



The following terms are used to bring attention to the presence of hazards of various risk levels or to important information concerning product life.

DANGER

Indicates the presence of hazards that will cause severe personal injury, death, or substantial property damage if ignored.

CAUTION

Indicates the presence of hazards that will or can cause minor personal injury or property damage if ignored.

NOTICE

Indicates special instructions on installation, operation, or maintenance that are important, but not related to personal injury hazards.

NOTICE

All hardware should be saved for reuse unless otherwise noted.

DANGER

Do not allow hardware to drop inside alternator. Loose hardware inside alternator cavity or stator windings or field coil will cause substantial equipment damage.

Disassembly

1. To make reassembly easier, mark the following junctions:
 - a. anti-drive end housing and shell.
 - b. drive end housing and shell. Transfer the mark from the existing drive end housing to the same location on the new drive end housing.
2. Remove and save pulley (if installed), Woodruff key, and pulley bushing on drive end.
3. Remove and discard:
 - a. regulator hardware and regulator.
 - b. control unit front cover hardware and control unit front cover.
3. Remove and save nut and washer holding fan on anti-drive end of shaft. Remove and save fan.
4. Remove and save nuts holding anti-drive end housing. Remove and save anti-drive end housing. Bearing and seals should remain on shaft.
5. Remove and save one nut and washer from anti-drive end rotor. Mark across middle of hole on face of rotor to realign rotor on shaft core. Remove and save remaining nuts and washers, then remove and save rotor.
 - a. To loosen rust, use an air chisel with a rounded-point hammer bit to vibrate area between screw holes on rotor face.

— OR —

- b. Use three 10-32 jacking screws to lift rotor off core.

CAUTION

This method may damage rotor if rotor is rusted to core.

6. Inside control unit, remove coating material covering three terminal leads and B+ stud.
7. Remove hardware holding three terminal leads and B+ stud. Remove the three leads and the leads from the B+ stud. See Figure 1.
8. Mark leads for reassembly and carefully pull three terminal leads from coating material so as not to damage leads. Clean coating material from leads. Check terminals for rust or corrosion and clean with wire brush if necessary.
9. Remove output lead attached to B+ stud.

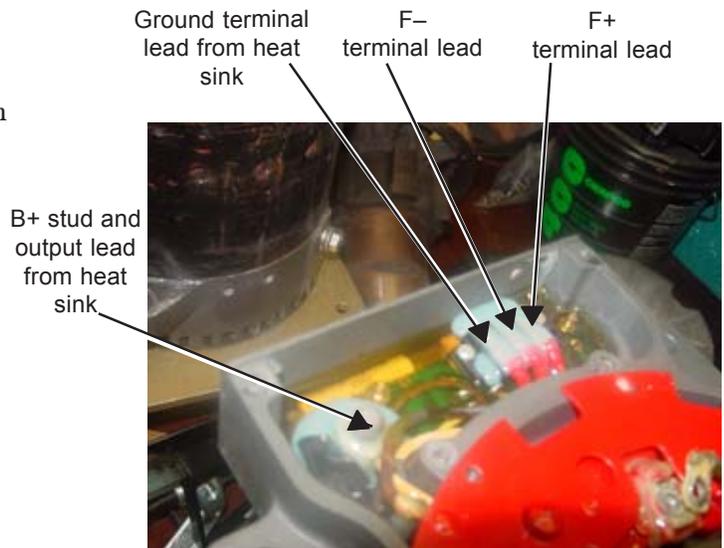


Figure 1—Control Unit Connections

- Remove and save hardware holding stator leads and phase lead (attached to stator lead (at 10:00 position) to heat sink assembly. See Figure 2. Clean coating material from leads. Check terminals for rust or corrosion and clean with wire brush if necessary.

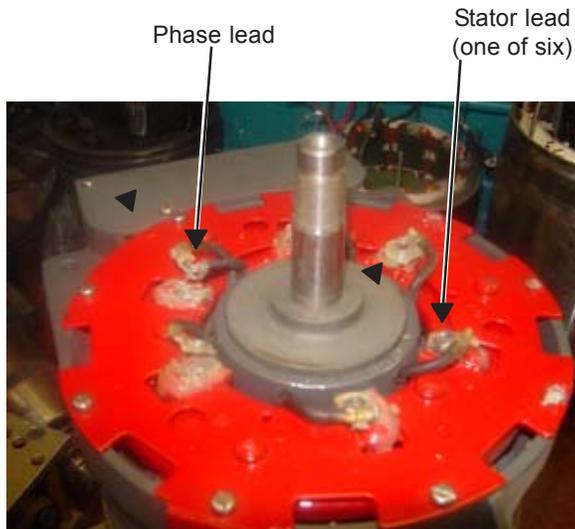


Figure 2—Phase Lead and Stator Leads Connections

- Remove and save heat sink hardware (including ground bolt and lockwasher on tab on side of housing) and heat sink assembly.
- Remove and save drive end housing hardware.
- Remove drive end housing from shell.
- Press shaft out of bearing in drive end housing. Discard drive end housing and bearing. Save shaft core/drive end rotor assembly.

