



**ELECTRIC SLIDE-OUT
SYSTEM
OPERATIONS
AND
SERVICE MANUAL**

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OPERATIONS MANUAL

The Power Gear electric slideout system in your unit 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 THIS SLIDEOUT SYSTEM.**

1. SYSTEM DESCRIPTION

Your Power Gear Slideout System is a rack and pinion design operated by a 12 Volt DC electric motor.

1.1 MAJOR COMPONENTS

- Inner rail assemblies are designed to support the room weight.
- The 12 Volt DC gearmotor will operate the room using power from the on-board unit battery.
- Slideout systems are equipped with a manual override that allows you to extend / retract the room in the event of a loss of power.
- A specially designed control that gives the user full control of room movement, in or out. The control has a load sensing capability that stops the motor when the room is fully extended or retracted.

2. HOW TO OPERATE YOUR SLIDEOUT SYSTEM

2.1 WARNING

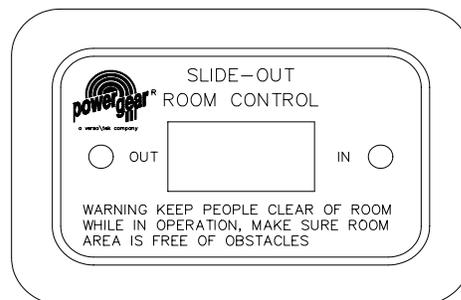
- **ALWAYS MAKE SURE THAT THE SLIDEOUT ROOM PATH IS CLEAR OF PEOPLE AND OBJECTS BEFORE AND DURING OPERATION OF THE SLIDEOUT ROOM.**
- **ALWAYS KEEP AWAY FROM THE SLIDE RAILS WHEN THE ROOM IS BEING OPERATED. THE GEAR ASSEMBLY MAY PINCH OR CATCH ON LOOSE CLOTHING CAUSING PERSONAL INJURY.**
- **INSTALL TRANSIT BARS (IF SO EQUIPPED) ON THE SLIDEOUT ROOM DURING STORAGE AND TRANSPORTATION.**

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

2.2 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 so equipped).
4. Turn 'ON' the on/off switch or key (if so equipped).
5. Press and hold the IN/OUT switch (Fig. 1) in the OUT position until the room is fully extended and stops moving.
6. Release the switch, which will lock the room into position. NOTE: If the slideout switch is held after the room is fully extended, the control will sense that the room has stopped and will shut off the motor after a few seconds.
7. Turn 'OFF' the on/off switch or key (if so equipped).

Fig. 1 Slideout Switch



2.3 RETRACTING THE ROOM

1. Verify the battery is fully charged and hooked-up to the electrical system.
2. Turn 'ON' the on/off switch or key (if so equipped).
3. Press and hold the IN/OUT switch (Fig. 1) in the IN position until the room is fully retracted and stops moving.
4. Release the switch, which will lock the room into position. NOTE: If the slideout switch is held after the room is fully retracted, the control will sense that the room has stopped and will shut off the motor after a few seconds.
5. Turn 'OFF' the on/off switch or key (if so equipped).
6. Install the transit bars (if so equipped).

3. MANUALLY OVERRIDING YOUR SLIDEOUT SYSTEM

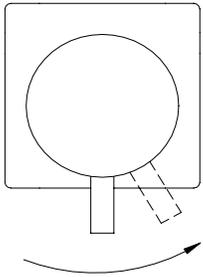
Your Power Gear slideout system is equipped with a manual override that allows you to extend or retract the room in the event of a loss of power.

NOTE: If the room does not move when the switch is pressed, check the following:

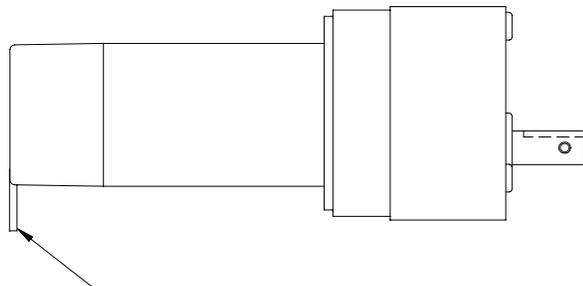
- **make sure the slideout system is turned on**
 - **battery is fully charged and connected**
 - **the transit bars are removed (if so equipped).**
 - After the previous items have been checked and the room still does not move when the slideout switch is pressed, follow these simple steps to manually override your slideout room.
1. Turn 'OFF' the on/off switch or key (if so equipped). **NOTE:** The override will not work if the switch is turned on.
 2. Locate the slideout electrical controller (refer to your dealer or RV manufacturer for location). There are (2) versions of the controller (Fig. 2). For version 1, unplug the (6) pin wiring harness from the controller. For version 2, remove one of the motor leads, either the motor I or motor II lead from the controller.
 3. Locate the slideout motor (Fig. 4). It will be mounted to one of the slideout rails. **NOTE:** If the RV has an underbelly or a cover over the motor, these parts must be removed to access the motor.
 4. Rotate the brake lever, on the backside of the motor, counter-clockwise (looking from the rear of the motor) about 1/8 of a turn to the released position. Refer to Fig. 3. This will release the brake that holds the room in place.
 5. Locate the manual override for the slideout system. Refer to Fig. 4.
 6. The room is now free to move. Using either a 5/8" or 3/4" wrench or socket, crank the room either in or out completely (depending on your needs). **NOTE:** If the slideout system is supplied with a gearbox override (optional), use the crank handle to move the room.
 7. When the room is fully in (or out) apply pressure to the wrench/ratchet and return the brake lever to its engaged position. This will ensure the room is locked into a sealed position.
 8. Install the transit bars to the slideout room (if so equipped) and take the unit to an authorized dealer for service.

!!! WARNING !!!

WHEN THE MOTOR BRAKE IS DISENGAGED THE SLIDEOUT ROOM WILL NOT LOCK INTO PLACE; THEREFORE, THE ROOM WILL NOT BE SEALED. WHEN THE ROOM HAS BEEN MANUALLY RETRACTED, BE SURE TO INSTALL THE TRANSIT BARS (IF SO EQUIPPED) AND RETURN THE MOTOR BRAKE LEVER TO ITS NORMAL ENGAGED POSITION IN ORDER TO SEAL AND LOCK THE ROOM INTO POSITION.



Rotate approx. 30 degrees
counter-clockwise to
release motor brake



Brake lever

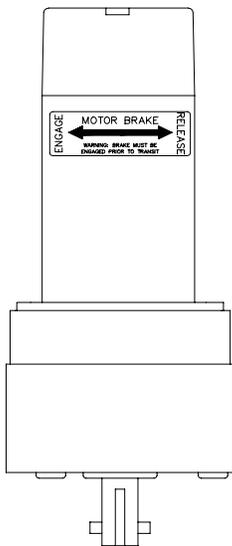


Fig. 3 Motor Brake Lever

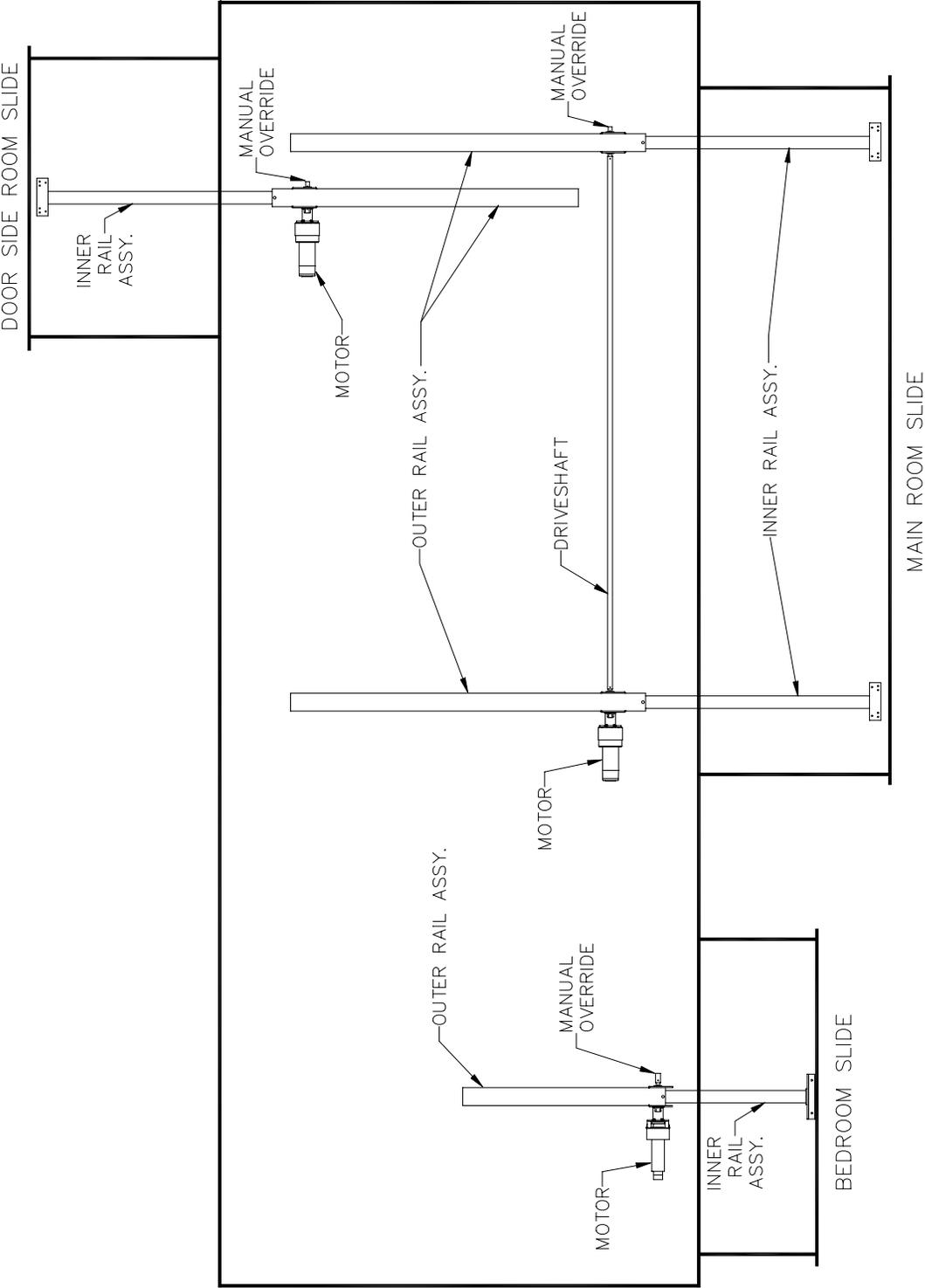


Fig. 4 Motor and Manual Override General Location
4. PREVENTATIVE MAINTENANCE

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

CAUTION: DO NOT WORK ON YOUR SLIDEOUT SYSTEM UNLESS THE BATTERY IS DISCONNECTED.

