

M3593 installation instructions

Hi-boy & Hi-boy-DLC

M3593 installation instructions Hi-Boy Hi-Boy DLC

Warning:

- Top of battery needs to be protected. If positive side of battery is accidentally grounded person could be burnt or wiring system can be damaged, or battery gasses could explode causing injuries.
- Disconnect cable from negative battery terminal before start installation.
- Always wear eye protection and protective clothing when working around hydraulic systems.
- Remove jewelry and objects that might conduct electricity while working on power units.
- Fluid under pressure can pierce the skin and enter the bloodstream causing death or serious injury.
- Hydraulic hoses and electrical cables (harnesses) must be tied and routed safely to avoid any damage and pinching (away from hot places, sharp objects etc.).

Note :

-Do not use teflon tape on hydraulic fittings as it can easily jam valves and plug the filters in the system.

-All electrical connections must be coated with die electrical grease to prevent corrosion.

1. Install colour co-ordinated weather covers (6)(7) on cable and plug assembly (2). Attach red lead to positive motor stud and black lead to negative motor stud. Liberally coat connections with di-electric grease then slide covers over the eyes on the end of the cables.
2. Install power unit (1) and mounting plate (3) with motor toward driver's side of truck (use star washers under bolts to bolt the pump plate to the lift frame and the power unit to the pump plate-use removable grade Loc Tite for these bolts also).
3. Route power unit harness through grommet in driver's side of mounting plate and secure using cable clamp (attached to power unit harness) and ¼" x 1" bolt.
4. Mount solenoid (4) to metal surface in engine compartment, bending bracket if necessary. Be sure to locate the solenoid so that there is sufficient cable to reach to both the battery and the cable and plug assembly (2) on the power unit.
NOTE: Solenoid must be well grounded in order to function properly.
5. Slide weather cover (20) over power cable (8) and ground cable (9) and route through grille of truck leaving sufficient length to attach to the cable and plug assembly (2). Secure the red power cable (8) to the large terminal on the solenoid and the black ground cable (9) to the negative terminal on the battery.
6. Secure power cable (10) from other large terminal on solenoid to positive terminal on battery.
7. Plug intermediate harness (11) into power unit harness and follow battery cable routing toward firewall. Locate a pass through hole in the firewall near the driver's side of the

truck. Route other end of intermediate harness (11) through the hole in firewall and attach control station .

NOTE: A smaller hole in the firewall can be used if the cable is fed into the engine compartment from the cab as the plug at the power unit end is smaller than at the control station end.

8. Attach white wire to ground, black wire to positive side of solenoid and brown wire to small terminal on top of the solenoid (4).

Note: Apply dielectric grease to all electrical connections. Assure that all electrical connections are attached and secured properly.

9. Neatly secure all excess cables and wires using tie straps. Silicone hole in firewall.

Note: Be sure all cables are properly protected from any sharp edges or hot or moving parts !!

10. Install swivel elbows (13) in ports, C1 @ 10:00, C2 @ 11:00 and C3 @ 3:00.
11. Install 90 degree swivel elbow (14) into curb side (CS) angle cylinder @ 11:00.. Route hose from port C1 through curb side grommet in the back of the mounting plate and loosely connect the straight end of 29" hose (17) into the 90 degree swivel elbow on CS cylinder.
12. Install 90 degree swivel elbow (14) into driver's side angle cylinder @ 11:00. Connect 90 degree swivel end of 36" hose into port C2. Route straight end of 36" hose (18) from port C2 through the curb side grommet in the back of the mounting plate and loosely connect to the driver's side angle cylinder. Use a tie strap through the 2 small holes in the mounting plate to secure the hose across the back side of the plate.
13. Install straight swivel (19) in lift cylinder port facing the driver's side. Route 29" hose (17) from port C3 through driver's side grommet in mounting plate and loosely attach to lift cylinder (16).
14. Remove vent cap and fill reservoir with **UNIVIS J13 (HVI 13) hydraulic oil**. Do not use automatic transmission fluid in this system as it may lead to aeration of the oil in very cold weather conditions. Use of any fluid other than J13 will void warranty.
15. Manually angle the plow to one side before activating the power unit. This can be easily accomplished, as the hose connections are loose at the angling cylinders.
16. Jog the lift switch until no air is seen in the fluid passing through the loose connection. Tighten fittings.
17. Jog the angle switch in the direction of the retracted cylinder until no air is seen in the fluid passing through the loose connection. Tighten fittings. Fully extend this cylinder.

18. Jog the angling switch in the direction of the retracted cylinder until no air is seen in the fluid passing through the loosened connection. Tighten fittings.
19. Refill power unit so that oil level is $\frac{3}{4}$ " from the top of the reservoir. Clean up any spilled oil and check all functions several times making sure there is not excessive foaming in the reservoir. Compress the lift cylinder and double check the oil level. Check for leaks at all fittings.
20. Apply die electric grease to all coil nuts and electrical connections to prevent corrosion and install power unit cover (12).

