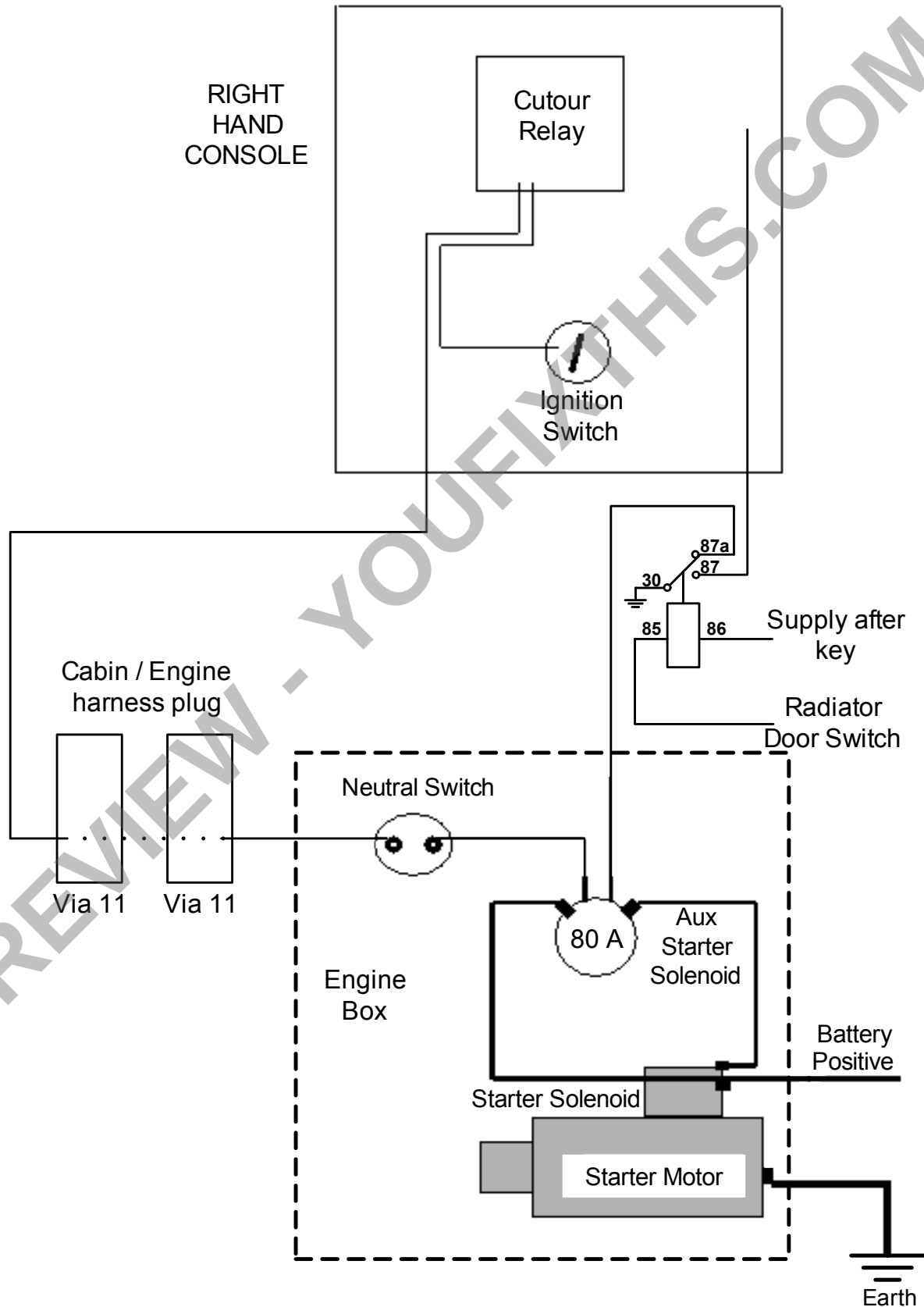
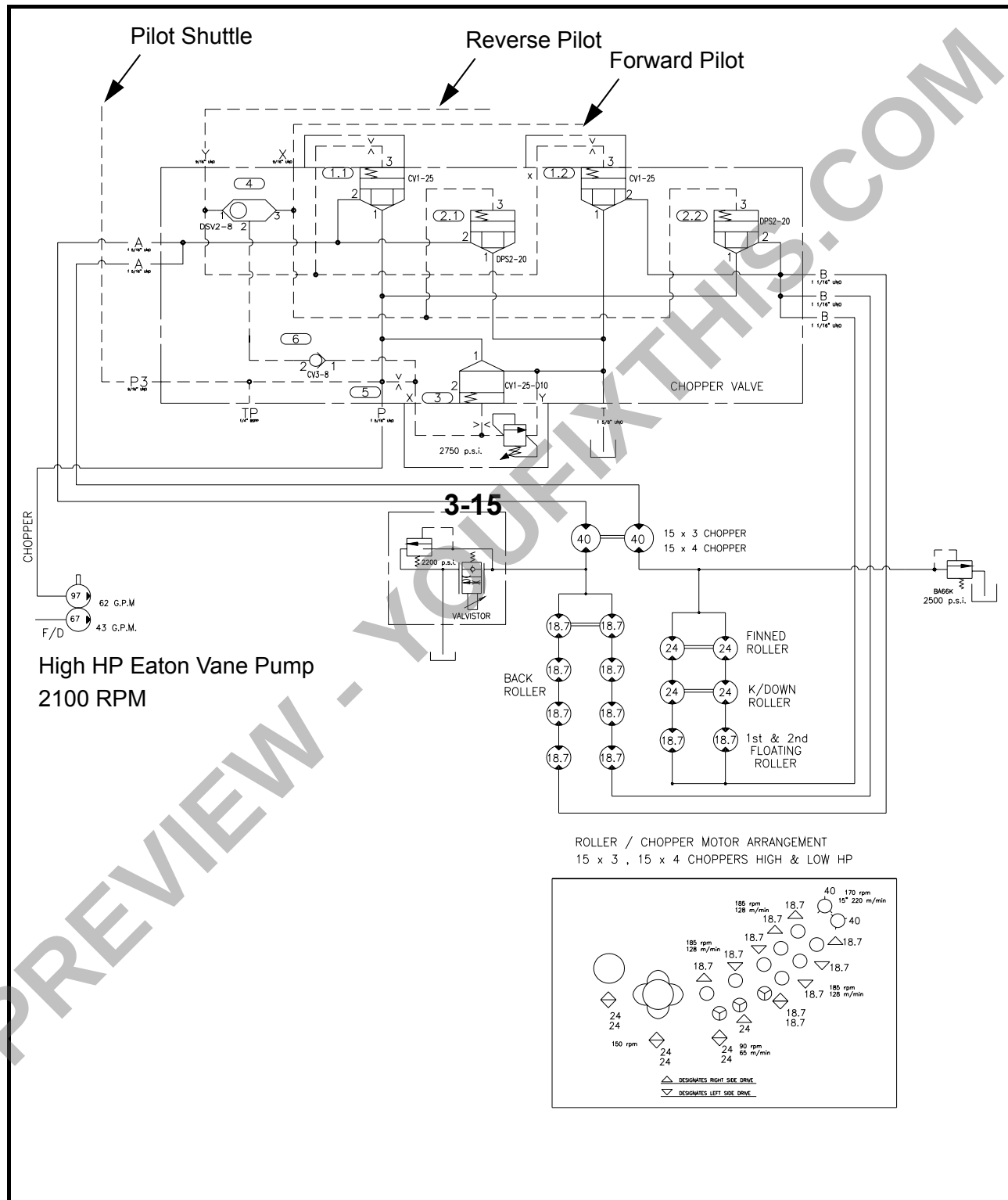


