

# RT175

Tier 4i - Serial Numbers 10721 - 811000

# RT175 Gen:2

Tier 4 - Serial Numbers 811001 and Up

# RT210

Tier 4i - Serial Numbers 21041 - 921000

# RT210 Gen:2

Tier 4 - Serial Numbers 921001 and Up

# RT250

Tier 4

## Compact Track Loader



# GEHL®

Form No.  
50940159  
Revision F  
May 2015  
ENGLISH

Original Instructions  
Supersedes 50940128

# Operator's Manual

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

Water Separator Inspection/Maintenance .....	130
Changing Fuel Filter .....	132
Hydraulic System Maintenance.....	133
Checking Hydraulic Oil Level.....	133
Changing Hydraulic Oil and Filter .....	134
Hydraulic Hose Maintenance .....	136
Travel Motor Maintenance.....	137
Travel Motor Gearbox Oil .....	137
Track Maintenance.....	137
Track Replacement .....	138
General Lubrication .....	141
Tilting ROPS/FOPS.....	142
Raising ROPS/FOPS.....	142
Lower ROPS/FOPS.....	143
Electrical System.....	144
Battery .....	144
Using a Booster Battery (Jump-Starting).....	145
Fuses and Relays.....	146
Engine Compartment Fuses/Relays (Model RT250).....	146
Engine Compartment Fuses/Relays .....	148
Engine Compartment Fuses/Relays .....	150
Fuses Under ROPS/FOPS.....	151
Control Modules .....	152
Multi-function Control Module .....	152
Lift Arm and Standard Auxiliary Flow Control Module.....	152
Engine Control Module (ECU).....	152
Main/Drive Control Module.....	152
Long-Term Storage .....	153
Before Storage .....	153
After Storage .....	153
Air Conditioning Maintenance .....	154
Air Conditioning Filters .....	154
Cab Air Filter .....	154
Outside Air Intake Filter.....	154
Windshield Washer Reservoir .....	155
Final Shutdown / Decommissioning .....	156
Before Disposal .....	156
Machine Disposal .....	156
Maintenance Log.....	157

<b>Troubleshooting .....</b>	<b>159</b>
Engine Troubleshooting .....	159
Indicator Lamp Troubleshooting.....	160
Seal and Hose Troubleshooting.....	161
Hydraulic System Troubleshooting.....	162
Hydrostatic Travel Drive System Troubleshooting .....	163
Electrical Troubleshooting .....	165
Miscellaneous Troubleshooting.....	166
Error Codes .....	166
Controller Communication Error Codes.....	166
Engine Error Codes .....	166
Drive and Valve Error Codes.....	174

# Introduction

- Vary traffic patterns to avoid exposure to rough terrain.
4. Maintain equipment. Check that seat suspension and all controls work smoothly and properly.

## Vibration Levels

See “Vibration Levels” on page 42 for a table listing typical whole-body vibration levels for the machine.

## Fire Extinguisher

An installation location for a fire extinguisher is on the shelf between the rear window and the operator's seat (Z, Fig. 2).

**IMPORTANT:** *Installation of a fire extinguisher according to DIN-EN 3 must be performed by an authorized dealer.*

**NOTE:** *A fire extinguisher is neither included as standard equipment nor available as an option from Manitou Americas, Inc.*

**IMPORTANT:** *Inspect the fire extinguisher at regular intervals as recommended by the fire extinguisher equipment manufacturer(s).*

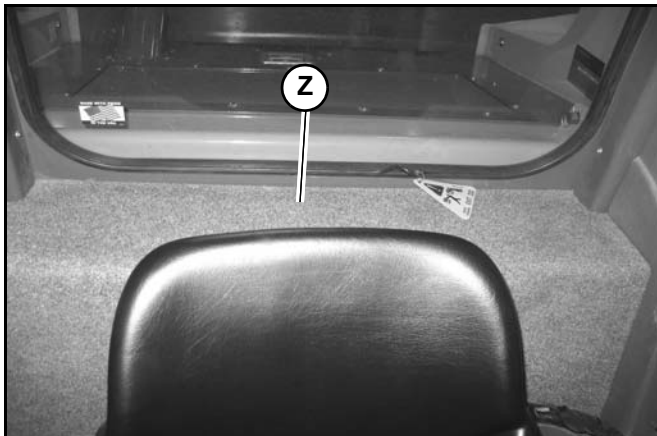


Fig. 2 – Location for Fire Extinguisher

## Manufacturer Information

Products described in this manual are manufactured by Manitou Americas, Inc.

**NOTE:** *Not all models and options described in this manual are available in all areas.*

- Do not work on hot engines, cooling systems or hydraulic systems. Wait for the engine to cool. When engine lube oil, gearbox lubricant or other fluids require changing, wait for fluid temperatures to decrease to a moderate level before removing drain plugs.

**NOTE:** *Temperatures below 49°C (120°F) will reduce the chances of scalding exposed skin while allowing the fluid to drain quickly and completely. Do not let the fluid fully cool, because drain time will be substantially increased.*

- Dispose of all oils and fluids properly. Used oils/fluids are environmental contaminants and may only be disposed of at approved collection facilities. Never drain any oils/fluids onto the ground, dispose of in municipal waste collection containers, or in metropolitan sewer systems or landfills. Check state and local regulations for other requirements.
- All safety equipment must be maintained so it is always in good condition.
- Safety-critical parts must be periodically replaced. Replace the following potentially fire-related components as soon as they begin to show signs of deterioration:
  - Fuel system flexible hoses, fuel tank overflow drain hose and the fuel filler cap.
  - Hydraulic system hoses, especially the pump outlet lines. Replace hydraulic hoses every 6 years from the date of manufacture, even if they do not appear damaged. The date of manufacture (month or quarter and year) is indicated on the hydraulic hoses.
- Keep mounting brackets and hose and cable routing straps tight. Hose routing should have gradual bends.
- After cleaning the machine, examine all fuel, lubricant and hydraulic oil lines for leaks, chafe marks and damage. Tighten any loose connections and repair or replace parts as necessary.
- Hydraulic line and hoses must be routed and fitted properly. Make sure no connections are interchanged.
- When handling oil, grease and other chemical substances, follow the product-related safety requirements Material Safety Data Sheet (MSDS) carefully to prevent burning or scalding.

## Battery Hazards

- Disconnect the negative battery cable from the negative battery terminal, before performing electrical service or electrical welding on the machine.
- Do not use a battery when the fluid level is below the minimum level. Doing so will hasten the deterioration of the battery and shortens battery life, and can also cause rupturing or explosion.
- Turn off all electrical equipment before connecting leads to the battery, including electrical switches on the battery charger or jump-starting equipment.
- When disconnecting at the battery terminals, remove the cable connected to the negative terminal first. When installing a battery, connect the positive terminal cable first.
- Connect positive cable first when installing jumper cables. The final cable connection, at the metal frame of the machine being charged or jump-started, should be as far away from the battery as possible. Disconnect the negative cable first when removing jumper cables.
- Sparks and open flames can set off explosive battery gas from incidental contact or static discharge. Turn off all switches and the engine when working on batteries. Keep battery terminals tight. Contact between a loose cable clamp and a terminal post can create an explosive spark.
- When jump-starting from another machine, do not allow the machines to touch. Wear safety glasses or goggles while battery connections are made.
- Never jump-start the machine if it has a frozen battery. The battery could explode. Thaw a frozen battery before charging it or attaching jumper cables.

**Table 3: Dimensions**

		RT175	RT210	RT250
A	Overall Operating Height (fully raised)	4267 mm (168.0 in.)	4369 mm (172.0 in.)	4450 mm (175.2 in.)
B	Height to Hinge Pin (fully raised)	3239 mm (127.5 in.)	3251 mm (128.0 in.)	
C	Reach (fully raised)	876 mm (34.5 in.)	940 mm (37.0 in.)	996 mm (39.2 in.)
D	Dump Angle (fully raised)	40.2°	39.0°	41°
E	Dump Height (fully raised)	2489 mm (98.0 in.)	2431 mm (95.7 in.)	2329 mm (91.7 in.)
F	Maximum Rollback Angle (fully raised)	102.5°		
G	Overall Height at ROPS	2103 mm (82.8 in.)	2111 mm (83.1 in.)	2111 mm (83.1 in.)
H	Overall Length (with bucket and standard counterweight)	3658 mm (144.0 in.)	3868 mm (152.3 in.)	4216 mm (166 in.)
I	Overall Length (w/out bucket)	2814 mm (110.8 in.)	2908 mm (114.5 in.)	3175 mm (125 in.)
J	Specified Height	1715 mm (67.5 in.)	1720 mm (67.7 in.)	
K	Reach (at specified height)	790 mm (31.1 in.)	808 mm (31.8 in.)	813 mm (32.0 in.)
L	Dump Angle (at specified height)	75.0°		
M	Maximum Rollback Angle (at ground)	30.0°		
N	Carry Position	179 mm (7.0 in.)		
O	Max. Rollback Angle (at carry position)	33.0°		
P	Digging Position (+ above / -below ground)	7.6 mm (0.3 in.)	5.1 mm (0.2 in.)	
Q	Angle of Departure (standard counterweight)	30.4°	29.2°	25.0°
R	Ground Clearance	343 mm (13.3 in.)	330 mm (13.0 in.)	
S	Track Gage	1313 mm (51.7 in.)		
T	Track Shoe Width	320 mm (12.6 in.)	450 mm (17.7 in.)	
U	Crawler Base	1392 mm (54.8 in.)	1483 mm (58.4 in.)	1562 mm (61.5 in.)
V	Overall Width (w/out bucket)	1636 mm (64.4 in.)	1765 mm (69.5 in.)	
W	Bucket Width	1674 mm (65.9 in.)	1877 mm (73.9 in.)	2131 mm (83.9 in.)
X	Front Clearance Radius (with bucket)	2322 mm (91.4 in.)	2492 mm (98.1 in.)	2659 mm (104.7 in.)
Y	Front Clearance Radius (w/out bucket)	1448 mm (57.0 in.)	1491 mm (58.7 in.)	1527 mm (60.1 in.)
Z	Rear Clearance Radius (standard counterweight)	1577 mm (62.1 in.)	1641 mm (64.6 in.)	1796 mm (70.7 in.)
	Maximum Rollback at Specified Height	66.8°		
	Angle of Approach	90°		
	Grouser Height	25.4 mm (1.0 in.)		

