

M3500V installation instructions

M3500V installation instructions

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.

Apply dielectric grease to all connections to prevent corrosion

Use of fluid other than J13 will void warranty

1. Install colour co-ordinated weather cover (8) on cable and plug assembly (4). Attach red lead to positive motor stud and black lead to negative motor stud. Liberally coat connections with dielectric grease then slide covers over the eyes on the end of the cables.
2. Install power unit (1) and mounting plate (2) with motor toward driver's side of truck (use star washers under bolts to bolt the pump plate to the lift frame - use star washers AND removable grade Loctite to fasten power unit to the pump plate).
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 (35) 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 (4) on the power unit.
NOTE: Solenoid must be well grounded in order to function properly.
5. Slide weather cover (10) over power cable (6) and ground cable (5) and route through grille of truck leaving sufficient length to attach to the cable and plug assembly (4). Secure the red power cable (6) to the large terminal on the solenoid and the black ground cable (5) to the negative terminal on the battery.
6. Secure power cable (7) from other large terminal on solenoid to positive terminal on battery.

7. Plug intermediate under hood harness (33) into valve section harness (34) 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 under hood harness (33) through the hole in firewall and attach to the intermediate in cab harness(32). Intermediate in cab harness must be secured under the dash and it should be attached to control station (Note: White wire must be attached under the dash(ground)).
8. Attach black wire to positive side of solenoid and brown wire to small terminal on top of the solenoid (35).
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 hoses and fittings as shown on drawing for hose and fitting installation.
11. 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 fluid other than J13 will void warranty.**
13. Manually angle one section of the blade to one side before activating the power unit. This can be easily accomplished, as the hose connections are loose at the angling cylinders.
14. Jog the joystick (extend and retract cylinder) ,operate only section of the blade that was manually extended, until no air is seen in the fluid passing through the loose connection. Tighten fittings.
15. Refill power unit. Repeat same steps for second section of the blade.
16. Refill power unit. Jog the joystick to lift blade until no air is seen in the fluid passing through the loose connection. Tighten fittings.
17. Refill power unit so that oil level is ¾" 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.
18. Install power unit cover (13).

Power Unit Kit 52871-M V plow			
Item	Part #	Description	Quantity
1	M3500010-01B01E	Power Unit V plow	1
2	52870-M	Mounting plate ass'y (includes pump plate, pump plate cover, bolts etc.)	1
4	3004665	18" Cable Plug Assembly	1
5	13061221	54" Ground Cable	1
6	1306120	63" Power Cable	1
7	1306340	22" Battery Cable	1
8	52427-N	Red Terminal Protector	1
*10	0203300	Dummy Plug (power and ground)	1
*11	52805-N	Dummy Plug (V plow)	1
12	51904-M	29" Hose	3
*13	52429-C	Power Unit Cover	1
14	HH-00790-002	90 deg Swivel Elbow	7
15	51905-M	36" Hose	2
18	CS200-06.00-NRS	2 x 6 Lift Cylinder	1
19	52436-N	Grommet 1/4"x1.3/4X2.1/2	3
21	HH-00293-006	1/4-20x1 Hex Head Cap Screw	1
22	HH-00293-049	3/8-16x1 Hex Head Cap Screw	2
24	53146-N	3/8" Star Lockwasher	10
25	HH-00972-029	5/16-24x1.1/4 Hex Head Cap Screw	4
26	HH-00460-005	5/16-24 Hex Nut	5
27	53147-N	5/16" Star Lockwasher	2
28	HH-00294-001	1/4-20 Hex Nut	1
29	HH-00457-006	1/4 Lockwasher	1
30	HH-00972-028	5/16-24x1 Hex Head Cap Screw	1
31	53218-N	Plastic Drain Hole Plug	1

Power Unit Kit 52871-M V plow			
Item	Part #	Description	Quantity
32	52802-B	Incab Intermediate Harness 7"	1
33	52803-B	Underhood Intermediate Harness 97"	1
34	52804-B	Valve Section Harness 26"	1
35	FP17757	Solenoid	1
36**	52873-NRS	Cylinder, 2" x 9"	2
37***	52807-01-M	Joystick Ass'y (incl. joystick and bracket)	1