Starter circuit



Hydraulic Circuits

Chopper Circuit



Basecutter Gearbox

The basecutter gearbox is of rigid construction and is mounted into the machine by bolts attached to the sidewalls. The basecutter legs are driven and kept in time by a gear train within the box.

The motive power is supplied by a M51 hydraulic motor mounted on the left hand side of the gearbox. Disc speed is **528 r.p.m.** and the ratio of the box is **2.65:1**.

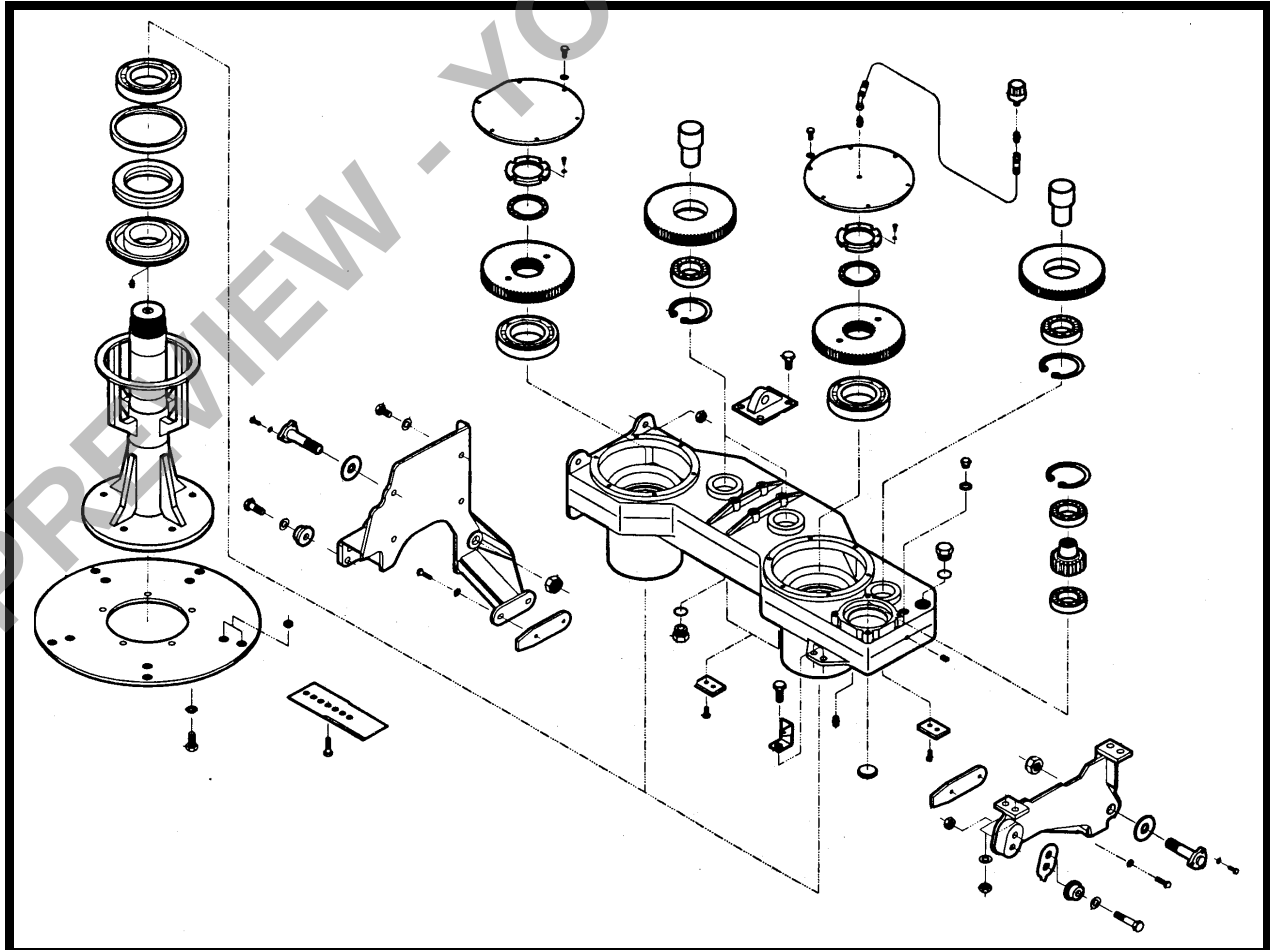
Before removing the basecutter gearbox it may be an advantage to remove the basecutter discs.

