BANDIT
TRACK CARRIERS

OPERATING & PARTS MANUAL

BTC-150

Model No: BTC-150

Serial No: _____

Engine Make: _____

Serial No: _____

Gear Box: _____

Model: _____ S/N _____

DEALER:

Name: _____

Address: _____

City/State: _____

Phone No: _____

Delivery Date: _____

ATTENTION:

Depending on what replacement parts you are ordering, we will need the following information:

TRACK CARRIER COMPONENTS	ENGINE COMPONENTS	GEAR BOX COMPONENTS
Serial Number	Brand	Brand
Model Number of Track Carrier	Engine Serial Number	Gear Box Serial Number
	Engine Model Number	Gear Box Model Number

Bandit INDUSTRIES, INC.
6750 Millbrook Rd. • Remus, MI 49340 • 1-989-561-2270

MANUFACTURED BY BANDIT INDUSTRIES, INC
PHONE: (989) 561-2270
PHONE: (800) 952-0178 IN USA
FAX: (989) 561-2273 ~ SALES DEPT.
FAX: (989) 561-2962 ~ PARTS/SERVICE
WEBSITE: www.banditchippers.com

CALIFORNIA PROPOSITION 65

⚠ WARNING ⚠ ADVERTENCIA

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- **Always start and operate the engine in a well-ventilated area.**
- **If in an enclosed area, vent the exhaust to the outside.**
- **Do not modify or tamper with the exhaust system.**
- **Do not idle the engine except as necessary.**

For more information go to:
www.P65warnings.ca.gov/diesel

Respirar gases de escape de motores diesel le expone a químicos conocidos por el estado de California como causales de cáncer y defectos congénitos u otros daños reproductivos.

- **Siempre encienda y opere el motor en áreas bien ventiladas.**
- **Si está en un área cerrada, ventile escape hacia el exterior.**
- **No modifique ni altere el sistema de escape.**
- **No deje el motor en ralentí a no ser que sea necesario.**

Para mayor información visite:
www.P65warnings.ca.gov/diesel

SPW-46 8/18

⚠ WARNING
⚠ ADVERTENCIA

Cancer and Reproductive Harm

Cáncer y daño reproductivo

www.P65warnings.ca.gov

SPW-47 8/18

WARRANTY VALIDATION FORM (BANDIT TRACK CARRIER)

IMPORTANT - WARRANTY WILL BE DEEMED NULL AND VOID IF THIS FORM IS NOT FILLED OUT COMPLETELY AND ACCURATELY AND RETURNED TO THE CUSTOMER DATA DEPARTMENT WITHIN 10 DAYS OF EQUIPMENT DELIVERY

Customer Data Department
6750 Millbrook Road
Remus, MI, USA 49340
Phone: (800) 952-0178 in USA
Phone: (989) 561-2270
Fax: (989) 561-2273
Website: www.banditchippers.com

PURCHASER / OWNER INFORMATION:

Company Name _____ Contact Name _____

Mailing/Street Address _____ City _____

State _____ Zip Code _____ Country _____ Telephone Number (__) _____

E-mail _____ Machine Model No. _____ Date Put Into Service _____

Machine Serial No. _____ Machine Work Order No. _____ Machine Hours _____

Engine Make _____ Engine Serial No. _____ Machine Color _____

DEALER / SELLER INFORMATION:

Dealer/Seller Name _____ Contact Name _____

Mailing/Street Address _____ City _____

State _____ Zip Code _____ Country _____ Telephone Number (__) _____

1. _____ The customer has received instruction and fully understands all operational, safety and maintenance requirements of the equipment.

2. _____ The customer has received instruction and fully understands that everyone needs to stay back 300 feet (90 m) in all directions of machine while in operation. Failure to do this could result in severe injury or death.

3. _____ The customer has received instruction and fully understands the equipment maintenance schedules and procedures. The customer understands that it is their responsibility to perform scheduled maintenance that includes retightening all fasteners as needed, belt adjustments, lubrication and other items.

4. _____ The customer has received instruction and fully understands not to reach near cutter head with hands or feet or to be located near debris field with engine running.

5. _____ The customer has received instruction and fully understands that the operators must always be located within easy reach of all feed control and shut down devices.

6. _____ The customer has received instruction and fully understands purpose of and how to operate the shut down and shut-off devices, and will not attempt to override any safety devices or guards.

7. _____ The customer has received instruction and fully understands to not start grinding or mowing without checking for power lines, water lines, sewer lines, phone lines, etc. in the area above or below the ground level.

8. _____ The customer has received instruction and fully understands that before performing any maintenance on the machine the ignition key must be removed, the cables must be completely disconnected from the battery, the cutter head must have come to a complete stop, and be securely on the ground before performing any type of maintenance on the machine. The customer understands they must allow the necessary time for the cutter head to come to a complete stop.

9. _____ The customer has received instruction and fully understands that the machine is not to be operated without all safety devices installed and working properly; this includes guards, shields, deflections chains, and other devices.

10. _____ The customer has reviewed and fully understands limited warranty, and all written and visual instructions.

11. _____ The customer has received instruction and fully understands that warranty will not apply if the machine is operated with replacement parts or equipment not manufactured or recommended by Bandit Industries, Inc.

12. _____ The customer has received, been advised, and understands the manuals, and the Safety/Service video supplied with the machine. A video is supplied for equipment models as available.

13. _____ All Danger, Warning and Operational decals are properly displayed on equipment and fully understood by customer.

14. _____The customer has been instructed, understands, and agrees that all potential operators must: See the supplied video, be instructed on all the Danger, Warning and Operational decals, read the manual and follow the procedures.

I have inspected this equipment and find it in correct working condition. To the best of my knowledge, the customer and his/her personnel are aware of, and agree to the above procedures.

Signed: _____ **Date:** _____

(Dealer Representative)

The equipment has been thoroughly checked by the above named dealer representative, and I am satisfied with his/her instructions. I have also read, understand, and agree to reverse side of page.

Signed: _____ **Date:** _____

(Customer)

TO BE RETURNED AFTER THIRTY (30) DAYS OF OPERATION

DATE PURCHASE: _____

MODEL: _____

SERIAL NUMBER: _____

DEALER NAME: _____

_____

Please return to: Customer Data Department
6750 Millbrook Road
Remus, MI 49340

Phone: (800) 952-0178 in USA
Phone: (989) 561-2270
Fax: (989) 561-2273
Website:www.banditchippers.com

STUMP GRINDER / FORESTRY MOWER QUALITY REPORT

All of the employees that build your equipment strive to manufacturer the **very best quality** product on the market. We would appreciate your efforts in letting us know how we are doing.

We would like you to operate your machine for thirty (30) days and then fill out this questionnaire and mail it to us. This will help us to keep producing a good product and improving our products through your recommendations.

1. Did your machine perform to your expectations? _____
2. Was the machine delivered on schedule? _____
3. Was the paint color and finish to your satisfaction? _____
4. Was machine equipment as ordered? _____
5. Did all welds appear to be high quality? _____
6. Was the overall machine to your liking? _____
7. What problems have you experienced? _____
8. Have any components regularly loosened that caused problems? _____
9. Does the hydraulic system seem to have adequate power? _____
10. Is the machine manufactured to accommodate service in an adequate manner? If not, please explain:
    _____
11. General comments and/or suggestions: _____
    _____
    _____
12. Would you like to be contacted concerning more of our equipment? _____

YOUR COMPANY: _____

NAME: _____

ADDRESS: _____

CITY: _____

STATE & ZIP: _____

PHONE: (____) _____

E-MAIL: _____

TABLE OF CONTENTS

NOTICE

ANY PART, PORTION, DESIGN, NUMBER, SPECIFICATION, AND/OR DIMENSION IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE BY THE MANUFACTURER.

INTRODUCTION

The purpose of this manual is to provide the user with specifications and procedures for the operation, maintenance and repair of this BANDIT product. As with any piece of equipment, safety should always be a constant thought while the machine is being operated, serviced or stored. In order to highlight this consideration, the material which addresses safety is proceeded by the following signal words:

Signal Word	Likelihood of Occurrence	Degree of Potential Injury or Damage
⚠DANGER	Will occur if warning is ignored	Severe
⚠WARNING	Can occur if warning is ignored	Severe
⚠CAUTION	Will or can occur if warning is ignored	Minor to Severe
NOTICE	Important, but not hazard related	Minor

The equipment is designed and manufactured in accordance with the latest product industry standards. This alone does not prevent injury. It is the operator's responsibility to use good judgement and follow the warnings and instructions as indicated in this manual, on the machine and follow all safety standards per ANSI and OSHA instructions.

⚠WARNING

Improper use of the product can result in severe personal injury. Personnel using the equipment must be qualified, trained and familiar with the operating procedures as defined in this manual, prior to operating the product.

⚠WARNING

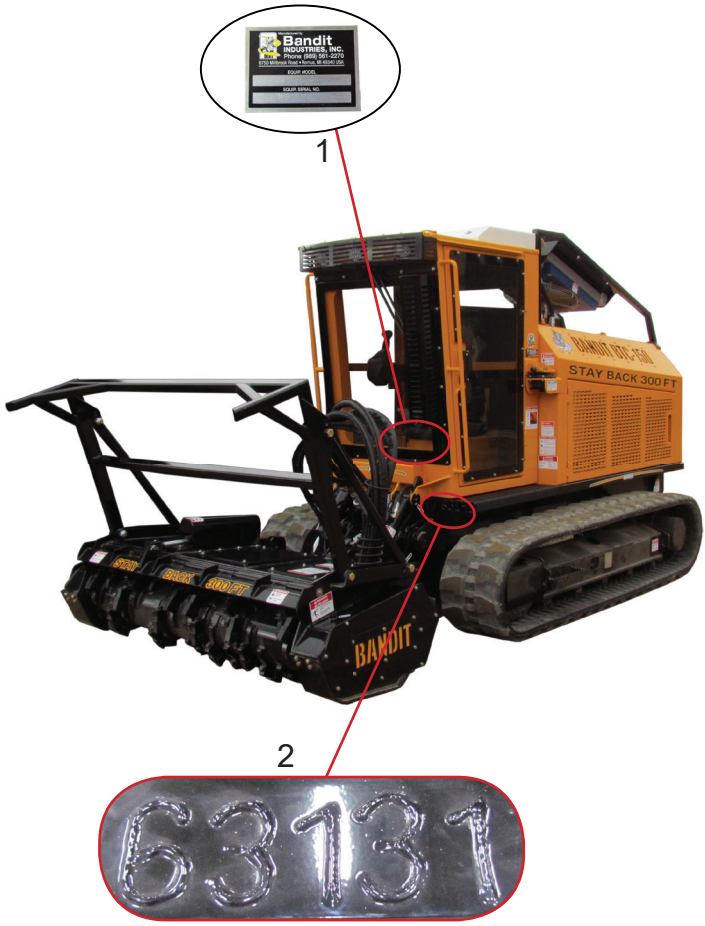
It is the responsibility of the owner or employer to ensure that the operator is trained and practices safe operation while using and servicing the machine. It is also the owner's responsibility to provide and follow a regularly scheduled preventative maintenance and repair program on the product, using only factory approved replacement parts. Any unapproved repairs or modifications may not only damage the machine and its performance, but could result in severe personal injury. Unapproved repairs or modifications will void warranty and eliminate manufacturer of any liability claims. Consult the equipment manufacturer with any questions.

Each machine is shipped with a manual, a customer's check sheet on the product, and any available parts & service manuals on component parts not produced by this manufacturer. Additional copies of these manuals and check sheets can be purchased from the manufacturer, or through the dealer. Engine parts, service and maintenance manuals MUST be purchased through the engine manufacturer or their dealer.

NOTICE

The producer of this Bandit product reserves the right to make any modifications or revisions to the design or specifications of its machine without advance notice. The producer also reserves the right to change machine and part prices as needed without advance notice.

TYPICAL SERIAL NUMBER AND/OR WORK ORDER NUMBER LOCATIONS



1. Serial Number - inside the cab below the speaker on the left side
2. Work Order Number - welded to the frame on the front of the machine

NOTICE

The engine information is located on the engine block.

SAFETY PROCEDURES

⚠DANGER

The words ⚠Danger, ⚠Warning, ⚠Caution, and Notice are used on the safety decals and throughout this manual, to make you aware of the safety procedures. These procedures are very important, read and obey them.

YOUR SAFETY IS VERY IMPORTANT TO US!

This machine is equipped with safety decals, guards and designs for your protection.

Don't ever take the machine for granted, always be cautious and careful when operating your equipment.

Read and follow all the instructions in your manual thoroughly. Your safety is dependent on your knowledge of how to operate and maintain this machine. You may obtain additional copies of this manual from your Bandit Dealer.

Before operating machine, you must have all potential operators; read and understand manuals and decals, watch the video and follow the recommendations.

Regardless of how hard a manufacturer tries to produce a safe machine, accidents still happen. Normally accidents are caused by people making mistakes. They do not read the manual, they ignore warning decals or do not use lockouts provided for their safety. This normally happens after the person has become accustomed to the machinery. In the initial start up and operation of the machinery, they are cautious, they are very careful because they do not understand the machine.

This equipment is intended for use by adults who have been properly trained and are physically capable of operating the machine safely. Never allow minors to operate this machine. Never operate any machine while under the influence of drugs or alcohol. Never operate equipment that is in need of repair or adjustment. Keep children, bystanders and animals clear of working area.

There must be at least two qualified and trained operators at the work site. They must be positioned in safe working locations, following safety procedures and instructions, and aware of each others whereabouts. There must, also, be at least two people on site during maintenance and service procedures in case an accident should occur.

⚠DANGER

Before starting the machine, take a minute to check a few things. The machine should be in an area restricted from people passing by. This area around the machine must be free of all objects that can obstruct your movement when working with the machine. The machine should be checked for loose tools or foreign objects. All tools not in use should be secured in a tool box.

⚠DANGER

NEVER sit, stand, lay, climb or ride anywhere on this machine while it is running, operating, or in transit. You will be injured.

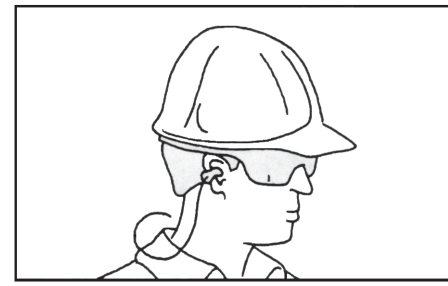
⚠WARNING

Operators **must** at all times be located within easy reach of all control and shut-off devices when the unit is running. They must be attentive and prepared to activate the devices.

⚠DANGER

Torn or loose clothing is more likely to get caught in moving machinery parts. Keep such items as long hair, shirt sleeves, and shirt tails properly contained. Avoid wearing necklaces, rings, watches, and especially neckties while operating this machinery. Make sure the machine is in excellent condition, and all the guards are in place, tight and secure.

Wear all personal protection equipment and follow all safety standards per ANSI and OSHA instructions. Examples of equipment: hard hat, face shield, safety glasses, gloves, ear protection, etc. Always keep a fully charged fire extinguisher with the machine while operating or servicing the machine.



⚠WARNING

WEAR EYE & PERSONAL PROTECTION EQUIPMENT

Wear all personal protection equipment and follow all safety standards per ANSI and OSHA instructions.

SAFETY PROCEDURES

⚠WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all hydraulic fittings. Relieve all pressures and retighten as needed.

DO NOT GO NEAR HYDRAULIC LEAKS! High pressure oil easily punctures skin causing serious injury, gangrene, or death. Avoid burns from fluid. Hot fluid under pressure can cause severe burns. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Relieve all pressure in the system before disconnecting the lines, hoses, or performing other work. Use a piece of cardboard to find leaks. Never use your bare hands. Allow system to cool down to ambient temperature before opening any coolant or hydraulic oil system.

In cold weather situations let your hydraulic system idle for approximately 15 minutes to allow the system to warm up to operating temperature.

⚠WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all nuts and bolts. It is normal for nuts and bolts to loosen once on a new piece of machinery. If you tighten them now, there is a good possibility they won't loosen again. Certain nuts and bolts should be checked periodically such as cutter teeth bolts for torque and fit.

Most of the nuts used on the Bandit Track Carrier are self locking. After a nut or bolt has been removed five times, it should be replaced to ensure proper tightness. This is especially critical on the cutter tooth bolts!

After the engine is started, let the grinder wheel turn at the lowest RPM's possible. Listen for any type of noise that is foreign. Any steel on steel noise is foreign. If you hear a noise, stop the engine, find the problem and fix it.

⚠WARNING

DO NOT operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

⚠DANGER

Keep the machine in good condition. Be sure the machine is in good operating condition and that all safety devices, including guards and shields are installed and functioning properly. Visually inspect the machine daily before starting the machine. Refer to the "Daily Start Up & Maintenance". Make no modifications to your equipment unless specifically recommended or requested by Bandit Industries Inc.

⚠DANGER

DO NOT operate machine with extremely worn or broken teeth.

⚠DANGER

DO NOT operate this machine indoors! Exhaust fumes can be fatal. Never refuel while the machine is running. Never refuel in the shop or building. Always refuel in a well ventilated area, away from sparks or open flames, DO NOT SMOKE. Extinguish all smoking materials. Wipe up all spilled fuel before restarting the engine. Do not fill above 1/2" (12.7mm) from top of tank for diesel engines and 2" (50mm) from the top of the tank for gasoline engines.

To obtain the most from your machine, for the least amount of cost, it is a good practice to set up and follow a scheduled preventative maintenance program. It will eliminate many possible problems and down time.

⚠WARNING

Never use jumper cables during freezing temperatures. Tow the machine inside and allow the battery time to warm up. If the machine must be started outside, inspect the battery acid for ice formation. Explosion will occur with a frozen battery. If the machine is going to be operated in excessively cold conditions, a larger cold cranking amp battery may be needed to ensure proper and prompt starting. Never use jumper cables in a confined or unventilated area. Battery acid fumes are explosive. Battery acid can cause severe burns. Never expose an open flame or spark near the battery. Keep all burning materials away from the battery. When servicing the battery, shield eyes and face, and do not smoke. Service in a well ventilated area.

NOTICE

Expensive damage to the Bandit will occur if proper preparation is not taken before welding on the machine. Be sure to disconnect both battery cables and the engine ECM (engine control module) before welding. Follow the specific Engine MFG. instructions for proper welding and grounding procedures, before attempting to weld on the machine. If welding on the machine, do not ground the welder through the machine bearings, ground near work to be performed.

NOTICE

Engage and disengage cutter head at low rpm.

SAFETY PROCEDURES

NOTICE

Do not attempt to start the engine, engage the cutter head or engage the engine PTO (power-take-off) system on this machine if the cutter head is jammed or frozen in place. If you do, you will damage or ruin the drive belts, the hydraulic system, and/or the PTO which will not be covered under warranty and will cost you down time and money.

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

⚠DANGER

Before attempting any type of maintenance or service work under the cab make sure the cylinder lock is in place.

⚠ DANGER

AVOID EQUIPMENT AND PERSONAL INJURY WHEN TILTING THE CAB.

DO NOT ALLOW ANYONE IN THE CAB WHEN IT IS TILTING OPEN OR CLOSED.

DO NOT ALLOW ANYONE NEAR THE CAB WHEN IT IS TILTING OPEN OR CLOSED.

DO NOT TILT THE CAB WITH THE CAB DOORS OPEN. SECURE IN CLOSED POSITION.

BE AWARE AND AVOID ALL PINCH POINTS OF THE CAB WHEN OPENING OR CLOSING.

ALWAYS OPERATE THE CAB TILT SLOWLY AND CAREFULLY.

ALWAYS SECURELY BOLT THE CAB IN THE "DOWN" POSITION DURING OPERATION OR TRANSPORT.

ALWAYS USE THE CAB CYLINDER LOCKS WHEN THE CAB IS TILTED.

⚠DANGER

Avoid moving parts. Keep hands, feet, and clothing away from power driven parts. Keep all guards and shields in place and properly secured.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

⚠DANGER

DO NOT go near or in-line with the debris field of the machine while in operation. While grinding/mowing, the chips and portions of the material fly from the cutter head and can cause severe injury.

⚠DANGER

Never grind/mow materials that might contain wires, stones, nails, or other metal objects which may damage the teeth and become dangerous projectiles. Remove all rocks and stones from work area.

⚠DANGER

DO NOT start to grind/mow unless you are completely sure there are not any utility lines in the area above or below the ground level where you are grinding/mowing. Always contact the utility locating service in your area or local utility companies to mark underground utility lines.

⚠DANGER

Avoid power lines. Electrocution is possible if the machine touches a power line. Take the following precautions. Keep the machine at least 10 feet (3 meters) from electric lines. If the machine contacts an electric line stay away from the machine.

⚠WARNING

Sparks can occur if cutter teeth strike rocks, metal, or other hard objects.

DO NOT use in high or very high fire hazard severity zones.

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

⚠WARNING

Do Not continue to operate the machine if the cutter head stalls. Immediately lift cutter head out of the stump, material, dirt, etc. and start again with less bite. Prolonged cutter head stall will ruin the hydraulic components, creating extreme heat and possible fire hazard.

⚠WARNING

Do not operate the machine with the cab doors opened. Leaving the cab doors open while the machine is in operation can cause serious injury or death.

SAFETY PROCEDURES

⚠WARNING

CLEAN MACHINE OF ALL DEBRIS! DO NOT leave this machine unattended until all potential fire debris is removed, no fire or smoldering exists, and hot spots are cold. The engine creates many hot spots including: exhaust manifold, exhaust, turbo (if equipped), etc. Remove all flammable debris such as wood, chips, leaves, oils, fuels, etc. from engine exhaust, engine turbo (if equipped), beside, around, and under engine, around and under tanks, inside belt shields and guards, inside battery and tool boxes, inside cabinets (if equipped), and anywhere materials collect. ALWAYS keep several type A:B:C fire extinguishers operational and on the job at all times.

⚠WARNING

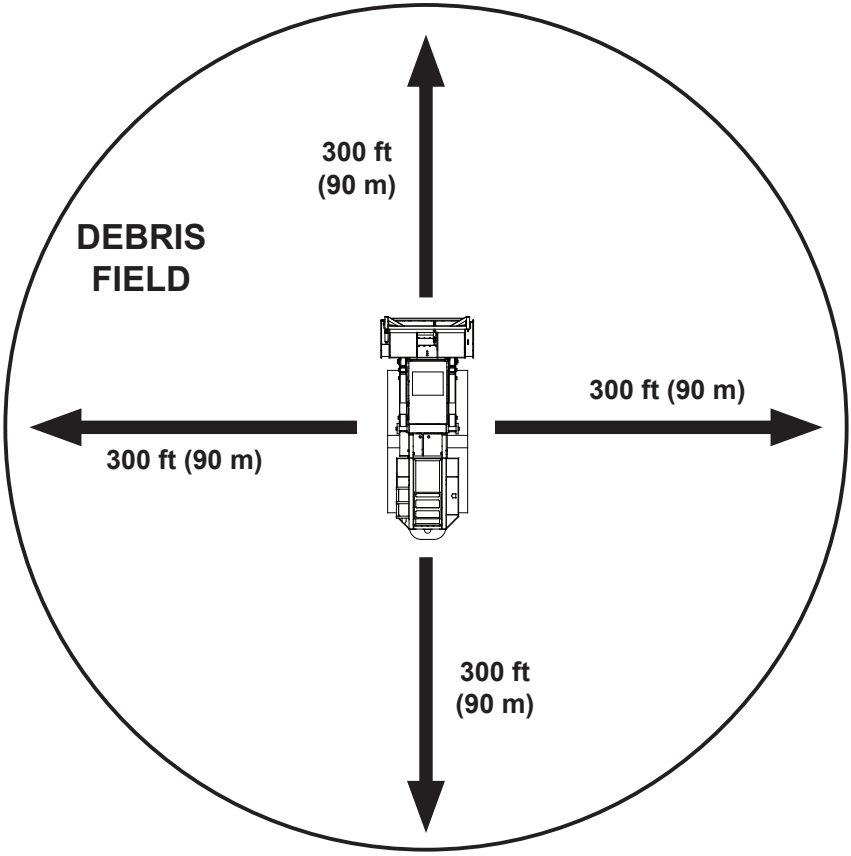
Check laws and regulations. Know and obey all federal, state, and local laws and regulations that apply to your work situation and the transportation of a machine this size.

NOTICE

The Bandit has only been run for a short time to test proper hydraulic pressures, possible leaks, etc. The fuel tank will be empty. Fuel is provided through a small auxiliary tank for testing. This immensely helps maintain safety in our manufacturing facility and while shipping.

⚠DANGER

Stay back 300 feet (90 m) in all directions from the machine while in operation. Always stop and warn anyone from entering the 300 foot (90 m) radius debris field around the machine. Failure to do this could result in severe injury or death. Wood chips, rocks, and other debris flying from the cutter head can be very dangerous.



SAFETY PROCEDURES

IF MACHINE IS EQUIPPED WITH A SELF PROPELLED UNDERCARRIAGE

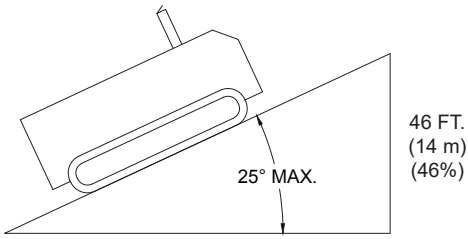
Machines equipped with undercarriage tracks are shipped with a manual from the track manufacturer. Refer to it for service, operation, and safety information.

⚠WARNING

Do not attempt to operate the machine on an ascending or descending slope of more than 25° or 46% or a side slope of more than 17° or 30%, it is Dangerous and could be Fatal. This is the maximum slope grade the machine can be operated on if the hydraulic system, self propelled undercarriage, and engine are running at maximum performance and good traction is sustained.

Maximum Slope Grade

Ascending or Descending Slope



Side Slope

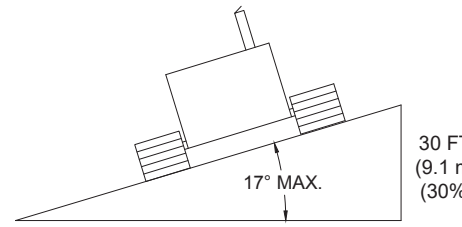


Diagram shows percentage to degree of slope.
Percentage is in vertical feet for every 100 horizontal feet.

⚠WARNING

Any increase from the specified maximum operating angles may cause loss of lubrication function and damage the engine.

⚠DANGER

The machine should never be parked on a slope at any time. The machine can coast or creep causing equipment and/or personal injury.

⚠DANGER

Make sure everyone is clear of machine before moving the machine. Stay clear of undercarriage travel system when the machine is moving.

⚠DANGER

DO NOT entangle feet or hands in undercarriage travel system.

⚠DANGER

Use **EXTREME CAUTION** when traveling over non-level surface! This machine can tip over or tip backwards on non-level surface. You will cause engine damage, machine damage and possible personal injury!

⚠DANGER

NEVER sit, stand, lay, climb or ride anywhere on this machine while it is running, operating, or in transit. You will be injured.

EQUIPMENT SPECIFICATIONS

EQUIPMENT SPECIFICATIONS

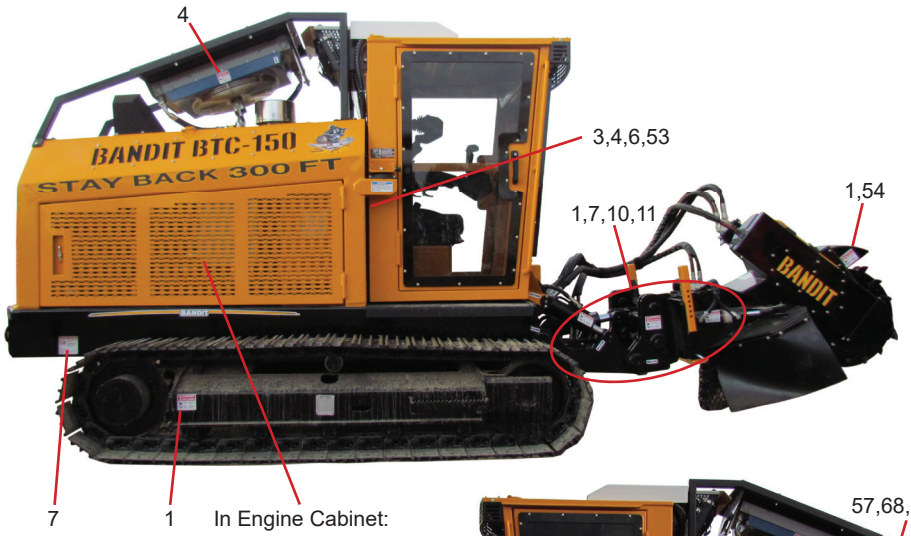
Approximate Dimensions & Weights

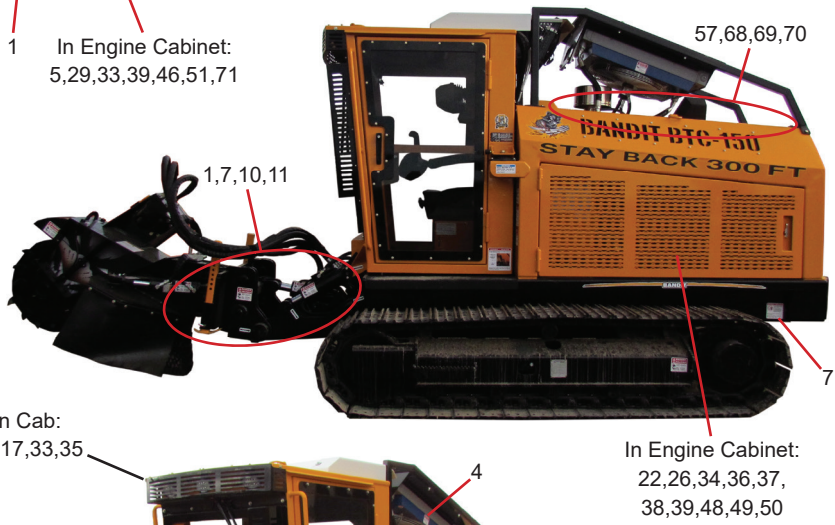
(Dimensions & weights will vary depending on optional equipment)

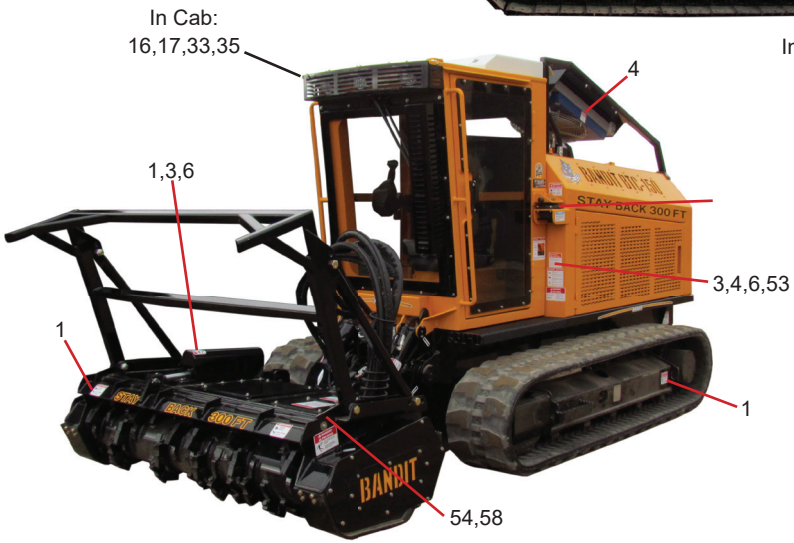
Model BTC-150		
Height		103" (2.6 m)
Length	Without Attachment	170" (4.3 m)
	With Mower Attachment	225" (5.7 m)
	With Stump Grinder Attachment	240" (6.1 m)
Width	Outside Tracks	83.5" (2.1 m)
Mower	Width	87.5" (2.2 m)
	Height	62" (1.6 m)
	Cutting Width	72" (1.8m)
Stump Grinder	Cutter Head Depth	58" (1.4 m)
	Cutter Head Height	71" (1.8 m)
	Cutter Head Swing	75" (1.9 m)
Weight	Without Attachment	13800 lbs. (6260kg)
	With Mower Attachment	16800 lbs. (7620kg)
	With Stump Grinder Attachment	15700 lbs. (7120kg)
Fuel Tank Capacity		50 gal. (189L)
Hydraulic Tank Capacity		40 gal. (151L)

DECAL LOCATIONS

Decal locations may vary, these are general locations.







