

OPERATION AND PARTS MANUAL



BTE TIE HEAD FOR BRIDGE CRANE

BTE-302885-10
S/N: 89530 & UP



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WARNING!

DO NOT operate
this equipment until
you have read and fully
understand the instructions
outlined in this manual.

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INTRODUCTION AND SAFETY



The BTE 308 Hi-Rail Bridge Maintenance Excavator is precision engineered using the latest CAD and simulation technology, built with quality materials and assembled by skilled workers. Proper assembly, maintenance and operating practices, as described in this manual, will help the owner/operator get years of exceptional service from this machine.

The purpose of this manual is to familiarize, instruct and train. The parts listing section is designed to familiarize the owner/operator with replaceable parts on the Hi Rail. This section provides exploded assembly drawings of each component, illustrating each piece and the corresponding part number.

Proper use and timely service prevents extensive repairs and costly downtime. The operation and maintenance sections of this manual instructs the owner/operator how to operate the BTE 308 Hi-Rail Bridge Maintenance Excavator correctly and attend to appropriate maintenance.

Safety is the primary importance. The first section of this manual includes a list of safety messages, that if followed, will help protect the operator and bystanders from injury or death. Many of the safety messages will be repeated throughout the manual. The owner/operator should know these safety messages and be aware of the hazards during use and maintenance.

Carefully read the BTE and Excavator Manufacture's operator manuals, completely understand the safety messages and instructions and know how to correctly operate BTE 308 Hi-Rail Bridge Maintenance Excavator

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WARNING!

Failure to follow safety precautions when operating this machine can result in serious injury or death to the operator or bystanders. Observe the following precautions whenever you are operating or working near this equipment.

DO NOT use this machine for other than its intended purpose.

DO NOT make any modifications without written authorization from Ballast Tools Equipment Company. Replace all components with genuine Ballast Tools Equipment Company products only.

DO NOT wear loose clothing, jewelry, etc. when operating or working on/near this equipment.

DO NOT walk in the travel path range or within 50 feet of the equipment when it is in operation.

DO NOT strike electrical power lines.

BE SURE all persons are clear of the equipment during start up and while in service.

DO NOT touch or service hydraulic equipment, hoses, etc. when they are hot.

NEVER leave attachments suspended in the air.

NEVER walk near or under a suspended load at any time.

NEVER work on equipment or attachment unless attachment is seated on level ground.

NO riders shall be allowed on this equipment at any time.

ALWAYS wear appropriate personal protective clothing when operating this equipment, e.g. safety glasses with side shields, hearing protection, hand protection and steel toe-shoes.

ALWAYS operate all equipment from inside of the backhoe cab.

ALWAYS keep hands, arms, feet, head, clothing, etc., out of the operating area of all rotating or moving components when operating or working on or near this equipment.

ALWAYS ensure that guards, covers, hoses and operating components are in good working condition and that all controls are in the appropriate position before starting the equipment. Do not operate this equipment without all guards being in place.

ALWAYS comply with all instructions provided on any decals or placards installed on the machine and with relevant information provided in this manual or other general operating procedures.

ALWAYS shut down equipment, ensure that all controls are in a safe position, and install all appropriate locking and safety devices before doing the following:

Lubricating, Adjusting, Installing Tooling, Making Repairs, Performing Services, etc...

ALWAYS comply with all lockout and tagout procedures and other safety procedures established for the local work environment.

NEVER operate any equipment under the influence of drugs or alcohol.

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MAINTENANCE

LUBRICATION INFORMATION

Before operating the tie talon, make sure the Rototilt is properly lubricated and thoroughly inspected. Only a minimum amount of time and effort is required to regularly lubricate and maintain this machine to provide long life and trouble free operation.

Do not let excess grease collect on or around parts, particularly when operating in sandy areas. The accompanying photographs show lubrication points. It takes very little time to insure that the Rototilt is lubricated daily, based upon normal conditions. Severe or unusual conditions may require more frequent lubrication.