- When the room is out, visually inspect the inner slide rail assemblies. Refer to Fig. 4 for location of inner rail assemblies. Check for excess build-up of dirt or other foreign material; remove any debris that may be present.
- If the system squeaks or makes any noises it is permissible to apply a coat of light weight oil to the drive shaft and roller areas but, remove any excess oil so dirt and debris do not build-up. **DO NOT** use grease.

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

SERVICE MANUAL

!!! CAUTION !!!

**THE FOLLOWING INFORMATION IS FOR AUTHORIZED
RV DEALERS AND SERVICE TECHNICIANS.**

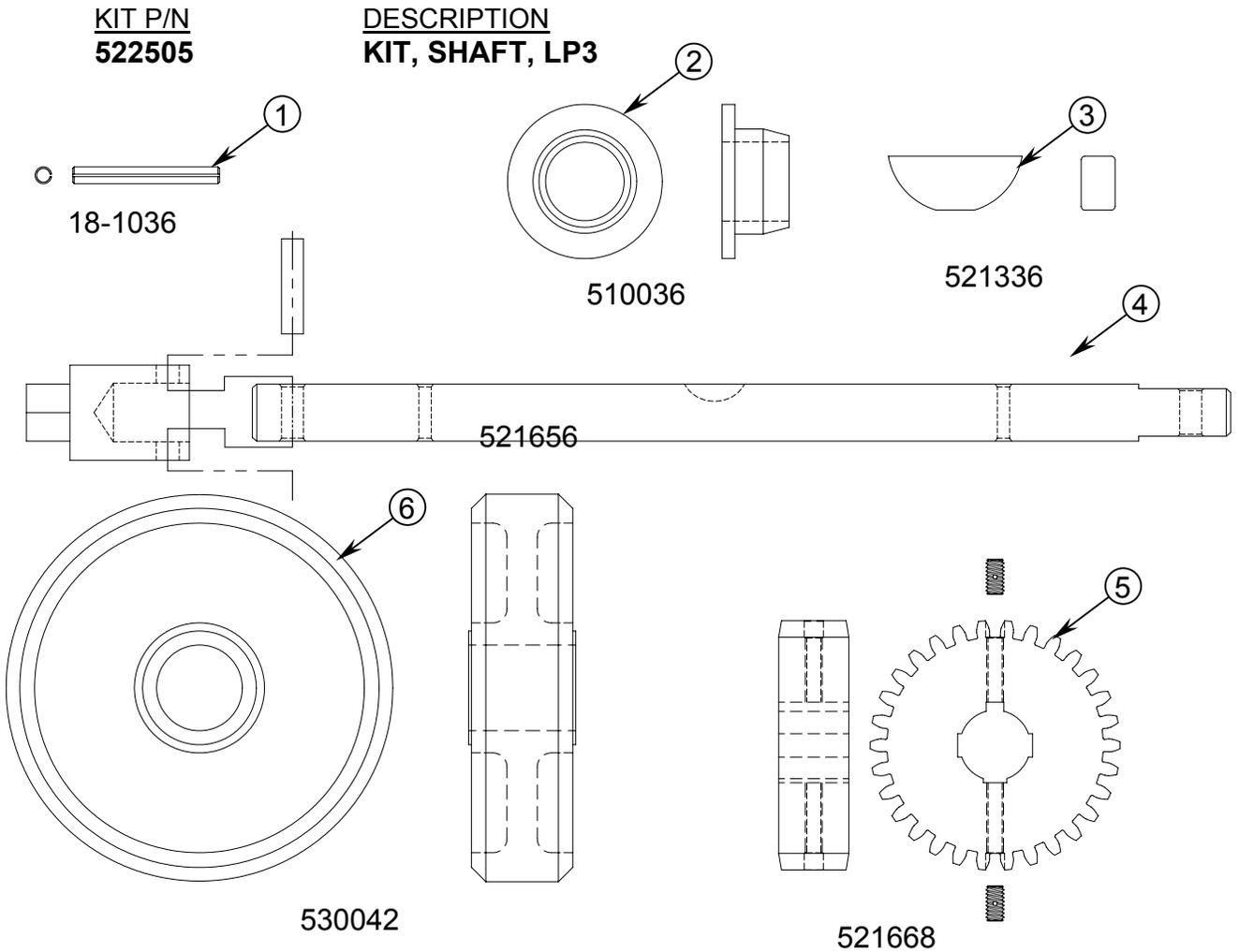
**RV OWNERS SHOULD NOT ATTEMPT THESE REPAIRS
OR PROCEDURES.**

**ANYONE OTHER THAN A RV AUTHORIZED SERVICE
TECHNICIAN ATTEMPTING REPAIRS WILL VOID
WARRANTY.**

!!! CAUTION !!!

1. POWER GEAR SLIDEOUT SYSTEM REPLACEMENT KITS

1.1 MECHANICAL COMPONENTS

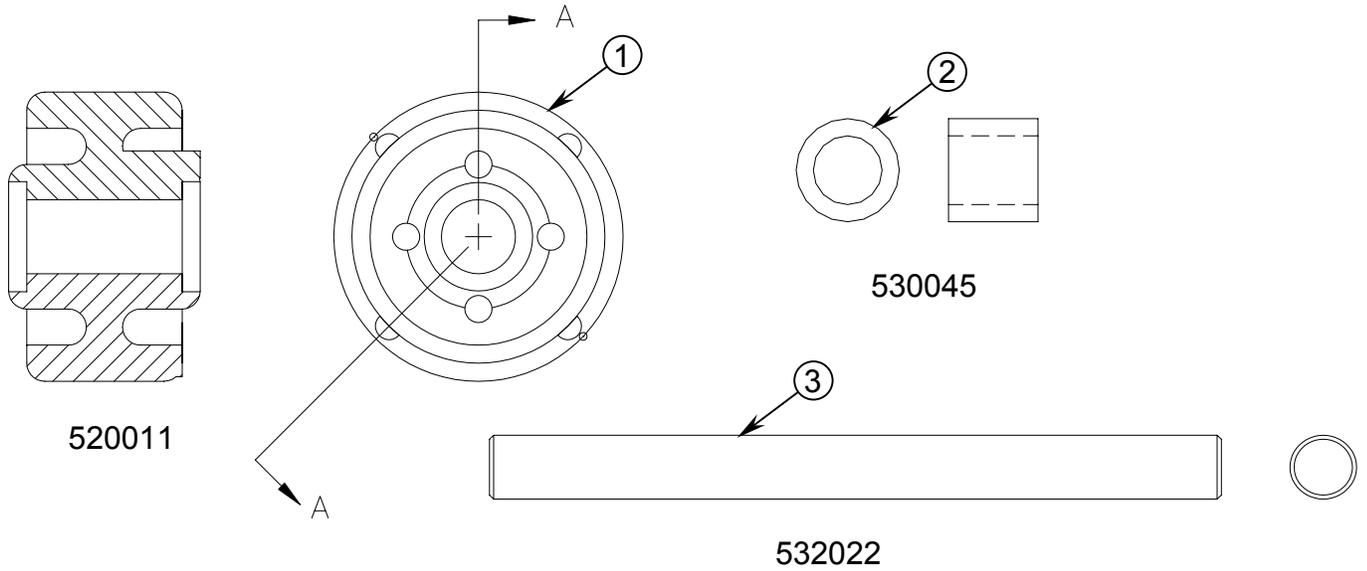


<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	18-1036	PIN ROLL .140 1.25	2
2	510036	BEARING SLEEVE .75	2
3	521336	KEY WOODRUFF #606	1
4	521656	SHAFT DRIVE IDLER ASSY	1
5	521668	GEAR SPUR ASSEMBLY	1
6	530042	ROLLER, 3.41 IN. DIA.	2

REPLACEMENT KIT FOR THE FOLLOWING SYSTEMS: 521243 – 521777 – 532062 – 532064 – 532068 – 532069.

