

WAITER's

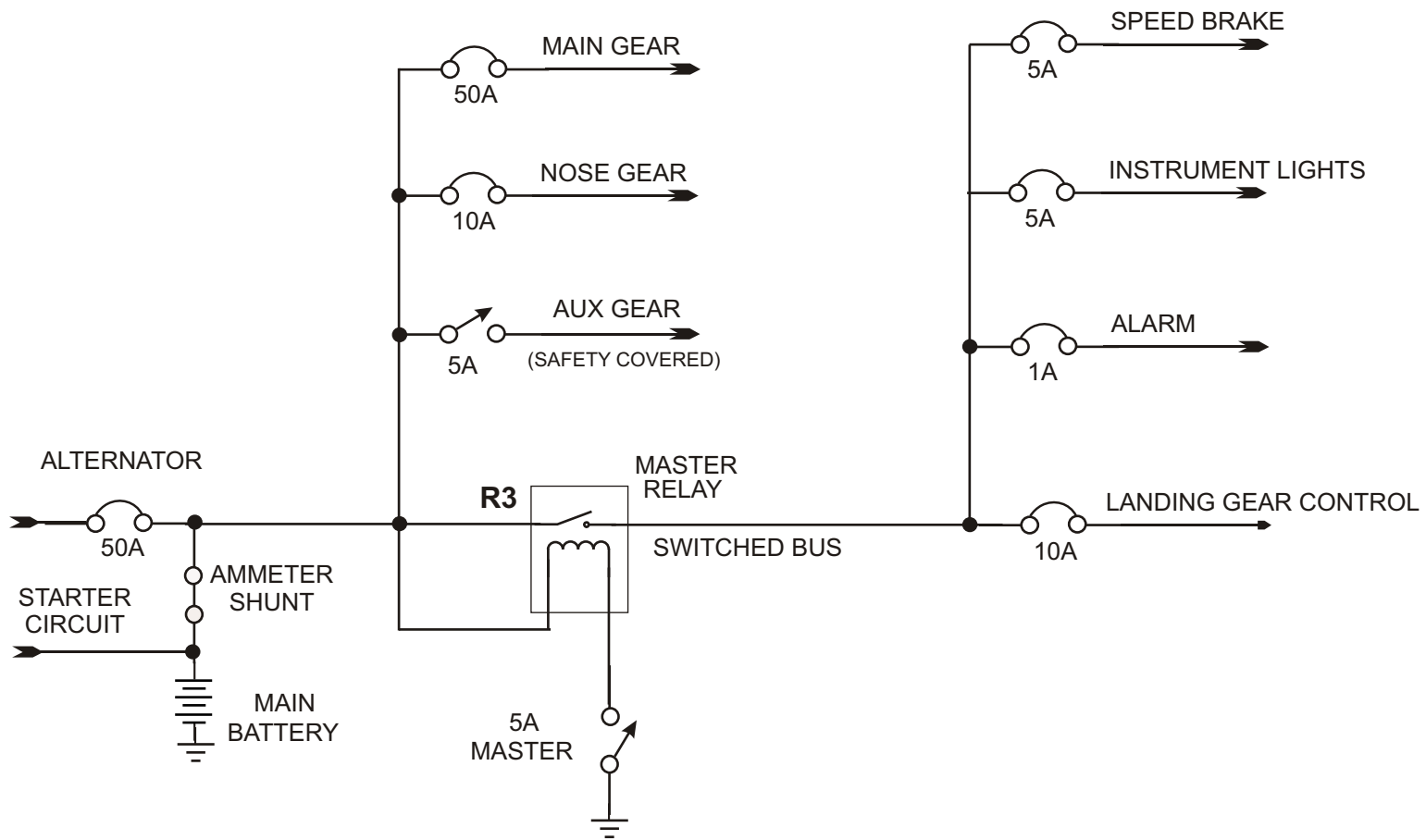
LANDING GEAR CONTROLLER

LONGEZ - BERKUT

REVISION HISTORY

The Drawing, Firmware, and Manual version numbers should all match.

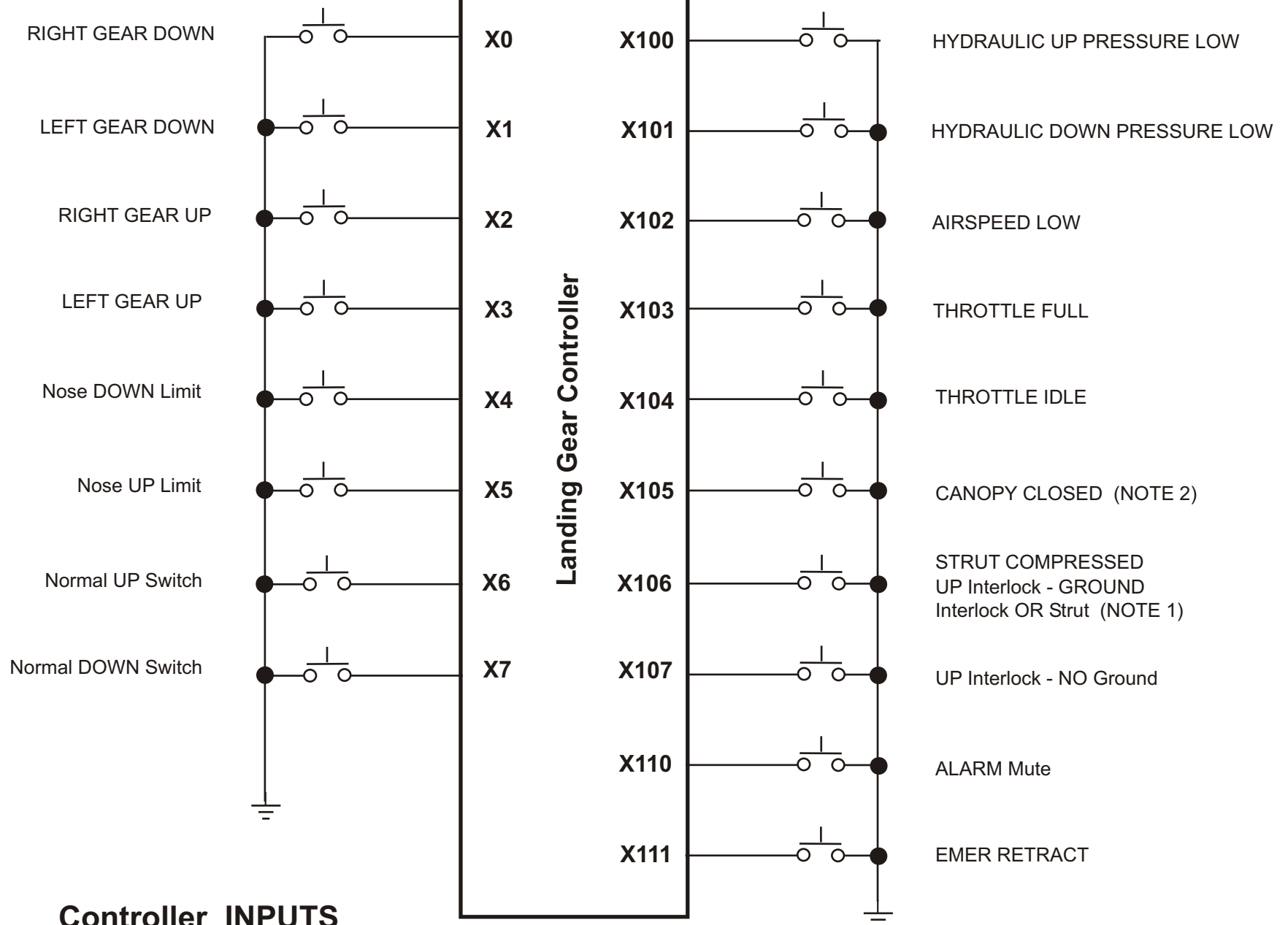
2.2.0	28 FEB 2010	Add C121 and C122 to for Nose Split and Hydraulic Operation
2.1.4	06 OCT 2008	Fix Infinity Strut switch on X106
2.1.3	12 JUL 2008	Add Firmware Switch to allow NC/NO switches & Strut/Spd Brk
2.1.2	31 MAY 2007	Correct for NC vs NO on the Hydraulic switch.
2.1.1	29 MAY 2007	Stuck MUTE button alarms ½ sec ON ½ sec OFF
2.1.0	26 MAY 2007	Change logic of Canopy Open and Airspeed Sensor
2.0.1	23 MAY 2007	INITIAL RELEASE
1.1.2		BETA NOT RELEASED



MAIN POWER

15 OCT 2009

All Diodes are 1N4004

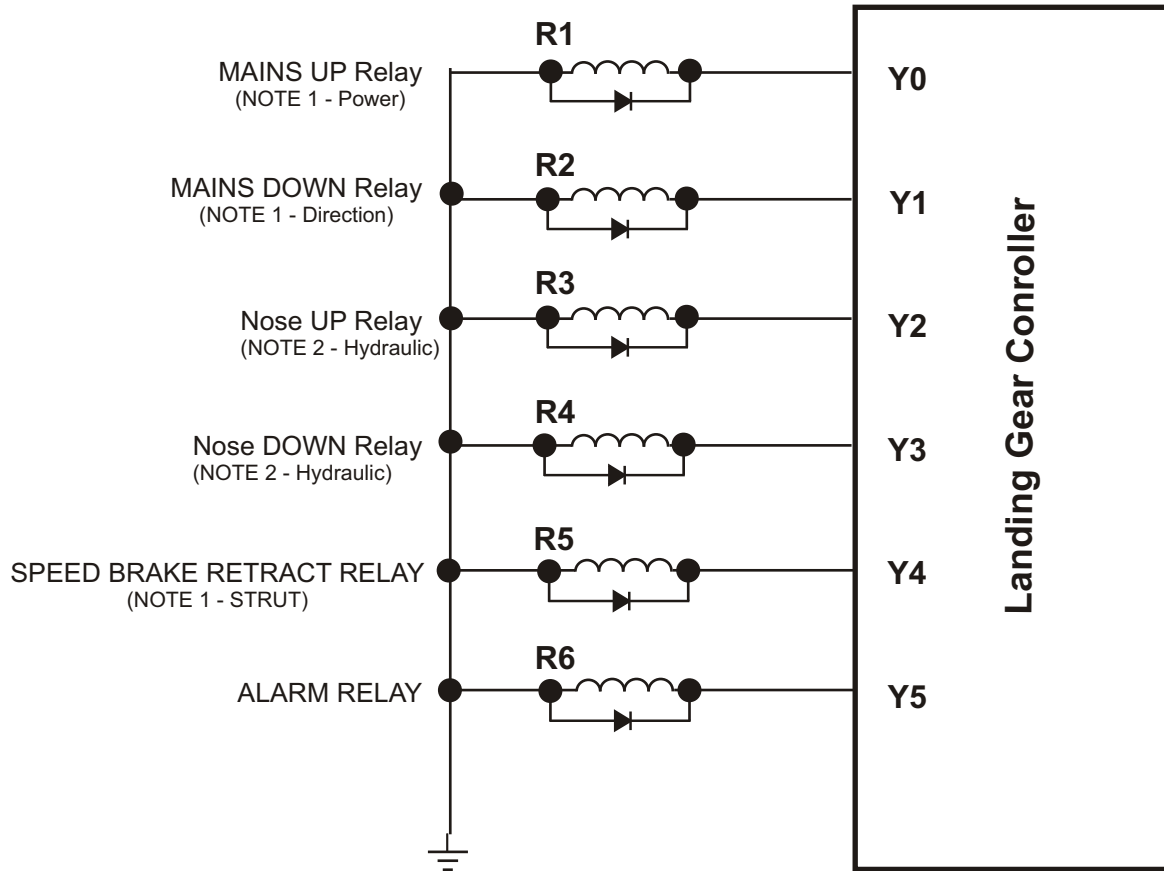


Controller INPUTS

6 OCT 2008

NOTE 1 - Depending on how the Controller is programmed, these outputs could serve either of these two functions.