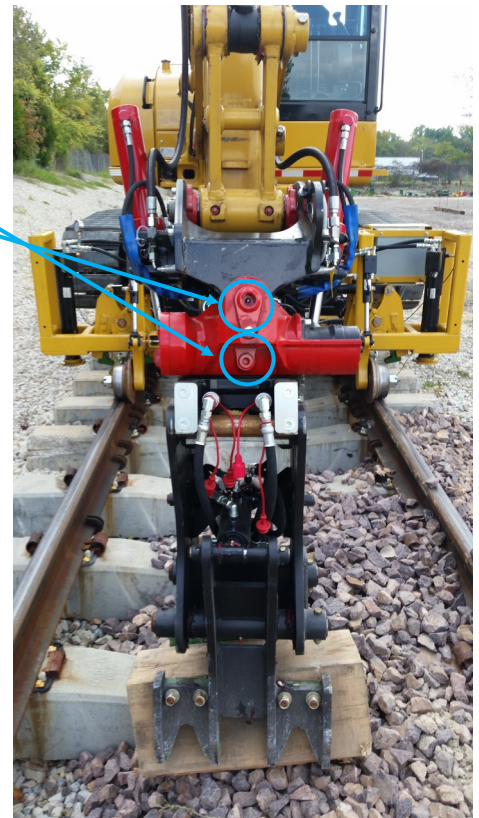
LUBRICATION POINTS

The Rototilt must be serviced daily to achieve the best operation and longest life. Good, quality grease from a hand grease gun should be sufficient.



GREASE—2 lubrications points,
On each side of RotoTils

GREASE—3 lubrications points,
On each side of RotoTils



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CONNECTING TO EQUIPMENT

- Position equipment boom parallel with side plate of attachment.
- Open the quick coupler attachment.
- Slowly lower the quick coupler down over the coupler pins until the coupler is resting on the pins on top of the attachment.
- Close the quick coupler.
- Position the attachment so the hydraulic connections can be safely and easily reached.
- Turn the equipment off.
- Turn ignition switch to the on position.
- Activate all auxiliary functions in all directions(this relieves hydraulic pressure trapped in the auxiliary lines.) Alternatively (if applicable) the Depressurization Enable button can be used instead.
- Turn ignition switch off.
- Verify hydraulic lines are free of dirt and other contaminants. Attach the hydraulic lines to the excavator. Attach electrical plug (if applicable)

ATTACH HYDRAULIC LINES



DISCONNECTING FROM EQUIPMENT

- Position the attachment so the hydraulic connections can be safely and easily reached.
- Turn the equipment off
- Turn ignition switch to the on position.
- Activate all auxiliary functions in all directions(this relieves hydraulic pressure trapped in the auxiliary lines.) Alternatively (if applicable) the Depressurization Enable button can be used instead.
- Turn ignition switch off.
- Verify hydraulic lines are free of dirt and other contaminants. Detach the hydraulic lines and electrical plug (if applicable) from the equipment.
- Position the attachment in/on its stand or on stable level ground which the attachment will be stored.
- Open the quick coupler
- Uncurl quick coupler from the coupler pins, raise the boom a few inches of the attachment and verify the coupler is fully disengaged and the hydraulic lines and electrical plug (if applicable) are detached before pulling the boom away.
- Verify that the quick coupler on the Excavator is completely closed. Slowly lower the quick coupler down to the ground.
- Close the quick coupler

**DO NOT FORGET TO DISCONNECT THE HYDRAULIC LINES AND
ELECTRIC PLUG OR DAMAGE MAY RESULT!**

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BTE TIE TALON OPERATING INSTRUCTIONS

BEFORE START UP

- Inspect equipment / tie talon attachment connections - quick coupler, hydraulic hoses.
- Verify that there are no leaks, or unsafe conditions in the cylinders, pumps, hoses, etc...
- Verify that the gripper pads are attached and in good working condition.
- Insure proper lubrication procedures have been followed (see page 6 of this manual).

START UP

- Refer to the OEM equipment manual for start up and operation procedures of the equipment.

CONTROL PANEL JOYSTICK FEATURES

This feature requires installation by a qualified technician. Contact BTE or your equipment manufacturing company for a qualified technician to install the required left and right hand joysticks. Ballast Tools Equipment Company supplies the controls package. Please see diagram of joysticks on page 9.