Removal

1. Unbolt the basecutter motor from the gearbox and hold clear.

NOTE: No hoses should be removed. Remove the deflector plates and scrapers from the sidewalls, along with the strengthening strut on the left hand side of the machine.

2. Disconnect the breather from the top of the gearbox. On fulltrack (7700) machines remove the finned roller by removing the drive motor assemblies from either end of the roller. To allow easier access, the power knockdown roller can also be removed.
3. On rubber tyred (7000) machines the box can be removed through the side of the machine, therefore removal of the rollers is not necessary.
4. Lower the machine until the basecutter touches the ground. Remove the bolts which mount the basecutter gearbox to the sidewalls. Raise the machine, this will leave the basecutter gearbox on the ground..
5. Remove the gearbox mount from the RH Side of the gearbox (4 bolts). Remove the gearbox mount from the LH Side of the gearbox (4 bolts and from the LH Side of the chassis (2 bolts).



5. Loctite the retainer plate bolts and ensure all idler gears rotate freely {REFER FIG.1}. It is important that a minimal amount of Araldite is used. Any excess Araldite could run into the bearings causing premature bearing failure.
6. The basecutter gearbox has metalface seals (duo cone) fitted to the legs and the upper and lower bearings run in gear oil.
7. To assemble, fit the seal retainer to the basecutter leg. NOTE:- When fitting the seal retainer it is important to align the drain holes with the basecutter disc mounting hole that is located between the webs on the leg. This will allow the plugs to be removed easily when the machine is in service.
8. Fit the lower bearing to the basecutter leg. Ensure that it is fully home on the leg.
9. Fit the toric ring and seal ring to the seal retainer (leg), fit the toric ring and seal ring to the basecutter box. If replacing insert, (refer to item 2 on the drawing on the previous page) ensure it is loctited using Loctite RC/635 or similar.
10. Allow sealant to harden. Unprimed parts at 72° F: 24 - 36 hours. Primed parts at 72° F: Up to 4 hours.
11. Place the basecutter legs the correct distance apart. Then position the gearbox over the legs.

To adjust the basecutter leg bearings

Position the legs so that the basecutter discs will be timed correctly.

NOTE: A timing tool can be made up to achieve this.

Procedure

1. Install the top bearing using Austoft toolpart number 872.524.73 to ensure that the bearings are seated correctly. The correct setting is :- **Zero preload - Zero endfloat.**
2. Apply Araldite to the spline in the drive gear and install the drive gear onto the shaft.
3. Apply Araldite to the thread in the nut and fit the nut to the shaft.
4. Tighten the nut down until the top bearing is firmly seated.
5. Loosen the nut and readjust the bearings to obtain zero preload / zero endfloat.
6. Align the basecutter nut with the nearest of lock tab position and fit the locking bolt.



ADJUSTING THE BASECUTTER LEG

Carry out the above procedure on the other basecutter leg bearings to obtain the correct setting. Zero preload - Zero endfloat. and lock the basecutter leg nut.

7. Apply sealant (Ultra blue) to the covers and fit the covers.
8. Fit the plugs back into the gearbox. (fill, level and 3 x drain plugs.

Torque Values

FASTENER	VALUE FT.LBS	VALUE NM
Basecutter Idler Pin Retainer Plate Bolt	35	45
Basecutter Disc Slip Clutch Bolts (Arduous Conditions)	120	163
Chopper Box Drive Stub to Chopper Drum Bolts	60	80
Chopper Box Drive Gear to Drive Flange Bolts	80	110
Pump Drive Gearbox Cover Plate Bolts	80	110
Pump Drive Gearbox Plate to Flywheel Bolt	45	61
Reduction Hub Stub Mounting Bolts (7000 B35)	180	245
Reduction Hub Ring Gear Bolts 7700	80	110
Reduction Hub Ring Gear Bolts 7000	60	80
Reduction Hub Stub Mounting Bolts (7700 T39)	170 +/- 10	230 +/- 14
Reduction Hub to Drive Sprocket Bolt (7700)	340 +/- 10	460 +/- 14
Grouser Plate to Track Chain Bolt	170	230
Track Roller to Track Frame	170 +/- 10	230 +/- 14
Adjuster Bracket to Front Idler Bolt	240 +/- 10	325 +/- 14
Dead Axle Bearing Retaining Nut	900	1220
Soleniod Coil Retaining Nut	4 - 6	5 - 8
Pivot Axle Mounting Bolts	310	420
Louisiana Full Track Stub Bolts	310	420

PLEASE NOTE: For torque values for sub assemblies (e.g. engine, hydraulic components), please refer to the manufacturers specifications. Anti-seize is applied to all bolts that do not require fastening with Loctite (see chapter 2 for Loctite application). Cadmium plated bolts should not be used where Loctite has to be applied.

Engine Specification

Scania DS 11

- **ENGINE TYPE:** Scania DS11
- **NUMBER OF CYLINDERS:** 6
- **FIRING ORDER:** 1, 5, 3, 6, 2, 4
- **HORSE POWER:** 332 HP in 2100 RPM
- **BORE:** 127mm
- **STROKE:** 145mm
- **CAPACITY:** 11 l
- **LOW IDLE:** 500/700 RPM
- **TAPPET SETTINGS:** inlet - .45mm
exhaust - .80 mm
- **OIL CAPACITY:** 28 Litres. Including filter.
- **OIL FILTER:** Centrifugal main filter,
Replacable turbocharger filter
- **WATER CAPACITY:** 54 Litres total system
capacity.
- **WATER CONDITIONER:** Scania Anti-
corrosive.
- **FUEL FILTER:** Water trap primary.
- **SECONDARY:** Canister Type.
- **SHUT DOWN (SAFETY):** Solenoid
operated fuel cut-off valve operating on oil
pressure, water temperature and hydraulic
oil level with Murphy override control.