NOTE 2 - See CANOPY PROXIMITY SENSOR



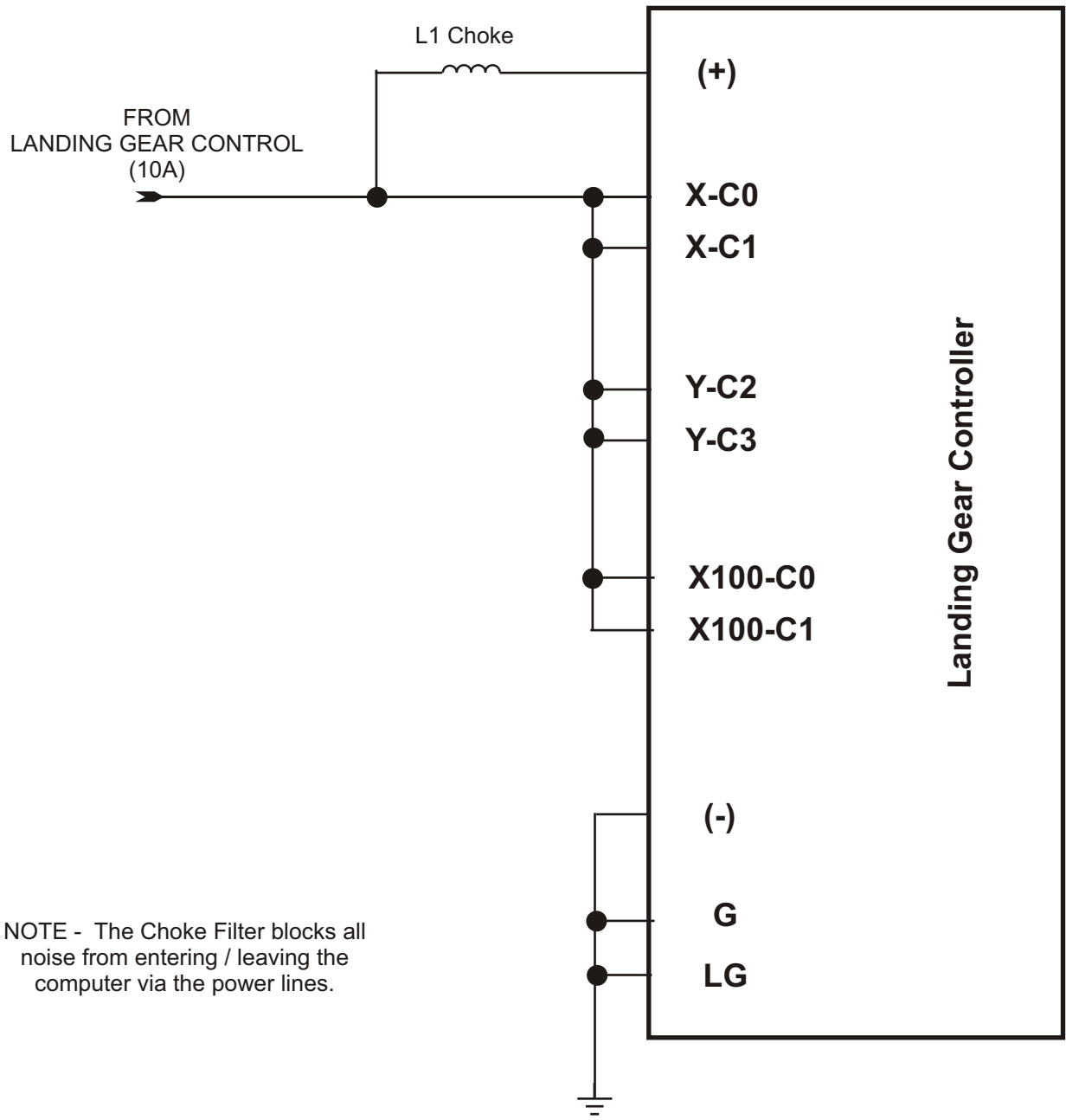
All Diodes are 1N4004

NOTE 1 - Depending on how the Controller is programmed, these outputs could serve either of these two functions.

NOTE 2 - If the Nose is set up to use Hydraulics, Y2 is then used for the Speed Brake Retract, and Y3 is not used.

Controller OUTPUTS

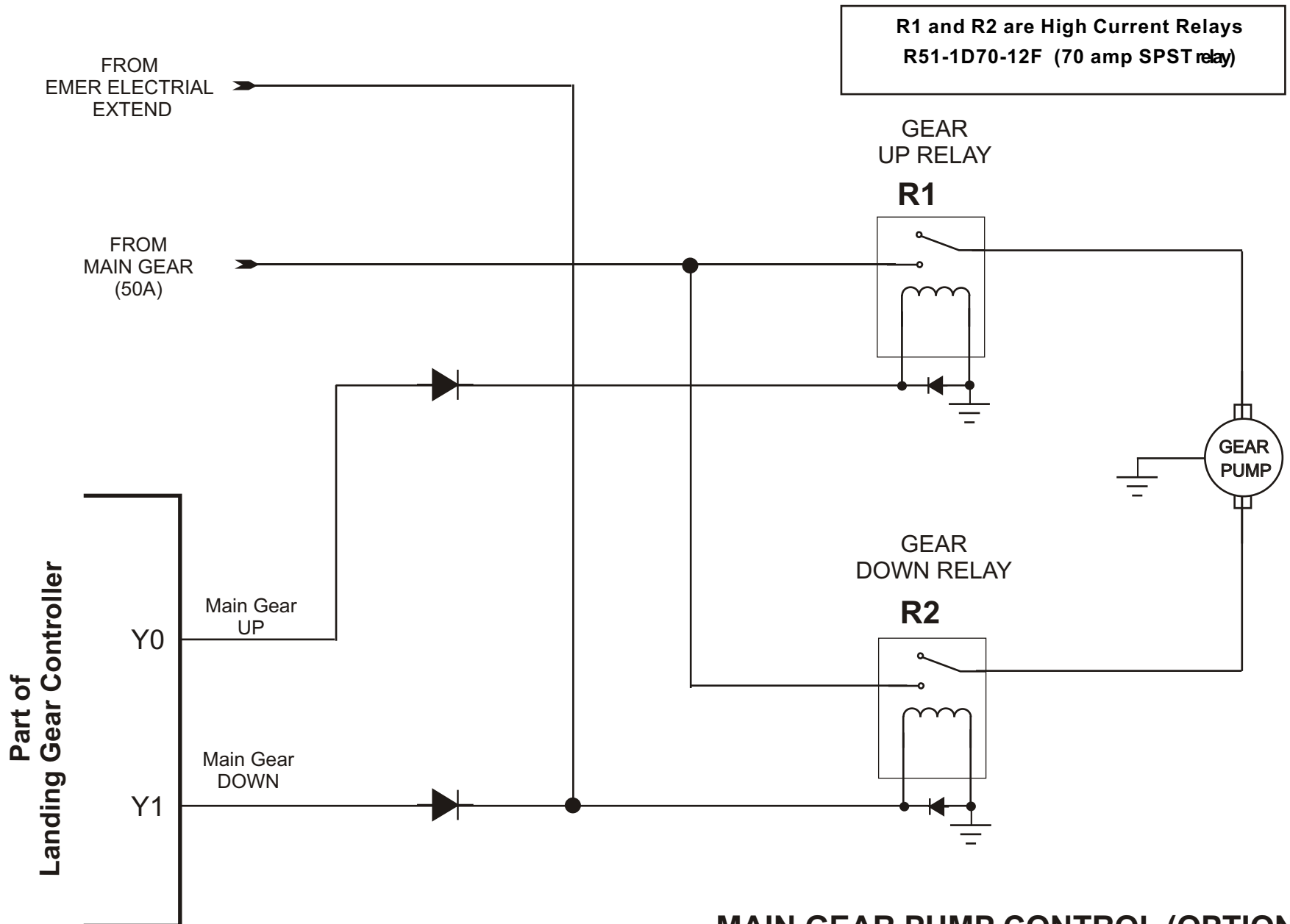
28 FEB 2010



NOTE - The Choke Filter blocks all noise from entering / leaving the computer via the power lines.

Controller POWER

15 MAY 2007



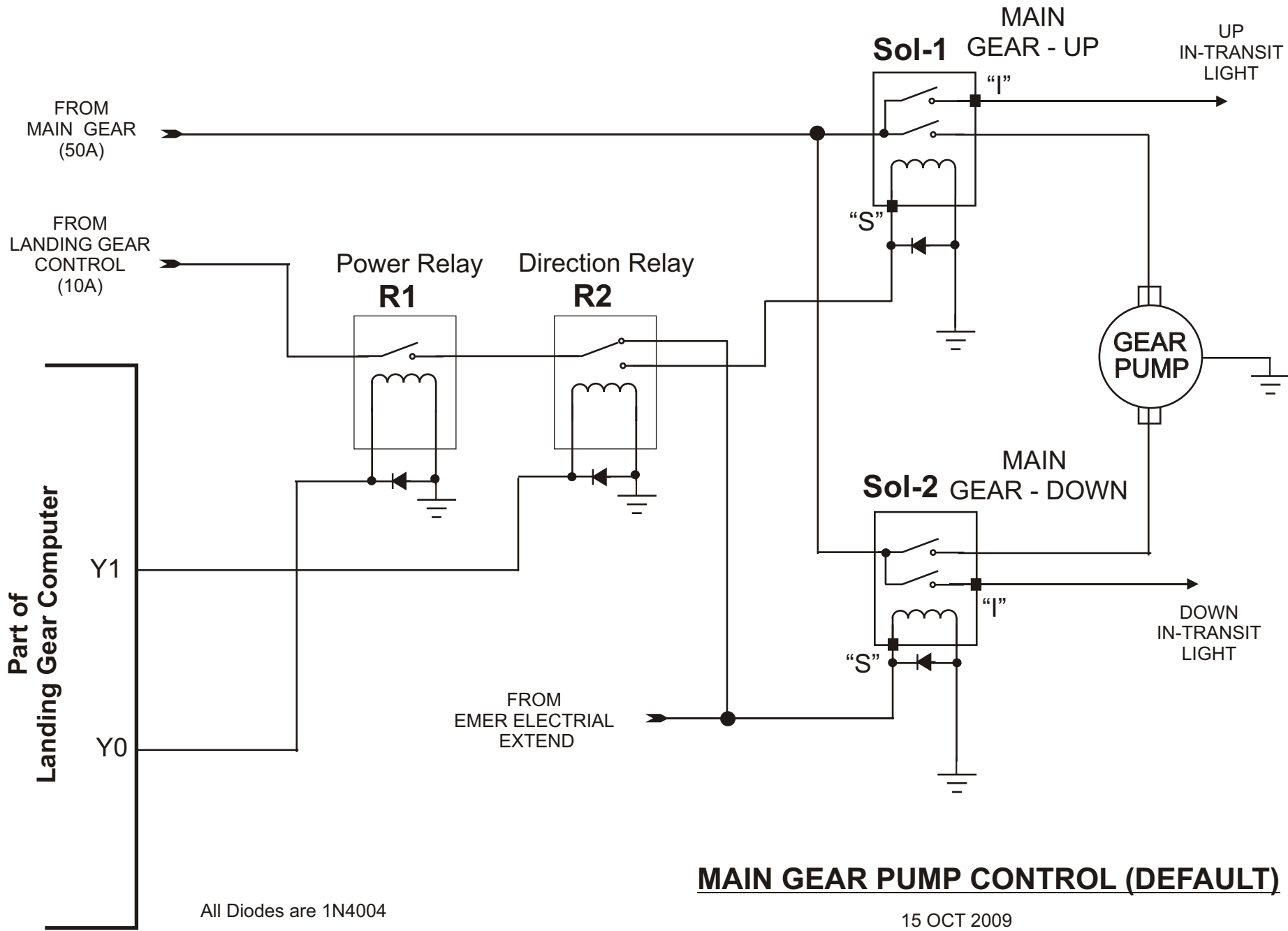
R1 and R2 are High Current Relays
R51-1D70-12F (70 amp SPST relay)

All Diodes are 1N4004

22 MAY 2007

NOTE: Use this diagram if UP/DOWN relays are controlled directly. (Must be programmed into PLC)