DECAL LOCATIONS

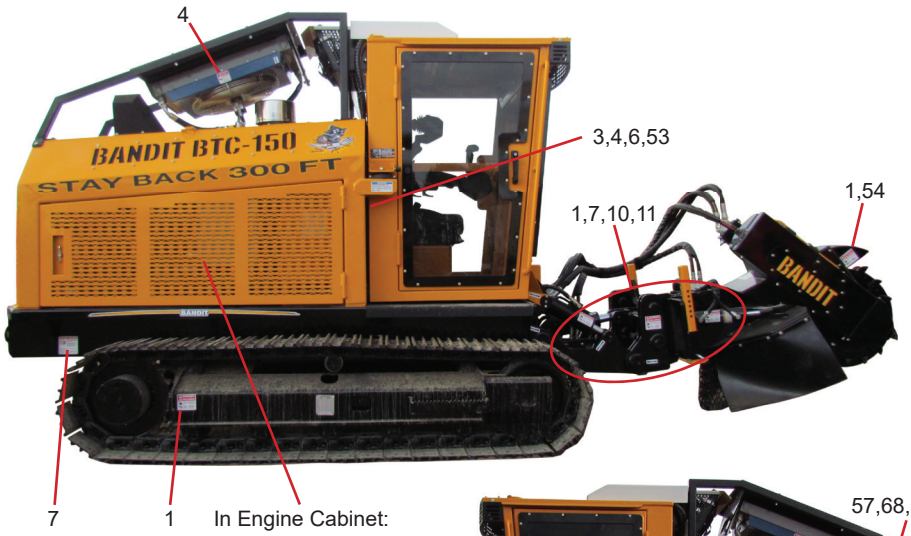
Modifications and/or additions of decals to this list will happen.
Consult track carrier dealer or manufacturer for most current decal package.

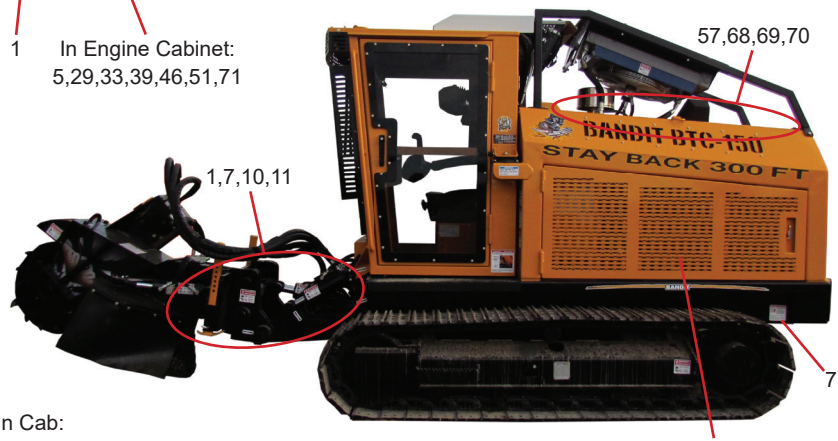
LOCATION	NUMBER	DESCRIPTION
1.	SPD-02	Moving Parts Keep Hands...
2.	SPD-19	...Minimum 10 Feet Away From Tracks...
3.	SPD-30	Do Not Sit, Stand, Lay, Climb or...
4.	SPD-61	Do Not Insert Fingers....
5.	SPD-74	Avoid...Injury When Tilting Cab...
6.	SPD-75	...Debris Field...
7.	SPD-76	Flying Objects Stand Clear...
8.	SPD-77	...Cab Is Tilted...Cylinder Locks Must Be In Place...
9.	ID-67	Bandit Industries Inc...USA
10.	INST-12	Grease Daily Arrow...
11.	INST-16	Grease Weekly Arrow
12.	INST-53	Hydraulic Oil...Hydrex XV...
13.	INST-73	Cutterhead Lock Hole
14.	INST-74	Cutterhead Lock Pin
15.	INST-110	Window Washing Instructions...
16.	INST-320	Left Joystick Controls...
17.	INST-322	Right Joystick Stump Grinder Controls...
18.	INST-323	Cutter Head Charge Filter
19.	INST-324	Curbside Track Charge Filter
20.	INST-325	Roadside Track Charge Filter
21.	INST-329	Windshield Washer Fluid
22.	INST-332	Cutter Head Pump
23.	INST-333	Roadside Track Pump
24.	INST-334	Curbside Track Pump
25.	INST-335	Auxiliary Pump
26.	INST-339	Control Box Top...
27.	INST-340	Control Box Bottom...
28.	INST-361	Valve Functions...
29.	INST-422	Valve Test Port & Pressure...
30.	INST-423	High Pressure Auxiliary/Tank Filter
31.	INST-424	Structure Design...
32.	INST-425	Power Box Fuse & Relay Panel...
33.	INST-426	Cab Fuse Panel...
34.	INST-428	Hydraulic Tank Drain
35.	INST-430	Right Joystick Mower Controls...
36.	N-02	Maintain Lubrication...
37.	SPN-06	Decal Maintenance...
38.	N-30	Must Wait ... Before Turning Off Battery...
39.	N-36	12 Volt Circuit
40.	N-40	Decrease Cutter Head Rpm...
41.	N-46	Accumulator Pre-Charge…
42.	N-60	Clean Quick Couplers...
43.	N-61	DEF Fill Area
44.	N-69	Patents...
45.	N-77	Cab Mount Bolt...
46.	N-79	Do Not Start To Weld...Unless...

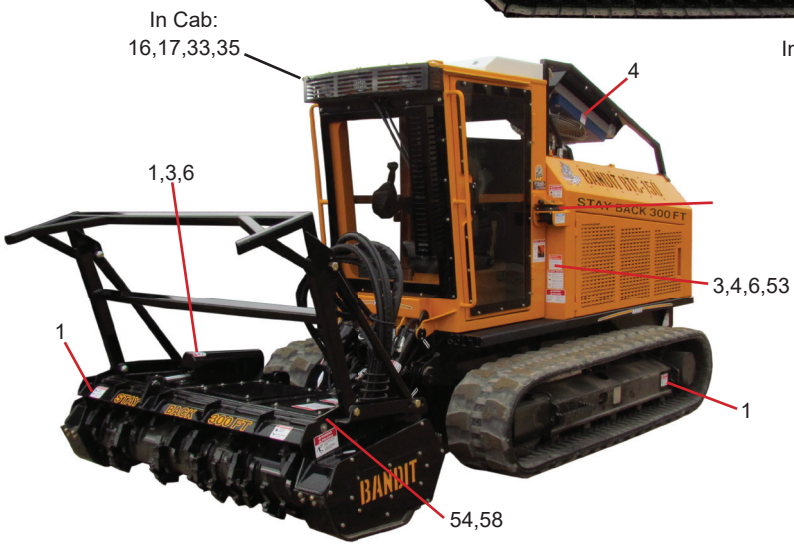
NOTICE Some decals are for optional equipment. Decal locations may vary, these are general locations. If any decals become damaged, replace immediately.

DECAL LOCATIONS

Decal locations may vary, these are general locations.







DECAL LOCATIONS

Modifications and/or additions of decals to this list will happen.
Consult chipper dealer or manufacturer for most current decal package.

LOCATION	NUMBER	DESCRIPTION
47.	N-80	Leaving Operator's Seat...Press Hydraulic Disable...
48.	N-83	Main Battery Disconnect Switch
49.	N-84	Cab Tilt Battery Disconnect Switch
50.	SPW-01	Do Not Go Near Oil Leaks...
51.	SPW-02	Combustible Liquid...Diesel Fuel Only...
52.	SPW-04	Frozen Battery Will Explode...
53.	SPW-11	Do Not Leave Unit Parked On A Slope...
54.	SPW-28	Fire Hazard Sparks Can Occur…
55.	SPW-31	Explosion Hazard Ultra Low Sulfur Diesel…
56.	SPW-43	Do Not Attempt...Slope Of More Than...
57.	SPW-46	California Proposition 65...Diesel
58.	SPW-47	California Proposition 65...
59.	SPW-48	Wear Eye & Personal Protection...
60.	900-8916-54	Basic Safety Decal Kit (Options may require additional decals)
61.	900-8914-50	Bandit Model BTC-150 Logo Decal Kit & Stay Back 300 Ft.
62.	900-8916-55	Cab & Label Decal Kit
63.	OL-07	Winch Tether Jack
64.	OL-25	Lights
65.	OL-33	Ignition Switch
66.	OL-64	Dome Light...
67.	OL-74	Battery Disconnect On / Off...
68.	OL-88	Ignition Switch Off / On / Start...
69.	OL-358	Hydraulic Tank Filter
70.	OL-359	Hydraulic Oil
71.	OL-360	Diesel Fuel
72.	OL-361	Valve Functions

NOTICE Some decals are for optional equipment. Decal locations may vary, these are general locations. If any decals become damaged, replace immediately.

DECALS

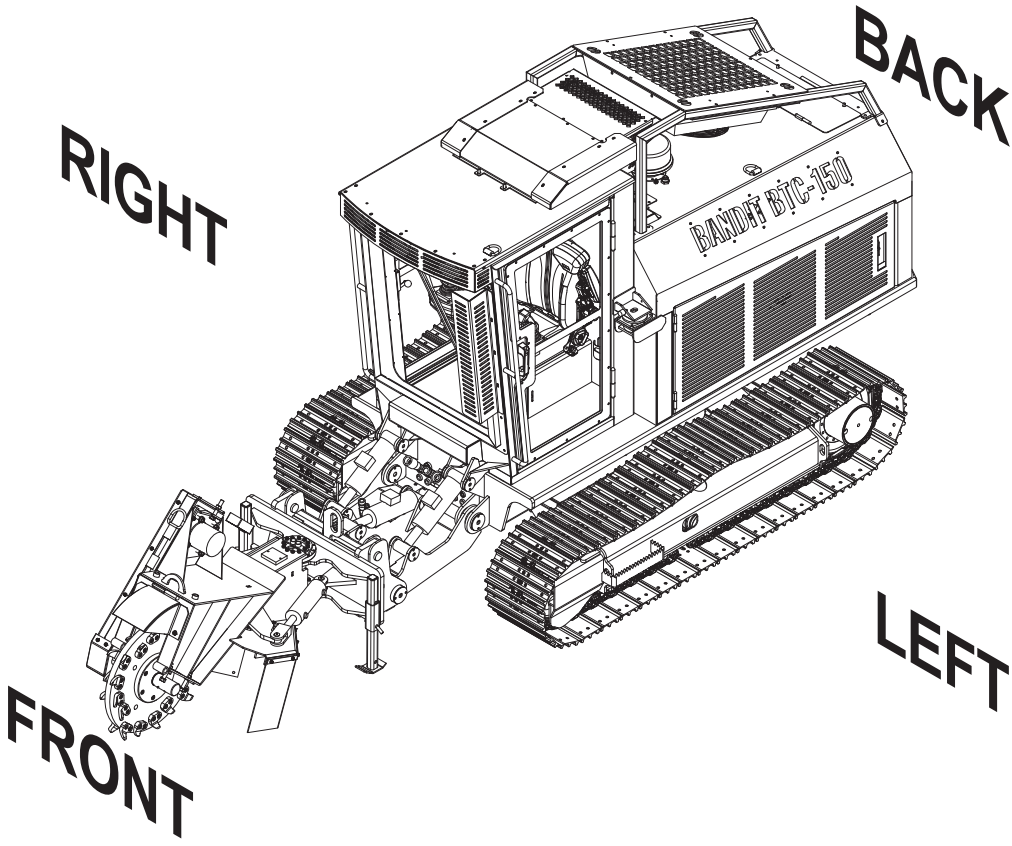
Decals located on your Bandit equipment contain useful information to assist you in operating your equipment safely. Some of the decals on your machine and their location are shown in this section.

It is very important that all decals remain in place and in good condition on your machine. Please follow the care and instructions given below:

1. You should use soap and water to keep your decals clean. Never use mineral spirits or any other abrasive cleaners.
2. Immediately replace any missing or damaged decals. The location the decal is going to be applied to must be clean and dry, and at least 40°F (5°C) before applying decal.
3. When the need arises to replace a machine component with a decal attached, be sure and replace the decal.
4. Replacement decals are available, and can be purchased from the manufacturer or your Bandit Dealer.
5. Peel back about half of the backer paper on the decal. Position it on the flat, dry, clean surface so it is smooth and secure. Peel off the remainder of the backer paper as you continue to stick the decal on the surface.
6. Rub decal from the center outward to remove air bubbles and to secure contact.
7. Combination English / Spanish decals are typically standard. Other foreign language decals are available and may be purchased. Mail translated decals required to Bandit Industries, Inc.

EXAMPLES:

MACHINE ORIENTATION REFERENCE



JOYSTICK FUNCTIONS WITH MOWER ATTACHMENT

LEFT JOYSTICK

RIGHT JOYSTICK

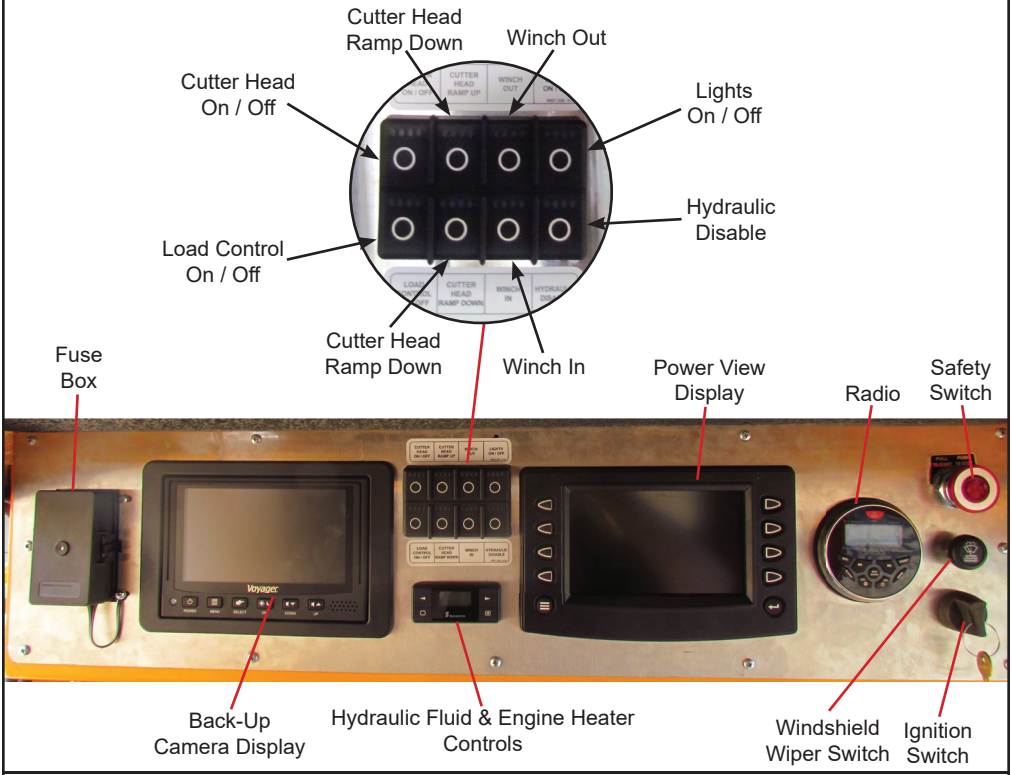
JOYSTICK FUNCTIONS WITH STUMP GRINDER ATTACHMENT

LEFT JOYSTICK

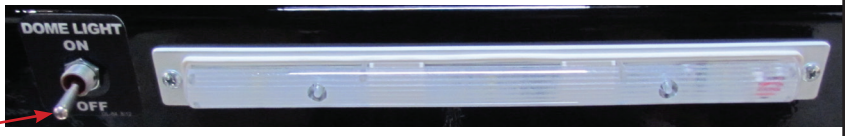
RIGHT JOYSTICK

CAB CONTROLS

DASHBOARD DISPLAY



DOME LIGHT

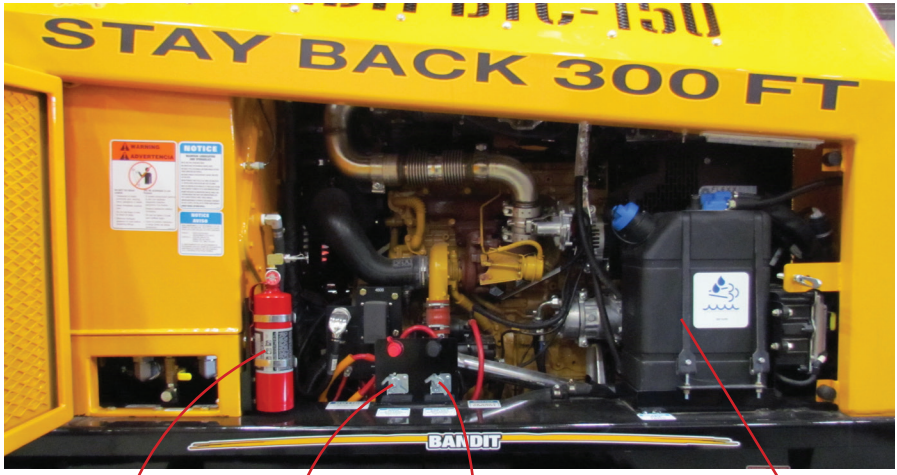


HEATER/AIR CONDITIONER CONTROLS

OPERATOR CHAIR ADJUSTMENTS

1. Adjust the seat suspension to the operator's weight.
2. Pull the lever to allow the chair to slide back
3. Twist the adjustment knob and lean back or lean forward to move the seat in the desired position.
4. Twist the adjustment knob to raise and lower the armrests.
5. Adjust these levers to adjust the armrest.

LEFT SIDE OF ENGINE



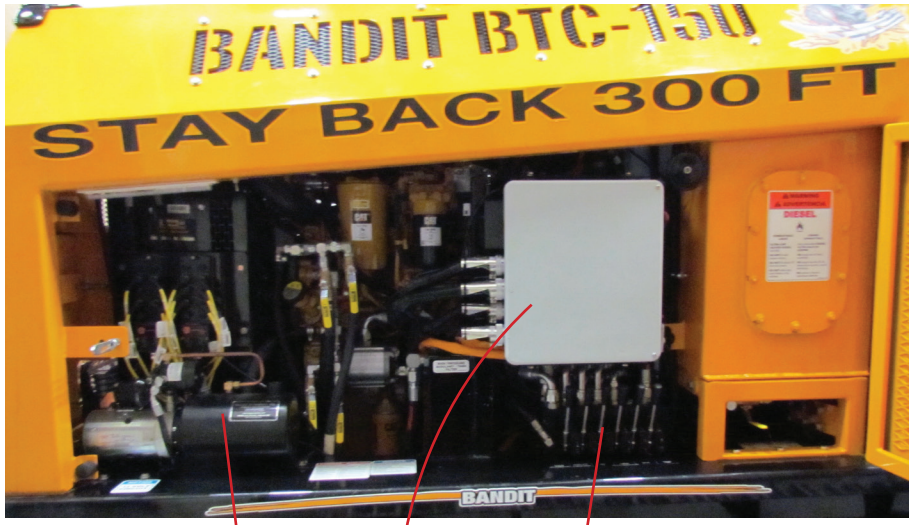
280° Fire Suppression

Main Battery Disconnect Switch

Cab Tilt Battery Disconnect Switch

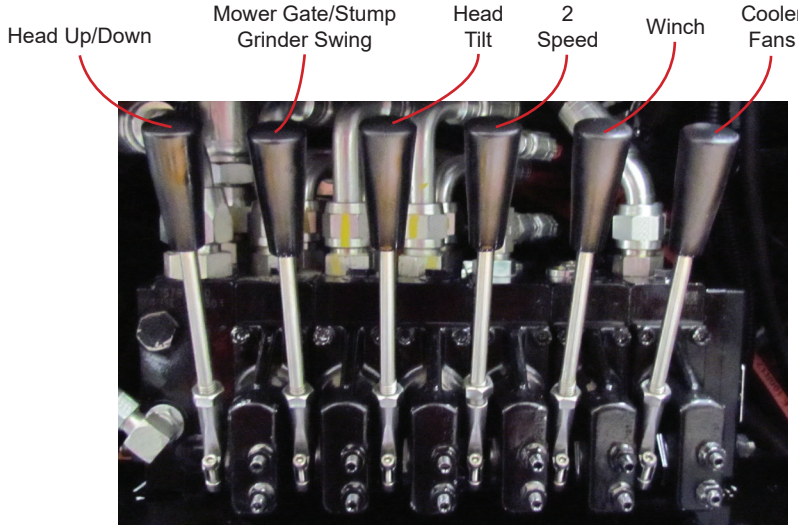
DEF Tank

RIGHT SIDE OF ENGINE



AUXILIARY VALVE

(Located on the left side behind the cab)



NOTICE

The handles (not shown) on the valve sections are for manual override during trouble shooting only.

WINCH

The winch tether can be plugged into the rear of the machine near the winch.

The winch tether jack at the rear of the machine. Located at the lower right hand corner of the engine radiator door.

The winch brake release to free spool the cable out.

MACHINE OPERATION - MOWER

⚠DANGER

Never grind/mow any materials that might contain wires, stones, nails, or other metal objects which may damage the teeth and become dangerous projectiles. Remove all rocks and stones from work area.

⚠DANGER

DO NOT start to grind/mow unless you are completely sure there are not any utility lines in the area above or below the ground level where you are grinding/mowing. Always contact the utility locating service in your area or local utility companies to mark underground utility lines.

⚠WARNING

DO NOT operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

⚠DANGER

Avoid power lines. Electrocution is possible if the machine touches a power line. Take the following precautions. Keep the machine at least 10 feet (3 meters) from electric lines. If the machine contacts an electric line stay away from the machine.

⚠DANGER

Stay back 300 feet (90 m) in all directions from the machine while in operation. Always stop and warn anyone from entering the 300 foot (90 m) radius debris field around the machine. Failure to do this could result in severe injury. Wood chips, rocks, and other debris flying from the cutter head can be very dangerous.

- Check all fluids before starting the machine.
- Make sure to go through the daily start-up and maintenance procedures before operating the machine.
- Start engine at idle speed and allow for sufficient time for oil to circulate before proceeding.
- Test all controls for proper operation.
- Avoid transversing slopes.

PUSHWORKING: MAKING THE FIRST INITIAL PASSES

Lift the cutter head up and tilt the mower up so that the cutter head is as exposed as possible.

Open the gate or trap door.

Drive the machine into the work area and start mulching.

Lower the cutter head as allowed.

Move the machine slowly back and tilt the cutter head down as it approaches the ground.

Watch the engine RPM's and adjust the machines mulching depth and travel speed as needed.

Do not allow the engine to stall.

PULLWORKING: GRINDING WHAT YOU HAVE TAKEN DOWN WITH THE FIRST INITIAL PASSES

Position the cutter head slightly off the ground.

Close the gate or trap door as needed to contain or control the debris.

Back the machine back over the area that was mulched.

Watch the engine RPM's and adjust the machines mulching depth and travel speed as needed.

Do not allow the engine to stall.

REMOVING STUMPS: STILL IN THE GROUND

To mulch stumps that are still in the ground, move the machine back and forth while slowly lowering the cutter head. Mulching stumps works best in the forward direction.

FINISHING: AFTER ALL INITIAL PASSES AND STUMPS HAVE BEEN REMOVED

Position the cutter head with the mower foot pads on the ground.

Close the gate or trap door

Back the machine back over the area that was mulched.

The slower the machine is driven, the finer the material that is left on the ground.

REMOVING STUMPS: LOOSE AND OUT OF THE GROUND

To mulch stumps that are loose and out of the ground, with the front of the mower tilted up, lower the cutter head down on top of the stump.

Do not tilt the mower up in the back because the stump may be thrown into the machine. Loose stumps should be chased or pinned in a hole in the ground.

Keep lowering the cutter head down on the stump, be careful not to fling the stump under the machine as the size decreases.

MACHINE OPERATION - STUMP GRINDER

⚠DANGER

Never grind/mow any materials that might contain wires, stones, nails, or other metal objects which may damage the teeth and become dangerous projectiles. Remove all rocks and stones from work area.

⚠DANGER

DO NOT start to grind/mow unless you are completely sure there are not any utility lines in the area above or below the ground level where you are grinding/mowing. Always contact the utility locating service in your area or local utility companies to mark underground utility lines.

⚠WARNING

DO NOT operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

⚠DANGER

Avoid power lines. Electrocution is possible if the machine touches a power line. Take the following precautions. Keep the machine at least 10 feet (3 meters) from electric lines. If the machine contacts an electric line stay away from the machine.

⚠DANGER

Stay back 300 feet (90 m) in all directions from the machine while in operation. Always stop and warn anyone from entering the 300 foot (90 m) radius debris field around the machine. Failure to do this could result in severe injury. Wood chips, rocks, and other debris flying from the cutter head can be very dangerous.

- Check all fluids before starting the machine.
- Make sure to go through the daily start-up and maintenance procedures before operating the machine.
- Start engine at idle speed and allow for sufficient time for oil to circulate before proceeding.
- Test all controls for proper operation.
- Avoid transversing slopes.

Position machine at stump with cutter wheel a slight distance away from stump.

Raise cutter wheel clear of stump.

Engage the cutter wheel.

Increase engine RPM to full.

Test the controls for proper operation, speed, and unobstructed movement.

The cutter wheel swing speed should be adjusted to a rate that will allow cutter wheel to pass through stump smoothly. If jerking, bouncing or significant drops in engine RPM occur, swing rate is too rapid and must be decreased.

Travel speed should be adjusted to a rate that will allow cutter wheel to approach stump smoothly. If cutter wheel is approaching stump quickly, travel speed is too rapid and must be decreased.

Lower the spinning cutter wheel to the stump and make a few light passes at the stump to get a feel for the cutting action.

Gradually increase cutting action and work away at the stump by swinging cutter wheel left-to-right-to-left through stump in a sideways motion. Smooth, effortless cutting lengthens machine life, minimizes down time and is more profitable in the long run.

Continue cutting stump by adjusting cutting wheel progressively lower until stump is cut well below ground level.

Swing cutter wheel clear of stump and position machine closer to stump for next series of passes and continue cutting.

Continue in this manner until stump has been removed.

Larger stumps may require repositioning machine to remove complete stump.

Raise cutter wheel clear of stump and return to center position.

Proceed to the next stump.

Reduce engine speed to idle and disengage cutter wheel. **DO NOT TURN OFF ENGINE**. Engine should be allowed to cool slowly at idle for 3-5 minutes to avoid damage.

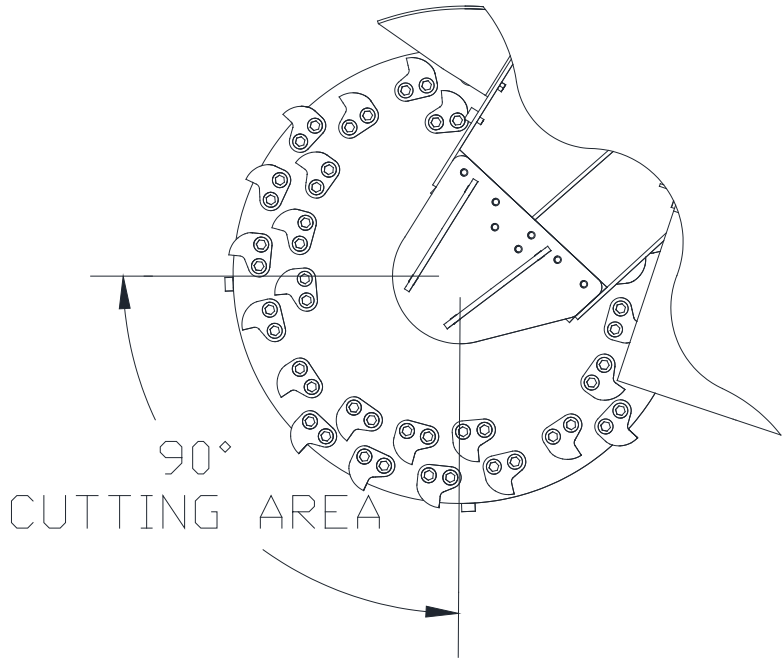
DO NOT ENGAGE OR DISENGAGE CUTTER HEAD AT A HIGH ENGINE RPM. Damage to the machine will occur.

Turn off engine.

Allow cutter wheel to come to a complete stop before inspecting.