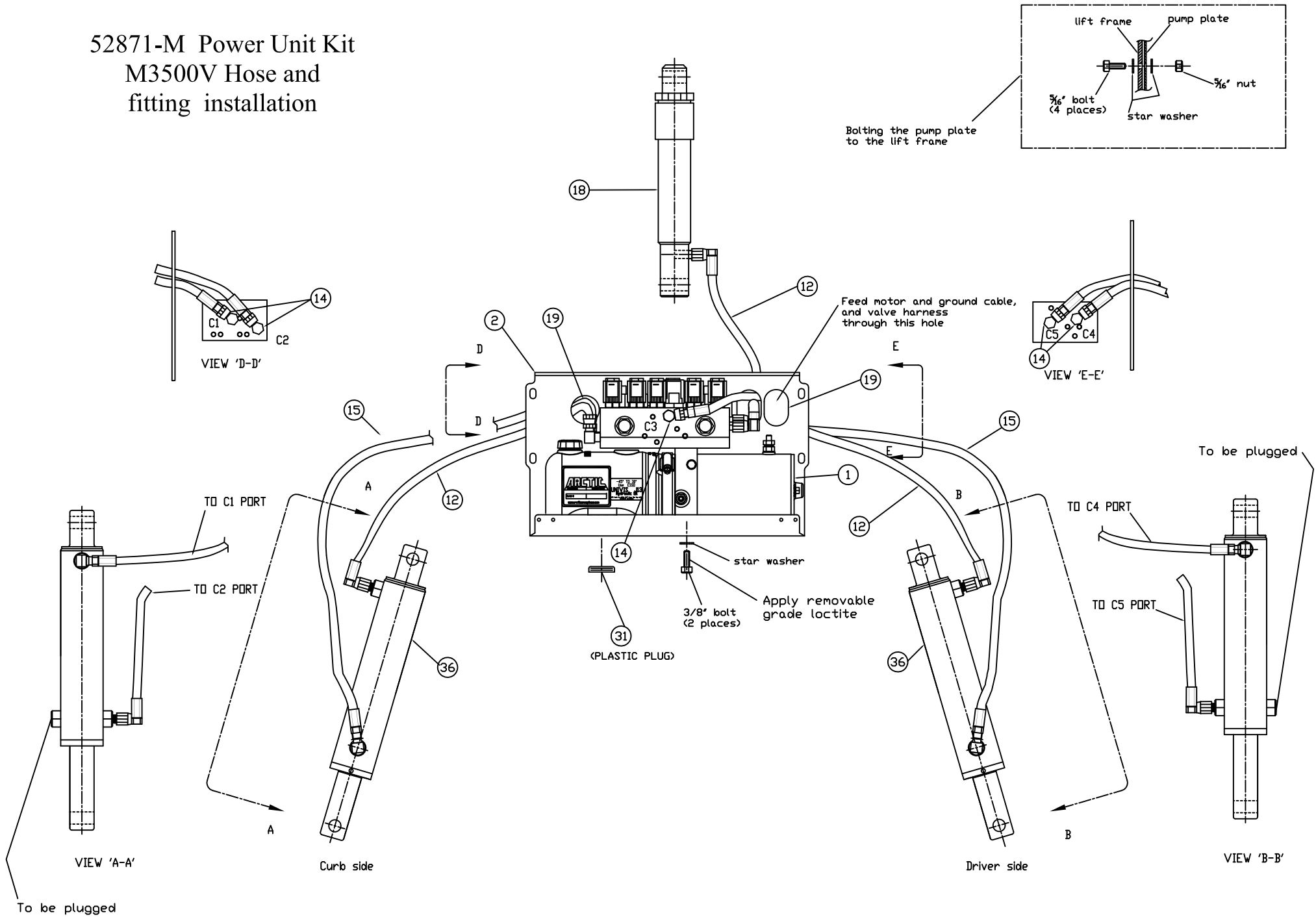
*Items not shown on drawing

**52873-N is part of power angling kit.