KIT P/N
532023

DESCRIPTION
KIT, ROLLER, INNER, LP3

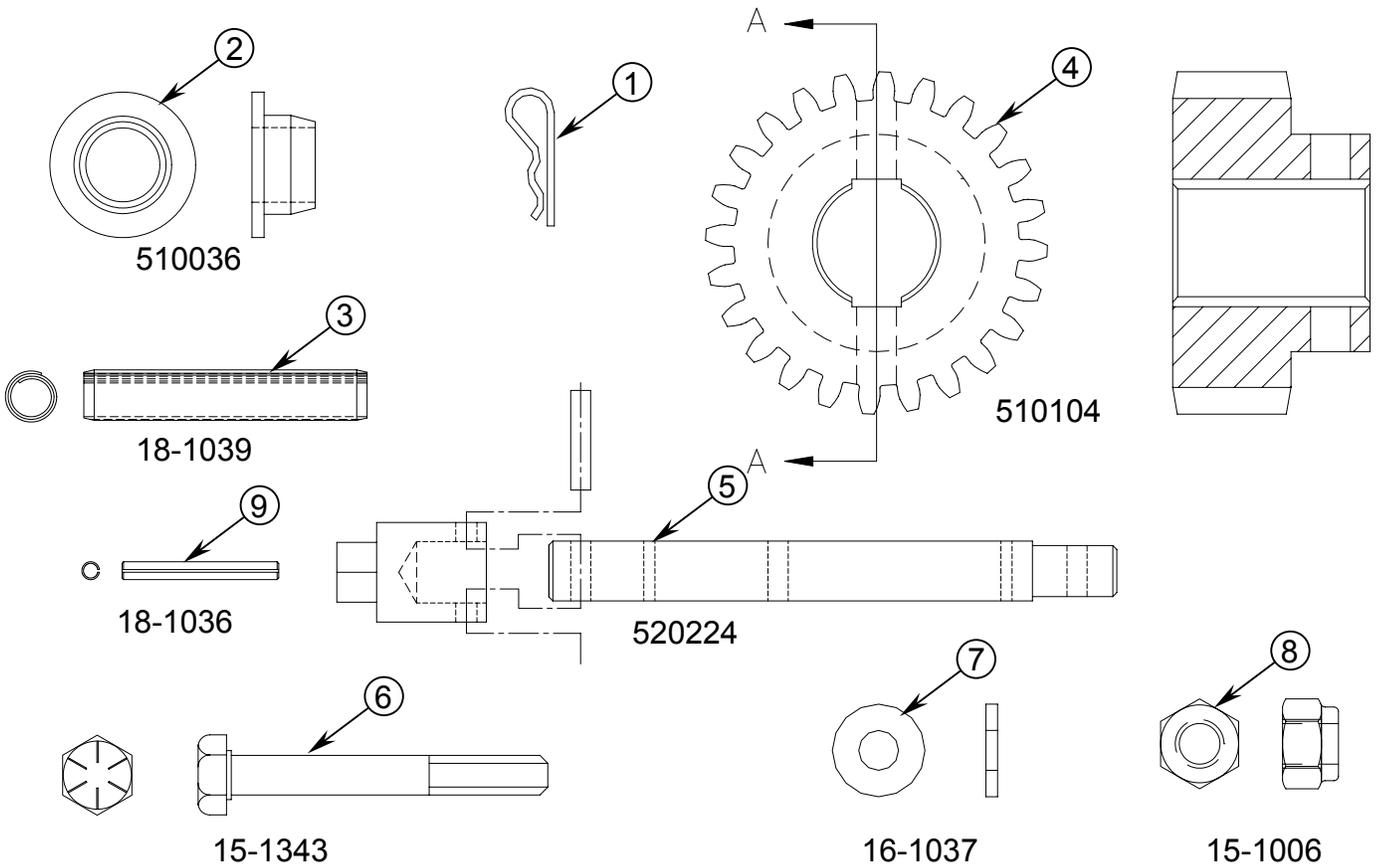


<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	520011	ROLLER INNER 3X3	2
2	530045	SPACER, INNER BEAM, .5 IN	3
3	532022	SPINDLE, INNER RAIL	1

REPLACEMENT KIT FOR THE FOLLOWING SYSTEMS: 521267 - 532003.

KIT P/N
520258-DRIVE SIDE
520259-IDLER SIDE

DESCRIPTION
HEX SHAFT REPLACEMENT KIT
(DOUBLE RAIL SLIDEOUT SYSTEM)

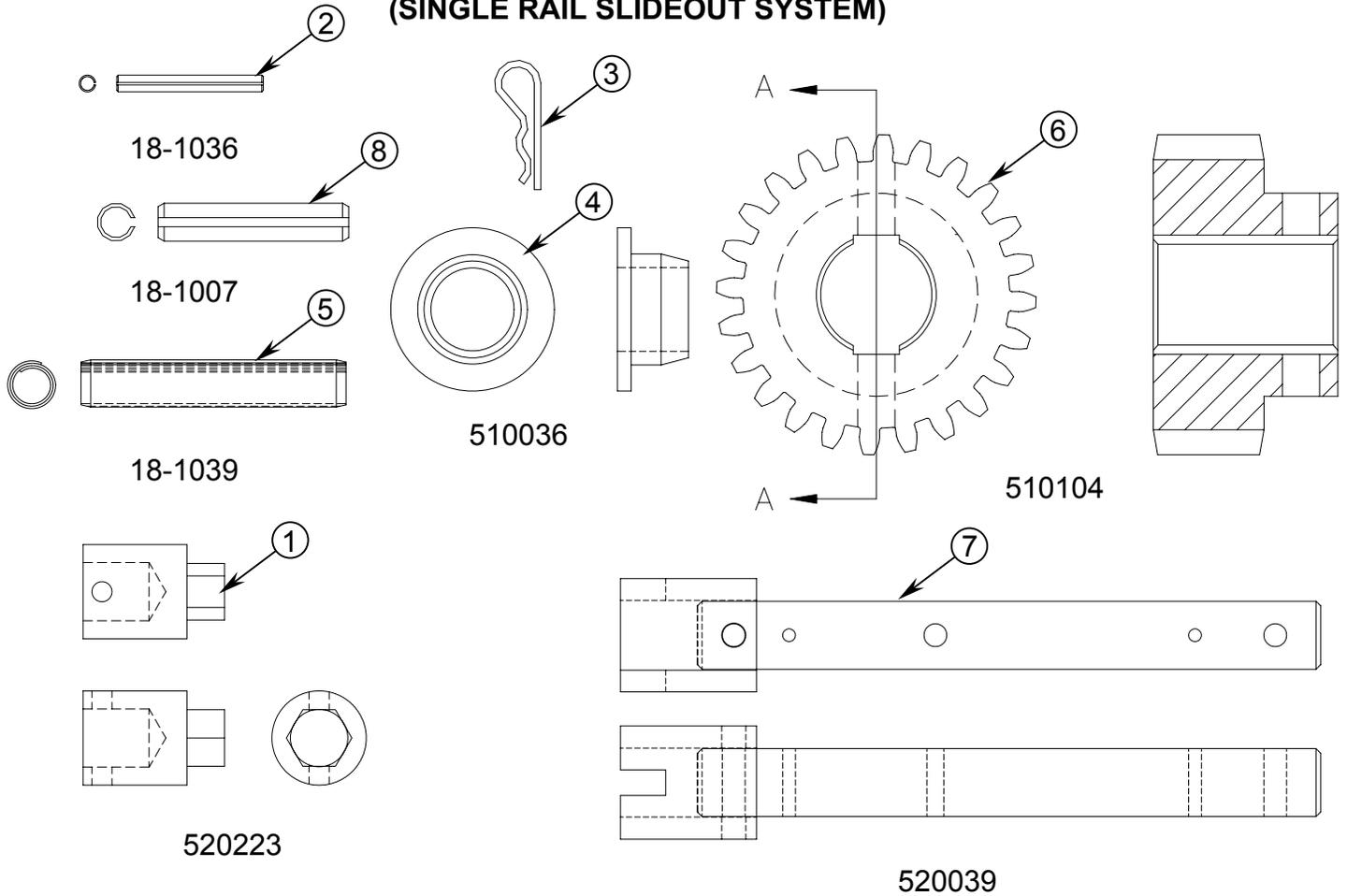


<u>ITEM #</u>	<u>PART#</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	18-1032	Cotter Hairpin	2
2	510036	Sleeve Bearing	2
3	18-1039	1/4" Coiled Pin	1
4	510104	Spur Gear	1
5	520224	Hex Coupling Shaft Assy.-(520259 only)	1
6	15-1343	Screw, HHC, 1/4-20 x 2"	1
7	16-1037	1/4" Washer	4
8	15-1006	Hex Lock Nut, 1/4-20	1
9	18-1036	9/64 Roll Pin-(520258 only)	1
10	520039	Drive Shaft Assembly-(520258 only)	1

REPLACEMENT KIT FOR THE FOLLOWING SYSTEMS: 521267 – 532003 – 522559(idler) – 522666(idler only) – 521363(idler only) – 521773(idler only) – 521776(idler only) – 521866(idler only) – 521994(idler only) – 522267(idler only) – 522412(idler only) – 522450(idler only) – 523170(idler only) – 523291(idler only) – 521605(idler only) – 521604(idler only) – 520222(drive only)

KIT P/N
520717

DESCRIPTION
GEAR SHAFT REPLACEMENT KIT
(SINGLE RAIL SLIDEOUT SYSTEM)

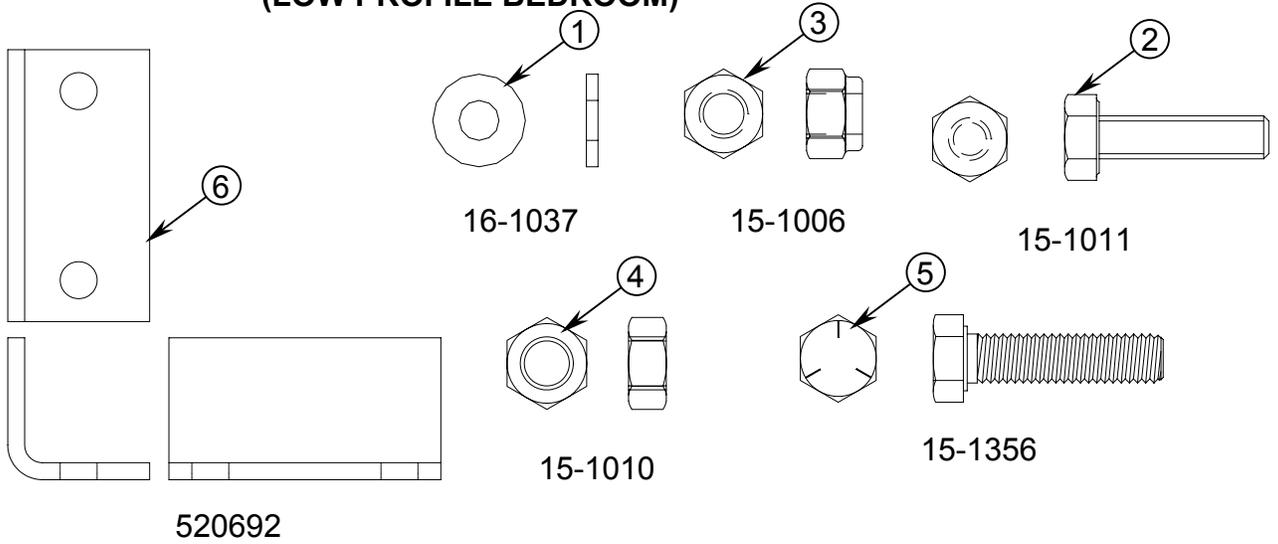


<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	520223	3/4" Hex Coupling Override	1
2	18-1036	9/64" Roll Pin	1
3	18-1032	Cotter Hairpin	1
4	510036	Sleeve Bearing	2
5	18-1039	1/4" Coiled Pin	1
6	510104	Spur Gear	1
7	520039	Motor / Coupling Shaft Assy.	1
8	18-1007	1/4" Roll Pin	1

REPLACEMENT KIT FOR THE FOLLOWING SYSTEMS: 520041(OBS) – 520204 – 520102(OBS) – 520141 – 520143(OBS) – 520182 – 520387(OBS) – 520260(OBS) – 520261(OBS) – 520307 – 520308(OBS) – 520330(OBS) – 520340 – 520222 – 520360(OBS) – 520380 – 520392 – 520398 – 520485 – 520181 – 520602(OBS) – 520615(OBS) – 520670 – 521028 – 522370 – 520885 – 520928 – 521038(OBS) – 521039 – 521064 – 521191 – 521344 – 521382 – 521620 – 521641(OBS) – 521658 – 521723(OBS) – 521736 – 521745 – 521752(OBS) – 521931 – 521933 – 522010 – 522153 – 522970(OBS).