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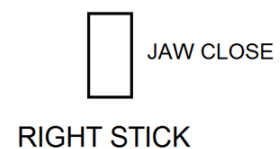
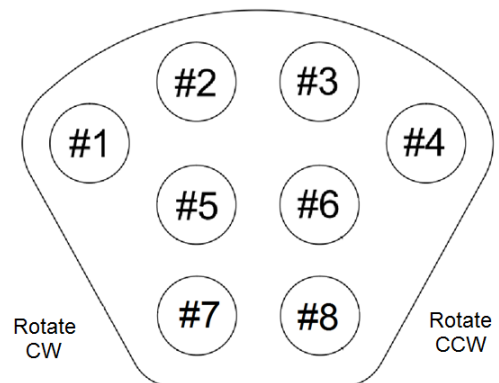
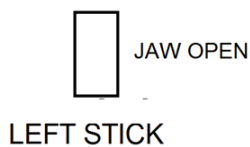
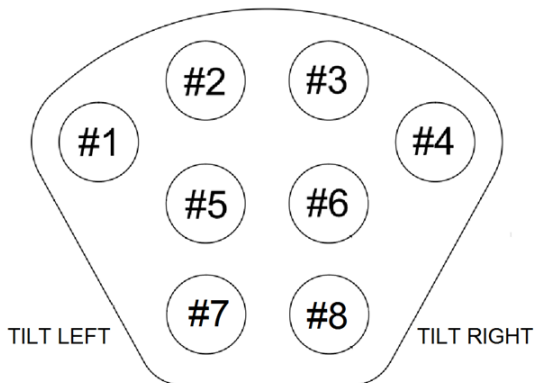
OPERATION CONT.

Left Joystick controls the following features:

- Trigger- Jaw Open
- #7 Tilt Left
- #8 Tilt Right

Right Joystick controls the following features:

- Trigger- Jaw Closed
- #7 Rotate CW
- #8 Rotate CCW



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OPERATION CONT.

The BTE Tie Talon features enable you to set up at any angle to the tie and remove or install ties with a minimal amount of moving the equipment. The versatility of the equipment tie talon allows the operator to insert, remove, stack and place ties with accuracy. The quick coupler system allows for quick change outs of multiple BTE attachments to meet all of your tie maintenance needs.

REMOVING TIES

- Remove the shoulder, loosen the crib.
- Grab the center of the tie squarely using down force and run the tilt function side to side and slide the tie out at the same time. This is the best method for tie removal, especially a plate cut tie or to clear the clip mount on concrete ties.
- Once the tie has cleared the plate wear, grab the end of the tie closest to the machine and pull to remove.
- Once the tie has been removed, use the tie head to loosen the crib area. Using the tilt feature will allow you to be more productive by not moving the equipment as much.

INSERTING TIES

- Grab the tie squarely near the center. Use the tilt feature to tilt the tie down and start under the rail, showing the tie in until the clip mount or plate has cleared.
- Next, grab the tie between the rails and shove the tie using down force and the tilt function to obtain clearance.
- Once the tie is lined up with the clip mount or plate, grab the center of the tie and hold up so that it can be spiked or so the clips can be installed.



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WARNING!

