure to line the bolt holes up.
3. Secure the motor with the bolts removed in the previous step.

PARTS LIST

Part Number	Description
190-002	Mach Hose Set of two 3/8"X96" Hoses w/1/2"FJIC & 1/2" MP
190-003	Straight 1/2" Male JIC to 5/8" Male O-Ring
190-005	Decal Kit - specify broom model
190-011	72" Replacement Poly Broom
190-012	72" Replacement Poly/Steel Broom
190-013	84" Replacement Poly Broom
190-014	84" Replacement Poly/Steel Broom
190-020	Broom Bearings – 4 bolt flange bearing – 2 required
190-030	Parker Hydraulic Drive Motor
190-035A	Spline Hub motor-end
190-035B	Shaft Hub non-motor end
190-040	Metal Cowling
190-042	Stand Leg
190-044	Hitch Pin with Hair Pin