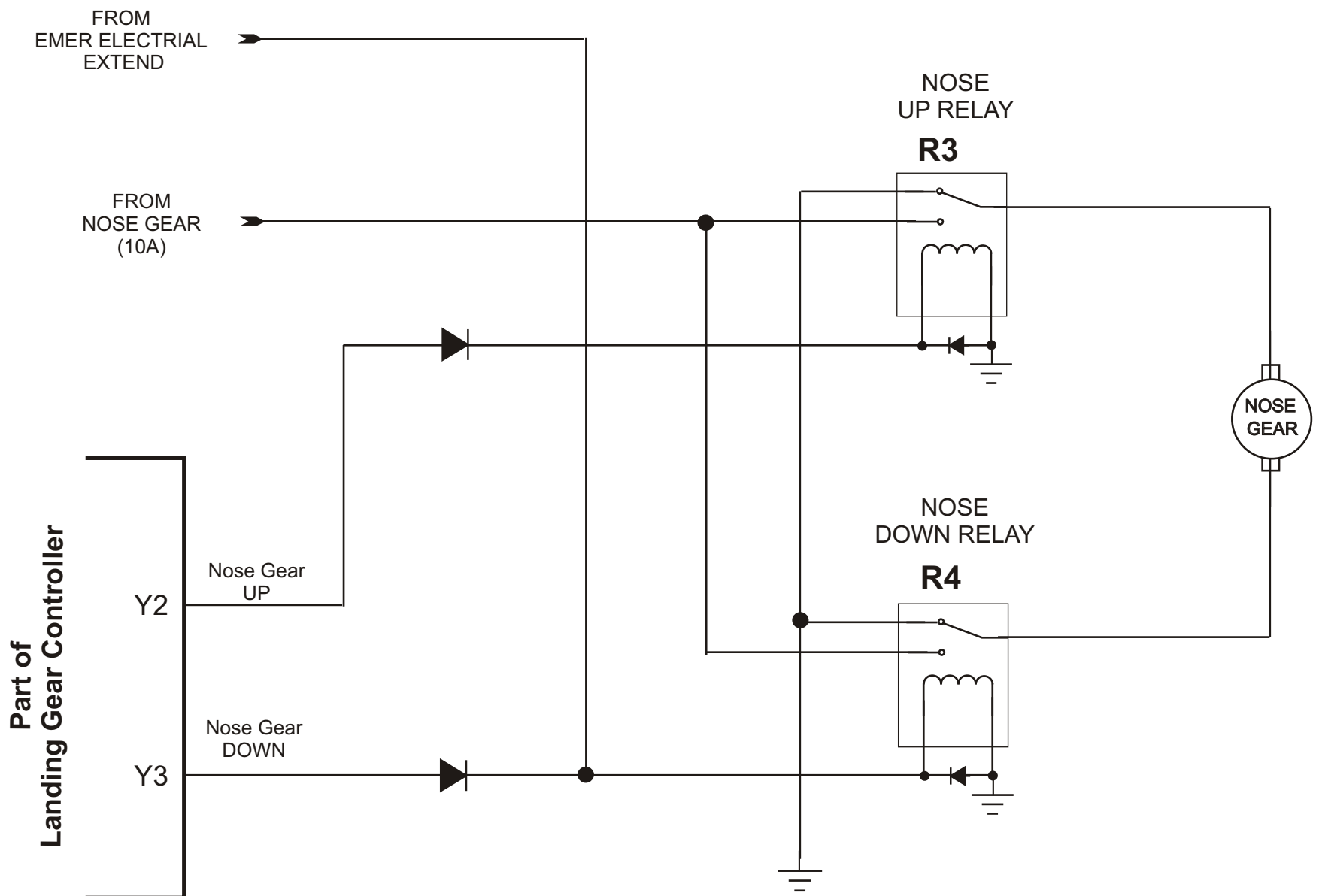
MAIN GEAR PUMP CONTROL (OPTIONAL)



MAIN GEAR PUMP CONTROL (DEFAULT)

15 OCT 2009

NOTE: Use this diagram if UP/DOWN Solenoids are controlled via Direction and Power relays. (Must be programmed into PLC)

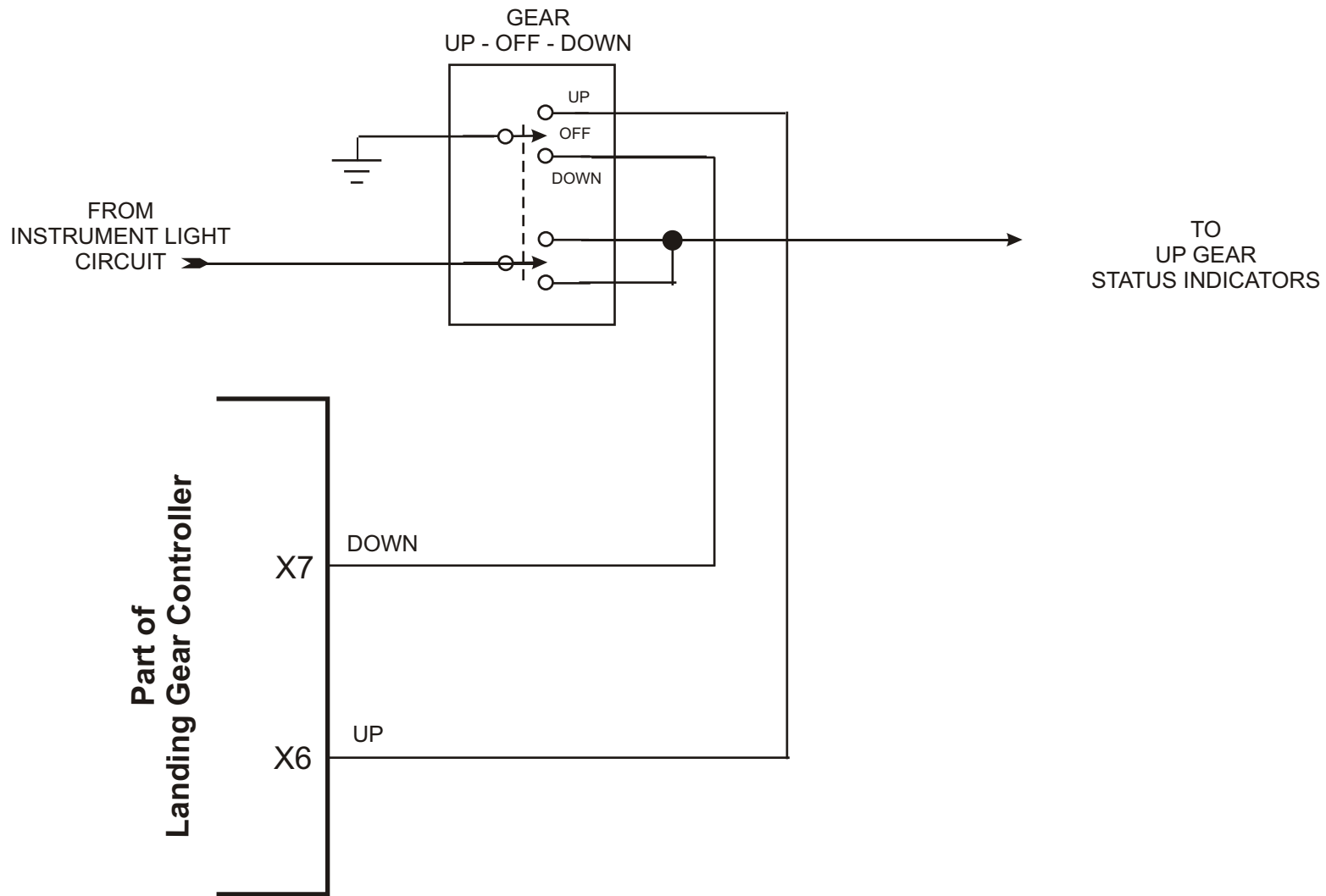


NOSE GEAR CONTROL

28 FEB 2010

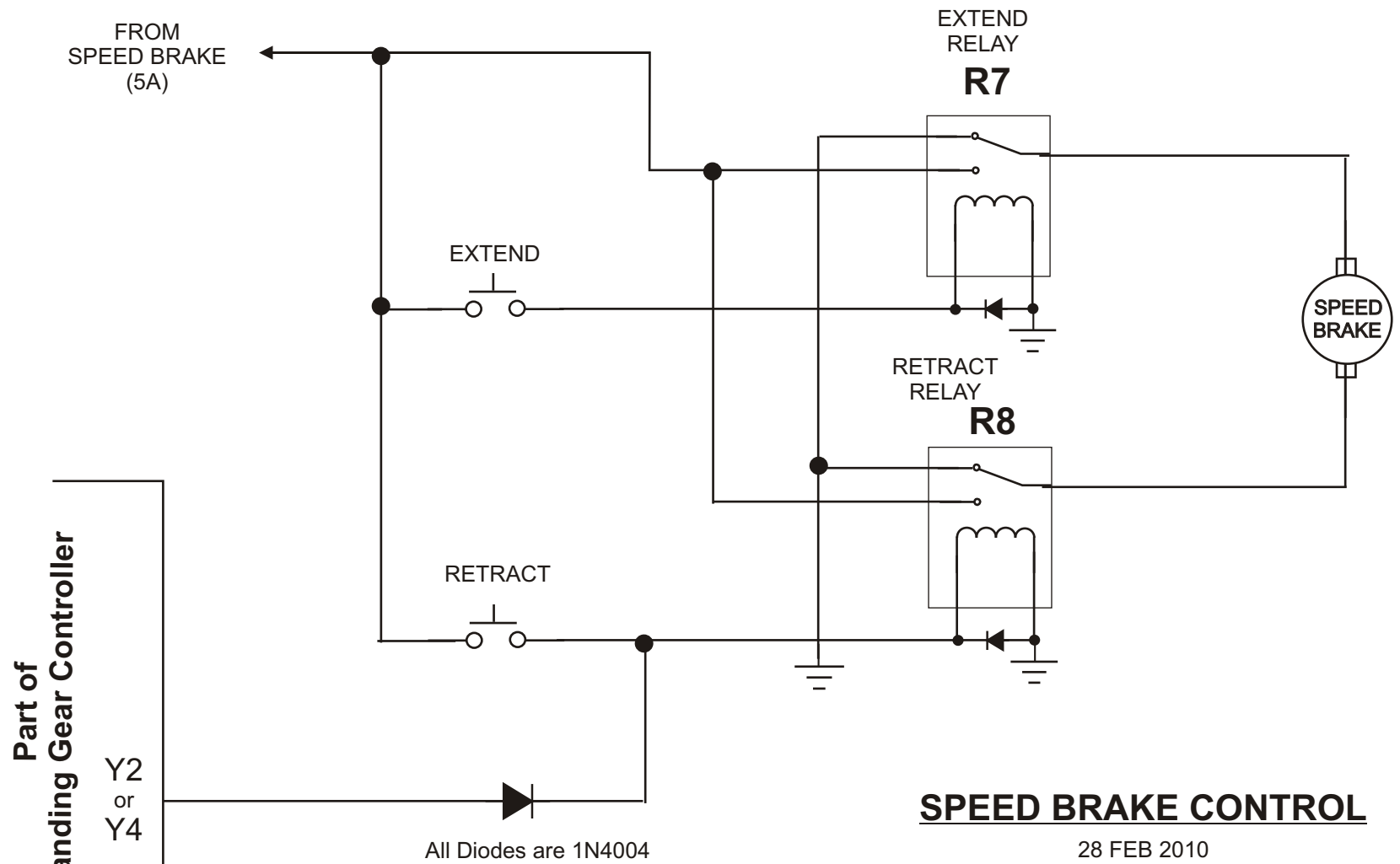
NOTE - C122 is SET - Nose gear has its own electric actuator.

