Service & Parts Manual for GULF STREAM- Power Gear Electric Slide Systems

CONTENTS

3010000065 Rev. 0B

Before you operate the slide system

The Power Gear electric slide-out system in your coach is designed to give you years of trouble free operation and reflects the latest state of the art technology. **READ, STUDY, AND UNDERSTAND THIS MANUAL BEFORE OPERATING YOUR SLIDE-OUT SYSTEM.**

SYSTEMS DESCRIPTION

Your Power Gear slide-out system is a rack and pinion design operated by a 12Volt DC electric motor.

MAJOR COMPONENTS

- Inner rail assemblies are designed to support the room weight.
- The 12Volt DC gear motor will operate the room using power from the onboard unit battery.
- Slide-out systems are equipped with a manual override that allows you to extend / retract the room in the event of a loss of power.

WARNING

- **ALWAYS MAKE SURE THAT THE SLIDE-OUT ROOM PATH IS CLEAR BEFORE AND DURING OPERATION OF THE SLIDE-OUT ROOM.**
- **ALWAYS KEEP AWAY FROM THE SLIDE-OUT RAILS WHEN THE ROOM IS BEING OPERATED. THE GEAR ASSEMBLY MAY PINCH OR CATCH ON LOOSE CLOTHING CAUSING PERSONAL INJURY.**
- **ALWAYS UTILIZE A ROOM LOCKING DEVICE ON THE SLIDE-OUT ROOM DURING STORAGE AND TRANSORTATION.**

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.

Operating Modes

EXTENDING THE ROOM

1. Level the unit.
2. Verify the battery is fully charged and hooked-up to the electrical system.
3. Remove the transit bars (if your unit is so equipped).
4. Make sure the room path is clear (both inside and outside the coach).
5. Check the slide-out awning (some awnings must be manually unlocked before operating the slide-out).
6. Press and hold the IN/OUT switch in the OUT position until the room is fully extended and stops moving.
7. Release the switch, which will lock the room into position.

RETRACTING THE ROOM

1. Verify the battery is fully charged and hooked-up to the electrical system.
2. Make sure the room path is clear (both inside and outside the coach).
3. Press and hold the IN/OUT switch in the IN position until the room is fully retracted and stops moving.
4. Release the switch, which will lock the room into position
5. Check the slide-out awning (some awnings must be manually locked before traveling).
6. Install transit bars (if your unit is so equipped).

Preventative Maintenance

Your Power Gear slide-out system has been designed to require very little maintenance. To ensure the long life of your slide-out system, read and follow these few simple procedures.

CAUTION: DO NOT WORK ON YOUR SLIDE-OUT SYSTEM UNLESS THE BATTERY IS DISCONNECTED.

- When the room is out, visually inspect the inner slide rail assemblies. Check for excess build-up of dirt or other foreign material; remove any debris or items that may be present.
- If the system squeaks or makes any noises it is permissible to apply a light coating of silicone spray or lithium grease to the roller and bearing sleeve I.D., removing any excess lubricant so that dirt or debris do not build-up. DO NOT lubricate the slide-out drive gears, gear racks, or roller OD as this will attract dirt / debris.

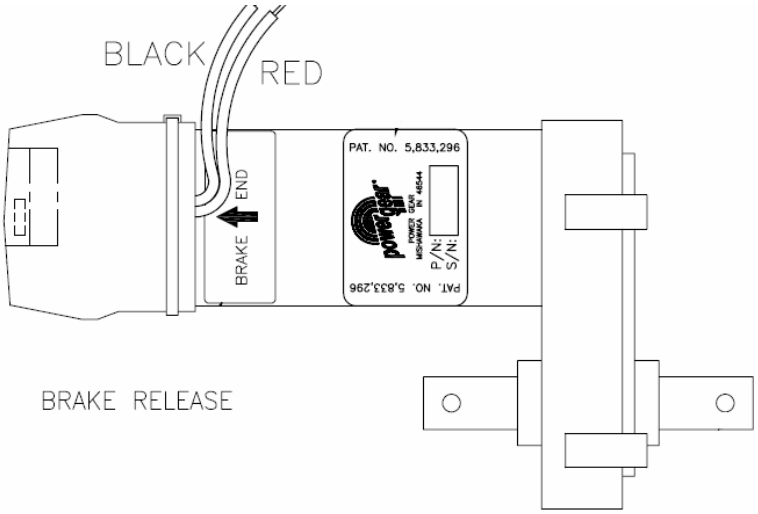
IF YOU HAVE ANY PROBLEMS OR QUESTIONS CONSULT YOUR LOCAL AUTHORIZED DEALER OR CALL US AT 574-537-8900.

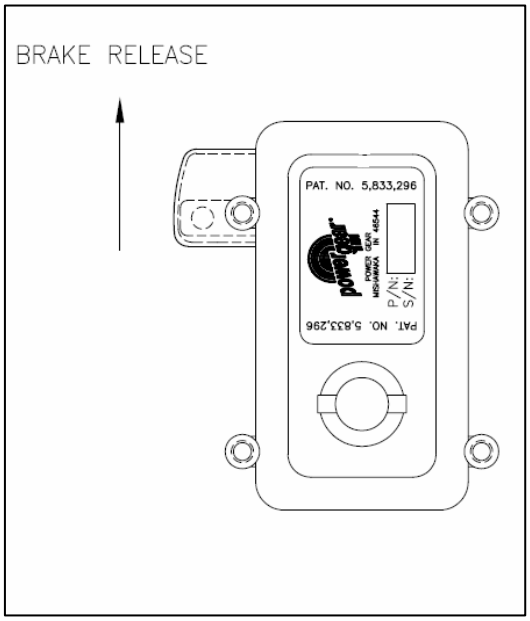
Manually Overriding your Slide-out

Your Power Gear slide-out system is equipped with a manual override that allows you to extend or retract the room in the event of a loss of power. **NOTE: If the room does not move when the switch is pressed, check the following:**

- **Battery is fully charged and connected**
- **The transit bars are removed**
- **All system fuses/circuit breakers and relays are good.**