# Controls

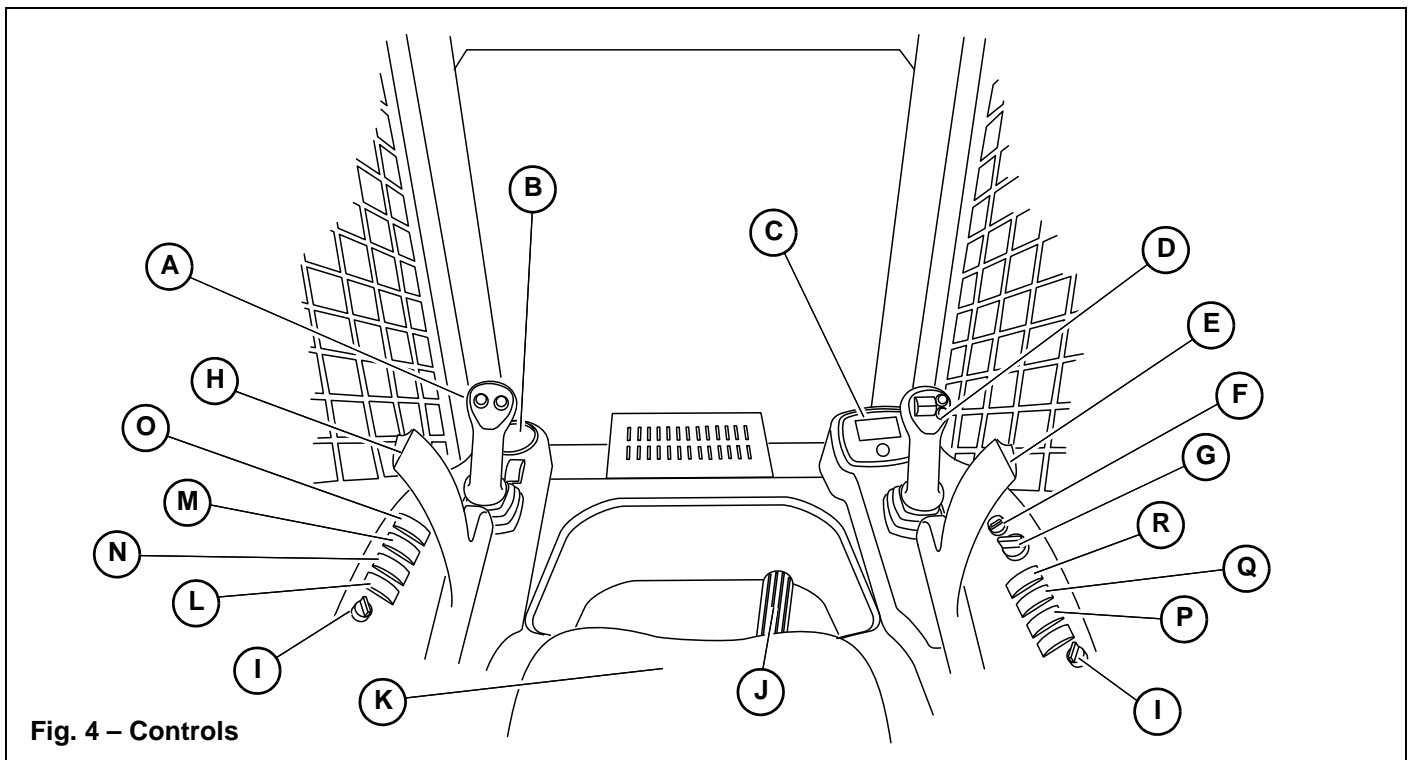


Fig. 4 – Controls

Table 21: Controls

Ref	Item	Description
A	Control Joystick - Left	Controls travel drive operation (and lift arm in option "D-H" control mode), horn and low/high speed travel mode. See "Control Joysticks" on page 53.
B	Cup Holder	Holds beverage containers up to 67mm (2-5/8") in diameter.
C	Multi-Function Display	Displays operation status messages and configures performance options.
D	Control Joystick - Right	Controls attachment lift/tilt operation (travel drive and attachment tilt in "D-H" control mode), auxiliary hydraulic flow, lift arm float and optional Hydraglide™. See "Control Joysticks" on page 53.
E	Safety Bar/Arm Rest - Right	Applies parking brake, locks out work hydraulics and prevents engine start when in the raised position. See "Parking Brake/Work Hydraulics Lock-out" on page 58.
F	Ignition Switch	Controls ignition, engine start and run. See "Starting the Engine" on page 72.
G	Throttle Knob	Primary engine speed control. See "Throttle Controls" on page 61.
H	Safety Bar/Arm Rest - Left	Applies parking brake, locks out work hydraulics and prevents engine start when in the raised position. See "Parking Brake/Work Hydraulics Lock-out" on page 58.
I	Electrical Accessory Socket	12-volt accessory outlet.
J	Throttle Pedal	Supplemental engine speed control. See "Throttle Controls" on page 61.
K	Operator's Seat	Seat plate according to ISO 7096 (located on seat).
L	Power-A-Tach® Switch	Controls Power-A-Tach®. See "Switches/Indicators" on page 47.
M	Self-Leveling Cancel Switch	Cancels optional self-leveling function. See "Switches/Indicators" on page 47.
N	Auxiliary Hydraulics Flow Switch	Controls high-flow auxiliary hydraulics. See "Switches/Indicators" on page 47 and "Auxiliary Hydraulics Operation" on page 104.
O	Parking Brake Switch	Controls the parking brake. See "Switches/Indicators" on page 47.
P	Rear Window Washer Switch	Controls rear window washer spray. See "Switches/Indicators" on page 47.
Q	Front Window Washer Switch	Controls front window washer spray. See "Switches/Indicators" on page 47.
R	Work Lights Switch	Controls work lights. See "Switches/Indicators" on page 47.