KIT P/N
520742

DESCRIPTION
STOP REPLACEMENT KIT
(LOW PROFILE BEDROOM)

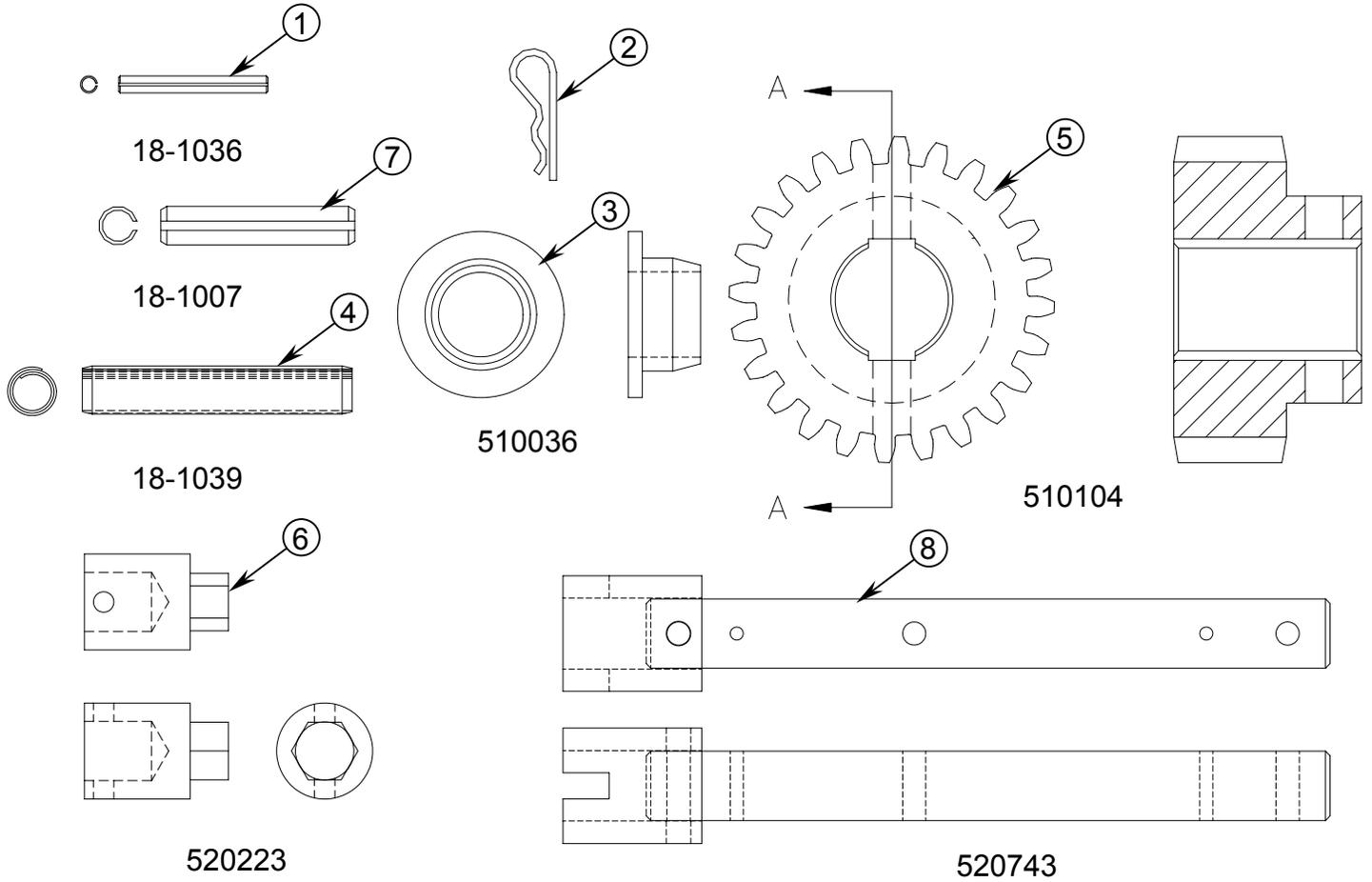


<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	16-1037	1/4" flat washer	16
2	15-1011	Screw, HHC, 1/4-20 x 3/4"	8
3	15-1006	Hex Lock Nut, 1/4-20	8
4	15-1356	Screw, HHC, 3/8-16 x 1 1/2"	2
5	15-1010	Hex Nut, 3/8-16	2
6	520692	Stop Bracket	2

REPLACEMENT KIT FOR THE FOLLOWING SYSTEMS: 521384.

KIT P/N
520744

DESCRIPTION
GEAR SHAFT REPLACEMENT KIT
(LOW PROFILE BEDROOM)



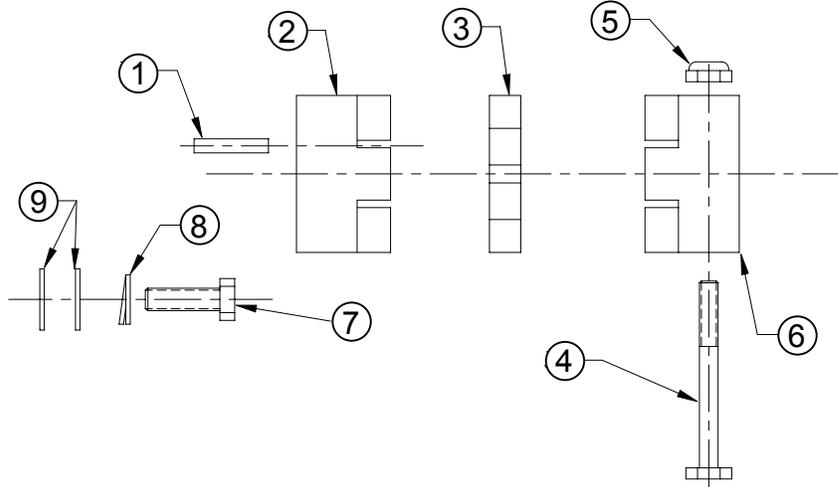
<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	18-1036	9/64" Roll Pin	1
2	18-1032	Cotter Hairpin	1
3	510036	Sleeve Bearing	2
4	18-1039	3/16" Coiled Pin	1
5	510104	Spur Gear	1
6	520223	3/4" Hex Coupling Override	1
7	18-1007	1/4" Roll Pin	1
8	520743	Motor / Coupling Shaft Assy.	1

REPLACEMENT KIT FOR THE FOLLOWING SYSTEMS: 520695 – 520797 – 521784 – 521787 – 520708 – 520861 – 520709 – 520719 – 520860 – 520969 – 520974 – 520986(OBS) – 521341(OBS) – 521384 – 521388(OBS) – 522000 – 522339 – 521081 - 521082.

KIT P/N
510185

DESCRIPTION
FLEXIBLE COUPLING REPLACEMENT KIT

NOTE: Flexible coupling repair kit is for use on PRE-'97 slideout units ONLY.



<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	13-1030	Square Key	1
2	13-1081	Coupling Hub, Motor	1
3	13-1080	Spider	1
4	15-1334	Screw, HHC, 1/4-20x2.5"	1
5	15-1006	Lock Nut, 1/4-20	1
6	13-1082	Coupling Hub, Shaft	1
7	15-1417	Screw, HHC, 5/16-18x1"	4
8	16-1003	Lock Washer, 5/16-18	4
9	16-1048	Flat Washer, 5/16-18	8

1.2 ELECTRICAL COMPONENT REPLACEMENT KITS

A. CIRCUIT BREAKER REPLACEMENT KIT

KIT P/N
520718

DESCRIPTION
CIRCUIT BREAKER REPLACEMENT KIT

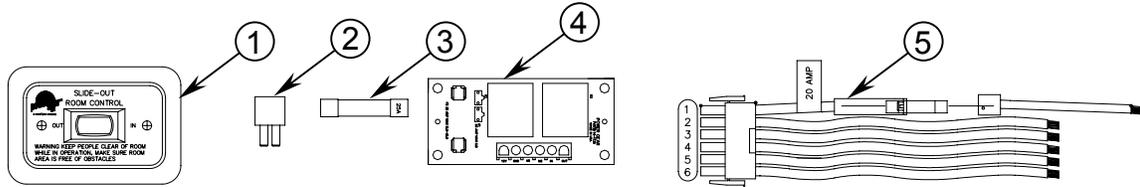
<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
14-1090	15 Amp Circuit Breaker	5
14-1089	20 Amp Circuit Breaker	5

B. RELAY CONTROL (VER. #1) REPLACEMENT KITS

KIT P/N
522243S
522509-FW **MOTORIZED ONLY**

DESCRIPTION
20 AMP RELAY CONTROL REPLACEMENT KIT

NOTE: For use on main room (double rail) Power Gear Slideout Systems.

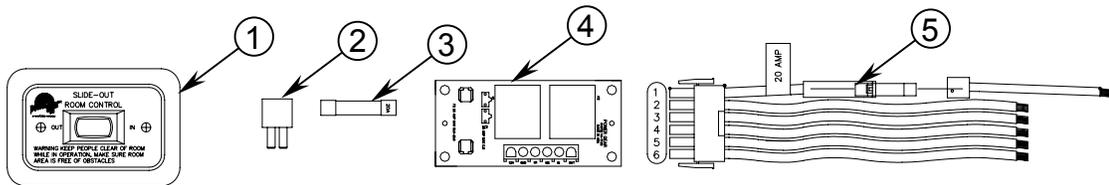


<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	520316	Switch Assy.	1
2	14-1089	20 Amp Circuit Breaker	1
3	14-1134	25 Amp Slo-Blo Fuse	1
4	14-1130	Relay Control	1
5	521283	Wiring Harness	1

KIT P/N
522248S
522508-FW **MOTORIZED ONLY**

DESCRIPTION
15 AMP RELAY CONTROL REPLACEMENT KIT

NOTE: For use on bedroom, wardrobe and single rail Power Gear Slideout Systems.

