

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.



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CRANE FORKS ATTACHMENT OPERATOR'S MANUAL



MODEL 660
WITH 660-01 GENERAL PURPOSE FORKS
(660-03 BRICK FORKS SIMILAR)



MODEL 660
WITH 660-02 BLOCK FORKS

Manual for Models
660, 660-01 & 660-02

**BEFORE USE, READ AND UNDERSTAND
THE COMPLETE OPERATOR'S MANUAL.**

If you need clarification or any additional information call your Star dealer or call Star Industries @ 1-800-541-1797 during normal business hours.

Installation, Use & Safety Precautions

Customers Who Bought this product also bought



Safety Work Platforms
Turn your forklift into an aerial
Work Platform



Lift Hooks
Lift up to 22,000 lbs.
safely and securely

Visit www.starindustries.com or call us at 800-541-1797 for more information on these and other great products

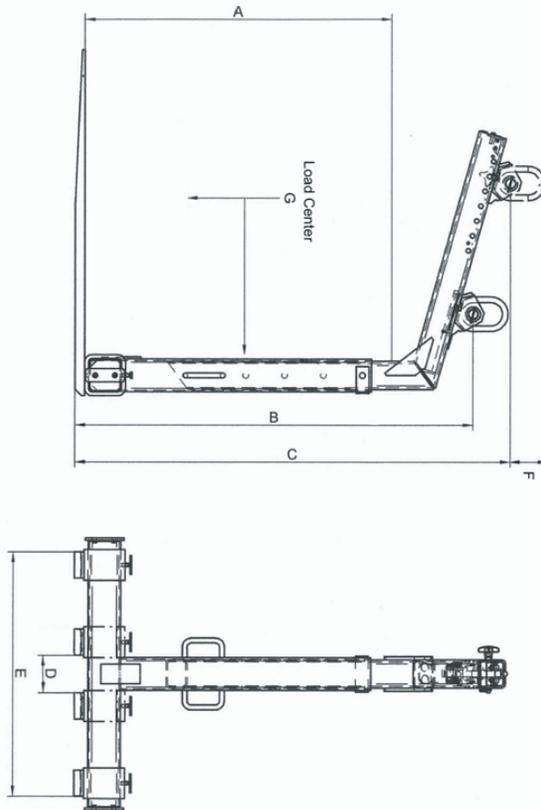
General Safety Precautions

- ⊛ Under no circumstances should personnel be elevated with Crane Forks.
- ⊛ Users should review the Operator’s Manual & Safety Information and understand all operations of the crane forks before using it.
- ⊛ Materials to be elevated with the crane fork must be adequately secured to prevent material from falling from pallets or packages.
- ⊛ Never allow personnel to stand under the load.
- ⊛ Use the handles on the king post to guide the crane fork into the pallet/package to prevent injury to fingers or other parts of the hand.
- ⊛ Make sure the lifting equipment is capable of handling the weight of the loaded crane fork.

Certification

Star Crane forks have been engineered and tested in accordance with A.N.S.I. Standards and the model 660 is rated at 6000 lbs capacity at a 23.6" load center with an equally balanced load, however with the smaller 660-03 Brick Tines the capacity is reduced to 4500 lbs.

Dimension	A	B	C	D	E	F	G
	48" to 68"	62" to 80"	68" to 86"	7"	39"	6.5"	23.6"



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.