MACHINE OPERATION - STUMP GRINDER

CUTTING AREA - STUMP GRINDER



⚠DANGER

For optimum performance, the stump should be cut with the portion of the cutter wheel shown above. **NEVER UNDERCUT THE STUMP**. Undercutting the stump may cause severe kickback, vibration and component damage. **NEVER CUT THE STUMP FROM THE TOP**. The cutter wheel will throw debris up and toward the operator, instead of down and under the machine.

TRANSPORTATION PROCEDURES

⚠WARNING

BEFORE TRANSPORTING THE MACHINE, INSPECT AND CONFIRM THE FOLLOWING STEPS:

1. The trailer must have a cargo weight rating capacity for the weight of the machine. The combined weight of the trailer and the machine can not exceed the load capacity of the tires, axles, hitch coupler system or the GVWR (Gross Vehicle Weight Rating) of the trailer.
2. The towing vehicle must be rated for and has the towing capabilities to haul the machine package (includes the machine and a trailer). The towing vehicle must be mechanically sound and capable of handling the towing job.
3. The hitch on the towing vehicle and the coupler on the trailer must match in size, type, and needed capacity.
4. Make sure both the towing hitch and the coupler are in good mechanical and wear condition, that they are joined together securely, and the coupler/hitch is locked in place.
5. The electrical plug-in on the towing vehicle and the trailer must be wired for the same functions and they fit securely together. The plug-in wire is long enough to not restrict the turning movement, but short enough to not drag on the road. The trailer must have a lighting system and braking system to match and perform correctly off the towing vehicles system. You must meet the Federal and your State's Department of Transportation Code of Regulations concerning lights, brakes, and highway transit.
6. All lights and brakes on the trailer must correctly function when activated by the systems in the towing vehicle.
7. The tires must be checked for cuts or damaged rims, air pressure is correct, and the axle lug nuts have been checked for correct torque (refer to trailer manual).
8. When the machine is on the trailer, the trailer has the right load capacity, the machine is positioned on the trailer for the correct weight distribution (follow the trailer manufacturer’s recommendations for the amount of weight on the tongue or hitch according to the total machine package weight), the cutter head is on the trailer bed, and the machine is securely bound down to the trailer bed per your States binding requirements.
9. Any loose debris, tools, or parts must be cleared off or put away.
10. Make sure to close and secure any of the following if equipped: tool box, radiator debris screen door, inspection doors, engine cabinet doors, tank caps, etc.
11. Make sure the load ramps are securely stored for transport.
12. Make sure the machine’s engine is not running, the ignition key is in your possession.
13. The machine package must be hauled level and the towing vehicle must be sized to handle hitch weight and towing weight. The towing vehicle or the combination of towing vehicle and towing package must have enough braking capacity to meet the Federal and your State Department of Transportation requirements.
14. The machine package is now ready for transport. Make sure to obey all local regulation and laws regarding the transporting of this type of machine.
15. Do not drive too fast for road conditions or exceed speed regulations for equipment towing.

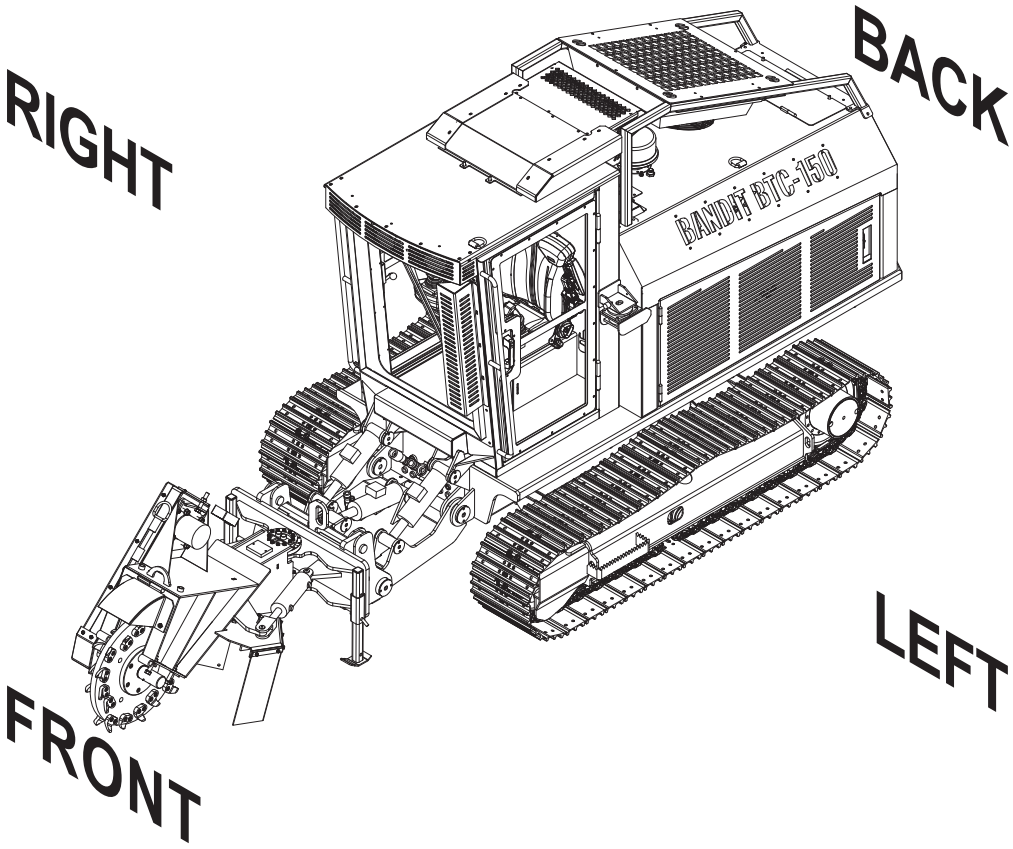
LOADING & UNLOADING

⚠WARNING

BEFORE LOADING OR UNLOADING THE MACHINE, INSPECT AND CONFIRM THE FOLLOWING STEPS: When loading or unloading the self-propelled machine on the trailer, use care and caution. The maneuvering of the equipment must be slow, smooth, and intentional, not fast and jerky.

1. Make sure the trailer and towing vehicle are parked on a flat surface. They must be stable on the surface with the brakes locked and the wheels chocked to avoid unwanted movement.
2. Position the loading ramps securely between the trailer and the ground level. Have them located so that they are in line with the tires or tracks of the machine when it moves.
3. Remove and store the straps/chains and binders used for transporting.
4. Confirm that there are not any obstacles on the trailer bed, around the trailer that may cause restricted movement of the machine.
5. The only person in the cab should be the one that is operating the machine controls, and they should be very experienced with the controls on this machine.
6. Follow all pre-startup instructions for the machine.
7. Once the engine is running at low RPMs, carefully raise the cutter head slightly up off the ground or trailer bed. While loading or unloading the machine, the cutter head should not be raised any higher than necessary to just clear whatever is under it. You need to keep the center of gravity as low as possible to avoid tipping the machine while it is moving.
8. The front of the machine should always be positioned so that it is toward the front of the trailer during transport. Make sure the engine turbo is pointed to the rear of the trailer or covered so wind can not blow in while transporting.
9. Follow the trailer manufacturer's recommendations for the amount of weight on the tongue or hitch according to the total machine package weight to correctly position the machine on the trailer bed.
10. The loading ramps or loading gate of the trailer must be constructed to withstand the weight and forces involved in loading and unloading the machine.
11. Align the machine with the trailer bed, and the loading ramps. The only equipment movement should be slowly, straight on or straight off the trailer.
12. With the engine and the machine at as low of speed as possible, move the machine toward the ramp system. Make sure the alignment is correct throughout the travel, and carefully readjust the cutter head height so that it barely clears obstacles as it is going up or down the ramp system.
13. Properly secure the equipment and the area to avoid any possible accidents or hazards.
14. The trailer should be constructed with appropriate tie down positions for the specific sized machine.
15. You must have binders that will withstand the strain of the machine trying to move while it is being transported.

MACHINE ORIENTATION REFERENCE



MAINTENANCE

The Bandit is a very simple machine to maintain. If you will follow a regular scheduled preventative maintenance program you should have years of trouble free operation.

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

⚠DANGER

Do not let anyone operate or maintain this machine until they have thoroughly read this manual, reviewed the equipment decals, watched the equipment video, and has been properly trained. You can purchase additional Bandit manuals, decals and videos for a nominal fee.

NOTICE

Consult your engine manual for proper break-in procedures. Various engines require somewhat different procedures, but basically the engines need to operate at lower RPM's and loads for a specific time.

NOTICE

Failure to properly break-in your engine may result in poor bearing and piston ring surfaces.

NOTICE

Expensive damage to the Bandit will occur if proper preparation is not taken before welding on the machine. Be sure to disconnect both battery cables and the engine ECM (engine control module) before welding. Follow the specific Engine MFG. instructions for proper welding and grounding procedures, before attempting to weld on the machine. If welding on the machine, do not ground the welder through the machine bearings, ground near work to be performed.

DAILY START UP & MAINTENANCE

1. Check the safety decals and engine gauges:
Replace any missing or damaged decals and/or engine gauges.

2. Check all safety equipment:
Check for proper operation. Repair or replace as needed. Examples: deflection chains, cab window guard, cab tilt cylinder lock, etc.

3. Check entire machine for loose bolts, nuts, parts, or components:
Check entire machine for any loose parts or components. Check for loose nuts or bolts. Torque, tighten, or replace any of the loose components. See page 38 for specific bolt torques.

4. Check all guards:
Check to make sure all guards are in place and installed correctly. Make sure they are secure.

5. Check the mower head/stump grinder wheel & attachment:
Check for elongated bolt holes, secure welds, torqued bolts, excessive wear and impact cracks on the attachment with the mower head or cutter wheel. If a problem is found contact the machine manufacturer or an authorized Bandit dealer.

6. Check condition of cutter teeth, tool holders, and attaching hardware:
Check condition of cutter teeth, tool holders, and attaching hardware. Look for, find, and tighten any component that has loosened up, become damaged, or is missing. Replace if necessary. Cutter teeth bolts must be replaced after a maximum of 5 rotations/changes to ensure safe clamping ability. Torque cutter teeth bolts to correct specs AT ALL TIMES.

7. Grease cylinder lug pin bushings:
Grease cylinder lug pin bushings with 1 to 2 shots of EP-2 Lithium type grease. Wipe off excessive grease. **Excessive grease will attract dirt.**

8. Grease mower head bearings (if equipped):
Grease each mower head bearing with 1 shot for every hour of use with EP-2 Lithium type grease (example: if the machine was used for 8 hours, each bearing would require 8 pumps of grease). Wipe off excessive grease. **Excessive grease will attract dirt.**

DAILY START UP & MAINTENANCE cont.

9. Grease stump grinder wheel bearings daily (if equipped):
Grease stump grinder wheel bearings daily with an EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**

10. Grease slew ring bearings on stump grinder attachment.
Grease slew ring bearings daily with 2 shots of an EP-2 Lithium type grease. There are 8 locations to grease. See "Lubrication Chart" for all 8 locations.

11. Check mower head belt tension (if equipped):
Remove the mower head guard and check the tension of mower head belt. Belt tension should measure 7/8" (22 mm) deflection with 65 lbs (30 kg) of force. New belt tension should be checked after 2 hours of operation, then every 4 hours for the first 48 hours of operation or until they quit stretching. Then belt tension should be checked daily.

12. Check stump grinder head belt tension (if equipped):
Remove the stump grinder head guard and check the tension of stump grinder head belt. Belt tension should measure 7/8" (22 mm) deflection with 55 lbs (25 kg) of force. New belt tension should be checked after 2 hours of operation, then every 4 hours for the first 48 hours of operation or until they quit stretching. Then belt tension should be checked daily.

13. Check hydraulic oil level:
Both hydraulic oil reservoir tank levels should always remain at 7/8 full. Remember to check DAILY to avoid excessive heat build up.

14. Check hydraulic shut-off valves:
Check to ensure all shut-off valves are open.

15. Check for any fluid leaks:
Inspect for any oil, fuel, or hydraulic oil. Check all hoses, fittings, lines, and tanks. DO NOT use fingers or skin to check for hydraulic leaks. Repair or replace any damaged or leaking components.

16. Check the fuel level:
Check the fuel level, running out and repriming is time consuming. Do not over fill, and you must leave fuel expansion space in the top of the tank.

17. Check engine oil and coolant levels:
Follow the engine manufacturer manual recommendations for fluid levels. You MUST follow specific ENGINE MFG. manual recommendations for radiator coolant, additives, lubrication, correct engine speed, ETC.

18. Check DEF level on Tier 4 engines:
Check the Diesel Emissions Fluid (DEF) level on Tier 4 engines. Fill to engine manufacturer's manual recommendations.

19. Check radiator, debris screen:
Refer to the engine manufacturer's manual. Thoroughly clean radiator fins at least once a day or more in excessive conditions. Make sure debris is not packed between fins. Use compressed air and/or pressurized water (soap may also be needed) to clean the radiator, depending on the level and type of debris. If pressurized water is used, be careful not to turn the debris hard and pack solid between the radiator fins. Make sure to clean the radiator in the correct direction depending on if the cooling fan is a sucker or a pusher; do not propel the debris into the radiator with compressed air or pressurized water. A partially plugged radiator will not allow the engine to cool properly. Keep the compressed air or pressurized water a safe distance from the radiator fins so they are not damaged. Visually inspect the radiator fins and make sure they are not bent or closed off, repair or replace as needed. Clean cooling fan, shroud on air cooled engines, and the debris screen (if so equipped). Improper service, maintenance, or neglect will cause overheating problems and/or engine failure.

20. Check oil cooler:
Thoroughly clean cooler fins at least once a day or more in excessive conditions. Make sure debris is not packed between fins. Use compressed air and/or pressurized water (soap may also be needed) to clean the oil cooler, depending on the level and type of debris. If pressurized water is used, be careful not to turn the debris hard and pack solid between the cooler fins. Make sure to clean the cooler in the correct direction; do not propel the debris into the cooler with compressed air or pressurized water. Keep the compressed air or pressurized water a safe distance from the cooler fins so they are not damaged. Visually inspect the cooler fins and make sure they are not bent or closed off, repair or replace as needed.

21. Check A/C condenser:
Thoroughly clean condenser fins at least once a day and twice in excessive conditions. Make sure debris is not packed between fins. Use pressurized water spray to clean. Do not rely on air pressure. The A/C condenser will only appear to be clean.

22. Check A/C filter:
Clean or replace foam A/C filter. Located behind the cab, on the front of the A/C.

23. Check air cleaner and precleaner:
Clean or replace element following engine manual recommendations. Also, check and clean the vacuator valve.

24. Check hydraulic control valves:
Inspect all hydraulic control valves and ensure they operate smoothly and shift correctly.

DAILY START UP & MAINTENANCE cont.

25. Inspect, adjust, and lubricate tracks:
Inspect, adjust, and lubricate tracks as needed per track MFG. manual.

26. Check around machine:
Check around the entire machine for tools, cans, saws, etc. All tools not in use should be stored in a tool box.

27. Clean off mower/stump grinder attachment (if equipped):
Clean off the mower or stump grinder attachment daily. Remove any debris that builds up on top of either attachment, especially around the hydraulic hoses. This may need to be done more than once a day, depending on the application.

28. Review all safety procedures on decals, from manual, and from video.

29. Make sure all safety equipment is being worn:
Make sure you are wearing all of your safety equipment: hard hat, face shield, gloves, eye protection, ear protection, etc.

30. Turn battery disconnect switch on.

31. Make sure the throttle switch is in the idle position on the control panel.

32. Remember to check EVERYTHING on the checklist.

WEEKLY MAINTENANCE

1. Grease the mower attachment's overhung load adapter (if equipped):
Grease both zerks with 1 - 2 pumps every 30 hours, or once a week with a synthetic NLGI#2 type grease.

2. Lubricate all steel friction areas:
Lubricate all steel friction areas including, but not limited to pivoting, hinged, sliding, rotating areas on the machine (i.e. doors, cab tilt hinge, winch rollers, etc.)

3. Remove the beltshield on mower/stump grinder attachment and clean out (if equipped):
Remove the beltshield on mower or stump grinder attachment, wipe off any grease that has built up around the bearings and remove any debris that has built up.

4. Check alternator and fan belts on engine (as applicable):
Adjust and maintain per the engine manufacturer's manual.

MONTHLY MAINTENANCE

1. Check hydraulic pressures:
Check, reset and maintain all hydraulic pressure settings to the specified maximum, see page 51. This will give you the best performance from the hydraulic system.

2. Check cab tilt pump reservoir:
Keep full of hydraulic oil, Petro-Canada Hydrex XV.

3 MONTH MAINTENANCE

1. Hydraulic oil filter (In-Tank):
Must be replaced after FIRST 10 HOURS OF OPERATION, USE A 10 MICRON FILTER. After first change replace oil filter every 3 months or 400 hours.

2. Charge filters (total of 3):
Must be replaced after first 10 hours of operation. Use a 10 Micron filter. After first change replace charge filters every 3 months or 400 hours. All charge filters are located between the cab and hydraulic and fuel tanks.

6 MONTH MAINTENANCE

1. Windshield Wiper:
Check the windshield wiper. Replace as needed.

YEARLY MAINTENANCE

1. Hydraulic oil:
Change hydraulic oil and flush the hydraulic reservoir tanks.

2. Fuel tank:
Drain and clean the fuel tank yearly.

3. Hydraulic suction screens:
Change hydraulic suction screens yearly or every 2000 hours.

4. Cab tilt pump reservoir:
Change ATF transmission oil and flush the cab tilt pump reservoir.

DAILY START UP & MAINTENANCE CHECK LIST

Each day before starting your machine these checks must be made:

		OK	REPAIRED
1.	Check the safety decals and engine gauges, replace if damaged.	☐	☐
2.	Check, maintain, and service all safety equipment for proper operation: deflection chains, cab window guard, cab tilt cylinder lock, etc.	☐	☐
3.	Check entire machine for loose nuts, bolts, and components.	☐	☐
4.	Check all guards to make sure they are tight and securely in place.	☐	☐
5.	Check the condition of the mower head/stump grinder wheel and attachment.	☐	☐
6.	Check the condition of the cutter teeth, tool holder, and hardware.	☐	☐
7.	Grease cylinder lug pin bushings with 1 to 2 shots.	☐	☐
8.	Grease mower head bearings with 1 shot for every hour of use, if equipped.	☐	☐
9.	Grease stump grinder wheel bearings.	☐	☐
10.	Grease slew ring bearings on stump grinder attachment with 2 shots in each locations.	☐	☐
11.	Check and adjust mower head belt tension.	☐	☐
12.	Check and adjust stump grinder head belt tension.	☐	☐
13.	Check and always maintain hydraulic oil level at 7/8 full.	☐	☐
14.	Check to ensure all hydraulic shut-off valves are open.	☐	☐
15.	Check all hoses, fittings, lines, and tanks for damage and fluid leaks.	☐	☐
16.	Check fuel level. (Running out and repriming is time consuming).	☐	☐
17.	Check engine oil, coolant levels, and correct engine speed. Follow engine manufacturer's manual specs. Engine must be level to check fluids.	☐	☐
18.	Check DEF level on Tier 4 engines. Fill to engine MFG's manual recommendations.	☐	☐
19.	Check radiator and debris screen. Clean as necessary. Clean cooling fan and shroud on air cooled engines.	☐	☐
20.	Check oil coolers. Clean as necessary.	☐	☐
21.	Check A/C condenser. Clean as necessary.	☐	☐
22.	Check A/C filter (Located behind the cab, on the front of the A/C). Clean as necessary.	☐	☐
23.	Check air cleaner, precleaner, and vacuator valve. Clean as necessary.	☐	☐
24.	Check hydraulic control valves and ensure they operate and shift correctly.	☐	☐
25.	Inspect, adjust, lubricate tracks per manufacturer’s manual recommendations.	☐	☐
26.	Check around the entire machine for any foreign objects, tools, cans, saws, etc.	☐	☐
27.	Clean & remove any debris that builds up on top of the mower or the stump grinder attachment (if equipped).	☐	☐
28.	Review all safety procedures on decals, from manual, and from video.	☐	☐
29.	Wear all applicable safety equipment: hard hat, face shield, gloves, eye protection, ear protection, etc.	☐	☐
30.	Turn battery disconnect switch on.	☐	☐
31.	Make sure the throttle switch is in the idle position on the control panel.	☐	☐
32.	Remember to check EVERYTHING on the checklist.	☐	☐

WEEKLY CHECK LIST

Every week these checks must be made:

		OK	REPAIRED
1.	Grease mower overhung load adapters with 2 shots on both sides of mower, if equipped.	☐	☐
2.	Lubricate steel friction areas: pivoting, hinged, sliding, & rotating areas (i.e. doors, cab tilt hinge, winch rollers, etc).	☐	☐
3.	Remove the beltshield mower/stump grinder attachment and clean out.	☐	☐
4.	Check alternator and fan belts on engine.	☐	☐

MONTHLY CHECK LIST

Every month these checks must be made:

		OK	REPAIRED
1.	**Check hydraulic pressure. Set to specified PSI (bar).**	☐	☐
2.	**Check cab tilt pump reservoir, keep full of ATF transmission oil.**	☐	☐

3 MONTH CHECK LIST

Every three months these checks must be made:

		OK	REPAIRED
1.	**Replace hydraulic oil filter after first 10 hours, then quarterly or every 400 hours.**	☐	☐
2.	**Replace charge filters (3 total) after first 10 hours, then quarterly or every 400 hours.**	☐	☐

6 MONTH CHECK LIST

Every six months these checks must be made:

		OK	REPAIRED
1.	**Check the windshield wiper. Replace as needed.**	☐	☐

YEARLY CHECK LIST

Every year these checks must be made:

		OK	REPAIRED
1.	**Change hydraulic oil and flush the hydraulic tanks.**	☐	☐
2.	**Drain and clean the fuel tank.**	☐	☐
3.	**Replace the hydraulic suction screens annually or every 2000 hours.**	☐	☐
4.	**Change ATF transmission oil and flush the cab tilt pump reservoir.**	☐	☐

BOLT TORQUE CHART

(THESE TORQUES ARE BASED ON DRY, CLEAN THREADS)

DESCRIPTION	BOLT SIZE	TORQUE (FT.-LBS.)	TORQUE (Nm)
Mower Head Tooth Bolt	3/4" - 10 NC	376	509
Mower Head Bearing Bolt	3/4" - 10 NC	118	160
Mower Head Bearing Set Screws		39	53
Mower Head Sheave Bushing		83	112
Mower Head Shaft Bushing		30	41
Mower Head Motor Sheave Bushing		67	91
Cutter Wheel Sheave Bushing		83	112
Cutter Wheel Mini Buck Tooth Bolts	7/8" - 14 NF	240	325
Cutter Wheel Green Tooth Nut		50	67
Cutter Wheel Green Tooth Pocket Bolts	5/8" - 18 NF	240	325
Cutter Wheel Tomahawk Bolts	5/8" - 18 NF	120 - 150	163 - 203
Engine Hold Downs	3/4" - 10 NC	350	475

Before tightening bolts be sure you have the correct size bolt for the correct amount of torque.
Use only factory approved knives and hardware.

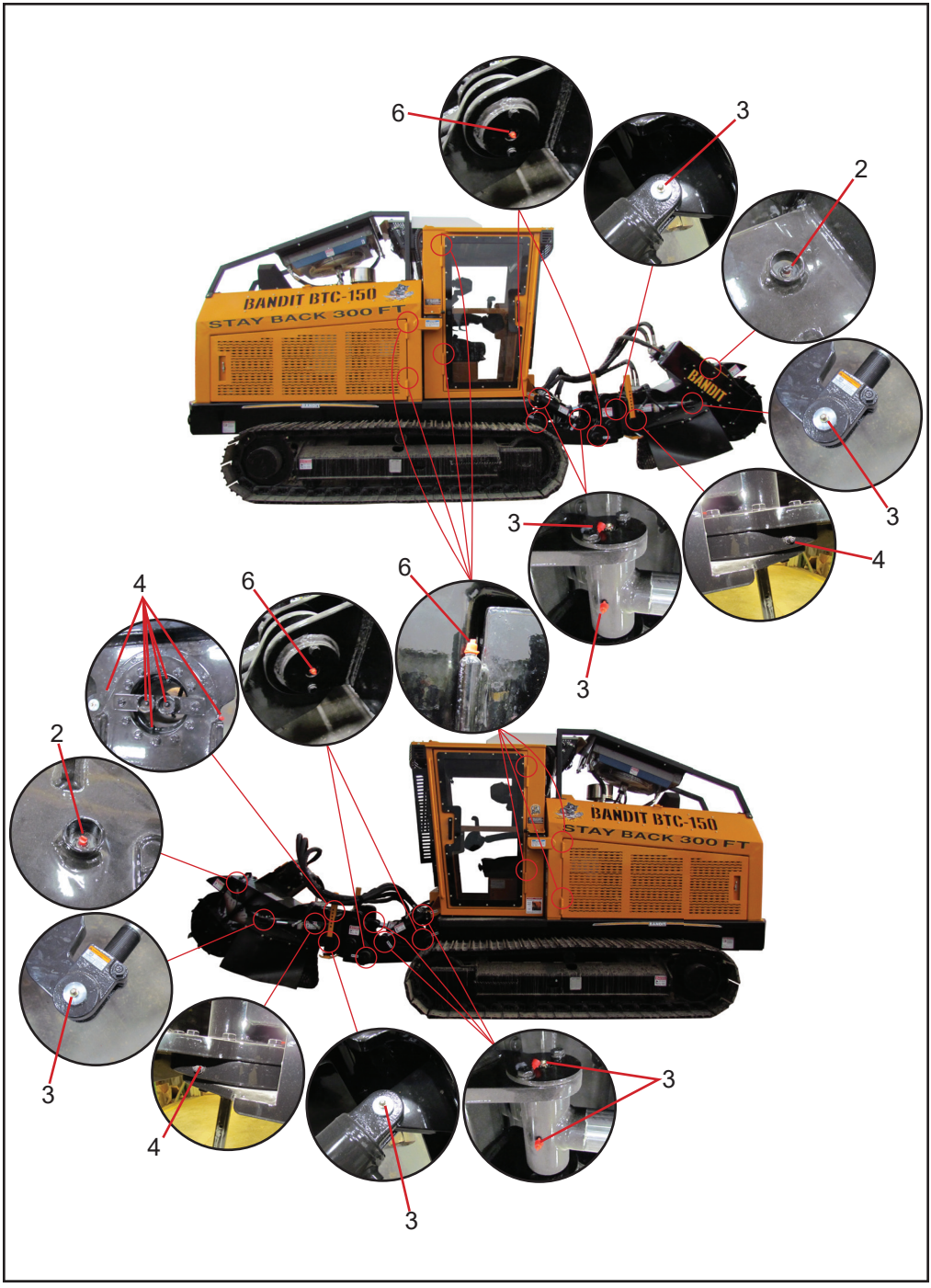
LUBRICATION CHART

		CHECK			
#	DESCRIPTION	DAY	WEEK	MONTH	PROCEDURE
1	Mower Head Bearings	X			1 shot of grease per hour of use - wipe off excess
2	Stump Grinder Cutter Wheel Bearings	X			1 shot of grease per hour of use - wipe off excess
3	Cylinder Lug Pin Bushings	X			1 - 2 shots of grease - wipe off excess
4	Stump Grinder Slew Ring Bearing	X			1 - 2 shots of grease - wipe off excess
5	Mower Overhung Load Adapter		X		1 - 2 shots of grease - wipe off excess
6	Steel Friction Areas: pivoting, hinged, sliding, rolling		X		Lubricate (i.e. doors, cab tilt hinge, etc.)
7	Tracks	→			Grease per MFG's instructions

A right angle grease fitting may need to be used to grease some of the lubrication points. This type of grease fitting can be obtained from most local automotive parts stores.

NOTICE Use as a reference only, locations may vary depending on options or component manufacturer. Lubrication point instructions are described on the machine, in the Lubrication & Coolant Section and Maintenance Section of this manual, or component manufacturer's manual.

LUBRICATION CHART



NOTICE Use as a reference only, locations may vary depending on options or component manufacturer. Lubrication point instructions are described on the machine, in the Lubrication & Coolant Section and Maintenance Section of this manual, or component manufacturer's manual.

MOWER HEAD

DO NOT OPERATE MACHINE WITHOUT A FULL SET OF CUTTER TEETH. OPERATING MACHINE WITHOUT A FULL SET OF CUTTER TEETH CAN CAUSE EXCESSIVE VIBRATION AND PREMATURE BEARING FAILURE, HYDRAULIC FAILURE AND EARLY MACHINE FATIGUE.

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

⚠DANGER

Do Not operate machine with extremely worn or broken teeth.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

MOWER TEETH CHANGING PROCEDURE

There are forty-two (42) teeth to a complete set on a model BTC-150 mower head.

Use only original equipment manufacturer's cutter teeth and scrapers. The use of any other aftermarket cutter teeth or scrapers may cause damage or premature failure to the drive train.

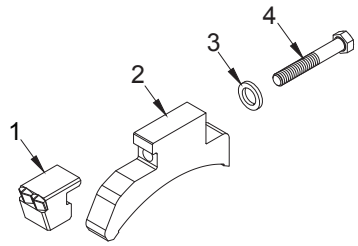
1. Read all instructions before starting procedures.
2. Lift the mower head off the ground and block it. Do not rely on the hydraulics to hold the mower head off the ground.
3. Follow all pre-maintenance shut down procedures.
4. Check the cutter head and mower attachment for elongated bolt holes, secure welds, torqued bolts, excessive wear and impact cracks. If a problem is found contact the machine manufacturer or an authorized Bandit dealer.
5. Check condition of cutter teeth, tool holders, and attaching hardware. Look for, find, and tighten any component that has loosened up, become damaged, or is missing. Replace if necessary. Cutter teeth and wiper insert bolts must be replaced after a maximum of 5 rotations/changes to ensure safe clamping ability. Torque cutter teeth and scraper bolts to 376 ft-lbs (509 Nm).

NOTICE

It is a good practice to stop after 20 or 30 minutes of running new cutter teeth in order to retighten any loose bolts to their specified torque.

MODEL BTC-150

1.	a.	401-2000-07	Carbide Tooth
	b.	401-2000-26	Planar Tooth
2.		401-3000-64	Tooth Holder
3.		900-4918-57	Lock Washer
4.		900-4904-64	Tooth Holder Bolt



CUTTER WHEEL - MINI BUCK TEETH

DO NOT OPERATE MACHINE WITHOUT A FULL SET OF TEETH. OPERATING MACHINE WITHOUT A FULL SET OF TEETH CAN CAUSE EXCESSIVE VIBRATION AND PREMATURE BEARING FAILURE.