- Locate the slide-out motor (see drawings later in this manual). The motor is located in the top of the center storage compartment under the slide-out room. For a bedroom slide-out the motor will be mounted to rail assembly.
- Rotate the brake lever on the back of the motor counter-clockwise (looking from the rubber boot end of the motor) about 1/8 of a turn to the released position. Refer to the label on the motor and the motor drawing in this manual. This will release the brake that holds the room in place. The room is now free to move.
- Locate the manual override on the end of a rail assembly (or on the motor itself). It is also permissible to use an adjustable wrench on the square drive shaft to crank the room in or out (if the room is so equipped).
- Check the slide-out awning (some awnings must be manually unlocked before operating).
- Using a ¾ wrench or ratchet, crank the room either in or out completely (depending on your need).
- When the room is fully in/out apply pressure to the wrench or ratchet and return the motor brake lever to the "Engaged" position. This will ensure the room is locked into a sealed position.
- Check the slide-out awning (some awnings must be manually locked before traveling).
- Install transit bars (if so equipped) and take the unit to an authorized dealer for service.

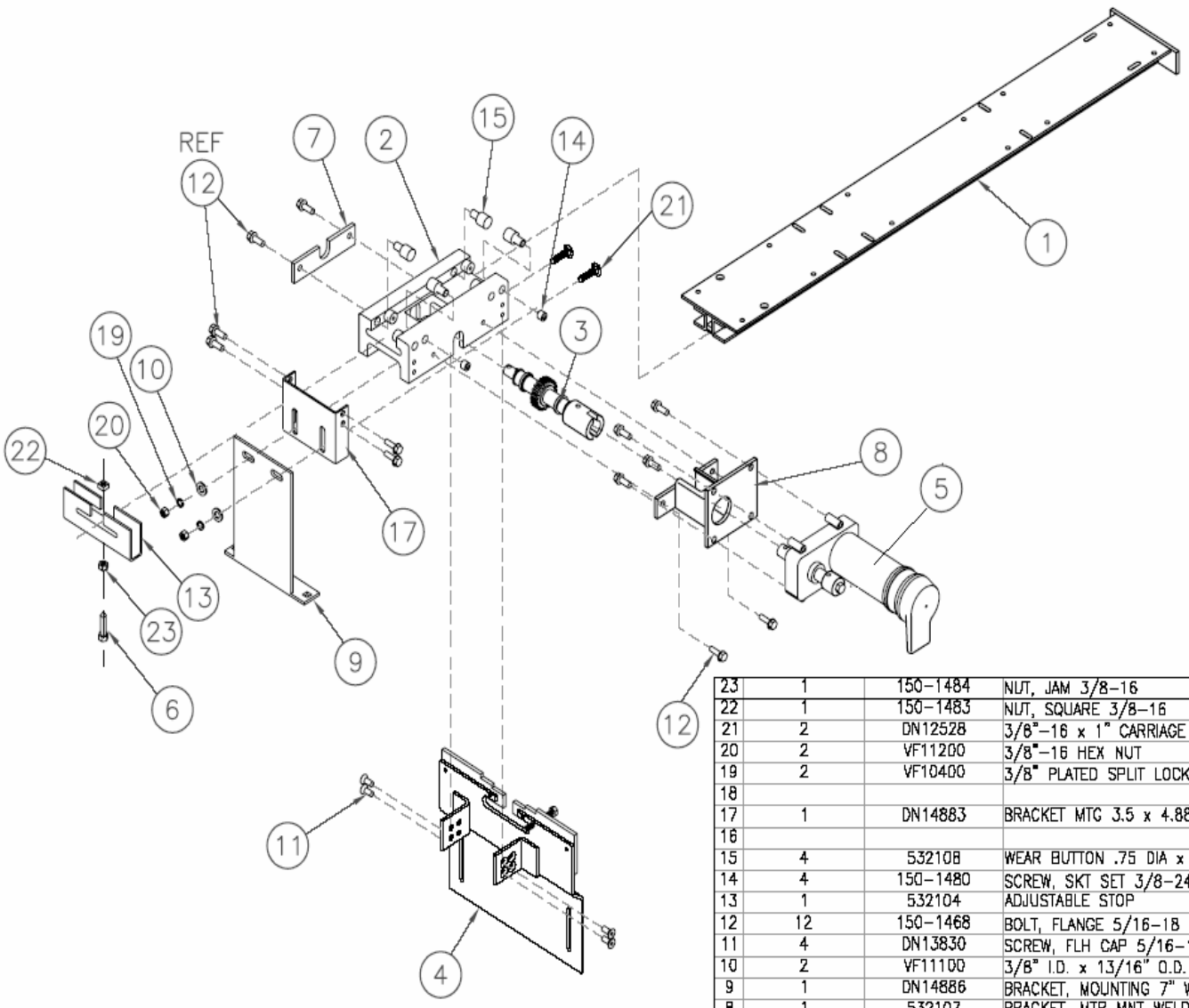




!!WARNING!!

WHEN THE MOTOR BRAKE IS DISENGAGED THE SLIDE-OUT ROOM WILL NOT LOCK IN PLACE; THEREFORE, THE ROOM WILL NOT BE SEALED. WHEN THE ROOM HAS BEEN MANUALLY RETRACTED, BE SURE TO INSTALL THE TRANSIT BARS AND RETURN THE MOTOR BRAKE LEVER TO ITS NORMAL "ENGAGED" POSITION IN ORDER TO SEAL AND LOCK THE ROOM INTO POSITION.