## Right Joystick Functions

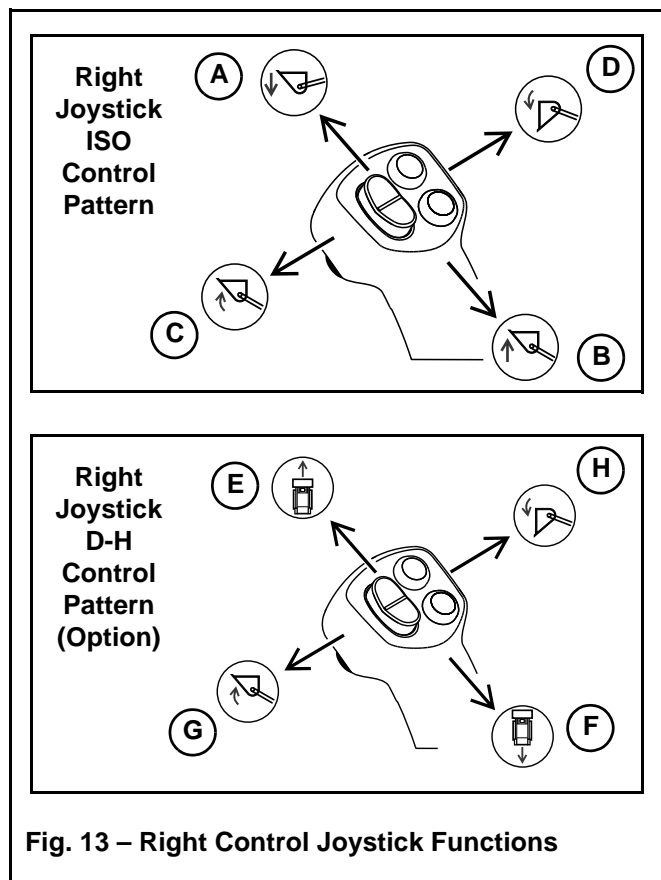


Fig. 13 – Right Control Joystick Functions

## Joystick Buttons/Switch Functions

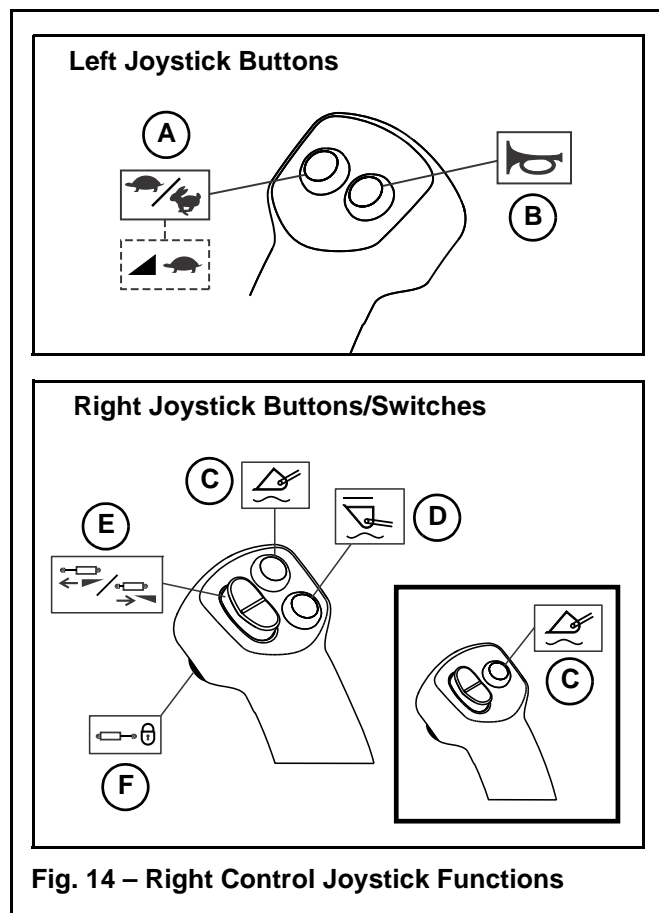


Fig. 14 – Right Control Joystick Functions

Table 28: Right Control Joystick Functions

	Joystick Direction	Function
<b>ISO Control Pattern</b>		
A	Forward	Lift arm – down
B	Backward	Lift arm – up
C	Left	Attachment tilt – tilt back
D	Right	Attachment tilt – tilt forward
<b>D-H Control Pattern (Optional)</b>		
E	Forward	Track drive – right track forward
F	Backward	Track drive – right track reverse
G	Left	Attachment tilt – tilt back
H	Right	Attachment tilt – tilt forward

Table 29: Joystick Button Functions


Button	Function
<b>Left Joystick Buttons</b>	
A	High/low drive speed selection (See “Travel Speed Range Selection” and “Travel Speed Limit (Option)” on page 62)
B	Horn
<b>Right Joystick Buttons/Switch</b>	
C	Lift arm float (See “Lift Arm Float” on page 96)
D	Hydraglide™ (See “Hydraglide™ Button (Option)” on page 65 and “Hydraglide™ Ride Control System (Option)” on page 97)
E	Auxiliary hydraulics flow (See “Powering Attachments with Hydraulic Function” on page 103)
F	Auxiliary hydraulics continuous flow lock (See “Auxiliary Hydraulics Operation” on page 104) Auxiliary hydraulics continuous flow will remain locked with the restraint bars in the raised position with the operator seat not occupied.

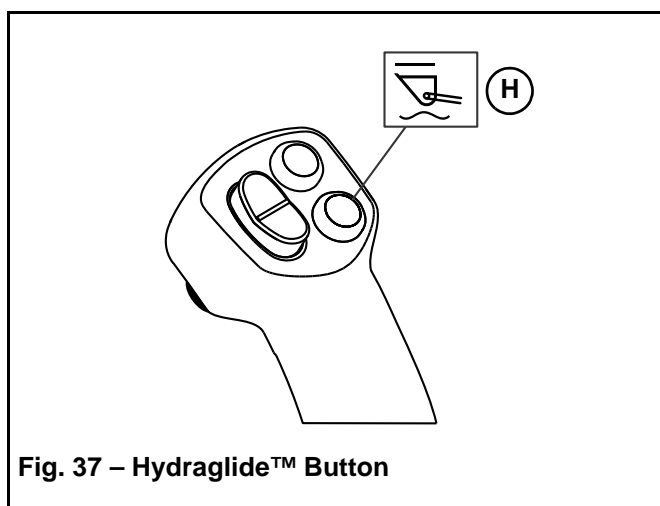
## Hydraglide™ Button (Option)

Hydraglide™ cushions lift arm loads during transport. It provides a smoother ride over uneven surfaces.

**IMPORTANT:** *Hydraglide™ is automatically deactivated when the machine is shut off.*

On the right joystick, press switch (H, Fig 37) to toggle Hydraglide™ on/off.

**NOTE:** *Indicator  on the multi-function display is lit whenever Hydraglide™ is activated.*



**Fig. 37 – Hydraglide™ Button**

For Hydraglide™ operation information see “Hydraglide™ Ride Control System (Option)” on page 97.

## Work Lights

The switches for the work lights are located on the right console.

### Work Lights



**Switch off the work lights when traveling on public roads. Work lights can dazzle motorists and cause accidents.**

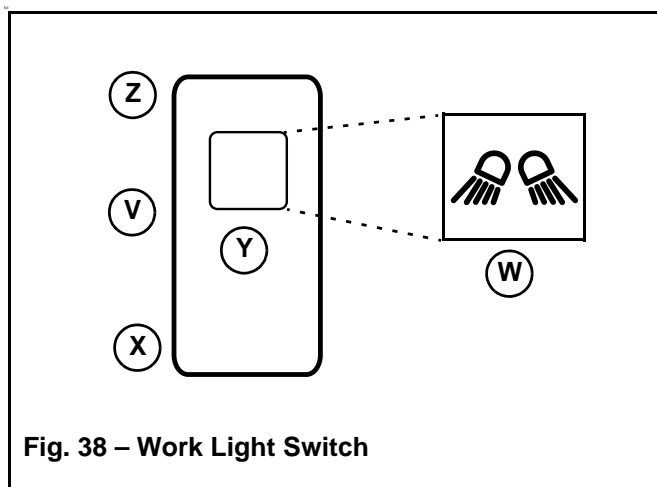
The front and back work lights operate using the same 3-position switch (Y, Fig 38).

Set switch (Y) to the middle position (V) to turn on the front work lights.

Set switch (Y) to the top (Z) position to turn both the front and back work lights on.

Set switch (Y) to the bottom (X) position to turn the work lights off.

**NOTE:** *Indicator (W) is on when the works lights are activated.*



**Fig. 38 – Work Light Switch**

## Engine Stalling



If the engine should stall for any reason during operation, always turn the ignition key all the way counter-clockwise to the “OFF” position before re-starting the engine according to “Starting the Engine” on page 72.

## Diesel Particulate Filter (DPF) Regeneration Procedures

**Models RT175 (Serial Numbers 811001 and Up) and RT210 (Serial Numbers 921001 and Up)**

The Diesel Particulate Filter (DPF) treats exhaust emissions in compliance with Tier 4 emission standards. The DPF filter relies on high exhaust temperatures. Periodic DPF maintenance (regeneration) is required, dependent upon machine operation load / temperature.

**NOTE:** *Machines operated primarily at high loads and operating temperatures require less frequent DPF maintenance. Extended periods of engine idling rapidly increases DPF soot levels, requiring more frequent regeneration operations.*

There are 4 modes of DPF regeneration:

- **Passive / Assist Regeneration:** Occurs automatically without operator input. Passive/assist regeneration does not effect machine operation.
- **Reset Regeneration:** Occurs automatically, but can be inhibited by the operator. Increases exhaust gas temperatures. Reset regeneration occurs approximately every 100 hours of operation. See “Reset Regeneration” on page 76.

**NOTE:** *Reset regeneration effectiveness is improved if the machine is operated at mid- to high-throttle settings while this mode is in progress.*

- **Stationary Regeneration:** Requires operator action to initiate and takes approximately 25-30 minutes to complete. See “Stationary Regeneration” on page 76.

**IMPORTANT:** *The machine cannot be operated and must be parked in a well-ventilated area away from flammable materials when stationary regeneration is in progress.*

- **Recovery Regeneration:** Requires operator action to initiate and takes approximately 25-240 minutes to complete. See “Recovery Regeneration” on page 81.

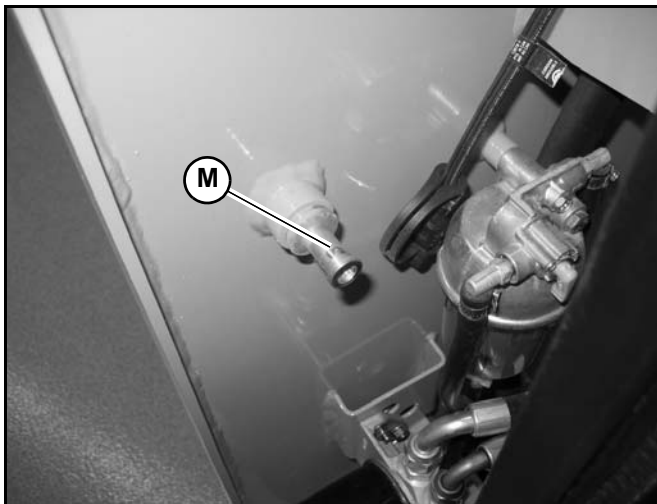


Fig. 78 – Chassis Ground/Rear Door Catch

## **WARNING**

Do not connect the other end of the jump lead to the negative terminal of the dead battery. Gas emerging from the battery may ignite if sparks are formed.