Assembly

- New drive end housing has bearing and retaining rings installed at factory. Using CEN A10-109 bearing tool or equivalent placed on bearing inner race, press shaft into bearing in DE housing. Rotate shaft to make sure bearing moves freely.
- Support shell/field coil/stator assembly on blocks while installing DE housing and shaft.

CAUTION

Do not damage stator windings or through-studs while assembling DE housing and shell. Make sure support is tall enough so that shaft clears bench.
- Align scribed marks, then set housing assembly in position. Pull stator leads and field coil leads through vent holes in assembly. See Figures 3 and 4. Securely mate housing to shell. Rotate shaft to make sure rotor does not interfere with stator leads or field coil leads.



Figure 3—Phase Leads and Field Coil Leads



Figure 4—Field Coil Leads

- Install existing locknuts on through-studs. Use a suitable adhesive, such as Loctite® 222. Follow manufacturer's instructions. Torque locknuts to 2-2.25 Nm/18-20 lb. in.
- Guide field coil leads through channel in housing. See Figure 2. Attach field coil leads to terminal block. See Figure 1 for correct locations. Tighten screws just enough to firmly hold leads in terminal block. Wire-tie field coil leads together inside channel.
- Install heat sink assembly, guiding stator leads and phase lead through center opening to their respective positions. See Figure 2.
- Install existing hardware to hold heat sink in position. Use a suitable adhesive, such as Loctite® 222. Follow manufacturer's instructions. Torque screws to 2-2.25 Nm/18-20 lb. in.
- Loosely install ground bolt and lockwasher in tab on side of heat sink.
- Install ground lead in terminal block. Tighten screw just enough to firmly hold leads in terminal block. See Figure 1 for position.

10. Remove two top nuts on B+ stud and discard one nut. Install output lead and remaining nut on B+ stud and tighten firmly enough to hold output lead on stud.

CAUTION

Out put terminal may be damaged if nut is overtightened.

11. Connect stator leads and phase lead to proper stator terminals as shown in Figure 2. Torque hardware to 3.4 Nm/30 lb. in.
12. Coat stator terminals and terminal block and B+ stud terminal inside control unit with Dow Corning[®] 3140 RTV coating or equivalent. Do not use coating containing acetic acid (vinegar smell) on electrical components.
13. Install new control unit cover on control unit with tab on top facing out. Use a suitable adhesive, such as Loctite[®] 222 on new hardware. Follow manufacturer's instructions. Torque screws to 2-2.25 Nm/18-20 lb. in.
14. Remove and discard two existing screws on top of control unit.
15. Place bracket, spacer, and regulator on top of control unit as shown in Figure 5.
16. Use a suitable adhesive, such as Loctite[®] 222 on new hardware. Follow manufacturer's instructions. Loosely install (see Figure 5):
 - a. one long screw and washer in regulator mounting hole above spacer.
 - b. remaining long screw and washer in front regulator mounting hole above bracket.
 - c. one short screw and washer in rear regulator mounting hole above bracket.
 - d. remaining short screw and washer in bracket.
17. Torque screws in a-b-c-d order listed in step 16

to 2-2.25 Nm/18-20 lb. in.

18. Place ADE rotor on shaft. Align scribe mark. Loosely install all nuts and washers except for the nut for the marked hole. Before securing nuts, make sure scribe mark in last hole is aligned. Then secure all nuts. On all screws, use a suitable adhesive, such as Loctite[®] 222. Follow manufacturer's instructions. Torque to 3.4 Nm/30 lb. in.
19. Align scribed marks, then set ADE housing assembly in position on shell. If bearing remained in housing, use CEN A10-109 bearing tool or equivalent placed on bearing inner race. Press on bearing and guide ADE housing on shell. Rotate shaft to make sure bearing moves freely.
20. Install existing locknuts on through-studs. Use a suitable adhesive, such as Loctite[®] 222. Follow manufacturer's instructions. Torque locknuts to 2-2.25 Nm/18-20 lb. in.
21. Press fan assembly into bore of ADE housing. Fasten with existing hardware and torque to 67.8 Nm/50 lb. ft.
22. Install pulley bushing on drive end shaft with short hub facing bearing.
23. Install Woodruff key in slot in shaft.
24. Install pulley on shaft. Torque to 162.7 Nm/120 lb. ft.
25. Plug regulator harness plug into regulator receptacle in housing.

Test unit on bench to verify proper operation after assembling.