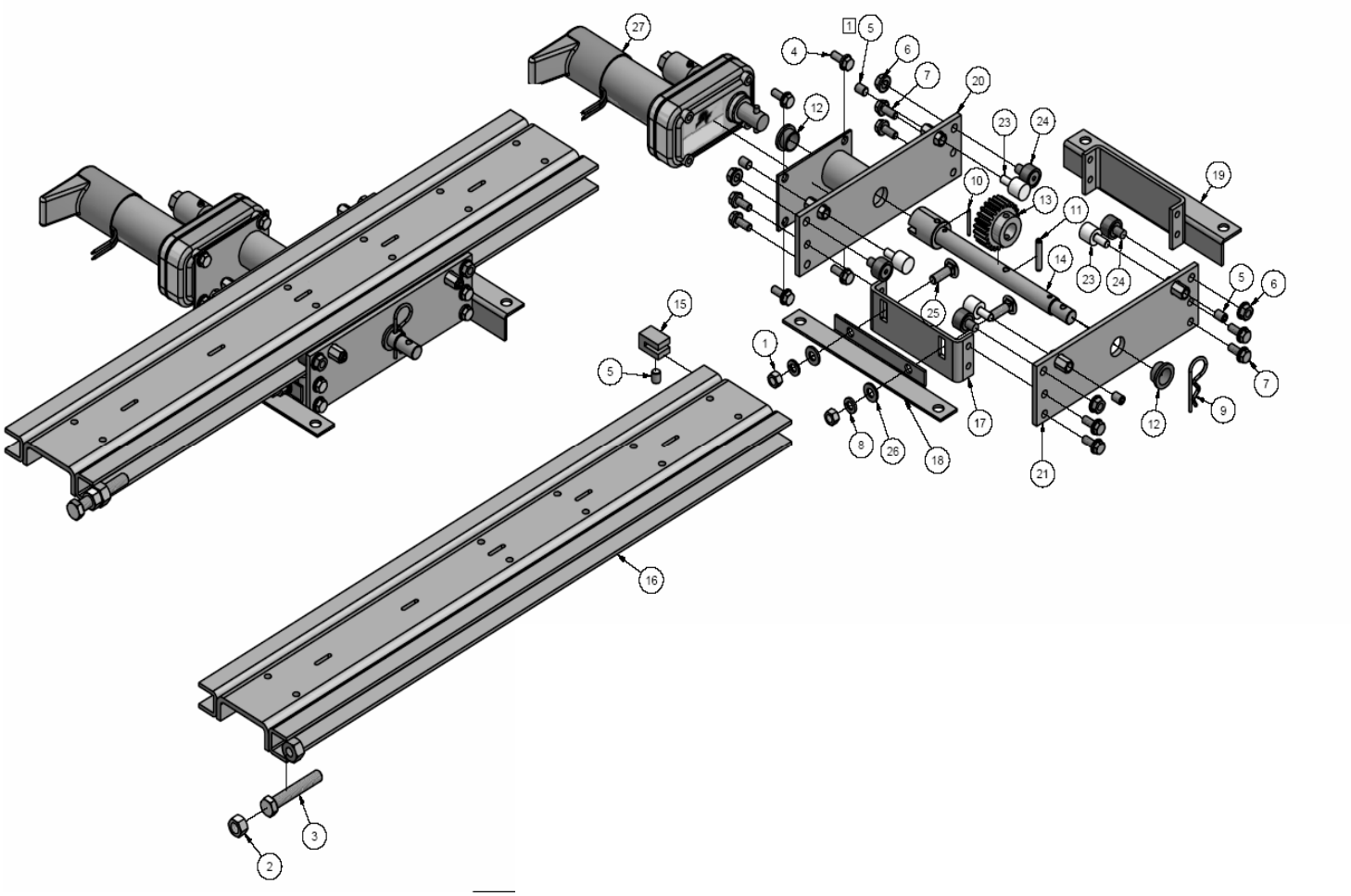
ABOVE FLOOR SLIDES WITH ALUMINUM BASES



ITEM	QTY REQD	PART NO.	DESCRIPTION
23	1	150-1484	NUT, JAM 3/8-16
22	1	150-1483	NUT, SQUARE 3/8-16
21	2	DN12528	3/8"-16 x 1" CARRIAGE ZINC
20	2	VF11200	3/8"-16 HEX NUT
19	2	VF10400	3/8" PLATED SPLIT LOCK WASHER
18			
17	1	DN14883	BRACKET MTG 3.5 x 4.88
16			
15	4	532108	WEAR BUTTON .75 DIA x 1.4
14	4	150-1480	SCREW, SKT SET 3/8-24
13	1	532104	ADJUSTABLE STOP
12	12	150-1468	BOLT, FLANGE 5/16-18 X .75
11	4	DN13830	SCREW, FLH CAP 5/16-18 x .75
10	2	VF11100	3/8" I.D. x 13/16" O.D. SAE FL
9	1	DN14886	BRACKET, MOUNTING 7" W. x 8 1/2" H.
8	1	532107	BRACKET, MTR MNT WELD
7	1	532105	BRACKET MTG 1.5 x 3.5 x 7
6	1	150-1481	BOLT, HEX HD 3/8-16 x 1.5 w/POINT
5	1	523833	MOTOR ASSY DS MT w/PIN & CPLR-B
4	1	523677	ASSY FRT STOP PLT w/RUBBER 12"
3	1	532128	SHAFT ASSY ABF w/CPLG
2	1	532113	ROLLER RACK BASE W/CAMFOLLOWERS
1	1	DN14262	SLIDE ARM ASSY 35.25