8. Start the machine with the discharged battery. See “Starting the Engine” on page 72. If the engine does not start immediately, stop cranking after 10 seconds and repeat starting procedure after approximately 30 seconds.

### After the Engine Starts:

1. With the operator remaining in the operator’s seat, the jump cables are disconnect by a second person in reverse order of steps 4 – 6 to avoid sparking near the battery.
2. Close the rear door and the engine cover according to “Closing Engine Covers” on page 121.
3. Allow the machine to run for at least 30 minutes to re-charge the battery.

## Travel Drive Operation

### **WARNING**

Never allow anyone to enter inside the turning radius and the machine path.

Signal your intention to move by sounding the horn.

Traveling should be performed with the attachment in transport position. See “Attachment Transport Position” on page 93.

Avoid sudden stops, starts or turns.

Do not raise the arm rests/safety bars while traveling. raising the arm rests/safety bars will apply the parking brake abruptly. Loss of control could result.

Do not switch off the ignition switch while traveling. Sudden braking will happen and loss of control could result.

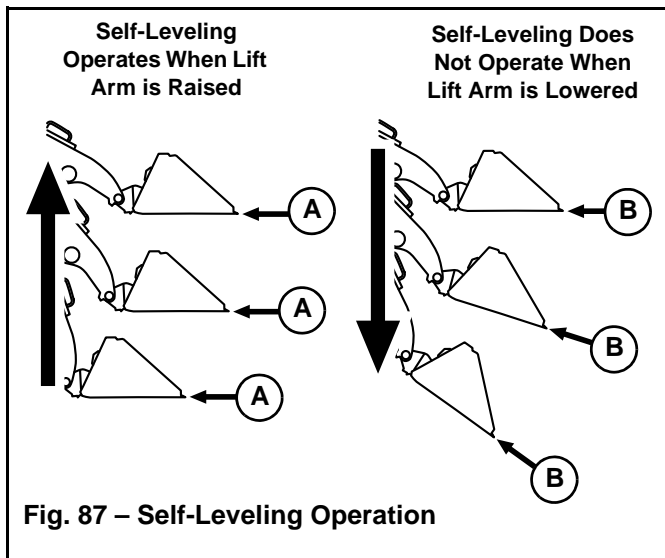
Visual check behind you before traveling in reverse. Traveling in reverse without checking could result in collision with a person or obstacle.

Remove obstacles in the machine’s path before traveling with a load.

## Self-Leveling

Self-leveling automatically keeps the tilt angle of the attachment constant, relative to the ground plane, (Fig. 87) when the lift arm is raised (A). This feature is especially useful when using pallet forks.

**IMPORTANT:** *Self-leveling operates only when the lift arm is raised: when the lift arm is lowered (B), self-leveling is not activated.*



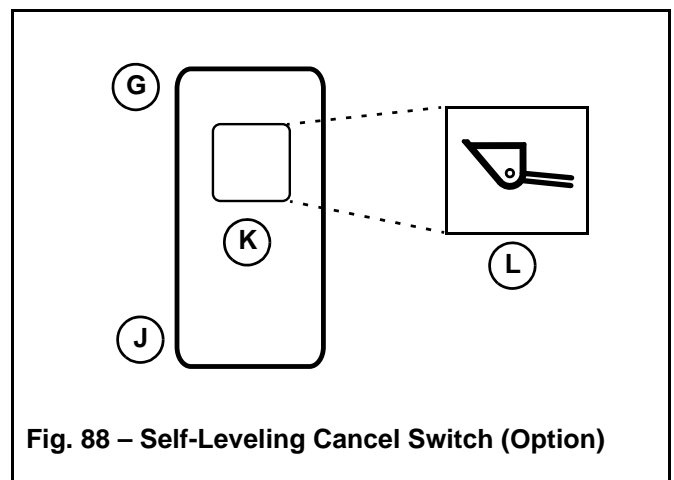
## Self-Leveling Cancel (Option)

The self-leveling cancel option allows deactivation of the self-leveling feature.

To deactivate self-leveling, press the top (G, Fig. 88) of the self-leveling cancel switch (K). To restore self-leveling, press the bottom (J) of the self-leveling cancel switch.

**NOTE:** *The indicator in the switch is lit when the self-leveling cancel option is on and the self-leveling feature is deactivated.*

**NOTE:** *Self-leveling is activated by default. If the engine is shut off, Self-leveling defaults to the activated condition.*



## **WARNING**

If the engine should stall for any reason during auxiliary high-flow hydraulics operation, always turn the ignition key all the way counter-clockwise to the “OFF” position before re-starting the engine according to “Starting the Engine” on page 72.

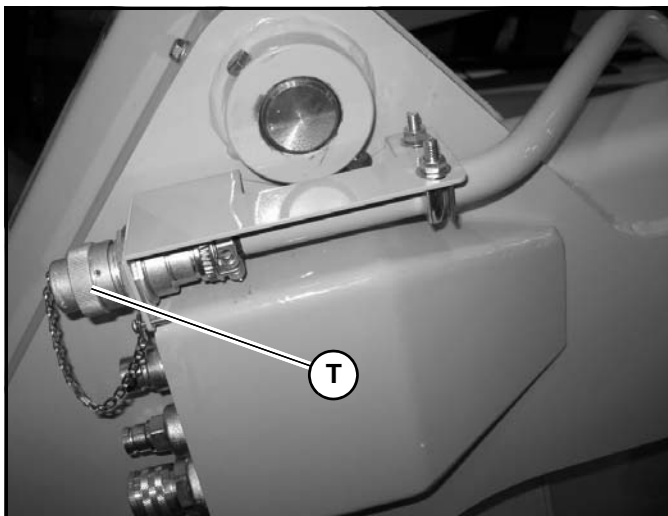
## Optional 14-Pin Connector

Optional 14-pin connector (T, Fig. 104) is intended for attachments equipped with 14-pin compliant connections using direct 12 volt actuation control.

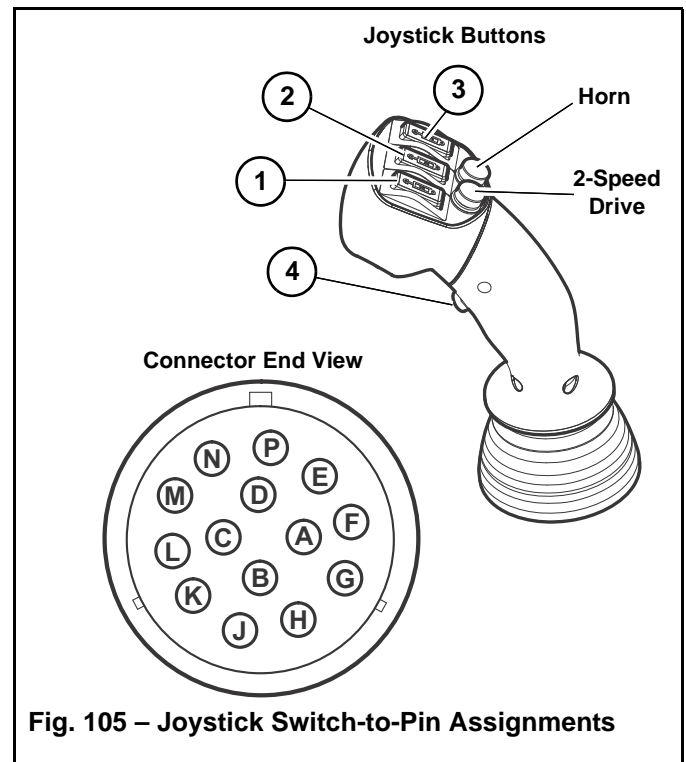
**NOTE:** Contact your dealer for information about approved 14-pin-equipped attachments.

### Switch / Pin Assignments

Refer to Fig. 105 and table 3 for details about joystick switches and the associated pins in the 14-pin connector.