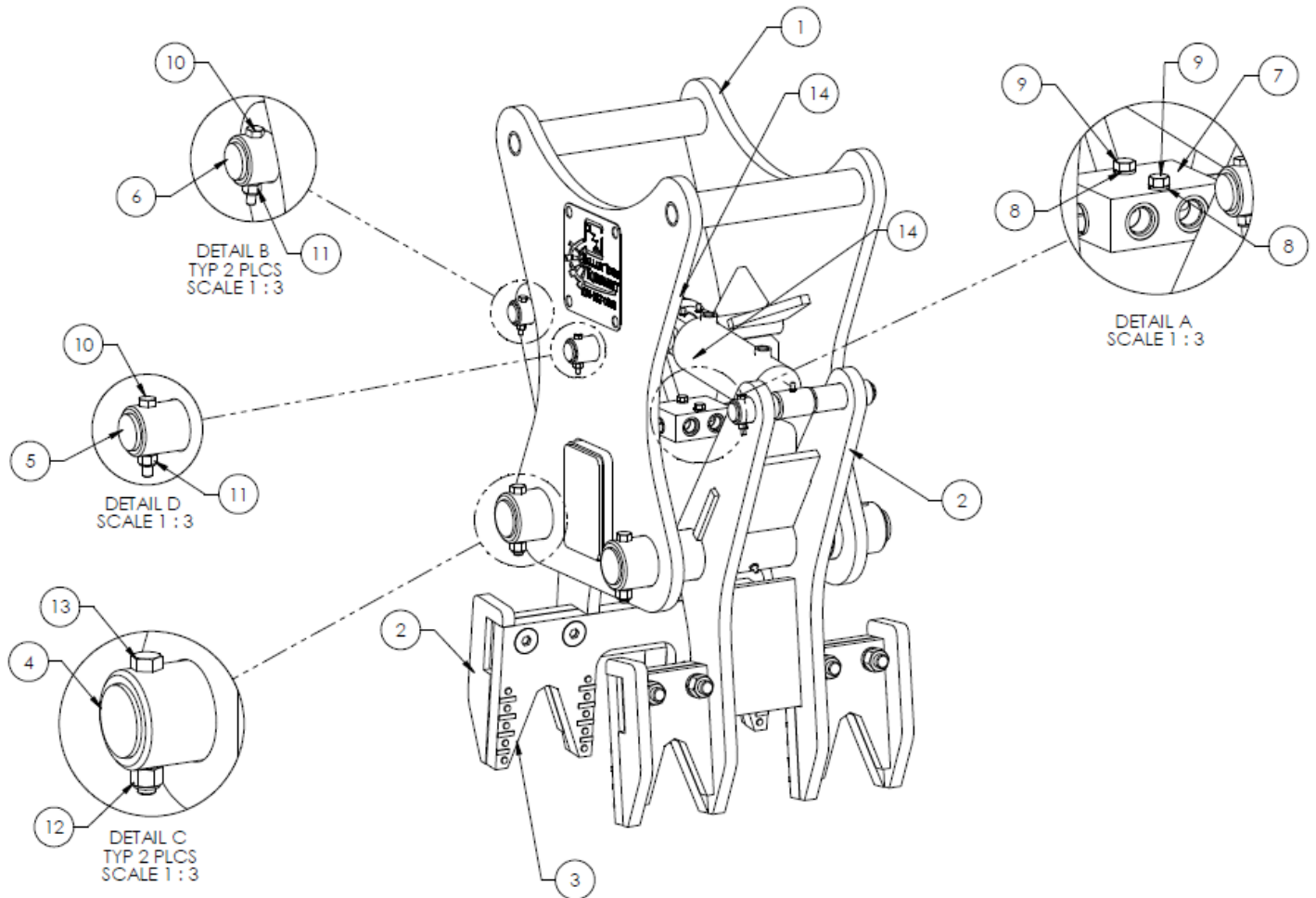
NEVER WALK NEAR OR UNDER A SUSPENDED LOAD AT ANY TIME! FALLING TIES MAY CAUSE SERIOUS INJURY OR DEATH!

- Do not push any objects with the gripper arms.
- Do not drag concrete ties on the ground.
- Do not use the tie head attachment for hammering or forcing heavy objects to relocate.
- Do not raise the tracks or the excavator by lowering the stick with the tie head attached.
- Do not use the tie head attachment for grading gravel, digging holes, etc....



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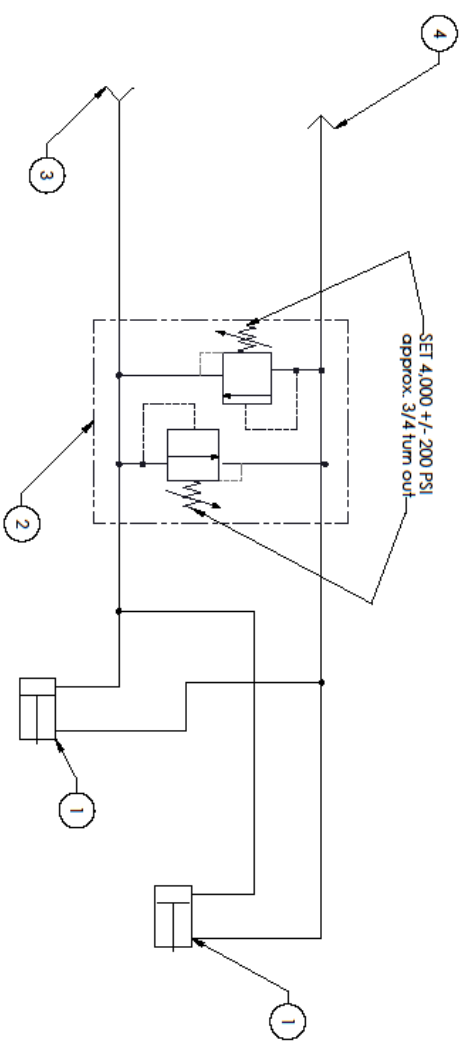
BTE TIE TALON



| | | | |
|------|---------------------------------|------------|------|
| 14 | HYD CYL 2-1/2" BORE x 4" STROKE | HYD29393 | 2 |
| 13 | HDW SCREW HHC 1/2-13 X 3-1/2 | HDW23508 | 2 |
| 12 | HDW NUT HEX 1/2-13 | HDW0223 | 2 |
| 11 | HDW NUT-HEX NYLON 1/4-20 GR8 | HDW28339 | 3 |
| 10 | HDW BOLT HH 1/4-20 X 2 | HDW28341 | 3 |
| 9 | HDW BOLT HH 5/16-18 x 2 | HDW23708 | 2 |
| 8 | HDW WASHER SPLT LK 5/16 | HDW23519 | 2 |
| 7 | HYD RELIEF VALVE INLINE | HYD29751 | 1 |
| 6 | MAC PIN - 1" DIA, 8-3/4" LONG | MAC27733 | 2 |
| 5 | MAC CYLINDER JUNCTION PIN | MAC29440 | 1 |
| 4 | MAC PIN - 2" DIA, 17-3/32" LG. | MAC27992 | 2 |
| 3 | MC TAMPER TR-10 TIE REMOVER | BTI-170122 | 2 |
| 2 | ASY BTE-302885 TIE PULLER ARM | ASY51500 | 2 |
| 1 | ASY BTE-302885 BASE ASSEMBLY | ASY39115 | 1 |
| ITEM | DESCRIPTION | PART NO. | QTY. |

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TOLERANCES
 X.XXX = 10/1000
 X.X = 1/100
 X.XX = 1/1000
 FRACTIONAL = 1/32
 ANGLES = 1/2°
 UNLESS SPECIFIED



| REV | DESCRIPTION | DATE | DESIGNED BY | REV |
|-----|-----------------|------------|------------------|-----|
| - | INITIAL RELEASE | 03/28/2014 | BTE-302885-HYD | - |
| | | | SHEET NO. 1 OF 1 | |

HYDRAULIC SCHEMATIC

| ITEM | DESCRIPTION | PART NO. | QTY |
|------|-------------------------------|----------|-----|
| 4 | HYD QUICK COUPLER 1/2" MALE | HYD31063 | 1 |
| 3 | HYD QUICK COUPLER 1/2" FEMALE | HYD31064 | 1 |
| 2 | HYD RELIEF VALVE INLINE | HYD29751 | 1 |
| 1 | HYDCYL 2-1/2 BORE 4" | HYD29393 | 2 |

BALLAST TOOLS EQUIPMENT
 15 GOODWIN DRIVE
 FESTUS, MO 63026
 PHN | (636) 937-0505
 FAX | (636) 937-3386

CHECKED BY: J.H. DATE: 3/28/14
 DESIGNED BY: BTE-302885-HYD
 DRAWN BY: J. KOCH

EQ TH FLOOR BRIDGE CRANE

DATE: 03/28/2014

NEXT ASST: FINAL

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Festus, MO 63028
636-937-0505
Fax: 636-937-3386

sales@btequip.com
www.btequip.com

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