All Diodes are 1N4004



GEAR CONTROL SWITCH

15 OCT 2009



SPEED BRAKE CONTROL

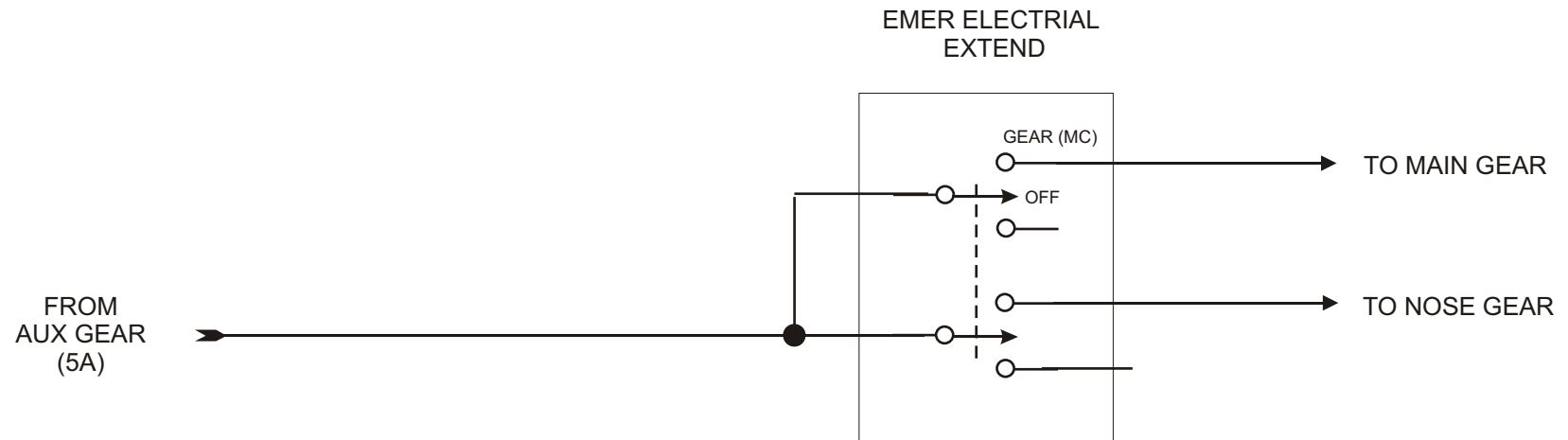
28 FEB 2010

All Diodes are 1N4004

Y2 - C122 must be RESET (Nose gear uses Hydraulic)

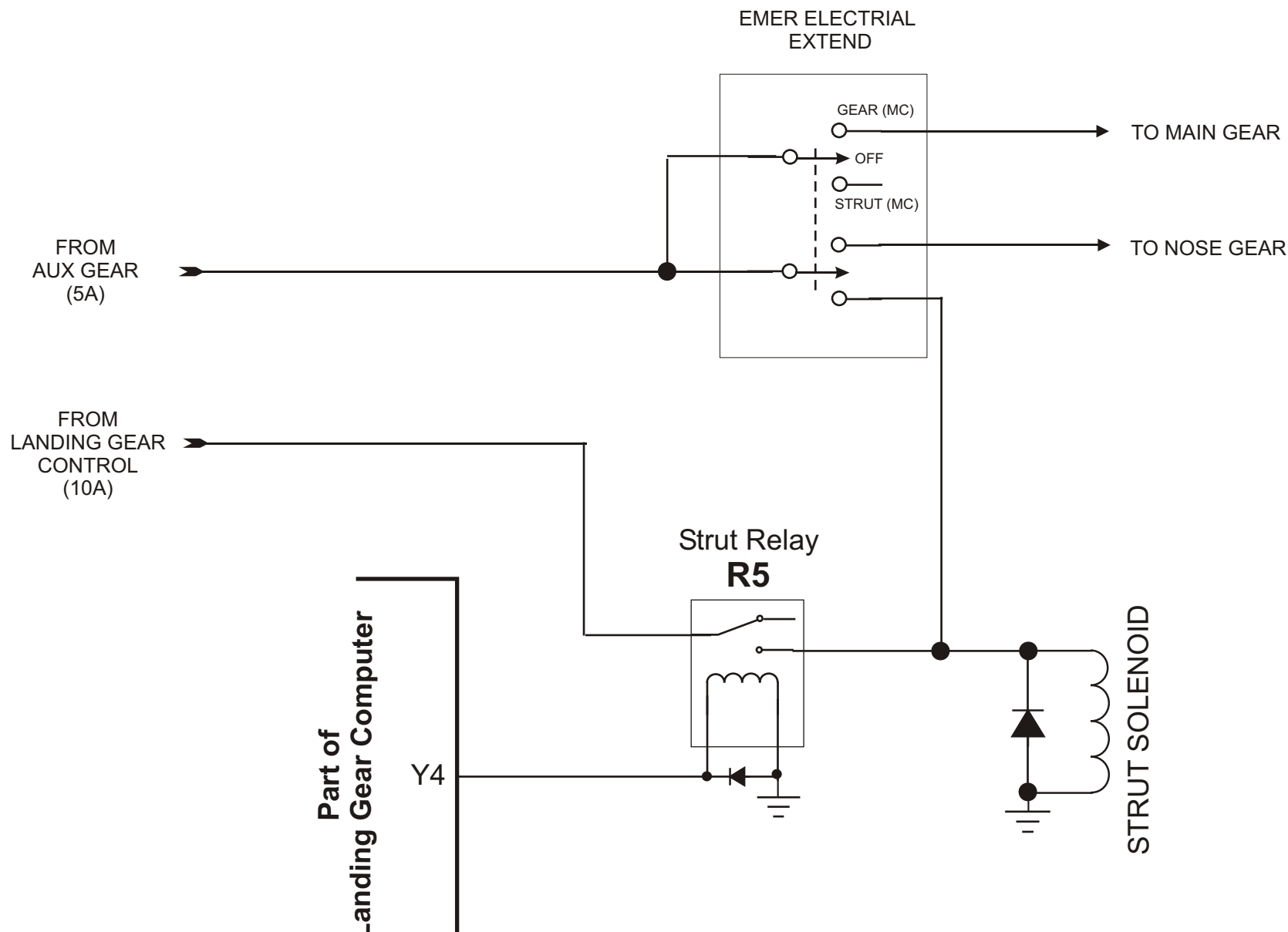
or

Y4 - C73 must be RESET (Main gear doesn't need to compress the struts before retracting)



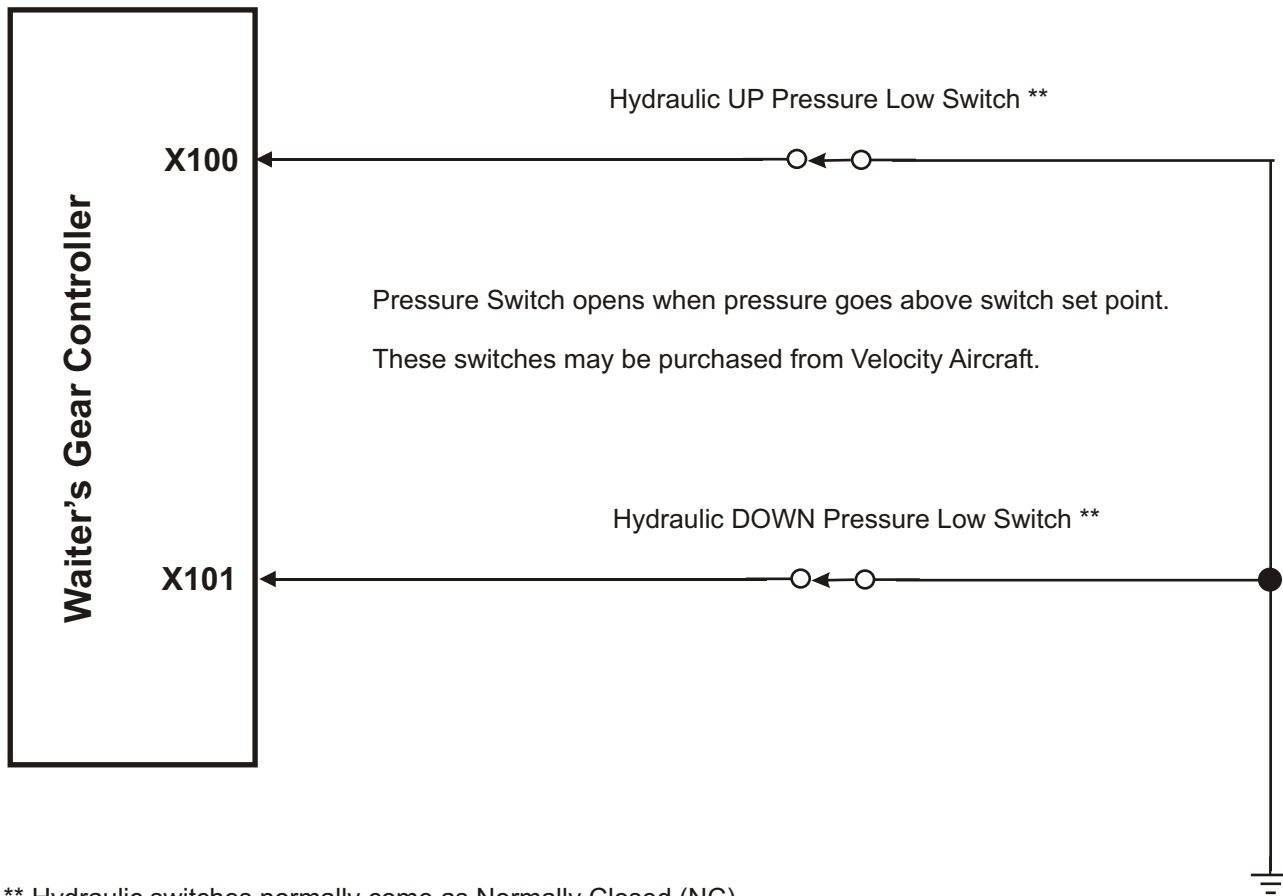
EMERGENCY ELECTRICAL EXTEND
(NON-INFINITY GEAR)

15 OCT 2008



EMERGENCY ELECTRICAL EXTEND
And STRUT CONTROL (INFINITY GEAR)

All Diodes are 1N4004

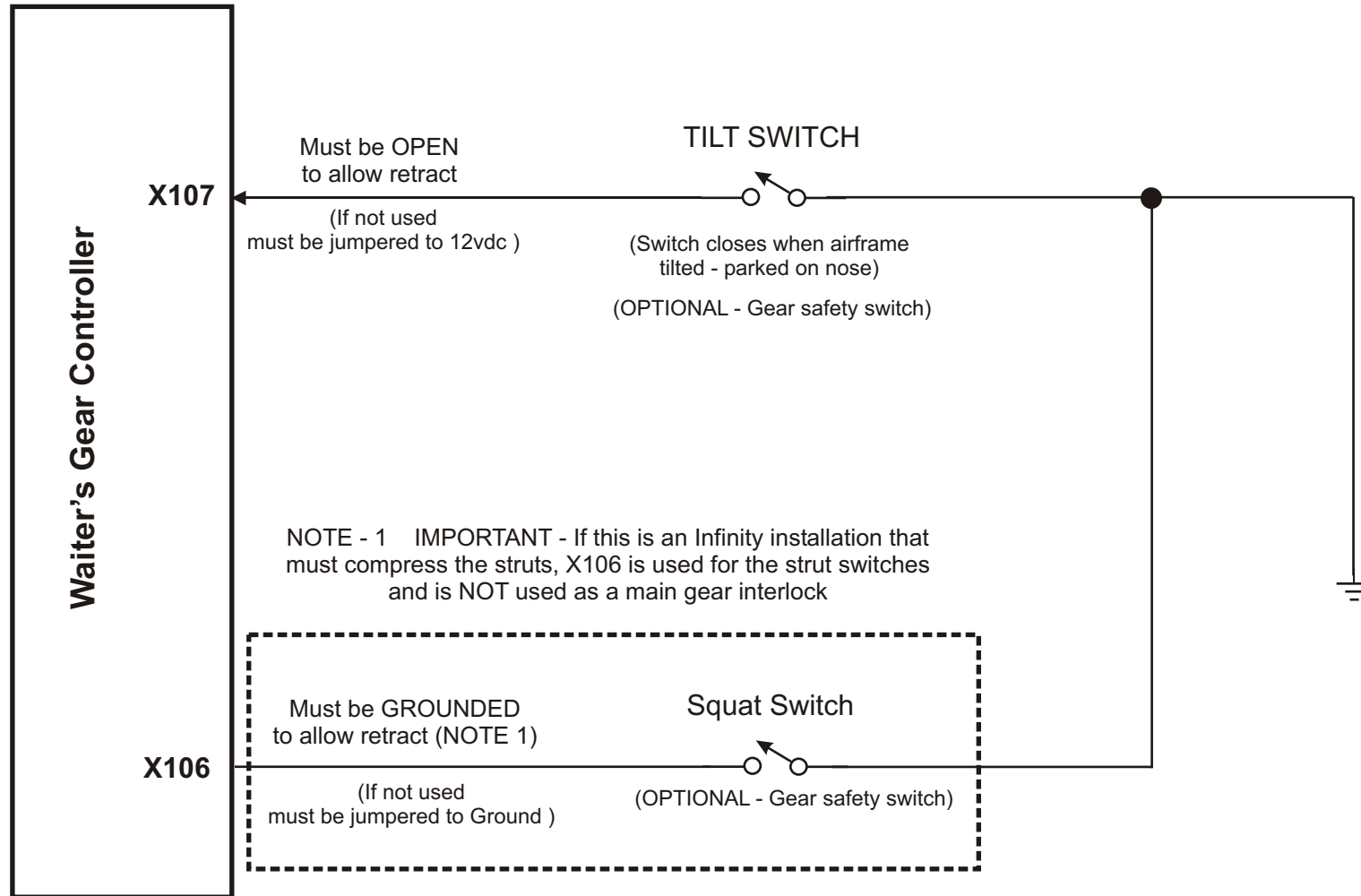


** Hydraulic switches normally come as Normally Closed (NC).
 This style switch OPENS when the correct pressure is
 reached. (Firmware Flag C0 = 1)