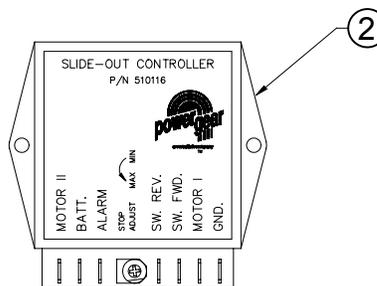
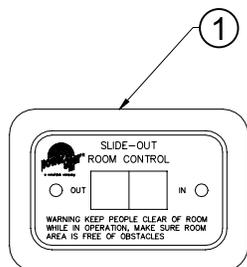


<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	520316	Switch Assy.	1
2	14-1090	15 Amp Circuit Breaker	1
3	14-1124	20 Amp Slo-Blo Fuse	1
4	14-1130	Relay Control	1
5	521283	Wiring Harness	1

C. CURRENT LIMITER CONTROL (VER. #2) REPLACEMENT KIT

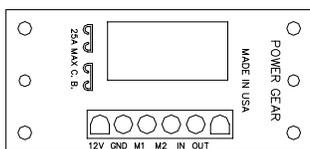
KIT P/N
510113

DESCRIPTION
CURRENT LIMITER REPLACEMENT KIT



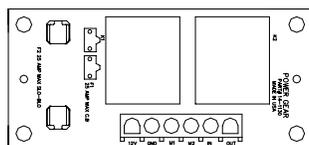
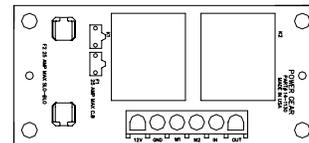
<u>ITEM #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>QUANTITY PER KIT</u>
1	520316	Switch Assy.	1
2	510116	Current Limiter Control	1

D. POWER GEAR SLIDE-OUT CONTROLS



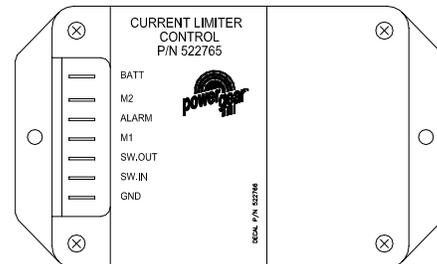
Relay Control
P/N 14-1098
OBSOLETE
TIP SHEET #110

Relay Control
P/N 14-1130
TIP SHEET #110



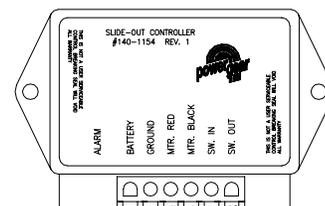
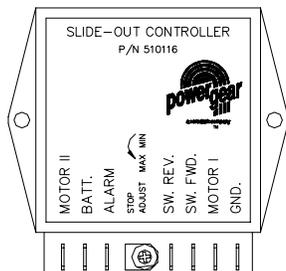
Relay Control
P/N 14-1098
UPDATED
TIP SHEET #110

Two-Stage
Slide out Control
P/N 140-1144
TIP SHEET #177

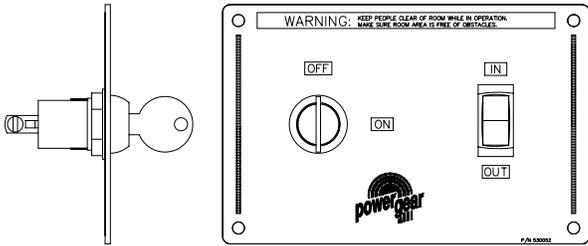


Current Limiter
Control
P/N 510116
TIP SHEET #87

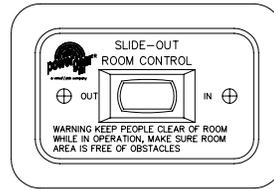
Sensing Control
P/N 140-1154
TIP SHEET #176



E. POWER GEAR SWITCH

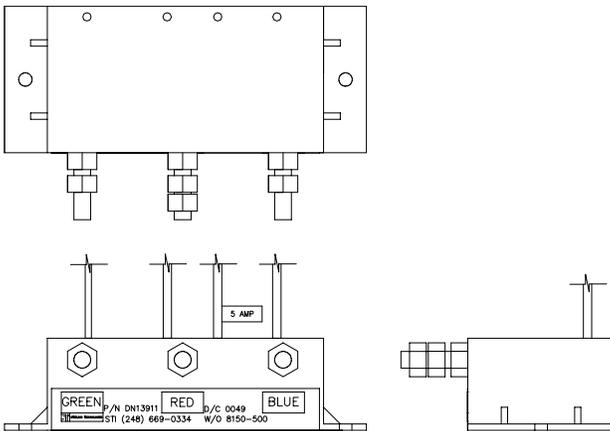


PART # 530052

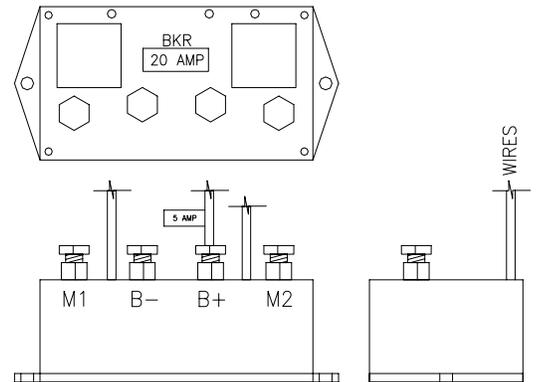


PART # 520316

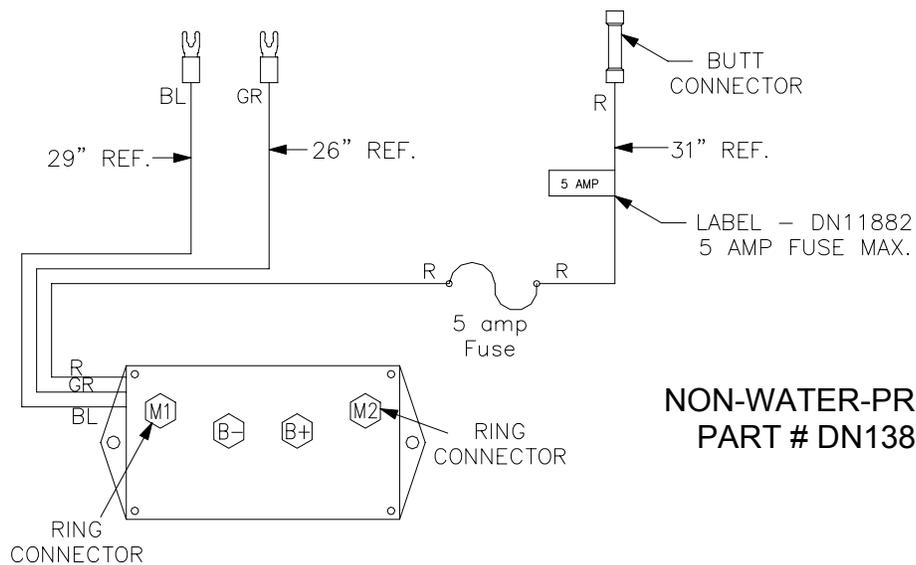
F. DEWALD MANUFACTURING INC. RELAY PACKS



WATER-PROOF
PART # DN13911



WATER-PROOF
PART # DN13003



NON-WATER-PROOF
PART # DN13819

2.3 REPLACEMENT GEARMOTORS

PRODUCTION PART NUMBER	PURCHASE PART NUMBER	MOTOR DISPOSITION	NEW PRODUCTION PART NUMBER	NEW PURCHASE PART NUMBER
510109	13-1083	OBSOLETE	520783	13-1111
510151	13-1083	OBSOLETE	520783	13-1111
510184	13-1086	OBSOLETE	520783	13-1111
510198	13-1089	OBSOLETE	520015	13-1086
520015	13-1086	NO CHANGE	NO CHANGE	NO CHANGE
520084	13-1084	OBSOLETE	520783	13-1111
520229	13-1089	OBSOLETE	520015	13-1086
520317	13-1090	OBSOLETE	520576	13-1083S
520430	13-1096	OBSOLETE	522802	130-1146
520488	13-1086	NO CHANGE	NO CHANGE	NO CHANGE
520491	13-1089	OBSOLETE	520488	13-1086
520554	13-1096	OBSOLETE	521286	13-1116
520555	13-1105	OBSOLETE	521292	13-1119
520576	13-1083S	NO CHANGE	NO CHANGE	NO CHANGE
520783	13-1111	NO CHANGE	NO CHANGE	NO CHANGE
520819	13-1109	NO CHANGE	NO CHANGE	NO CHANGE
521065	13-1105	OBSOLETE	521271	13-1119
521066	13-1109	NO CHANGE	NO CHANGE	NO CHANGE
521072	13-1086	NO CHANGE	NO CHANGE	NO CHANGE
521103	13-1116	OBSOLETE	522802	13-1146
521271	13-1119	NO CHANGE	NO CHANGE	NO CHANGE
521272	13-1115	NO CHANGE	NO CHANGE	NO CHANGE
521286	13-1116	NO CHANGE	NO CHANGE	NO CHANGE
521288	13-1118	NO CHANGE	NO CHANGE	NO CHANGE
521290	13-1115	NO CHANGE	NO CHANGE	NO CHANGE
521291	13-1115	NO CHANGE	NO CHANGE	NO CHANGE
521292	13-1119	NO CHANGE	NO CHANGE	NO CHANGE
521293	13-1117	NO CHANGE	NO CHANGE	NO CHANGE
521297	13-1118	NO CHANGE	NO CHANGE	NO CHANGE
521301	13-1117	NO CHANGE	NO CHANGE	NO CHANGE
521342	13-1116	NO CHANGE	NO CHANGE	NO CHANGE
521470	13-1123	OBSOLETE	521749	13-1129
521472	13-1121	OBSOLETE	521748	13-1127
521652	13-1009	NO CHANGE	NO CHANGE	NO CHANGE
521654	13-1126	NO CHANGE	NO CHANGE	NO CHANGE
521748	13-1127	NO CHANGE	NO CHANGE	NO CHANGE
521749	13-1129	NO CHANGE	NO CHANGE	NO CHANGE
521769	13-1126	NO CHANGE	NO CHANGE	NO CHANGE
521976	13-1133	NO CHANGE	NO CHANGE	NO CHANGE
522002	13-1132	NO CHANGE	NO CHANGE	NO CHANGE
522609	130-1148	NO CHANGE	NO CHANGE	NO CHANGE
522735	130-1147	NO CHANGE	NO CHANGE	NO CHANGE
522788	DN14665	NO CHANGE	NO CHANGE	NO CHANGE
522787	DN14666	NO CHANGE	NO CHANGE	NO CHANGE
522802	130-1146	NO CHANGE	NO CHANGE	NO CHANGE
522895	130-1146	NO CHANGE	NO CHANGE	NO CHANGE
522919	130-1154	NO CHANGE	NO CHANGE	NO CHANGE
522967	13-1119	NO CHANGE	NO CHANGE	NO CHANGE
530013	13-1086	NO CHANGE	NO CHANGE	NO CHANGE
531087	13-1113	NO CHANGE	NO CHANGE	NO CHANGE
532049	13-1106	NO CHANGE	NO CHANGE	NO CHANGE

550020	13-1110	NO CHANGE	NO CHANGE	NO CHANGE
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3. TROUBLESHOOTING THE SLIDEOUT SYSTEM

If a problem occurs with a Power Gear Slideout System Consult the following table. If a problem is not listed or you require further assistance, please call Lippert Components and talk to our Customer Service Department at 574-537-8900.