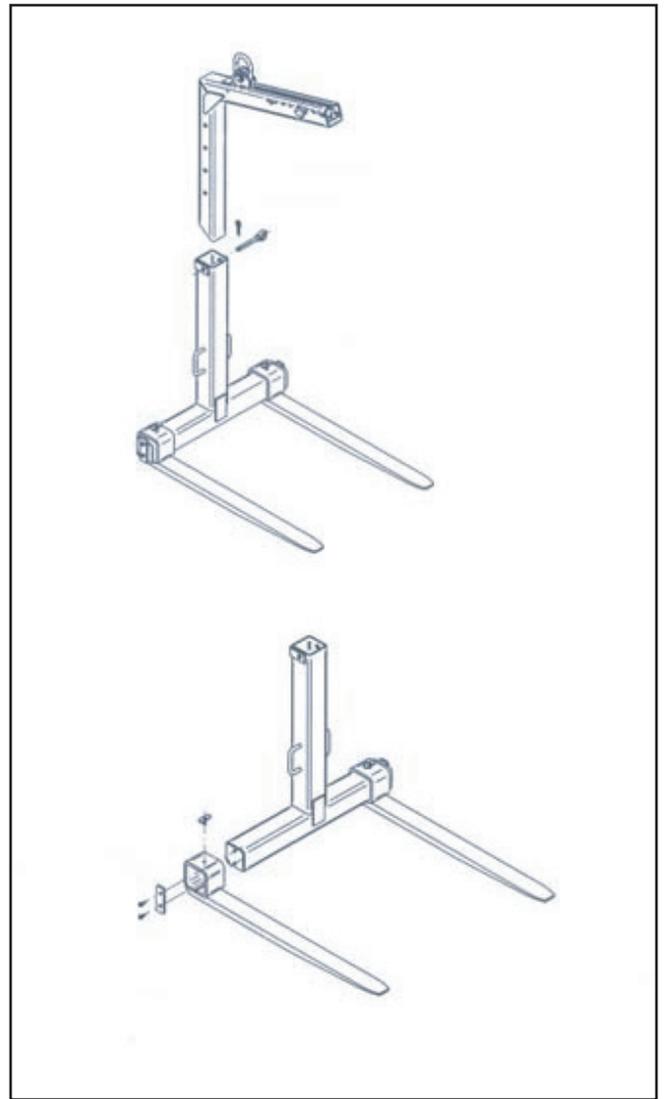
<<< Star Industries Limited Warranty >>>

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, 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.



Assembly and Adjustment

The King post can be adjusted for greater load height from 48" to 68" by removing the locking pin and raising the upper arm section for load heights - Make sure personnel raising the post have sufficient strength to handle the weight.

Tines are installed on the bottom square horizontal tube and are secured with the end plates and locked into position with the TBolts. Adjust the tines to allow for even load distribution.

Fitting to crane

The crane fork should be connected to the crane by means of a universal joint type suspending element via the crane hook or rotator.

How it works

The crane fork is equipped with a spring loaded trolley that keeps the forks level with or without a load. The trolley is designed so that when tension is relieved on the hoist line, the spring returns the trolley to the empty fork position. When the load is lifted and tension is applied, the trolley travels out to a predetermined stop set at the load center of the loaded crane fork. A trolley end stop pin is provided to adjust the travel of the trolley for various pallet/package sizes.

Operation

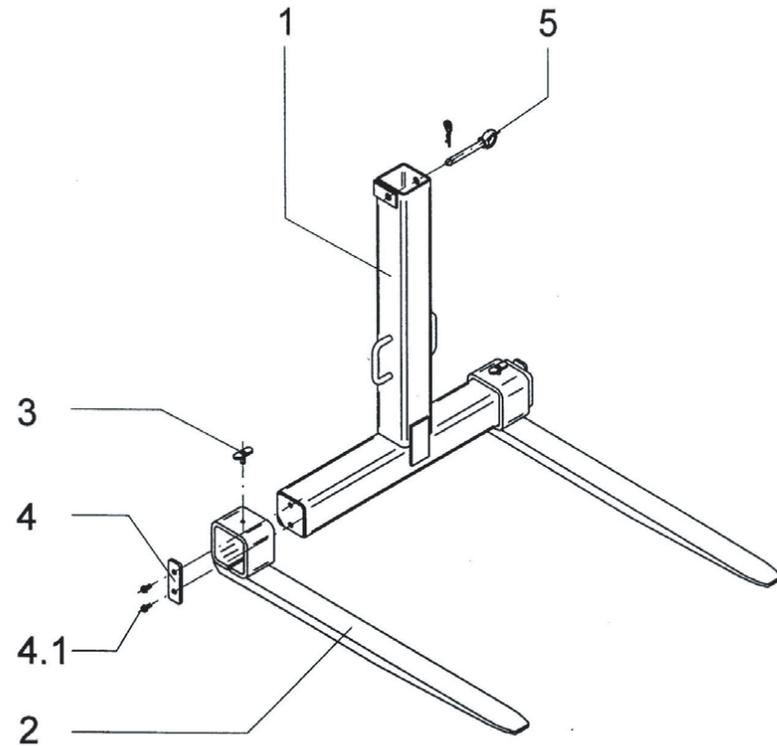
When picking a new load check to see that the load is being carried with the forks level or slightly tipped up. If not, immediately lower the load to the ground and relieve the tension on the hoist line. Then reposition the Trolley End Stop Pin in the top arm to adjust the travel of the trolley so that it stops at the crane fork's loaded vertical load center. You may have to move the pin several times to find the position where the forks hang level or slightly tipped up with the load.