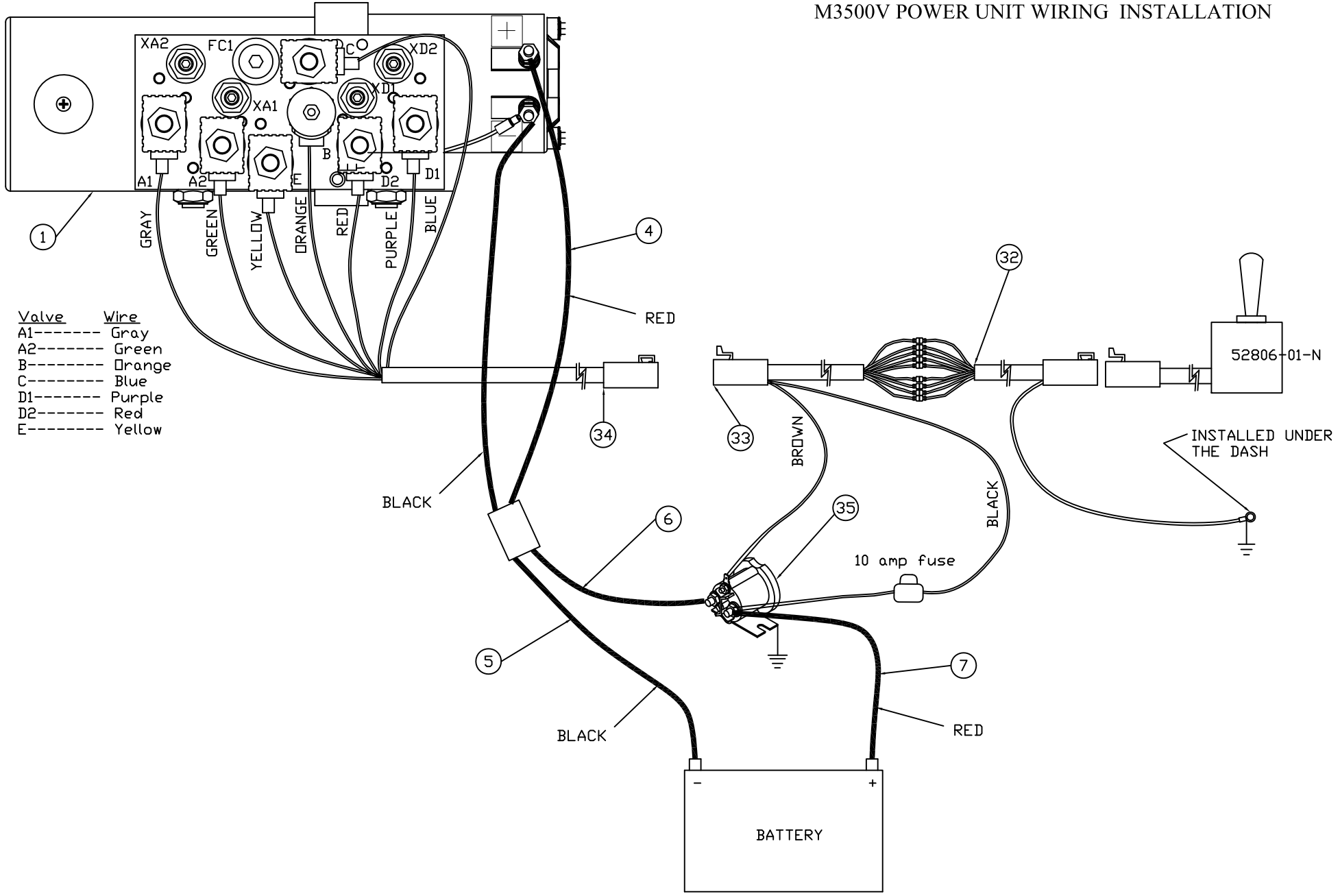
*** 52807-01-M is not part of this kit (it is sold separately).