**Fig. 104 – Optional 14-Pin Connector**



**Fig. 105 – Joystick Switch-to-Pin Assignments**

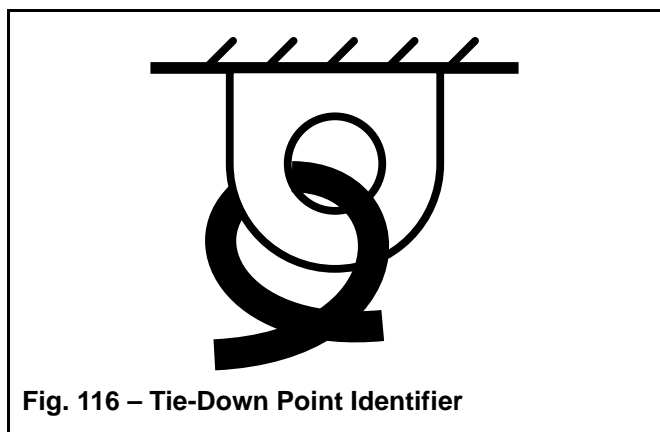
**Table 3: 14-Pin Joystick and Pin Assignments**

Joystick Switch	Switch Position	Switch Type	Connector Pin	Amp
1	Forward	Momentary	C	15
	Back		D	
2	Forward	Momentary	E	10
	Back		F	
3	Forward	Momentary	G	10
	Back		H	
4	Pressed	Latching	A	15

Pin Description	Connector Pin	Amp
Ground	B	15
Power (with key ON)	K	15
Not Assigned	L	N/A
Not Assigned	M	N/A
Not Assigned	N	N/A
Not Assigned	P	N/A
Not Assigned	J	N/A

**NOTE:** Depending upon the attachment, an adapter harness may be necessary. Refer to the documentation supplied with the attachment, or contact your dealer.

4. Slowly and carefully drive the machine in reverse onto the transport vehicle, with the bucket end facing down the ramp.
5. Do not adjust travel direction while traveling on the ramps. Instead, drive down off of the ramps, and re-align the machine with the ramps.
6. Position the machine at the lowest possible position on the transport platform, with the center of gravity of the load over center line of the transport vehicle.
7. Lower the bucket onto the loading area.
8. Stop the engine.
9. Raise the arm rests/safety bars to apply the parking brake and lock out the hydraulic functions.
10. Remove the ignition key.
11. Do not allow anyone to stay in the cab.
12. Close the doors and the engine cover.
13. Tie down the machine as follows:
  - a. Make sure the authorized maximum height is not exceeded.
  - b. Place blocks in front and behind tracks to prevent movement.
  - c. Securely strap the machine at the tie-down points (Fig. 116) to the platform. Use only belts or chains of sufficient capacity.

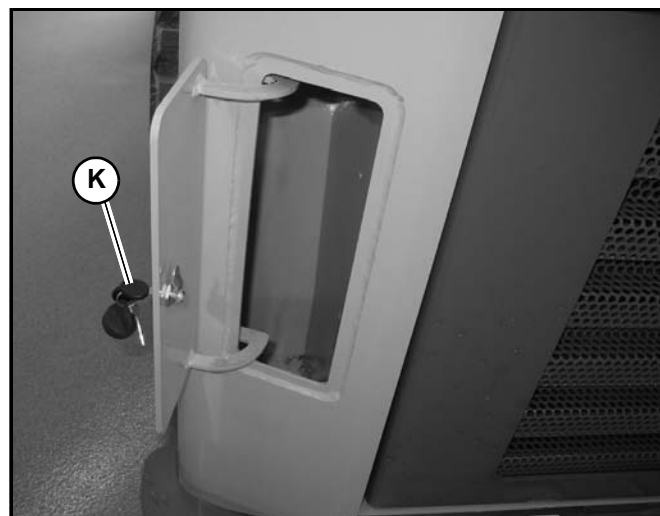


**Fig. 116 – Tie-Down Point Identifier**

**IMPORTANT:** Before transporting the machine through heavy rain, close off the exhaust pipe with a cap or suitable adhesive tape.

## Storage Box

The machine is equipped with a locking storage box (Fig. 117) at the left rear corner of the machine.



**Fig. 117 – Locking Storage Box**

Use the accessory key (supplied with the ignition key) to lock/unlock the storage box.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

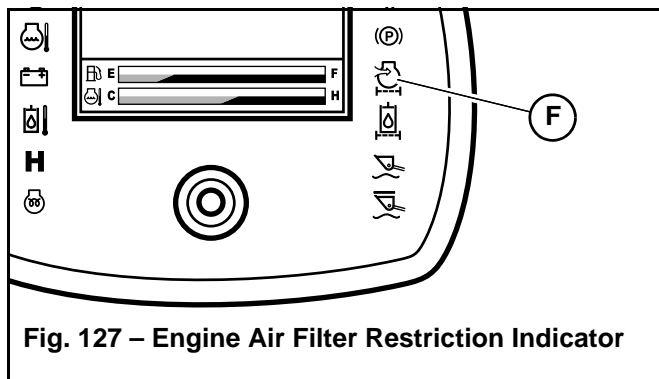
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

## Engine Air Filters

**IMPORTANT:** Do not operate the engine without the air cleaner components installed or damage to the engine could occur.

Check, and if necessary replace, the engine air filters after every 250 hours of use, or every 6 months, or whenever the engine air filter restriction indicator is lit (F, Fig. 127).

**NOTE:** The engine air filter restriction indicator (F, Fig. 127) on the multi-function display is lit whenever the air cleaner becomes restricted. When this indicator is lit, the air filters require inspection and may need replacement.



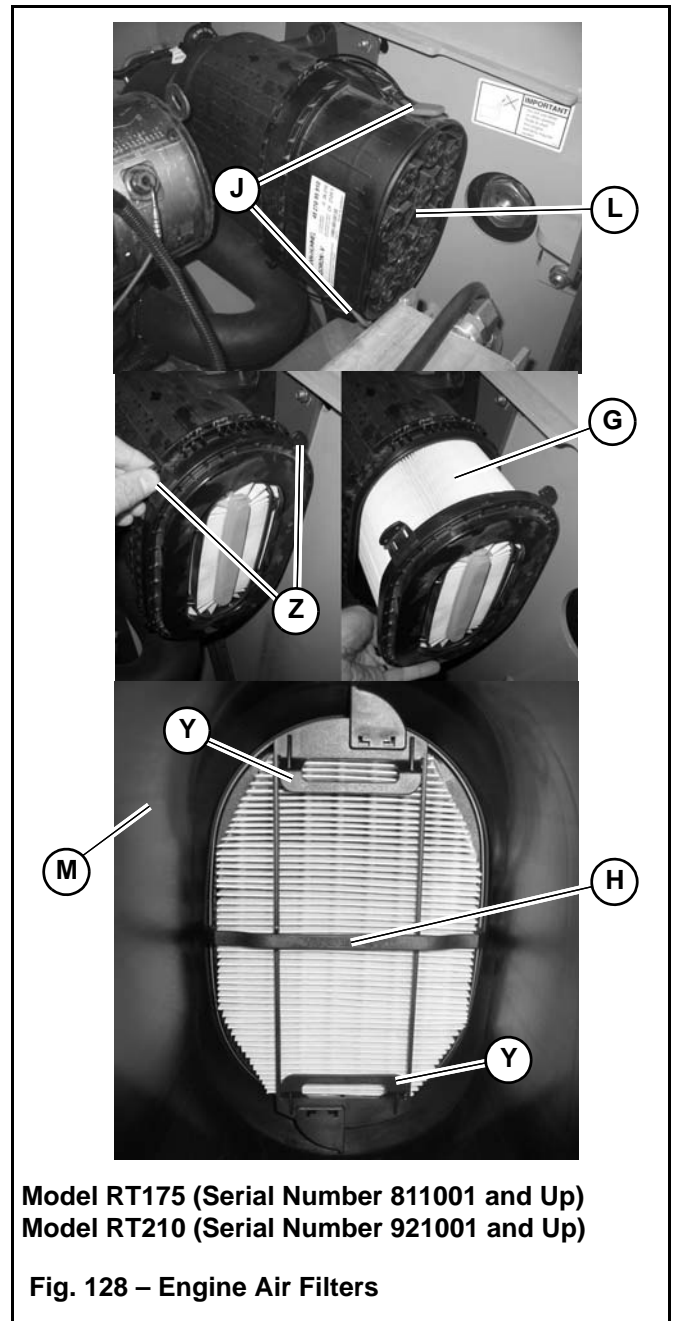
The air cleaner consists of an outer (primary) filter element (G, Fig. 129), an inner (secondary) filter element (H) and an optional pre-cleaner.

Replace the inner filter element every third time the outer element is replaced, unless the outer element is damaged or the inner element is visibly dirty.

Be sure the air cleaner intake hose, clamps and mounting bracket hardware are properly tightened.

## Changing Air Filter Elements

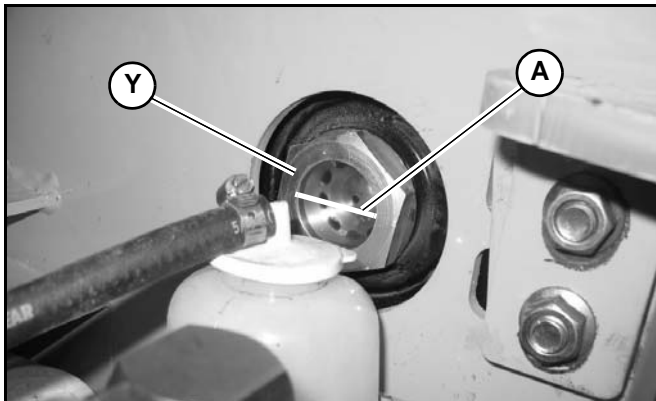
1. Perform the “Mandatory Safety Shutdown Procedure” on page 18.
2. Open the engine cover “Engine Access” on page 121.



3. Unlatch clamp (J, Figs. 128 and 129) on the air cleaner housing and remove the air filter cover (L).
4. Clean debris from inside the air cleaner housing (M) and air filter cover.