If you use Normally Open switches (NO) then Firmware flag
 C0 must be set to C0 = 0

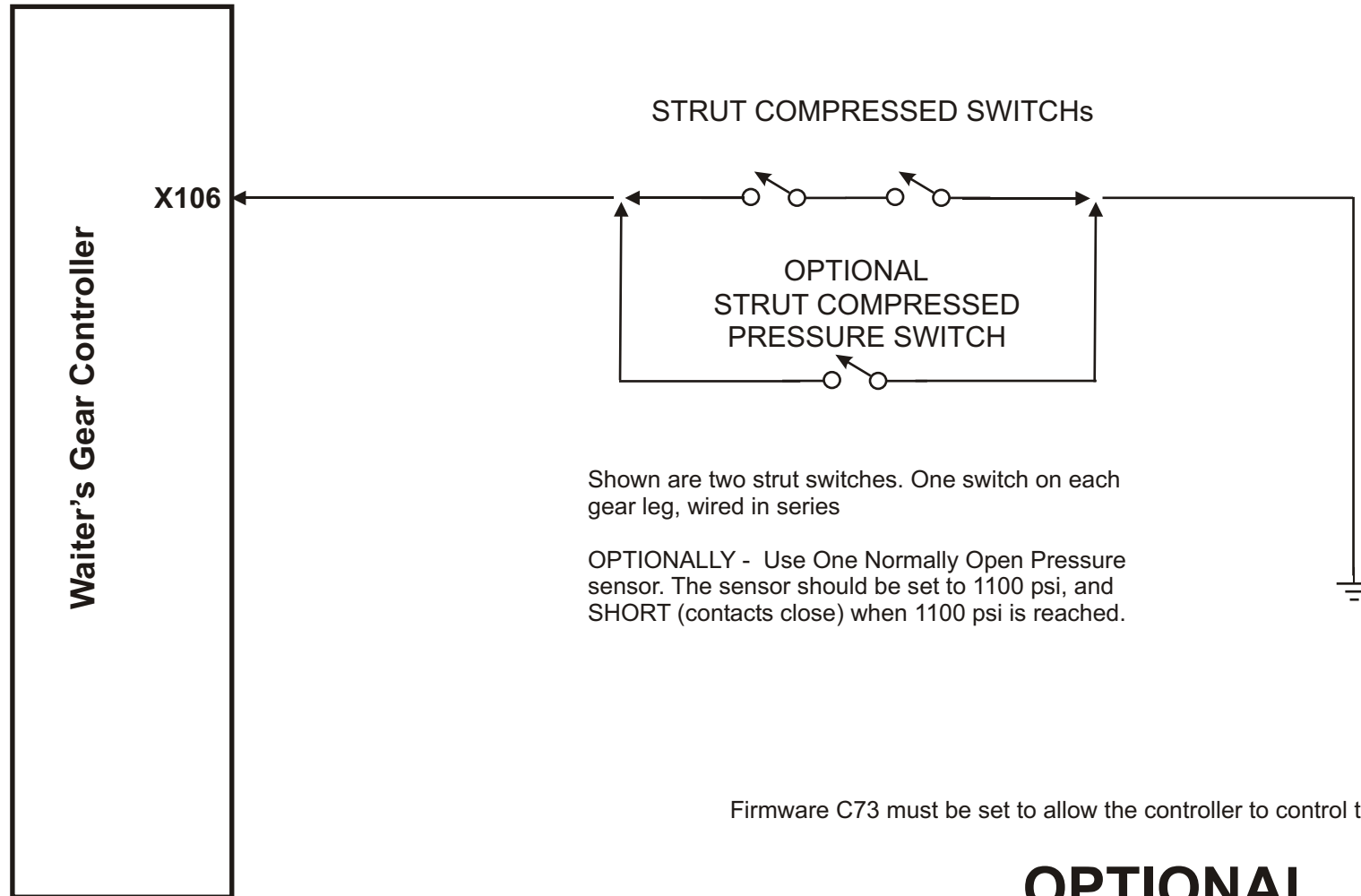
HYDRAULIC PRESSURE SWITCHES

10 OCT 2008



OPTIONAL GEAR RETRACT INTERLOCKS

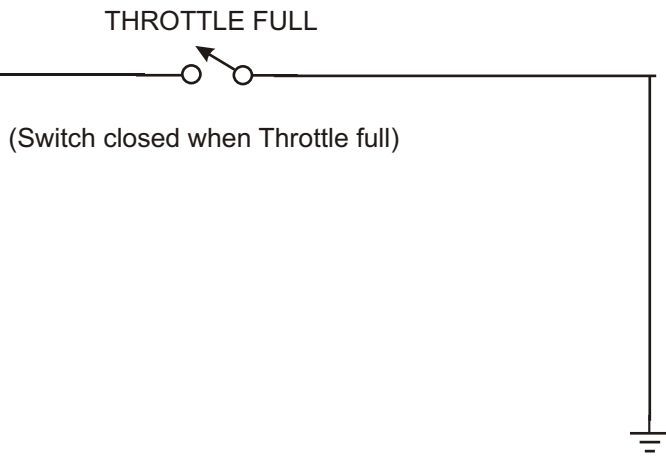
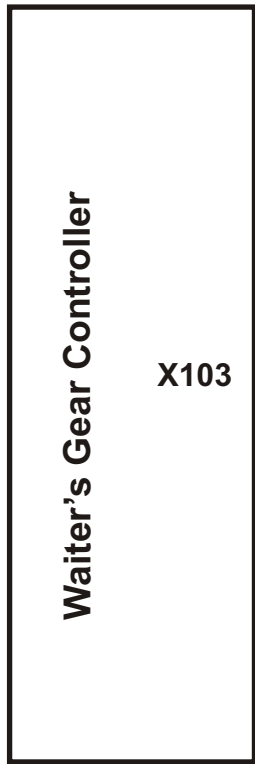
15 OCT 2009



Firmware C73 must be set to allow the controller to control the Infinity Strut Valve.