52871-M Power Unit Kit

M3500V Hose and fitting installation



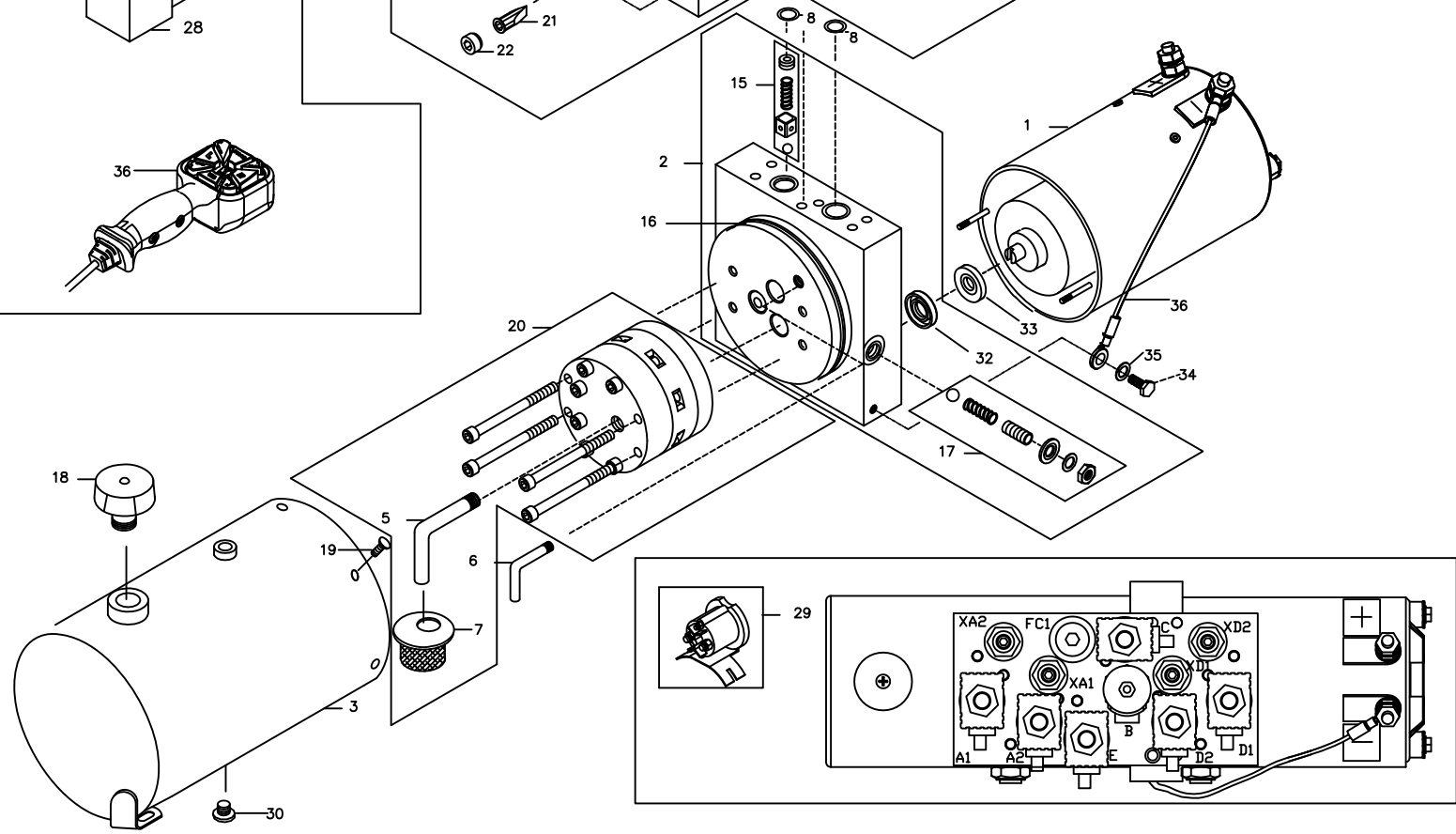
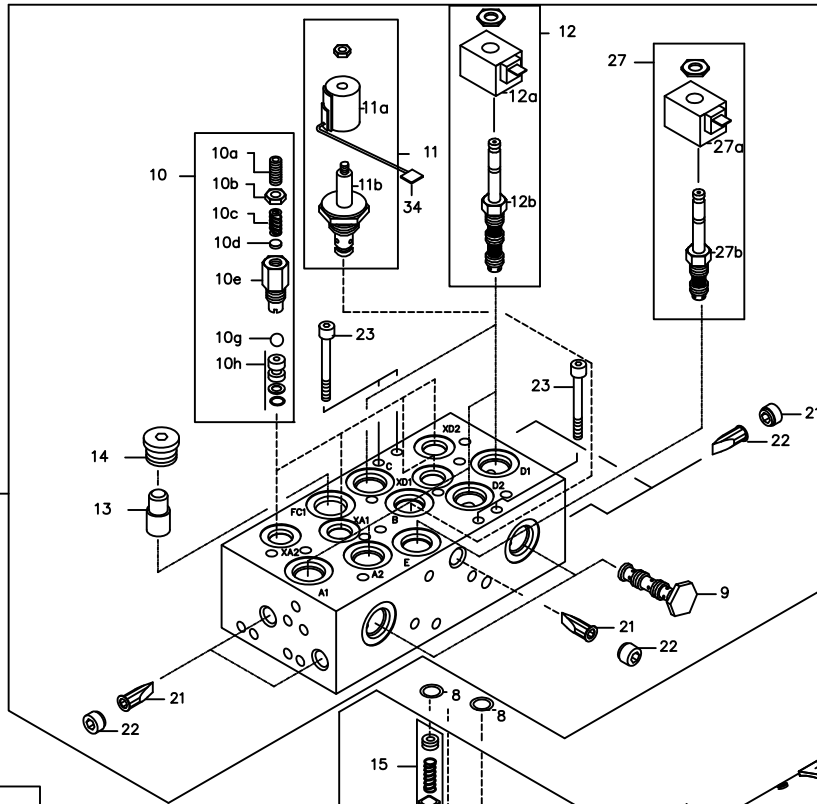
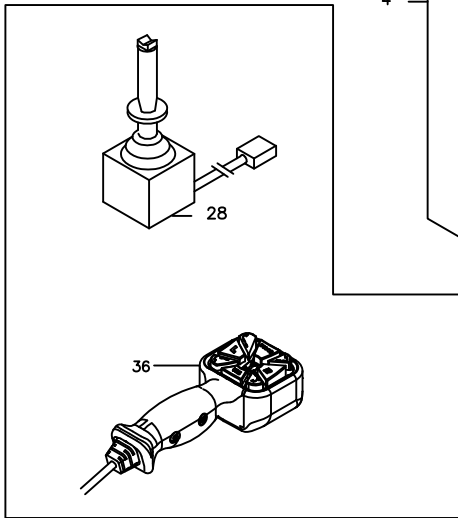
M3500V POWER UNIT WIRING INSTALLATION



Valve	Wire
A1	Gray
A2	Green
B	Orange
C	Blue
D1	Purple
D2	Red
E	Yellow

INSTALLED UNDER THE DASH

POWER UNIT M3500V
up to 2012



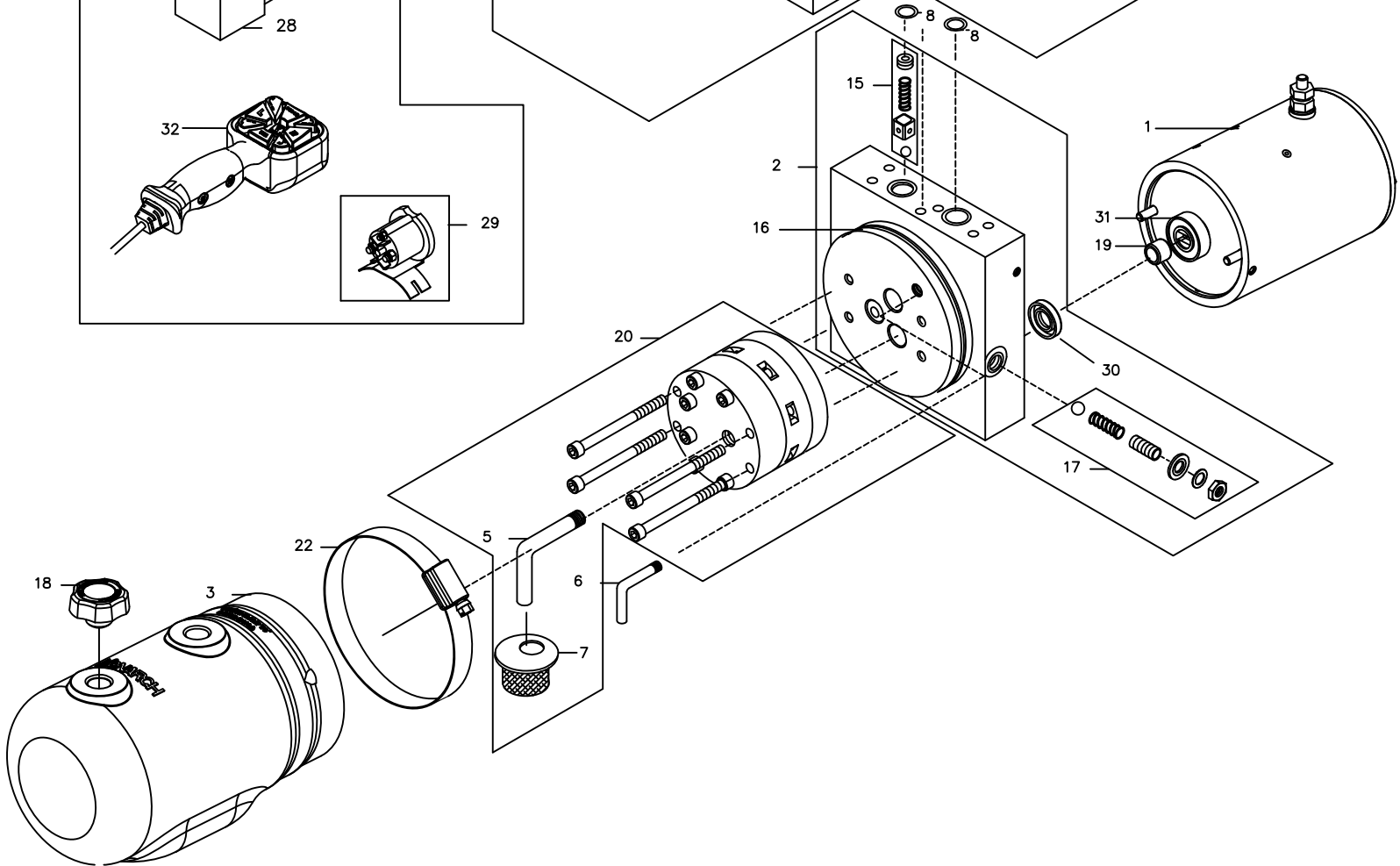
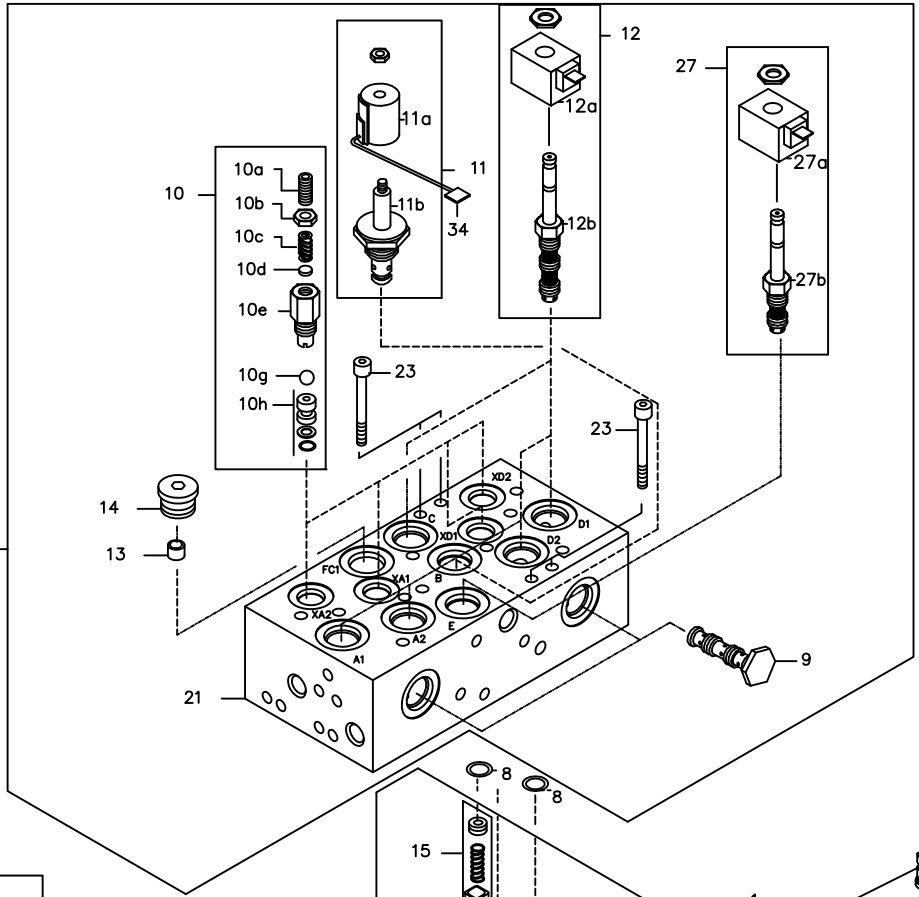
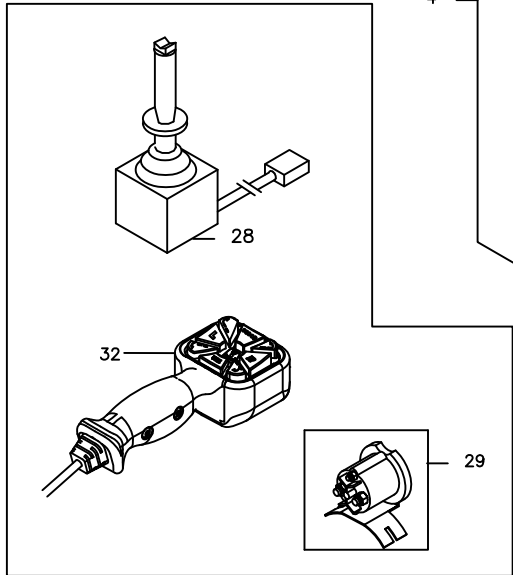
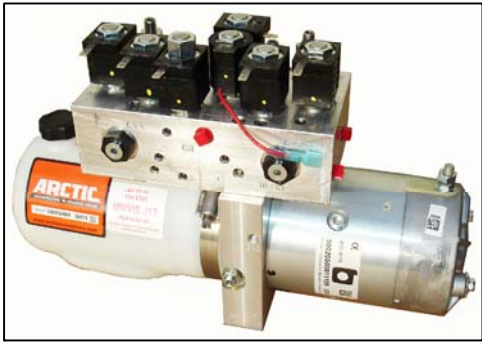
M3500V Parts List (up to 2012)				
Rev	Ref #	Qty	Part #	Description
R01	1	1	FP18442	Motor,ISKRA, 12 VDC with ground stud
	1a	1	FP8714	Brush Kit for ISKRA Motor (FP184420
	1b	1	52589-M	Brush Kit for Prestolite Motor (FP8034)
*	2	1	FP12345-1	Pump base assembly M3593
	2a	1	FP7985	Needle Bearing (Pump Shaft to Pump Base)
	3	1	FP6661-2	Reservoir, 4-1/2" DIA x 8" length
	4	1	FPN0854-SA	Manifold assembly (incl. all valves)
	4a	1	FPN0854-1	Manifold only
	5	1	FP1209	Suction tube
	6	1	FP13058	Return tube
	7	1	FP1134	Suction filter
	8	2	FP0118	O-ring, 5/8 x 3/4 x 1/16 -016
	9	2	FP7346	Valve, PO check valve (CVA, CVD)
	10	4	FP13023	X over valve assembly (XA1, XA2, XD1, XD2)
	10a	1	FP7899	Screw
	10b	1	FP0386	Sealing nut
	10c	1	FP0147	Spring
	10d	1	FP1288	Plate
	10e	1	FP0379	Housing
	10g	1	FP0012	Ball
	10h	1	FP0378	Seat
R04	11	1	FP0490-D	Valve, #8, 2W / 2P, NC poppet (B)
R04	11a	1	FP10861-D	Coil #8, 2W / 2P 12V
R04	11b	1	FP10907-D	Valve cartridge, #8, NC poppet
R04	12	5	FP7249-D	Valve, #8, 3W / 2P, c/w spade terminal (A1, D1, A2, D2, C)
R04	12a	1	FP18835-D	Coil, 12 VDC, #8, with spade terminal
R04	12b	1	FP0679-D	Valve cartridge, #8 spool, 3W / 2P
	13	1	FP17232.0	Pressure compensated flow control
	14	1	FP3274	Plug, SAE #8
	15	1	FP7526	Check valve kit
	16	1	FP2352	O-ring, 3-5/8" x 3-7/8 x 1/8, -239
	17	1	FP7527	Relief valve,(flat washer FPN0575/seal washerFP3874
	18	1	FPN0572	Breather
	19	6	FP7703	Screw, 10-24 x 3/8" self tapping
	20	1	FP12171-250-SA	Pump assembly kit
	21	5	FP1316	Filter, screen
	22	5	FP7624	Screw, filter retainer
	23	4	FPN0748	Screw, SHCS, 1/4-20 x 3"
	24	1	52804-B	Harness, valve section

M3500V Parts List (up to 2012)				
Rev	Ref #	Qty	Part #	Description
	25	1	52803-B	Underhood intermediate harness
	26	1	52802-B	Incab intermediate harness
R04	27	1	FPN0862-SA-D	Valve assembly #8, NO poppet, 12 VDC (E)
R04	27a	1	FP18835-D	Coil #8 with spade terminal
R04	27b	1	FP7276-D	Valve cartridge #8, NO poppet
	28	1	52806-N	Control station, joystick
R02	29	1	FP17757	Solenoid, switch
R03	30	1	53220-N	Plug, SAE O ring 7/16"
	32	1	FP2159	Pump shaft seal
	33	1	FP2318	Motor bearing
	34	1	761656	Spade connector, male 1/4" tab, insulated, 20 g wire
	35	1	53329-A	Motor to Base Ground Wire
	36	1	53326-M	Handheld Controller (V Blade only)

* Items Not Shown on Drawing

- R01: FP18442 replaces FP8034
- R02: FP17757 replaces FP7518
- R03: Added drain plug
- R04: FP0490-D replaces FP0490
 - FP10861-D replaces FP0496 *note: if Deltrol coil FP0496 is replaced with Deltrol coil FP10861-D Deltrol cartridge FP0307 must also be changed to Deltrol cartridge FP10907-D.
 - FP10907-D replaces FP0307 *note: if Deltrol cartridge FP0307 is replaced with Deltrol cartridge FP10907-D, Deltrol coil FP0496 must also be changed to Deltrol coil FP10861-D.
 - FP7249-D replaces FP7249
 - FP18835-D replaces FP10977
 - FP0679-D replaces FP0679 *note: if Parker cartridge FP0679 is replaced with FP0679-D, Parker coil FP10977 must also be changed to Deltrol FP18835-D.
 - FP7276-D replaces FPN0565 *note: If Parker cartridge FPN0565 is replaced with Deltrol cartridge FP7276-D Parker valve FP10977 must also be changed to Deltrol coil FP18835-D.
 - FPN0862-SA-D Replaces FPN0862-SA

POWER UNIT M3500V
2012+



Arctic Equipment Manufacturing Corporation
M3500V Power Unit

R03

M3500V Power unit (2012+)			
Ref #	Part #	Description	Qty
1	FP8111	Motor	1
2	FP18405	Pump base assembly	1
3	FP6102	Reservoir	1
4	FP18411	Manifold assembly (incl. all valves)	1
5	FP1209	Suction tube	1
6	FP13058	Return tube	1
7	FP1134	Suction filter	1
8	FP0118	O-ring, 5/8 x 3/4 x 1/16 -016	2
9	FP7346	Valve, PO check valve (CVA, CVD)	2
10	FP13023	X over valve assembly (XA1, XA2, XD1, XD2)	4
10a	FP7899	Screw	1
10b	FP0386	Sealing nut	1
10c	FP0147	Spring	1
10d	FP1288	Plate	1
10e	FP0379	Housing	1
10g	FP0012	Ball	1
10h	FP0378	Seat	1
11	FP0490-D	Valve, #8, 2W / 2P, NC poppet (B)	1
11a	FP10861-D	Coil #8, 2W / 2P 12V	1
11b	FP10907-D	Valve cartridge, #8, NC poppet	1
12	FP7249-D	Valve, #8, 3W / 2P, c/w spade terminal (A1, D1, A2, D2, C)	5
12a	FP18835-D	Coil, 12 VDC, #8, with spade terminal	1
12b	FP0679-D	Valve cartridge, #8 spool, 3W / 2P	1
13	FP2361	Orifice	1
14	53220-N	Plug, SAE #4 (7/16")	1
15	FP7526	Check valve kit	1
16	FP2352	O-ring, 3 3/4 x 4 x 1/8, -240	1
17	FP7527	Relief valve,(flat washer FPN0575/seal washer FP3874)	1
18	FPN0571	Breather	1
19	FP7985	Needle Bearing	1
20	FP12171-380-SA	Pump assembly kit	1
21	FP18410	Manifold only	1
22	FP7900	Clamp, (clamp up to 80inlb)	1
23	FP7752	Screw, SHCS, 1/4 x 2 3/4"	4
24	52804-B	Harness, valve section	1
25	52803-B	Underhood intermediate harness	1
26	52802-B	Incab intermediate harness	1
27	FPN0862-SA-D	Valve assembly #8, NO poppet, 12 VDC (E)	1
27a	FP18835-D	Coil #8 with spade terminal	1
27b	FP7276-D	Valve cartridge #8, NO poppet	1
28	52806-N	Control station, joystick	1

M3500V Power Unit

M3500V Power unit (2012+)			
Ref #	Part #	Description	Qty
29	FP17757	Solenoid, switch	1
30	FP2159	Pump shaft seal	1
31	FP2318	Motor bearing	1
32	53326-M	Handheld Controller (V Blade only)	1