NOTE: BEFORE REPLACING PARTS ON THE SLIDEOUT SYSTEM MAKE SURE THE BATTERY HAS BEEN DISCONNECTED.

Problem	Check/Inspect	Probable Cause	Solution
The room does NOT move and the motor does NOT turn.	Electrical wiring and components.	Bad wiring or components.	Check wiring and components. Refer to TIP sheet #69 or #88.
	The room will move slightly then stop.	Excessive drag on the room.	Check to insure the transit bars are removed. Check for proper alignment and fit of room. Refer to TIP sheets #70 & #82
		Current limiter controller pot switch adjusted too low.	Adjust control pot switch until system functions. Refer to Fig. 2.
	Motor turns but gear shaft does not turn.	Gear shaft pin or coupler broken.	Replace motor/gear shaft. Refer to replacement instructions.
		Pin in motor output shaft broken.	Replace gearmotor assembly. Refer to replacement instructions.
	Spur gear spins freely on shaft.	Sheared spur gear pins (both outer rail assy.)	Replace pins and realign room. Refer to replacement instructions.
The room does NOT seal.	Check for motor brake lever in 'engaged' position.	Motor brake lever disengaged.	Engage brake lever. Refer to Fig. 3
	One side seals and the other side does not seal.	Inner rails not aligned.	Realign inner rails. Refer to TIP sheet #70
		Room height misadjusted.	Check for proper room height.

			Refer to TIP sheet #82
		Room/opening not square.	Measure room/opening for proper fit.
Problem	Check/Inspect	Probable Cause	Solution
The room STARTS to move but then STOPS .	Test by visual inspection.	Transit bar still installed.	Remove transit bar.
		An obstruction blocking path of travel of the room.	Remove obstruction or relocate the unit.
		Debris lodged between the gear and rack.	Remove the debris.
		Dirt or corrosion build-up.	Remove dirt and lubricate with LIGHT coat of oil.
The room moves VERY slowly.	The room moves slowly when it is nearly in or beginning to go out.	Improper room height setting, rails are pinching.	Check for proper room height. Refer to TIP sheet #82
		Room is binding.	Adjust item binding room.
	The room moves slowly all the way in or out.	Check for 12 Volts DC at the motor while room is in operation. If not 12 volts...	Recharge or replace battery. Check wiring of system. Refer to TIP sheets #79 or # 87.
System makes a LOUD chatter noise when operating.	Check the slideout room height adjustment.	Slideout room height out of adjustment.	Readjust slideout room. Refer to TIP sheet #82
	Check anti-jump bolt.	Anti-jump bolt missing or not adjusted.	Call Lippert Components at 574-537-8900 for assistance.
ONE side of the room moves, the motor and drive shaft	One spur gear spins freely on the shaft.	Sheared spur gear pin.	Replace spur gear and realign room. Refer to replacement instructions.
	Teeth on spur gear damaged or broken off	Sheared teeth on spur gear.	Replace spur gear and realign room. Refer to replacement instructions.
	Teeth on gear rack are damaged or broken off.	Sheared teeth on gear rack.	Replace inner rail assembly and realign room. Refer to replacement instructions.

ALSO turn.	Drive shaft bolt is broken.	Sheared drive shaft bolt.	Replace drive shaft bolt and realign room. Refer to replacement instructions.
	The system makes a skipping noise and the shaft bearing(s) appear missing or damaged	Loose or broken bearing sleeve(s).	Replace bearing sleeve(s) and realign room. Refer to replacement instructions.

PG P/N	DESCRIPTION	PIN	CONN. (M/F)	BOOT	MOTOR DIA.	MIN. OUTPUT	RUN AMPS	STALL	SPECIAL DESIGNATIONS	SHAFT (S/D)	BRAKE
521288	ASSY MOTOR DS LT W/PIN	Y	NONE	W	2.5	150IN-LBS@15RPM	15	30A MIN.	LT, K500	D	Y
521297	ASSY MOTOR DS LT W/PIN&CON	Y	M	W	2.5	150IN-LBS@15RPM	15	30A MIN.	LT, K500	D	Y
532049	ASSY MOTOR DUAL 2.5" W/CON	N	AMP	N/A	2.5	250IN-LBS@15RPM	N/A	N/A	K600	D	Y
510198	MOTOR ASSY-BEDROOM	Y	NONE	N/A	2.5	250IN-LBS@20RPM	11	50A	RD. GEARBOX, KEYWAY ON SHAFT,K400	S	Y
520430	ASSY MOTOR SGL 2.5"	Y	NONE	N/A	2.5	250IN-LBS@20RPM	11	47.5A	K500, 131:1 GEAR	S	Y
520491	ASSY MOTOR SGL 2.5" W/CON	Y	M	N/A	2.5	250IN-LBS@20RPM	11	50A	RD. GEARBOX, KEYWAY ON SHAFT,K400	S	Y
520554	ASSY MOTOR SGL 2.5" W/CON	Y	M	N/A	2.5	250IN-LBS@20RPM	11	47.5A	K500, 131:1 GEAR	S	Y
521103	ASSY MOTOR DS MT W/PIN	Y	NONE	G	2.5	300IN-LBS@15RPM	15	40A MIN.	MT	D	Y
521272	ASSY MTR DSMT W/CON-K, W/O PIN	N	F	G	2.5	300IN-LBS@15RPM	15	40A MIN.	MT, K500	D	Y
521286	ASSY MOTOR DS MT W/PIN & CON	Y	M	G	2.5	300IN-LBS@15RPM	15	40A MIN.	MT	D	Y
521290	ASSY MOTOR DS MT W/O PIN&CON	N	NONE	G	2.5	300IN-LBS@15RPM	15	40A MIN.	MT, K500	D	Y
521291	ASSY MOTOR DS MT W/OPINW/CON	N	M	G	2.5	300IN-LBS@15RPM	15	40A MIN.	MT, K500	D	Y
521342	ASSY MTR DSMT W/CON-K & PIN	Y	F	G	2.5	300IN-LBS@15RPM	15	40A MIN.	MT	D	Y
521749	ASSY MOTOR DS MT W/PIN	Y	NONE	G	3	300IN-LBS@15RPM	15	40A MIN.	MT	D	Y
522609	MOTOR ASSY DS MT E-SYNCH	Y	e-SYNC	G	2.5	300IN-LBS@15RPM	15	40A MIN.	USES 13-1116 MTR, MT, K500	D	Y
522802	MOTOR ASSM DSMT W/PIN	Y	NONE	G	2.5	300IN-LBS@15RPM	15	40	MT	D	Y
522895	ASSY MOTOR DS MT W/PIN & CON	Y	M	G	2.5	300IN-LBS@15RPM	15	40	MT	D	Y
523091	MOTOR ASSY DS MT W/PIN&CONN	Y	F	G	2.5	300IN-LBS@15RPM	15	40	MT	D	Y
531087	ASSEMBLY, GEARMOTOR, FF-LPSO	Y	M	N/A	2.5	350IN-LBS@10RPM	8	43.7A	TEARDROP GEARBOX, 300:1, K600	D	Y
520015	ASSY MOTOR SGL 3"	Y	NONE	Y	3	350IN-LBS@20RPM	16	35A MIN.	SQ. GEARBOX, KEYWAY ON SHAFT	S	Y
520317	ASSY MOTOR SGL 3"	Y	NONE	N/A	3	350IN-LBS@20RPM	16	35A MIN.	RD. GEARBOX, KEYWAY ON SHAFT,K400	S	Y
520488	ASSY MOTOR SGL 3" W/CON	Y	M	Y	3	350IN-LBS@20RPM	16	35A MIN.	SQ. GEARBOX, KEYWAY ON SHAFT	S	Y
520576	ASSY MOTOR SGL 3" HT	Y	NONE	N/A	3	350IN-LBS@20RPM	20	35A MIN.	SQUARE GEARBOX, HT, KEYWAY ON SHAFT	S	Y
520783	MOTOR ASSEMBLY, WARDROBE S/O	N	M	N/A	3	350IN-LBS@20RPM	16	35A MIN.	SQ. GEARBOX, KEYWAY ON SHAFT	S	Y

521072	ASSY MOTOR SGL 3" W/CON-S MBH	Y	M	Y	3	350IN-LBS@20RPM	16	35A MIN.	SQ. GEARBOX, KEYWAY ON SHAFT, MOD. BRAKE HANDLE	S	Y
521976	GEARMOTOR ASSY DS W/O PIN	N	NONE	B	2.5	400IN-LBS@10RPM	8	40	296:1	D	Y
522176	GEARMOTOR ASSY DS W/O PIN	N	F	B	2.5	400IN-LBS@10RPM	8	40	296:1	D	Y
523013	GEARMOTOR DS 296:1 WITH PIN	Y	NONE	B	2.5	400IN-LBS@10RPM	8	40	296:1	D	Y
520819	ASSY MOTOR DS HT W/OPIN&CON	N	NONE	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
521066	ASSY MOTOR DS HT W/OPINW/CON	N	M	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
521271	ASSY MOTOR DS HT W/PIN & CON	Y	M	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
521292	ASSY MOTOR DS HT W/PIN	Y	NONE	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
521652	ASSY MTR DS HT W/O PIN W/CON	N	F	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
521748	ASSY MOTOR DS HT-S W/PIN	Y	NONE	B	3	400IN-LBS@15RPM	15	55A MIN.	HT	D	Y
522735	MOTOR ASSM DS HT W/O PIN&CON	N	NONE	B	3	400IN-LBS@15RPM	15	55	3 WIRE, K500	D	Y
522756	MOTOR DS HT W/O PIN-S ASSM	N	NONE	B	3.25	400IN-LBS@15RPM	15	55A MIN.	HT	D	Y
522919	MOTOR ASSM DSMT W/PIN	Y	NONE	G	2.5	400IN-LBS@15RPM	15	55A MIN.	MT, 3 WIRE	D	Y
522967	ASSY MOTOR DS HT W/PIN-KW/COUP	Y	NONE	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500, HEX COUPLER	D	Y
523036	MOTOR ASSY DS HT W/PIN & CON	Y	WP-M	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
523037	MTR ASSY DS HT W/O PIN W/CON	N	WP-M	B	3	400IN-LBS@15RPM	15	55A MIN.	HT, K500	D	Y
523143	ASSY MOTOR DS HT W/O PIN	N	NONE	B	3	400IN-LBS@15RPM	15	55A MIN.	HT	D	Y
521654	GEARMOTOR ASSY DS W/O PIN	N	NONE	N/A	2.5	N/A	N/A	N/A	TEARDROP GEARBOX, 300:1, K600	D	Y
521769	ASSY MTR DS W/OPIN-K & WCON	N	F	N/A	2.5	N/A	N/A	N/A	TEARDROP GEARBOX, 300:1, K600	D	Y
522002	ASSY MTR DS SHT W/O.R. W/O P	N	NONE	B	2.5	N/A	N/A	N/A	300:1, 35:1 OVERRIDE, K600	D	Y
522462	GEARMOTOR ASEMBLY D/S W/O PIN	N	M	N/A	2.5	N/A	N/A	N/A	TEARDROP GEARBOX, 300:1, K600	D	Y
522462	GEARMOTOR ASEMBLY D/S W/O PIN	N	M	N/A	2.5	N/A	N/A	N/A	TEARDROP GEARBOX, 300:1, K600	D	Y
DN14665	GEARMOTOR WORM 150:1 KLAUBER	N	NONE	NONE							
DN14666	GEARMOTOR WORM 300:1 KLAUBER	N	NONE	NONE							