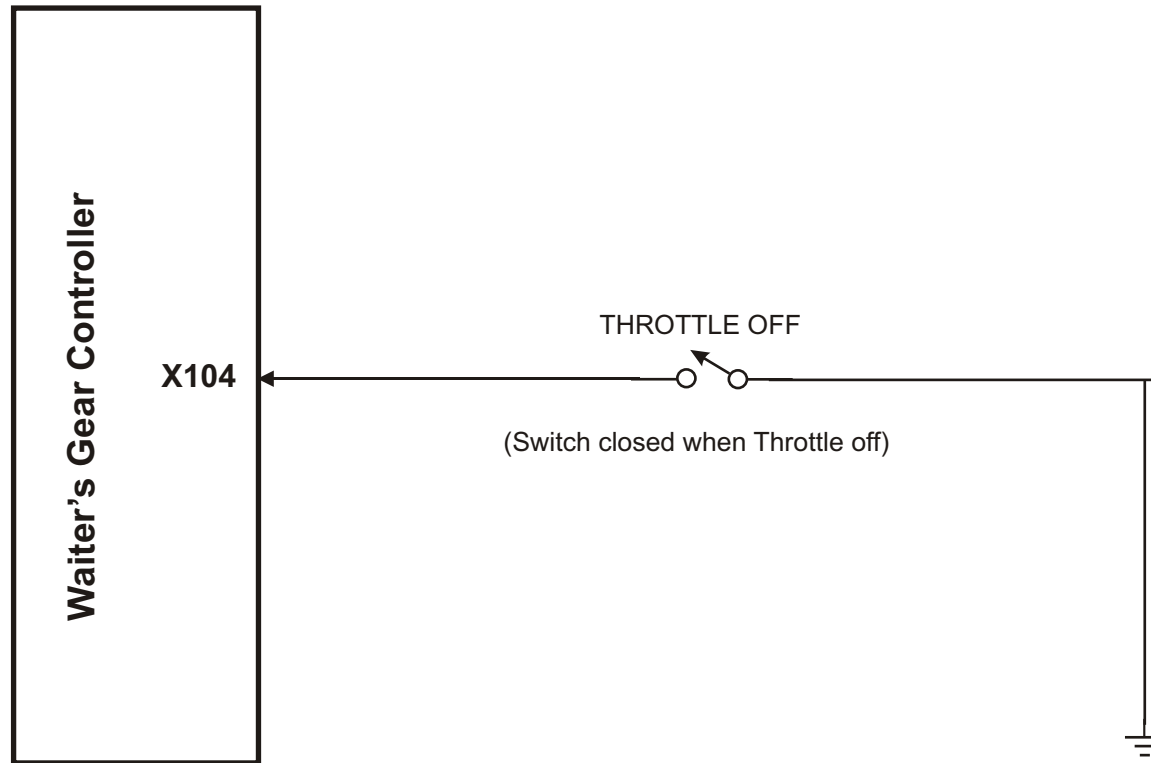
OPTIONAL INFINITY STRUT

10 OCT 2008



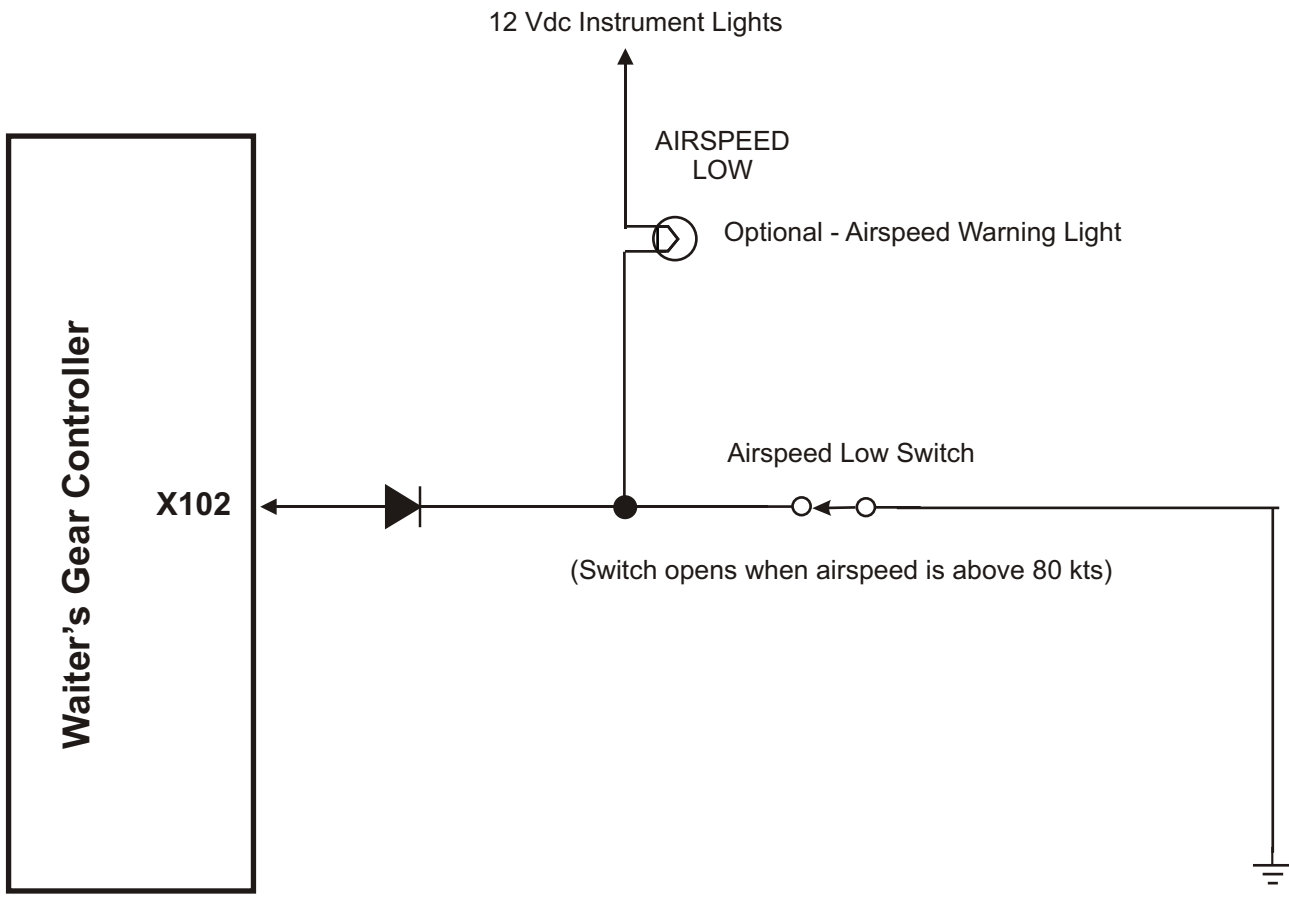
THROTTLE FULL CIRCUIT

16 April 2007



THROTTLE OFF CIRCUIT

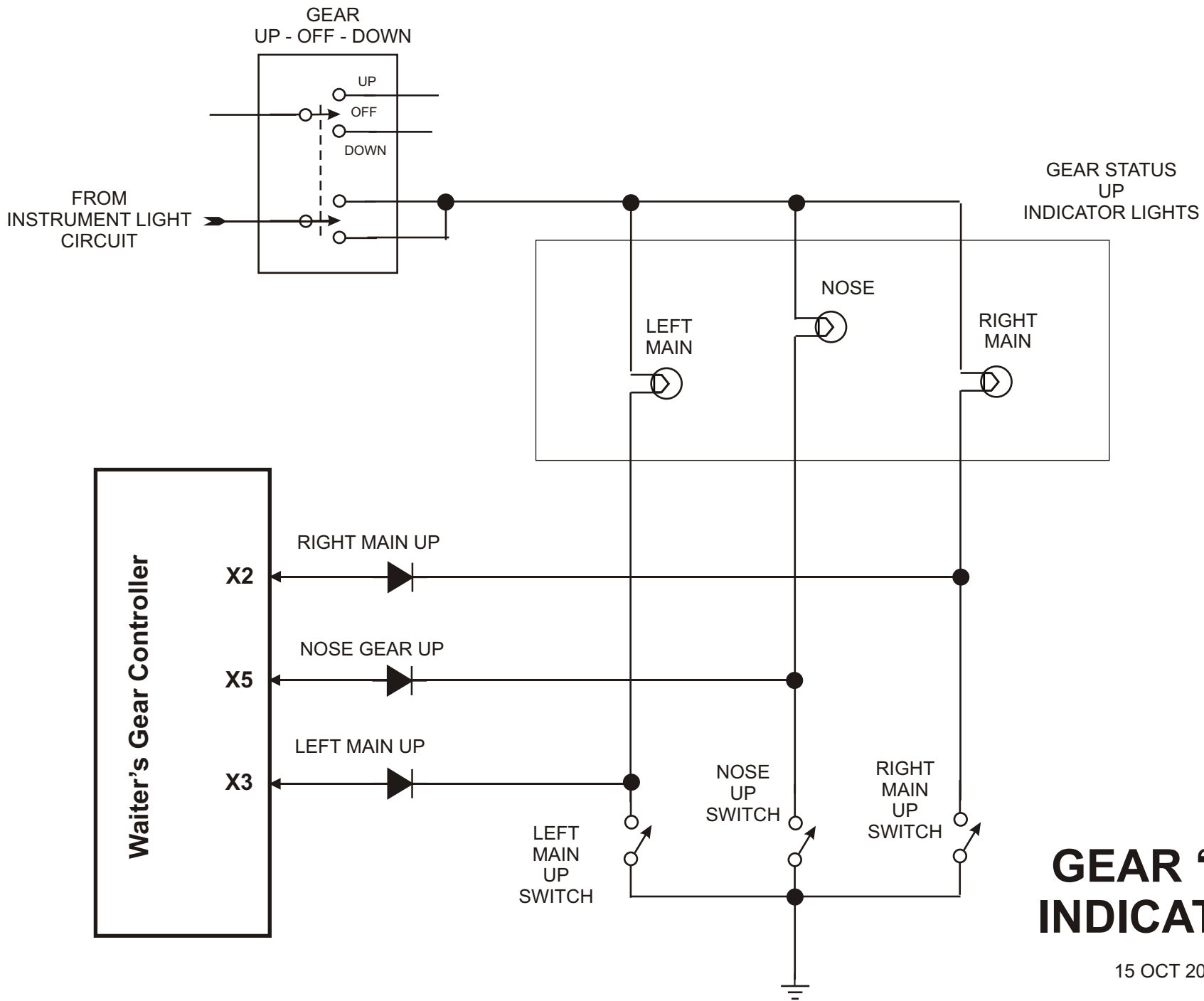
16 April 2007



All Diodes are 1N4004

AIRSPEED SENSOR

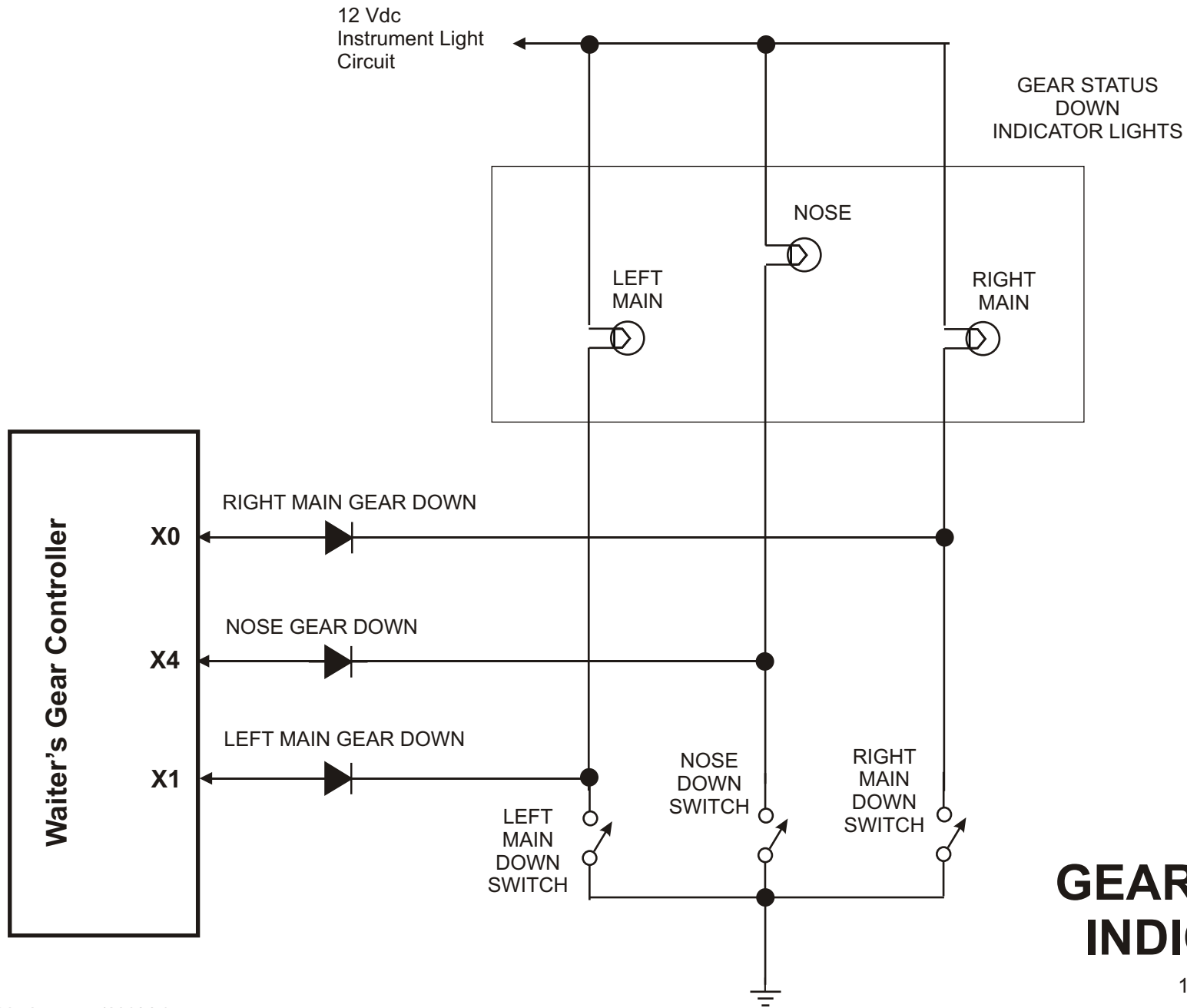
26 MAY 2007



GEAR "UP" INDICATORS

15 OCT 2009

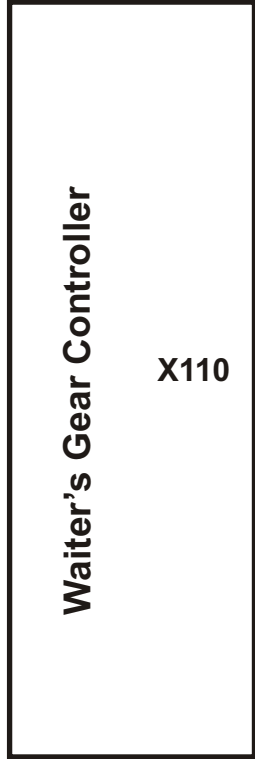
All Diodes are 1N4004



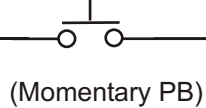
GEAR "DOWN" INDICATORS

16 APR 2007

All Diodes are 1N4004

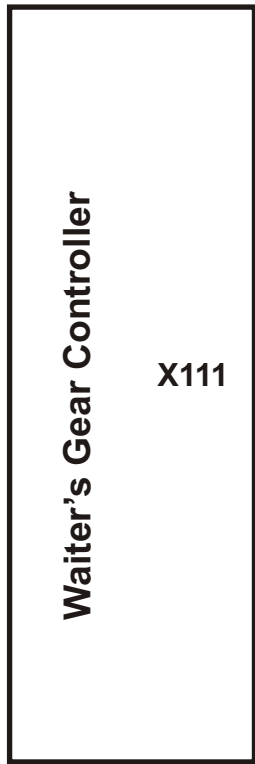


ALARM MUTE

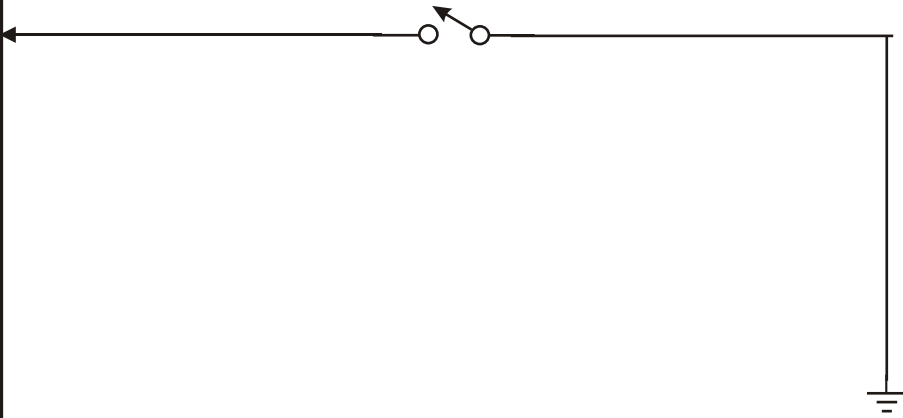


ALARM MUTE SWITCH

22 MAR 2007

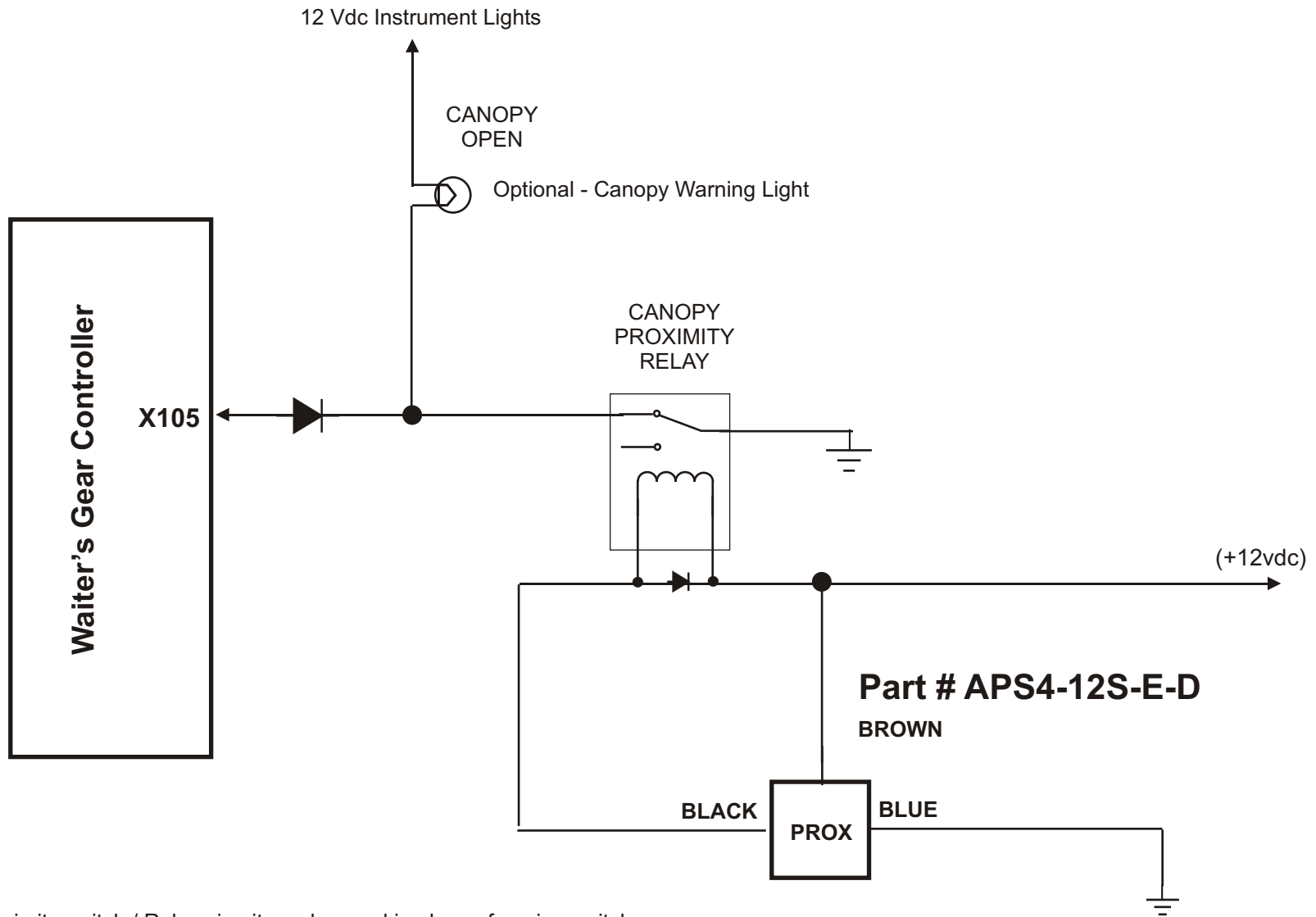