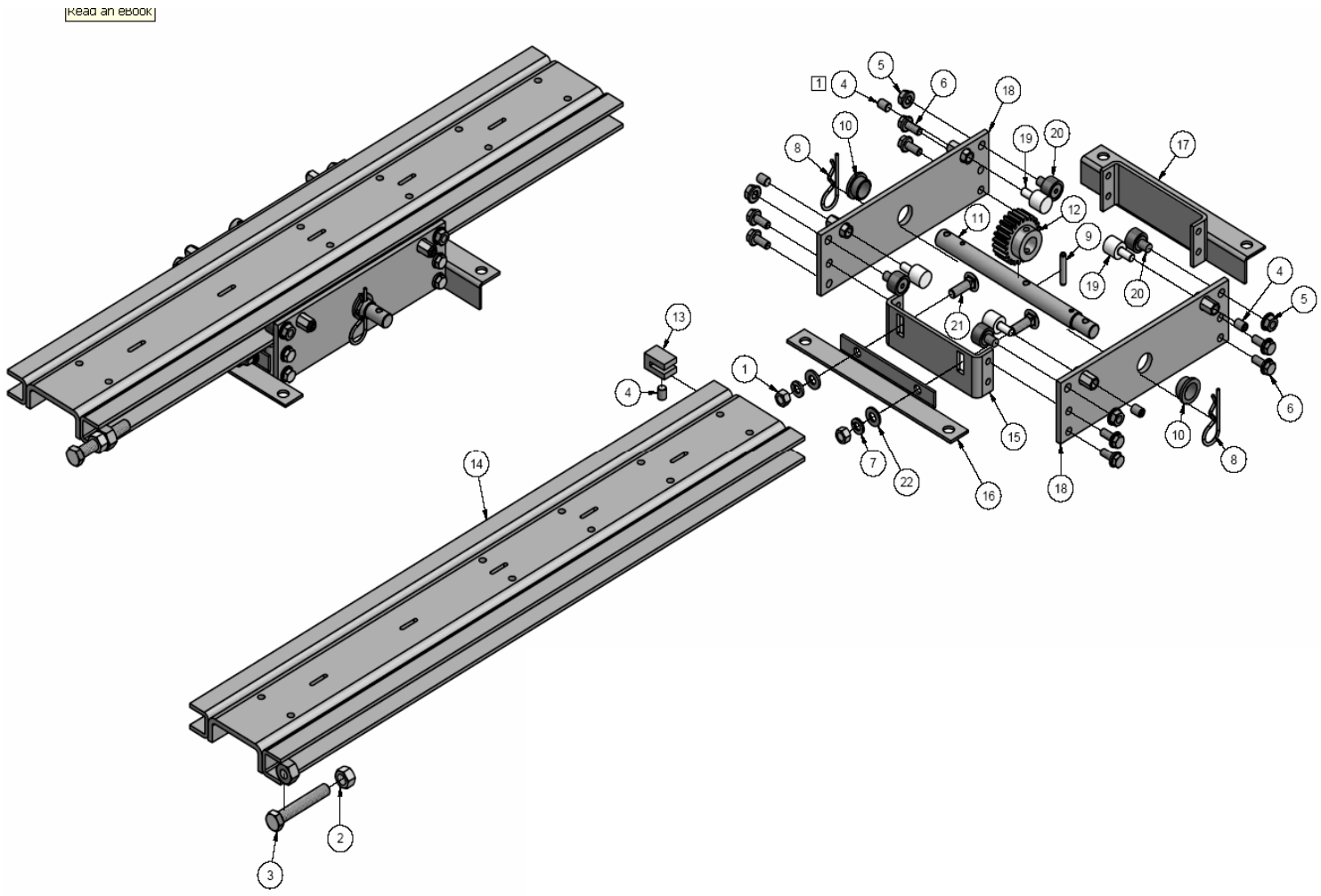
ABOVE FLOOR SLIDES WITH STEEL BASES-DRIVE SIDE

ITEM	PART NUMBER	QTY	DESCRIPTION	ITEM	PART NUMBER	QTY	DESCRIPTION
13	510104	1	GEAR PINION 1.417 OD	27	524793	1	GEARMOTOR DS MT W PIN - INBOARD BO
12	190-1046	2	BEARING, BRONZE FLANGE .75 ID	26	VF11100	2	WASHER, FLAT 1/2
11	18-1039	1	PIN, COILED 1/4 DIA X 1.50	25	DN12528	2	3/8-16 X 1" CARRIAGE BOLT
10	18-1036	1	PIN, ROLL OD 1/8 X 1.25	24	532115	4	CAM, FOLLOWER .88 OD
9	18-1032	1	CLIP, PIN 1/8	23	532108	4	BUTTON, WEAR
8	16-1002	2	WASHER, LOCK 3/8	21	524651	1	PLATE, BASE WELD
7	150-1555	8	SCREW, FL 5/16-18 .75	20	524636	1	PLATE, OUTER RAIL WELD
6	150-1538	4	NUT, HEX FL 3/8-24	19	524635	1	BRACKET, FRONT MOUNT
5	150-1480	5	SCREW, SET .375-24 X .50	18	524622	1	BRACKET, MOUNT FOOT
4	150-1468	4	SCREW, FL 5/16-18 .75	17	524621	1	BRACKET ADJ MTG
3	15-1406	1	HHCS 1/2-20 X 3.0 FULL THREAD	16	524618	1	RAIL, INNER WELD
2	15-1346	1	HEX NUT 1/2-13	15	524596	1	STOP SCREW ON
1	15-1010	2	NUT, HEX 3/8-16	14	524514	1	SHAFT ASSY .75 OD X 8.94 W/CPLR