10. Remove hydraulic breather/oil fill cap (P or B, Fig. 140) and add hydraulic oil until the level reaches the middle of the sight glass (A, Fig. 142). Replace and tighten the hydraulic oil fill cap. Close the engine compartment.

**NOTE:** See “Fluids/Lubricants Types and Capacities” on page 33 for proper hydraulic oil grade and type. Hydraulic oil capacity listed is approximate.



**Fig. 142 – Hydraulic Oil Level Sight Gauge**

11. Start the machine. Cycle through all hydraulic functions several times to purge air from the hydraulic system. Shut down the machine according to “Mandatory Safety Shutdown Procedure” on page 18.
12. Check the machine for hydraulic oil leaks. Correct any leaks as required.
13. Add oil to the hydraulic system as required until the level reaches the middle of the sight glass (A). Replace and tighten the hydraulic oil fill cap.

To access the battery, use the accessory key (supplied with the ignition key) to unlock (H, Fig. 158) and open the battery cover, located on the top left of the machine next to the top engine cover.

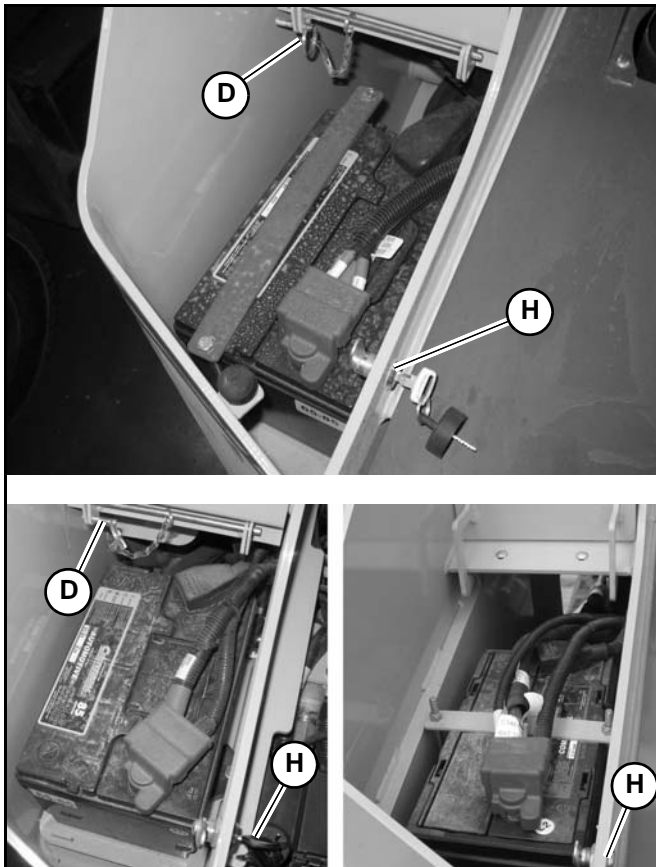


Fig. 158 – Battery Compartment

## CAUTION

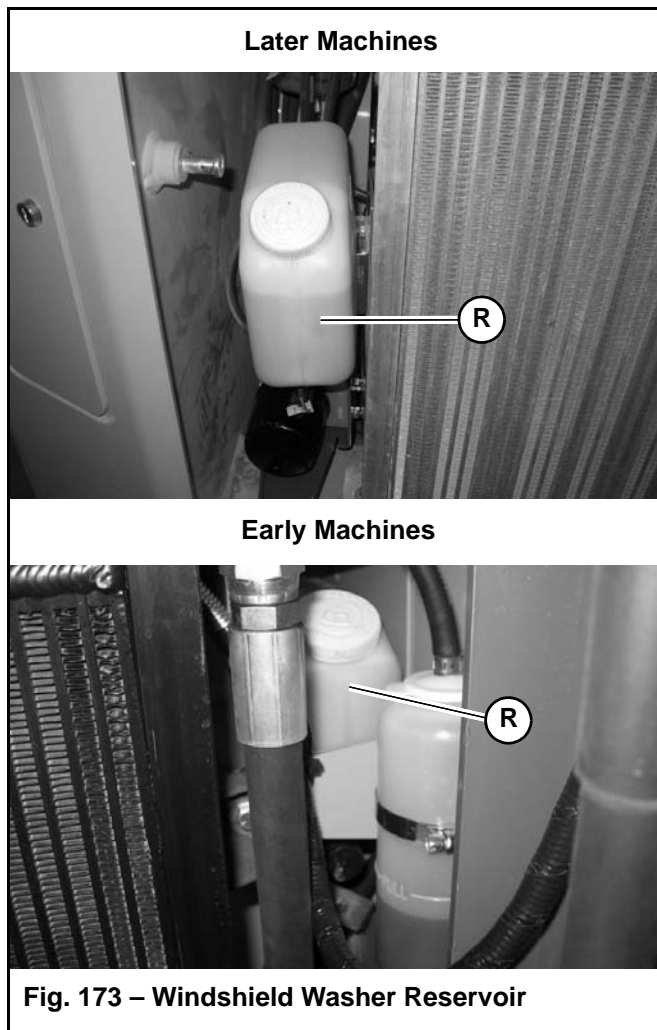
Always hold the battery compartment cover open when working on the battery. Use pin (D), if so equipped. Severe injuries can result if the battery compartment cover falls on hands and/or fingers.

### ***Using a Booster Battery (Jump-Starting)***

Jump-start the machine according to “Jump-Starting” on page 83.

## Windshield Washer Reservoir

The windshield washer reservoir (R, Fig. 173) is located inside the engine compartment. Check the windshield washer reservoir level daily before starting the machine and fill if necessary.



**IMPORTANT:** *Fill the windshield washer fluid reservoir with clean tap water only. Add a cleaning agent if required. Add antifreeze to the water in cold weather.*