4. COMPONENT PART REPLACEMENT INSTRUCTIONS

NOTE: BEFORE REPLACING PARTS ON THE SLIDEOUT SYSTEM MAKE SURE THE BATTERY HAS BEEN DISCONNECTED.

4.1 Replacing the Spur Gear Shear Pin

1. Disconnect battery.
2. Slightly adjust the room/rails in or out so that the pieces of the pin line up and can be easily removed. NOTE: To help align the gear and shaft pin holes, the holes in the gear shaft are in a straight line.
3. Use a punch to remove the broken shear pin.
4. Verify the hole alignment and insert a new shear pin, making sure the shear pin is inserted completely. NOTE: If both spur gear pins were sheared, repeat steps 2 thru 4 to complete the other side.
5. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more than 1/8", refer to TIP sheet #70 (Inner Rail Realignment) in the appendix to realign the rails.
6. Reconnect the battery and test the system operation.

4.2 Replacing the Spur Gear

1. Disconnect battery.
2. Remove all items necessary to access outer rail gear assembly.
3. NOTE: This step is only needed if replacing the spur gear on the drive rail. Remove the (4) motor mounting bolts with a 1/2" socket/wrench and remove the gearmotor.
4. Remove the drive shaft bolt with a 7/16" socket/wrench and slide the drive shaft away from the outer rail assembly.
5. Remove the cotter hairpin (on the drive shaft side) from the gear shaft.
6. Slide the gear shaft to disengage the gear from the rack and rotate the gear shaft until the spur gear shear pin is visible.
7. Remove the shear pin with a 3/16" or smaller punch.
8. Pull the gear shaft out of the outer rail assembly, removing the spur gear from the shaft.
9. Slide the new gear shaft back into the outer rail assembly through the first bearing sleeve.
10. Slide the new spur gear onto the gear shaft.
11. Align the spur gear hole to the hole in the shaft and slide the gear shaft through the second bearing sleeve.
12. Verify the hole alignment and insert a new shear pin, making sure the shear pin is inserted completely.
13. Disengage the gear from the rack and rotate the gear shaft until the gear shaft hole and drive shaft hole line up.
14. Engage the gear and rack by sliding the gear shaft back through the second bearing sleeve.
15. Replace the cotter hairpin in the gear shaft.
16. Slide the driveshaft back into position over the gear shaft and replace the driveshaft bolt with the correct number of washers and lock nut. Refer to TIP sheet #73 (Torque Specification for Slideout Drive Shaft Bolts) for proper assembly of the driveshaft bolt, washers and nut.
17. Reinstall the gearmotor (if applicable) and bolt into place.
18. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more than 1/8", refer to TIP sheet #70 (Inner Rail Realignment) to realign the rails.
19. Replace all items that were removed to access the outer rail assembly.

20. Reconnect the battery and test the system operation.

4.3 Replacing the Drive Shaft

1. Disconnect battery.
2. Remove all items necessary to access both slide rails.
3. Remove the drive shaft bolts with a 7/16" socket/wrench.
4. Slide the drive shaft assembly together (one tube slides into the other) and carefully remove from the outer rail assemblies.
5. Install the new drive shaft by extending the drive shaft assembly over each gear shaft and aligning the bolt holes. NOTE: The drive shaft will only install in one direction.
6. Insert (2) new drive shaft bolts with the correct number of washers and lock nut onto the outer rail assembly. Refer to TIP sheet #73 (Torque Specification for Slideout Drive Shaft Bolts) for proper assembly of the driveshaft bolt, washers and nut.
7. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more than 1/8", refer to TIP sheet #70 (Inner Rail Realignment) to realign the rails.
8. Replace all items that were removed to access both slide rails.
9. Reconnect the battery and test the system operation.

4.4 Replacing the Manual Override Gearbox (option)

1. Disconnect battery.
2. Remove all items necessary to access both slide rails.
3. Remove the override gearbox from the unit (a grinder may be needed to remove welds) and remove the roll pin that attaches the crank shaft to the gearbox.
4. Remove the drive shaft bolts with a 7/16" socket/wrench.
5. Slide the drive shaft assembly together (one tube slides into the other) and carefully remove from the outer rail assemblies.
6. Slide the override gearbox off one side of the drive shaft.
7. Slide the new override gearbox onto the drive shaft. NOTE: The square holes in the override gear and gearbox bearing must line up for the override gearbox to fit onto the shaft.
8. Install the new drive shaft by extending the drive shaft assembly over each gear shaft and aligning the bolt holes. NOTE: The drive shaft will only install in one direction.
9. Insert (2) new drive shaft bolts with the correct number of washers and lock nut onto the outer rail assembly. Refer to TIP sheet #73 (Torque Specification for Slideout Drive Shaft Bolts) for proper assembly of the driveshaft bolt, washers and nut.
10. Place the override gearbox into position and secure it to the unit. NOTE: The override gearbox must be attached to the 1" square tube side of the drive shaft.
11. Reinstall the roll pin that attaches the crank shaft to the gearbox.
12. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more than 1/8", refer to TIP sheet #70 (Inner Rail Realignment) to realign the rails.
13. Replace all items that were removed to access both slide rails.
14. Reconnect the battery and test the system operation.

4.6 Replacing the Outer Rail Assembly Sleeve Bearings

1. Disconnect battery.
2. Remove all items necessary to access outer rail gear assembly.
3. NOTE: This step is only needed if replacing the sleeve bearings in the drive rail. Remove the (4) motor mounting bolts with a 1/2" socket/wrench and remove the gearmotor.
4. Remove the drive shaft bolt with a 7/16" socket/wrench and slide the drive shaft away from the outer rail assembly.
5. Remove the cotter hairpin (on the drive shaft side) from the gear shaft.
6. Slide the gear shaft to disengage the gear from the rack and rotate the gear shaft until the spur gear shear pin is visible.
7. Remove the shear pin with a 3/16" or smaller punch.
8. Pull the gear shaft out of the outer rail assembly, removing the spur gear from the shaft.
9. Remove the old sleeve bearings and install the new sleeve bearings.
10. Slide the gear shaft back into the outer rail assembly through the first bearing sleeve.
11. Slide the spur gear onto the gear shaft.
12. Align the spur gear hole to the hole in the shaft and slide the gear shaft through the second bearing sleeve.
13. Verify the hole alignment and insert a new shear pin, making sure the shear pin is inserted completely.
14. Disengage the gear from the rack and rotate the gear shaft until the gear shaft hole and drive shaft hole line up.
15. Engage the gear and rack by sliding the gear shaft back through the second bearing sleeve.
16. Replace the cotter hairpin in the gear shaft.
17. Slide the driveshaft back into position over the gear shaft and replace the driveshaft bolt with the correct number of washers and lock nut. Refer to TIP sheet #73 (Torque Specification for Slideout Drive Shaft Bolts) for proper assembly of the driveshaft bolt, washers and nut.
18. Reinstall the gearmotor (if applicable) and bolt into place.
19. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more than 1/8", refer to TIP sheet #70 (Inner Rail Realignment) to realign the rails.
20. Replace all items that were removed to access the outer rail gear assembly.
21. Reconnect the battery and test the system operation.