EMERGENCY RETRACT
(SAFETY COVERED)



EMERGENCY RETRACT CIRCUIT

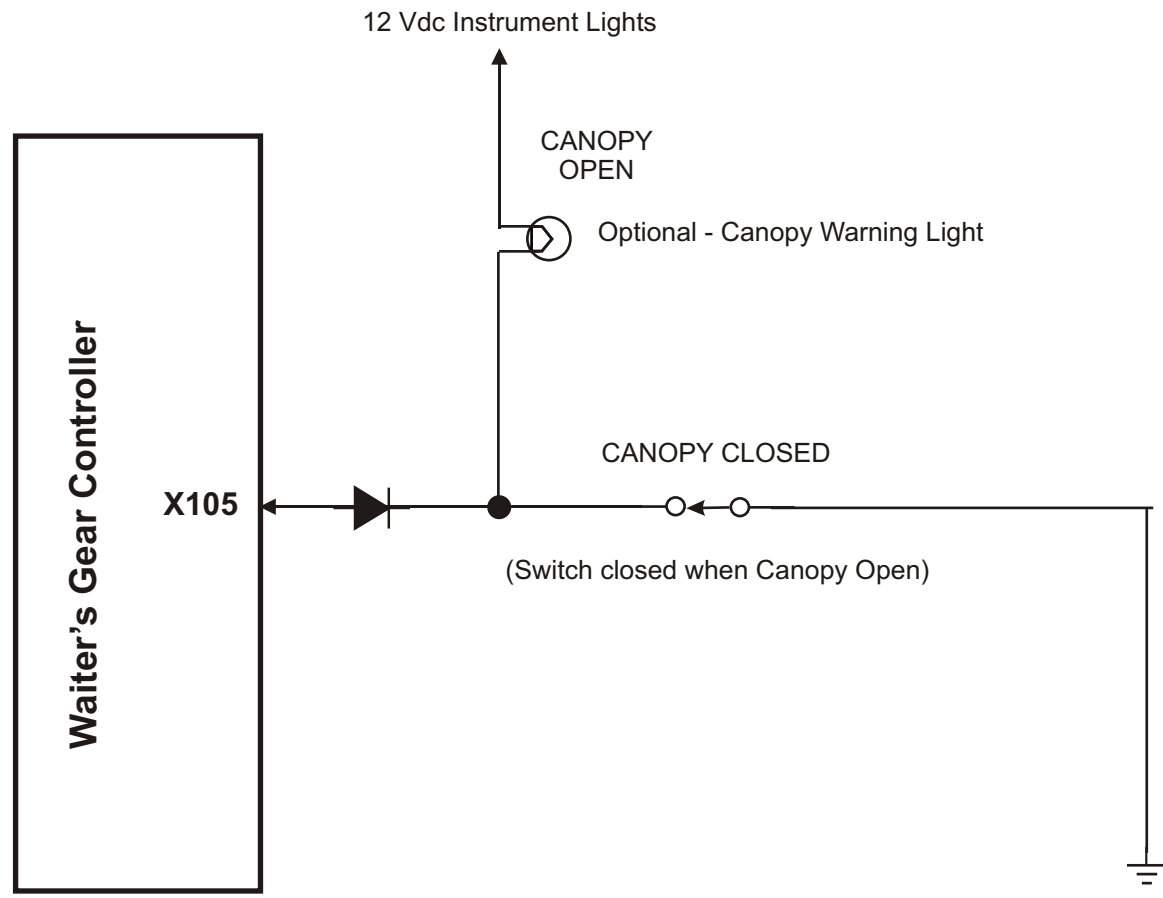
22 MAR 2007



This Proximity switch / Relay circuit can be used in place of a microswitch

CANOPY PROXIMITY SENSOR

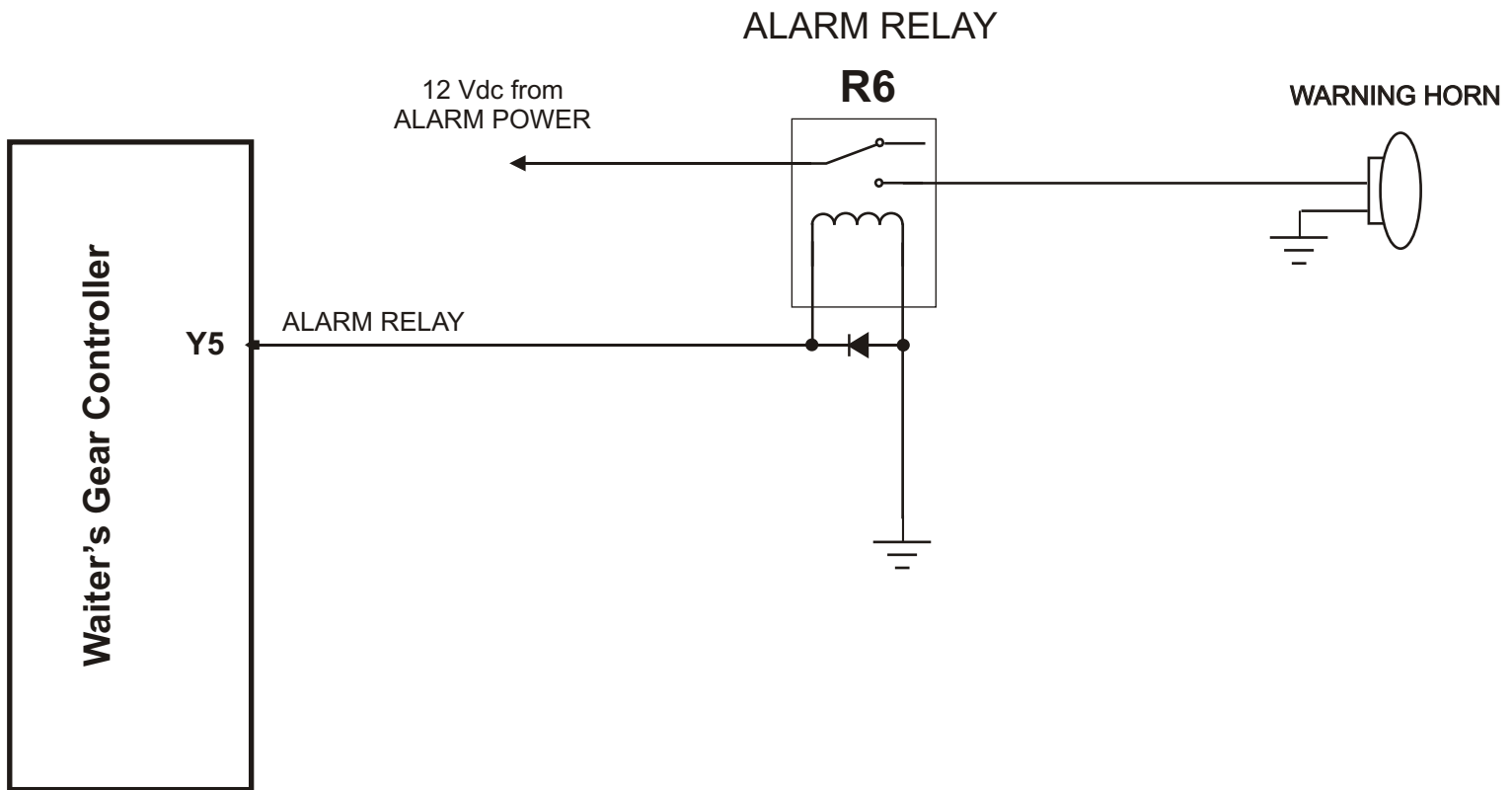
13 Aug 2009



CANOPY CLOSED CIRCUIT

All Diodes are 1N4004

26 MAR 2007

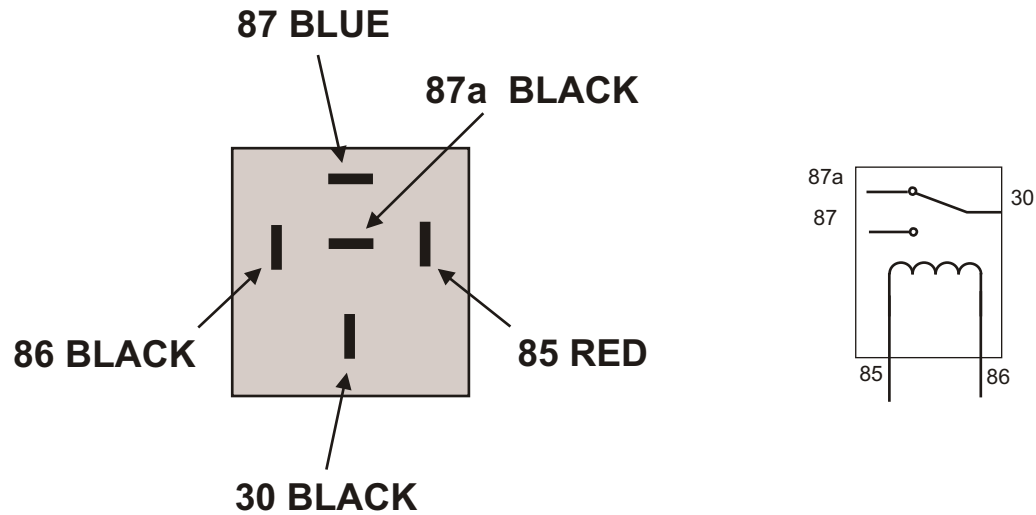


ALARM CIRCUIT

22 MAR 2007

All Diodes are 1N4004

Use this relay for R3 thru R8

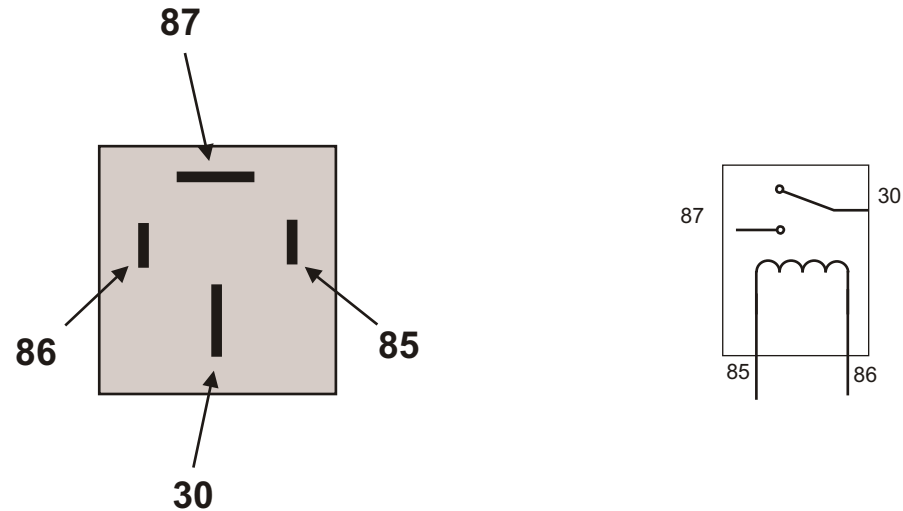


**CUBE RELAY
VIEWED FROM BOTTOM**

10 JULY 2005

The relays and a pigtail (with suppression diode) are available from Jameco. The relays are \$2.49 each (part# 148582CH) and the pigtail is \$2.35 (Part# 170624CH)

Use this relay for R1 and R2



**CUBE RELAY
VIEWED FROM BOTTOM**

22 MAY 2007

R51-1D70-12F (70 amp SPST relay)

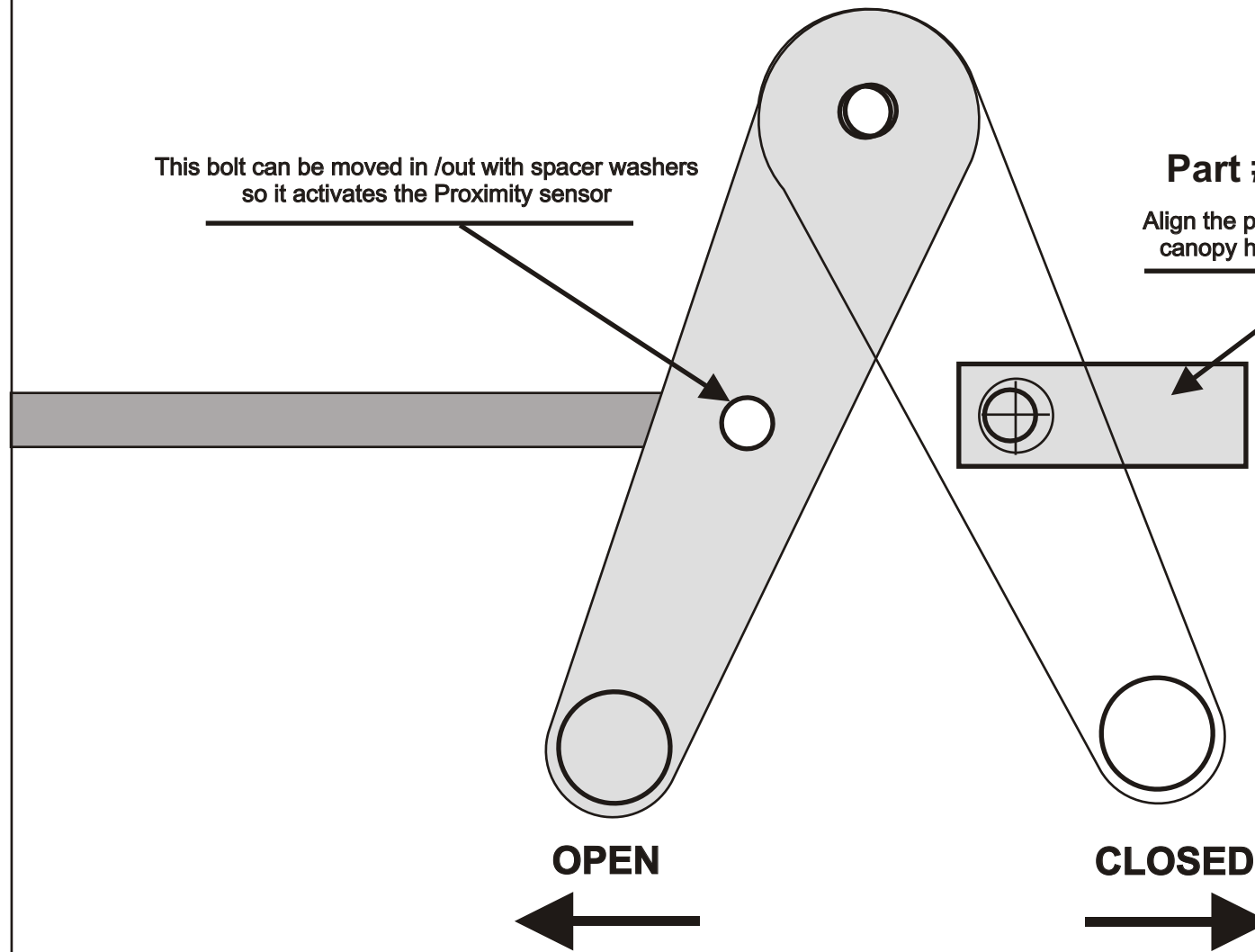
R95-160A Socket

These parts available from Mouser Electronics (800) 346-6873

This bolt can be moved in /out with spacer washers so it activates the Proximity sensor

Part # APS4-12S-E-D

Align the prox so it just activates when the canopy handle is in the LOCK position.

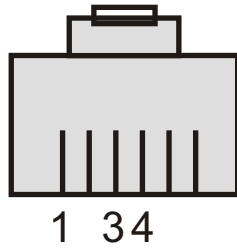


OPEN

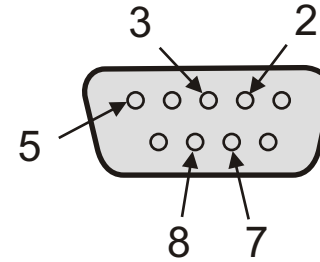
CLOSED

CANOPY PROXIMITY SENSOR

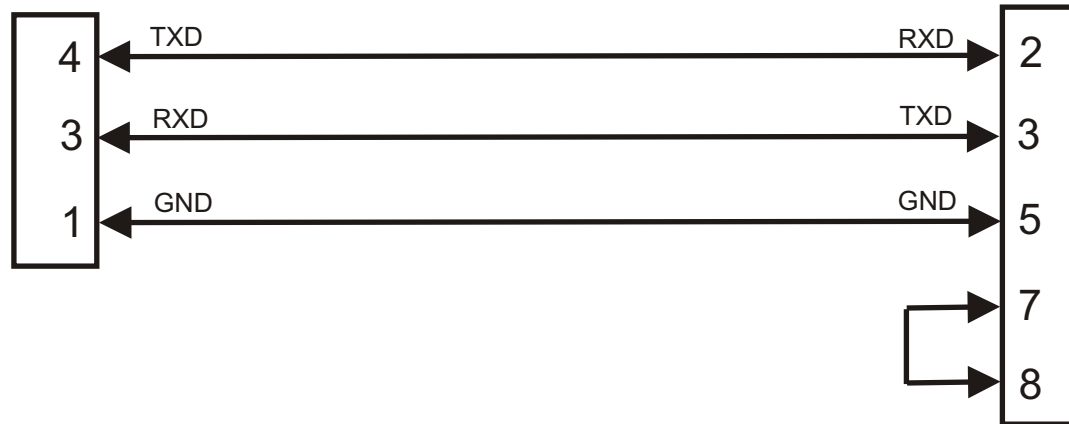
9 April 2007



6P6C Phone plug
Viewed on end



9 pin "D" connector (female)
Viewed on end

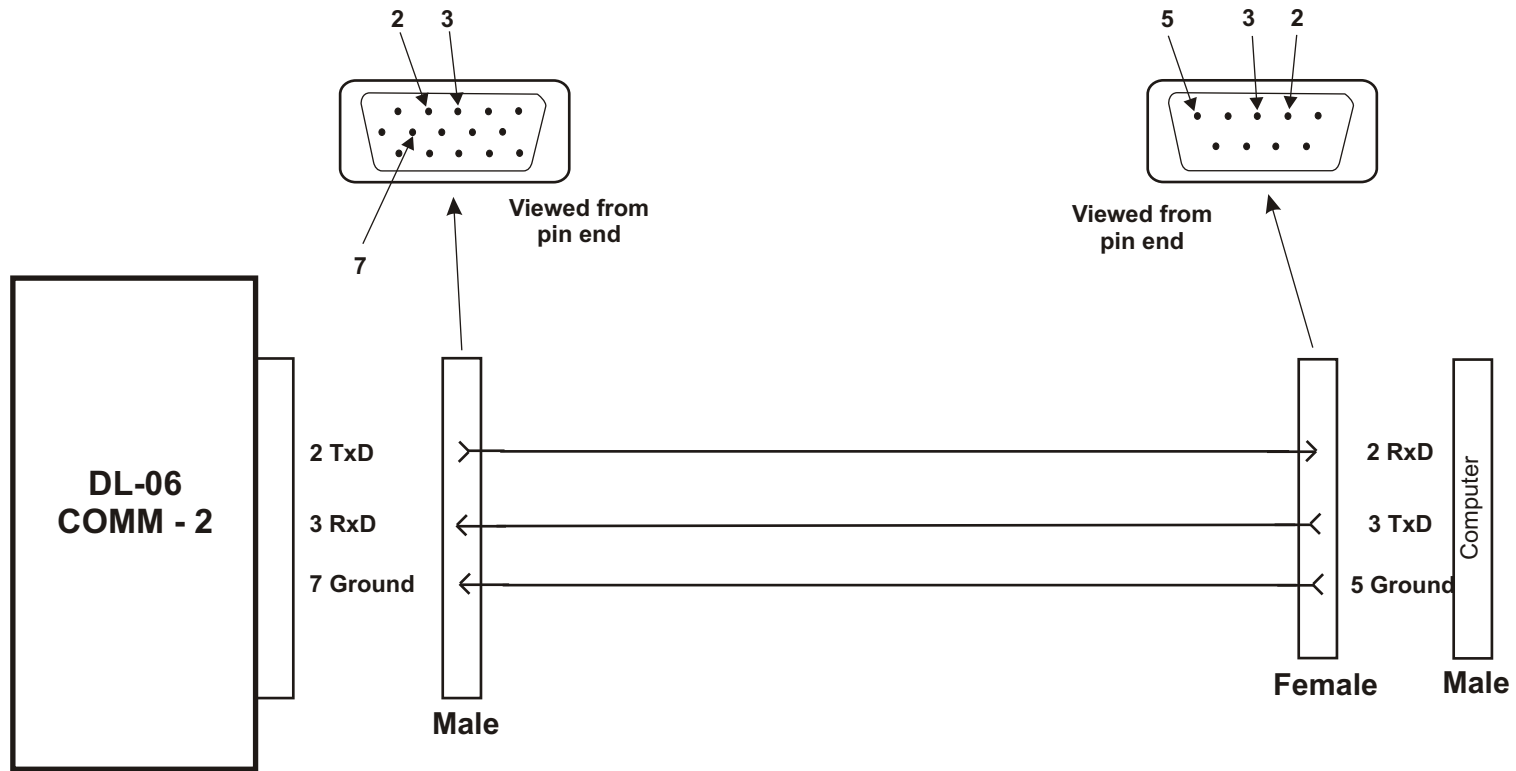


Automation Direct Part # D2-DSCBL

This cable is used to Program the DI05 and DI06 (port 1) AND also to read the serial port data stream (port 2)

PLC SERIAL DATA CABLE

12 JULY 2008



DL-06 Serial Output

The DL-06 Must be configured properly in order to output data on comm port 2

Using DirectSoft with the PLC connected, goto:

PLC > SETUP > SETUP SEC COM PORT.

Set the PROTOCOL to NON-SEQUENCE, 9600 baud