Cummins M11C-330

- **ENGINE TYPE:** Cummins M11C-330.
- **NUMBER OF CYLINDERS:** 6.
- **FIRING ORDER:** 1, 5, 3, 6, 2, 4.
- **HORSE POWER:** 330 HP @ 2100 rpm.
- **BORE:** 125 mm.
- **STROKE:** 147 mm.
- **CAPACITY:** 10.8 Litres.
- **HIGH IDLE:** 2200 rpm.
- **LOW IDLE:** 675 - 750 rpm.
- **TAPPET SETTING:** (Refer engine data
plate).
- **OIL CAPACITY:** 38 Litres (including filter).
- **OIL FILTER:** Combination filter full flow
combined with by-pass filter. Spin on/spin
off type element.
- **WATER CAPACITY:** 54 Litres total system
capacity.
- **COOLANT:** 50 / 50 water and ethylene
glycol with the addition of DCA4 corrosion
inhibitor at the rate of 1.5 units (1/3 pint per
US gallon).
- **WATER FILTER:** Canister type
- **FUEL FILTER:** *Primary* : combination
water trap and spin on canister. *Secondary*
: Spin on canister.
- **SHUT DOWN (SAFETY):** Solenoid
operated fuel cut-off valve operating on oil
pressure, water temperature and hydraulic
oil level with Murphy override control.

Engine Coolant

Scania Engine

The water for the coolant should be free of dirt and have a pH of 6-9.

If there is a danger of freezing

Only glycol anti-freeze should be used in the coolant as protection against corrosion. We recommend only nitrite-free glycol anti-freeze with the following supplier designations: **BASF G48 ou BASF D542**

The concentration of glycol should be 30 - 60% by volume depending on ambient temperature. 30% by volume offers protection down to -18 °C.

Never top up with water only or glycol only.

Lost fluid should always be replaced with pre-mixed coolant with the same glycol content as the coolant in the engine. If the concentration of glycol drops, both antifreeze and corrosion protection will suffer.

NOTE: A glycol concentration below 30% by volume will not provide sufficient protection against corrosion. A glycol concentration greater than 60% will not increase anti-freeze protection and reduces engine cooling capacity.

If there is no danger of freezing

Only Scania Anti-corrosive should be used in the coolant to protect against corrosion. The correct level of anti-corrosive is 7-12% by volume and this must never drop below 7% by volume. The inhibitor in Scania Anti-corrosive is nitrate-free.

First fill: Fill with Scania Anti-corrosive as indicated on the packaging.

Never top up with water only or anti-corrosive only!

Lost fluid should always be replaced with pre-mixed coolant: water + 10% Scania Anti-corrosive by volume.

Coolant Change

The coolant should be changed when the cooling system is

cleaned: Every 4,800 hours or at least every 5th year.

Check the coolant every 1000 hours.

Topping up with 1.0% by volume of Scania Anti-corrosive should be done after every 2,400 operating hours.

Cummins Engine / CASE 10.3I

Heavy duty diesel engines require a mixture of water and ethylene glycol at 50-50 mix, with supplemental coolant additives. Is recommended the use of DCA4.

Drain and replace the mixture every 2 years, or 6,000 hours of operation, whichever occurs first.

Use soft water in the coolant mixture.

Contaminants in hard water neutralize the corrosion inhibitor components.

Water must not exceed 300ppm hardness or contain more than 100ppm of either chloride or sulfate.

Maintain supplemental coolant additive at the rate of 1/5 pint.

Panel

RH Console - Top section



1. Secondary hood slew
2. Topper
3. Drive trains direction
4. Bin flap
5. Primary extractor hood slew
6. Elevator - height
7. Elevator chain direction
8. [LH] Side trim direction
9. [RH] Side trim direction
10. Basecutter tilt
11. PKD roller raise
12. [LH] Side trim raise and lower
13. [RH] Side trim raise and lower
14. [LH] Coropdivider tilt
15. [RH] Coropdivider tilt
16. Billet length

Troubleshooting - Starter Circuit

The engine will not crank

Check the battery isolation switch is on.

Check all harvesting function switches are switched off. (Lights in switches indicate switch is on.)

Check that traction lever / levers are in the neutral position.

Check that the radiator door is closed.

The above procedure eliminates all the safety devices in the circuit if the circuit is not damaged.

Switch off the RHS console isolation switch located under the armrest. This will isolate any problems in the harvest function switches.

Check for power at the switches (Lights, A/C, Horn ect.) If no power check the batteries and isolation switch.

Check for power at the main starter motor terminal.

Check for power at the ignition switch, if no power check wiring.

Check for power at the orange wire on the starter motor solenoid when the ignition switch is placed in the start position. If there is power at this terminal, and the engine will not crank. Check the start relay. To check the start relay turn the ignition key to the crank position and press the murphy switch button. If the fuel shutdown solenoid is operational the circuit is OK. If all check out ok, repair the starter motor.

Engine Cranks But Will Not Fire

With the ignition turned on depress the override button on the murphy watchdog relay.

If an audible click is heard the fuel solenoid and murphy relay are working and the problem is mechanical and not electrical.

If the solenoid does not work check that the solenoid plunger is free to move and that the linkage is not binding

If this is not the cause of the problem open the dash and check the murphy relay fuse.

If the fuse is in working condition check the operation of the murphy relay. With the ignition switched on and the override button depressed the relay should be supplying power to the C terminal.

If the murphy watchdog relay is working next check the operation of the two relays in the right hand seat console.

The **50A** relay mounted on the side of the right hand console should be energised when the **20A** relay is activated and directs power from the starter motor solenoid terminal to the fuel shutdown solenoid pull coil.

If the relays are working correctly check that power is being supplied to the fuel solenoid and that it is in working order.

If all of the electrical system is functioning correctly, the mechanical system must be investigated.

PREVIEW - YOUFIXTHIS.COM

Triturador de Pontas

The topper consists of a sturdy frame to which is mounted two fingered gathering discs driven individually by Charlynn "S" 1¹/₄" KS Orbital Motors.