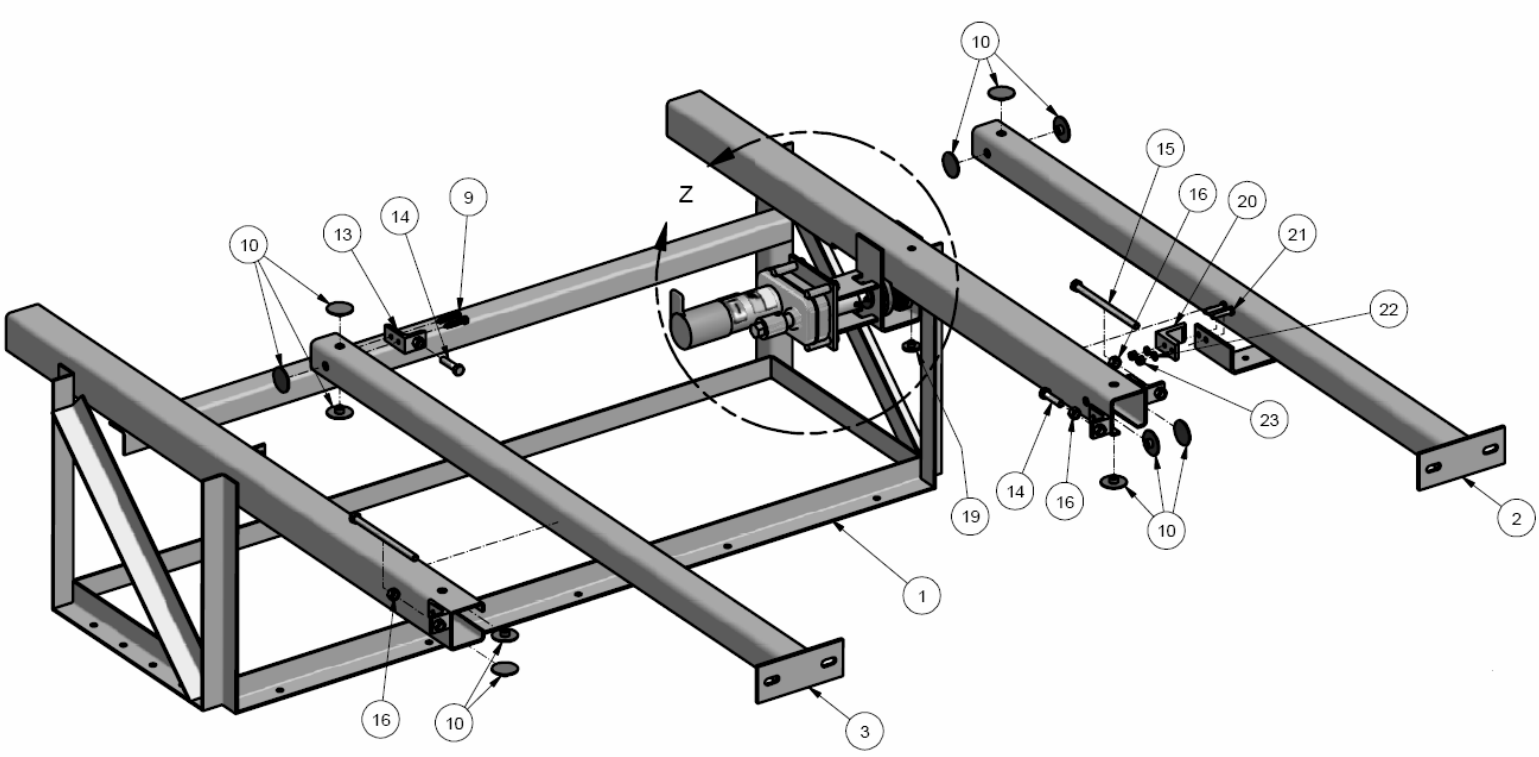


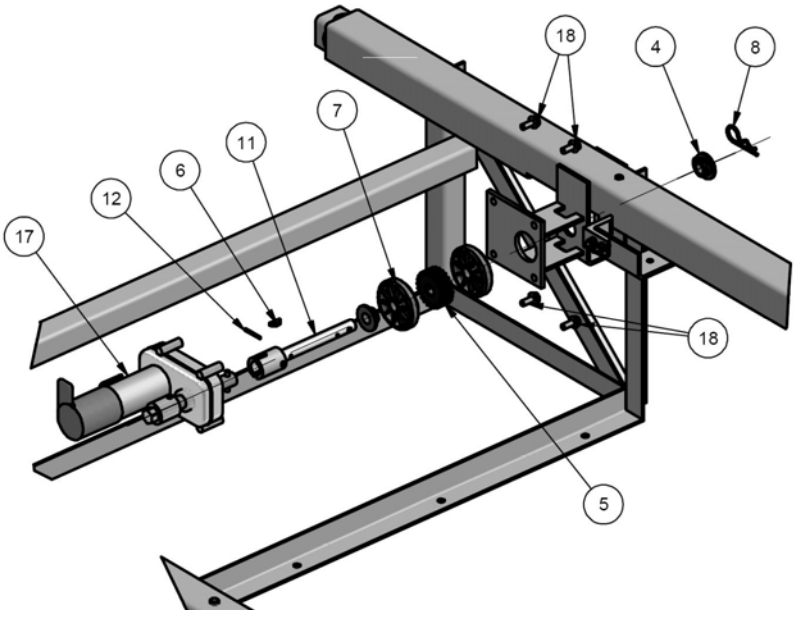
ABOVE FLOOR SLIDES WITH STEEL BASES-IDLER SIDE

ITEM	PART NUMBER	QTY	DESCRIPTION	ITEM	PART NUMBER	QTY	DESCRIP
11	260-0014	1	SHAFT, GEAR .75 OD X 9.34	22	VF11100	2	WASHER, FLAT 1/2
10	190-1046	2	BEARING, SLEEVE .75 ID	21	DN12528	2	3/8-16 X 1" CARRIAGE BOL
9	18-1039	1	PIN, COILED 1/4 DIA X 1.50	20	532115	4	CAM, FOLLOWER .88 OD
8	18-1032	2	CLIP, PIN 1/8	19	532108	4	BUTTON, WEAR
7	16-1002	2	WASHER, LOCK 3/8	18	524651	2	PLATE, BASE WELD
6	150-1555	8	SCREW, FL 5/16-18 .75	17	524635	1	BRACKET, FRONT MOUNT
5	150-1538	4	NUT, HEX FL 3/8-24	16	524622	1	BRACKET, MOUNT FOOT
4	150-1480	5	SCREW, SET .375-24 X .50	15	524621	1	BRACKET ADJ MTG
3	15-1406	1	HHCS 1/2-20 X 3.0 FULL THREAD	14	524618	1	RAIL, INNER WELD
2	15-1346	1	HEX NUT 1/2-13	13	524596	1	STOP SCREW ON
1	15-1010	2	NUT, HEX 3/8-16	12	510104	1	GEAR PINION 1.417 OD