## Electrical Troubleshooting

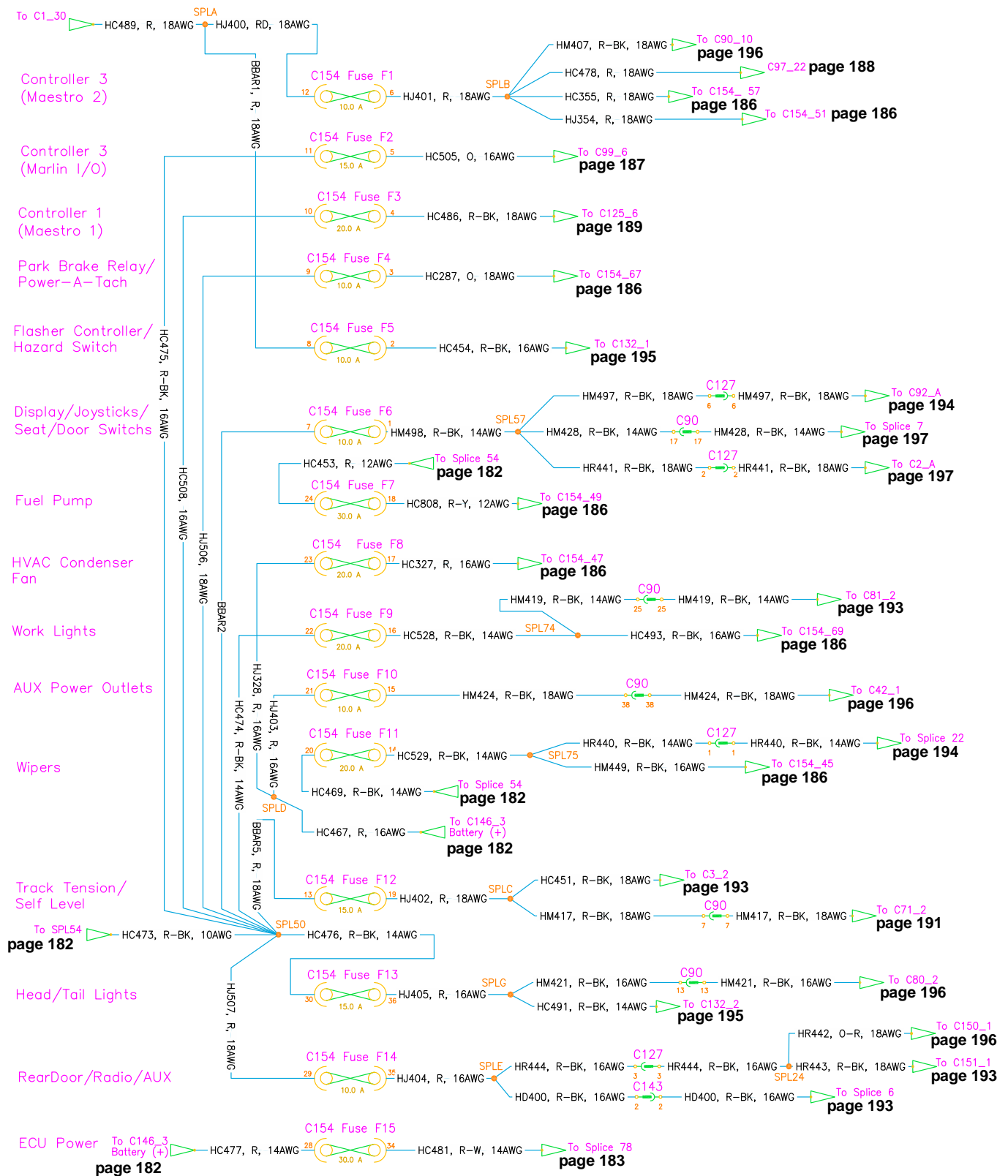
Table 21: Electrical Troubleshooting

Problem	Possible Cause	Corrective Action
Loss of electrical power	Battery terminals or cables loose or corroded	Clean battery terminals/cable connections and tighten
	Battery malfunction	Test battery. Recharge/replace as necessary
	Blown main fuse	Correct over-current problem and replace main fuse. See "Fuses and Relays" on page 146
Instrument display does not activate when ignition is on	Blown main fuse	Correct over-current problem and replace main fuse. See "Fuses and Relays" on page 146
	Battery terminals or cables loose or corroded	Clean battery terminals/cable connections and tighten
	Ignition switch malfunction	Replace switch
Starter does not engage when key switch turned to start position	In very cold weather, display screen slow to display	Wait a few minutes for display to activate
	Loose/corroded starter electrical connections	Check/tighten/clean connections
	Battery terminals or cables loose or corroded	Clean battery terminals/cable connections and tighten
	Starter relay malfunction	Contact dealer
	Battery malfunction	Test battery. Recharge/replace as necessary
	Starter solenoid malfunction	Contact dealer
	Starter or pinion malfunctioning	Repair/replace as needed
Error code "0". Arm rest/safety bar in raised position; cab door not closed (if equipped)' operator's seat not occupied	Lower arm rests/safety bars to operating position. Engine will not start with either arm rest/safety bar raised, or the cab door open (if equipped). Occupy operator's seat	
Work/road lights malfunction	Single light not working; light bulb burned out, faulty wiring	Check and replace light bulb as needed, check wiring connections
	No lights; blown fuse	Correct over-current problem and replace fuse. See "Fuses and Relays" on page 146
	Light switch malfunction	Replace light switch
	Poor electrical ground	Check ground wire connections

Table 25: Drive and Valve Error Codes

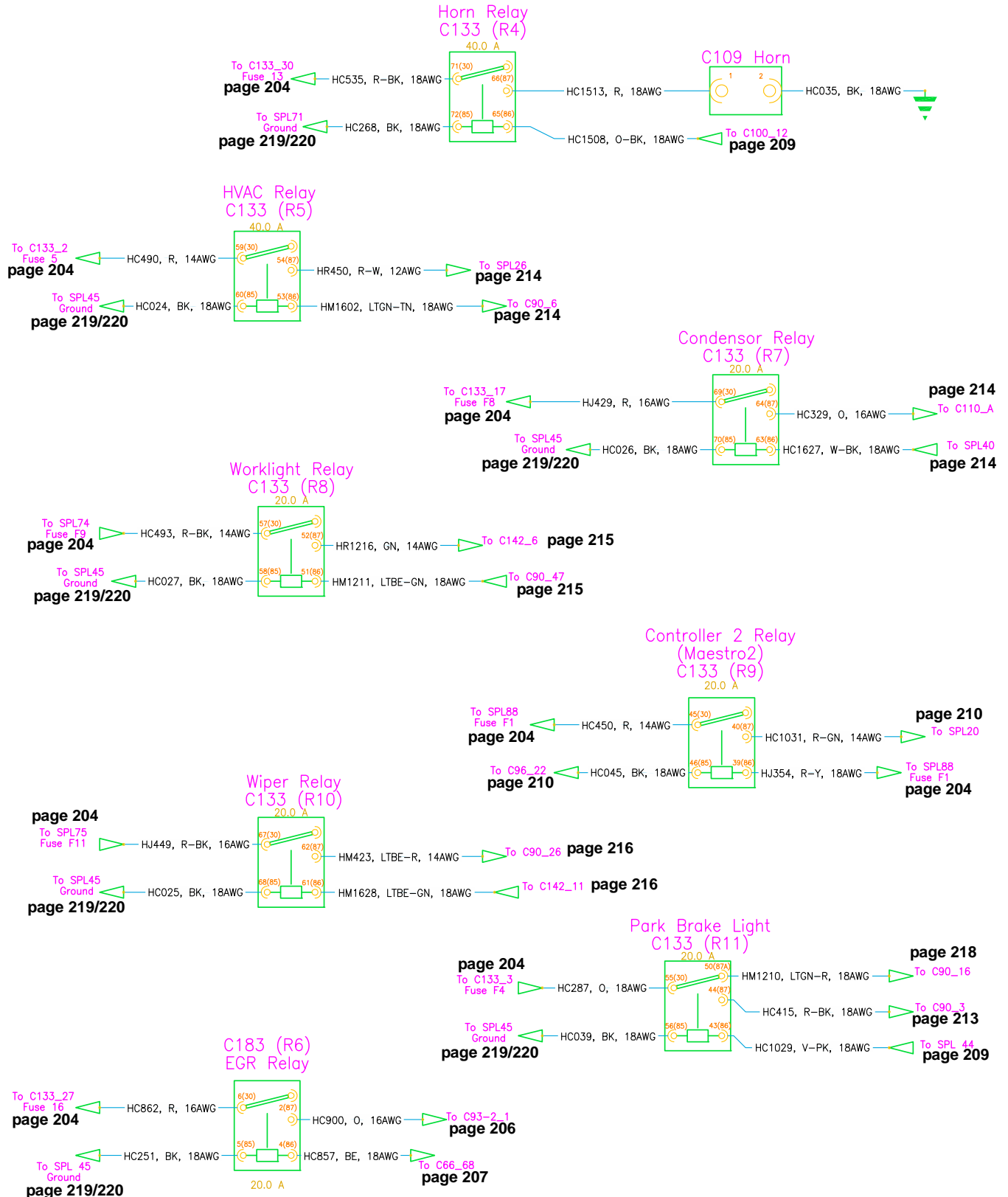
Error Code	Error Description
12	Tilt back valve solenoid A wiring or coil fault
13	Control valve upper auxiliary solenoid wiring or coil fault
14	Control valve lower auxiliary solenoid wiring or coil fault
15	Lift arm up control valve lower solenoid wiring or coil fault
16	Lift arm down control valve upper solenoid wiring or coil fault
22	Left joystick output data fault
23	Right joystick output data fault
24	No left joystick CAN communication
25	No right joystick CAN Communication
35	Swash plate sensor supply voltage fault
36	Battery voltage fault
37	Pump and tilt solenoid supply voltage fault
38	Limp mode (See "Travel Drive Error Condition Operation (Limp Mode)" on page 91)
39	Open loop mode (See "Travel Drive Error Condition Operation (Limp Mode)" on page 91)