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

There are thirty-two (32) teeth to a complete set on a Model BTC-150 Mini Buck Tooth Cutter Wheel. Thirty-two (32) teeth: Twelve (12) threaded right teeth, twelve (12) counter-bored left teeth, four (4) threaded straight teeth, four (4) counter-bored straight teeth and thirty-two (32) socket head cap screws.

Use only original equipment manufacturer's teeth. The use of any other aftermarket teeth may cause damage or premature failure to the drive train.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

⚠DANGER

Do Not operate machine with extremely worn or broken teeth.

⚠DANGER

NEVER USE HAND ON CUTTER WHEEL TO HOLD IN PLACE WHILE CHANGING TEETH. BE SURE TO REMOVE LOCKING PIN BEFORE OPERATING THE MACHINE.

A locking pin is provided to hold the cutter wheel in position during tooth removal and reinstallation. Locking pin will only lock on outer teeth.

TOOTH ARRANGEMENT

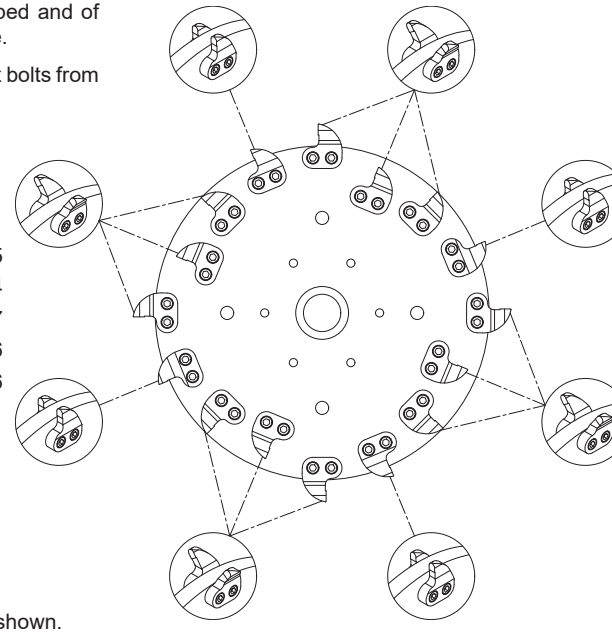
Inspect pockets, teeth and bolts for damage and replace as required.

When replacing pockets, always replace new pockets across from each other (180°) in order to prevent vibration.

Replacement teeth must be carbide tipped and of like design as provided with the machine.

Use anti-seize on threads to help prevent bolts from "freezing up" in cutter wheel pockets.

When replacing complete set of teeth, be sure to duplicate original factory tooth arrangement. Typically a 1/2" allen key socket is required to change or torque the teeth. Torque bolts to 240 ft. lbs. (325 Nm).



Threaded Angled Tooth 900-9938-75
C'bored Angled Tooth 900-9938-74
Threaded Straight Tooth 900-9938-77
C'bored Straight Tooth 900-9938-76
Pocket Bolt 900-4911-26

NOTICE Parts may not be exactly as shown.

CUTTER WHEEL - GREEN TEETH

DO NOT OPERATE MACHINE WITHOUT A FULL SET OF TEETH. OPERATING MACHINE WITHOUT A FULL SET OF TEETH CAN CAUSE EXCESSIVE VIBRATION AND PREMATURE BEARING FAILURE.

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

There are thirty-two (32) teeth and pockets, and thirty-two (32) tooth nuts to a complete set on a Model BTC-150 Green Tooth Wheel. Thirty-two (32) pockets: twelve (12) threaded right pockets, twelve (12) counter-bored left pockets, two (2) threaded straight pockets, two (2) counter-bored straight pockets, two (2) threaded left pockets, two (2) counter-bored right pockets, and thirty-two (32) hex bolts.

Use only original equipment manufacturer's teeth. The use of any other aftermarket teeth may cause damage or premature failure to the drive train.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

⚠DANGER

Do Not operate machine with extremely worn or broken teeth.

⚠DANGER

NEVER USE HAND ON CUTTER WHEEL TO HOLD IN PLACE WHILE CHANGING TEETH. BE SURE TO REMOVE LOCKING PIN BEFORE OPERATING THE MACHINE.

A locking pin is provided to hold the cutter wheel in position during tooth removal and reinstallation. Locking pin will only lock on outer teeth.

TOOTH ARRANGEMENT

Inspect pockets, teeth and bolts for damage and replace as required.

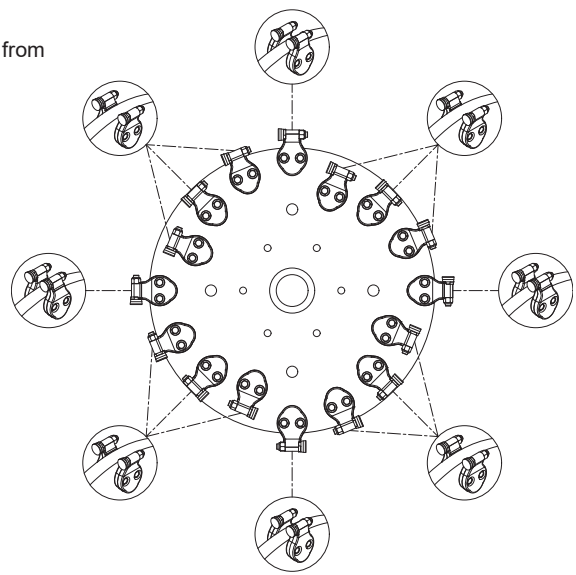
When replacing pockets, always replace new pockets across from each other (180°) in order to prevent vibration.

Replacement teeth must be carbide tipped and of like design as provided with the machine.

Use anti-seize on threads to help prevent bolts from "freezing up" in cutter wheel pockets.

When replacing complete set of teeth, be sure to duplicate original factory tooth arrangement. Torque pocket bolts to 240 ft. lbs. (325 Nm). Torque tooth nuts to 50 ft.-lbs. (67 Nm).

WearSharp Tooth	900-9918-24
WearSharp Tooth Nut	900-9918-50
Threaded Right Angled Pocket	900-9907-10
C'bored Left Angled Pocket	900-9907-09
Threaded Straight Pocket	900-9907-11
C'bored Straight Pocket	900-9907-47
Threaded Left Angled Pocket	900-9907-49
C'Bored Right Angled Pocket	900-9907-48
Pocket Bolt	900-9907-13



CUTTER WHEEL - TOMAHAWK TEETH

DO NOT OPERATE MACHINE WITHOUT A FULL SET OF TEETH. OPERATING MACHINE WITHOUT A FULL SET OF TEETH CAN CAUSE EXCESSIVE VIBRATION AND PREMATURE BEARING FAILURE.

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

There are thirty-two (32) teeth to a complete set on a model BTC-150 Tomahawk Cutter Wheel. Thirty-two (32) teeth: fourteen (14) right teeth, fourteen (14) left teeth, four (4) straight teeth, sixteen (16) threaded teeth mounts, sixteen (16) counter-bored teeth mounts, and thirty-two (32) hex head bolts.

Use only original equipment manufacturer's teeth. The use of any other aftermarket teeth may cause damage or premature failure to the drive train.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

⚠DANGER

Do Not operate machine with extremely worn or broken teeth.

⚠DANGER

NEVER USE HAND ON CUTTER WHEEL TO HOLD IN PLACE WHILE CHANGING TEETH. BE SURE TO REMOVE LOCKING PIN BEFORE OPERATING THE MACHINE.

A locking pin is provided to hold the cutter wheel in position during tooth removal and reinstallation. Locking pin will only lock on outer teeth.

TOOTH ARRANGEMENT

Inspect pockets, teeth and bolts for damage and replace as required.

When replacing pockets, always replace new pockets across from each other (180°) in order to prevent vibration.

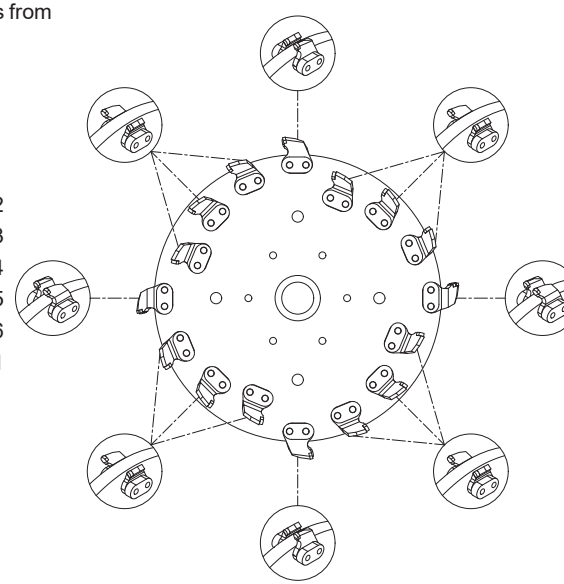
Replacement teeth must be carbide tipped and of like design as provided with the machine.

Use anti-seize on threads to help prevent bolts from "freezing up" in cutter wheel pockets.

When replacing complete set of teeth, be sure to duplicate original factory tooth arrangement. Torque bolts to 120 - 150 ft. lbs. (163 - 203 Nm)

ALL POCKETS require angle teeth mounted away from the cutter wheel.

Straight Tooth	900-9903-82
Left Angled Tooth	900-9903-83
Right Angled Tooth	900-9903-84
C'bored Mount Block	900-9903-85
Threaded Mount Block	900-9903-86
Mount Bolt	900-9903-81



SPROCKET INSTALLATION

1. Inspect the bore of the sprocket and the bushings tapered surface. Remove any oil, dirt or grease.
2. Place the bushing in the sprocket, inserting screw loosely.
3. Place key in key seat and slide sprocket to its desired location with the screw head facing out. If bushing goes on hard check shaft for burrs, remove if necessary.
4. Check for proper alignment of belts and evenly tighten bolts to recommended torque (See Page 37).

BELT TENSION CHECKING PROCEDURES

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

1. Follow all pre-maintenance shut down procedures and remove the cutter head inspection plate on the left side of the mower attachment or on the right side of the stumper attachment as shown in Figure 1.
2. Lay the paddle belt tension tool on top of the belt as shown in Figure 2.
3. Center the front of the paddle belt tension tool in the inspection cover cutout with the edge of the adjuster slot in the overhung load adapter mount as shown in Figure 2. If the beltshield is removed center the paddle between the two sheaves. This will place the paddle belt tension tool in the center of the belt between the two sheaves.
4. Set a torque wrench at 65 ft-lbs (88 Nm) for mower attachment or 55 ft-lbs (74 Nm) for stumper attachment.
5. Use a 1-1/8” socket on the torque wrench and turn the torque wrench clockwise.
6. When the torque wrench reaches 65 ft-lbs (88 Nm) for the mower head attachment, or 55 ft-lbs (74 Nm) for the stumper attachment, the belt should be deflected 7/8” (22 mm) for both attachments.
7. If the belt tension needs to be adjusted, see the Cutter Head Belt instructions.
8. Reinstall the inspection cover plate or the cutter head beltshield.

BELT TENSION CHECKING PROCEDURES

Figure 1

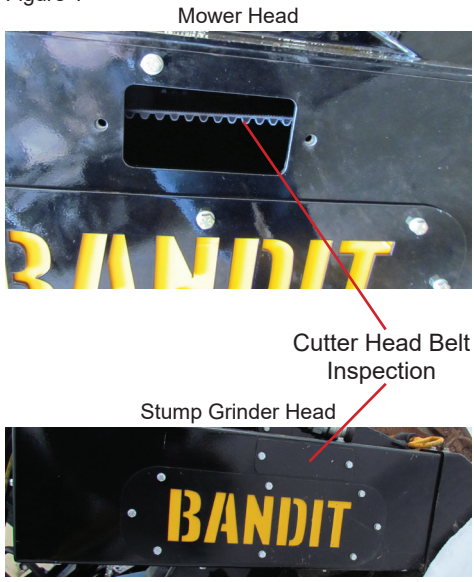
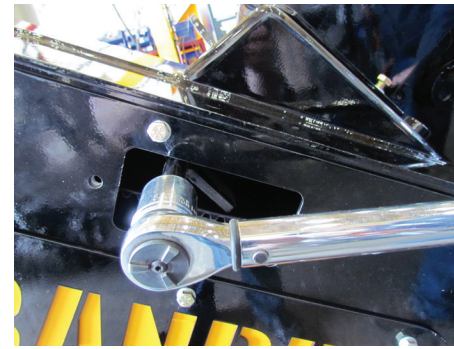
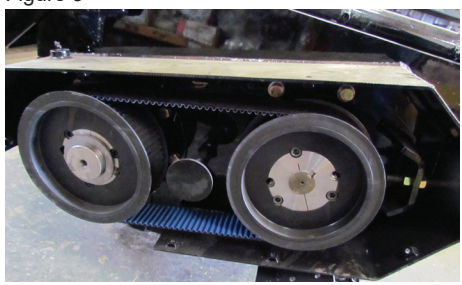


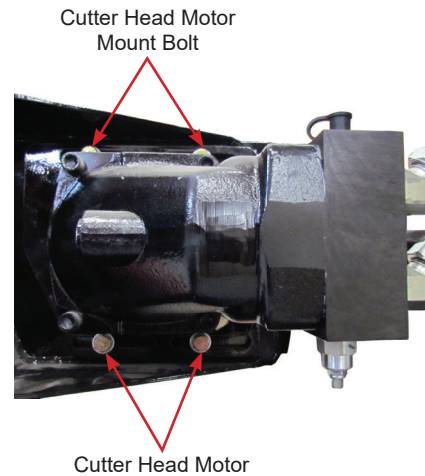
Figure 2



Paddle Belt Tension Tool
Part Number: 988-2004-35

Figure 3





POLY CHAIN BELT TENSION

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

NOTICE

DO NOT IGNORE THIS MAINTENANCE RULE

New belts stretch very soon and must be adjusted several times in the first few hours of operation. Adjust after one hour of operation, then every four hours until the belts quit stretching. Failure to do this will cause the belts to burn and fly off. **THIS FAILURE IS NOT COVERED BY WARRANTY!**

GENERAL RULES FOR TENSIONING

1. Check poly chain belt tension during the first 2 - 48 hours of run-in operation or after installing a new poly chain belt.
2. Over tensioning or under tensioning shortens belt and bearing life.
3. Keep the belt free from foreign materials that may cause the belt to slip.
4. Inspect poly chain belt and sprockets daily. Never use belt dressing as this will damage the belt and cause early failure.
5. The poly chain belt must never be forced over the sprocket. Allow enough room for belt to slip on.
6. Always make sure sprockets are aligned properly.

POLY CHAIN SPROCKET ALIGNMENT AND INSTALLATION

Sprocket alignment is very important. Proper alignment allows the load to be transformed equally across the belt width, which reduces wear and improves belt life.

1. Place a straight edge on the outside of the drive sprocket, making sure that the straight edge touches the outside and inside of the sprocket.
2. Move the sprocket until the straight edge touches both outside edges and inside edges.
3. Make sure the sprockets are properly aligned. Alignment should be within 1/4 degree. This is the maximum “M” dimension of .05” per foot (1.3 mm per 305 mm) center distance.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

NOTICE

It is a good practice to rotate the sprockets during belt tensioning. Then recheck deflections. The belts may need to be tightened again.

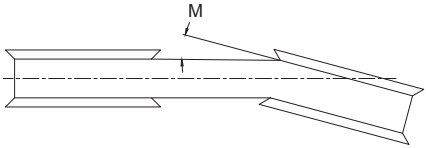
NOTICE

Special care needs to be taken with your cutter head belt. Alignment, tension, and cleanliness of this belt is very important. The cutter head belt needs to be checked for tension approximately every 10 to 20 hours of use. The cutter head belt must be running true. If the belt runs on an angle, it will cause belt failure. When replacing the cutter head belts, do not try to pry the belt on over pulley, this can break the fibers in the cutter head belt.

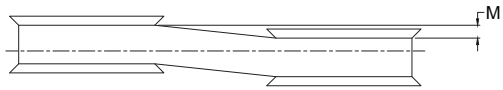
CUTTER HEAD BELTS (POLY CHAIN BELTS)

1. Follow all pre-maintenance shut down procedures.
2. Remove the cutter head beltshield.
3. Remove the old belt and replace with a new one, if replacing.
4. Measure the belt tension, proper belt tension for the Mower Head is 7/8” (22 mm) deflection with 65 ft-lbs (88 Nm). Proper belt tension for the Stump Grinder Head is 7/8" (22 mm) deflection with 55 ft-lbs (74 Nm) of force.
5. To adjust tension of the belt, loosen the bolts on cutter head bearing mount.
6. Tighten or loosen the belt tension adjuster.
7. Check the belt tension with the provided belt tension tool and readjust if necessary.
8. Tighten the cutter head bearing mount bolts.
9. Tighten the jam nuts on the belt tension adjuster.
10. Check the belt to make sure it is at the specified tension.
11. Check cutter head sprockets, with a straight edge to ensure that they are in line.
12. Replace the cutter head beltshield.

ANGULAR MISALIGNMENT



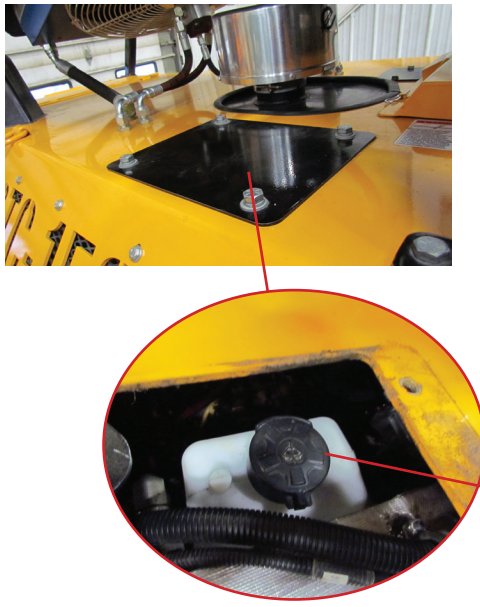
PARALLEL MISALIGNMENT



MAINTENANCE

Clean or replace foam A/C filter. Located on backside of the cab. Filter is removed for inspection on the bottom of the A/C unit.

Part Number for A/C Filter: 900-9939-85



The window washer fluid tank is located within the right side engine compartment. Remove the door to access. Keep full.

CAB TILTING INSTRUCTIONS

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

⚠DANGER

DO NOT go near the rotating cutter head for any reason. DO NOT go near the cutter head while the engine is running or the cutter head is coasting to a stop. Contact with a rotating cutter head will result in serious bodily injury or death.

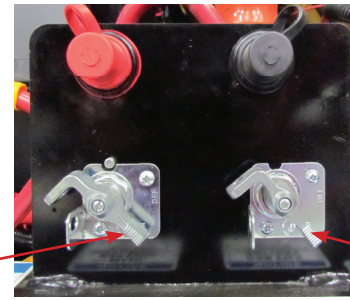
⚠DANGER

Before attempting any type of maintenance or service work under the cab make sure the cylinder lock is in place.

1. Read all instructions before starting.
2. Make sure the cutter head is resting on the ground.
3. Follow all pre-maintenance shut down procedures.
4. Remove the cab lock bolts. See Figure 2.
5. Switch the Main Battery Disconnect Switch to the "Off" position. See Figure 1.
6. Switch the Cab Tilt Battery Disconnect Switch to the “On” position. See Figure 1.
7. Push the Cab Lift Lever up to lift the cab. See Figure 3.
8. Pin the cylinder locks in place before doing anything under the cab. See Figure 4.
9. To lower the cab reverse the steps.

CAB TILTING INSTRUCTIONS

Figure 1



Main Battery Disconnect Switch

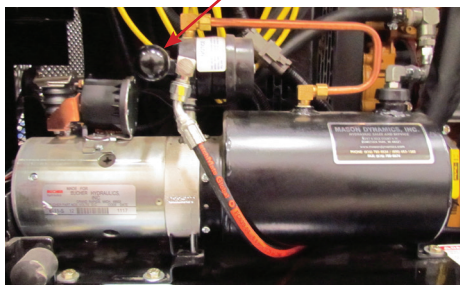
Cab Tilt Battery Disconnect Switch

Figure 2

There is a cab lock bolt located on both sides of the operator's cab below the rear side window.

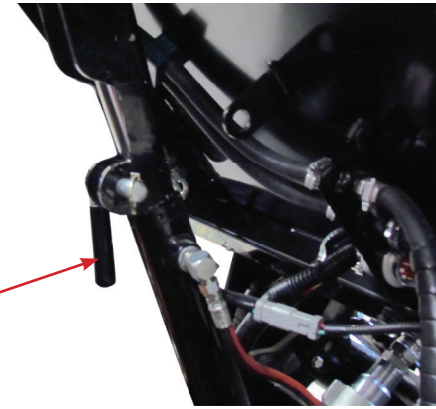
Figure 3

Cab Tilt Lever



Cab tilt power unit located on the left side of the machine, behind the engine door. Push the lever towards the engine to lift the cab. Pull the lever towards the operator to lower the cab. Make sure the engine battery disconnect switch is "Off" and the power disconnect switch to the cab tilt unit is in the "On" position and both of the cab lock bolts are removed.

Figure 4



Cylinder Lock in place on the Cab Tilt Cylinder

PAINT CARE

To help keep up the appearance of your Bandit equipment and reduce the possibility of surface rust follow these steps:

1. The machine should be washed on a regular basis with a non-abrasive mild detergent and then rinsed thoroughly. **Do not pressure wash sensitive areas** like: decals, gauges, electronic devices, autofeed control, etc.
2. If a stone chip, paint scratch, or paint crack occurs - it should be repaired immediately. Simply sand the edges of the damaged paint area, mask off the surrounding area, and apply primer and paint to the dry, clean, and warm area. This will keep the damaged area from spreading or getting worse.
3. If you are unable to sand and mask the area, there are containers of primer and paint available. A small brush can be used to touch up the area.
4. Also, primer and most colors of paint are available in aerosol spray cans to simply spray over the effected area after it is cleaned, dry, and warmed. This method is not as reliable as the process in step #2.

It is also reported that some equipment owners polish their machine at least yearly, and keep good mud flaps on their towing trucks to prolong the paint.

WINDOW WASHING INSTRUCTIONS

DO NOT use any glass cleaner on windows. Follow these steps to clean the windows:

1. Rinse with water to remove abrasive dirt.
2. Wash with soap or mild detergent, using a soft cloth sponge.
   Compatible cleaners: Top Job, Joy®, Palmolive Liquid®, Windex® Ammonia Free
   DO NOT SCRUB
3. Rinse once more, then dry with a soft cloth or chamois.
4. To remove grease, wet paint or decals: rub gently with a cloth wetted thoroughly in VM&P Natha or Isopropyl Alcohol. Wash and rinse.

DO NOT USE RAZOR BLADES, SCRAPERS, SQUEEGEES, ETC.

HYDRAULICS

⚠WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all hydraulic fittings. Relieve all pressure and retighten as needed.

DO NOT GO NEAR HYDRAULIC LEAKS! High pressure oil easily punctures skin causing serious injury, gangrene, or death. Avoid burns from fluid. Hot fluid under pressure can cause severe burns. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Relieve all pressure in the system before disconnecting the lines, hoses, or performing other work. Use a piece of cardboard to find leaks. Never use your bare hands. Allow system to cool down to ambient temperature before opening any coolant or hydraulic oil system.

In cold weather situations let your hydraulic system idle for approximately 15 minutes to allow the system to warm up to operating temperature.

⚠WARNING

DO NOT operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

HYDRAULIC FLUID REQUIREMENTS

This machine is equipped with “Petro-Canada Hydrex XV” hydraulic fluid. It is recommended to replace with the same. “Petro-Canada Hydrex XV” is an all season hydraulic fluid. This is a premium performance, long life anti-wear, hydraulic fluid, designed for all season use in heavy duty hydraulic systems. “Petro-Canada Hydrex XV” allows year round use under wide extremes of temperature. It allows the hydraulic system to start at temperatures as low as -40°C/-40°F, under no load conditions and it improves lubrication of hydraulic components at high operating temperatures. It will also help protect against hydraulic failures during the wide temperature swings of spring and fall. To find the closest “Petro-Canada Hydrex XV” dealer call 1-866-335-3369, press 1 for English, then 1 for lubricants, then press 2 for new customer. Or go to “lubricants.petro-canada.com” and click on “Contact Us” then click “Request A Quote” to find your nearest Petro-Canada dealer.

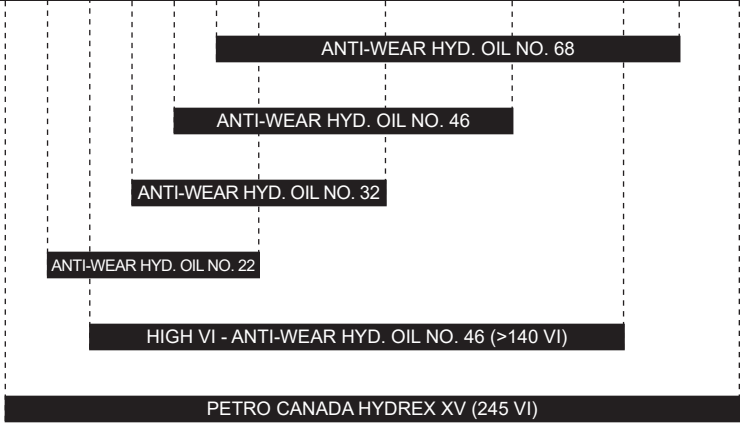
Multi Viscosity motor oils are not recommended to mix with “Petro-Canada Hydrex XV” hydraulic oil. AW oils may mix with “Petro-Canada Hydrex XV” hydraulic oil. The following are specifications and authorizations of compatible oils. Only a high quality anti-wear (AW) hydraulic oil containing foam, corrosion, rust and oxidation inhibitors should be used. This viscosity grade depends on the oil temperature in service, based on the climate and operating conditions.

	Hydrex XV	ISO 22, AW	ISO 32, AW	ISO 46, AW	ISO 68, AW	ISO 100, AW
Viscosity Index	>235	>95	>95	>95	>95	>95
Flash Point	>240°C/464°F	>200°C/395°F	>210°C/410°F	>220°C/430°F	>220°C/430°F	>240°C/464°F
Oxidations Stability (ASTM D0943)	>9,000 Hours	>3,000 Hours	>3,000 Hours	>3,000 Hours	>3,000 Hours	>3,000 Hours
Cold Start-up, No Load, Max	-40°C/-40°F	-34°C/-29°F	-26°C/-14°F	19°C/-3°F	-9°C/16°F	-4°C/24°F

HYDRAULICS

Alternate hydraulic oils are available, but they do not equal the performance or longevity of the “Hydrex XV” oil. Consult the following information supplied by the oil distributor.

CELSIUS (C)	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+43	+49	+54
FAHRENHEIT (F)	-40	-30	-15	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+110	+120	+130



NOTICE

The above chart is a suggested guide for viscosity of hydraulic fluids at start up ambient temperature. The load, demand, and cleanliness of the equipment will affect actual oil temperatures which can increase dramatically above ambient air temperatures during operation. The actual viscosity needed is based on oil temperature during operation and not air temperature. Compare your fluid specifications with the specifications below to verify compliance.

When choosing a hydraulic fluid - these maximum and minimum specifications must be met:

Minimum Viscosity during operation = 12 cSt
Maximum No-Load Viscosity at start-up = 2000 cSt

Hydraulic fluids vary in their resistance to oxidation at elevated temperatures, their ability to protect against metal-to-metal contact under increasing temperature, and their ability to separate water from the fluid. Viscosity is temperature dependant. Fluids with high viscosity-index (VI) will thin out slower at higher temperature and thicken slower at colder temperatures allowing a wider operating range. Choose a fluid that has test results in these areas for best results.

Based on the varying temperatures of the area where Bandit equipment is used, and the high demand and loads placed on this equipment, Bandit has filled each hydraulic system with Petro-Canada’s Hydrex XV All Season Hydraulic Fluid for maximum protection and performance.

Go to: lubricants.petro-canada.com and click on “Contact Us” then click “Request A Quote” to find your nearest Petro-Canada dealer.

NOTICE

Some equipment and components such as a fluid engagement clutch (PTO) have their own lubrication requirements. Consult their manufactures manual for that information.

HYDRAULICS
THE BANDIT HYDRAULIC SYSTEM

The Bandit is equipped with a very efficient, simple hydraulic system. Each component is capable of withstanding a specified PSI (bar) and still operate for a very long time.

If the simple rules mentioned below are followed, the hydraulic components will last for years:

•After you have operated a new machine for approximately an hour shut down the machine and recheck all hydraulic fittings for tightness and leaks.

• Avoid hydraulic pump cavitation. Low oil levels or cold start-ups will cause the hydraulic pump to cavitate. Cavitation will ruin the pump and possibly the entire hydraulic system. Cavitation only has to happen once. This will start the pump on its way to ruin. Allow hydraulic system to turn slowly for several minutes in cold weather in order for hydraulic system to warm up. Cavitation is not covered under warranty.

• Do not increase the relief valve settings beyond specified PSI (bar). This will cause damage to hydraulic components. Do not set any other hydraulic component past it's specified pressure or this will cause damage to the hydraulic components.

• Keep hydraulic oil clean. Dirty oil will cause excessive wear and loss of hydraulic power.

• Replace the hydraulic oil filter(s) after first 10 hours and with each 400 hours of operation or 3 months.

• Replace hydraulic oil & suction screen(s) at least once yearly. This is also a very good time to flush and clean the tank. Replace hydraulic oil immediately if it is contaminated or looks "milky". See pages 51 - 52 for hydraulic oil requirements.

• If the Bandit's hydraulic system is kept clean and the hydraulic pressures are not increased beyond the specified PSI (bar), the maximum use and life should be received from the hydraulic system.

• If a problem is encountered, it will more than likely be located in the relief valve or something as simple as belts or clutch slipping, check these first.

• Do not close the hydraulic shut-off valve for more than 3 to 4 seconds. Hydraulic shut-off valve handle must be completely turned on (in line with hose) at all times unless checking hydraulic pressure. Pressure gauge should be safely stored and installed only when checking pressure. Follow above instructions or this will cause unwarranted damage to the hydraulic components.

• Never close the ball valves on the hydraulic tank suction ports (if equipped) while the machine is running, this will ruin the hydraulic pump and components.

• Some component manufacturers require different specific hydraulic lubrication, such as gear boxes, undercarriage drives, etc. Refer to their manuals and maintenance section of this manual.

⚠WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all hydraulic fittings. Retighten as needed.

DO NOT GO NEAR HYDRAULIC LEAKS! High pressure oil easily punctures skin causing serious injury, gangrene, or death. Avoid burns from fluid. Hot fluid under pressure can cause severe burns. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Relieve all pressure in the system before disconnecting the lines, hoses, or performing other work. Use a piece of cardboard to find leaks. Never use your bare hands. Allow system to cool down to ambient temperature before opening any coolant or hydraulic oil system.

In cold weather situations let your hydraulic system idle for approximately 15 minutes to allow the system to warm up to operating temperature.

⚠WARNING

DO NOT operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury!

⚠CAUTION

After the initial start-up of the machine and after any replacement of hydraulic components, fittings and hoses must be re-checked for leaks and clearances.

HYDRAULICS

⚠DANGER

Before attempting any type of maintenance, disengage clutch or cutter head engagement, wait for the cutter head to come to a complete stop, place the cutter head on the ground, turn off engine, remove the ignition key, make sure the ignition key is in your possession, and wait 2 minutes then disconnect the battery. Make sure the cutter head is set on the ground or securely blocked up and also chained before doing any work around or under it.

NOTICE

DO NOT UNDER ANY CIRCUMSTANCES OVER-SET THESE RELIEF PRESSURES, BECAUSE IT WILL CAUSE DAMAGE TO COMPONENT PARTS AS WELL AS HYDRAULIC PARTS.

NOTICE

These typical hydraulic flows and relief pressure settings are with the engine at full RPM. All settings are subject to change!

⚠CAUTION

After the initial start-up of the machine and after any replacement of hydraulic components, fittings and hoses must be re-checked for leaks and clearances.

NOTICE

When returning hydraulic components for warranty make sure to box up all warranted parts to avoid additional damage while shipping. **Do not disassemble any hydraulic components which are to be warranted.** Anything which has been disassembled or tampered with will not be warranted. Items being returned must be clean. All hydraulic components must have all hosing ports plugged. Failure to plug ports will allow debris to enter components which will void warranty.

NOTICE

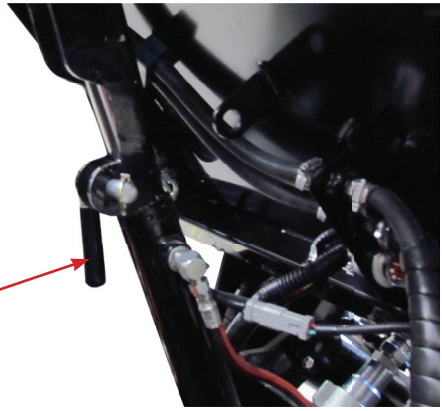
In cold weather situations, let the hydraulic system idle for approximately 15 minutes to allow the system to warm up to operating temperature. Running cold oil through the hydrostatic motor can raise the case drain pressures and damage the shaft seals.

NOTICE

Some equipment and components such as a fluid engagement clutch (PTO) have their own lubrication requirements. Consult their manufactures manual for that information.

⚠DANGER

Before attempting any type of maintenance or service work under the cab make sure the cylinder lock is in place.



Cylinder Lock in place on the Cab Tilt Cylinder

HYDRAULICS

TYPICAL HYDRAULIC RELIEF PRESSURE SETTINGS
TYPICAL HYDRAULIC FLOWS AND RPM SETTINGS
(Approximate, For Reference Only, Engine At Full RPM)

Equipment Model	BTC-150
Cutter Head Pressure PSI (bar)	5600 (386)
Head Pump Charge PSI (bar)	440 (30)
Track Pump PSI (bar)	5000 (345)
Track Pump Charge PSI (bar)	380 (26)
Lift Cylinder PSI (bar)	2500 (172)
Tilt Cylinder PSI (bar)	2500 (172)
Cab Tilt Cylinder PSI (bar)	2500 (172)
Mower/Stump Attachment PSI (bar)	2500 (172)
Push Bar PSI (bar)	2500 (172)
Cooler PSI (bar)	2250 (155)
Winch PSI (bar)	2500 (172)

NOTICE

DO NOT UNDER ANY CIRCUMSTANCES OVER-SET THESE RELIEF PRESSURES, BECAUSE IT WILL CAUSE DAMAGE TO COMPONENT PARTS AS WELL AS HYDRAULIC PARTS.

NOTICE

These typical hydraulic flows and relief pressure settings are with the engine at full RPM. All settings are subject to change!

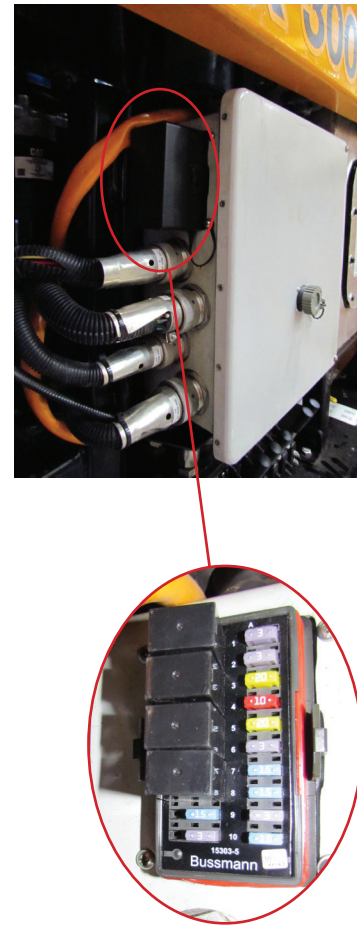
⚠CAUTION

After the initial start-up of the machine and after any replacement of hydraulic components, fittings and hoses must be re-checked for leaks and clearances.

CHARGE FILTERS

POWER BOX FUSE & RELAY PANEL

ENGINE START RELAY		SEAT POWER	3A
		SEAT AIR RIDE	10A
LIGHTS 1 RELAY		LIGHTS 1	20A
		SPARE	10A
LIGHTS 2 RELAY		LIGHTS 2	20A
		INPUTS	3A
ECU RELAY		MODULE 310	15A
		MODULE 311	15A
OUTPUT GROUP #2	15A	CONTROLLER IGNITION	3A
CONTROLLER SUPPLY	3A	OUTPUT GROUP #1	15A



The power box fuse & relay panel is located on the right hand side of the engine on the cab power box.

CAB FUSE PANEL

F11	BACK-UP CAMERA	3A	F1	DISPLAY	3A
F12	POWER PORT	10A	F2	E-STOP	3A
F13	RADIO	10A	F3	WINDSHIELD WIPER	10A
F14	SPARE		F4	KEYPAD	3A
F15	AIR CONDITIONER	25A	F5	SEAT	20A
F16	SPARE		F6	SPARE	
F17	SPARE		F7	SPARE	
F18	SPARE		F8	SPARE	
F19	SPARE		F9	SPARE	
F20	SPARE		F10	SPARE	

The cab fuse panel is located on the dashboard inside the operator's cab.

REPLACEMENT PARTS

Depending on what replacement parts you are ordering
the following information will be needed:

MACHINE COMPONENTS
Serial Number
Model Number of Machine

ENGINE COMPONENTS
Brand
Engine Serial Number
Engine Spec. Number

NOTICE

When ordering any replacement parts you should have the serial number (S/N) and model of the machine to ensure that you receive the correct replacement part. See page 6 for typical serial number & work order number locations.

NOTICE

All nuts, bolts, washers, and many other components can be ordered by physical description.

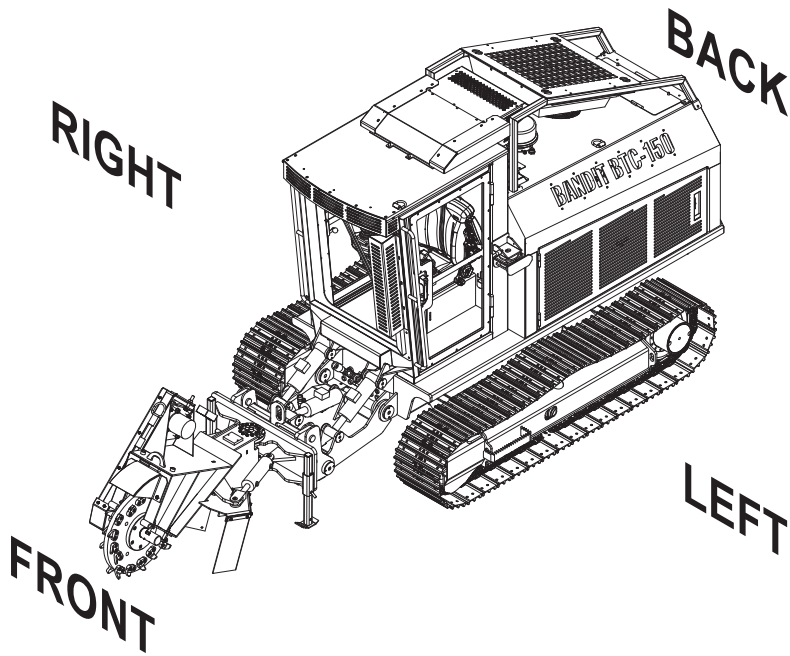
NOTICE

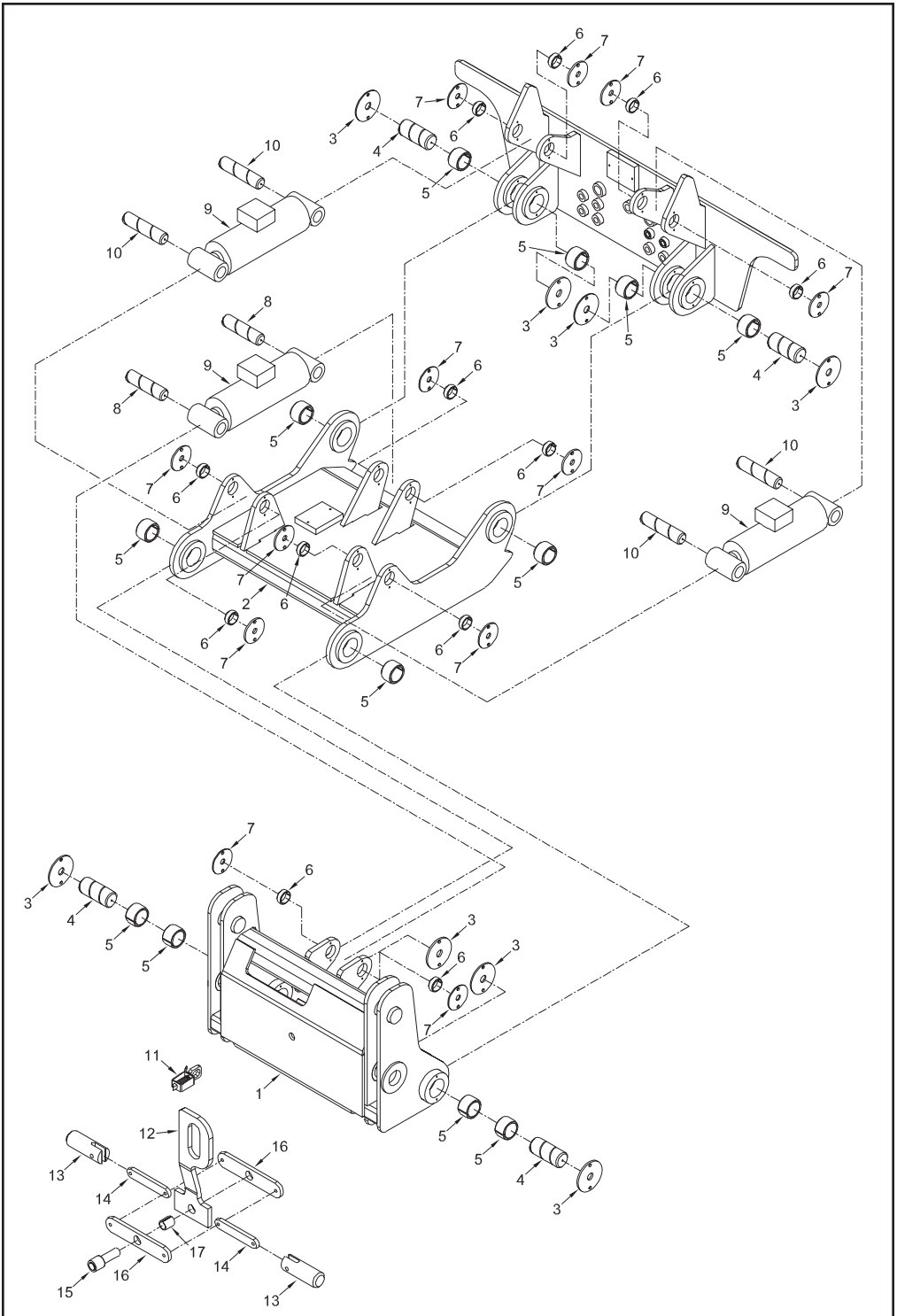
Some of the components shown in this section are for optional equipment and may not apply to every machine.

NOTICE

Bandit Industries Inc. reserves the right to make changes in models, size, design, installations and applications on any part without notification.

MACHINE ORIENTATION REFERENCE

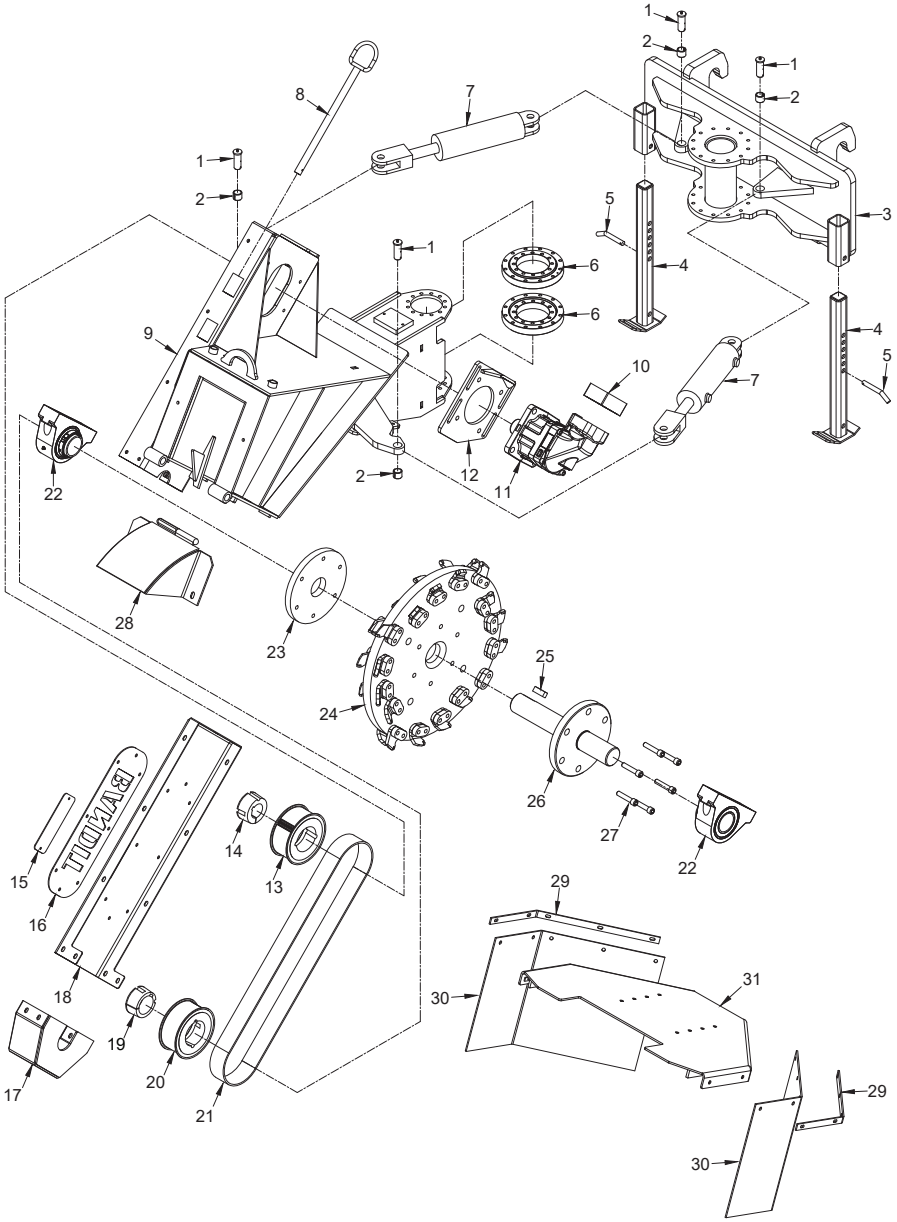




NOTICE Parts may not be exactly as shown.

LOCATION	PART NUMBER	DESCRIPTION
1.	954-2000-20	Quick Attach Lift
2.	954-2000-21	Quick Attach Tilt
3.	954-3001-08	Pivot Pin Keeper
4.	954-3001-07	Pivot Pin
5.	900-1905-35	Split Bushing - 2 1/2" OD x 2" ID x 1 1/2"
6.	900-1925-25	Split Bushing - 1 3/4" OD x 1 1/2" ID x 5/8"
7.	954-3001-09	Cylinder Pivot Pin Keeper
8.	900-3001-29	Tilt Cylinder Pivot Pin
9.	900-3985-51	Lift & Tilt Cylinder
10.	900-3001-30	Lift Cylinder Pivot Pin
11.	900-4924-21	Quick Attach Pin Lock Handle Keeper
12.	988-3022-53	Quick Attach Pin Lock Handle
13.	954-3001-12	Quick Attach Pin Lock
14.	954-3001-13	Quick Attach Pin Linkage
15.	954-3001-14	Quick Attach Lock Handle Pivot Pin
16.	954-3001-11	Quick Attach Pin Linkage Arm
17.	900-1902-50	Split Bushing - 1 1/4" OD x 1" ID x 1 1/2"

NOTICE **Nuts, bolts, washers, and all other components can be ordered by physical description.**

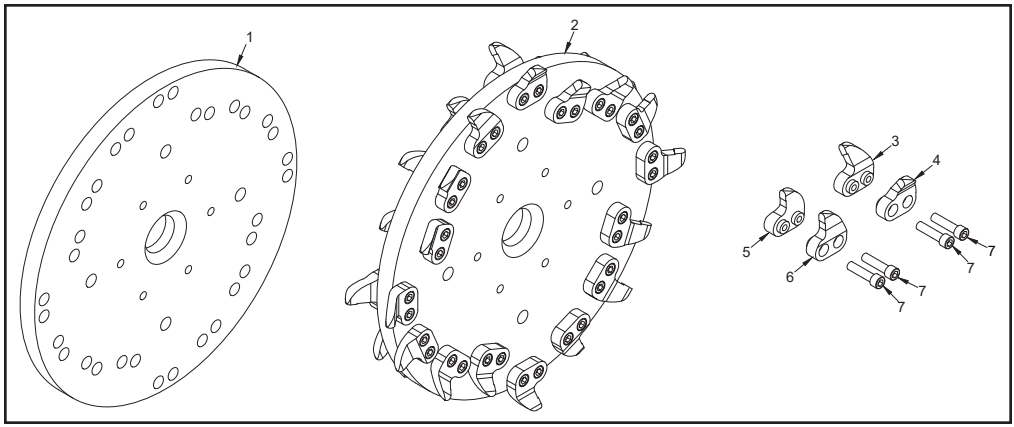


NOTICE Parts may not be exactly as shown.

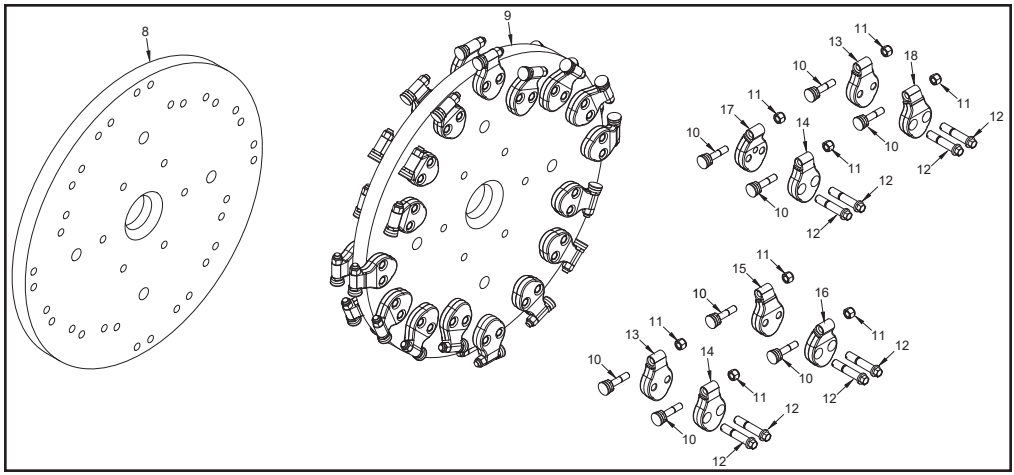
LOCATION	PART NUMBER	DESCRIPTION
1.	900-3934-20	Swing Cylinder Pin
2.	900-1902-42	Split Bushing - 1 1/4" OD x 1" ID x 1"
3.	954-2000-52	Stump Grinder Attachment Plate
4.	974-2000-11	Attachment Stabilizer
5.	900-4908-00	Pin for Attachment Stabilizer
6.	900-1925-71	Slew Ring Bearing
7.	900-3977-30	Swing Cylinder
8.	987-2000-71	Cutter Wheel Lock Pin
9.	954-2000-44	Cutter Wheel Arm Assembly
10.	900-3956-52	Cutter Wheel Motor Relief Block
11.	900-3956-28	Cutter Wheel Motor
12.	954-2000-50	Cutter Wheel Motor Adjustment Plate
13.	900-1925-90	Poly Chain Sprocket - Cutter Wheel Motor
14.	900-1925-91	Poly Chain Sprocket Bushing - Cutter Wheel Motor
15.	996-3007-06	Beltshield Access Cover
16.	987-3014-72	Bandit Name Plate
17.	954-2000-47	Beltshield Clean Out
18.	954-3002-41	Beltshield
19.	900-1925-92	Poly Chain Sprocket Bushing - Cutter Wheel
20.	900-1925-90	Poly Chain Sprocket - Cutter Wheel
21.	900-1925-75	Poly Chain Belt
22.	900-1925-64	Cutter Wheel Bearing
23.	954-3002-54	Cutter Wheel Hub
24.	954-3002-57	Cutter Wheel Only
25.	001-3007-17	Key for Cutter Wheel Shaft
26.	954-2000-51	Cutter Wheel Shaft
27.	900-4911-28	Cutter Wheel Bolt - 5/8"-18NF x 3 SHCS
28.	994-2000-83	Cutter Wheel Guard
29.	954-3002-51	Chip Pan Strap
30.	954-3002-50	Chip Pan Curtain
31.	954-2000-49	Chip Pan

NOTICE **Nuts, bolts, washers, and all other components can be ordered by physical description.**

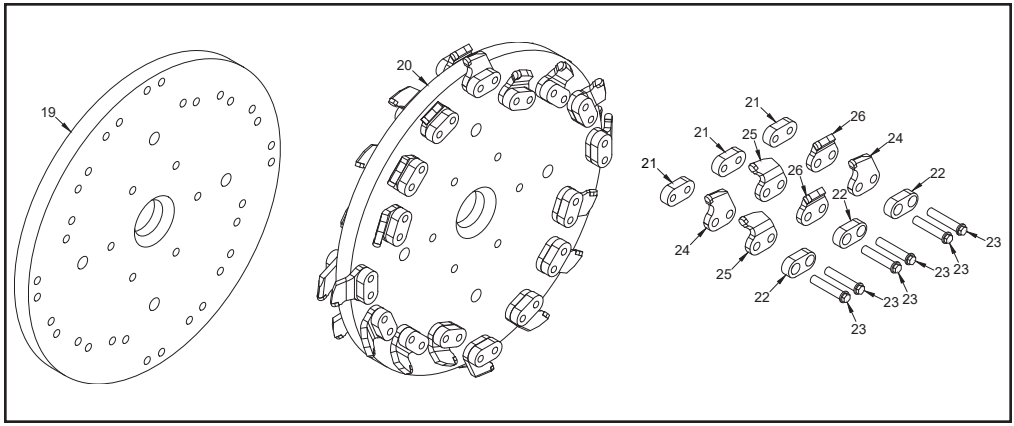
MINI BUCK TEETH



GREEN TEETH



TOMAHAWK TEETH



NOTICE Parts may not be exactly as shown.

MINI BUCK TOOTH

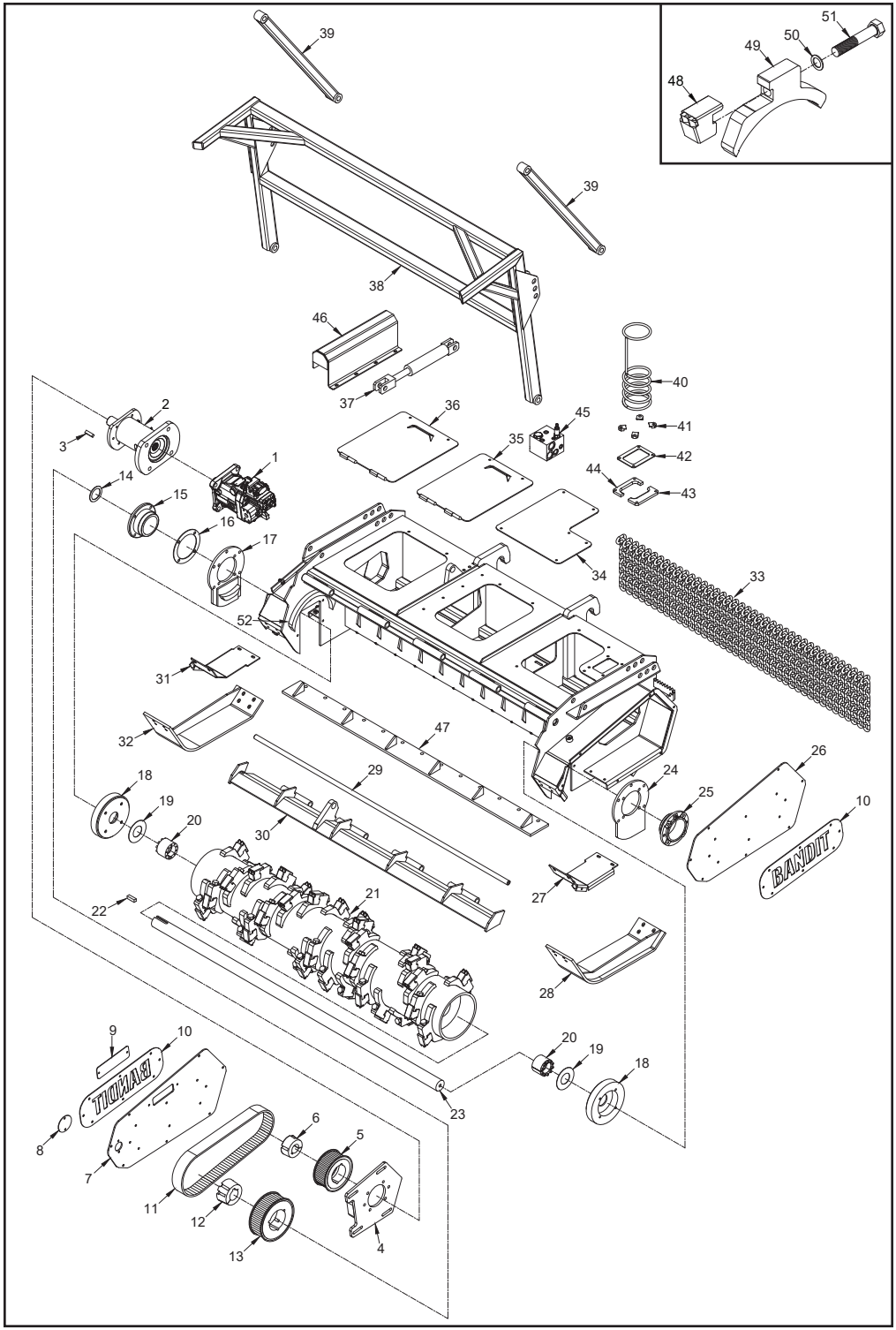
LOCATION	PART NUMBER	DESCRIPTION
1.	954-3003-13	Mini Buck Tooth Cutter Wheel
2.	954-1000-16	Mini Buck Tooth Assembly (Includes 3 - 7)
3.	900-9938-75	Mini Buck Threaded Tooth - Angled
4.	900-9938-74	Mini Buck Counter Bored Tooth - Angled
5.	900-9938-77	Mini Buck Threaded Tooth - Straight
6.	900-9938-76	Mini Buck Counter Bored Tooth - Straight
7.	900-4911-26	Mini Buck Tooth Bolt - 5/8"-18NF x 2 1/2"

GREEN TEETH

LOCATION	PART NUMBER	DESCRIPTION
8.	954-3002-57	Green Teeth Cutter Wheel
9.	954-1000-15	Green Teeth Assembly
10.	900-9918-24	Green WearSharp Tooth
11.	900-9918-50	Green WearSharp Tooth Nut
12.	900-9907-13	Green Tooth Pocket Bolt
13.	900-9907-11	Green Tooth Threaded Pocket - Straight
14.	900-9907-47	Green Tooth Counter Bored Pocket - Straight
15.	900-9907-10	Green Tooth Threaded Pocket - Right Angled
16.	900-9907-09	Green Tooth Counter Bored Pocket - Left Angled
17.	900-9907-49	Green Tooth Threaded Pocket - Left Angled
18.	900-9907-48	Green Tooth Counter Bored Pocket - Right Angled

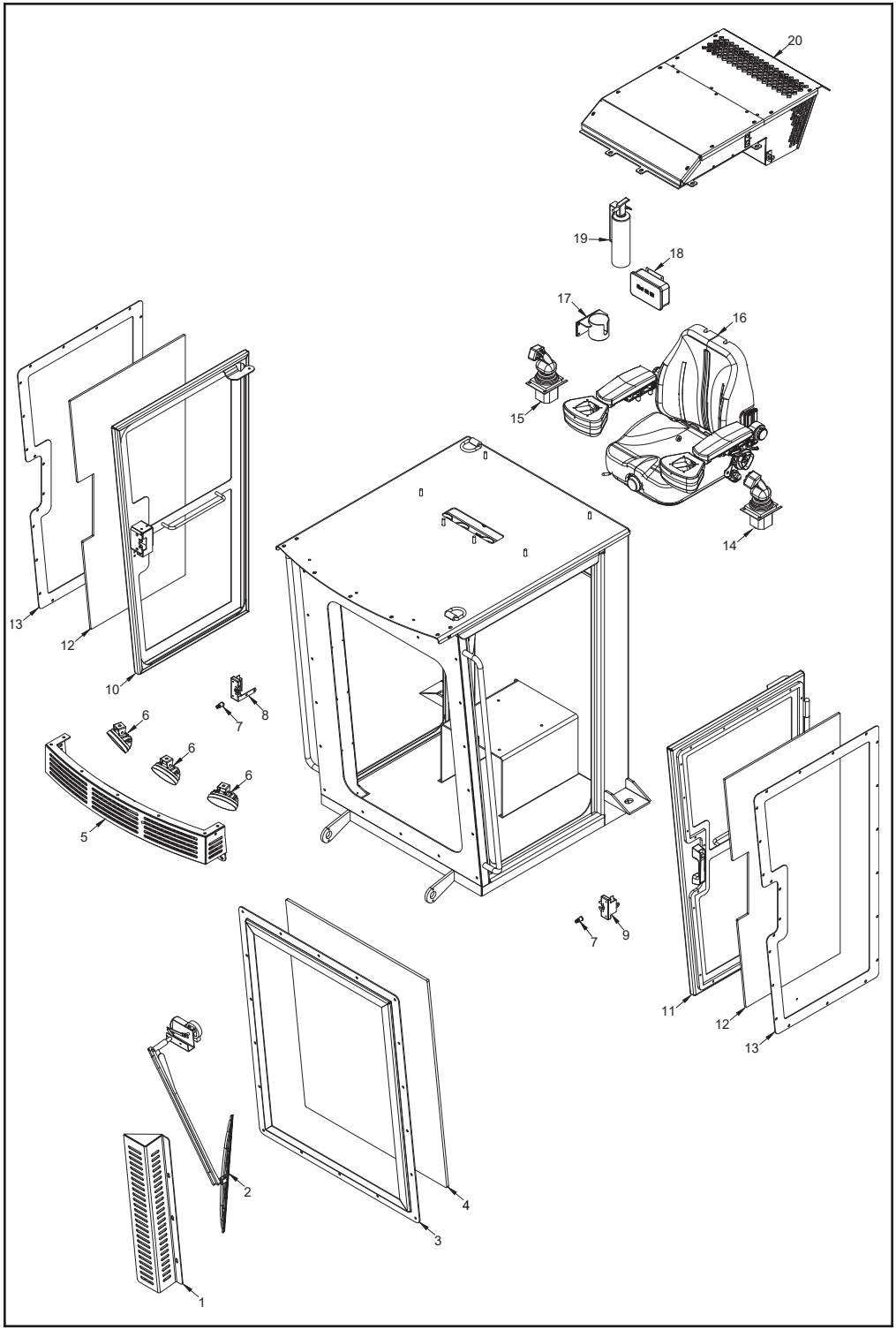
TOMAHAWK TEETH

LOCATION	PART NUMBER	DESCRIPTION
19.	954-3002-57	Tomahawk Teeth Cutter Wheel
20.	954-1000-14	Tomahawk Teeth Assembly
21.	900-9903-86	Tomahawk Threaded Mount
22.	900-9903-85	Tomahawk Counter Bored Mount
23.	900-9903-81	Tomahawk Mount Bolt
24.	900-9903-82	Tomahawk Tooth - Straight
25.	900-9903-84	Tomahawk Tooth - Right Angled
26.	900-9903-83	Tomahawk Tooth - Left Angled



NOTICE Parts may not be exactly as shown.