CAGE STYLE SLIDES – BED / WARDROBE





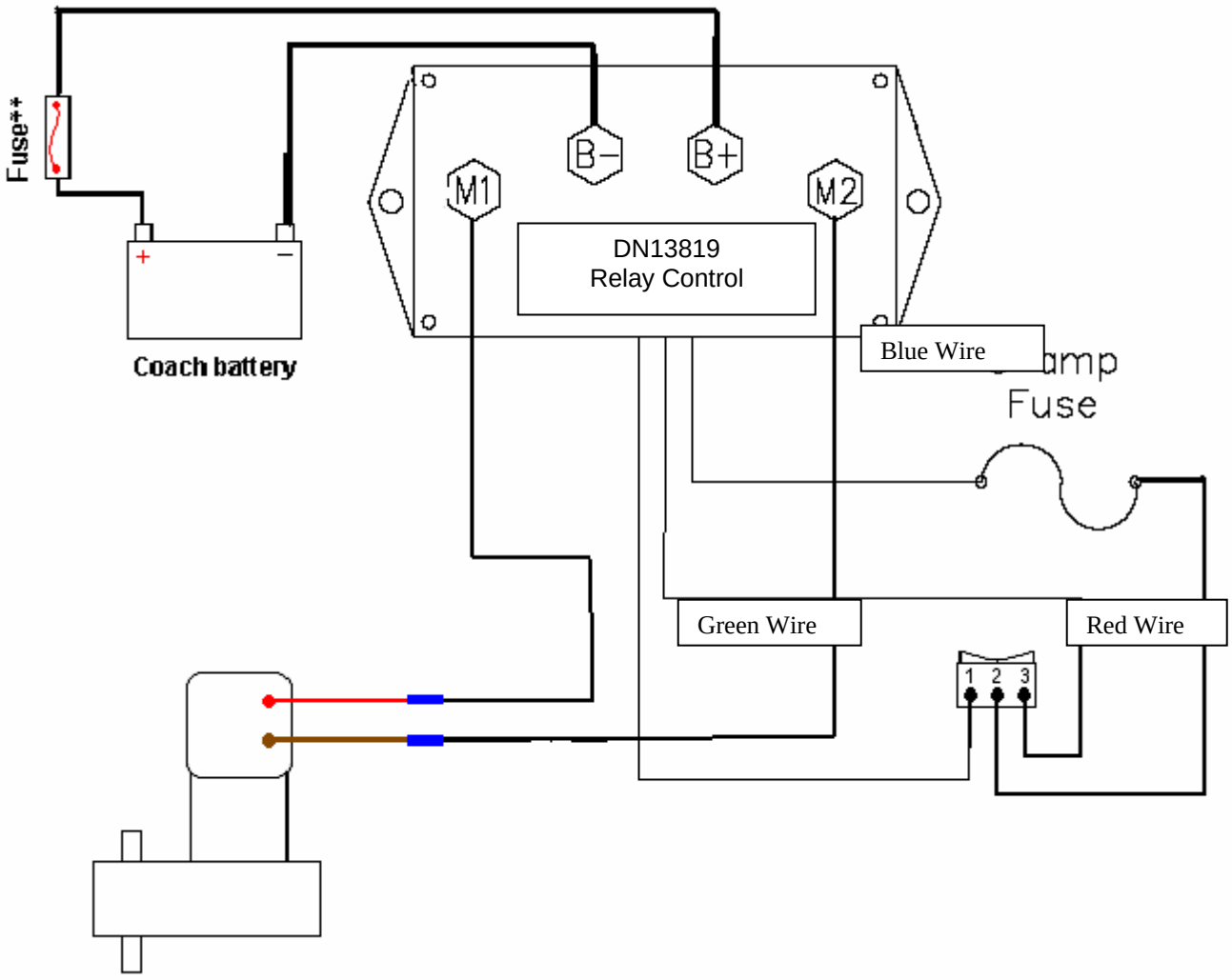
ITEM	PART NUMBER	QTY	DESCRIPTION
23	15-1006	2	NUT, NYLOK 1/4-20
22	16-1001	2	WASHER, LOCK 1/4
21	DN12404	2	SCREW, HHC 1/4-20 x 1.25
20	523419	1	BRACKET, IN STOP
19	DN11879	1	WEARPAD
18	150-1468	4	SCREW, FL 5/16-18 .75
17	523833	1	GEARMOTOR DS MT w/PIN & CPLR -B
16	15-1010	3	NUT, HEX 3/8-16
15	15-1355	2	SCREW, HHC 3/8-16 X 6.0 FULL THREAD
14	15-1007	2	SCREW, HHC 3/8-16 X 1.5
13	523420	1	BRACKET, IN STOP WELD
12	18-1036	1	PIN, ROLL OD 1/8 X 1.25
11	523404	1	SHAFT 2X2 w/CPLR
10	DN10936	11	WEAR PAD
9	150-1531	2	SCREW, SELF TAP .25 X 1.25
8	18-1032	1	CLIP, PIN 1/8
7	320-0009	2	ROLLER, OUTER 2"
6	521336	1	KEY, WOODRUFF #606
5	250-0001	1	GEAR, SPUR .62 ID X 2.0 OD
4	190-1027	2	BEARING, SLEEVE 5/8" W/TAB
3	524834	1	RAIL, INNER 2X2 LH 48.0 w/o RACK
2	524830	1	RAIL, INNER 2X2 RH 48.0
1	524729	1	FRAME B/R WELD 2X2 ELECT DRV

TYPICAL WIRING WITH A RELAY STYLE CONTROLLER

Diagnosing the relay control:

1) Measure voltage between B+ and B-. Voltage less than 11.5 volts is insufficient. Repair or recharge battery or repair wiring before attempting other repairs.
2) Measure voltage at green wire when switch is moved to the “IN” position. It should be at least 11.5 volts. Voltage less than specified indicates a bad switch or wires to the switch. Check seat switch and park brake switches also.
3) Measure voltage at blue wire when switch is moved to the “OUT” position. It should be at least 11.5 volts. Voltage less than specified indicates a bad switch or wires to the switch. Check the seat switch and park brake switches also.
4) Measure voltage between M1 and M2 when switch is moved to the “IN” position. It should be at least 11 volts. Less than 11 volts indicates a bad control if all other steps have been OK.
5) Measure voltage between M1 and M2 when switch is moved to the “OUT” position. It should be at least 11 volts. Less than 11 volts indicates a bad control if all other steps have been OK.

**Must be fused per latest edition of ANSI/RVIA standard for low voltage systems in conversion and recreational vehicles.



FLAT FLOOR ROOM HEIGHT ADJUSTMENT---FLUSH FLOOR STYLE SLIDES

This TIP sheet is designed to provide information on setting the room height on a flat floor slide-out system utilizing angled rails.

With the room fully extended-

- Measure from the top of the moving slide-out rail to the bottom of the slide-out room floor up close to the coach. This is dimension “A”.
- Measure from the top of the moving slide-out rail to the bottom of the slide-out room floor out near the mounting bracket. This is dimension “B”.
- To calculate dimension “B” use the following formula:
  “B” (end bracket height setting)=“A” + (slideout room floor thickness) + ¼”.

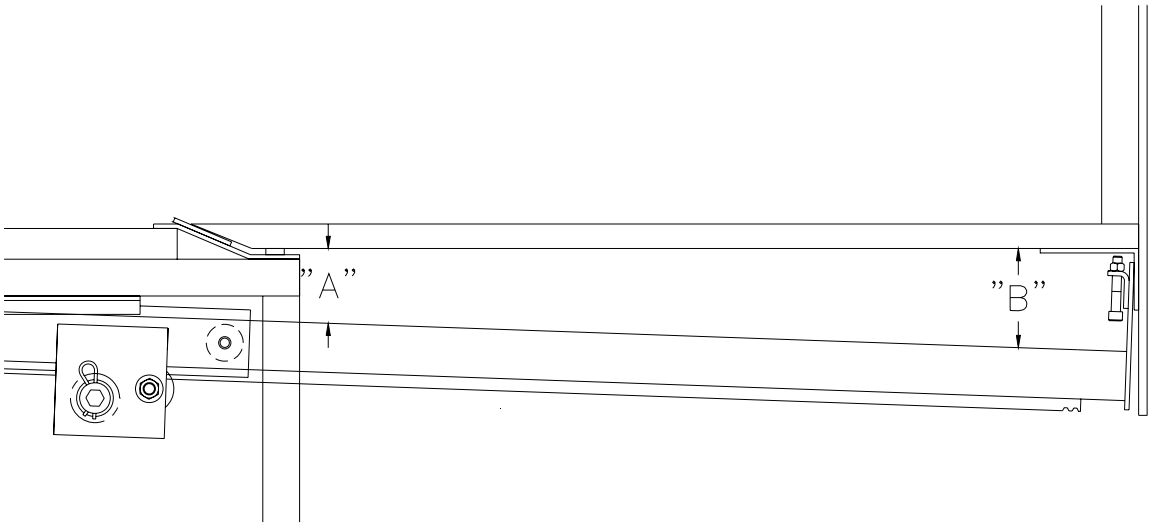
EXAMPLE:

“B” (end bracket height setting) =“A” + (slideout room floor thickness) + ¼”.
If “A” = 3-1/4” AND THE SLIDEOUT FLOOR IS 1” THICK
Then “B”=3-1/4” + 1” + ¼” = 4-1/2”

- Perform this check on each slide-out rail independent of the other.

NOTE:

1) These figures are approximates. Each coach may be slightly different.
2) Refer to manufacturer of coach/trailer for correct slideout room floor thickness.



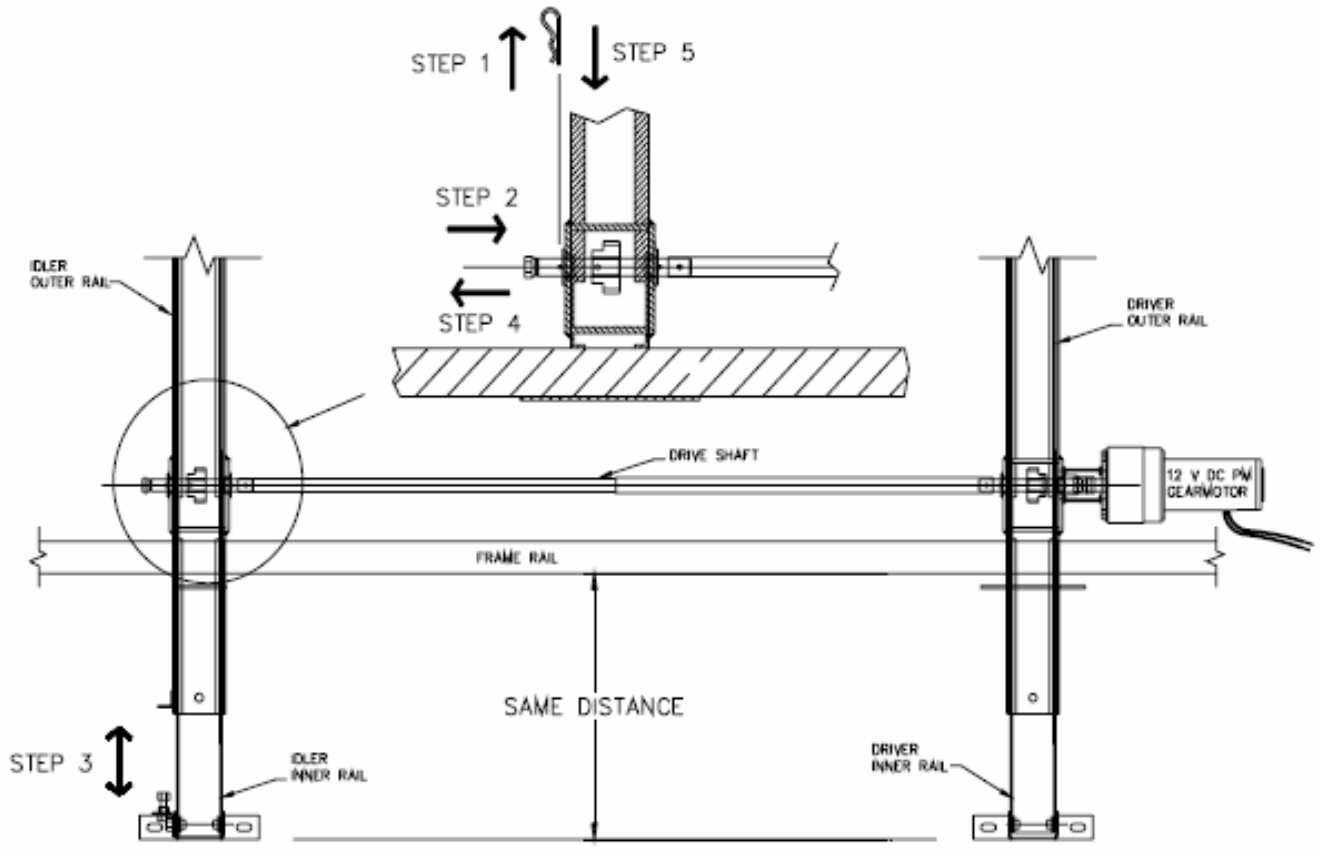
SYNCHRONIZING RAILS

Rail "Timing"

End of inner rails must extend from chassis frame the same distance +/- 1/16". If the inner rails vary more than the 1/16", refer to the instructions on inner rail realignment. There4 are several methods of setting the timing between rails. One of the more popular methods is illustrated here. **NOTE:** Failure to set inner rails at proper distance will prevent room from sealing properly.

Inner Rail Alignment

1. Remove cotter hairpin from idler drive shaft.
2. Push the idler drive shaft toward inner rail to disengage the gear from the gear rack.
3. Adjust the room by sliding the idler rail side of the room to the proper position (same distance from the frame as the drive rail side).
4. Push the idler drive shaft back into position engaging the gear and the gear rack.
5. Reinstall cotter hairpin in idler drive shaft.
6. Extend and retract room a couple of times and check for proper room flange sealing.
7. If room is not aligned properly, repeat steps 1 thru 6.

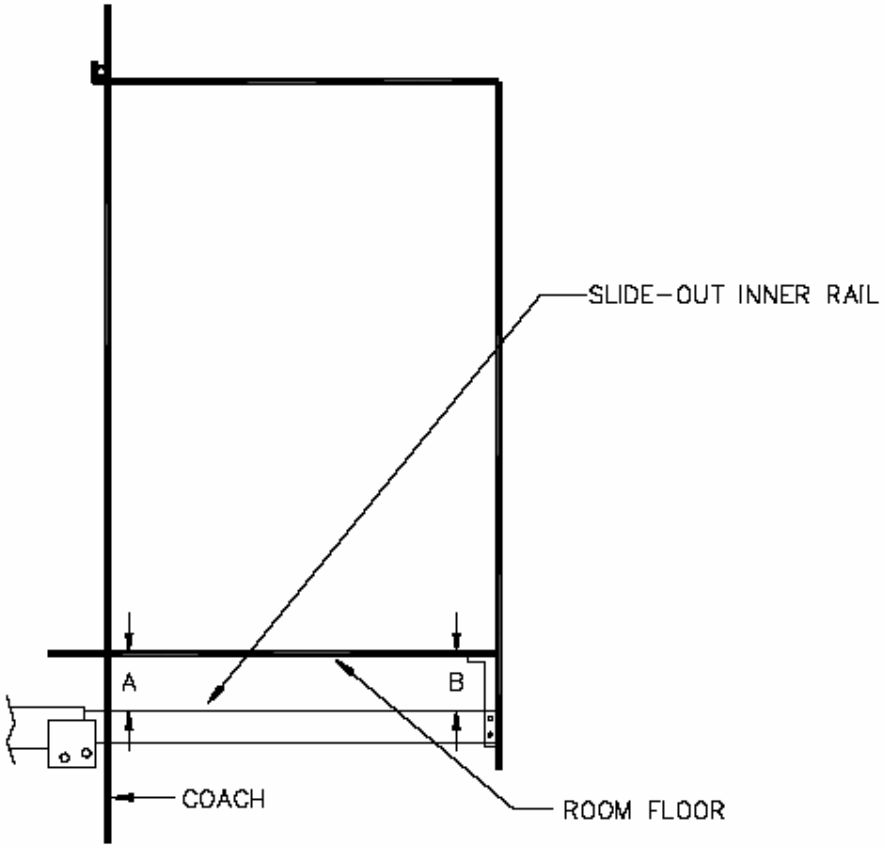


NON-FLUSH FLOOR TYPE ROOM

SLIDE-OUT ROOM HEIGHT ADJUSTMENT

For proper slide-out operation the slide-out room floor to slide-out rail height must be set. This procedure is to be performed at the factory during room installation and should be checked periodically.

To set the room height, please refer to the Figure below.



$$B = A^{+1/8"}_{-0"}$$

The distance between the bottom of the floor and the top of the inner rail must be the same distance (A=B) or the distance at the end of the inner rail can be 1/8" greater than the inside distance (B=A+1/8").

TROUBLE SHOOTING DC-ELECTRIC MOTORS

Test procedure.

Prior to removing slideout motor, check voltage supply to Slideout motor to assure that 12 volts is being supplied. Upon voltage verification, properly check the motors' functionality using the following procedure:

1. Locate slideout motor.
2. Verify that 12VDC is being supplied to motor leads.
3. With motor bolted on, disconnect both wire leads to the motor (leave enough wire to enable you to strip the wires and connect wires to a power source).
4. Using a fully charged 12-volt DC battery or equivalent power source (with a 70 amp minimum), connect motor wire leads directly to power source. If you need to use extra wire to splice to motor leads, use a minimum of 10 gauge. Switch the leads to run motor in opposite direction.
5. Observe motor during operation for the following:

Symptom	Corrective Actions
Excessive noise in motor assembly.	Replace motor.
Does motor function in both directions?	If not, replace motor.
Ability to move slideout room throughout complete cycle (completely extended and retracted).	If slideout room does run in and out, but room appears to bind up while retracting or extending, check to see that slideout room is adjusted properly (reference service manual T.I.P sheets #82 or T.I.P sheet #124 for flat floors for adjustment measurements and procedures). If all adjustments are properly made and motor still does not operate properly, replace motor.
Does motor brake release and lock?	If not, replace motor.

Note: Please specify reason for returning motor upon completing steps, as this will aid Power Gear in processing your return faster.

WARNING: The gear motor is made up of 3 parts (gearbox, motor housing, and brake assembly). Disassembly of any part of the gearmotor will void warranty on the gearmotor.