## Power Distribution/Fuses – Models RT250

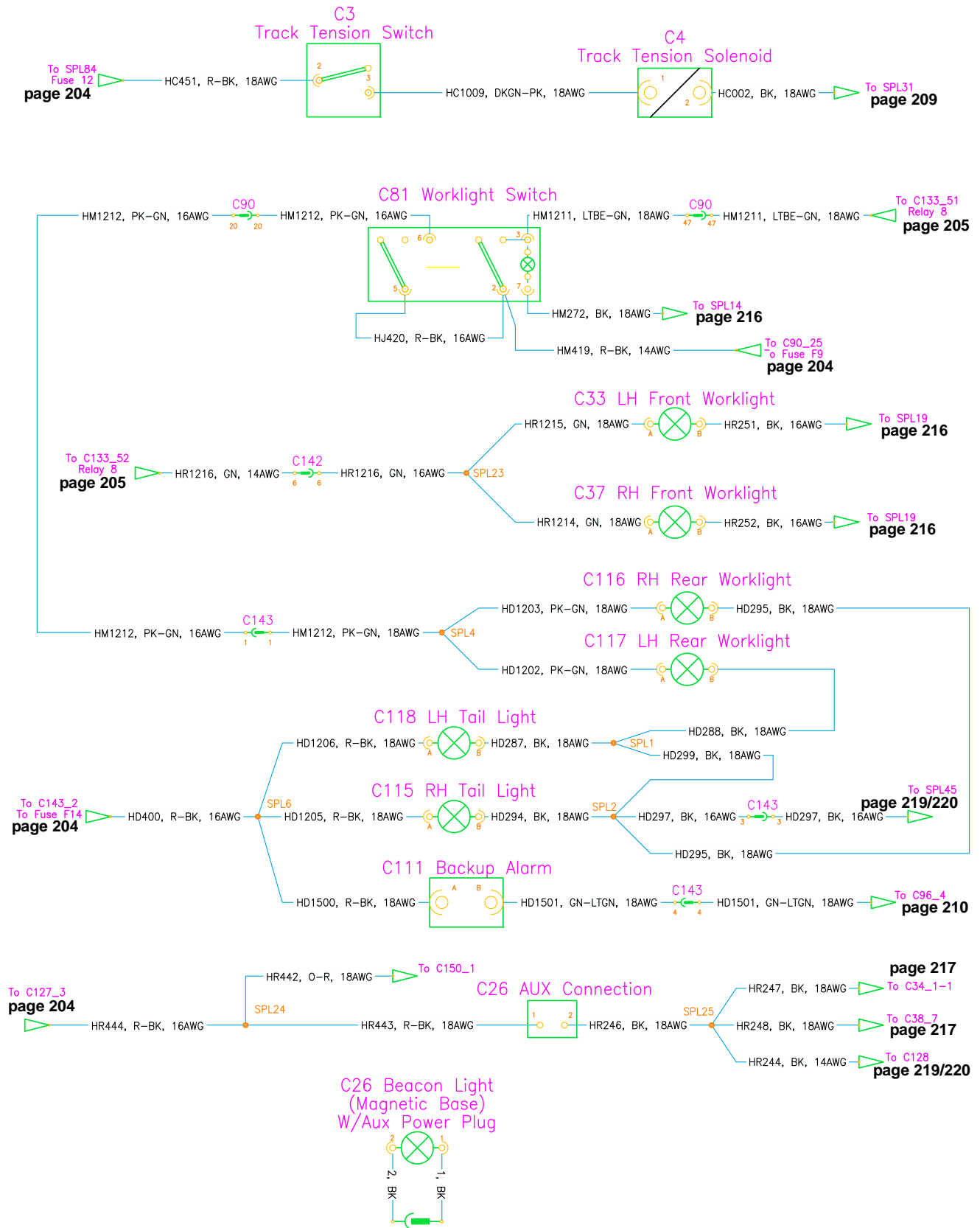




## Power Distribution/Relays – Model RT175 (Serial Numbers 811001 and Up) Model RT210 (Serial Numbers 921001 and Up)

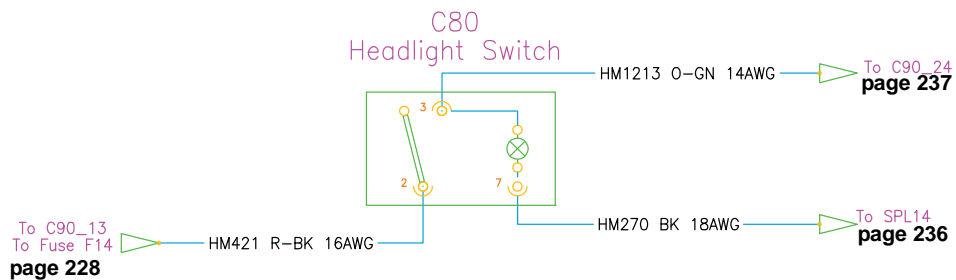
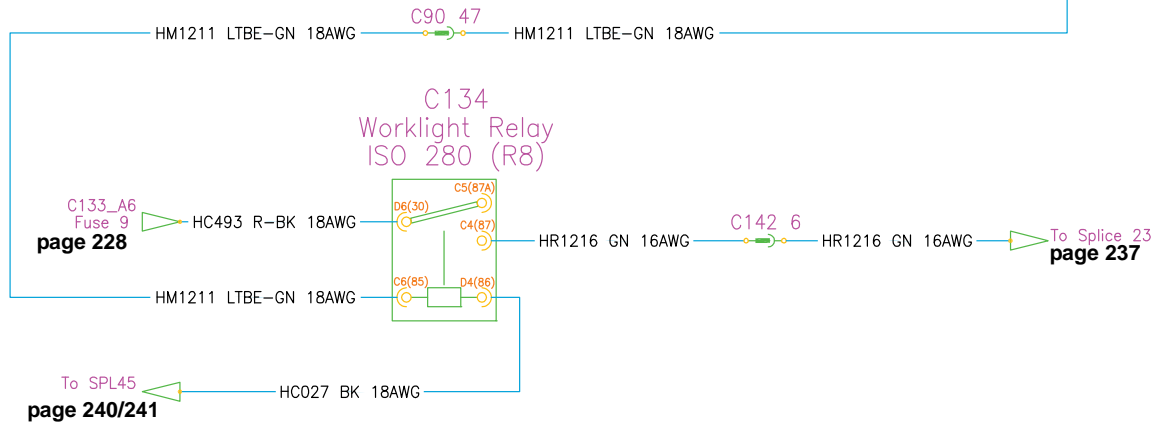
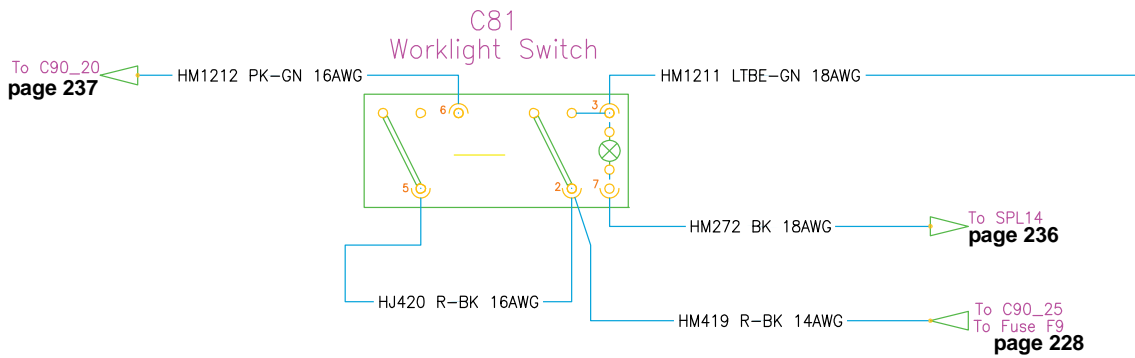
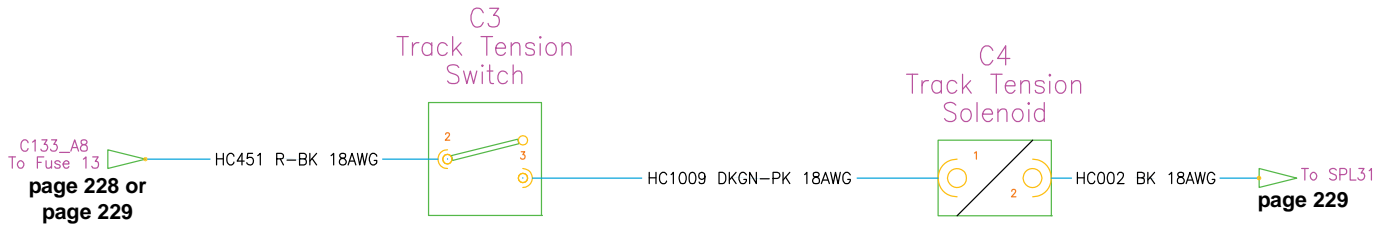


## Track Tension/Work Lights – Model RT175 (Serial Numbers 811001 and Up) Model RT210 (Serial Numbers 921001 and Up)





## Track Tension/Lighting Control – Model RT175 (Serial Numbers 811000 and Before) Model RT210 (Serial Numbers 921000 and Before)



# Index

## A

After Operation .....	83
Air Conditioning	
Maintenance .....	154
Attachments	
14-Pin Connector .....	105
Connecting/Disconnecting .....	101
Hydraulic Powered .....	103
Auxiliary Hydraulics	
High-Flow Control .....	104
Operation .....	104

## B

Backup Alarm .....	92
Battery .....	144
Jump-starting .....	145
Buckets	
Working with .....	106
Digging Tips .....	106
Safety Instructions .....	106
Standard Buckets .....	107, 108
Backfilling .....	110
Scooping .....	107

## C

Cab .....	69
Door Emergency Exit .....	70
Opening/Closing the Door .....	69
Securing the Door in the Open Position .....	59
Checks During Operation .....	68
Component Identification .....	12
Component Serial Numbers .....	11
Contents and Use of this Manual .....	9
Control Joysticks .....	53
Control Sensitivity .....	56
D-H Pattern .....	53
ISO Pattern .....	53
Control Modules .....	152
Controls .....	45
Crane Lifting .....	113

## D

Declaration of Conformity .....	249
Decommissioning .....	156

Delivery Checklists .....	i
DPF Filter Maintenance .....	49, 75
Ash Cleaning .....	49
DPF Ash Cleaning .....	129
Forcing Stationary Regeneration .....	78
Recovery Regeneration .....	81
Regeneration Inhibit .....	79
Reset Regeneration .....	76
Stationary Regeneration .....	76
Drive System	
Travel Speed Range Selection .....	62

## E

Electrical System .....	144
Engine	
Access .....	121
Air Filters .....	125
Cooling System .....	126
Checking Coolant Level .....	126
Cleaning Radiator Fins .....	127
Draining/Refilling Cooling System .....	127
Maintenance .....	121
Oil .....	122
Checking Level .....	122
Filter Changing .....	123
Oil Changing .....	123
Engine Stalling .....	75
Error Codes .....	166
Controller Communication Error Codes .....	166
Drive and Valve Error Codes .....	174
Engine Error Codes .....	166

## F

Final Shutdown .....	156
Fire Extinguisher .....	15
Fuel System	
Maintenance .....	129
Adding Fuel .....	130
Changing Fuel Filter .....	132
Water Separator Inspection/ Maintenance .....	130
Fuses .....	146

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL