

# GrindLazer™

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***For removal of materials from flat horizontal concrete and asphalt surfaces. For professional use only.***

## Pro Series - Rotary Cut

Model 25M847 - GrindLazer Pro RC813 G (390 cc / 13hp Electric Start)

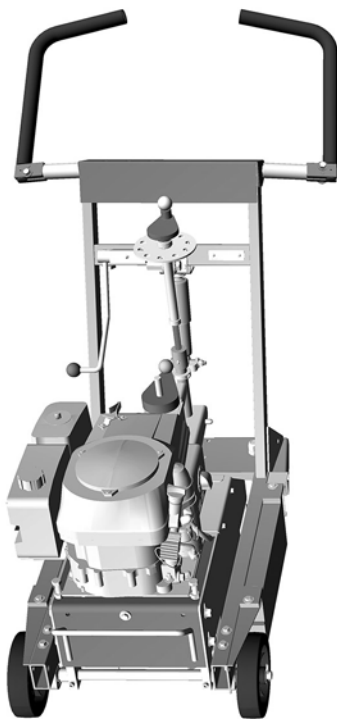
Model 25M847 - GrindLazer Pro RC813 G (390 cc / 13hp Electric Start) (Series B)

Model 25N669 - GrindLazer Pro RC813 G DCS (390 cc / 13hp Electric Start)

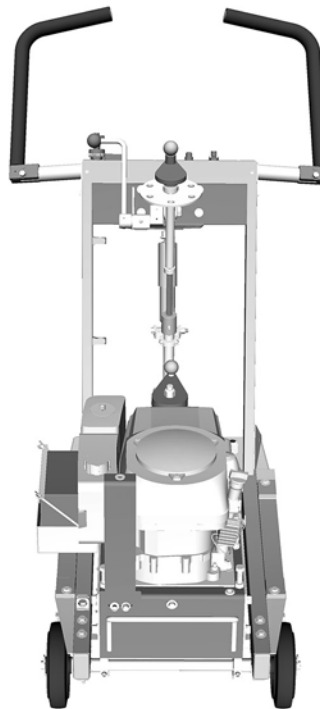


## Important Safety Instructions

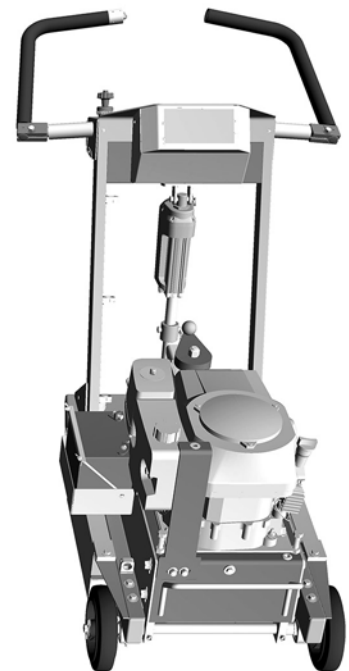
Read all warnings and instructions in this manual before using the equipment. Be familiar with the controls and the proper usage of the equipment. Save these instructions.



25M847



25M847 (Series B)



25N669

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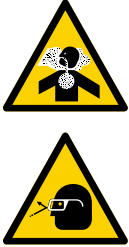



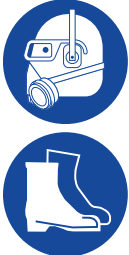







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# Warnings

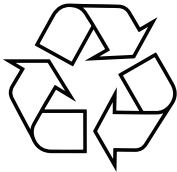
The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h1 style="margin: 0;">WARNING</h1>	
	<p><b>DUST AND DEBRIS HAZARD</b></p> <p>Grinding concrete and other surfaces with this equipment can create dust that contains hazardous substances. Grinding can also create flying debris.</p> <p>To reduce the risk of serious injury:</p> <ul style="list-style-type: none"> <li>• Control the dust to meet all applicable workplace regulations.</li> <li>• Wear protective eye wear and a properly fit-tested and government approved respirator suitable for the dust conditions.</li> <li>• Use equipment only in a well-ventilated area.</li> <li>• Grinding equipment must be used only by trained personnel who understand the applicable workplace regulations.</li> </ul>
	<p><b>ENTANGLEMENT AND MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Do not wear loose clothing, jewelry or long hair while operating equipment.</li> <li>• Before checking, moving, or servicing equipment, disconnect battery.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Cutters and engine can become very hot during operation. To avoid severe burns, do not touch hot equipment. Wait until equipment has cooled completely.</p>
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not leave the work area while equipment is energized. Turn off all equipment when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> <li>• Maintain a safe operating distance from other people in the work area.</li> <li>• Avoid any pipes, columns, openings, or any other objects protruding from work surface.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of dust or chemicals, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eye wear.</li> <li>• Protective shoes.</li> <li>• Gloves.</li> <li>• Hearing protection.</li> <li>• Properly fit-tested and government approved respirator suitable for the dust conditions.</li> </ul>

 <h1 style="margin: 0;">WARNING</h1>	
 	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Do not fill fuel tank while engine is running or hot; shut off engine and let it cool. Fuel is flammable and can ignite or explode if spilled on hot surface.</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Keep a fire extinguisher in work area.</li> </ul>
	<p><b>CARBON MONOXIDE HAZARD</b></p> <p>Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death.</p> <ul style="list-style-type: none"> <li>• Do not operate in an enclosed area.</li> </ul>
	<p><b>BATTERY HAZARD</b></p> <p>Lead-acid batteries produce explosive gases and contain sulfuric acid that can cause severe burns. To avoid sparks and injury when handling or working with a lead-acid battery:</p> <ul style="list-style-type: none"> <li>• Read and follow the battery manufacturer's warnings.</li> <li>• Exercise caution when working with metallic tools or conductors to prevent short circuits and sparks.</li> <li>• Keep all sparks, flames, and cigarettes away from batteries.</li> <li>• Always wear protective eyewear and protective equipment for face, hands, and body.</li> <li>• If you have direct contact with battery fluid, flush with water and consult a physician immediately.</li> <li>• Installation and maintenance must be performed by knowledgeable personnel only.</li> </ul>

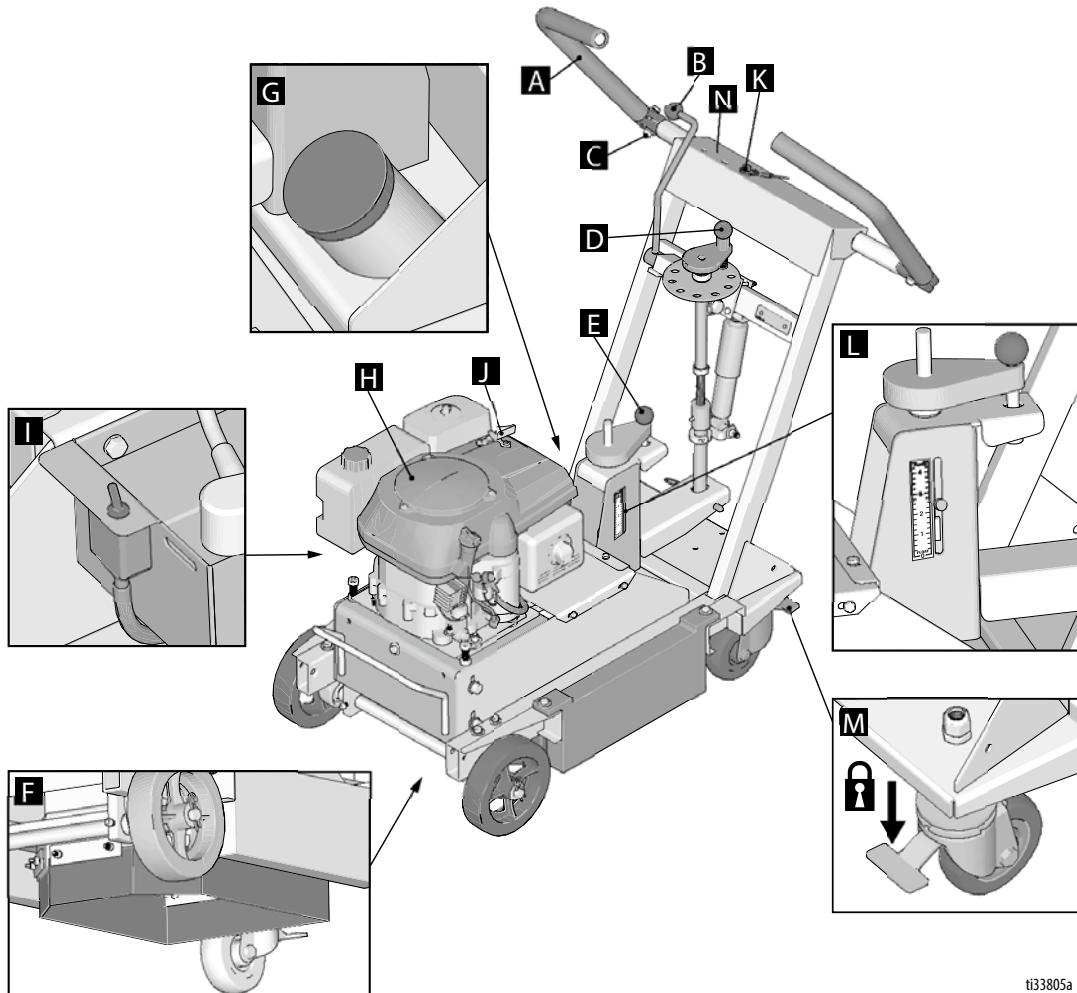
## Battery Disposal

Do not place batteries in the trash. Recycle batteries according to local regulations. In the USA and Canada call 1-800-822-8837 to find recycling location or go to [www.call2recycle.org](http://www.call2recycle.org).



# Component Identification

25M847



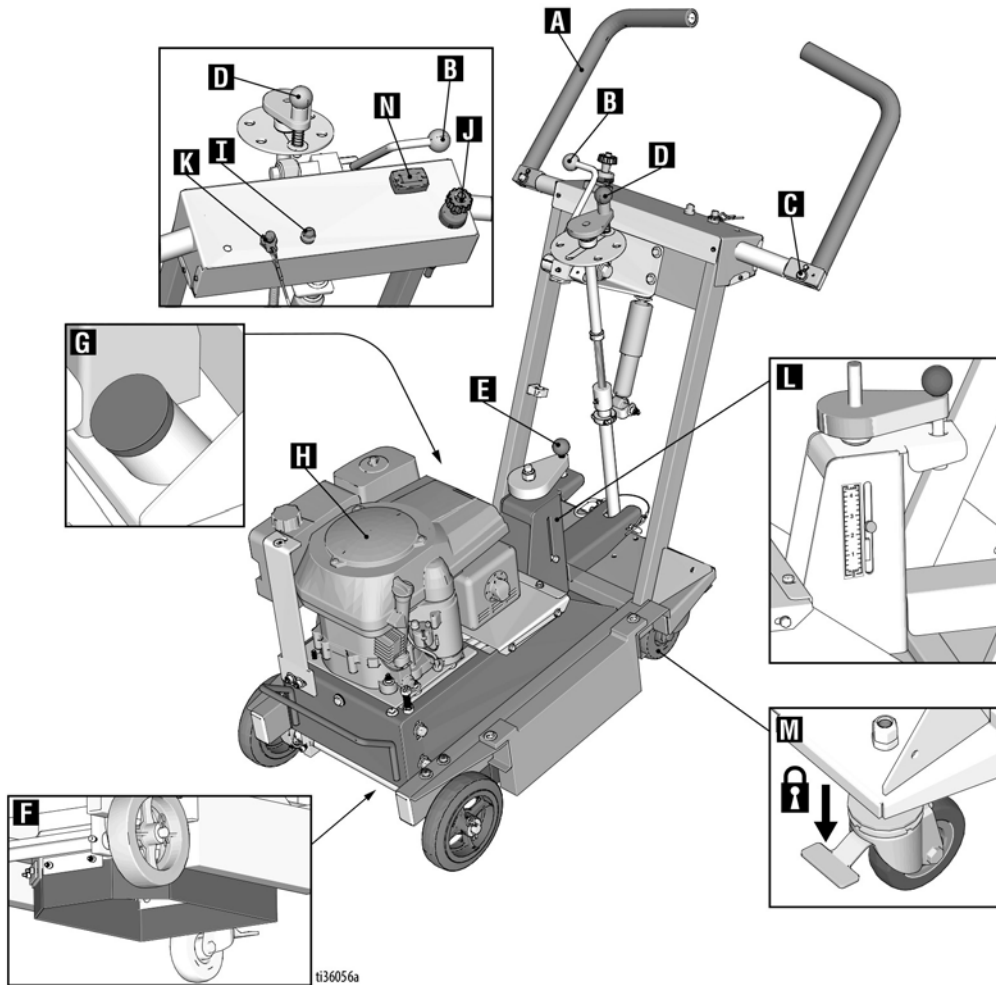
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Component	
A	Handlebar
B	Cutter Head Engage Lever
C	Handlebar Adjustment Bolts
D	Cutter Head Adjustment Dial
E	Pressure Control Dial
F	Dust Skirt
G	Vacuum Port

Component	
H	Engine
I	Electric Start Engine Switch
J	Engine Throttle
K	Engine Kill Button
L	Pressure Indicator
M	Wheel Stop
N	Hour Meter / Tachometer

# Component Identification

## 25M847 (Series B)

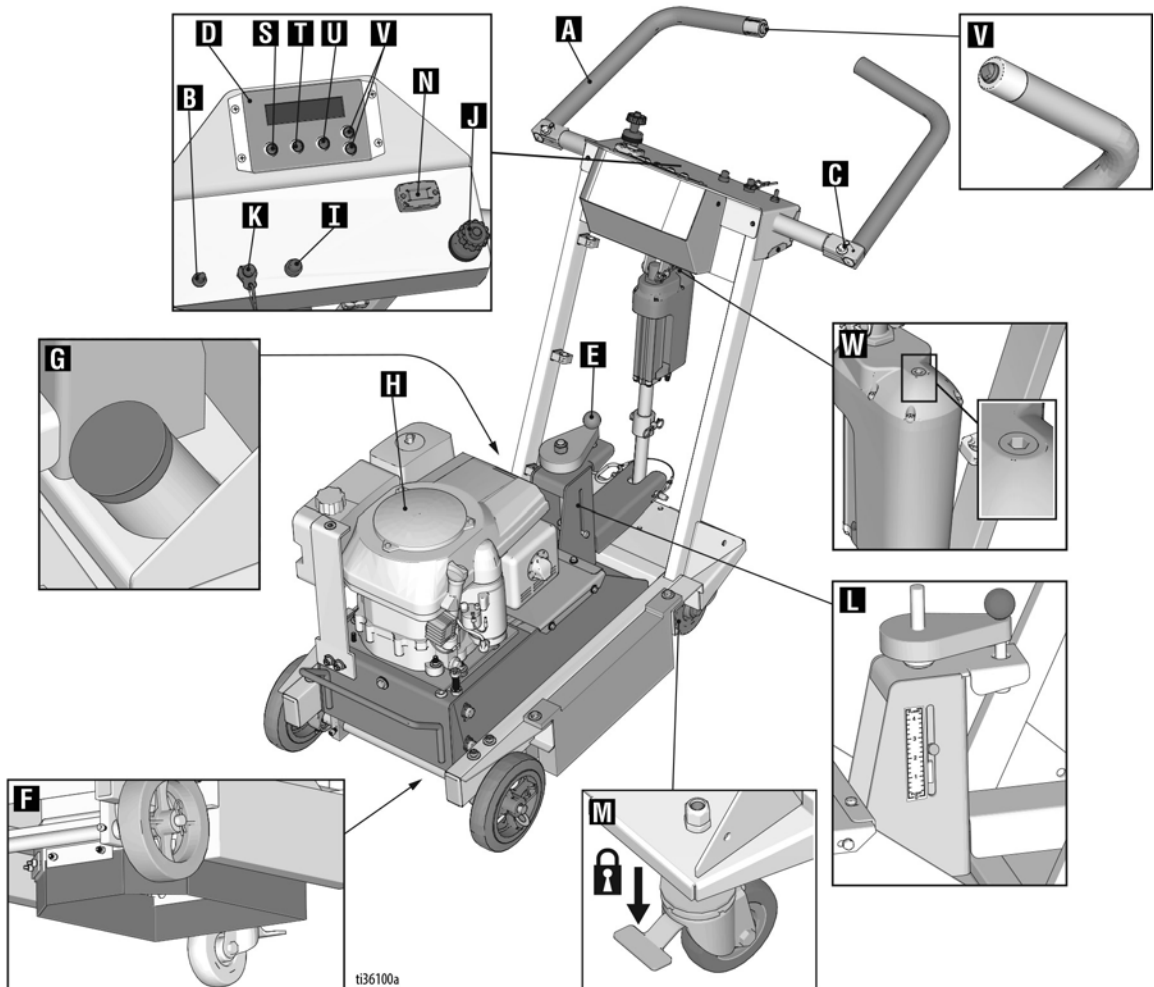


Component	
A	Handlebar
B	Cutter Head Engage Lever
C	Handlebar Adjustment Bolts
D	Cutter Head Adjustment Dial
E	Pressure Control Dial
F	Dust Skirt
G	Vacuum Port

Component	
H	Engine
I	Electric Start Engine Switch
J	Engine Throttle
K	Engine Kill Button
L	Pressure Indicator
M	Wheel Stop
N	Hour Meter/Tachometer

# Component Identification

## 25N669



Component	
A	Handlebar
B	Power Switch
C	Handlebar Adjustment Bolts
D	DCS Control
E	Pressure Control Dial
F	Dust Skirt
G	Vacuum Port
H	Engine
I	Electric Start Engine Switch
J	Engine Throttle

Component	
K	Engine Kill Button
L	Pressure Indicator
M	Wheel Stop
N	Hour Meter/Tachometer
S	Home Button
T	Zero Button
U	Cut Depth Button
V	Up/Down Buttons
W	Manual Height Adjustment

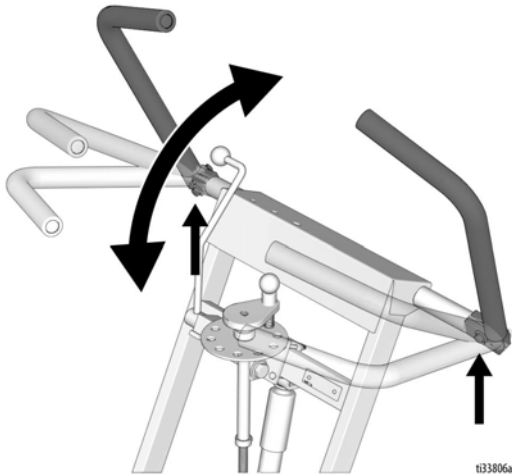
# Setup

## Handle Bar Adjustment

The handlebars are equipped with a high-density vibration suppression material to reduce operator fatigue when operating equipment. To adjust the handlebars to a new position for different height operators please follow these steps:

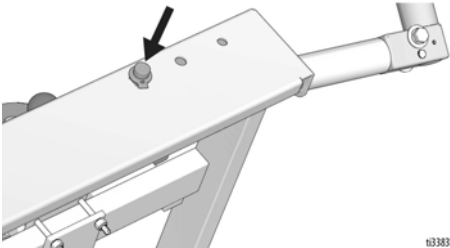
1. Using a 9/16" (14mm) wrench or socket, loosen the bolts on both sides of the handlebars until the handlebar moves freely.
2. Stand behind the machine and lightly tap the handlebar to the desired position.
3. Re-tighten the bolts to 21.7 to 25 ft-lb (29-34 N•m) to lock the handlebars into position.

**NOTE:** Never operate equipment with loose handlebars. The bolts must be fastened tightly assuring the handle is locked into position.



## Engine Kill Button

In the event of a malfunction or an accident (such as the machine operator falling or losing footing), the GrindLazer is equipped with a corded Engine Kill Button. Attach the end of the cord to the operator's belt or wrist, and snap the clip into place on the button by raising the top of the Engine Kill Button and inserting the clip into the gap. If the operator becomes distanced too far from the machine, the cord will detach from the button and the machine will stop running. The engine can also be stopped by pressing down on the Engine Kill Button.



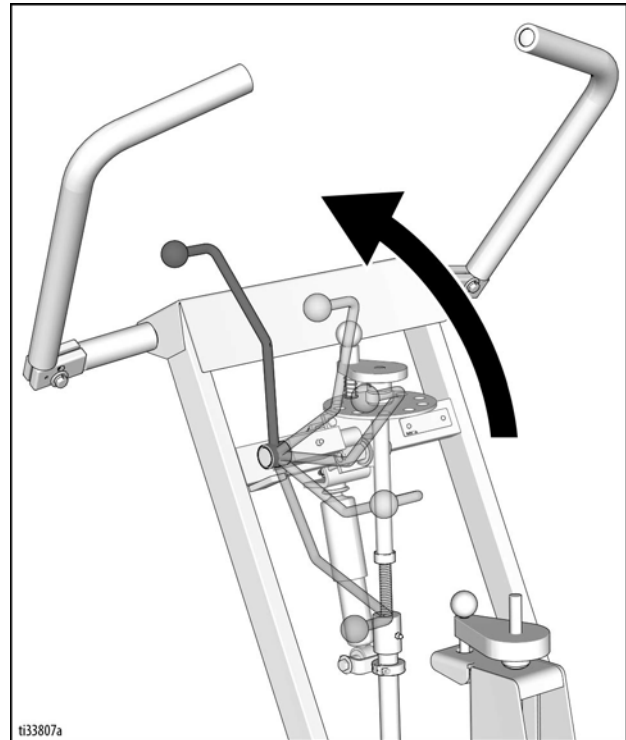
## Cutter Head Installation/Replacement

Normal use will require periodic cutter head inspection and may necessitate cutter replacement. Time of replacement will vary according to usage and load factors.



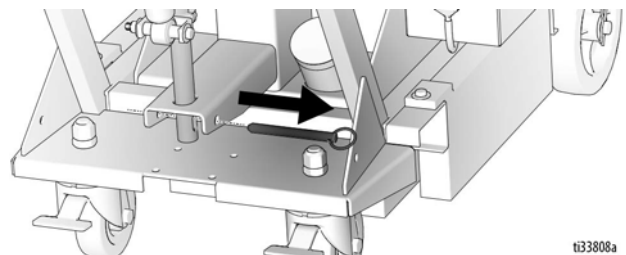
To avoid injury from unexpected start up, disconnect spark plug wire and black battery cable before you service your unit.

1. **Non-DCS Models:** Raise the Cutter Head Engage Lever to the up position so the cutter head is off the ground.



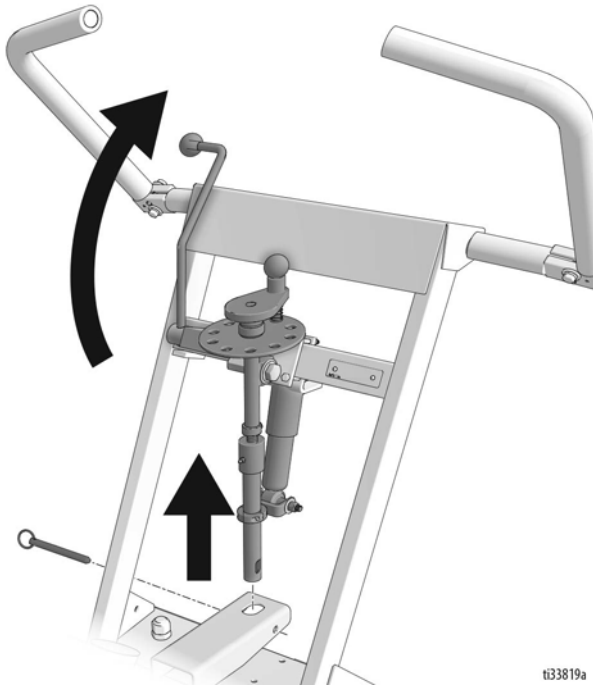
**DCS Models:** Press the Home Button on the DCS Control so the cutter head is off the ground.

2. Remove Clevis Pin.



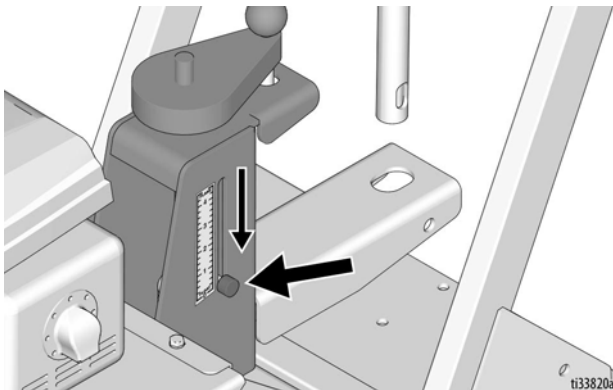


3. **Non-DCS Models:** Rotate Cutter Head Engage Lever to upwards position to release lower linkage from inner frame.

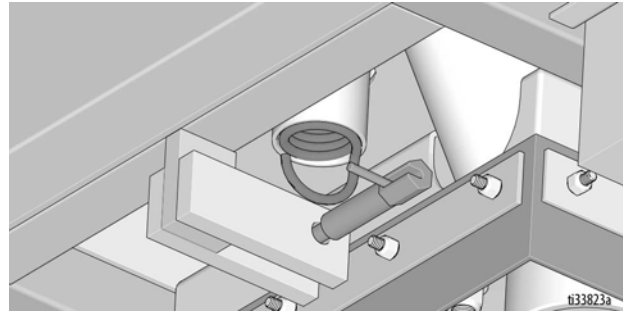


**DCS Models:** Press the Home Button on the DCS Control.

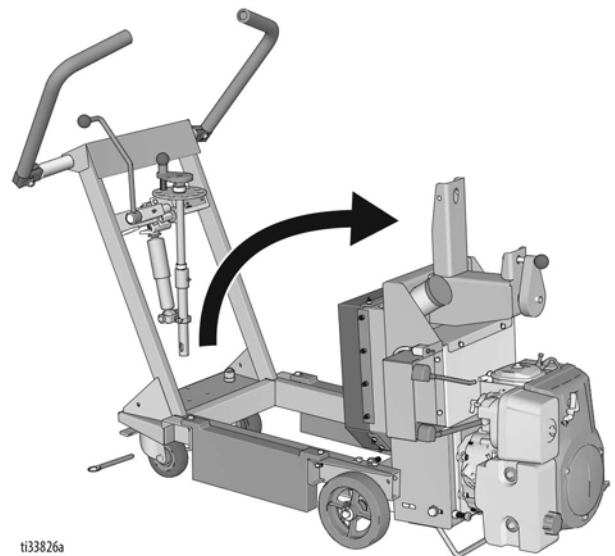
4. Turn the pressure control dial until the indicator is at "0". This releases tension from the pressure control spring.



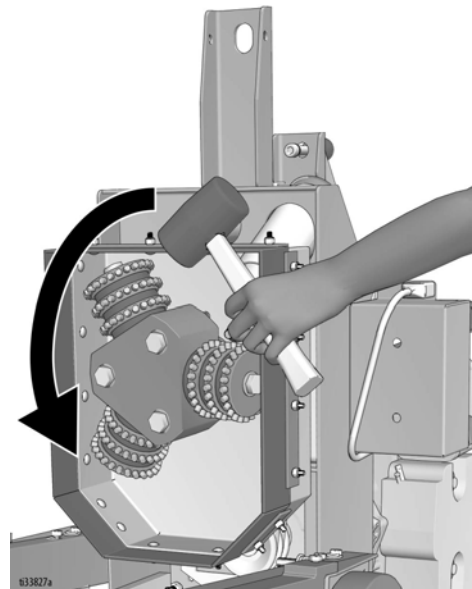
5. Unhook spring from the spring plunger (bottom rear section of machine).



6. Rotate the inner frame upwards to gain access to the cutters.

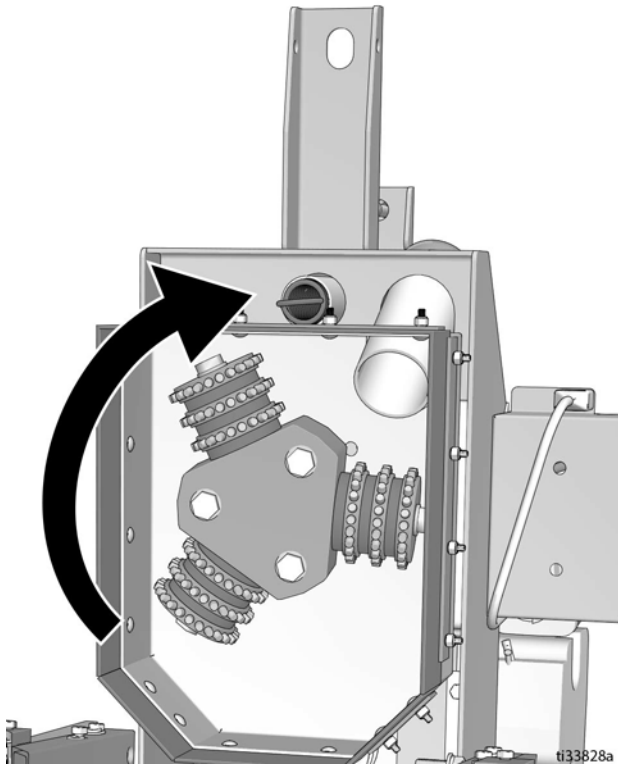


7. If there is a cutter head attached, it must be removed. To do so, strike the cutters in a counter clockwise direction with a rubberized mallet or wood block.

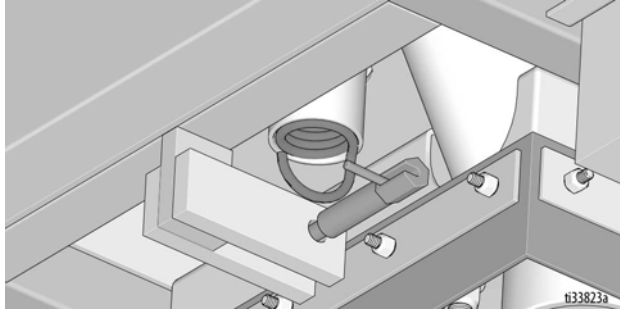


Setup

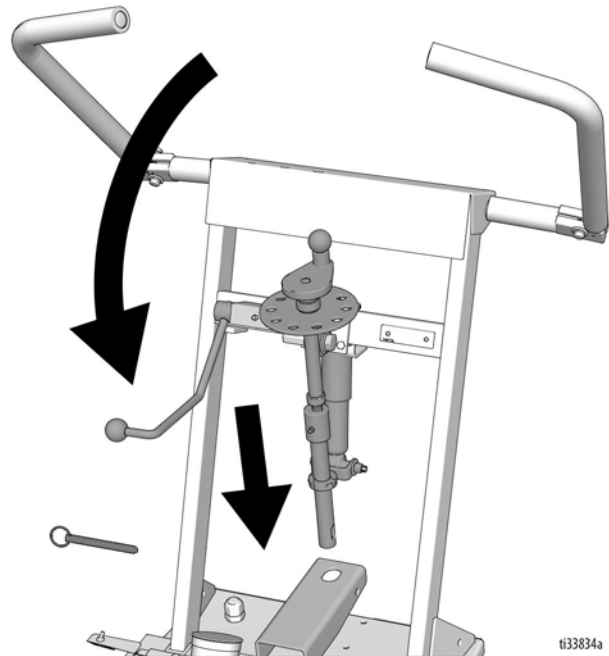
8. Install the new cutter assembly onto the machine by spinning clockwise. Cutters will lock onto the machine once surface removal is started.



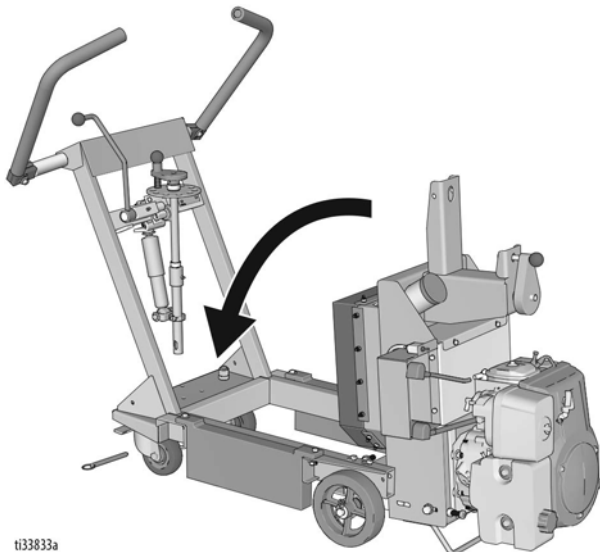
10. Connect the spring to the spring plunger.



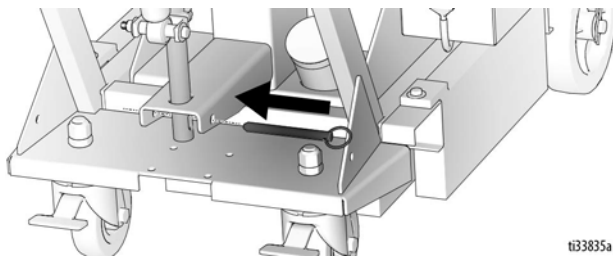
11. Lower the lower linkage into the slot in the inner frame by rotating the Cutter Head Engage Lever (non-DCS models), or by using the Down Button on the DCS Control (DCS models).



9. Lower the inner frame back to a horizontal position.



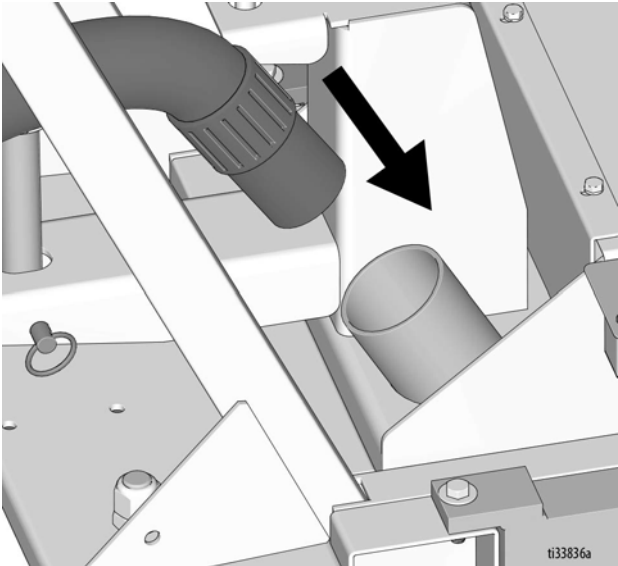
12. Connect Clevis Pin.



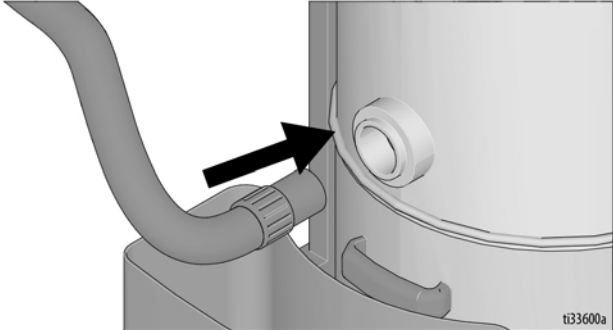
# Dust Control

## Vacuum Attachment

- 1. If using a vacuum, attach vacuum hose to the Vacuum Port.



- 2. Attach vacuum hose to the Inlet Port on the Cyclone Separator (optional) or vacuum.

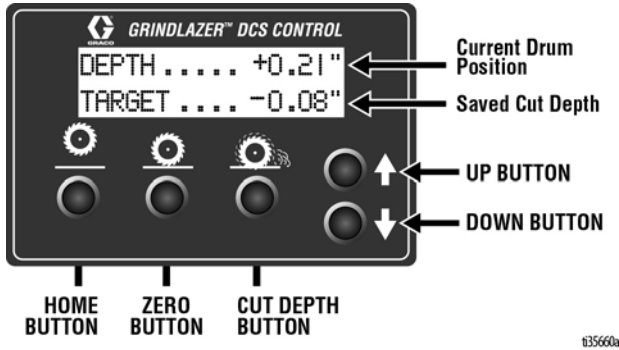


## DCS Control (DCS Models only)

Buttons on the DCS Control have two functions, quick press and long press. Quick press refers to pressing the button and releasing the button quickly, while long press is pressing the button and holding the button for two or more seconds.

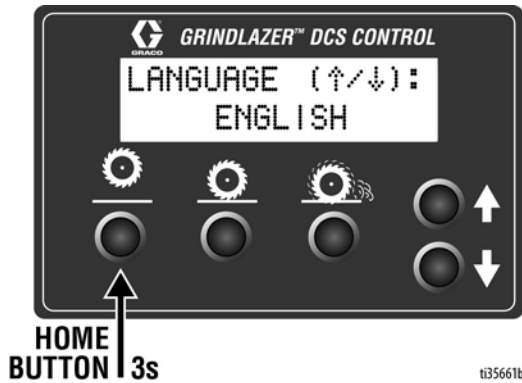
**NOTE:** "+" (plus) refers to above pavement surface. "-" (minus) refers to below pavement surface.

### Run Screen

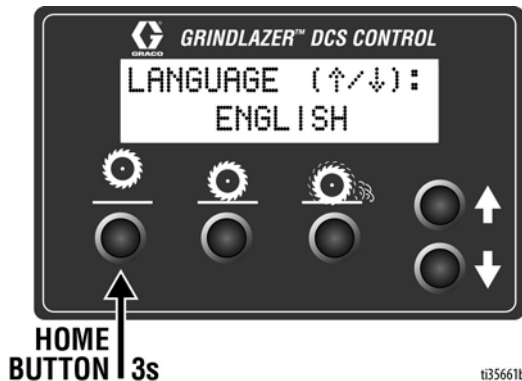


### Home Button

**Quick Press:** Takes the cutter head to its highest position.



**Long Press:** Brings up Menu Screen.



### Zero Button

**Quick Press:** Takes the cutter head to the surface.

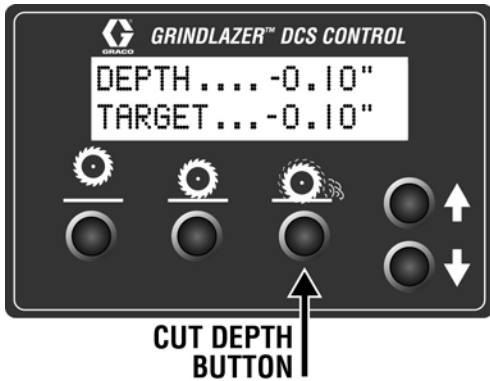


**Long Press:** Reprograms the zero point to the current cutter head position.



### Cut Depth Button

**Quick Press:** Takes the cutter head to the Cut Depth Target.



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**Long Press:**

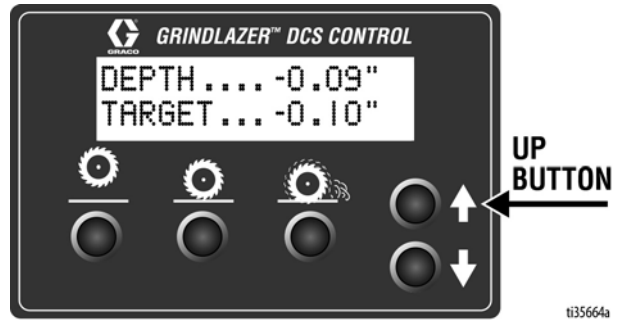
- If at or above zero point: Opens new screen to select desired cut depth using up/down buttons.
  - To exit without saving, quick press the Cut Depth Button.
  - To exit with saving, long press the Cut Depth Button.
- If below zero point: Reprograms the Cut Depth Target to the current cutter head position.



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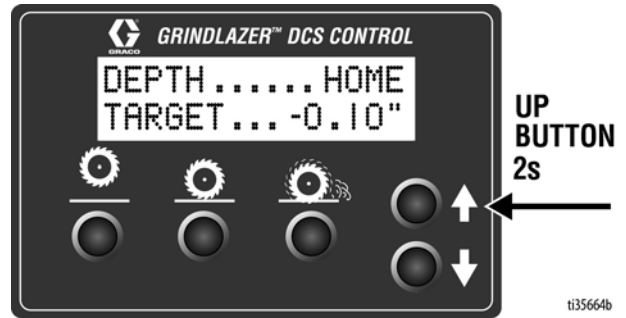
### Up Arrow Button\*

**Quick Press:** Raises the cutter head by 0.01" (0.25mm, 10 mil).



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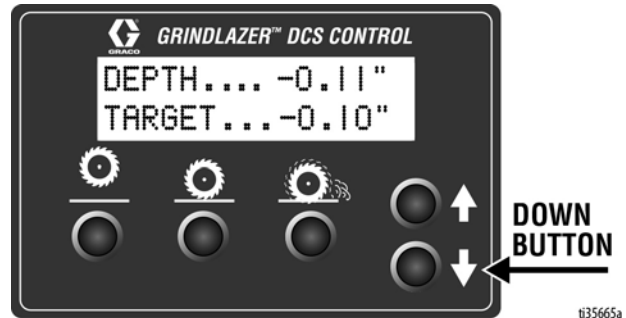
**Long Press:** Raises the cutter head to Home position.



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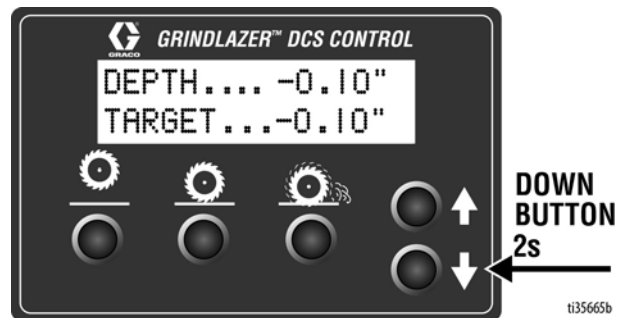
### Down Arrow Button\*

**Quick Press:** Lowers the cutter head by 0.01" (25mm, 10 mil).



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**Long Press:** Lowers the cutter head to Cut Depth Target.



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\*Handlebar Rocker Switch has the same functions as Up and Down Arrow Buttons.

## Menu Screens

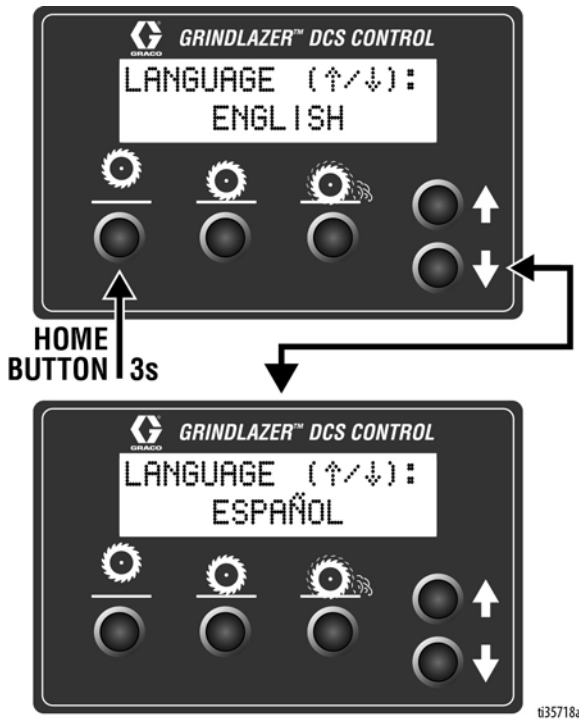
To display the Menu Screens, hold down Home Button from the Run Screen. To save menu settings and return to Run Screen, hold down Home Button from any Menu Screen.

To cycle through selections in each Menu Screen, use Up and Down Arrow Buttons.

To advance to next Menu Screen, quick press the Home Button.

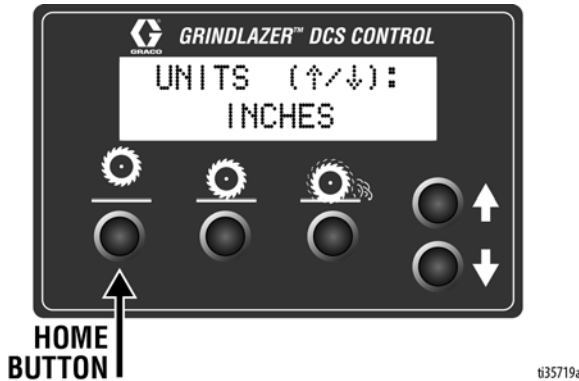
### Menu Screen #1 - Language

Select your desired language (English, Spanish, French, German, or International Symbols).



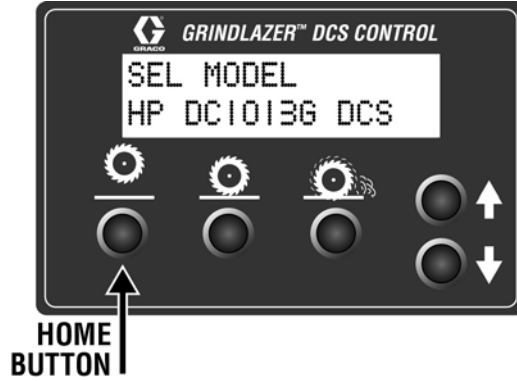
### Menu Screen #2 - Units

Select your desired depth units (inches, millimeters, or mils).



### Menu Screen #3 - Model Select

Your GrindLazer model name can be found on the handlebar dashboard label. Select the model on the DCS Control which matches the model you have. This ensures accurate depth readings. Hold down Up or Down Arrow Buttons to cycle through models.



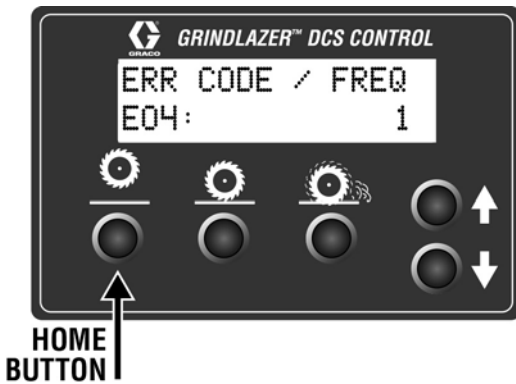
### Menu Screen #4 - Software revision

Displays the revision of the software on the DCS Control.



### **Menu Screen #5 - Error Codes**

Displays the most recent error code and the total number of times that error has occurred. Cycle through previous error codes using Up/Down Buttons.



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### **Error Codes**

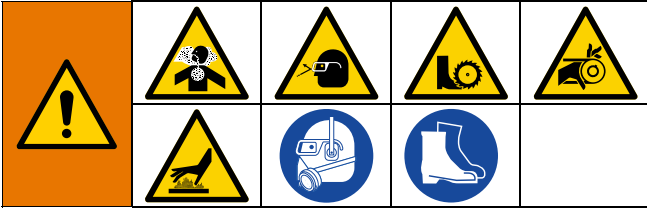
E04: High Voltage  
 E05: High Motor Current  
 E08: Low Voltage  
 E09: Hall Sensor Error  
 E12: High Current (short circuit)  
 E31: Home Button Error  
 E32: Zero Button Error  
 E33: Cut Depth Button Error  
 E34: Up Button Error  
 E35: Down Button Error

To clear an error code that appears while on the Run Screen:

1. Turn DCS Power Switch OFF.
2. Address/Fix the issue.
3. Turn DCS Power Switch ON.

**NOTE:** See Repair Manual for more information on Error Codes and Troubleshooting.

# Operation



Do not start machine while cutter head is in contact with the ground. Doing so can cause the operator to lose control of the machine, resulting in property damage and/or personal injury.

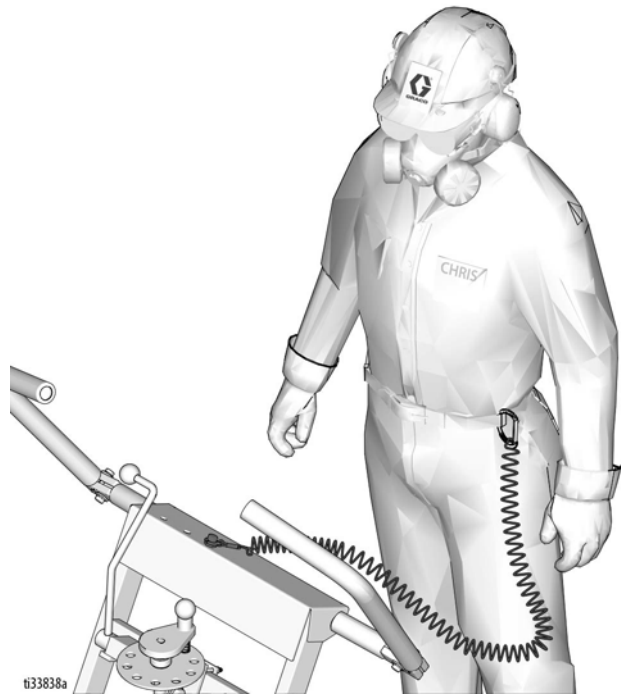
## Machine Start Up

Before starting engine, perform the following:

- Read and understand engine manual.
- Make sure all guards are in place and secure.
- Make sure all mechanical fasteners are secure.
- Inspect for damage to engine and other exterior surfaces.
- Inspect work area to locate any pipes, columns, deck inserts, or other objects protruding from work surface. Avoid these objects during operation.

## Starting the Engine

- Connect Engine Kill Button Cord to operator and machine.






- Open the fuel shut off on the gas tank and then place the throttle lever at the “fast idle” position.
- Move the choke to closed.
- Push the Electric Start Engine Switch to start the engine.
- After the engine starts, move choke to open.
- Set throttle to desired setting.

## If the Engine Does Not Start

- Check engine for proper gas level.
- Check the spark plug. Make sure socket areas are clean and clear of debris, and the proper gap is set. Replace if needed.
- Battery might be dead. Try pulling the starter cord.
- Engine may have tilted backwards. If so, allow oil to drain after removing spark plug.
- If engine still does not start, refer to the engine manual.
- The engine will not start without the Corded Engine Kill Clip securely in place.



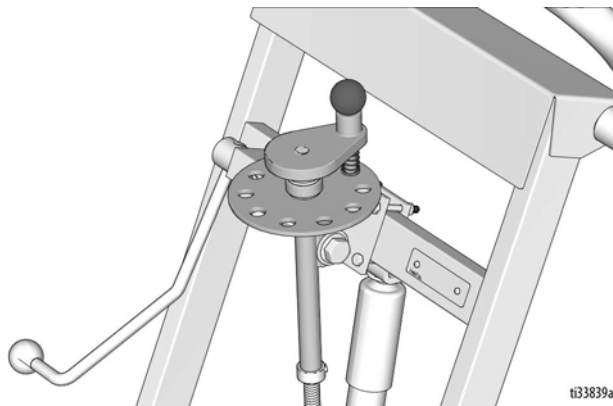
## Cutting Material

				
<p>Maintain a safe operating distance from other people in the work area. Avoid any pipes, columns, openings, or any other objects protruding from your work surface.</p>				

1. Start Engine, see page 16.
2. Turn vacuum on, if using a vacuum.

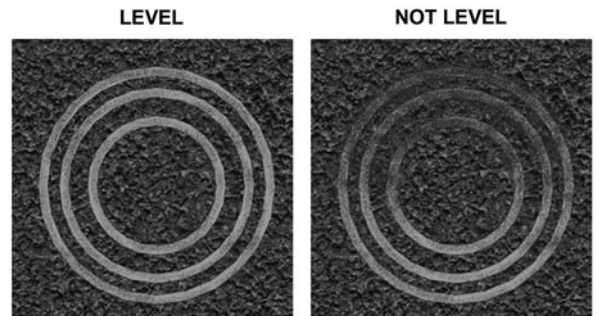
### Adjusting Cutter Head Angle

1. Locate a level surface for cutter adjustment. All four wheels should be on a level surface for setup.
2. Run at about 1/3 engine throttle.
3. **Non-DCS Models:** Lower the Cutter Head Engage Lever.
4. **Non-DCS Models:** Slowly lower the Cutter Head Adjustment Dial and at first sign of dust from the cutters, raise the depth control knob up a couple of turns and then lift the Cutter Head Engage Lever back up.

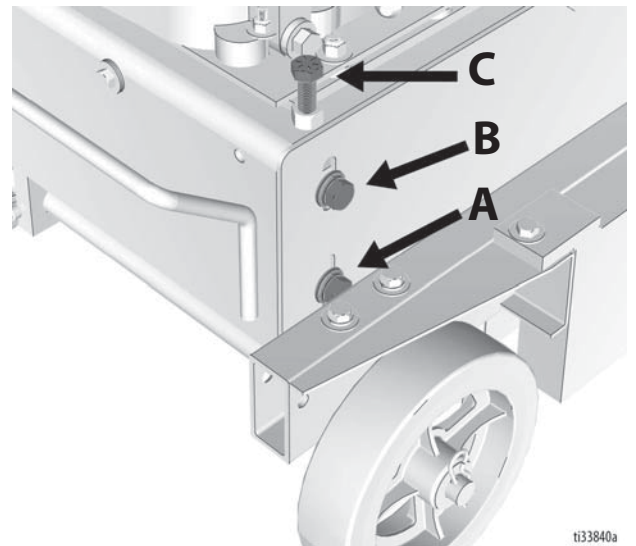


**DCS Models:** Slowly lower the cutter head by pressing the Down Button on the DCS Control repeatedly until the first sign of dust from the cutters. Then raise the cutter head off of the surface by pressing the Home Button.

5. Move the machine away from the current position to inspect the cut. Use the elevation screws in the front of the machine to pitch the cutter to the correct plane to create the desired cut pattern. Loosen bolts A and B, then adjust bolt C to modify the cutter head angle. Tighten bolts A and B when the desired cutter angle is achieved.



ti33845a



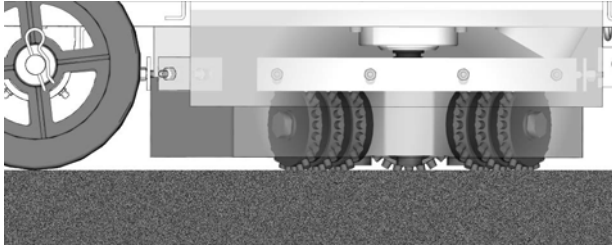
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## Operation

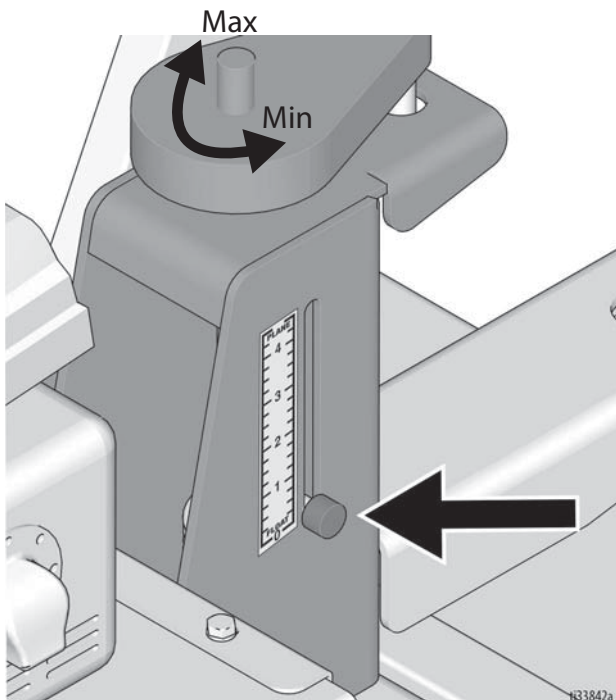
### Concrete Cutting Setup

The machine set-up required when cutting concrete is as follows:

1. Cutters should be parallel to the ground when engaged.

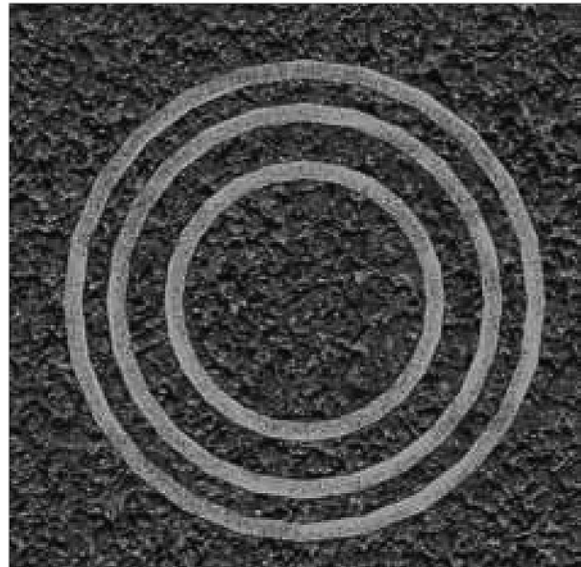


2. Use the Pressure Control Dial to set the Pressure Indicator to 0-1.



3. The cutting mark left by the machine should be an even circle.

### LEVEL

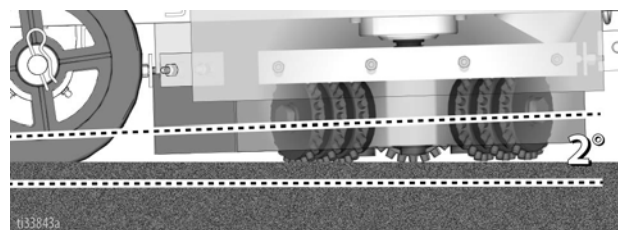


4. If the mark left by the machine is not as shown, adjust the elevation screws accordingly. See page 17.

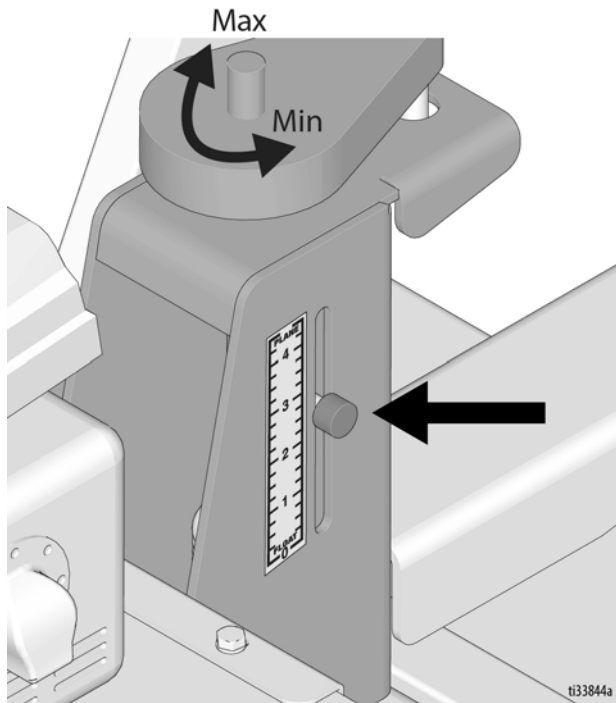
### Asphalt Cutting Setup

The machine set-up required when cutting asphalt is as follows:

1. Cutters should be at an angle no more than 2 degrees to the ground when engaged.



- Use the Pressure Control Dial to set the Pressure Indicator to 2-3.



- The cutting mark left by the machine should be an uneven circle.



← Front of Machine

ti33847a

- If the mark is in the wrong direction, adjust the elevation screws to pitch the cutter head to the correct plane. See page 17.

## Cutting Technique

These are recommended settings only. Increasing spring tension, depth of cut and pitch will increase the removal speed at the expense of reduced life and surface finish.

**NOTICE**

Care must always be taken to lift up the rotating heads over any significant obstruction, including steel or concrete expansion joints that can cause the cutters or spindle components to break.

**NOTICE**

Should you desire to tilt the machine, always tilt forward. Tilting the machine backwards at any time will flood the spark plug with oil and may cause damage to your engine.

**NOTE:** On harder surfaces, it may be best to make several passes in increments of 1/32 in. (0.8 mm) to get to the desired depth.

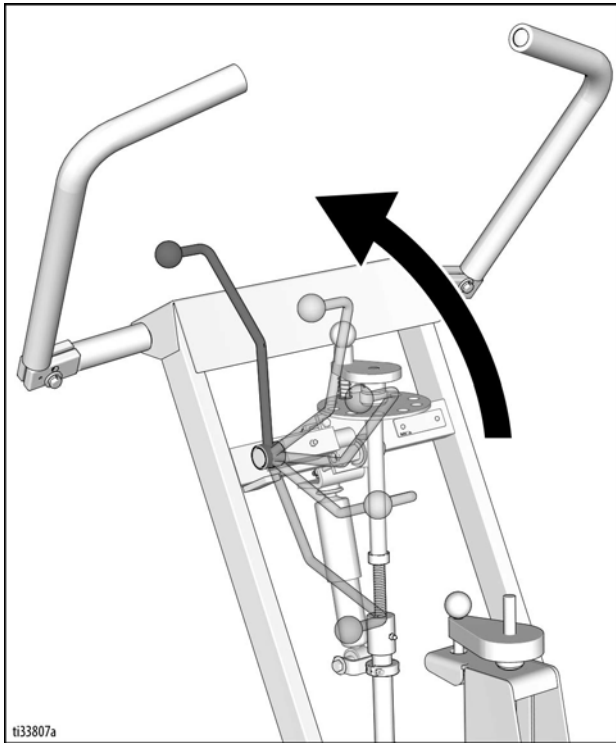
- Make certain that the cutter head is positioned to where only the cutter tips strike the surface.
- The cutter head will not withstand substrate contact. **NOTE:** Contacting the removal surface too deeply will cause premature wear to the cutter head and other components. The correct depth setting is indicated by relatively little machine vibration.
- Cutting too deep only has negative results. Try to remove materials in several passes rather than one, deep pass. Several tests will show the best, most appropriate cutter impact. Use a forward, backward and/or circular pattern to achieve your desired finish.

**NOTE:** Positioning the machine over the surface in many directions, as well as dialing the hand wheel up or down can help create desirable surface patterns. After several hours of practice, the operator will become comfortable and should be able to remove materials faster with enhanced results.

**NOTE:** The engine should not labor. Run engine at full speed and adjust the forward speed to fit the work being performed. Harder concrete surfaces will have to be cut at a slower pace than asphalt or other softer surfaces.

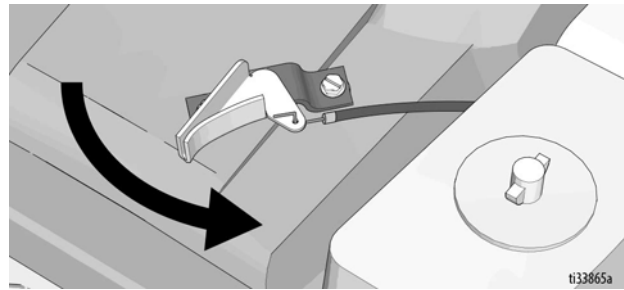
## Stop Cutting Material

1. **Non-DCS Models:** Raise Cutter Head Engage Lever so that the cutter head is off the ground.

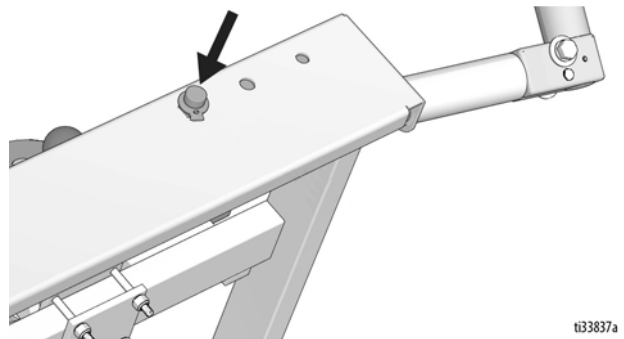


**DCS Models:** Press the Home Button on the DCS Control.

2. Adjust Engine Throttle to low setting.



3. Depress Engine Kill Button.



4. Clean the entire exterior of the machine after it has cooled. Check for worn or damaged parts and perform any required **Maintenance** on page 23.

## DCS Instructions

Each time the DCS Control is turned on, the DCS actuator will travel to the Home position.



Once the DCS Control finds Home, ensure the correct model is selected as well as your desired language and units. See **Menu Screens**, page 14, for instructions on changing these settings.

### Set Zero Point:

With the engine on, lower the cutter head by pressing the Down Arrow Button until you hear the cutters make contact with the pavement surface. Hold down the Zero Button for 2 seconds. Your Zero Point has now been saved.

**NOTE:** The Cut Depth Target is based off of the Zero Point. Re-program the Zero Point if the cutter head is changed or worn.



### Set Cut Depth Target:

Quick press the Zero Button to take the cutter head to the pavement surface. Set the Cut Depth Target by:

1. Quick pressing the Down Arrow Button as many times as needed to achieve your target. Then long press the Cut Depth Button to save your target.

**NOTE:** This method will lower the cutter head into the pavement surface as you set your cut depth.

**OR**

2. From the Zero Point, long press the Cut Depth Button until a new screen pops up. Use the Down Arrow Button to enter your Cut Depth Target. Then long press the Cut Depth Button to save your target and return to the Run Screen.

**NOTE:** This method will keep the cutter head stationary as you set your Cut Depth Target.



The DCS Control is now ready to grind/scarify. Long press down on the Handlebar Rocker Switch to lower the cutter head to your Cut Depth Target. Short press up or down on the switch to adjust your Cut Depth on the fly. When finished with your cut, long press up on the switch to raise the cutter head to the Home position.