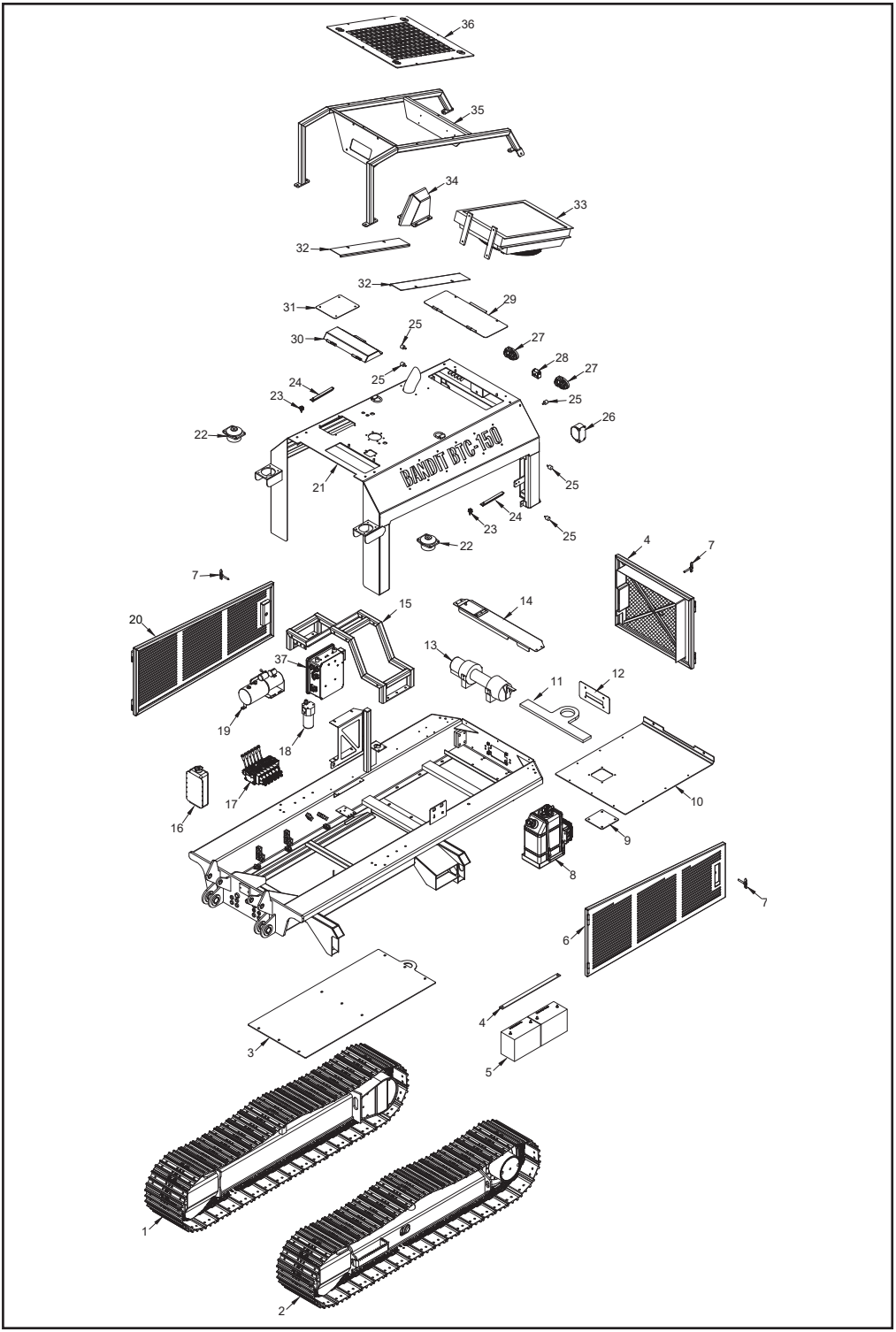
LOCATION	PART NUMBER	DESCRIPTION
1.	900-3964-47	Cutter Head Motor
2. a.	401-1000-03	Overhung Load Adapter Assembly
b.	900-1921-55	Overhung Load Adapter Bearing
c.	401-2000-18	Splined Shaft Only
d.	401-3000-79	Locking Pin Only
e.	401-2000-17	Overhung Load Adapter Housing Only
3.	001-3007-10	Key for Overhung Load Adapter
4.	401-2000-19	Adjustable Mount for Overhung Load Adapter
5.	900-1910-93	Poly Chain Sprocket - Cutter Head Motor
6.	900-1906-01	Poly Chain Sprocket Bushing - Cutter Head Motor
7.	963-3003-19	Drive Side Beltshield
8.	401-3002-65	Tach Inspection Cover
9.	996-3007-06	Beltshield Access Cover
10.	987-3014-72	Medium Bandit Name Plate
11.	900-1910-92	Poly Chain Belt
12.	900-1911-06	Poly Chain Sprocket Bushing - Cutter Head
13.	900-1911-39	Poly Chain Sprocket - Cutter Head
14.	963-3005-54	Poly Chain Sprocket to Cutter Head Bearing Spacer
15.	900-1918-96	Cutter Head Bearing - Right Side
16.	401-3001-22	Cutter Head Bearing to Bearing Mount Spacer
17. a.	401-2000-23	Right Bearing Mount Assembly
b.	401-3002-54	Bottom Wire Cover
18.	401-2000-38	Bearing Mount Cover
19.	963-3003-03	Taper Lock Bushing Cover
20.	900-1918-21	Taper Lock Bushing
21.	401-1000-05	Mower Head Assembly
22.	001-3007-12	Key for Mower Head Shaft
23.	401-3001-34	Mower Head Shaft
24. a.	401-2000-24	Left Bearing Mount Assembly
b.	401-3002-54	Bottom Wire Cutter
25.	900-1918-99	Cutter Head Bearing - Left Side
26.	401-3002-64	Non Drive Side Beltshield
27.	963-3003-15	Beltshield Filler - Left Side
28.	963-2001-13	Mower Foot - Left Side
29.	963-3004-01	Gate Hinge Pin
30.	401-2000-32	Gate Assembly
31.	963-3003-20	Beltshield Filler - Right Side
32.	963-2001-14	Mower Foot - Right Side
33.	401-3000-70	Deflection Chain
34. a.	954-3003-75	Left Side Access Cover
b.	401-3000-82	Left Side Access Cover
35. a.	401-2000-64	Center Access Cover
b.	401-3001-09	Center Access Cover
36. a.	401-2000-63	Right Side Access Cover
b.	401-2000-08	Right Side Access Cover
37.	900-3958-80	Mower Gate Cylinder
38.	401-2000-29	Push Bar Assembly
39.	401-2000-13	Push Bar Arm
40.	900-4921-48	Spring Loaded Hose Holder
41.	401-3002-46	Spring Loaded Hose Holder Mount Tab
42.	401-3000-89	Hose Clamp Cover Plate
43.	401-3000-88	Hose Clamp - Wide
44.	954-3003-80	Hose Clamp - Narrow
45.	900-3993-03	Manifold Block
46.	954-2000-63	Gate Cylinder Cover
47.	401-2000-30	Cutter Head Anvil
48. a.	401-2000-07	Carbide Tooth (42 Required)
b.	401-2000-26	Planar Tooth (42 Required)
49.	401-3000-64	Tooth Holder
50.	900-4918-57	Lock Washer
51.	900-4904-64	Tooth Holder Bolt
52.	401-3002-53	Top Wire Cutter - 2 On Each Side



NOTICE Parts may not be exactly as shown.

LOCATION	PART NUMBER	DESCRIPTION
1.	954-2000-13	Windshield Wiper Guard
2. a.	900-2922-21	Windshield Wiper Motor
b.	900-2925-75	Windshield Wiper Arm
c.	900-9933-46	Windshield Wiper
3.	954-2000-12	Front Window Mount Frame
4.	954-3000-79	Front Window
5.	954-2000-14	Light Guard
6.	900-2926-79	Work Light
7.	900-9906-34	Cab Door Handle Striker
8.	900-4916-47	Right Side Door Latch
9.	900-4916-49	Left Side Door Latch
10. a.	954-2000-10	Right Side Door Assembly (Includes 13)
b.	900-4916-48	Door Handle
11. a.	954-2000-09	Left Side Door Assembly (Includes 13)
b.	900-4916-48	Door Handle
12.	954-3000-75	Door Window
13.	954-3000-69	Cab Door Window Clamp
14.	900-2927-30	Left Joystick
15.	900-2927-29	Right Joystick
16.	900-9940-20	Cab Seat
17.	954-2000-28	Cup Holder
18.	900-9910-85	First Aid Kit
19.	900-9904-53	Fire Extinguisher
20. a.	900-9939-83	Rooftop Air Conditioner / Heater
b.	900-9939-85	Air Filter

NOTICE **Nuts, bolts, washers, and all other components can be ordered by physical description.**

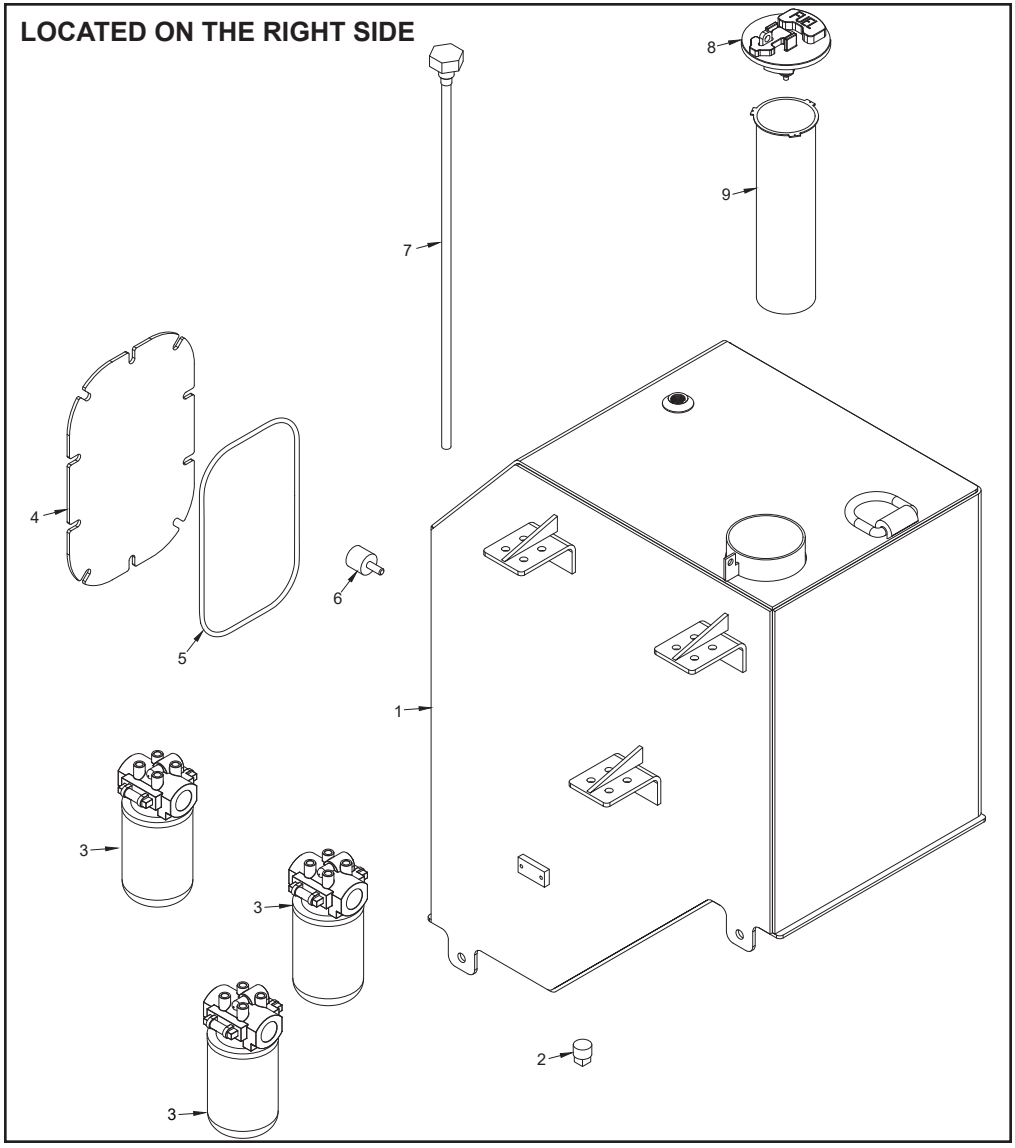


NOTICE Parts may not be exactly as shown.

LOCATION	PART NUMBER	DESCRIPTION
1.	**	Track Assembly - Right Side
2.	**	Track Assembly - Left Side
3.	954-3000-08	Main Belly Pan
4.	954-3002-10	Battery Strap
5.	900-6915-42	Battery
6.	954-2000-37	Left Side Door
7.	900-4921-44	Drop Lock Hatch
8. a.	954-1000-08	Def Tank and Mount Assembly
b.	954-3002-00	Def Tank Strap
9.	954-3002-18	Oil Drain Access Cover
10.	954-3000-22	Rear Belly Pan
11.	954-3000-24	Removable Tow Hook
12.	954-3000-18	Tow Hook Cover Plate
13.	900-3962-58	10,000 Lb. Winch
14.	954-2000-03	Winch Cover
15.	954-2000-35	Hydraulic & Fuel Tank Mount
16.	900-9908-48	6 Qt. Windshield Wiper Fluid Reservoir
17.	900-3987-47	6 Bank Valve
18.	900-3935-44	In-Line Filter
19.	900-3950-26	Cab Tilt Pump
20.	954-2000-38	Right Side Door
21.	954-2000-69	Roll Cage (Includes 29 - 32 & 34 - 36)
22.	900-7901-70	Rubber Isolator
23.	900-2910-46	Dome Light Switch
24.	900-2923-55	Dome Light
25.	900-9905-35	Rubber Bump Stop
26.	900-2907-52	Back Up Alarm
27.	900-2926-79	Work Light
28.	900-2932-70	Back Up Camera
29.	954-2000-58	Radiator Access Cover
30.	954-2000-36	Hydraulic & Fuel Tank Access Cover
31.	954-3003-10	Windshield Washer Fluid Fill Access Cover
32.	954-3003-31	Cooler Air Shroud
33.	900-3990-96	Hydraulic Cooler
34.	954-2000-43	Exhaust Cowl
35.	954-2000-61	Top Roll Cage
36.	954-2000-62	Top Access Door
37.	**	Power Relay & Fuse Box

** Components will vary with options, order by machine serial number.

NOTICE **Nuts, bolts, washers, and all other components can be ordered by physical description.**

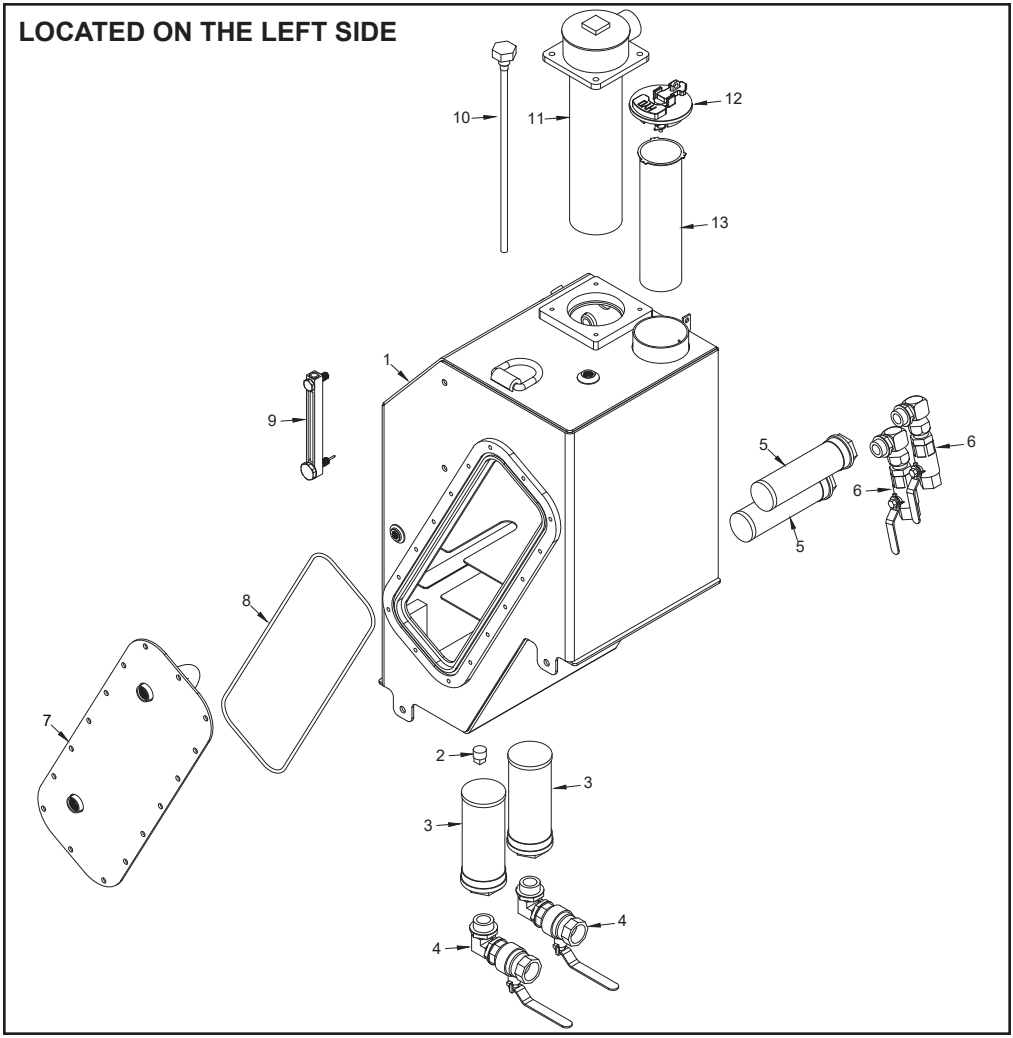


LOCATION	PART NUMBER	DESCRIPTION
1. a.	954-1000-07	Fuel Tank Assembly
b.	954-2000-33	Fuel Tank Weldment (Includes 2 - 9)
2.	900-3922-60	Magnetic Drain Plug
3. a.	900-3965-98	Charge Filter Head Only
b.	900-3934-89	Charge Filter Element Only
4.	989-300911	Clean-Out Door
5.	900-3950-32	Clean-Out Door O-Ring
6.	900-9905-35	Rubber Stop
7.	900-2922-90	Fuel Level Sending Unit
8.	900-3952-62	Fuel Cap
9.	900-3947-93	Fuel Strainer

NOTICE **Nuts, bolts, washers, and all other components can be ordered by physical description.**

NOTICE Parts may not be exactly as shown.

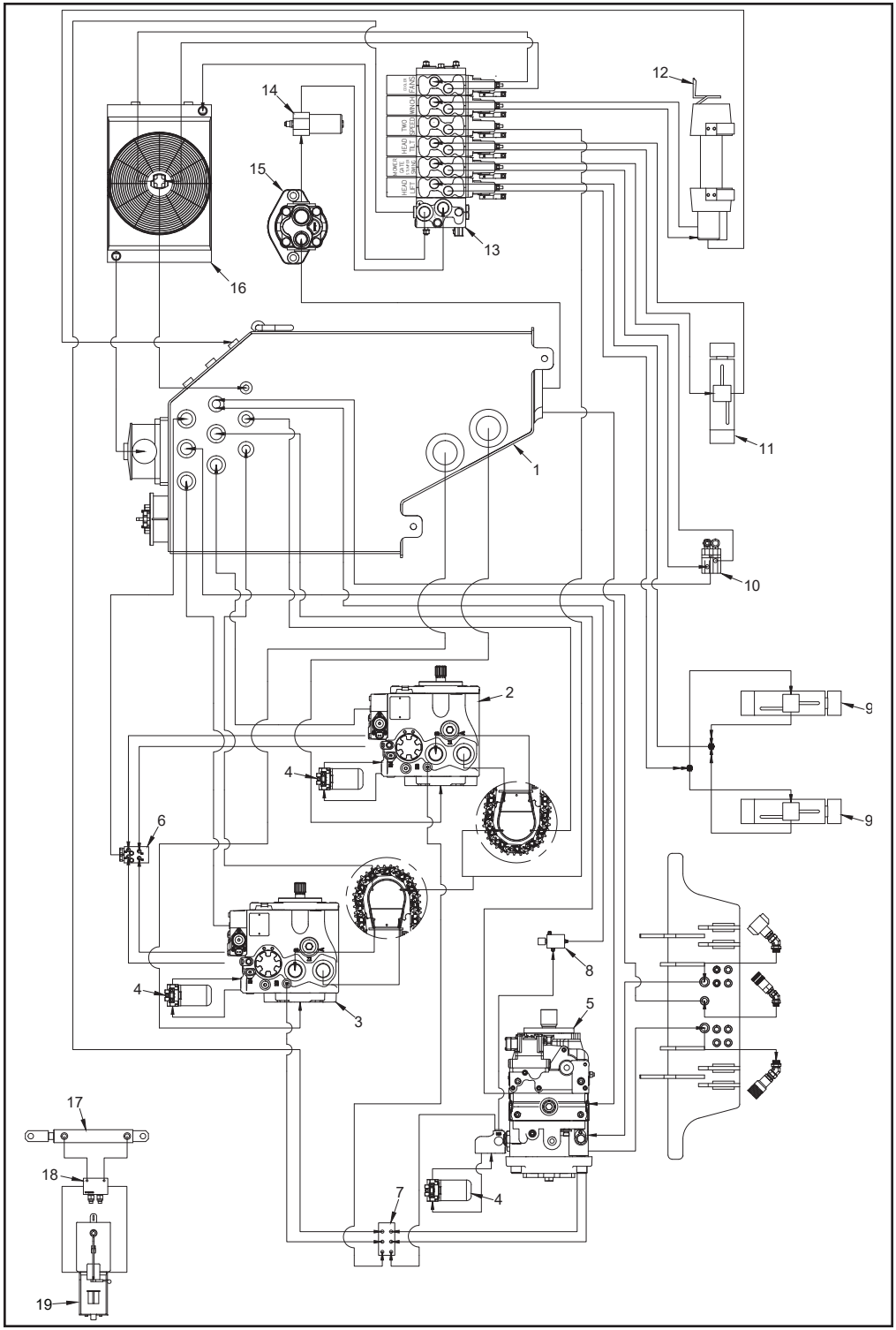
LOCATED ON THE LEFT SIDE



LOCATION	PART NUMBER	DESCRIPTION
1. a.	954-1000-06	Hydraulic Tank Assembly
b.	954-2000-34	Hydraulic Tank Weldment (Includes 2 - 12)
2.	900-3922-60	Magnetic Drain Plug
3.	900-3925-21	Suction Strainer - 1 1/2"
4.	900-3951-11	Ball Valve - 1 1/2"
5.	900-3932-05	Suction Strainer - 1"
6.	900-3932-08	Ball Valve - 1"
7.	987-2000-83	Clean-Out Door
8.	900-3950-34	Clean-Out Door O-Ring
9.	900-3901-78	Hydraulic Sight Gauge
10.	900-2923-94	Hydraulic Level Sending Unit
11. a.	900-3949-52	Hydraulic Filter Assembly
b.	900-3949-53	Hydraulic Filter Only
12.	900-3961-18	Hydraulic Cap
13.	900-3947-93	Hydraulic Strainer

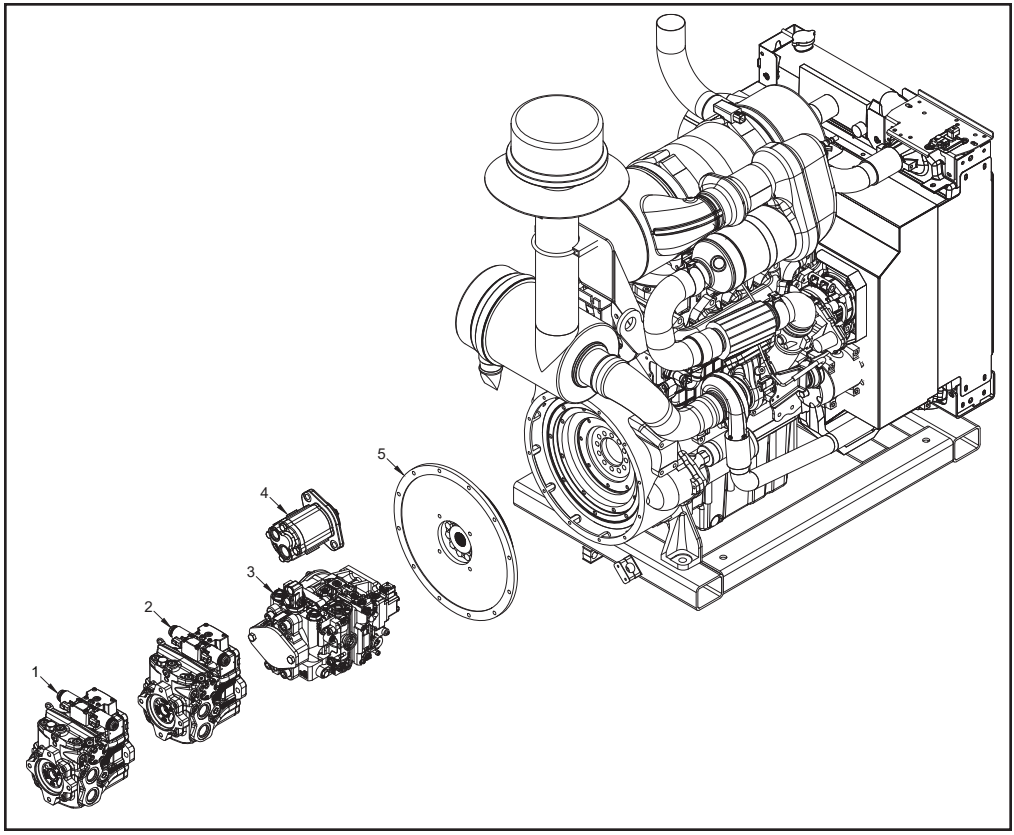
NOTICE **Nuts, bolts, washers, and all other components can be ordered by physical description.**

NOTICE Parts may not be exactly as shown.



NOTICE Parts may not be exactly as shown.

LOCATION	PART NUMBER	DESCRIPTION
1.	See Page 74	Hydraulic Tank Assembly
2.	900-3985-65	Drive Pump - Right Side Track
3.	900-3985-66	Drive Pump - Left Side Track
4. a.	900-3965-98	Charge Filter Head
b.	900-3934-89	Charge Filter
5.	900-3985-64	Cutter Head Pump
6.	900-3956-40	Track Flushing Block
7.	987-3015-23	Plate for Test Ports
8.	900-6913-55	Flexxaire Unit
9.	900-3985-51	Head Lift Cylinder
10.	954-7000-01	Gate/Swing Disconnect Block
11.	900-3985-51	Head Tilt Cylinder
12.	900-3962-58	Optional Winch
13.	900-3987-47	6 Bank Valve
14.	900-3935-44	High Pressure Filter
15.	900-3987-56	Auxiliary Pump
16.	900-3950-61	Cooler Fan
17.	900-3925-03	Cab Tilt Cylinder
18.	900-3956-84	Check Valve for Cab Tilt Cylinder
19.	900-3978-63	Cab Tilt Pump



LOCATION	PART NUMBER	DESCRIPTION
1.	900-3985-66	Rear Track Pump
2.	900-3985-65	Front Track Pump
3.	900-3985-64	Cutter Head Pump
4.	900-3977-72	Pump
5.	900-3987-56	Torsion Adapter Plate

NOTICE Parts may not be exactly as shown.

SERVICE RECORD

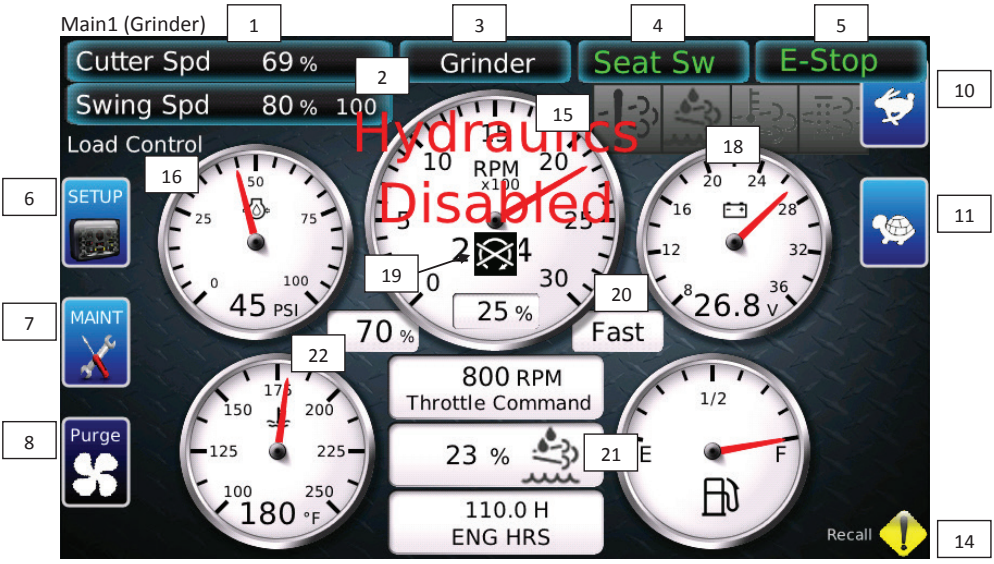
DATE	DESCRIPTION	AMOUNT

SERVICE RECORD

DATE	DESCRIPTION	AMOUNT

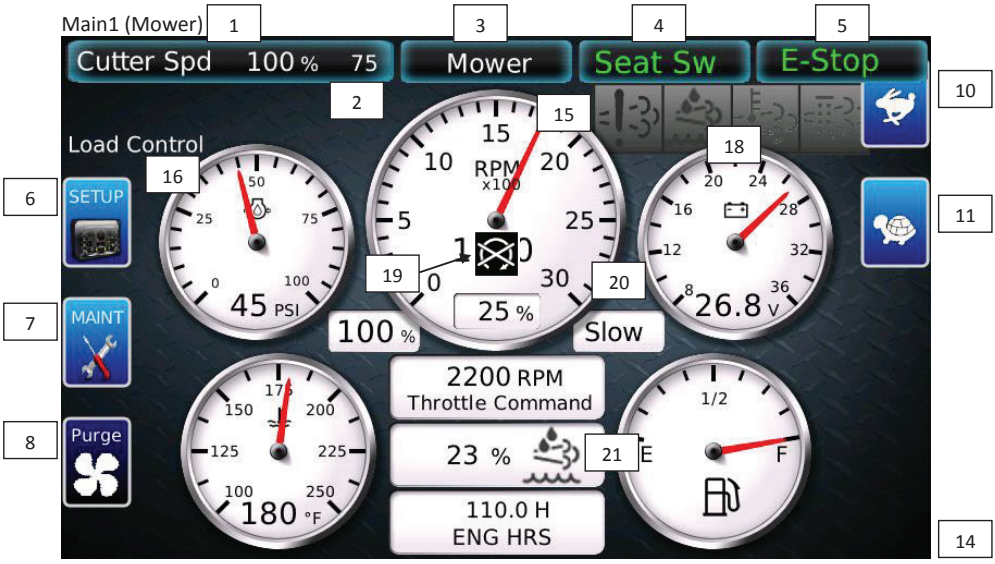
Bandit Track Carrier

Bandit Controls



(The Display automatically returns to this Main Engine page 60sec after last button press).

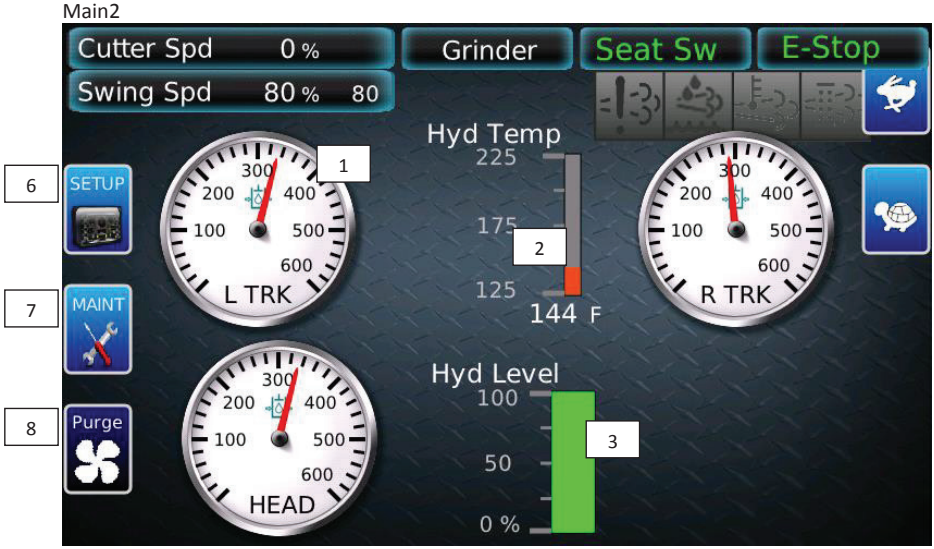
1. Cutter Head is turned On/Off at Keypad, Speed adjusted Up/Dn at Keypad as well.
2. Swing Speed Limit is adjusted by finger wheel on Right Joystick. When Load Control (16) is turned ON at Keypad, the small number behind the Swing Speed % is an automatic limit that slows the Swing Speed when engine is lugging down in a hard cut.
3. Shows which machine mode is selected, Stump Grinder or Mower as selected in Setup2.
4. Indicates status of Seat Switch. If the operator leaves the seat for 3sec or more, the engine will idle down and hydraulic functions will be disabled.
5. Indicates status of E-Stop Switch.
6. and 7. Navigate to Setup Options and Maintenance information.
8. Momentary button to force a fan purge on the reversing fan systems; will reverse for 20secs.
10. and 11. Increase / Decrease Eng RPM. Throttle Command (shown below Eng RPM gauge). Can also Inc/Dec Eng RPM on LH Joystick.
14. Warning icon indicates a Pop-up diagnostic message is hidden, press this button to recall.
15. Blinking alert that shows Hydraulics Disabled is pressed on the Keypad. When Hydraulics Disabled is pressed, the engine will idle down and all machine functions will be disabled EXCEPT for the hydraulic cooler motors.
16. "Load Control" will appear to indicate that Load Control is turned ON at the Keypad.
18. Tier 4 emissions icons and indicators.
19. Blinking indicates that the system has been E-Stopped.
20. Track Motor Displacement indicator, select Slow or Fast on LH Joystick.
21. Diesel Exhaust Fluid (DEF) Tank Level. If less than 12% the DEF level icon will blink red.
22. Track Speed Limit is adjusted 1-100% on the LH Joystick finger wheel. If the tracks are limited to anything less than full speed 100% (i.e. 70% in the example screen shot), pushing the LH Joystick all the way fwd/rev will only allow 70% speed output to the tracks.



(The Display automatically returns to this Main Engine page 60sec after last button press).

1. Cutter Head is turned On/Off at Keypad, Speed adjusted Up/Dn at keypad as well. When Load Control (16) is turned ON at Keypad, the small number behind the Cutter Speed % (2) is an automatic limit that slows the Cutter Speed or Track Speed when the engine is lugging down in a hard cut (Ld Cntrl Mwr Type Selected in Setup1).

Main2



(The Display automatically returns to this Main Engine page 60sec after last button press).

1. Charge Pressure gauges for each Hydrostatic pump.

2. Hydraulic Oil Temps for Hyd Tanks. As the Hyd Oil temps rise, the system will respond with the following behavior:

- at 135degF Hyd Cooler fan will turn on until oil temps recede below 125degF
- at 180degF a warning will alert the operator to excessive oil temps
- at 200degF a warning will alert the operator that the system has idled down and de-rated to 1600rpm until Hyd oil temps have receded below 195degF
- at 220degF a warning will alert the operator that the system has idled down and de-rated to 1200rpm until Hyd oil temps have receded below 200degF, the Cutter Head will be disabled.

3. Hydraulic Oil Level gauges.

Setup

1. Navigate back to Eng page.
2. Navigate to Password page that leads to Setup2 page and more setup options.
3. Toggle between day and night gauges (Engine page) and day/night brightness settings.
5. and 8. Highlight Up or Down to the next value you would like to adjust.
6. and 7. Adjust the value that is currently highlighted.

The Creep settings are the fwd track speeds used with the Creep Fwd Trigger on LH Joystick. The tracks will advance fwd at the Creep speeds for a short time pulse Creep Time which is adjusted on Setup2. This feature is typically used in the Stump Grinder Mode to inch up on a stump for another grinder pass.

(58117 is 29Dec2017)

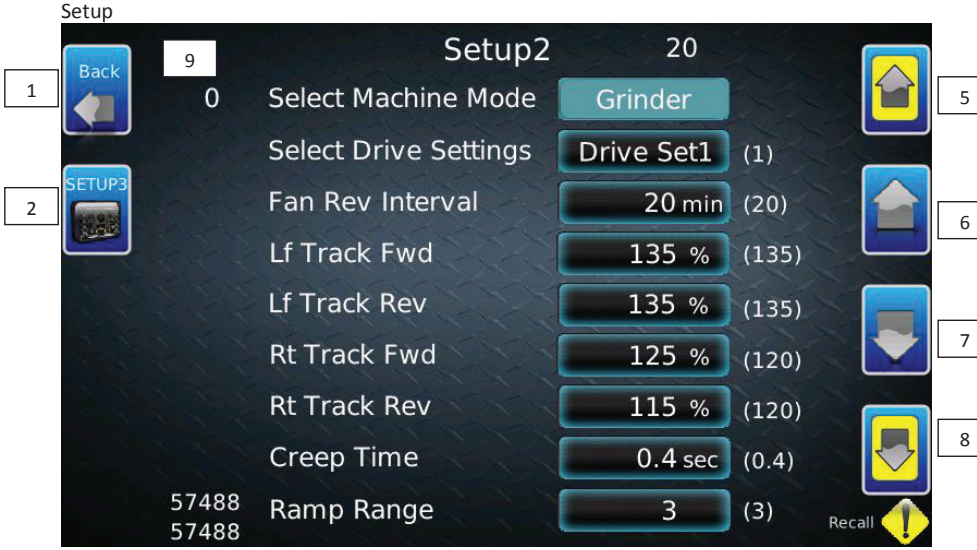
Setup

1. Navigate back to Setup1.

2. Enter the password and proceed to Setup2.

5. and 8. Highlight Up or Down to the next value you would like to adjust.
6. and 7. Adjust the value that is currently highlighted.

Setup



1. Navigate back.

2. Navigate to Setup3 page and more setup options.

5. and 8. Highlight Up or Down to the next value you would like to adjust.

6. and 7. Adjust the value that is currently highlighted.

Machine Mode can only be change with Key ON, Engine NOT running.

Select Drive Settings allows more than one operator to choose between two separate drive setting groups on Setup7 and Setup8. Each drive group can be adjusted to how separate operators prefer to drive the machine.

Fan Reverse Interval is optional on some machines. It is the time between fan reversing cycles to purge debris from the fan shrouds. The reverse cycle typically lasts between 20-30 seconds.

Track speed settings allow the operator to trim the maximum track speed for straight travel if they drift out of alignment with wear over time.

There are 3 different track drive Ramp Ranges that can be selected to adjust how quickly the tracks stop and go. Range[3] is the most responsive, Range[1] is slower and soft. If the Ramp Range is changed, the operator should test the Creep Fwd trigger again because the drive ramps have an effect on Creep Time ; which may need to be readjusted along with Ramp Range.

9. Shows total hours of operation for the selected attachment.

Setup

1. Navigate back.

2. Navigate to Setup5 page and more setup options.

5. and 8. Highlight Up or Down to the next value you would like to adjust.

6. and 7. Adjust the value that is currently highlighted.

The travel speed of each hydraulic cylinder function can be adjusted to a max limit.

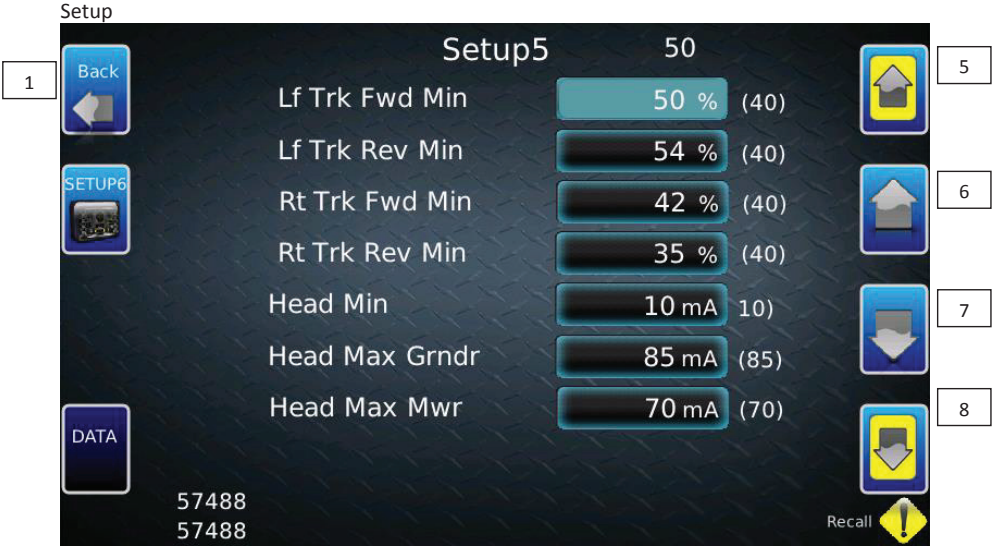
Setup

1. Navigate back to Setup1.

2. Enter the password and proceed to Factory Settings in Setup5.

5. and 8. Highlight Up or Down to the next value you would like to adjust.
6. and 7. Adjust the value that is currently highlighted.

Setup



1. Navigate back.

2. Navigate to Setup6 page and more setup options.

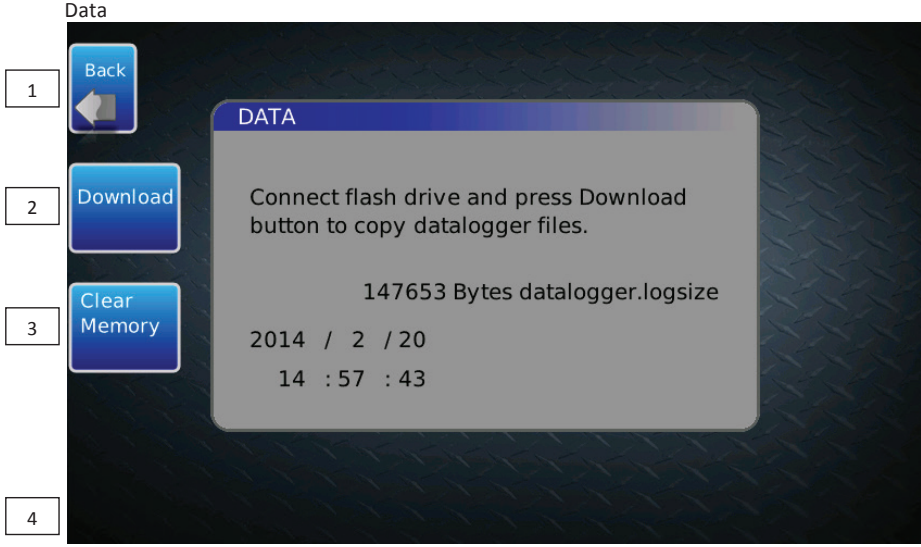
5. and 8. Highlight Up or Down to the next value you would like to adjust.

6. and 7. Adjust the value that is currently highlighted.

Track Min values adjust the minimum speed of each track direction. This is to adjust the sensitivity of the proportional control and adjust for track straight conditions at the very low end of speed control.

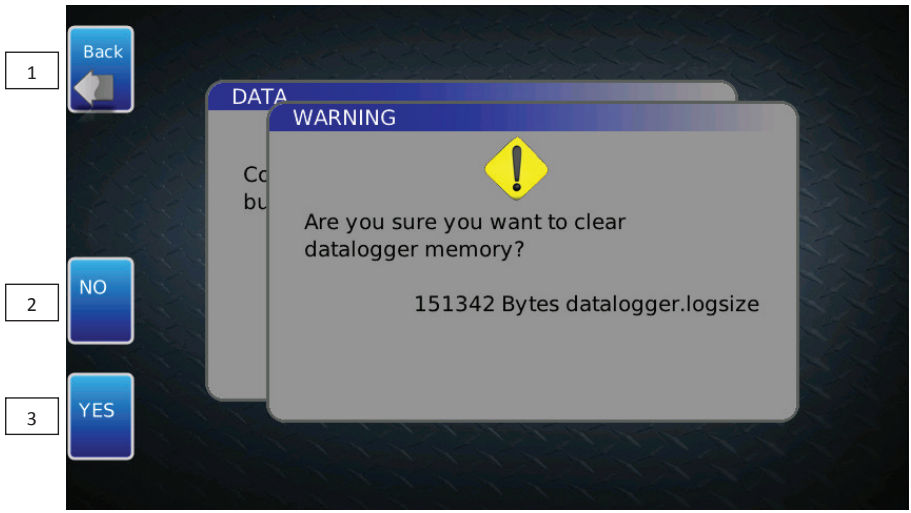
The max and min head speeds can be adjusted to ensure that 1% Cutter Speed is barely turning the Cutter and 100% is right at the maximum hydraulic flow of the Cutter drive and not too high. It is also used to limit the Maximum speed of Mower or Grinder head to prevent overspeeding.

Data



Various Machine and Engine parameters can be logged into a downloadable spreadsheet.
1. Navigate back to Maint2 page.
2. Connect a USB flash drive and Press Download to copy datalogger files.
3. Press this button to navigate to a page where you can erase the datalogger files in the display.

Data



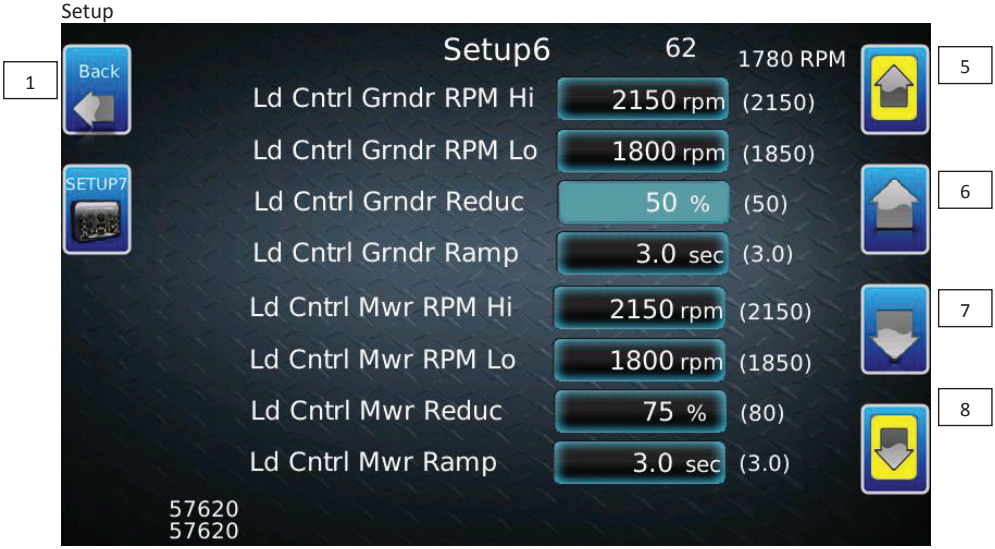
Various Machine and Engine parameters can be logged into a downloadable spreadsheet.

1. Navigate back to the DATA page.
2. NO means Cancel the operation that would erase the datalogger files.
3. YES means continue and erase the datalogger files.

Sample Data Log

Year	Month	Day	Hour	Min	Sec	RPM	Temp C	Oil kPa	Hours	Load %	Volts	Volts	SPN	FMI	SA
2014	2	20	11	56	26	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	56	31	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	56	36	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	56	41	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	56	46	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	56	51	2100	82	308	7.6	70	27.6	13.6	444001	1	1
2014	2	20	11	56	56	2100	82	308	7.6	70	27.6	13.6	444001	1	1
2014	2	20	11	57	1	2100	82	308	7.6	70	27.6	13.6	444002	1	235
2014	2	20	11	57	6	2100	82	308	7.6	70	27.6	13.6	444002	1	235
2014	2	20	11	57	11	2100	82	308	7.6	70	27.6	13.6	3251	16	0
2014	2	20	11	57	16	2100	82	308	7.6	70	27.6	13.6	3251	16	0
2014	2	20	11	57	21	2100	82	308	7.6	70	27.6	13.6	3251	0	0
2014	2	20	11	57	26	2100	82	308	7.6	70	27.6	13.6	3251	0	0
2014	2	20	11	57	31	2100	82	308	7.6	70	27.6	13.6	3251	16	0
2014	2	20	11	57	36	2100	82	308	7.6	70	27.6	13.6	3251	16	0
2014	2	20	11	57	41	2100	82	308	7.6	70	27.6	13.6	3251	16	0
2014	2	20	11	57	46	2100	82	308	7.6	70	27.6	13.6	3251	16	0
2014	2	20	11	57	51	2100	82	308	7.6	70	27.6	13.6	3251	0	0
2014	2	20	11	57	56	2100	82	308	7.6	70	27.6	13.6	3251	0	0
2014	2	20	11	58	1	2100	82	308	7.6	70	27.6	13.6	3251	0	0
2014	2	20	11	58	6	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	58	11	2100	82	308	7.6	70	27.6	13.6	0	0	0
2014	2	20	11	58	16	2100	82	308	7.6	70	27.6	13.6	0	0	0

Setup



1. Navigate back.
2. Navigate to Setup6 page and more setup options.
5. and 8. Highlight Up or Down to the next value you would like to adjust.
6. and 7. Adjust the value that is currently highlighted.

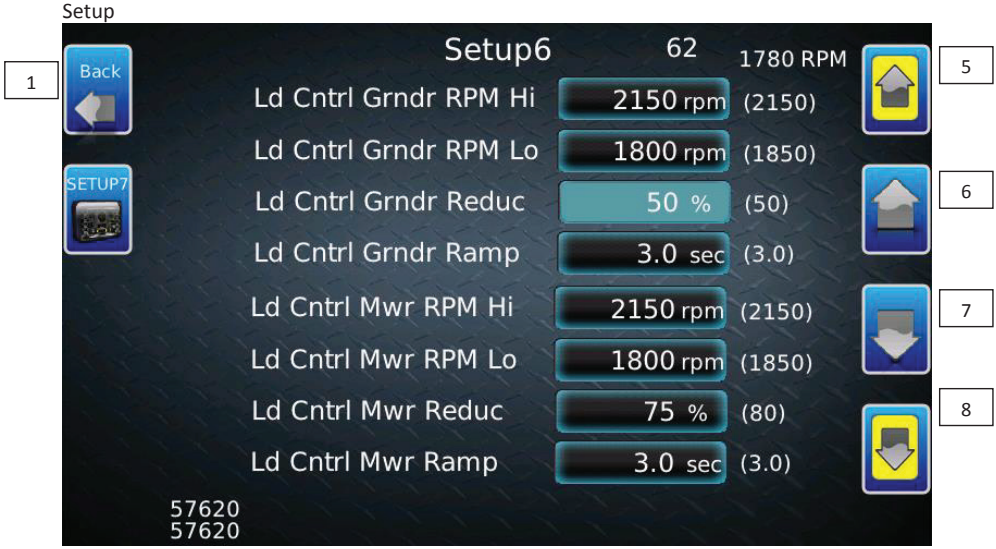
LOAD CONTROL IN STUMP GRINDER MODE

If Load Control is turned ON in Grinder Mode, the Swing Speed will automatically slow down if the engine lugs too much under load. In the example screen shot above, if the engine RPM was at or above LdCntrlGrndrRPMhi 2150rpm the Load Control system would allow 100% of whatever Swing Speed the operator has dialed in on the Main Engine page, ex on pg1 shows 80% would be the limit at full joystick deflection. Then if grinding becomes aggressive and the engine lugs down under load, when the engine RPM decreased to LdCntrlGrndrRPMlo 1800rpm or below, the Load Control System would reduce the operators limit to LdCntrlGrndrReduc 50%; that is 50% of the 80% Swing Spd = 40% is now the limit at full joystick deflection. The system proportionally applies a reduction between LdCntrlGrndrReduc (50%) and full 100% as the engine RPM varies under load between 1800-2150rpm.

LOAD CONTROL IN MOWER MODE (Load Control Mower Type HEAD)

If Load Control is turned ON in Mower Mode and LdCntrlMwrType in Setup1 is 'Head', the Cutter Head Speed will automatically slow down if the engine lugs too much under load. In the example screen shot above, if the engine RPM was at or above LdCntrlMwrRPMhi 2150rpm the Load Control system would allow 100% of whatever Cutter Speed that the operator has dialed in on the Main Engine page, ex on pg2 shows 100% would be the limit. Then if grinding becomes aggressive and the engine lugs down under load, when the engine RPM decreased to 1800rpm or below, the Load Control System would reduce the operators limit to LdCntrlMwrReduc 80%; that is 80% of the 100% CutterSpd = 80% is now the limit. The system proportionally applies a reduction between LdCntrlMwrReduc (80%) and full 100% as the engine RPM varies under load between 1800-2150rpm.

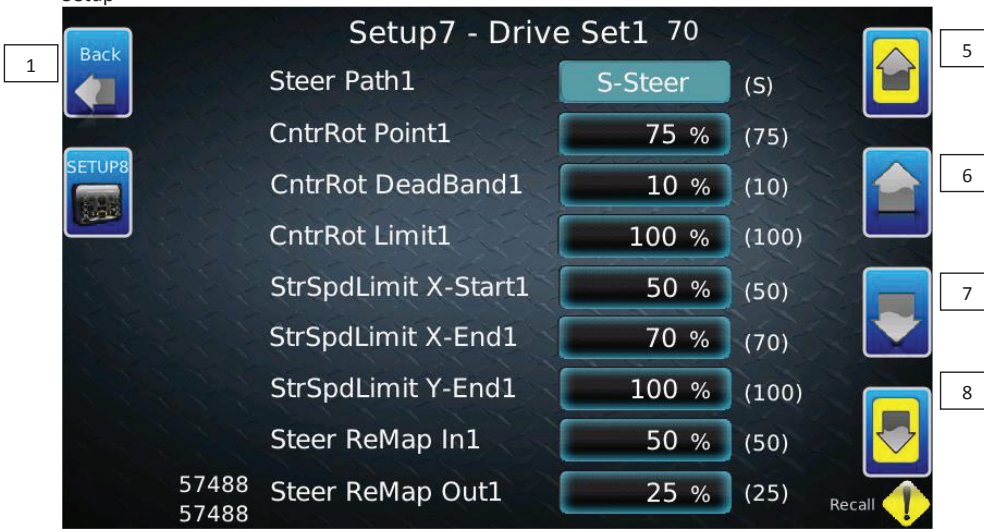
Setup



1. Navigate back.
2. Navigate to Setup6 page and more setup options.
5. and 8. Highlight Up or Down to the next value you would like to adjust.
6. and 7. Adjust the value that is currently highlighted.

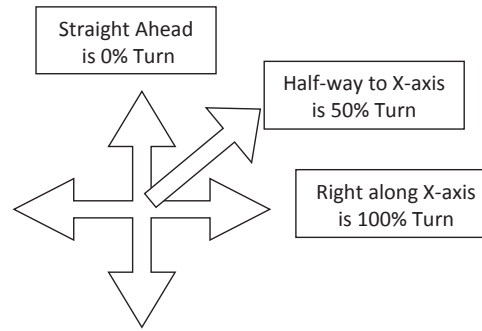
LOAD CONTROL IN MOWER MODE (Load Control Mower Type TRACKS)
If Load Control is turned ON in Mower Mode and LdCntrlMwrType in Setup1 is 'Tracks', the Track Speed will automatically slow down if the engine lugs too much under load. In the example screen shot above, if the engine RPM was at or above LdCntrlMwrRPMhi 2150rpm the Load Control system would allow 100% of maximum track speed. Then if grinding becomes aggressive and the engine lugs down under load, when the engine RPM decreased to 1800rpm or below, the Load Control System would reduce the maximum track speed to LdCntrlMwrReduc 80%. The system proportionally applies a reduction between LdCntrlMwrReduc (80%) and full 100% as the engine RPM varies under load between 1800-2150rpm.

Setup

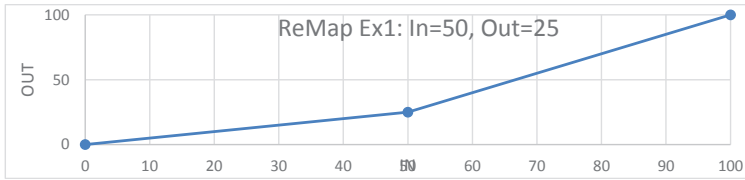


Steer Path can be either 'S' Steer or 'C' Steer. Both behave the same in the fwd direction but will turn differently in reverse. Turning in reverse with C-Steer will travel the machine the same direction that the joystick is moved. Turning in reverse with S-Steer will turn the head of the machine the same direction that the joystick is moved. In both 'C' and 'S' Steer, if the operator moves the joystick straight left or straight right, the machine will do a stationary counter-rotate with the head of the machine moving the same direction as the joystick.