The 24 blade topping drum is mounted between the gathering discs, and 10 blades are bolted to the frame (5 per side), on which the topper drum blades cut.

The topping disc is driven by a Commercial M50 Motor, 2¹/₄" Gear.

Care should be taken to ensure all bolts and nuts are secure at all times to minimise damage to the rotary and fixed components.

Disassembly

Removing the gathering discs and bearings

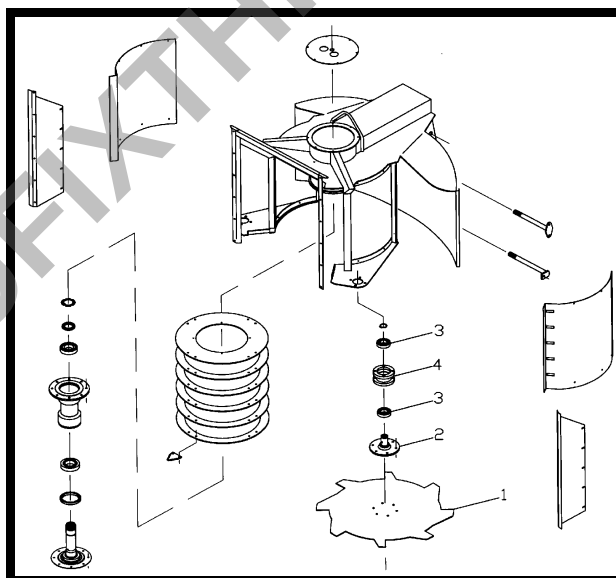
1. Remove the six bolts holding the gathering discs to the drive flanges (1).
2. Remove the hoses from the Char-lynn Motors (Plug and cap all oil lines).
3. Remove the two bolts holding the Charlynn motors to the bearing housing and remove the motors.
4. Mark the motors left hand and right hand, and secure the drive keys.
5. Remove the circlips from the shafts (2), and push the shafts down through the bearings (3).
6. The bearings can now be removed, and or the housings (4) removed from the topper frame then stripped.

Removing the topper shredder drum

1. After both gathering discs have been removed, the severing drum can be removed.

CAUTION: The blades on the severing drum are self sharpening EXTREME caution must be taken when removing the severing drum.

2. Support the severing drum, then remove the eight bolts which mount the drum to the shaft. Then remove the drum.



Assembly

Assembly is the reverse of disassembly.

Primary Extractor - Vertical Arm (Anti-vortex)

The vertical arm extractor consists of a fan driven by a hydraulic motor which is bolted to the top of a tripod mount. The tripod mount in turn is bolted to the outside of the primary cleaning chamber.

A vertical shaft in the centre of the mount carries the fan carrier on tapered roller bearings. These bearings are lubricated with grease.

The fan carrier is driven by a splined shaft. The coupling connecting the splined drive shaft to the motor has an external spline which is used to trigger the pickup for the primary extractor tachometer.

To replace the extractor blade set

1. Remove the lower fairing by removing the central bolt.
2. Remove the bolts holding the blades to the fan hub.
3. Replace the worn blades with new blades

NOTE: Always use genuine Case Austoft Blades, which are sold in balanced sets.

To remove the anti-vortex style fan hub

1. Remove the lower plastic fairing by removing the central bolt.
2. Remove the fan blades.
3. Remove the eight (8) nuts holding the fan hub on to the adaptor.
4. Remove the fan hub and upper fairing assembly.
5. The upper fairing assembly can be removed by removing the eight (8) bolts from the inside rim of the hub. On Assembly, Care must be taken to prevent damaging the threads moulded into the plastic.

Assembly

Assembly is a reversal of the above procedure.

To overhaul the vertical arm extractor

**Refer to picture on the next page.*

1. Remove the extractor fan.
2. Remove the extractor fan mounting flange (1), from the bearing housing (2), and with draw the drive shaft (6).
3. Bend back the locktab on the lockwasher and remove the bearing retaining nut, this will allow the bearing housing and drive sleeve (4) to slide off the centre bearing mount (5).
4. Clean all components and check for wear or damage, and replace where necessary.

To reassembly the vertical arm extractor

**Refer to picture on the next page.*

1. Assemble the bearing carrier (2) with seals and bearings together with drive sleeve (4).

NOTE: Pack the bearing and fill bearing housing with grease.

2. Slide the assembly over the bearing mount (5).
3. Install the lower bearing cone, washer, lockwasher, and nut.
4. Adjust the bearings to zero endfloat, zero preload with the bearing retaining nut. Align slot in retaining nut with tab on lock washer, and bend tab to lock the nut to the shaft.
5. Ensure drive motor coupling is fitted to drive shaft (6), the coupling has an internal circlip fitted giving a long and short spline engagement. The short spline engagement fits to the drive shaft. To the other end of the drive shaft (i.e. the end with the external circlip fitted) fit the fan mounting flange.

GUIDING GUARD WEAR

Link wear like this results from contact with guiding guard wear strip

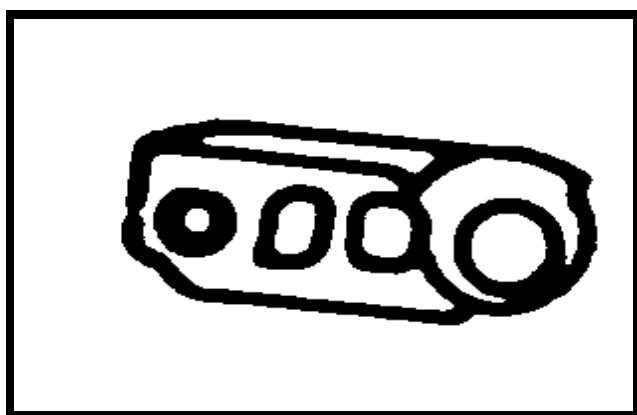


ILLUSTRATION 13

TRACK LINK SPEC.

AUSTOFT P/No. 001.339.20

PART NUMBER

7K 1825

HEIGHT

95.3mm (3.75")

RE-BUILT LIMIT

88.9mm (3.50")

ALLOWABLE WEAR

TO RE-BUILD

06.4mm (0.25")

ROLLER FLANGE TO PIN BOSS CLEARANCE

12.7mm (0.50")

CASE DEPTH TO Rc

45 8.89mm (0.350")

BOLT SIZE

9/16"

DESIGN

See picture.

TRACK LINKS

Percent Worn Chart 7k-1825-26

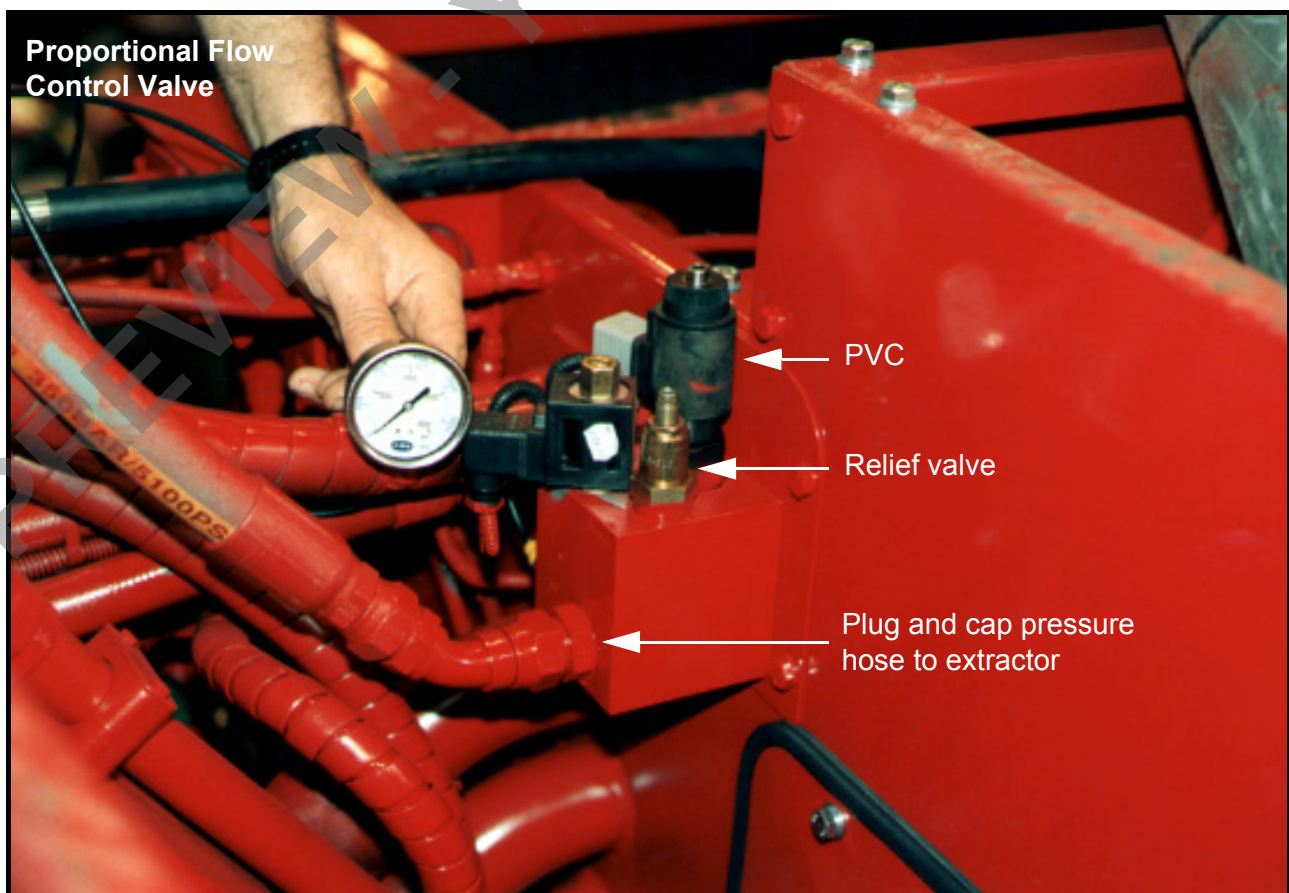
Inches	%Worn	mm
3.75	0	95.3
3.74	4	95.0
3.73	8	94.7
3.72	12	94.5
3.71	16	94.2
3.70	20	94.0
3.69	24	93.7
3.68	28	93.5
3.67	32	93.2
3.66	36	93.0
3.65	40	92.7
3.64	44	92.5
3.63	48	92.2
3.62	52	91.9
3.61	56	91.7
3.60	60	91.4
3.59	64	91.2
3.58	68	90.9
3.57	72	90.7
3.56	76	90.4
3.55	80	90.2
3.54	84	89.9
3.53	88	89.7
3.52	92	89.4
3.51	96	89.2
3.50	100	88.9
3.49	104	88.6
3.48	108	88.4
3.47	112	88.1
3.46	116	87.9
3.45	120	87.6
3.44	124	87.4
3.38	128	87.1

To check the primary extractor relief valve

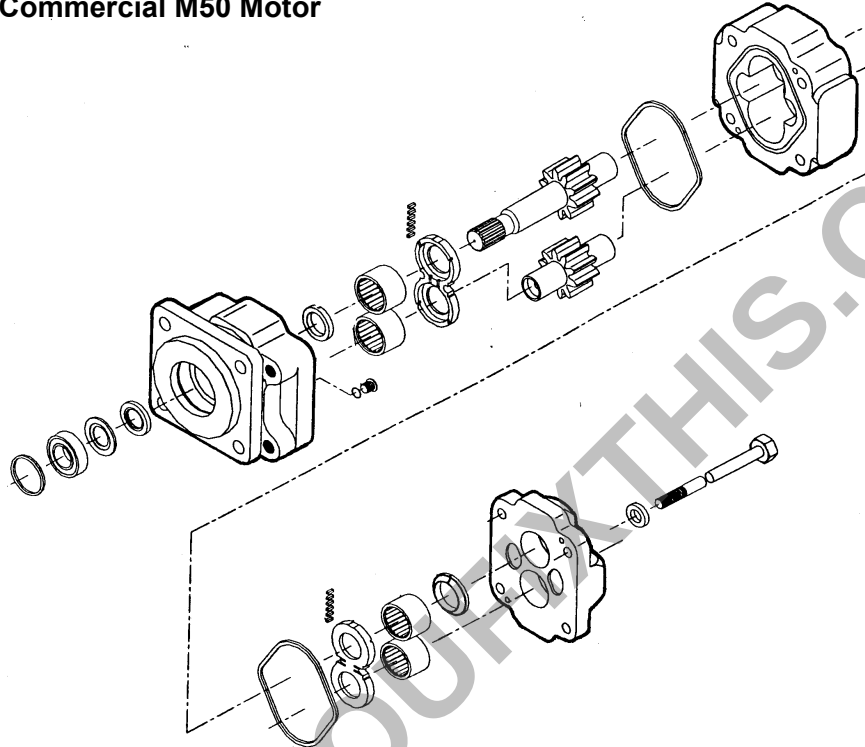
Connect a 5000 psi gauge to the test point on the proportional flow control valve manifold. Cap and plug the pressure hose on the extractor motor. Engage the extractor fan and set the relief valve to **3500 psi**. Reconnect the hose and remove the gauge.

Relief valve setting 3500 psi.

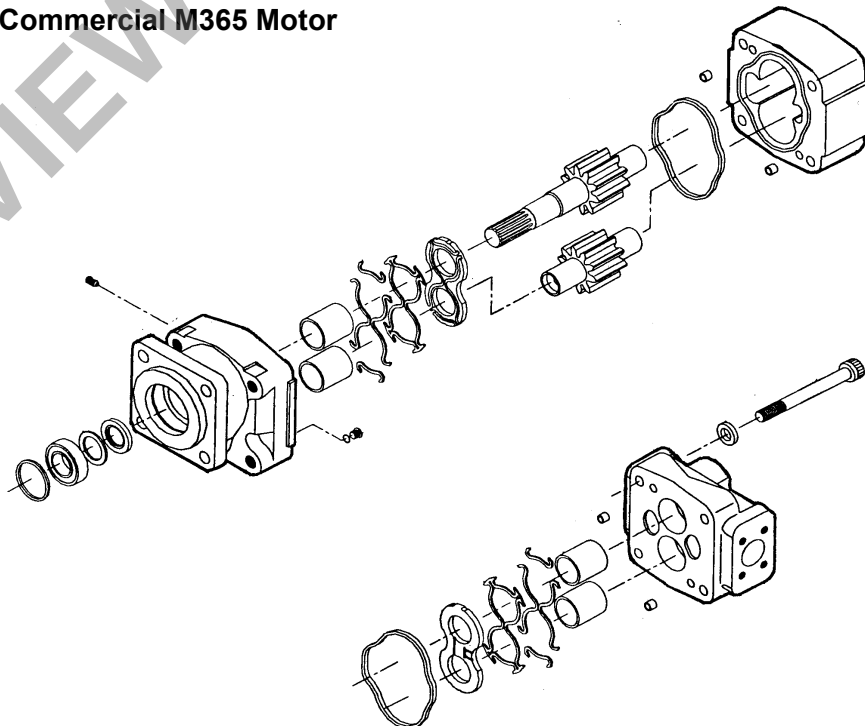
NOTE: The extractor speed should be set to maximum speed when testing.



Commercial M50 Motor



Commercial M365 Motor



Bin deflector cylinder

Disassembly

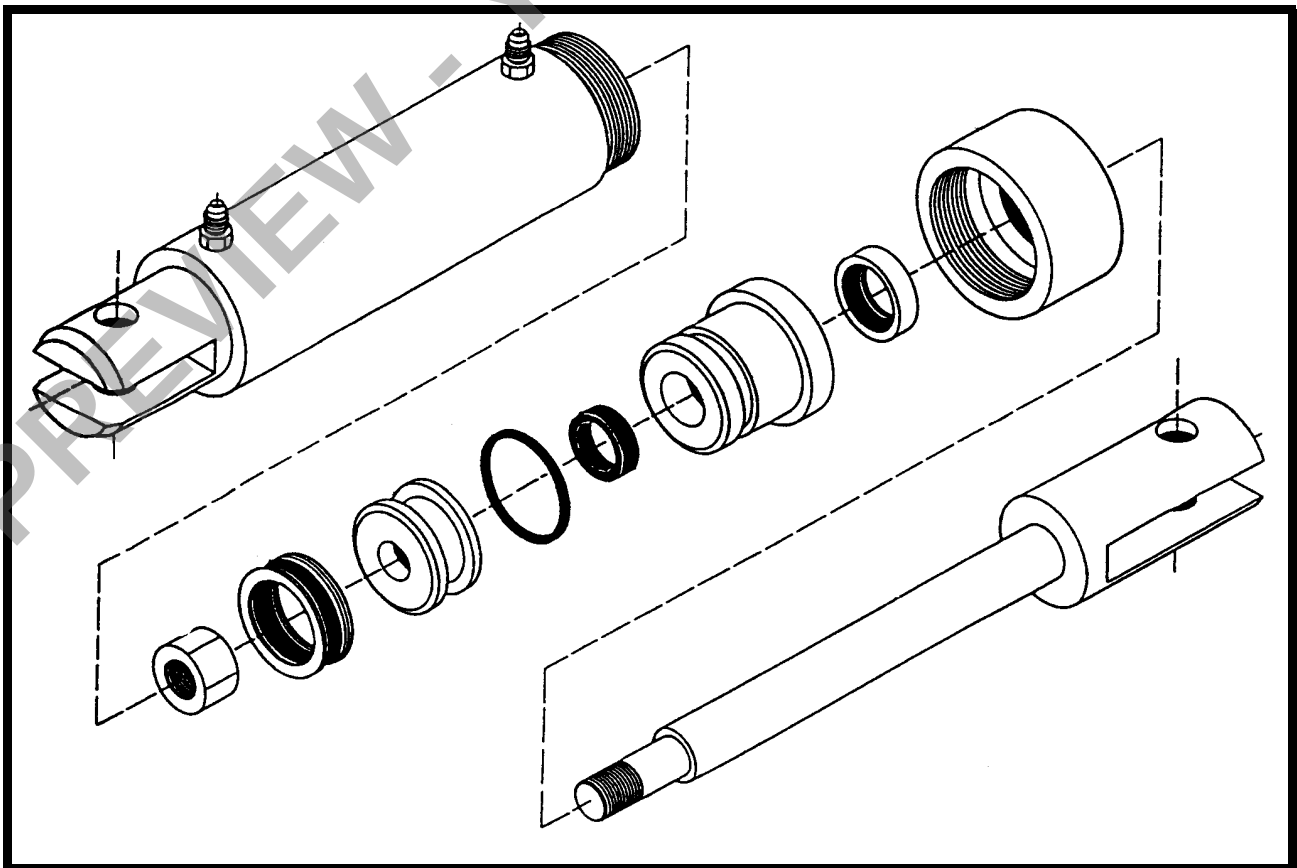
Undo the cylinder nut (5) and remove the rod assembly (2) from the barrel (1).

Remove the nut (4) holding the piston (3) to the rod.

Examine all seals and surfaces. Replace where necessary.

Assembly

assembly is the reverse of the above procedure.



Starter Circuit

Starter Circuit

The starter is operated by the ignition switch which receives power from the battery via the isolation switch (red wire).

Turning the key to the start position, connects the start relay mounted in the engine box (orange / white). The ignition lockout relay interrupts the start circuit when any of the harvest functions are activated.

Located in this wire we have the transmission neutral switch.

In the solenoid is connected the black / blue wire radiator door switch, this same wire is the ground of the circuit. Only DS11, M11 engines!!!

NOTE: Lights (Green) located in the switches on the console will indicate if a switch (Circuit) is on.



Testing neutral lockout timer box

To test the starting function of the timer box, remove the four screws and cover from it.

Connect a multimeter set on OHMS across terminals 5 and 6 on the terminal strip inside the box. If the meter reads "0" indicating a closed circuit, then the start function is working.

To test the locknot function, turn the ignition on and check the reading on the meter across 5 and 6.

As each of the functions listed below is engaged, the reading on the meter should change from "0" to infinity indicating an open circuit. When the switch is returned to neutral, the reading on the meter should return to "0".

The functions that operate the lockout are:

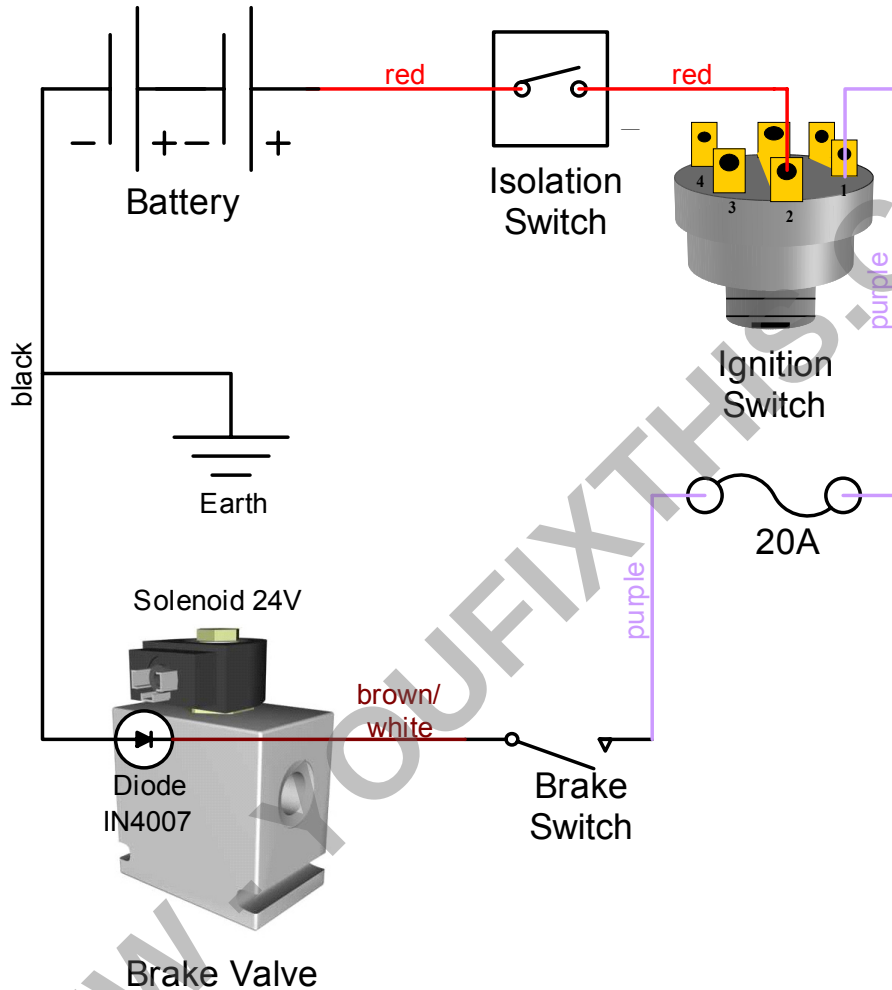
1. Forward and reverse operation;
2. Base Cutter forward and reverse;
3. Topper;
4. Side trim knives forward and reverse;
5. Radiator Door Opened (M11 and DS11).

If any of the functions fail to make the reading on the meter change, ensure power is being supplied to the box by that function.

If the timer box is functioning correctly and all functions are in neutral power is supplied to pin 11 (Orange/White wire) Located in the 36 pin plug located under the operators seat.

Brake

Brake Circuit



NOTE: In case the brakes doesn't work when you start it by the knob, check if the coil is been powered. In case positive, replace it.



Chain brake solenoid

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