Power Unit Kit 52403-02-M Hi Boy & Power Unit Kit 52403-04-M Hi Boy-DLC			
Item	Part #	Description	Quantity
1	M3593	M3593-010-01B02E Power Unit	1
2	3004665	Cable and Plug Assembly	1
3	52870-C	Mounting Plate	1
**4	FP17757	Solenoid M3593	1
6	52427-N	Red Terminal Protector	1
7	52428-N	Black Terminal Protector	1
8	1306120	Power Cable 63"	1
9	13061221	Ground Cable 54"	1
10	1306340	22" Battery Power Cable	1
11	FPN0457-SA	Intermediate Harness	1
***12	52429-C	Power Unit Cover	1
13	HH-00790-002	90 Deg Swivel Elbow	5
16*	CS150-06.00-NRS	Lift Cylinder 1 $\frac{1}{2}$ " x 6"	1
16a*	CS200-06.00-NRS	Lift Cylinder 2" x 6"	1
17	51904-M	Hose Assembly 29"	2
18	51905-M	36" Hose Assembly	1
19	HH-00794-003	1/4" Pipe to Pipe Swivel	1

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Power Unit Kit 52403-02-M Hi Boy & Power Unit Kit 52403-04-M Hi Boy-DLC			
Item	Part #	Description	Quantity
***20	0203300	Weather cover for power and ground cable	1
21	52431-M-BB	Bolt Bag	1
***23	52315-N	Dummy Plug for intermediate harness	1
24	53218-N	Plastic Drain Hole Plug	1

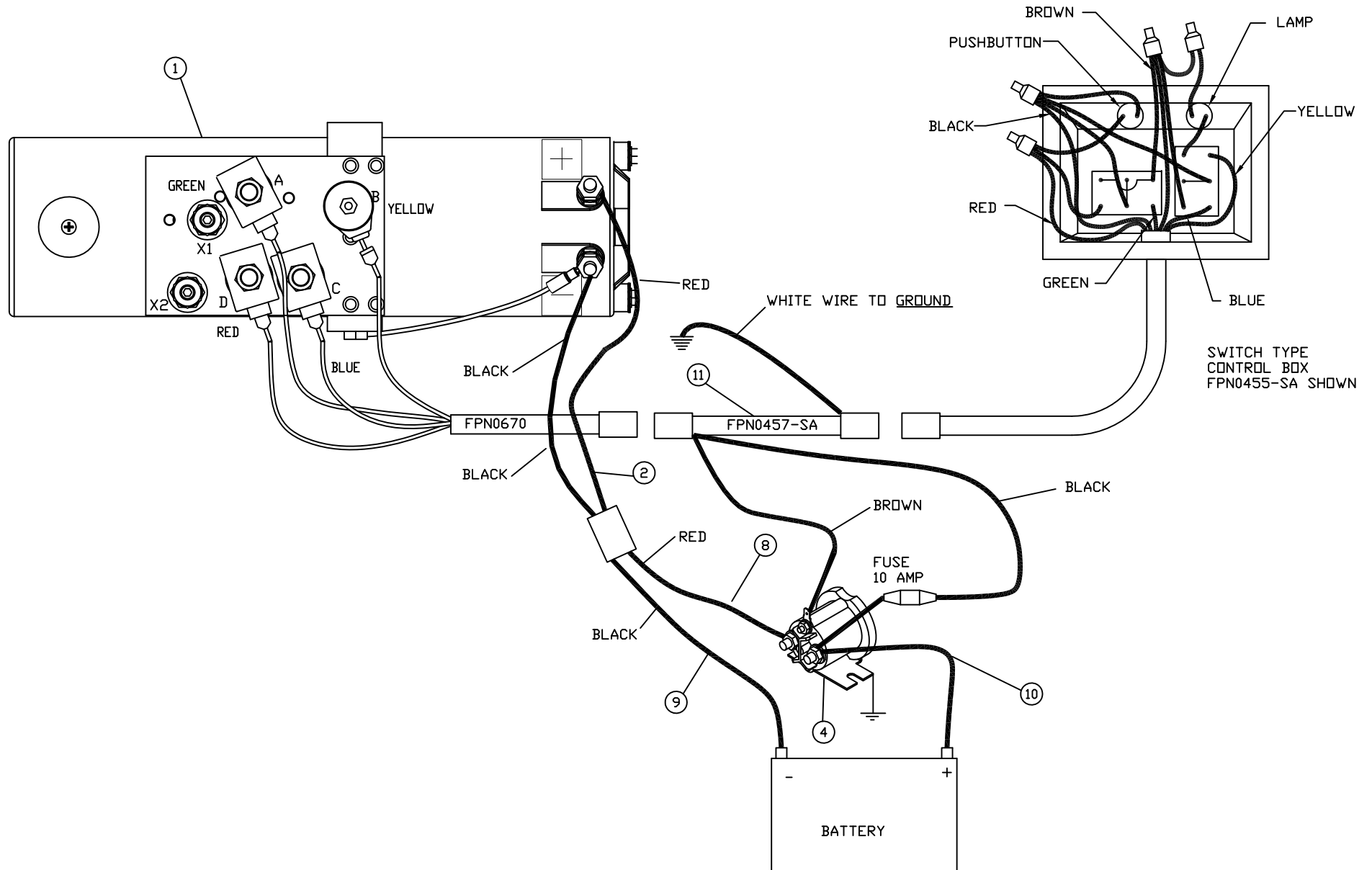
*Note: Item #16 is included in 52403-02-M kit & item #16 a is included in 52403-04-M.

**Item 4 was part number FP7518

***Items not shown on drawing

52403-02-M & 52403-04-M Power Unit Kit M3593010-01B02E WIRING INSTALLATION

NOTES:
1) THE HARNESSES FPN0670 & FPN0457-SA ARE USED WITH ALL CONTROL BOXES: SWITCH TYPE FPN0455-SA (SHOWN).



M3593 hose and fitting installation