The Counter-Rotate settings above are based on percent of joystick turn, meaning how much to the right or left of straight is the joystick moved - example at right. The CntrRot Point is the point in the Joystick turn when the inside track will slow, stop, and then begin to turn the opposite direction for counter-rotation. The CntrRot DeadBand is the range around the CntrRot Point where the inside track remains stopped. CntrRotLimit cannot be adjusted.

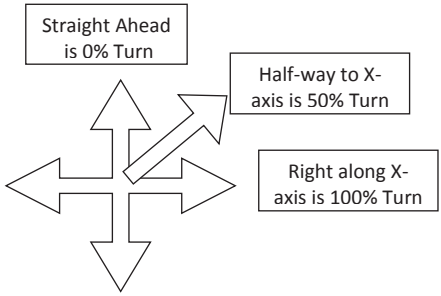


ReMap makes the joystick input less aggressive in desired areas by changing the scale of input. In the example screenshot where SteerReMapIn = (50%) and SteerReMapOut = (25%) , the first 50% of the joystick deflection will only yield 25% Input Signal, making for fine motor control in the lower half of motion.

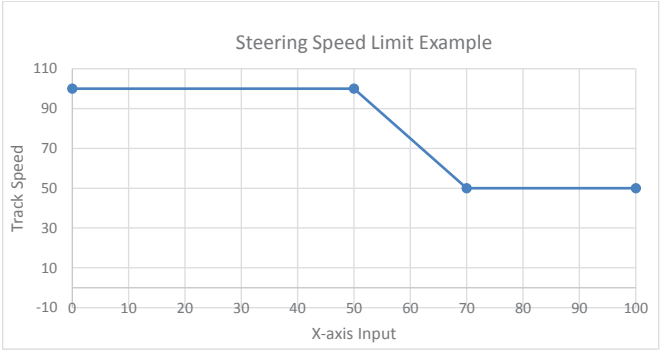


Setup

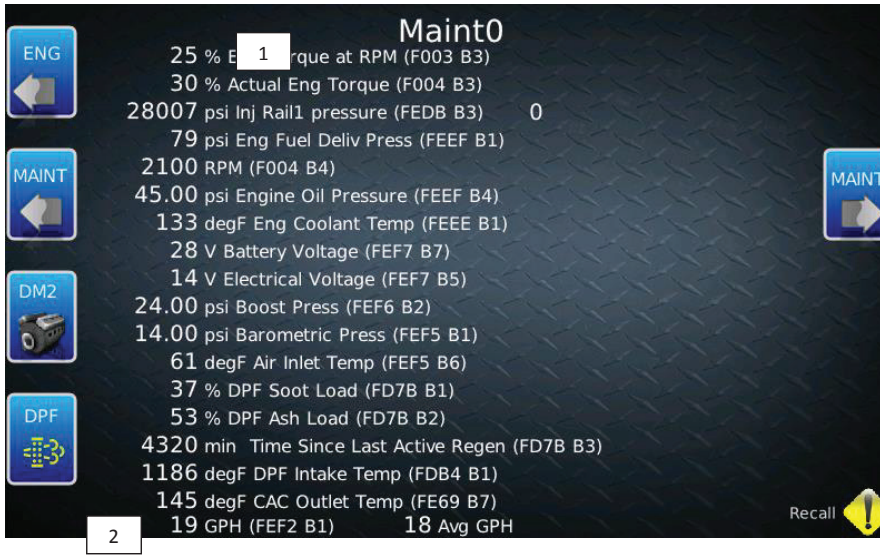
There are 2 drive setting groups. Each drive group can be adjusted to how separate operators prefer to drive the machine.



The Speed Limit settings above are based on percent of joystick turn, meaning how much to the right or left of straight is the joystick moved - example at right. The Steering Speed Limit settings can be used to automatically reduce overall speed a certain amount as a turn is made tighter and tighter. This is designed to keep severe steering maneuvers from becoming uncontrolled. The example below shows how the track speed would be reduced beginning at 50% joystick turn, fully reduced at 70% turn to a maxiumum of 50% travel speed. It may be desired to leave the tracks at full speed, in that case the StrSpdLimt Y-End can simply remain at 100%.



Maintenance



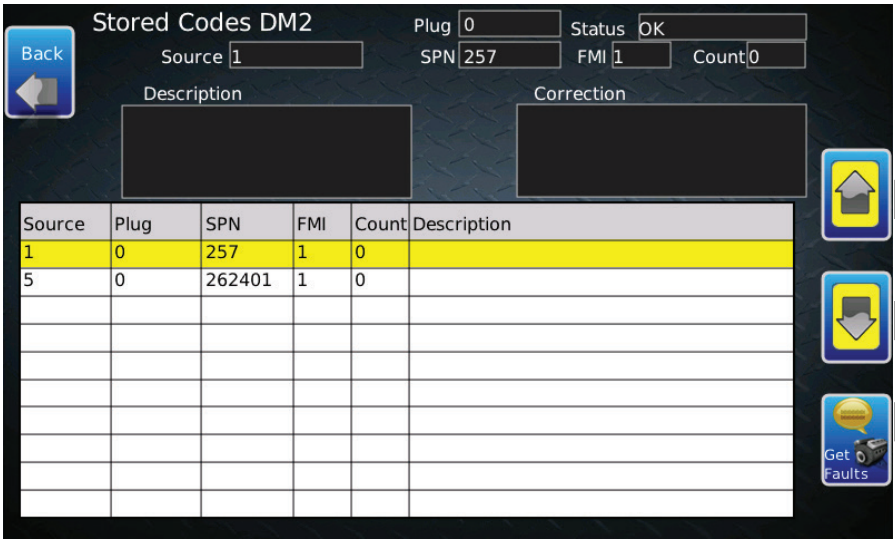
1. Various Engine parameters that the Engine may be monitoring.

2. To reset the Avg GPH, go to Maint2.

3. DM2 stands for Diagnostic Message #2 which pulls stored trouble codes from J1939 devices on CAN2. Navigate to this page to see if any devices have stored codes to report.

4. DPF stands for Diesel Particulate Filter. Navigate to this page to inhibit or force DPF regen cycles.

Maintenance



DM2 stands for Diagnostic Message #2 which pulls stored or inactive trouble codes from J1939 devices on CAN2. Up to 10 Diagnostic Trouble Codes can be retrieved and displayed. Information at the header provides details about the origin and description of the trouble code.

6. and 7. Highlight through the different trouble codes to display the details in the header.

8. Request that the J1939 devices on CAN2 to send their DM2 message with trouble codes.

Maintenance

(On Applicable Tier 4 engines)

Diesel Particulate Filter (DPF)

1. Navigate back to Maint2 page.
2. Force a regen cycle. (Automatically puts the DPF Mode in Auto)
3. Tier 4 Indicators


Exhaust gas temperature is high. Regen is in process of burning out accumulated soot.


Soot level in the DPF indicates need for Regen (if in Auto, the engine typically conducts the regen on its own and the exhaust gas temperature indicator will come on to show it is in process).

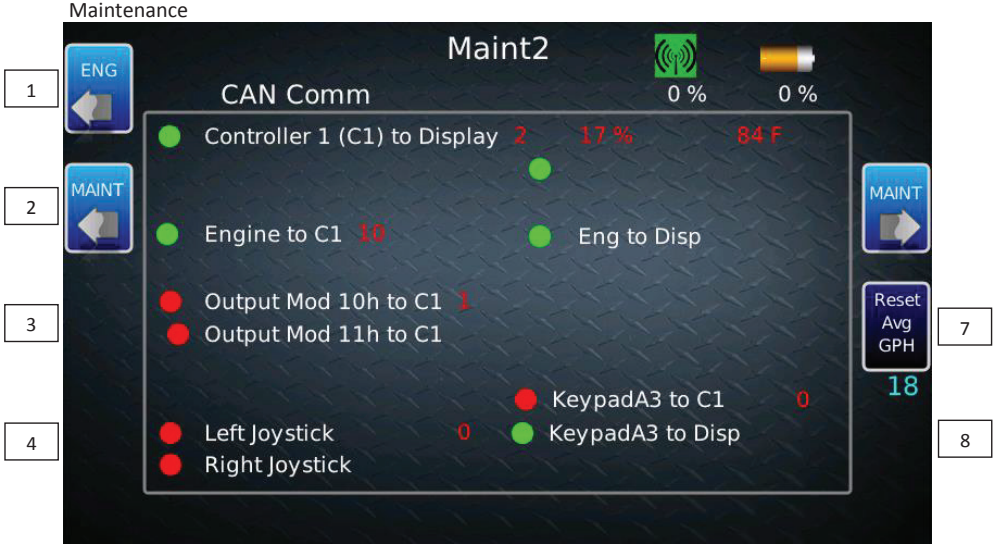

Auto Regen cycles are Inhibited (disabled) by the operator.


Diesel Exhaust Fluid (DEF) tank level. Indicator will blink/turn red at low level, for ex: less than 12%


On some engines this icon is used to indicate a malfunction with the emission system.

4. Select the DPF operating mode, Auto or Inhibit. In general, always leave the DPF system in Auto. The only time you may want to inhibit regen burn cycles is in the rare case where higher exhaust temperatures may elevate the risk of fire in the surrounding environment.

Maintenance



Maint2 shows the communication status between each device that is communicating over the CAN networks (there are 3 CAN networks on this machine, CAN1 is a CANopen network for the Output Modules and C1. CAN2 is a J1939 network for everything else except Tether. CAN3 is a J1939 network for the Tether only).

The red number behind many of the device descriptions is an error count. Each time communication is lost with that device it is counted up to a maximum of 15 until keyswitch is cycled and that memory is cleared. This is to provide a limited history of errors in case an operator is unable to watch this page continuously and likely miss a Green LED momentarily showing Red. If the machine exhibits erratic behavior or abruptly jumps in and out of controllability, check that communication between all devices is Green=good.

The red percentage behind C1 to Display is CAN2 J1939 busload, which measures how many total messages are being sent on that CAN network.

1. Navigate back to Engine page.
2. and 6. Navigate to and from a total of 5 Maintenance pages.
7. The Average GPH is calculated in Controller1 and can be reset by pressing this button on Maint2. Avg GPH will only accumulate when Engine speed is above 500rpm.

(Communication directly with Display will start out Green even if the device is not connected and can possibly show a false positive. The Display needs to see good comm with a device first, then if comm is lost the status will turn red. This is not true for comm directly with Controller1, C1 can tell if a device is missing right away).

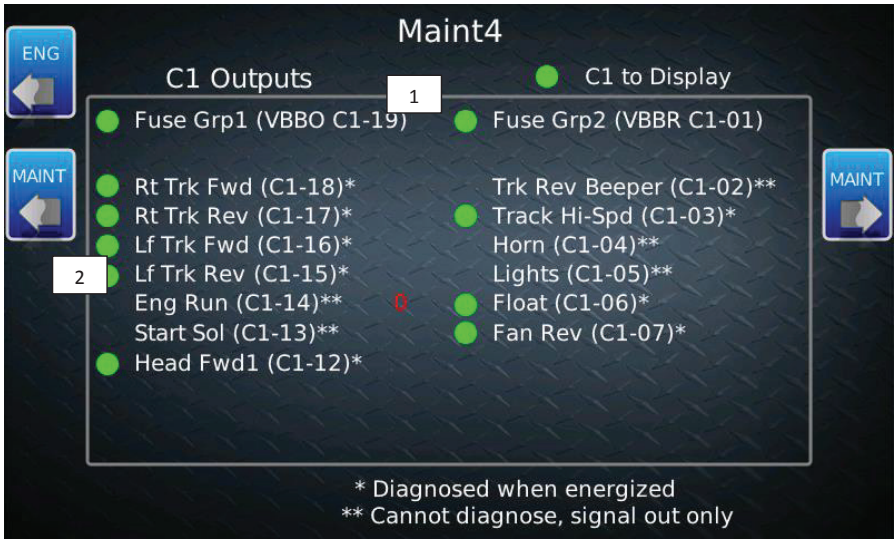
Maintenance

1. Green LEDs indicate that On/Off Input is currently ON. *SeatSw* and *E Stop* inputs are energized/Green during normal operation, and will be de-energized/Blank when they are interrupted.

2. The numeric value to the right of the input descriptions is a live readout of that electric signal.

3. The red number behind many of the device descriptions is an error count.

Maintenance

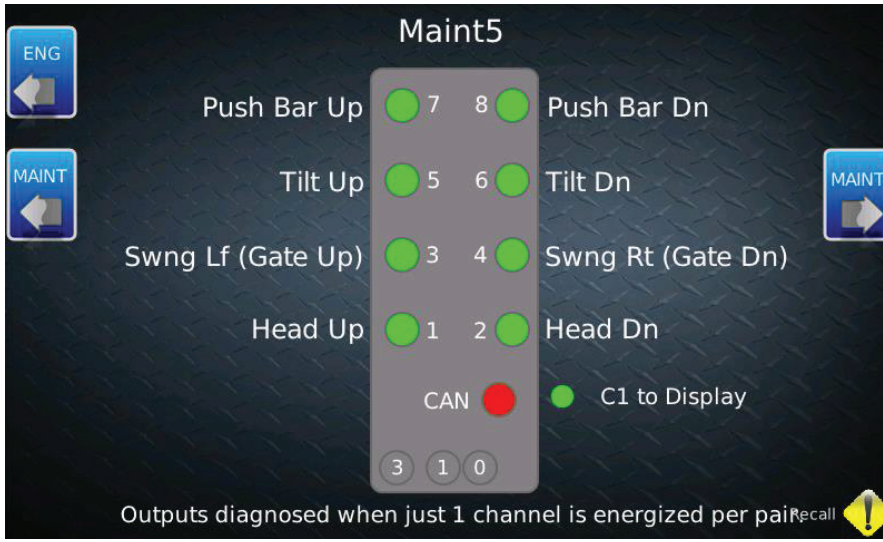


1. The Outputs in Controller1 (C1) are organized into 2 groups, each group has a supply fuse. The status of each fuse is shown at the top of each group. If multiple outputs from the same group have red status, check the supply fuse for that group as well as the individual wires to each coil.

2. Outputs on Controller1 (C1) can be diagnosed when energized for wire break or short circuit. Green is "good", Red is "bad" meaning go check wiring. Some outputs are only used for signals or low power devices and cannot be diagnosed.

(The red number behind the Eng Run output description is a current measurement to Eng ECU)

Maintenance



1. Outputs on each expansion module can be diagnosed but only when just 1 channel per pair is energized (1-2, 3-4, 5-6, 7-8).

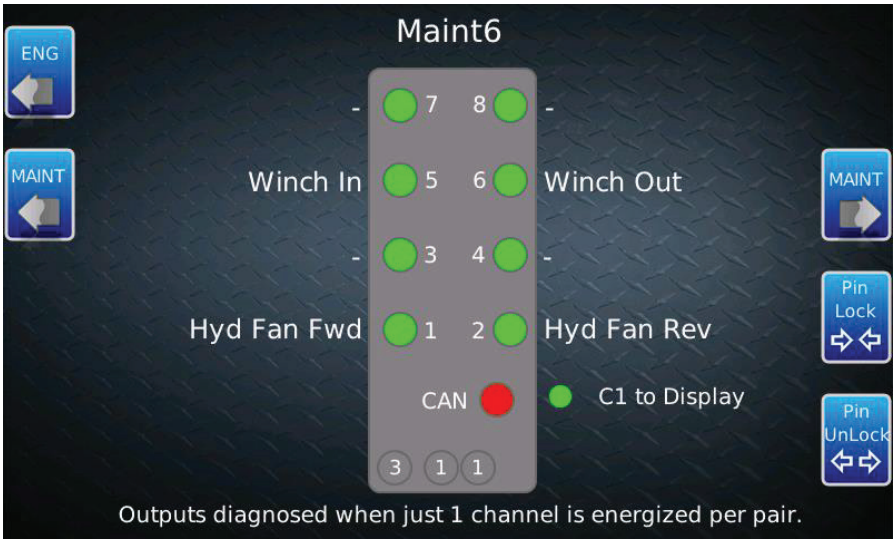
2. CAN communication between this output module and Controller1 (C1) is good when the CAN LED is Green. It is also good to observe whether communication between the Display and C1 is good. If communication between C1 and the Display is bad, virtually all maintenance information from C1 is bogus.

3. The three numeric values listed in bubbles correspond to the dip-switch settings in the module itself. The first number '3' sets the CAN baud rate at 250k. The next two numbers are the node I.D. in hexadecimal, in this case 10hex (aka 16dec).

Output Modules

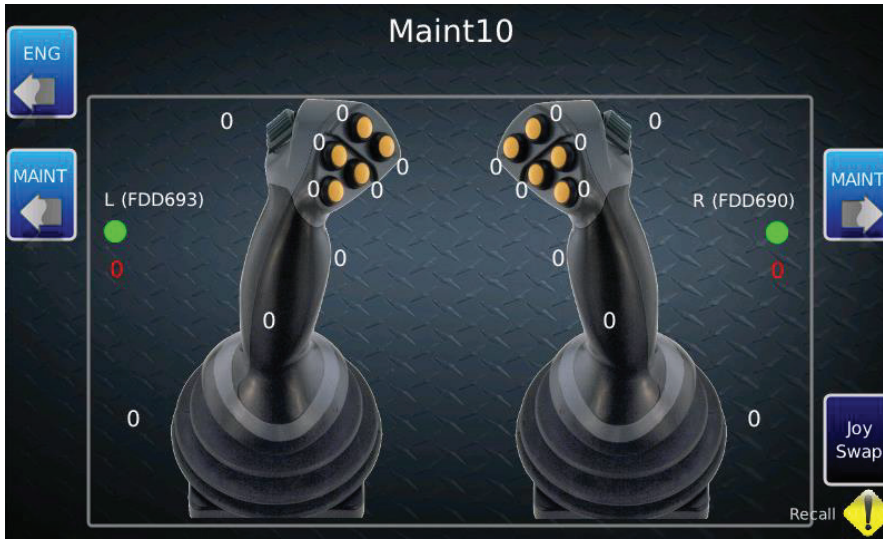
- If CAN is red in the Maintenance pages, communication with that module may be lost, check wiring and fuses. The status LEDs on the module itself indicate the following:
  - Left blinking green; right off: Good
  - Left blinking green; right solid: no communication / loading program
  - Left solid green; right solid red: module software settings may not be matched to controller

Maintenance



Additional Outputs

Maintenance



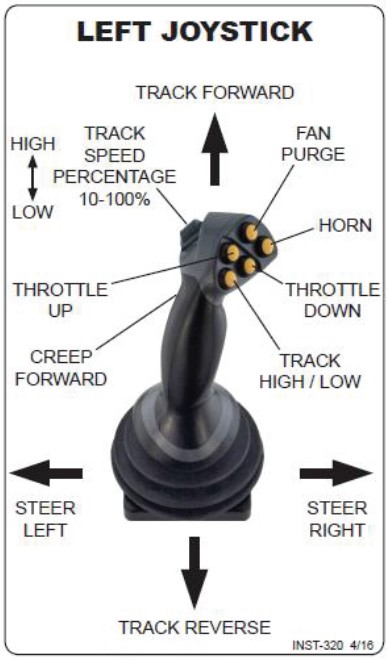
The joysticks on this machine send all of their signals via CAN messages and therefore cannot be checked physically with a voltmeter. This Maintenance screen is a tool used to function check all inputs coming from the joysticks to ensure they are working properly. With the ignition ON but ENGINE NOT RUNNING, work through each button and make sure the corresponding values change. The numbers shown are raw values that the program translates into commands.

(The red number below the Red/Green status LEDs is an error count of the number of times each joystick has lost communication with the main controller).

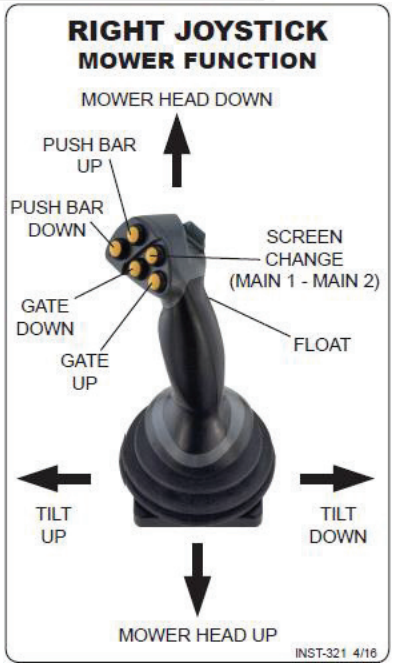
1. Press Joystick Swap to temporarily move all left side functions to the RH Joystick and all right side functions to the LH Joystick. The Joy Swap label will turn green and "JOYSTCIK SWAP" will blink on all pages. This feature provides a 'limp home' capability in case one joystick is malfunctioning.

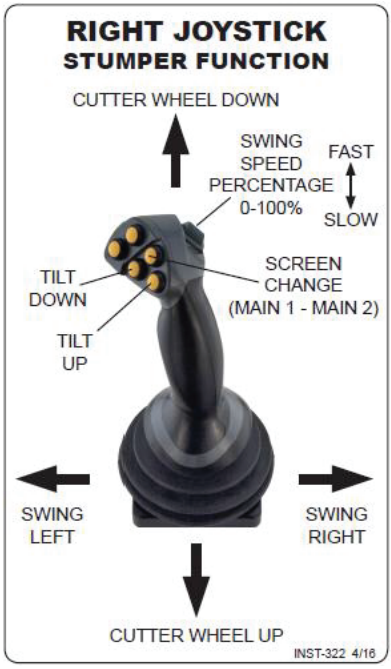
(CAN based joysticks cannot control different functions just by exchanging connectors. When they are connected to the CAN network at any location, they identify themselves as LH or RH joystick respectively and will operate only their assigned functions. A selector button is needed to change their assigned functions inside the program).

Joysticks

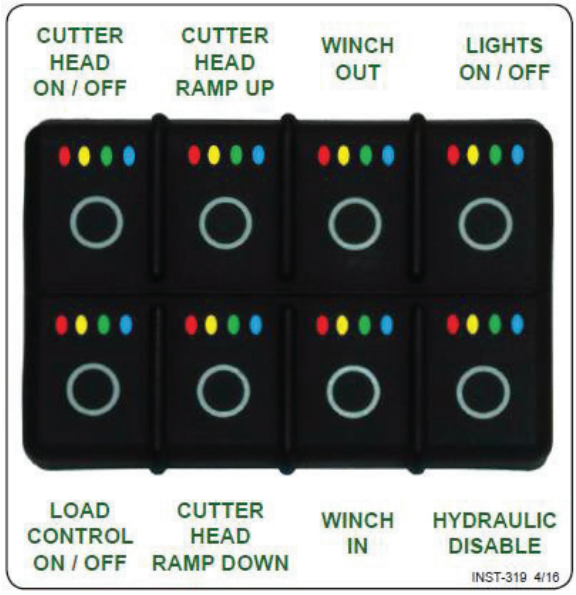


The RH joystick functions can change based on whether the machine is in Mower or Stump Grinder Mode.





Keypad



Winch can only be operated with Head OFF.

When Hydraulics Disabled is pressed, the engine will idle down and all machine functions will be disabled EXCEPT for the hydraulic cooler motors.

Notes

A sample pop-up diagnostic message (the error shown implies that particular machine had electric valves controlling the Discharge Conveyor).

SPN's that are unique to Bandit electronic controls

SPN	FMI	Descrip
523001	31	System E-Stop because Hood Pin / Mill Door Switch is Open
523002	31	FC Clutch Fault or Temp Fault. Inspect Gate Position, Gate may open to prevent jamming when FC cl
523003	31	Outputs from Controller to Radiator Fan Drive Pump are either open or shorted. Check Wiring.
523019	31	Hyd Oil Level Low
523020	31	Accumulator Gas PSI Low for at least 5sec, Cutter OFF
523021	31	Hyd Oil Temp Above 180F (82C)
523022	31	Hyd Oil Temp Above 200F (93C), Eng limit to 1600rpm until temp below 195degF
523023	31	Hyd Oil Temp Above 220F (104C), Cutter OFF and Eng limit to 1200rpm until temp below 200F

SPN's that are applicable to varied DPF type Tier4 engines

SPN	FMI	Descrip
3251	0	cu DPF is full of soot. Contact engine service center.
3251	16	cu DPF is nearly full of soot. Goto MENU - DPF and Force a Regen.
3703	31	ca DPF is nearly full of soot. Goto MENU - DPF and Force a Regen.
3714	31	ca DPF is nearly full of soot. Goto MENU - DPF and Force a Regen.
3715	31	ca DPF is full of soot. Contact engine service center.
3719	0	ca jd DPF is full of soot. Goto MENU - DPF and Force a Regen. Contact service center.
3719	15	jd DPF is nearly full of soot. Goto MENU - DPF and Force a Regen.
3719	16	ca jd DPF is nearly full of soot. Goto MENU - DPF and Force a Regen.

Program Notes

[CAN2RxFromDisp]
[CAN2RxFromEng]
[CAN2RxFromFlexxaire]
[CAN2Tx]
[Comm2]
[Comm3]
[HourMeters]
[KeypadA3]

[ControlEngine]
- C1 will idle Eng down for
    - Hydraulic Disable
    - C1 loses comm with Eng
    - Lost Display and Lost Joysticks
    - DPF DTC's
    - Push 'Force' in Maint2-DPF
    - Seat Switch
    - Hyd Temp over 200 (then limit to 1600rpm)
    - Hyd Temp over 220 (then limit to 1200rpm)
    - AccumSw is OFF

- C1 will shutdown Eng for
    - E-STOP

[ControlFans]
- reversible fan
- Hyd Cooler fans will not turn on until 5sec after Eng RPM above 500
- AC ON puts fans at 40% speed
- ~~AC Interrupt output is fired any time fans are not Fwd~~
-

[ControlGate]
- HydDisable, EngRunOut, not SeatSwDelay, not MowerMode disables Gate
- ~~PushBar Dn automatically fires Gate Dn~~
- Mod10h34 is Gate in Mower, Swing in Grinder

[ControlHead]
- Head Will Automatically come to a controlled stop if
    - HydDisable is ON
    - HydTempOver220
    - EngRunOut is OFF
    - SeatSwDelay is OFF
    - Lost Keypad A3
    - AccumSw is OFF
    - Key goes OFF
- Head will come to immediate stop if EngRunOut is E-Stopped
- AntiStall is active and will reduce Cutter Head to 20% power if Eng is at full load and lugs down to 1300rpm or less. Once Eng RPM rises back above 1600rpm, Cutter Head will resume 100%.

[ControlLights]
- If communication is lost with Keypad A3, lights will turn ON.

[ControlLockPins]
- HydDisable, EngRunOut, not SeatSwDelay, disables Lock Pins

[ControlMain]
- HydDisable, EngRunOut, not SeatSwDelay, disables Main
- Float Trigger has 200ms delay.
- Not Mower Mode, HydDisable, EngRunOut, not SeatSwDelay, disables Float
- Separate Float valve vs Main U/D valve w/ 4th-pos

[ControlPushBar]
- Not Mower Mode, HydDisable, EngRunOut, not SeatSwDelay, disables PushBar

[ControlStarter]
- Volvo start command sent via J1939 (FF46)
- *KeyStartIn* will sound start beeper *(StartHornOut)* for 50ms seconds and then fire starter solenoid *(StartSolOut)*.
- If the Eng E-Stop has been triggered, dead-crank starting is permitted, but engine will not fire.
- If Eng Speed is above 450rpm for 300ms start cranking is prevented.

[ControlSwing]
- Not Grinder Mode, HydDisable, EngRunOut, not SeatSwDelay, disables Swing
- Mod10h34 is Gate in Mower, Swing in Grinder

[ControlTilt]
- HydDisable, EngRunOut, not SeatSwDelay, disables Tilt

[ControlTracks]
- HydDisable, EngRunOut, not SeatSwDelay, disables Tracks
- Track Reverse on either track will fire TrackBeeper
- RampRange1 Ascend 1000/1000 per sec, Descend 2500/1000 per sec
- RampRange2 Ascend 2500/1000 per sec, Descend 2500/1000 per sec
- RampRange3 Ascend 5000/1000 per sec, Descend 5000/1000 per sec

[ControlWinch]
- Head ON, HydDisable, EngRunOut, not SeatSwDelay, disables Winch

[Inputs]
- Seat Switch has 3sec OFF delay
- E-Stop has 100ms OFF delay
- Accum Sw forced true ~~has 5sec OFF delay~~

[Outputs]

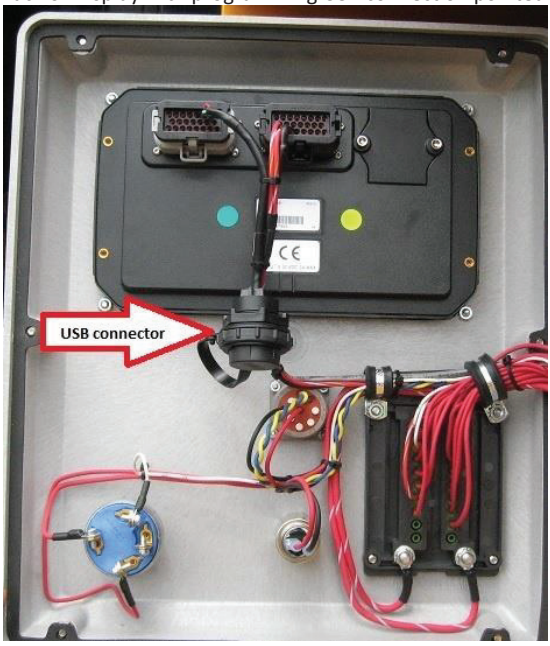
[OutputsAllow]
- IgnON = CLAMP15 > 8500mV
- OutputsMayTurnOn 500ms after IgnOn; Outputs OFF when IgnOFF
- VBBO and VBBR ON immediately
- VBBO OFF 500ms after IgnOFF
- VBBR and Supply OFF 1sec after IgnOFF

[OutputsP]
[Setup1]
[Setup2]

Notes

To load a new program into the display, follow the instructions below.

Back of Display with programming USB connection pointed out.



1. With power OFF, insert USB Flash Drive.

2. Hold Upper-Right button on display, power ON display, and continue holding button for 5 secs.

Notes

Display will startup in boot mode

3. Use buttons by the up / down arrows to select update-full.tar.gz, then push right-arrow button to select that file for download.

4. The right-arrow will turn green, press it again to confirm that is the file to download.

The Display will download the selected file, this can take a minute or so. The Display will reboot in operational mode on its own upon completion. After display is in proper working order, power down display and remove USB Flash Drive, replace cover on USB port.