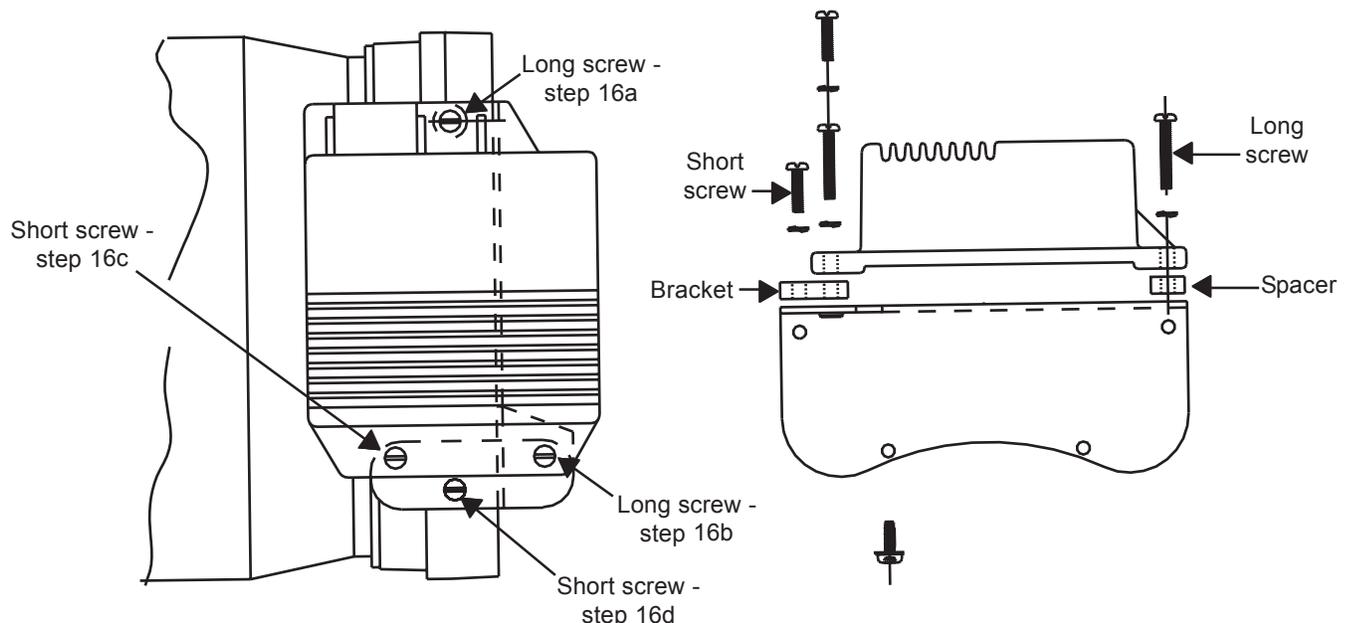
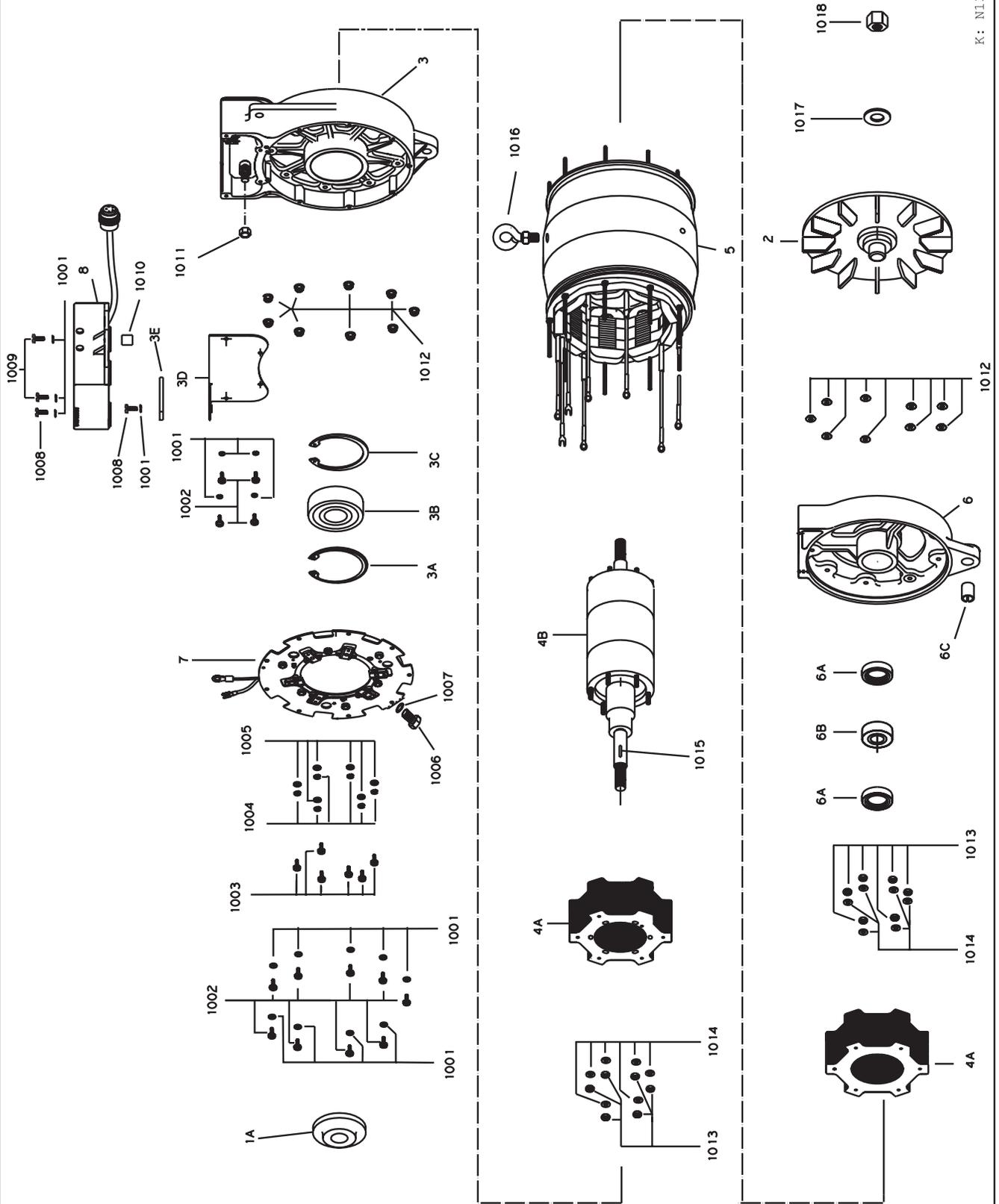