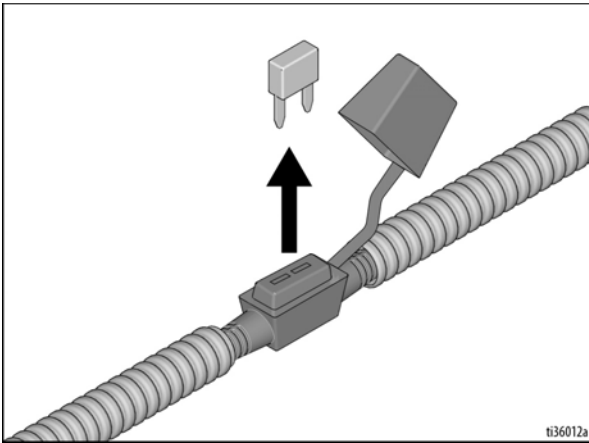
**NOTE:** The Zero Point and Cut Depth are referenced from the Home position. Recalibrate your DCS Control periodically by pressing the Home button or long pressing up on the Handlebar Rocker Switch.

**NOTE:** Pressing any button while the cutter head is moving to Zero or Cut Depth will stop the command and halt the cutter head from moving any further up or down until another button is pressed.

### **Manual Height Adjustment**

If the DCS Control is not usable (dead battery, etc.), the cutter head height can be adjusted using the Manual Height Adjustment feature.

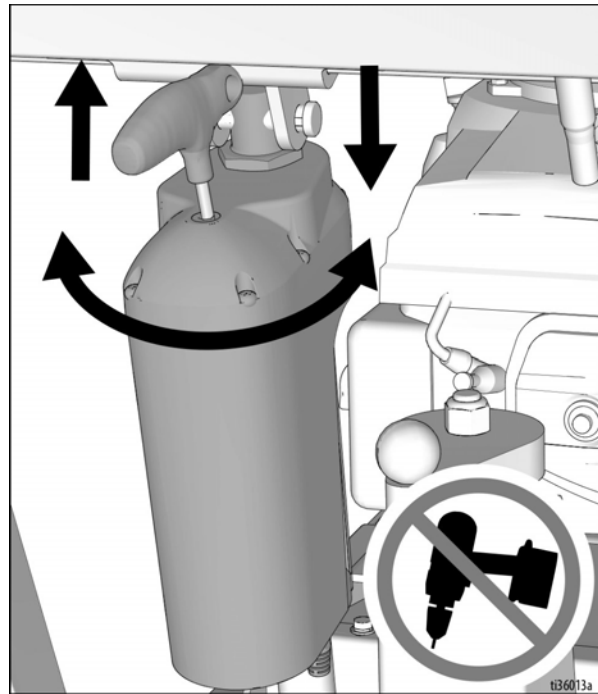
1. Remove fuse from fuse holder near positive battery terminal. This will protect the battery from damage.



2. Use a 6mm hex key to remove the screw plug on the top of the linear actuator.

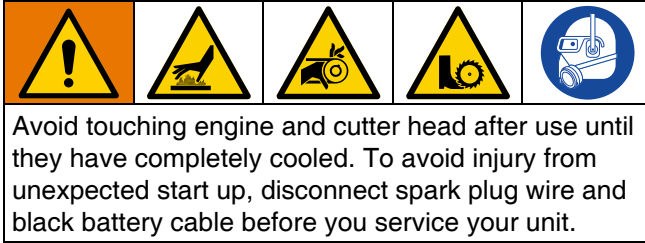
3. Insert 6mm hex key into the port the screw plug was removed from.

- One revolution of the hex key results in 0.10" (2.5mm, 100 mil) of adjustment at the cutter head.
- Rotate counterclockwise to lower the cutter head; rotate clockwise to raise the cutter head. **Max rotation speed of 1 revolution per second. Do not use power tools in the Manual Height Adjustment port.**



4. Once the desired depth is achieved, replace the screw plug in order to keep water and dust out.

# Maintenance



The following steps should be performed to maintain proper operation and sustain the life of the GrindLazer.

## BEFORE OPERATION:

- Visually inspect the entire unit for damage or loose connections.
- Check engine oil (see engine manual).
- Check bushings and cutters.
- Check cutter for uneven wear.

## DAILY:

- Check all fasteners and re-tighten.
- Clean dust and debris from exterior of unit (do NOT use pressure washer or other high pressure cleaning equipment).
- Inspect dust skirts for damage. Repair or replace damaged skirts in order to help dust and debris containment.
- Check engine oil level and fill as necessary.
- Check and fill gas tank.
- Remove air filter cover and clean element. Replace element if necessary. Replacement elements can be purchased from your local engine dealer.
- Grease the Cutter Head Engage Lever and lower linkage (non-DCS models only).

## AFTER THE FIRST 20 HOURS OF OPERATION:

- Drain engine oil and refill with clean oil. See engine manual for correct viscosity.

## EVERY 40-50 HOURS OF OPERATION:

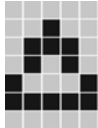
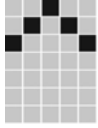
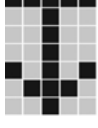
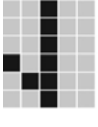
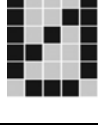

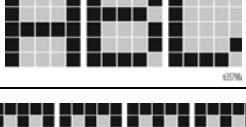
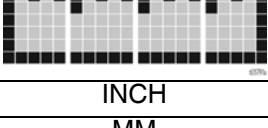
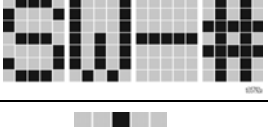
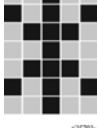
- Change engine oil (see engine manual).
- Grease wheel bearings.

## AS REQUIRED:

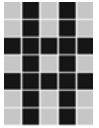
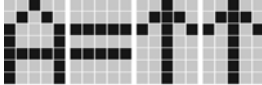
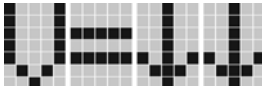
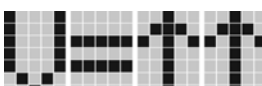
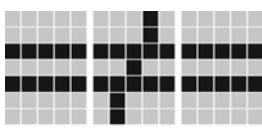
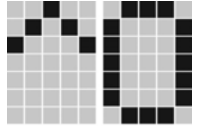
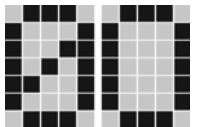
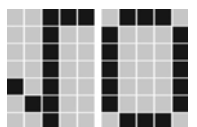
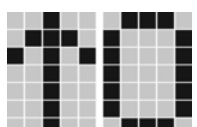
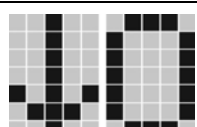
- Check drive belt and tension and tighten or replace as needed.

For additional information about engine maintenance, see engine manual.

# DCS Control Translations (DCS Models only)




English	Español	Français	Deutsche	International
FINDING HOME	ENCONTRANDO INICIO	TROUVER LE DÉBUT	START FINDEN	 #35784a
HOME	INICIO	DÉBUT	START	 #35785a
DEPTH	ALTURA	HAUTEUR	TIEFE	 #35786a
TARGET	OBJETIVO	OBJECTIF	ZIEL	 #35787a
ZERO	CERO	ZÉRO	NULL	 #35788a
SEL MODEL	MODELO	MODELE	MODELL	 #35789a
LANGUAGE	IDIOMA	LA LANGUE	SPRACHE	 #35790a
UNITS	UNIDAD DE MEDIDA	UNITÉ DE MESURE	MAßEINHEIT	 #35791a
INCHES	PULGADAS	POUCES	ZOLL	INCH
MILLIMETERS	MILIMETROS	MILLIMETRES	MILLIMETER	MM
MILS	MILS	MILS	MILS	MIL
SOFTWARE REV	SOFTWARE REV	REVUE SOFTWARE	SOFTWARE REV	 #35792a
ERROR	ERROR	ERREUR	FEHLER	 #35793a



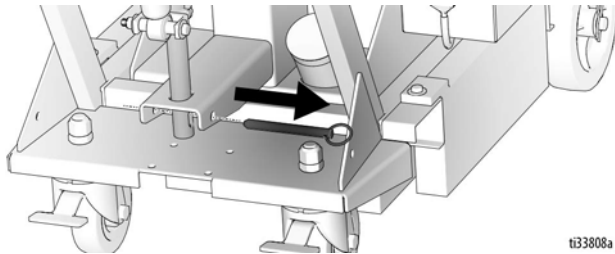
English	Español	Français	Deutsche	International
FREQUENCY	FRECUENCIA	FRÉQUENCE	ANZHAL	 43579a
HIGH CURRENT	ALTA CORRIENTE	COURANT ÉLEVÉ	HOHER STROM	 43579b
LOW VOLTAGE	BAJO VOLTAJE	BASSE TENSION	NIEDERSPANNUNG	 43579c
HIGH VOLTAGE	ALTO VOLTAJE	HAUTE TENSION	HOCHSPANNUNG	 43579d
HALL SENSORS	SENSORES DE HALL	CAPTEURS DE HALL	HALL-SENSOREN	 43579e
HOME BUTTON	BOTÓN DE INICIO	BOUTON DE DÉBUT	START KNOFF	 43579f
ZERO BUTTON	BOTÓN CERO	BOUTON ZÉRO	NULLTASTE	 43580a
CUT BUTTON	BOTÓN DE CORTAR	BOUTON DE COUPE	SCHNITT TASTE	 43580b
UP BUTTON	BOTÓN ARRIBA	BOUTON HAUT	NACH OBEN TASTE	 43580c
DOWN BUTTON	BOTÓN DE ABAJO	BOUTON BAS	NACH UNTEN TASTE	 43580d

# Repair

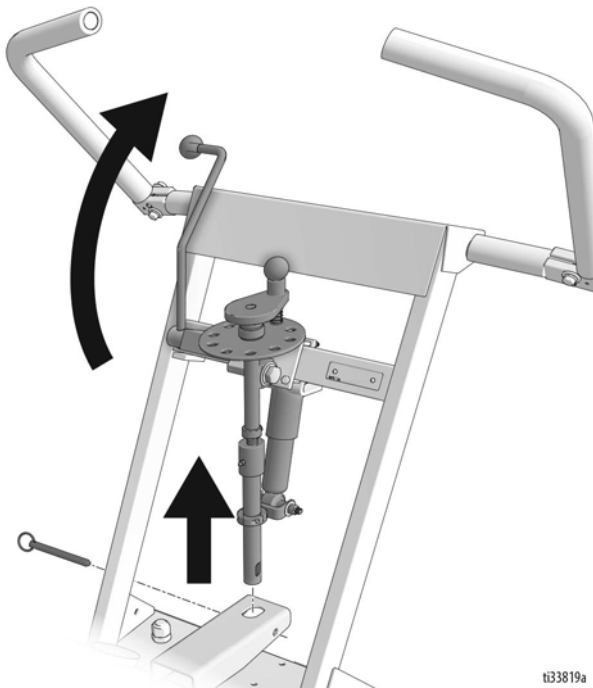
## Belt Replacement and Adjustment

				
<p>To avoid injury from unexpected start up, disconnect spark plug wire and black battery cable before you service your unit.</p>				

1. Remove Clevis Pin.

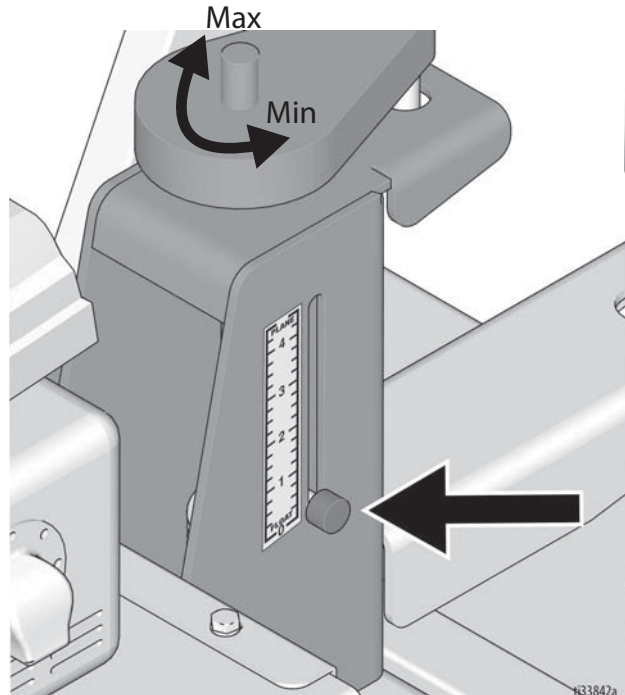


2. **Non-DCS Models:** Rotate Cutter Head Engage Lever to upwards position to release lower linkage from inner frame.

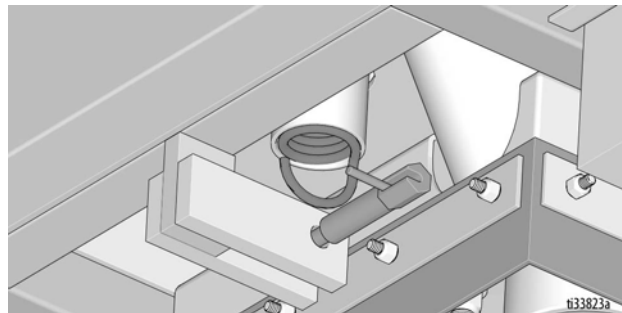


**DCS Models:** Press Home Button on the DCS Control.

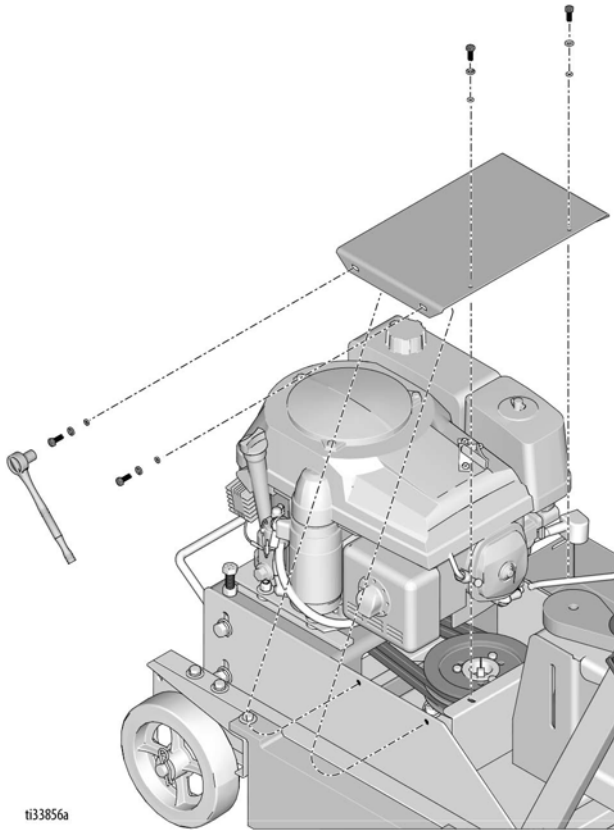
3. Use the Pressure Control Dial to set the Pressure Indicator to 0. This releases tension from the pressure control spring.



4. Unhook spring from the spring plunger (bottom rear section of machine).

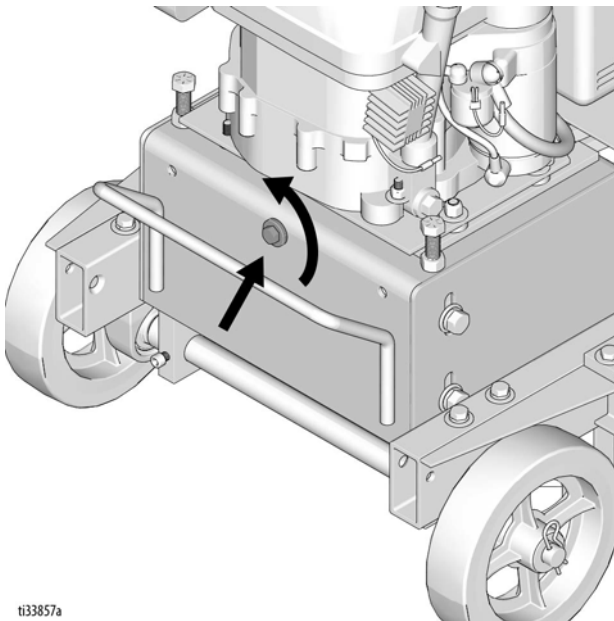


- Remove belt guards using a 7/16" socket or wrench.



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- Unscrew tension bolt using a 9/16" socket or wrench until belts are loose (do not remove entirely).



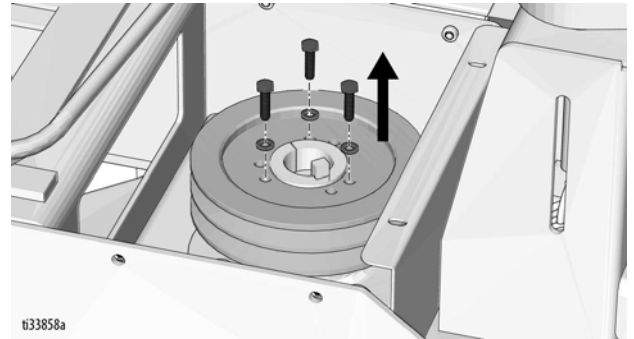
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- At this point the belts should be loose enough to be removed and replaced.

- To tighten belts, reverse step 6 until desired tension is achieved.

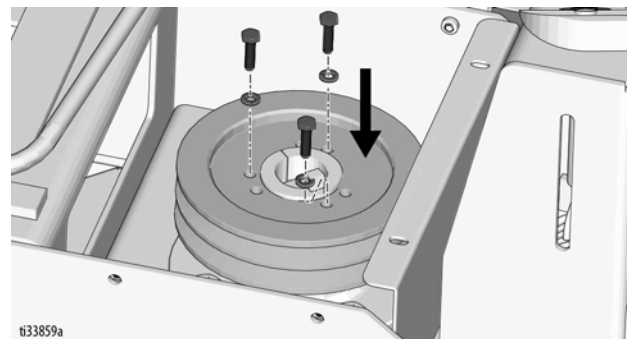
## Drive Pulley Replacement

- After the belts have been removed, remove the 3 hex bolts using a 7/16" socket.



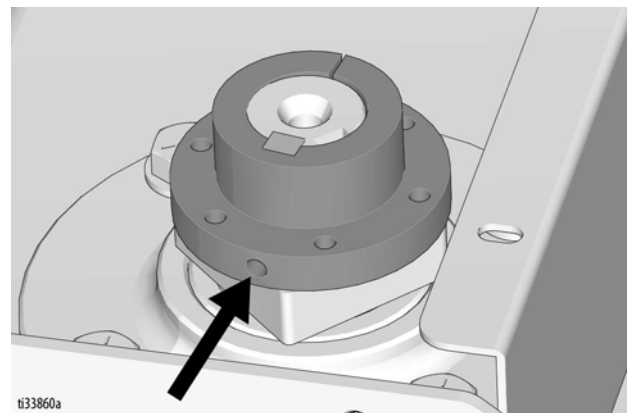
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- Screw those 3 hex bolts into the threaded holes shown below and turn equally to remove pulley from bushing.



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- To remove bushing, use 1/8" hex key to loosen the set screw.



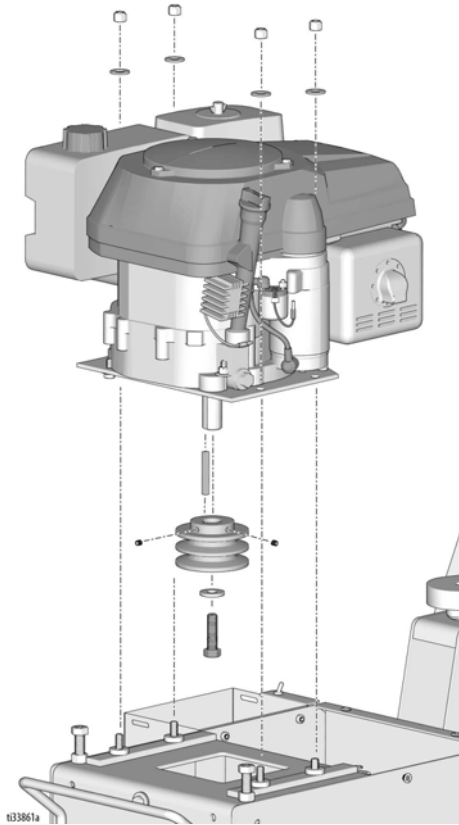
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**\*\*\*RECOMMENDED\*\*\***

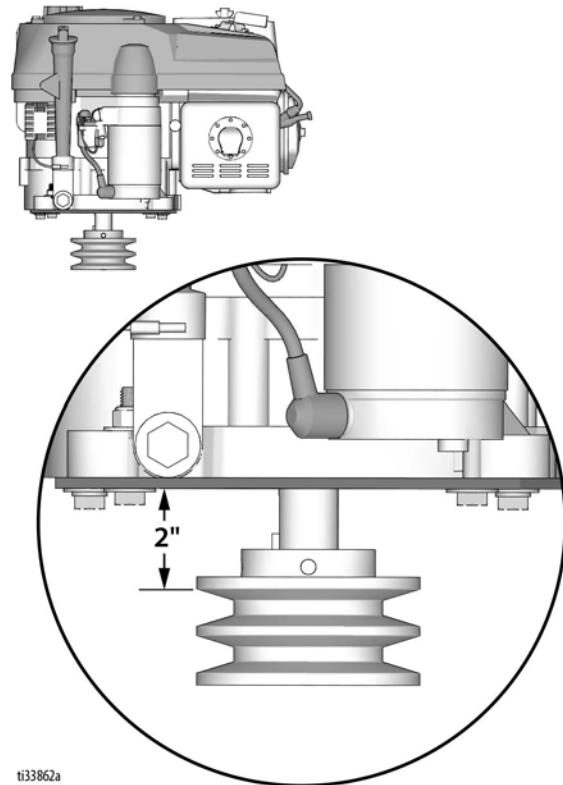
Use medium strength thread locker or equivalent on set screws when reinstalling bushing.

## Engine Pulley Replacement

1. Remove the lock nuts that hold the engine plate to the inner frame using a 9/16" socket or wrench.
2. Lift the engine off the machine.
3. Remove the hex bolt below the pulley using the 5/8" socket, followed by the set screws using the 5/32" hex key.






4. When reinstalling, adjust the pulley so that the distance between the bottom face of the engine plate and the uppermost edge of the V-belt groove is 2 inches.



**\*\*\*RECOMMENDED\*\*\***

Use medium strength thread locker or equivalent on set screws when reinstalling pulley.

# Troubleshooting

				
<p>To avoid injury from unexpected start up, disconnect spark plug wire and black battery cable before you service your unit.</p>				

Problem	Cause	Solution
Cutters wearing unevenly/prematurely	Cutter head is too low	Raise the cutter head
	Material build up	Clean the cutters
	Bearings may be worn	Replace bearings
	Wrong cutters for application	Contact Tech Services
Cutters Shaft Breakage unevenly/prematurely	Cutter head is too low	Raise the cutter head
	Over 40 hours service life	Replace shafts
Excess Vibration	Bearings may be worn	Replace bearings
	Drive shaft worn	Replace drive shaft
	Improper cutter set-up	Contact Tech Services
	Spindle contacting the ground	Raise the cutter head
	Wheels worn out	Replace the wheels
Machine jumps erratically	RPM is too low	Turn engine throttle to highest setting
	Surface is severely uneven	Move to smoother surface
Drive belt wearing prematurely	Pulley is misaligned	Re-align pulley, see <b>Engine Pulley Replacement</b> , page 28
	Wrong belt	Order new belt
Cutter Head Engage Lever will not raise/lower (non-DCS models only)	Cutter Head Adjustment Dial is set too high or low	Raise or lower the Cutter Head Adjustment Dial
Cutter Head Adjustment Dial will not turn (non-DCS models only)	Threads are not greased	Clean and grease threads
	Linkage may be bent	Replace linkage
	Cutter Head Adjustment Dial may be out of position	Raise or lower cutter head adjustment dial

## DCS Models only

Problem	Cause	Solution
DCS Control not turning on	Blown fuse on DCS Power wire.	Replace fuse on DCS Power wire.
	Power Switch is OFF or damaged.	Turn Power Switch ON. Replace Power Switch if damaged.
	Battery is dead.	Charge Battery.
	DCS Control Board is damaged.	Replace DCS Control Board.
DCS Control runs for short time, then turns off	Engine is not charging the battery. Battery voltage is 14.0-15.0 VDC when engine is full throttle and charging correctly.	Check engine charging coil and voltage rectifier/regulator. Replace or repair if needed.
DCS Control is on, but actuator and/or cutter head housing does not move	Actuator is disconnected from DCS Control.	Check all connections.
	A DCS Control Switch is pressed or defective.	Ensure all switches are not stuck. Replace switches if defective.
	Actuator rod is stuck.	Manually move the actuator rod using the Manual Height Adjustment feature. Remove screw plug on top of the actuator, then use 6mm hex key to move the rod.
	Actuator or DCS Control Board is damaged.	See flow chart, page 33.
	Battery is low.	Charge battery.
DCS display does not match Cut Depth.	DCS Control needs to recalibrate its position.	Restart the DCS Control.
	Zero Position is not set to the pavement surface.	Reprogram the Zero Position. See <b>DCS Instructions</b> , page 21.
	The wrong GrindLazer model is selected on the DCS Control.	Select the correct model on DCS Control. See <b>Menu Screens</b> , page 14.
DCS Control Buttons work, but display is blank	The display is unplugged or damaged.	Check that the display ribbon cable and red/white wire are connected inside Control Box. Replace if damaged.

## DCS Error Codes

To clear an error code on the DCS Control:

1. Turn DCS Power Switch to OFF.
2. Address/Fix the issue.
3. Turn DCS Power Switch to ON.

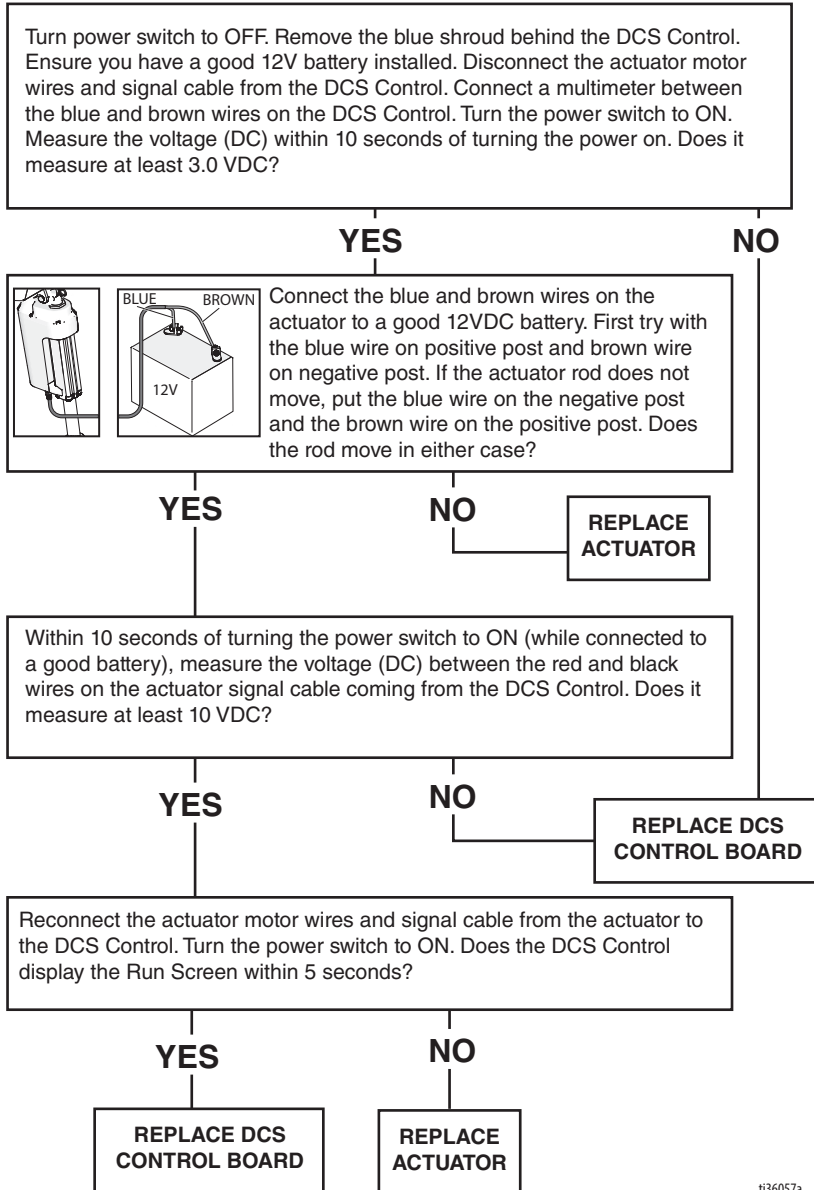
Error	Cause	Solution
E04: High Voltage (20VDC or greater, measured across battery posts)	Battery is damaged.	Replace battery.
	Engine voltage rectifier/regulator is damaged.	Replace engine voltage rectifier/regulator.
E05: High Motor Current (15 Amps or greater, measured on blue or brown actuator wire)	Actuator rod is stuck.	Manually move the actuator rod using the Manual Height Adjustment feature.
	Too high of load.	Ensure there is no binding anywhere on the unit when the actuator is moving.
E08: Low Voltage (7VDC or lower, measured across battery posts)	Battery is low/dead.	Charge battery.
	Engine is not charging the battery.	Check the engine charging coil and voltage rectifier/regulator. Replace or repair if needed.
E09: Hall Sensor Error	Actuator Signal Cable is disconnected from DCS Control or is damaged.	Check all connections. Repair or replace if needed.
	Actuator or DCS Control Board is damaged.	See flow chart, page 33.
E12: High Current (short circuit, 60 amps or greater, measured on red or black wire between battery and DCS Control)	A wire or board component has shorted.	Check all wires for shorts. If all wires are okay, the DCS Control board may be damaged and need to be replaced.
E31: Home Button Error	The Home Button is stuck or shorted.	Check to see if Home Button is stuck. If not stuck, replace the Home Button switch.
E32: Zero Button Error	The Zero Button is stuck or shorted.	Check to see if Zero Button is stuck. If not stuck, replace the Zero Button switch.
E33: Cut Depth Button Error	The Cut Depth Button Error is stuck or shorted.	Check to see if Cut Depth Button is stuck. If not stuck, replace the Cut Depth Button switch.

Error	Cause	Solution
E34: Up Button Error	The Up Button or Handlebar Rocker Switch is stuck or shorted.	<p>Disconnect Handlebar Rocker Switch from the DCS Control. Clear the error code.</p> <p>If the error code reappears 30 seconds after turning the Power Switch back ON, the problem is the Up Button on the DCS Control. Check to see if the Up Button is stuck. If not stuck, replace the Up Button Switch.</p> <p>If the error code does not reappear 30 seconds after turning the Power Switch back ON, the problem is the Handlebar Rocker Switch. Check to see if the switch is stuck. If not stuck, replace the Handlebar Rocker Switch.</p>
E35: Down Button Error	The Down Button or Handlebar Switch is stuck or shorted.	<p>Disconnect Handlebar Rocker Switch from the DCS Control. Clear the error code.</p> <p>If the error code reappears 30 seconds after turning the Power Switch back ON, the problem is the Down Button on the DCS Control. Check to see if the Down Button is stuck. If not stuck, replace the Down Button Switch.</p> <p>If the error code does not reappear 30 seconds after turning the Power Switch back ON, the problem is the Handlebar Rocker Switch. Check to see if the switch is stuck. If not stuck, replace the Handlebar Rocker Switch.</p>



# DCS Actuator Rod Does Not Move



Use this flow chart if the DCS Actuator Rod does not move or if the DCS displays error code E09 (Hall Sensor Error). Reference **Wiring Diagram**, page 54.



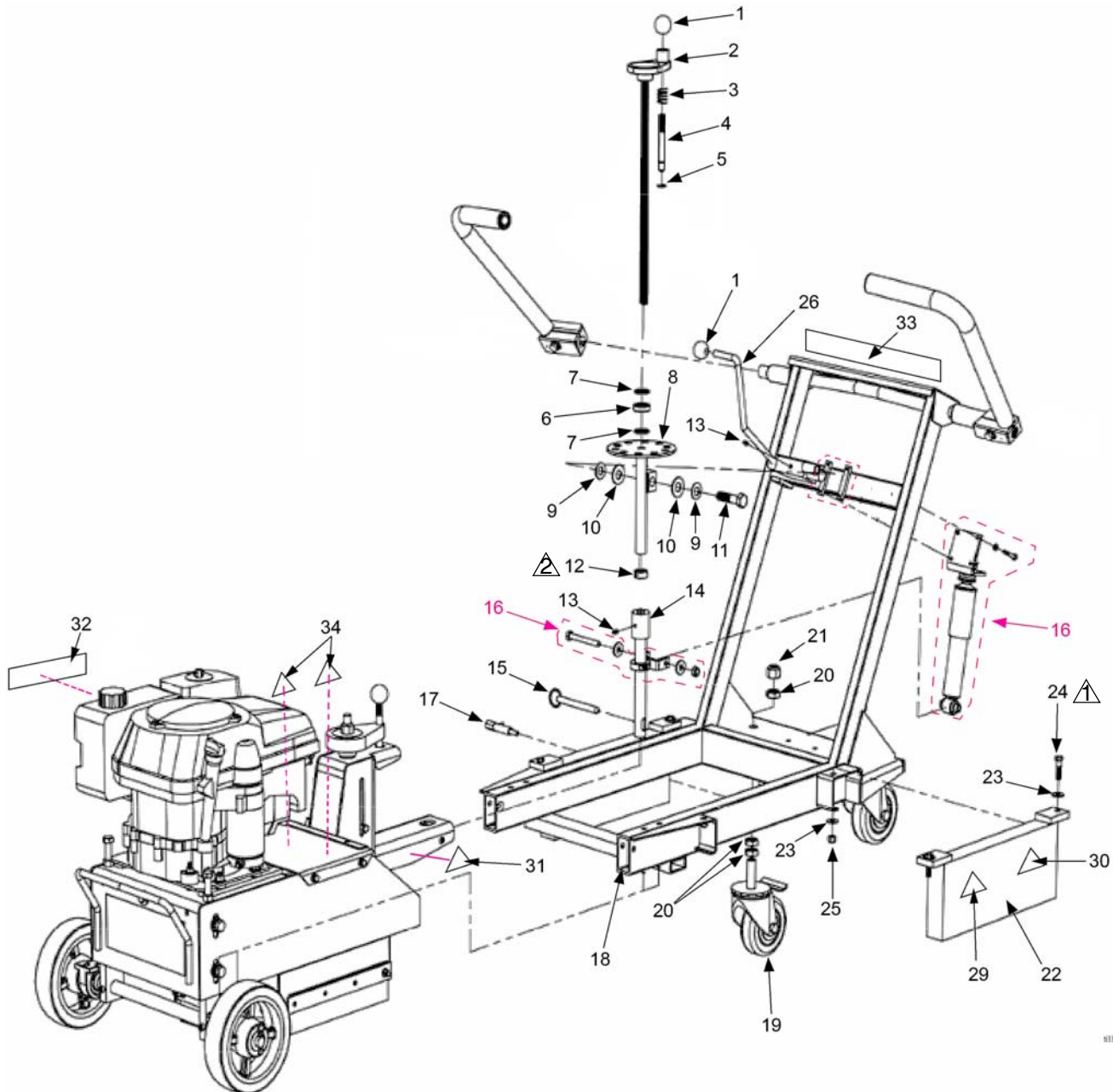
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# Parts

## Outer Frame Assembly - 25M847

Ref.	Torque
 20-22 ft-lb (27.1-30.0 N•m)	
 72-84 in-lb (8.1-9.5 N•m)	


*\*Use industry standard torques when not specified.*



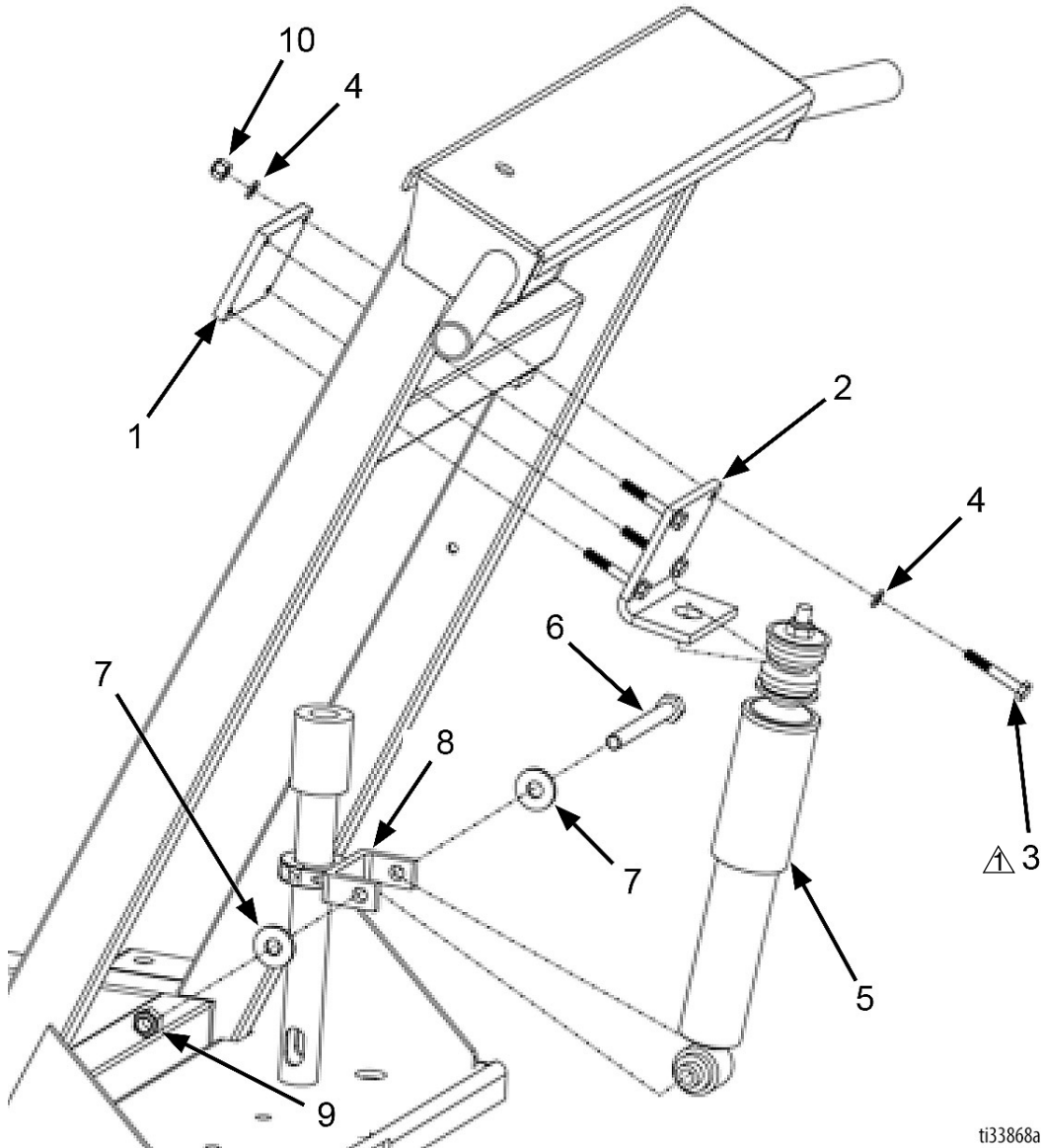
## Outer Frame Assembly Parts List - 25M847

Item:	P/N	Description	Qty
1	17W049	Ball Knob	2
2	17Y998	Handwheel Assembly	1
3	17W111	Spring	1
4	17W119	Locater Pin	1
5	17W127	E-Clip	1
6	17W054	Thrust Bearing	1
7	17W105	5/8" Structural Washer	2
8	17Y022	Upper Linkage	1
9	119563	5/8" Belleville Spring Washer	2
10	17W113	Bronze Washer	2
11	C19075	5/8-11x2.5" Hex Head Bolt	1
12	17W056	Locking Collar	1
13	17W045	Grease Fitting, straight	2
14	17Y114	Lower Linkage	1
15	17W217	Pin Detent	1
16	17W243	Damper Kit	1
17	17W230	Spring Plunger	1
18	17W185	Outer Frame	1
19	17W189	Caster Wheel	2
20	17W234	3/4-10 Jam Nut	6
21	17W261	3/4-10 Nylon Nut	2
22	17W186	Weight	2
23	100023	3/8" Flat Washer	8
24	100003	3/8-16x1.5" Hex Head Bolt	4
25	101566	3/8-16 Nylon Nut	4
26	17W302	Height Control Lever Sheathing	1ft
29▲	16C393	Warning Label, Foot Cut	2
30▲	16D646	Warning Label, Hot Surface	2
31▲	15H108	Warning Label, Pinch	2
32▲	194126	Warning Label, Fire and Explosion	1
33▲	17W264	Warning Label, Multiple	1
34▲	16C394	Warning Label, Entanglement	2
35	17W284	Tachometer (not shown)	1
▲ Replacement warning, safety labels, tags, and cards are available at no cost.			

## Shock Assembly - 25M847

Ref.	Torque
	72-84 in-lb (8.1-9.5 N•m)

\*Use industry standard torques when not specified.




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### Shock Assembly Parts List

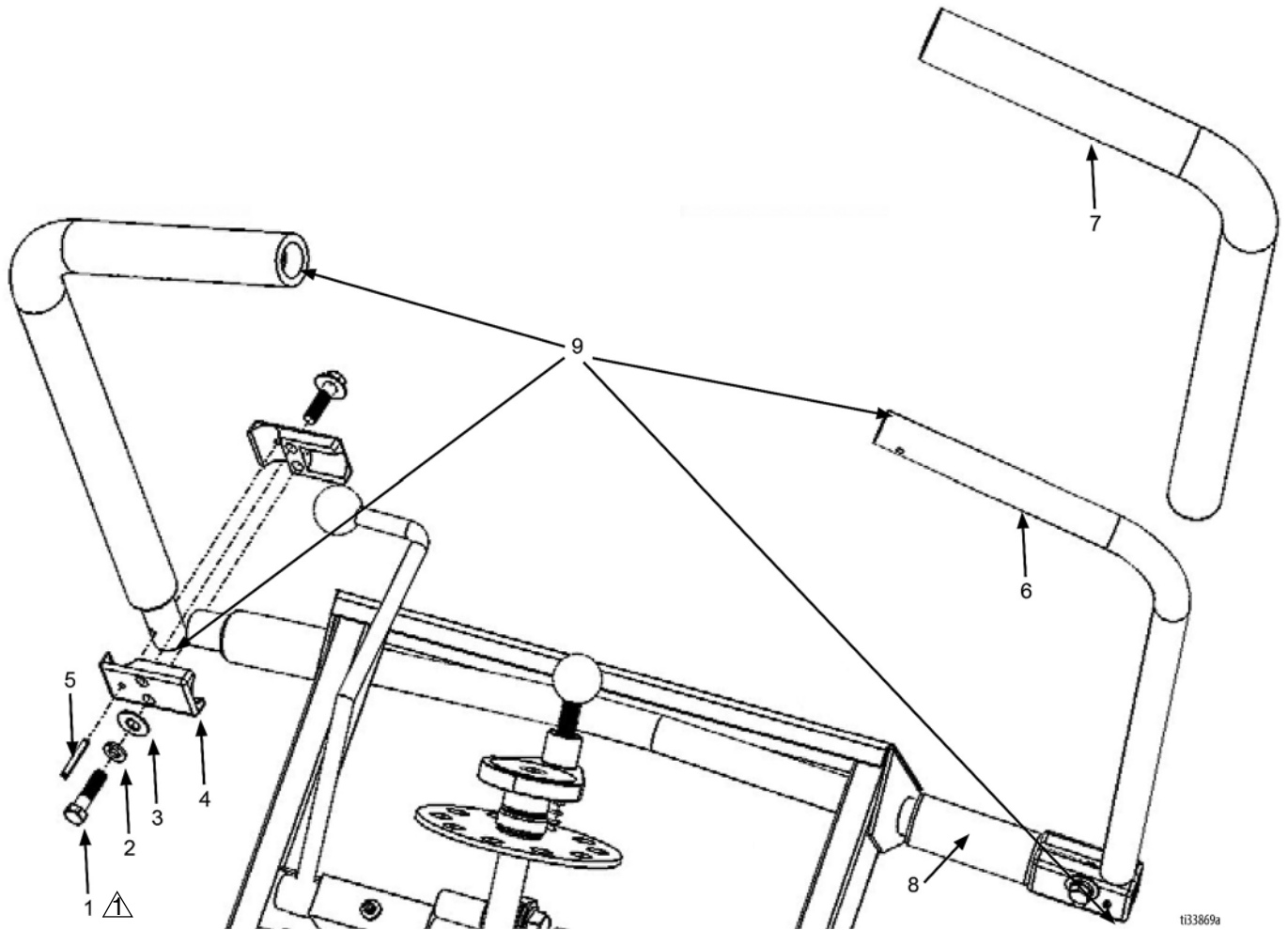
Item:	P/N	Description	Qty
1	17W247	Upper Shock Mount Clamp	1
2	17W246	Upper Shock Mount Bracket	1
3	17W248	1/4-20x2.25" Hex Cap Screw	4
4	17W020	1/4" Flat Washer	8
5	17W126	Shock Absorber	1

6	17W125	3/8-16x1.5" Hex Cap Screw	1
7	100023	3/8 Flat Washer	2
8	17W123	Lower Shock Mounting Bracket	1
9	101566	3/8-16 Nylon Nut	1
10	102040	1/4" Nylon Nut	4

## Adjustable Handles - 25M847

Ref.	Torque
	20-22 in-lb (27.1-30.0 N•m)



*\*Use industry standard torques when not specified.*



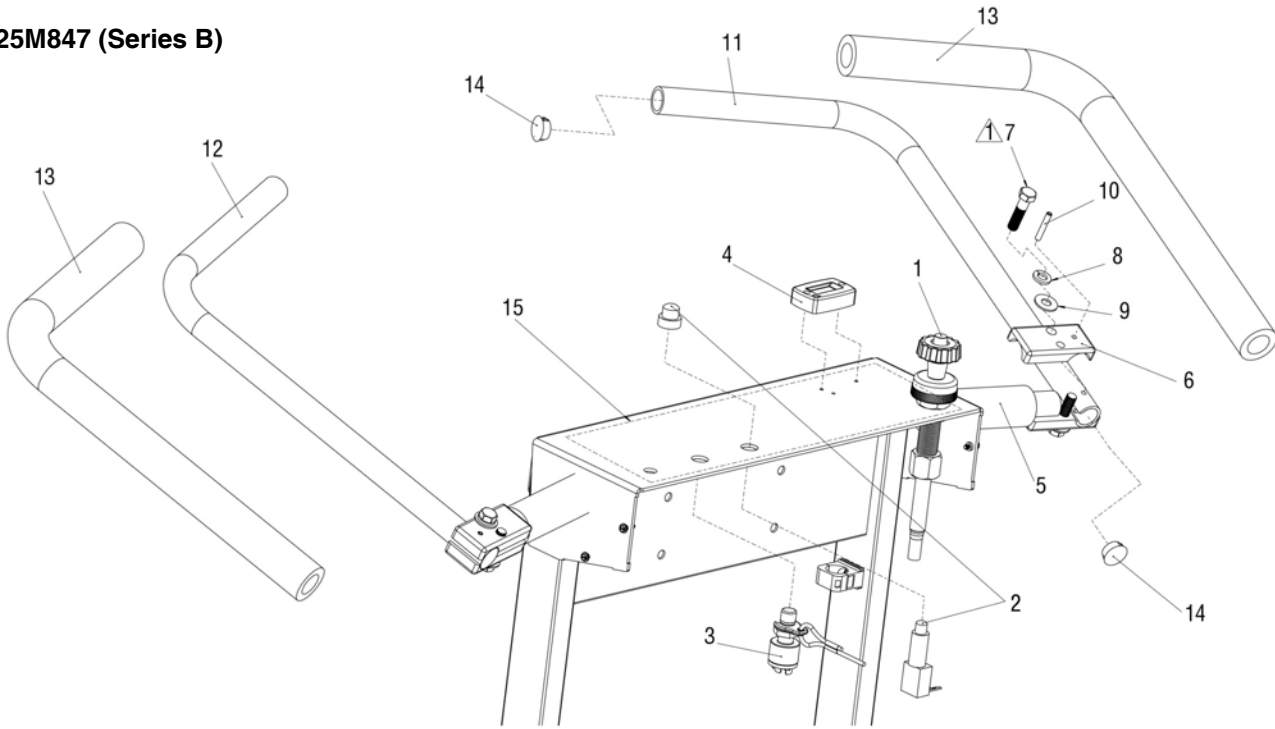
## Adjustable Handles Parts List - 25M847

Item:	P/N	Description	Qty
1	100003	3/8-16x1.5" Hex Cap Screw	4
2	100133	3/8" Lock Washer	4
3	120454	5/16" Flat Washer	4
4	17W003	Handle Clamps	4
5	17W268	3/16 x 1-1/4 Roll Pin	2
6	17W216	Adjustable Handle Bars	2
7	17W195	Long Handle Bar Grips (24" Long)	2
8	17W269	Short Handle Bar Grips (4.5" Long)	2
9	17W009	Small Black Tube Caps	4

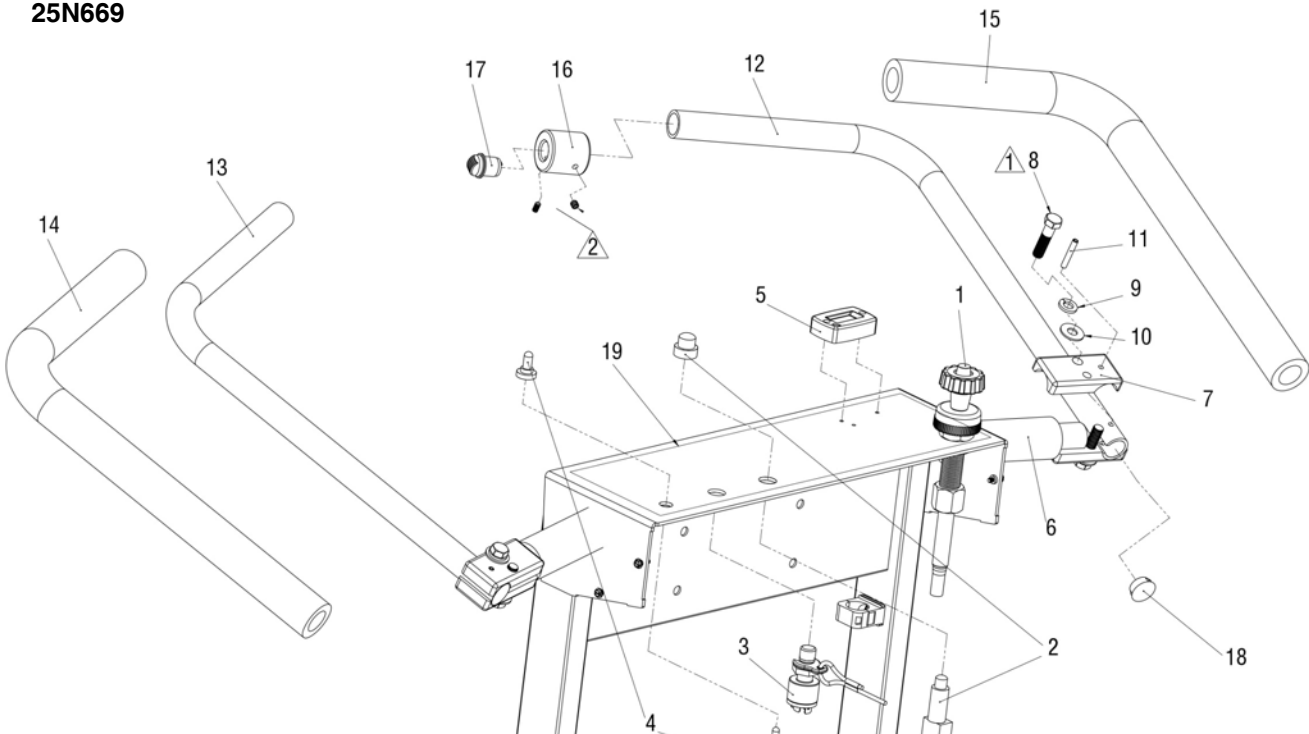
## Adjustable Handles - 25M847 (Series B) & 25N669

Ref.	Torque
 20-22 in-lb (27.1-30.0 N•m)	
 72-84 in-lb (8.1-9.5 N•m)	

### 25M847 (Series B)



### 25N669



### Adjustable Handles Parts List - 25M847 (Series B)

Item:	P/N	Description	Qty
1	17Y113	Cable, Vernier Control	1
2	18A137	Starter Assembly	1
3	18A143	Kill Switch Assembly	1
4	18A133	Tachometer Assembly	1
5	17W269	Grip, Foam, Handlebar, 4.5"	2
6	17W003	Clamp, Handlebar Locking	4
7	100003	Screw, Cap, Hex Head, 3/8-16x1.5"	4
8	100133	Washer, Lock, 3/8"	4
9	120454	Washer, Flat, 5/16"	4
10	17W268	Pin, Roll, 3/16" DIA x 1-1/4"	2
11	18A331	Handle, Adjustment, Bar, right	1
12	17W216	Handle, Adjustment, Bar, left	1
13	17W195	Grip, Foam, Handlebar, 24"	2
14	17W009	Plug, Cap, 3/4"	4
15▲	17W264	Warning Label, Multiple	1




▲ Replacement warning, safety labels, tags, and cards are available at no cost.

### Adjustable Handles Parts List - 25N669

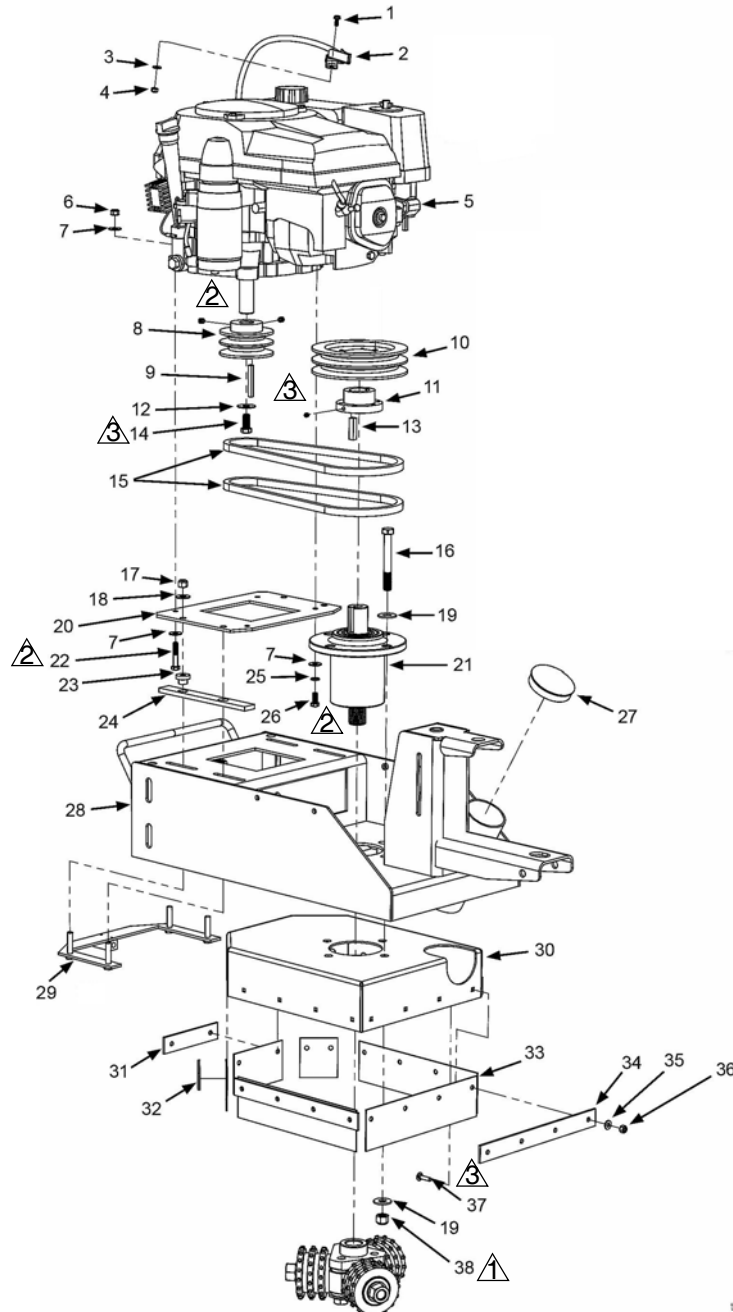
Item:	P/N	Description	Qty
1	17Y113	Cable, Vernier Control	1
2	18A137	Starter Assembly	1
3	18A143	Kill Switch Assembly	1
4	18A142	Power Switch Assembly	1
5	18A133	Tachometer Assembly	1
6	17W269	Grip, Foam, Handlebar, 4.5"	2
7	17W003	Clamp, Handlebar Locking	4
8	100003	Screw, Cap, Hex Head, 3/8-16x1.5"	4
9	100133	Washer, Lock, 3/8"	4
10	120454	Washer, Flat, 5/16"	4
11	17W268	Pin, Roll, 3/16" DIA x 1-1/4"	2
12	18A331	Handle, Adjustment, Bar, right	1
13	17W216	Handle, Adjustment, Bar, left	1
14	17W195	Grip, Foam, Handlebar, 24"	1
15	18A424	Grip, Foam, Handlebar, 23"	1
16	17Y120	Housing, control switch	1
17	17Y999	Switch, Rocker	1
18	17W009	Plug, Cap, 3/4"	3
19▲	17Y160	Warning Label, Multiple	1

▲ Replacement warning, safety labels, tags, and cards are available at no cost.

# Drive System Assembly - 25M847

Ref.	Torque
	28-30 ft-lb (38.0-40.0 N•m)
	144-180 in-lb (16.2-20.0 N•m)
	72-84 in-lb (8.1-9.5 N•m)

\*Use industry standard torques when not specified.






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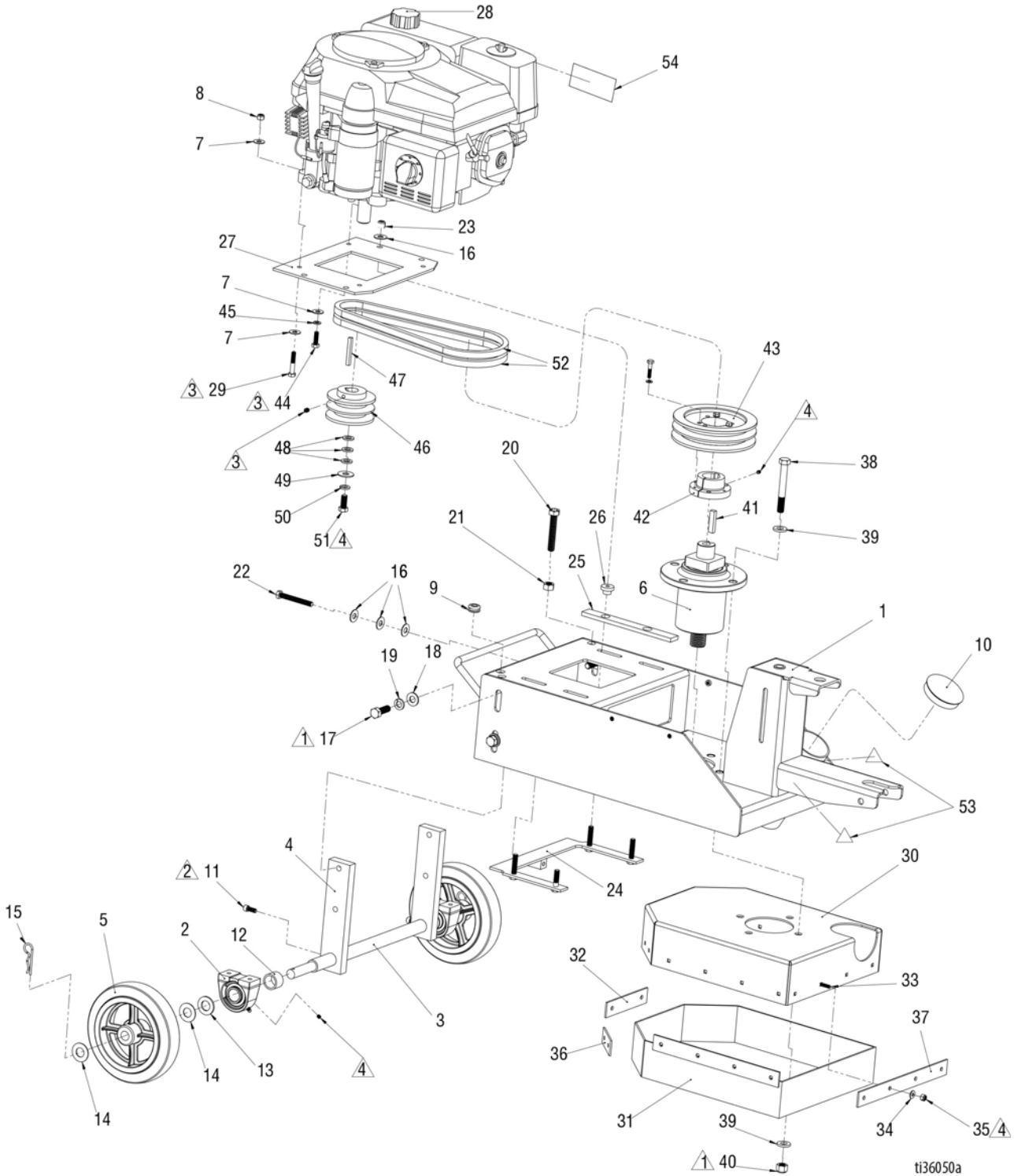
## Drive System Parts List - 25M847

Item:	P/N	Description	Qty
1	17W089	Hex Slotted Screw - Self Tapping	2
2	17X251	Throttle Cable Assembly	1
3	17W143	#10 Flat Washer	2
4	17W262	#10-32 Nylon Nut	2
5	17W194	13HP Engine	1
6	110838	5/16" - 18 Nylon Nut	2
7	120454	5/16" - Flat Washer	6
8	17W211	Engine Pulley	1
9	17W088	Key for Engine Pulley	1
10	17W212	Drive Pulley	1
11	17W213	Bushing for Drive Pulley	1
12	17W146	7/16" Fender Washer	1
13	17X252	Key for Drive Pulley	1
14	116645	7/16-20x1" Hex Head Bolt	1
15	17W210	Drive Belt	2
16	17W057	1/2-20x4" Hex Head Bolt	4
17	101566	3/8-16 Nylon Nut	4
18	100023	3/8" Flat Washer	4
19	17W218	1/2" Hardened Spacer	8
20	17W191	Engine Mount Plate	1
21	17W238	Driveshaft Housing Assembly	1
22	108843	6/16-18x1 3/4" Hex Head Bolt	2
23	17W197	Rubber Bushing	4
24	17W193	Engine Mount Spacer	2
25	100214	5/16" Lock Washer	2
26	109031	5/16"-24x1" Hex Head Bolt	2
27	17W220	Cap Plug	1
28	17W175	Inner Frame	1
29	17W192	Engine Tensioner	1
30	17W183	Cutter Head Guard	1
31	17W222	Skirt Retainer (med)	1
32	17W223	Skirt Retainer (small)	2
33	17W184	Rubber Skirt	1
34	17W224	Skirt Retainer (large)	3
35	17W020	1/4" Flat Washer	18
36	102040	1/4-20 Nylock Nut	18
37	107139	1/4-20x1" Carriage Bolt	18
38	101926	1/2-20 Nylock Nut	4
40*	17W029	Deflector for Engine	1
41	17W964	Self Tapping Screws for Deflector	3
* Not Shown			

# Drive System Assembly - 25M847 (Series B) & 25N669

Ref.	Torque
	28-30 ft-lb (38.0-40.0 N•m)
	144-180 in-lb (16.2-20.0 N•m)
	72-84 in-lb (8.1-9.5 N•m)

*\*Use industry standard torques when not specified.*







## Drive System Parts List - 25M847 (Series B) & 25N669

Item:	P/N	Description	Qty
1	18A394	Frame, Inner	1
2	17W235	Bearing, Axle, Ball, 1"	2
3	17W232	Shaft, Axle, Front	1
4	17W187	Holder, Axle, Front	2
5	17W190	Wheel, Front, 8 x 2-5/8 x 3/4	2
6	17W238	Bearing, Assembly, Drive Shaft	1
7	120454	Washer, Flat, 5/16"	6
8	110838	Nut, Lock, 5/16"-18	2
9	17Y158	Grommet, push in	1
10	17W220	Plug, Cap, 3"	1
11	558673	Screw, cap, socket head, 5/16-18 x 0.75"	2
12	17W188	Spacer, Axle, Front	2
13	169468	Washer, Flat, 3/4"	2
14	17W226	Shim, 3/4" ID x 1-1/2" OD x .048" THK	4
15	17W229	Pin, Cotter, Hitch	2
16	100023	Washer, Flat, 3/8"	4
17	17W223	Screw, Cap, Hex Head, 1/2-13 x 1.5"	4
18	17W098	Washer, Flat, 1/2"	4
19	101911	Washer, Lock, 1/2"	4
20	17W215	Screw, Cap, Hex Head, 1/2-13 x 3	2
21	555395	Nut, Hex, 1/2-13	2
22	17W195	Screw, Cap, Hex Head, 3/8-16 x 3	1
23	101566	Nut, Lock, 3/8"-16	4
24	17W192	Belt, Tensioner, engine	1
25	17W193	Spacer, Engine, Mount	2
26	17W197	Grommet, Rubber	4
27	17W191	Plate, Engine, Mount	1
28	17W194	Engine, Honda GX390V, 13HP	1

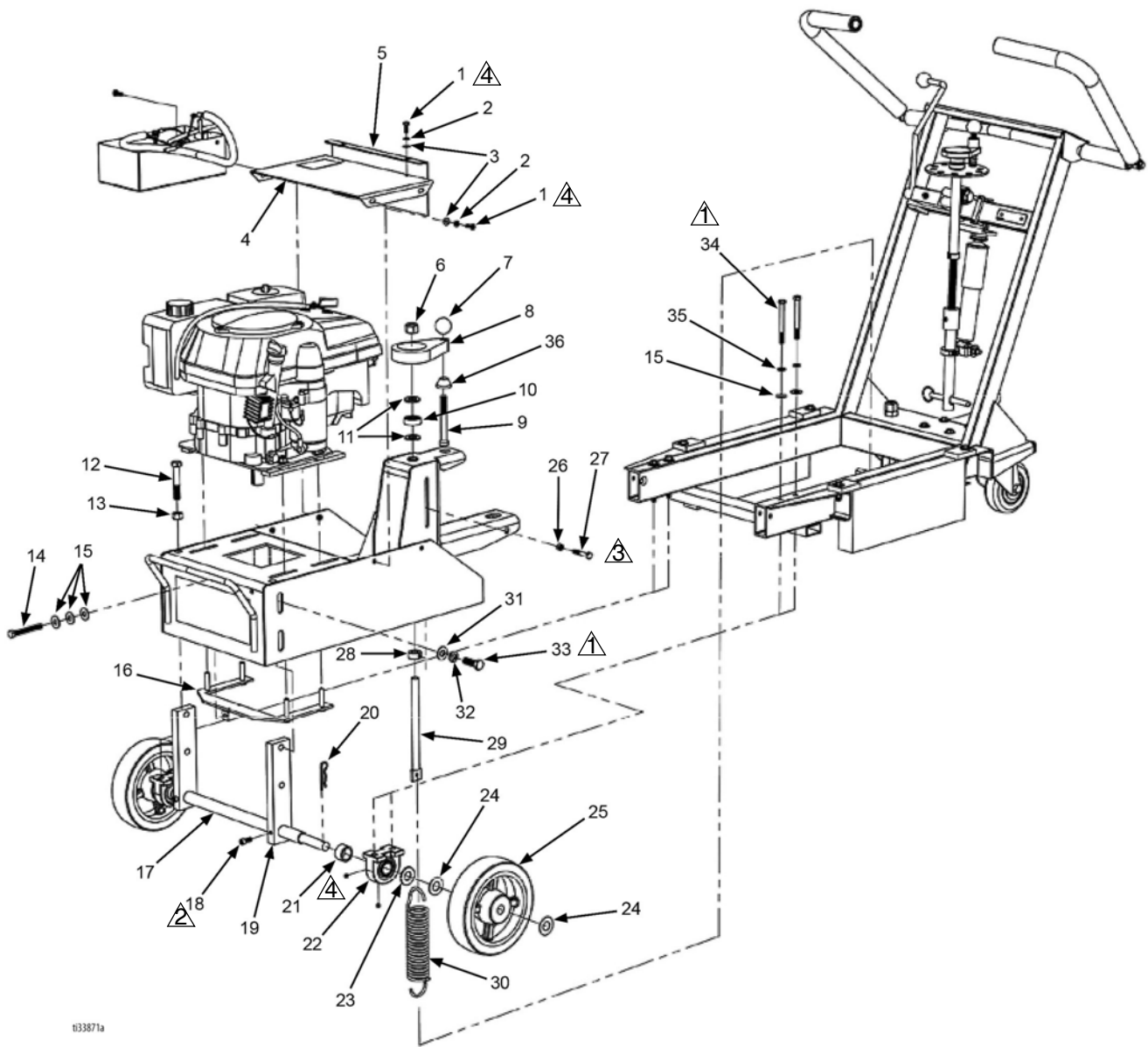
29	108843	Screw, Cap, Hex Head, 5/16-18 x 1.75"	2
30	17W183	Guard, Head Cutter	1
31	17W184	Gasket, Rubber, Skirt	1
32	17W222	Retainer, Medium 5-12", Skirt	1
33	107139	Bolt, Round Head, 1/4 - 20 x 1"	18
34	17W020	Washer, flat, 1/4"	18
35	102040	Nut, Lock, 1/4"-20	18
36	17W223	Retainer, Small, 3-14", Skirt	2
37	17W224	Retainer, Large, 12", Skirt	3
38	17W057	Screw, Cap, Hex Head, 1/2-20 x 4"	4
39	17W218	Spacer, Hardened, 1/2"	8
40	101925	Nut, Lock, 1/2"-20	4
41	17X252	Key, Way, Drive Pulley	1
42	17W213	Bushing, 35mm Bore, w/ Key Slot	1
43	17W212	Pulley, Engine, 2-groove	1
44	109031	Screw, Cap, Hex Head 5/16 - 24x1"	2
45	100214	Washer, Lock, 5/16"	2
46	17W211	Pulley, Engine	1
47	17W088	Key, Drive, 1/4" SQ x 2-1/4"	1
48	16Y269	Washer, Flat, M12	3
49	17W146	Washer, Fender, 7/16"	1
50	100052	Washer, Lock, 7/16"	1
51	116645	Screw, Cap, Hex Head, 7/16-20x1"	1
52	17W210	Belt, Drive, Heavy-Duty	2
53▲	15H108	Warning Label, Pinch	2
54▲	194126	Warning Label, Fire & Explosion	1

▲ Replacement warning, safety labels, tags, and cards are available at no cost.

# Front Assembly - 25M847

Ref.	Torque
	28-30 ft-lb (38.0-40.0 N•m)
	20-22 ft-lb (27.1-30.0 N•m)
	144-180 in-lb (16.2-20.0 N•m)
	72-84 in-lb (8.1-9.5 N•m)

\*Use industry standard torques when not specified.







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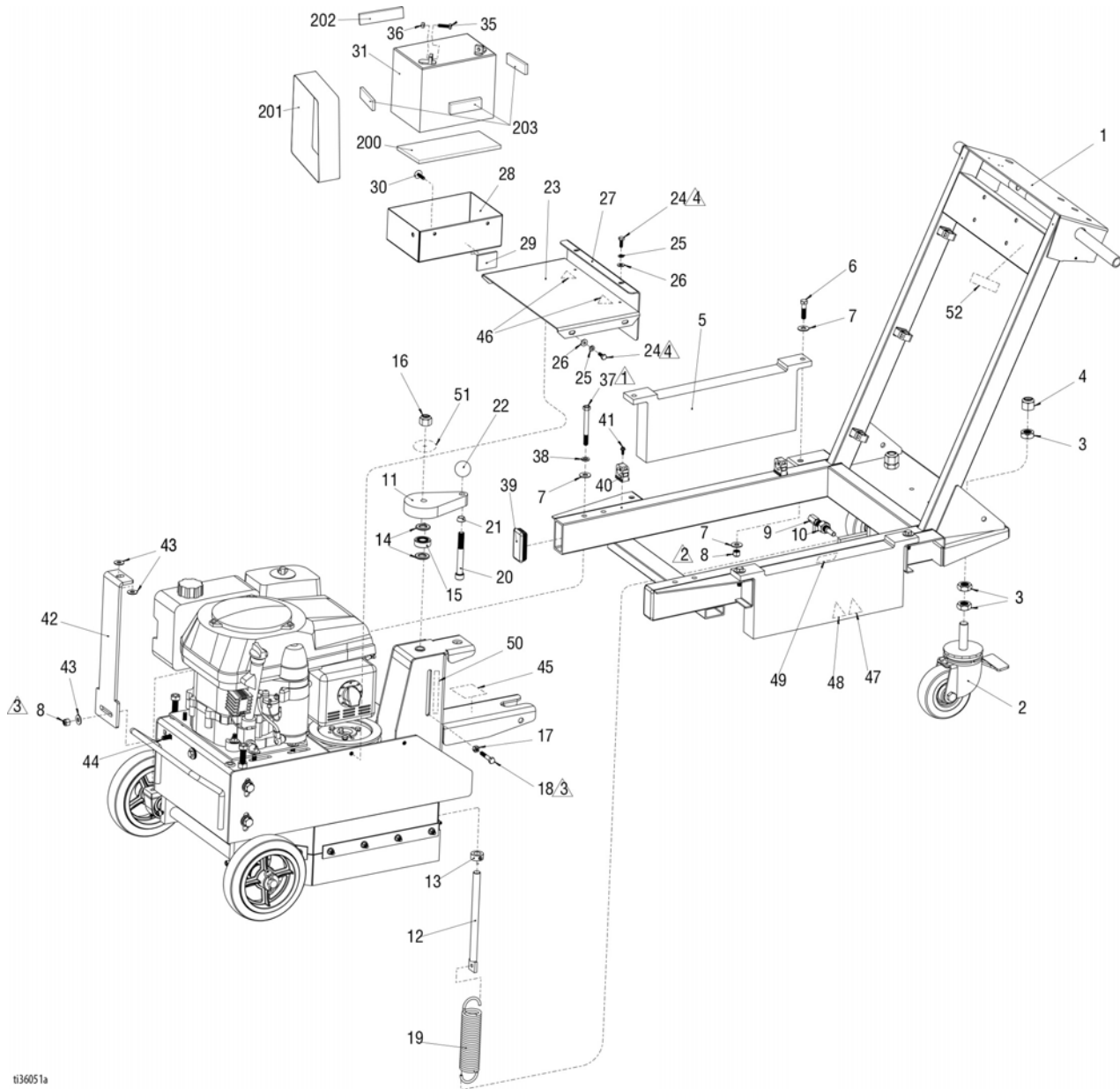
## Front Assembly Parts List - 25M847

Item:	P/N	Description	Qty
1	100022	1/4-20x3/4" Hex Head Bolt	4
2	100016	1/4" Lock Washer	4
3	17W020	1/4" Flat Washer	4
4	17W176	Belt Cover (top)	4
5	17W177	Belt Cover (back)	1
6	101712	5/8-11 Nylock Nut	1
7	17W049	Ball Knob	1
8	17W181	Handwheel	1
9	17W141	1/2-13x4" Socket Head Cap Screw	1
10	17W054	Thrust Bearing	1
11	17W105	5/8" Structural Washer	2
12	17W215	1/2-13x3" Hex Head Bolt (full thread)	2
13	555395	1/2-13 Hex Nut	2
14	17W196	3/8-16x3" Hex Head Bolt (full thread)	1
15	100023	3/8" Flat Washer	7
16	17W192	Belt Tension	1
17	17W232	Axle Shaft	1
18	558673	5/16-18x3/4" Socket Head Cap Screw	2
19	17W187	Axle Holder	2
20	17W229	Cotter Pin	2
21	17W188	Spacer	2
22	17W235	Axle Bearing	2
23	169468	3/4" Flat Washer	2
24	17W226	Shim	4
25	17W190	Front Wheel	2
26	17X253	5/16-18 Hex Nut	1
27	108843	5/16-18x1 3/4" Hex Head Bolt	1
28	17W056	Locking Collar	1
29	17W182	Pressure Control Linkage	1
30	17W221	Pressure Control Spring	1
31	17W098	1/2" Flat Washer	4
32	17W064	1/2" Lock Washer	4
33	17W233	1/2-13x1.5" Hex Head Bolt	4
34	17W231	3/8-16x3.5" Hex Head Bolt	4
35	100133	3/8" Lock Washer	4
36	17W237	Tapered Sleeve	1

## Front Assembly - 25M847 (Series B) & 25N669

Ref.	Torque
	28-30 ft-lb (38.0-40.0 N•m)
	20-22 ft-lb (27.1-30.0 N•m)
	144-180 in-lb (16.2-20.0 N•m)
	72-84 in-lb (8.1-9.5 N•m)

\*Use industry standard torques when not specified.





## Front Assembly Parts List - 25M847 (Series B) & 25N669

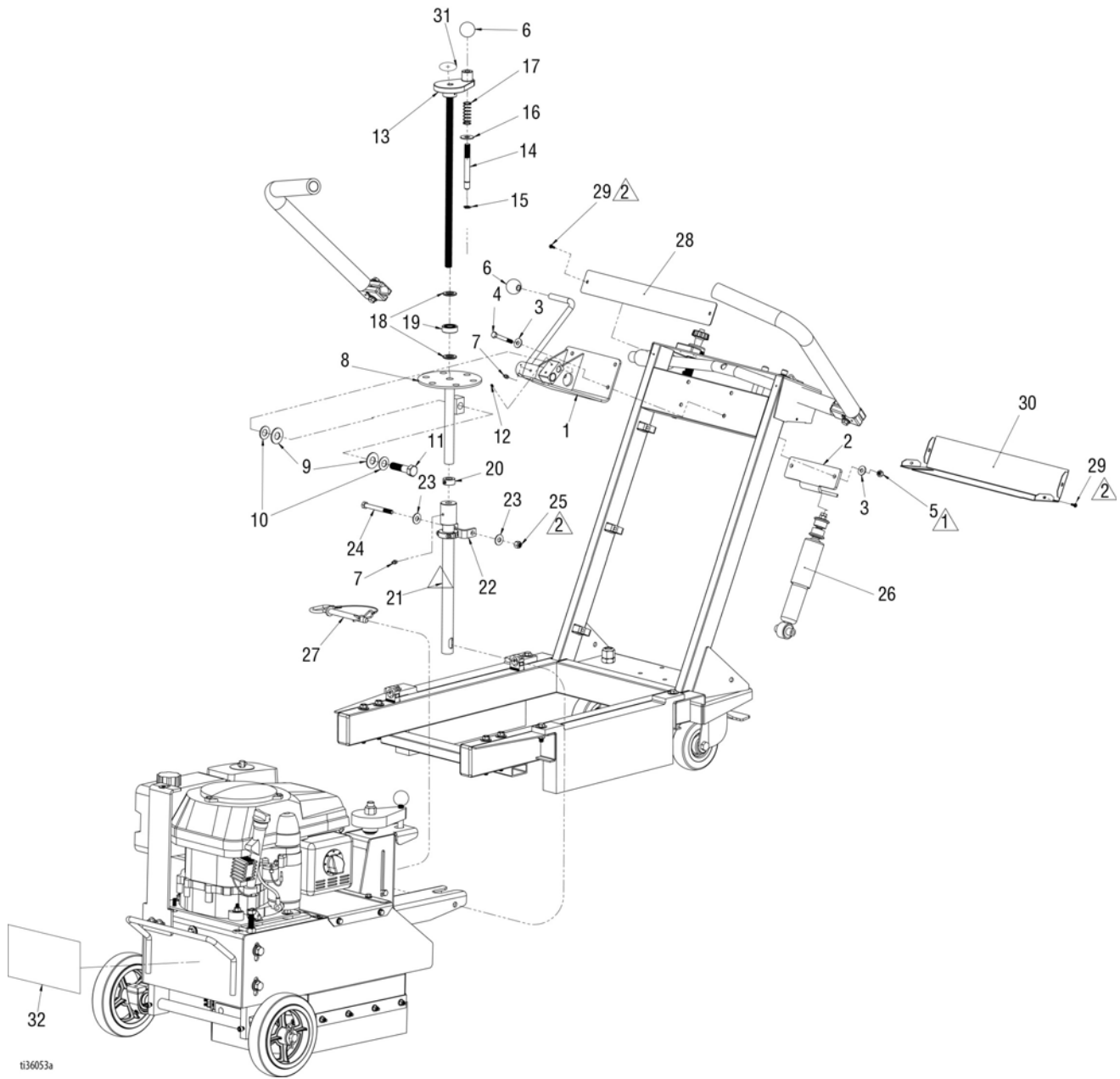
Item:	P/N	Description	Qty
1	17Y118	Frame, Outer	1
2	17W189	Wheel, Caster	2
3	17W234	Nut, Jam, 3/4"-10	6
4	108540	Nut, Lock, 3/4"-10	2
5	17W186	Ballast, Weight	2
6	100003	Screw, Cap, Hex Head, 3/8-16 x 1.5"	4
7	100023	Washer, Flat, 3/8"	12
8	101566	Nut, Lock, 3/8"-16	6
9	17W230	Plunger, Spring	1
10	555396	Nut, Hex, 5/8"-11	1
11	17W181	Wheel, Hand, Large	1
12	17W182	Link, Pressure Control	1
13	17W056	Collar, Locking, 5/8"	1
14	17W105	5/8" Structural Washer	2
15	17W054	Bearing, Thrust	1
16	101712	Nut, Lock, 5/8"-11	1
17	17X254	Nut, Hex, 5/16"-18	1
18	108843	Screw, Cap, Hex Head, 1/4-20 x 0.75"	4
19	17W221	Spring, Control, Pressure	1
20	17W141	Screw, Cap, Socket Head, 1/2-13 x 4"	1
21	17W237	Sleeve, Tapered, Aluminum	1
22	17W049	Knob, Ball	1
23	17W176	Belt, Cover, Top	1
24	100022	Screw, Cap, Hex Head, 1/4-20 x 0.75"	4
25	100016	Washer, Lock, 1/4"	4
26	17W020	Washer, Flat, 1/4"	4
27	17W177	Belt, Cover, Back	1
28	17Y121	Box, Battery	1
29	18A435	Rubber, Backing Skirt	1
30	110823	1/4-20 x 1" Low Profile Screw	2
31	115753	Battery, 33AH, Sealed	1
35	100021	Screw, Cap, Hex Head, 1/4-20 x 1"	2
36	100015	Nut, Hex, 1/4"-20	2
37	17W231	Screw, Cap, Hex Head, 3/8-16 x 3.75"	4
38	100133	Washer, Lock, 3/8"	4
39	168117	3" x 1.5" Rectangular Plug	2
40	18A115	Support, Tubing	5
41	17W089	Screw, Self-Tap, 10-32 x 0.5"	5
42	17Y117	Bracket, Vernier Control	1
43	120454	Washer, Flat, 5/16"	4
44	113956	Bolt, Carriage, 3/8-16 x 1"	2
45	17W861	Label, Made in USA	1
46▲	16C394	Warning Label, Entanglement	2
47▲	16D646	Warning Label, ISO, Hot Surface	2
48▲	16C393	Warning Label, ISO, Cut Foot Hazard	2
49	17W751	Label, Pro Series	1
50	17W241	Label, Depth Control	1
51	17W263	Label, Pressure Control	1
52	17P925	Label, A+ Service	1
200	18Y704	Foam, 1/2", under battery	1
201	18A786	Strap, velcro, 2"	1
202	18Y705	Foam, 1/4", front of battery	1
203	18Y701	Foam, 1/4", side and back of battery	3

▲ Replacement warning, safety labels, tags, and cards are available at no cost.

# Controls Assembly - 25M847 (Series B)

Ref.	Torque
	28-30 ft-lb (38.0-40.0 N•m)
	20-22 in-lb (2.3-2.5 N•m)

\*Use industry standard torques when not specified.







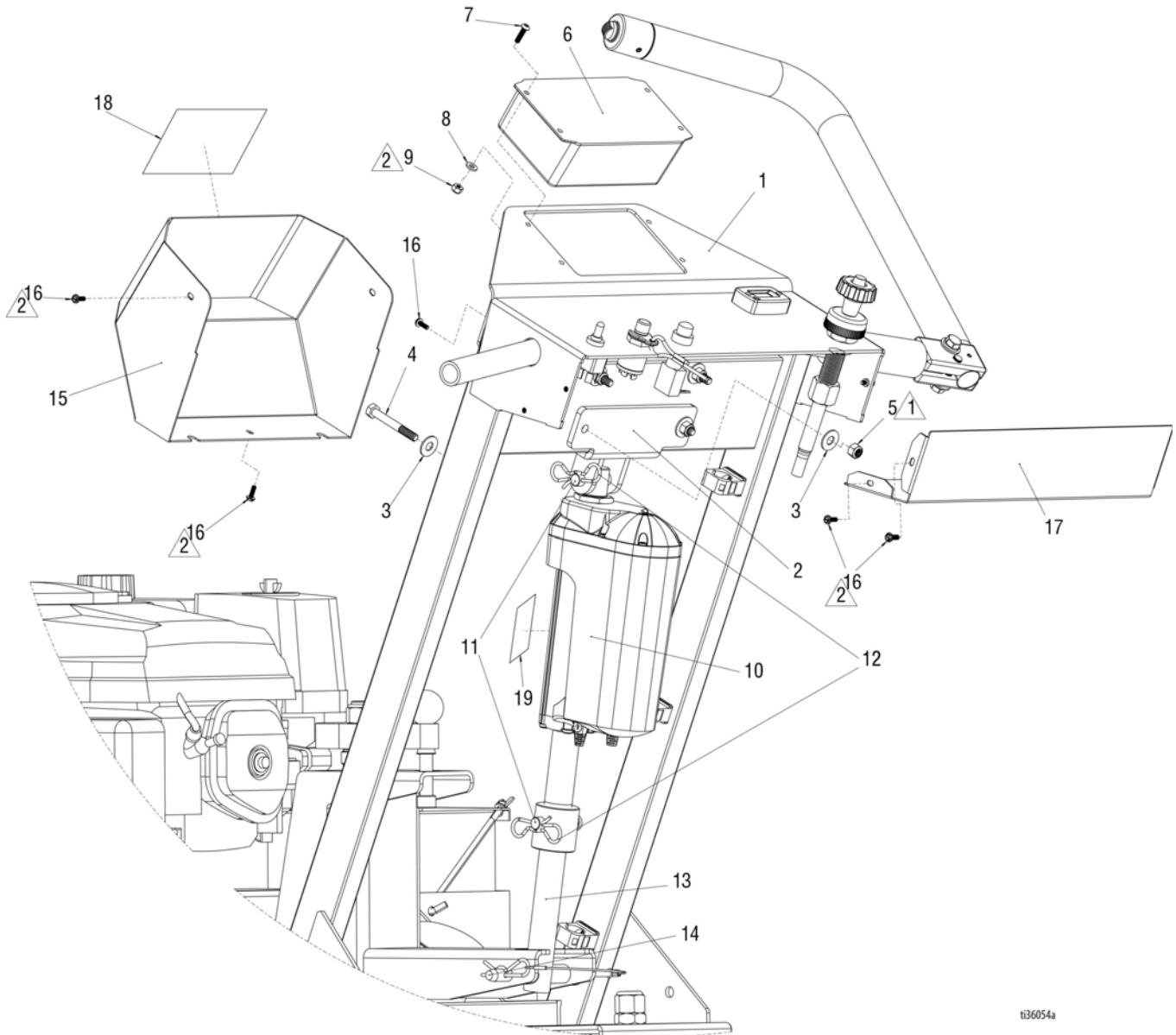
## Controls Assembly Parts List - 25M847 (Series B)

Item:	P/N	Description	Qty
1	17W108	Handle, Assembly, Cam Lever	1
2	17Y115	Bracket, Shock	1
3	120454	Washer, Flat, 5/16"	6
4	17W081	Screw, Cap, Hex Head, 5/16"-18 x 2.5"	4
5	110838	Nut, Lock, 5/16"-18	4
6	17W049	Knob, Ball	2
7	17W045	Fltting, Grease	2
8	17Y822	Link, Upper	1
9	17W113	Washer, Flat, Bronze	2
10	119563	Washer, Belleville	2
11	C19075	Screw, Cap, Hex Head, 5/8-11 x 2.5"	1
12	M71149	Screw, Set, SCH, 10-32 x 0.25"	1
13	17Y998	Wheel, Assembly, Hand	1
14	17W119	Pin, Locator	1
15	17W127	Ring, Retainer	1
16	17W146	Washer, Fender, 7/16"	1
17	17W111	Spring, Compression	1
18	17W105	Washer, Structural, 5/8"	2
19	17W054	Bearing, Thrust	1
20	17W056	Collar, Locking, 5/8"	1
21	17Y114	Link, Lower	1
22	17W123	Link, Attachment, Lower	1
23	100023	Washer, Flat, 3/8"	2
24	17W125	Screw, Cap, Hex Head, 3/8-16 x 3.5"	1
25	101566	Nut, Lock, 3/8-16	1
26	17W126	Shock, Absorber	1
27	17W217	Pin, Detent	1
28	17Y116	Plate, Handlebar, Front	1
29	117501	Screw, Hex Washer Head, 8-32 x 0.5"	6
30	18A154	Cover, Backing	1
31	17W053	Label, Info, Control	1
32	17W240	Label, Brand	1

# Controls Assembly - 25N669

Ref.	Torque
	28-30 ft-lb (38.0-40.0 N•m)
	20-22 in-lb (2.3-2.5 N•m)

\*Use industry standard torques when not specified.

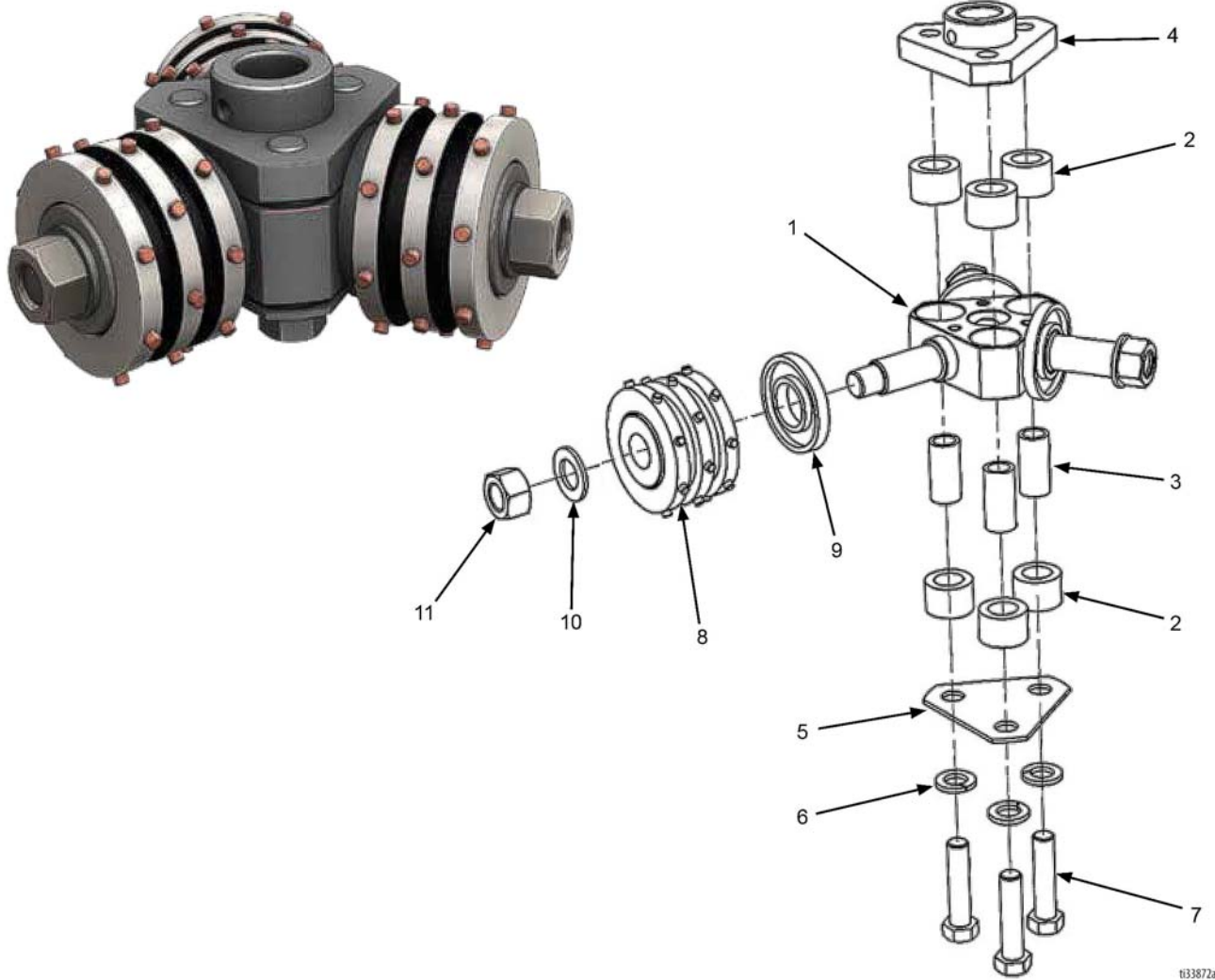


t36054a

## Controls Assembly Parts List - 25N669

Item:	P/N	Description	Qty
1	17Y112	Bracket, Control Mounting	1
2	17Y111	Bracket, Upper Linkage	1
3	120454	Washer, Flat, 5/16"	8
4	17W081	Screw, Cap, Hex Head, 5/16-18 x 2.5"	4
5	110838	Nut, Lock, 5/16"	4
6	18A790	Control, Assembly, DCS	1
7	128990	Screw, Cap, Button Head, 10-32 x 0.75"	4
8	17W886	Washer, Flat, M6	4
9	115483	Nut, Lock, 10-32	4
10	17Y237	Actuator, Linear, 12V	1
11	18A114	Pin, Clevis	2
12	17Y962	Pin, Cotter, Bow Tie	2
13	17Y110	Bracket, Lower Linkage	1
14	17W217	Pin, Detent	1
15	18A151	Cover, Shroud	1
16	117501	Screw, Hex Washer Head, 6-32 x 0.5"	9
17	18A154	Cover, Backing	1
18	17Y823	Label, Brand	1
19	18A330	Label, Instruction	1

## Spindle Cutter Assembly (24 pin)



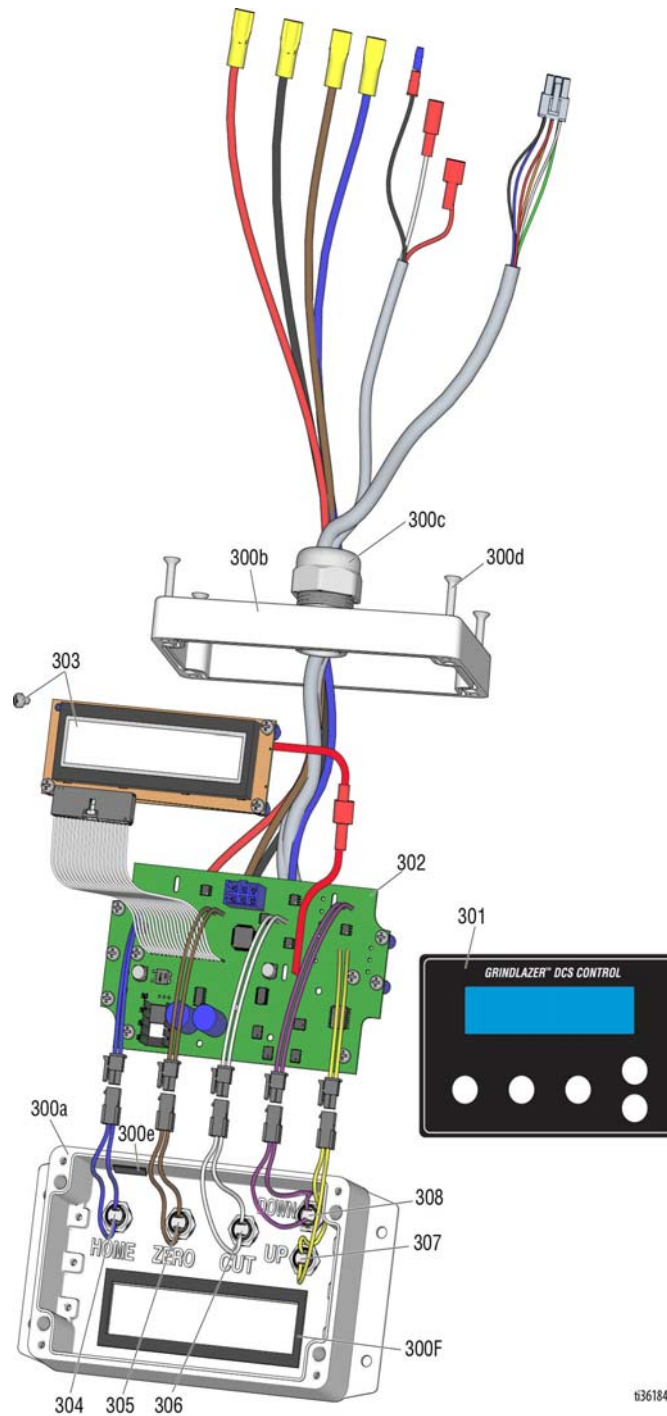
### Spindle Cutter Assembly Parts List - 25N363

Item:	P/N	Description	Qty
1*	17W324	Spindle Assembly	1
2	17X257	Rubber Bushing	6
3	17X258	Steel Bushing	3
4	17X259	Hub Connector	1
5	17X260	Hub Plate	1
6	17W299	Lock Washer	3
7	17W297	Hex Cap Screw	3
8	19A087	24 Pin Cutter (set of 3)	1
9	17W267	Backing Plate	3
10	17X266	Belleville Washer	3
11	17W265	Left Handed Hex Nut	3

\* Item 1 includes items 1-7, 9-11

# DCS Control Box 18A790

25N669 only

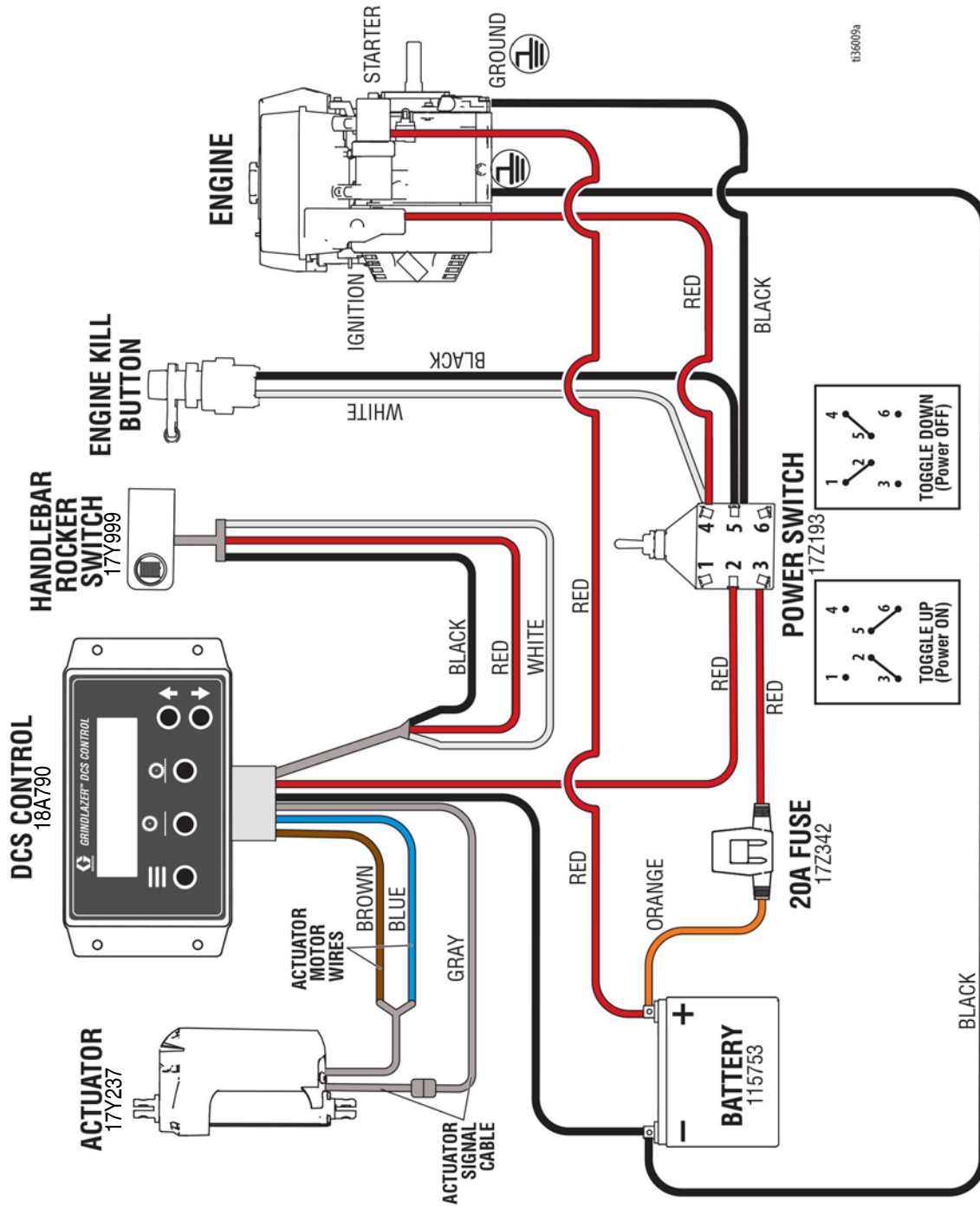


## Parts List

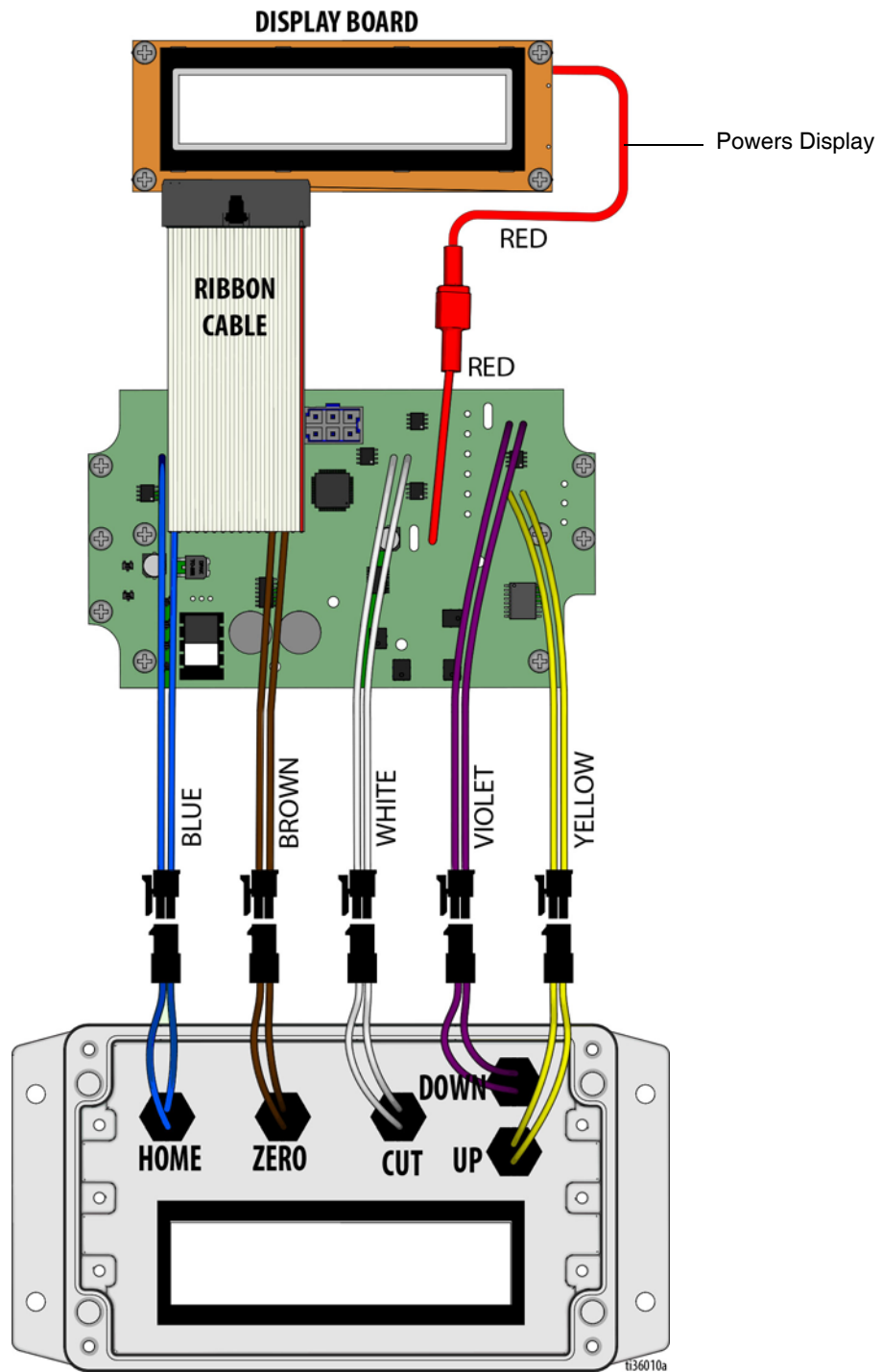
Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
300	18A690	KIT, DCS Control Box, machined <i>includes 300a - 300f</i>	1	304	18A693	KIT, home button, DCS	1
301	17Y686	LABEL, control, GrindLazer DCS	1	305	18A694	KIT, zero button, DCS	1
302	18A691	KIT, potted DCS Control PCB	1	306	18A695	KIT, cut button, DCS	1
303	18A692	KIT, display board, DCS control	1	307	18A696	KIT, up button, DCS	1
				308	18A697	KIT, down button, DCS	1

# Wiring Diagram

## DCS System



# DCS Control Box



# Technical Data

<b>GrindLazer Pro RC813 G (25M847)</b>		
<b>Noise level (dBa)</b>		
Sound power	109 dBa per ISO 3744	
Sound pressure	94 dBa measured at 3.1 feet (1m)	
<b>Vibration level*</b>		
Right/Left Hand	18.1 m/sec <sup>2</sup>	
* Vibration measured per ISO 5349 based on 8 hr daily exposure		
<b>Dimensions/Weight (unpackaged)</b>	<b>US</b>	<b>Metric</b>
Height	50 in.	127 cm
Length	48 in.	122 cm
Width	27 in.	69 cm
Weight	450 lb	204 kg

<b>GrindLazer Pro RC813 G DCS (25N669)</b>		
<b>Noise level (dBa)</b>		
Sound power	109 dBa per ISO 3744	
Sound pressure	94 dBa measured at 3.1 feet (1m)	
<b>Vibration level*</b>		
Right/Left Hand	18.1 m/sec <sup>2</sup>	
* Vibration measured per ISO 5349 based on 8 hr daily exposure		
<b>Dimensions/Weight (unpackaged)</b>	<b>US</b>	<b>Metric</b>
Height	50 in.	127 cm
Length	48 in.	122 cm
Width	27 in.	69 cm
Weight	475 lb	216 kg

## CALIFORNIA PROPOSITION 65



**WARNING:** This product can expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

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Original instructions. This manual contains English. MM 3A5581

**Graco Headquarters:** Minneapolis

**International Offices:** Belgium, China, Japan, Korea

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