For proper operation of the trolley, the load must be greater than 1,100 lbs otherwise the trolley will not travel properly. When lifting the load, the hoist line should lead the load slightly to ensure that the trolley moves out to the loaded stop position. The maximum load capacity of the Crane Fork must not be exceeded. The maximum load capacities are based on a 23.6" load center on the forks. Use handles to guide the crane fork into the pallet/package. Keep hands off other parts of the crane fork during use to prevent getting fingers mashed between the crane fork and the load.

Never stand under the load.

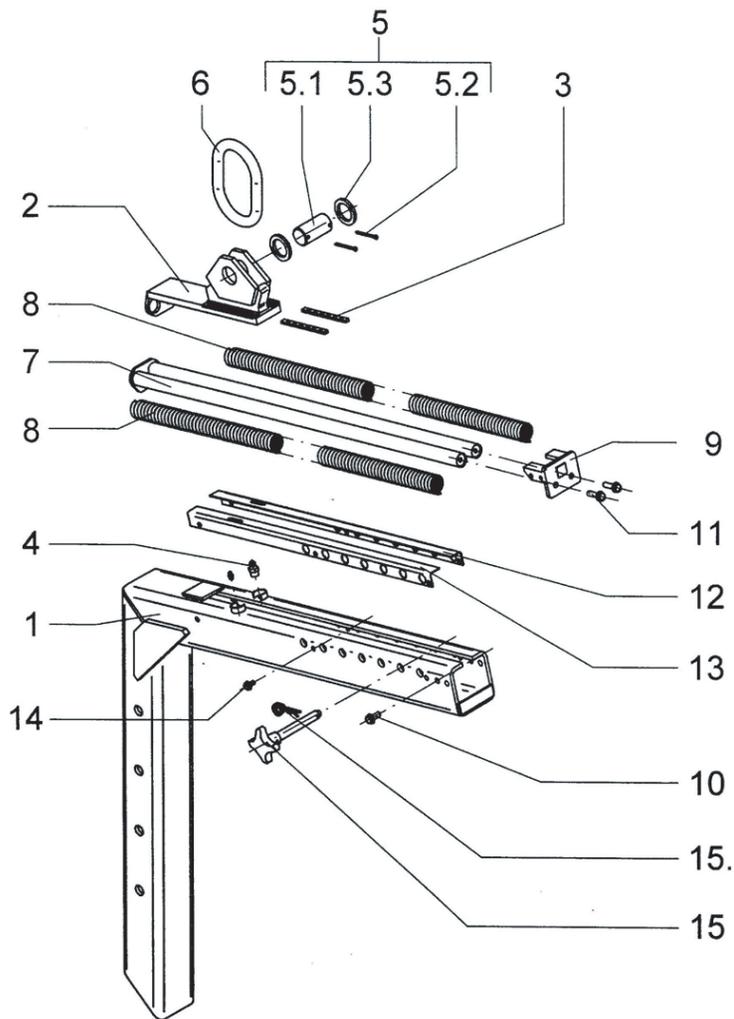
Parts Manual

Crane Fork Lower Section



Parts List

Item No.	Qty	Description	Part Number
1	1	Lower Section Assy.	660-B
	1	Set of 2 Pallet tines 1.5"x4"x46"	660-01
2	1	Set of 6 block tines 1.5"x2"x47"	660-02
	1	Set of 2 brick tines 1.5"x3"x39"	660-03
3	2/6	Tine T-Bolt	660-33
4	2	End Plate	660-34
4.1	4	End plate screw	660-341
5	1	King post pin w/ locking ring	660-35
5.1	1	King post pin only	660-351
5.2	1	locking ring only 660-352	



Parts List

Crane Fork – Upper Section

Item No.	Qty	Description	Part Number
1	1	upper section complete	660-A
2	1	trolley slide	660-12
3	2	trolley slide wear pads	660-13
4	2	Grease Zerks	660-14
5	1	trolley pin assy.	660-15
5.1	1	Trolley pin	660-151
5.2	2	Cotter pins	660-152
5.3	2	trolley pin washers	660-153
6	1	Trolley pick ring	660-16
7	1	Spring guide tube	660-17
8	2	Compression springs	660-18
9	1	Upper arm cover plate	660-19
10	4	Hex head screw – m10x25	660-20
11	2	Hex head screw – m10x35	660-21
12	1	Left slide rail	660-22
13	1	right slide rail	660-23
14	6	Locking screw – m8x16	660-24
15	1	Trolley stop pin	660-25
15.1	1	Hairpin for trolley stop pin	660-251

Transporting the pallet fork

When in transit, the pallet fork must be properly secured and if it is carried on a boom truck make sure the boom and crane fork cannot swing out in an uncontrolled manner. In addition make sure the boom does not exert any extreme compression force on the crane fork.

Maintenance and Repair

General notes

Thorough regular maintenance of the crane fork is essential to prevent downtime and prolong its life. Strict cleanliness must be observed in all maintenance operations.

Grease

Chevron Delo #2 or
Any multi-purpose high-melting-point lithium-based grease of consistency category 2

Maintenance every 50 hours of operation (Depending on conditions more frequent maintenance may be required)

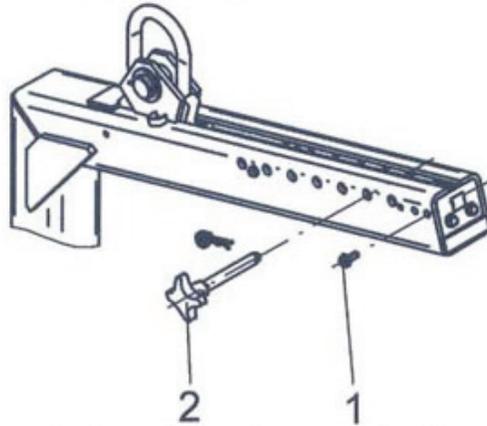
Check screw connections, tighten if necessary
Apply grease thru Zerk fittings on top of top arm
Remove any rust or corrosion and Lubricate tine adjustment T-bolts

Annual Maintenance

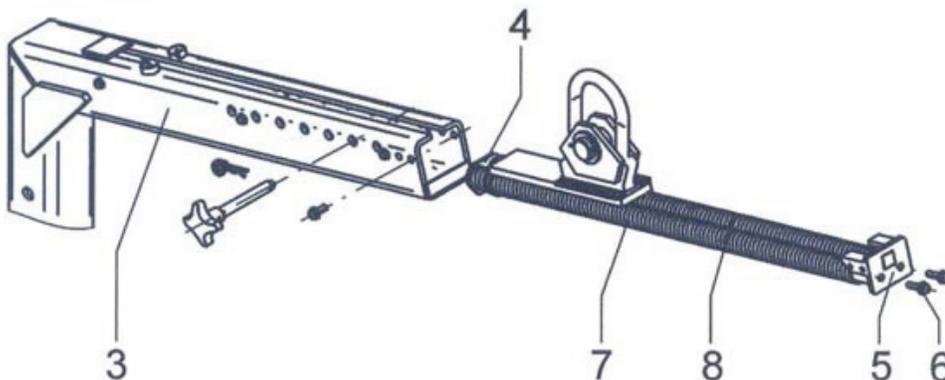
Check for cracks, wear, corrosion and functional safety (to be carried out by qualified specialist).

Upper part - Changing springs, spring guide, slide, cover plate and sliding rails

Remove four hexagon screws (1) and pin (2).



Pull complete spring guide (4) forwards out of upper part (3).
 Slacken off the two hexagon screws (6) on the cover plate (5).
 Squeeze together the first spring (7) on the cover plate (5) (maintain preload)
 Remove corresponding hexagon screw (6).
 Swing cover plate (5) to one side. Relieve pressure on spring.
 Remove second spring (8) in the same way.



WARNING !!

Always relieve pressure on springs slowly and one at a time to avoid risk of injury !!

Remove sliding rails (9 and 10)

Install in the reverse order.

For load capacities above 2000 kg / 4400 lbs, a second person is needed to relieve the load on the spring slowly.