Figure 5—New Regulator and Bracket Assembly

Exploded View * N1380



K: N1380DL

Service Parts List * N1380-1

Date: 09/03/04

Key No.	Part No.	Qty.	Description
1A	N9001	1	Pulley Bushing (.785"ID x 2.79"OD x .695"T)
2	N7212	1	Fan
3	N7403	1	Front Housing & Control Unit
3A	N9009	1	Retaining Ring (Beveled)
3B	N9010	1	Front Bearing
3C	N9008	1	Retaining Ring
3D	N7368	1	Cover Plate, Plug Nut Assembly
3E	N9450	1	Bracket
4	N7449	1	Rotor, Shaft & Core Assembly
4A	N7003	2	Rotor Assembly
4B	N7278	1	Core & Shaft Assembly
5	N7280	1	Shell, Stator, Field Coil Assembly
6	N7281	1	End Housing
6A	N9302	2	Bearing Seals
6B	N9303	1	Rear Bearing (Roller)
6C	N9405	1	Tension Bushing
7	N7227	1	Heatsink Assembly
8	N3109	1	Regulator
10	N8051	1	Small Parts Package
1001	N9265	17	Lockwasher (#8 .17"ID x .30"OD x .040" T SST)
1002	N9186	13	TXT-20 Screw (8-32UNC-2A x .37"L)
1003	N9039	6	Pan Head Screw (10-32UNF-2A x .37"L)
1004	N9018	6	Lockwasher (#10 .20"ID x .33"OD x .05"T SST)
1005	N9016	6	Flat Washer (.20"ID x .375"OD x .040"T SST)
1006	N9014	1	Bolt (5/16-16UNC-2A x .75"L)
1007	N9015	1	Lockwasher (.32"ID x .60"OD x .08 "T SST)
1008	N9399	2	Pan Head Screw (8-32UNC-2A x .62"L)
1009	N9400	2	Pan Head Screw (8-32UNC-2A x 1.0"L)
1010	N9447	1	Spacer (.18"ID x .50"OD x .25"T STL)
1011	N9218	1	Hex Nut (3/8-16 Zn)
1012	N9099	18	Flange Locknut (8-32 S-Grip)
1013	N9091	12	Locknut ((10-32UNF-2B)
1014	N9320	12	Flat Washer (.200"ID x .437"OD x .031"T)
1015	N9040	1	Woodruff Key (3/16" x 3/4")
1016	N9217	1	Eyebolt / Nut (3/8-16UNC-2A x 1.75"L)
1017	N9063	1	Flat Washer (.53"ID x 1.06"OD x .09"T BLKOXD.)
1018	N9092	1	Locknut (1/2-20UNF-2B ZN)
*1019	N9587	12	Torx Screw Taptite (10-32 x .5"L)

* - Part not shown on Exploded View.