4.10 Replacing Inner Rail Assembly

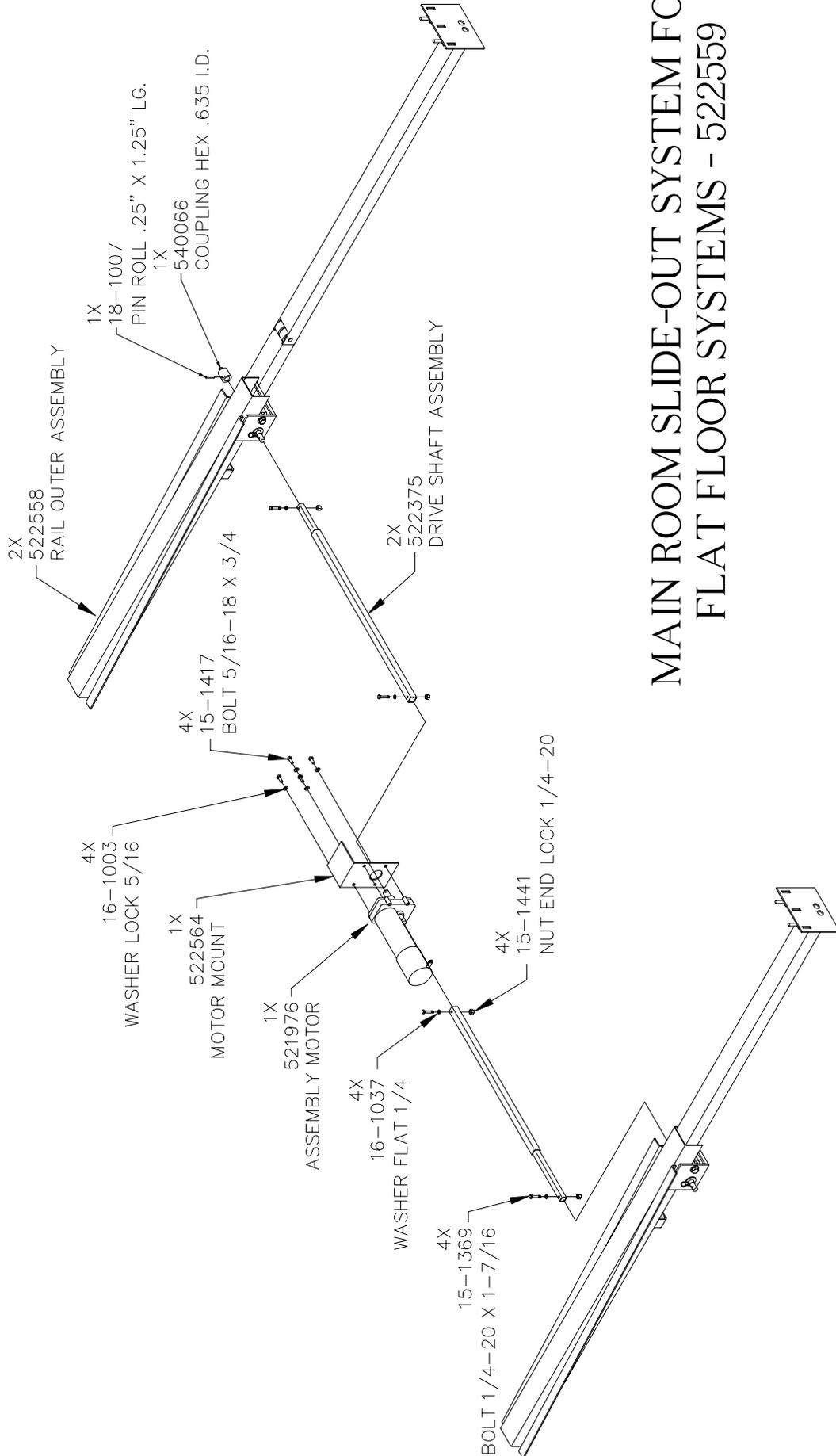
1. Disconnect battery.
2. Remove inside slideout room flange.
3. Unbolt room (end) brackets from inner rail assembly.
4. Remove slideout room from unit.
5. Disengage gear from inner rail gear rack, refer to TIP sheet #70 (Inner Rail Realignment) for the procedure. NOTE: If the drive side needs to be replaced, the motor must be removed first.
6. Remove and replace inner rail assembly.
7. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more than 1/8", refer to TIP sheet #70 (Inner Rail Realignment) to realign the rails.
8. Re-install slideout room into unit.
9. Bolt room (end) brackets to inner rail assembly.
10. Re-install inside slideout room flange.
11. Reconnect the battery and test the system operation.

Electric Slide-out Systems

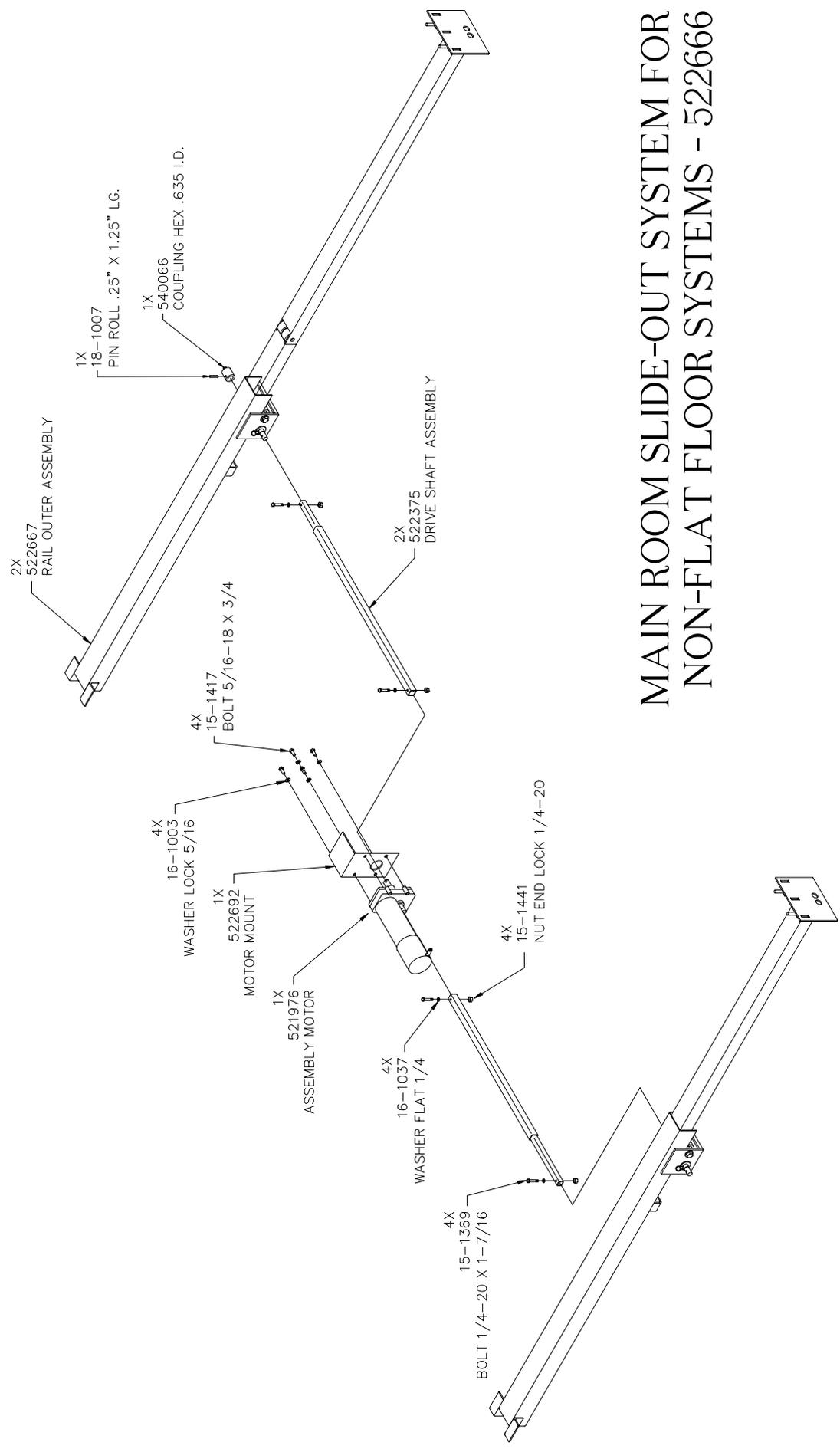
Main room – Galley – Dinette

To most accurately identify the Power Gear Slide-out System, contact your RV manufacturer. By using the RV VIN#, the slide-out system # can be identified and the information relayed to a Technical Service Consultant at Power Gear.

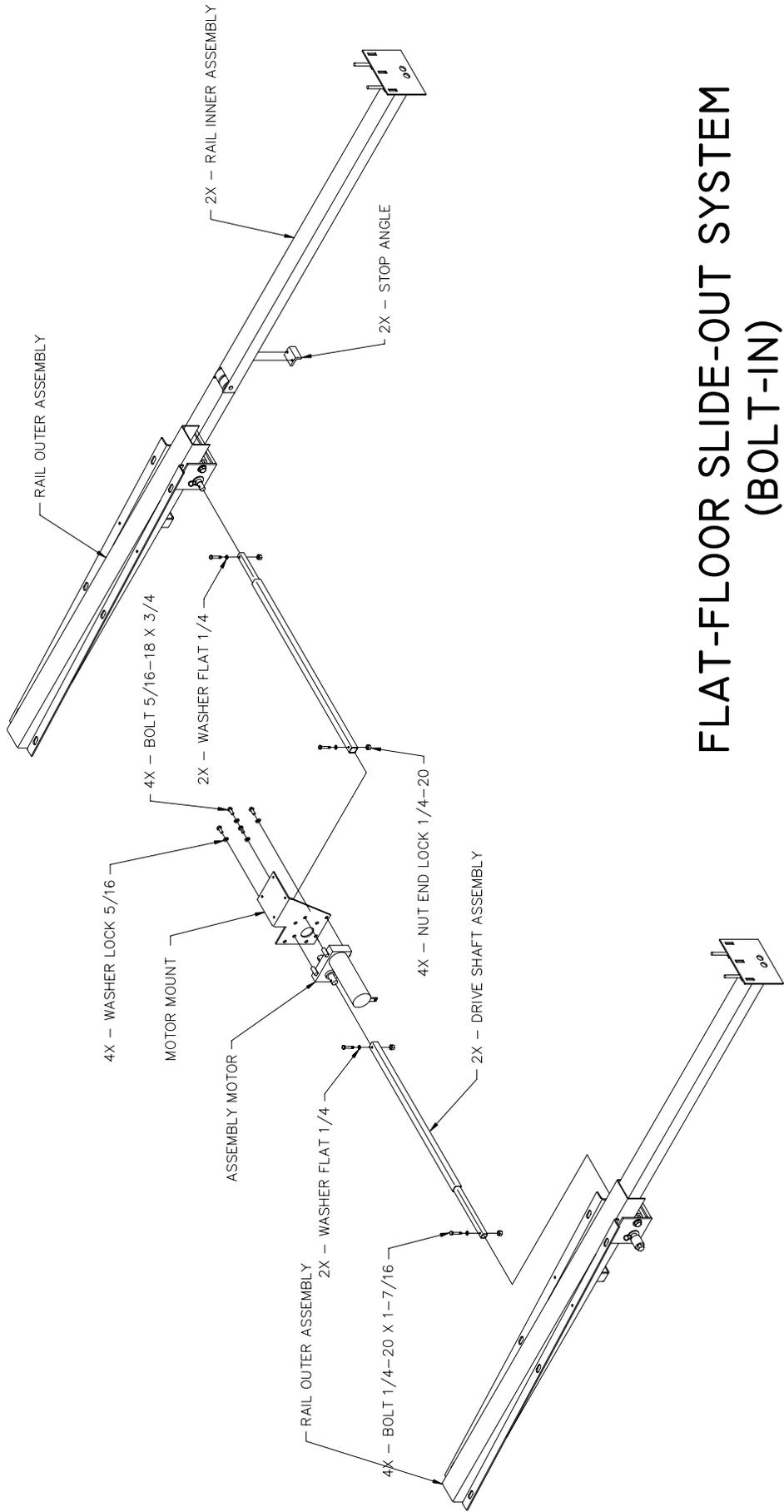
The Following drawings are for identification use only and are representatives of many different groups of slide-outs. Refer to the Bill of Materials for specific part numbers for the corresponding system number.



MAIN ROOM SLIDE-OUT SYSTEM FOR FLAT FLOOR SYSTEMS - 522559

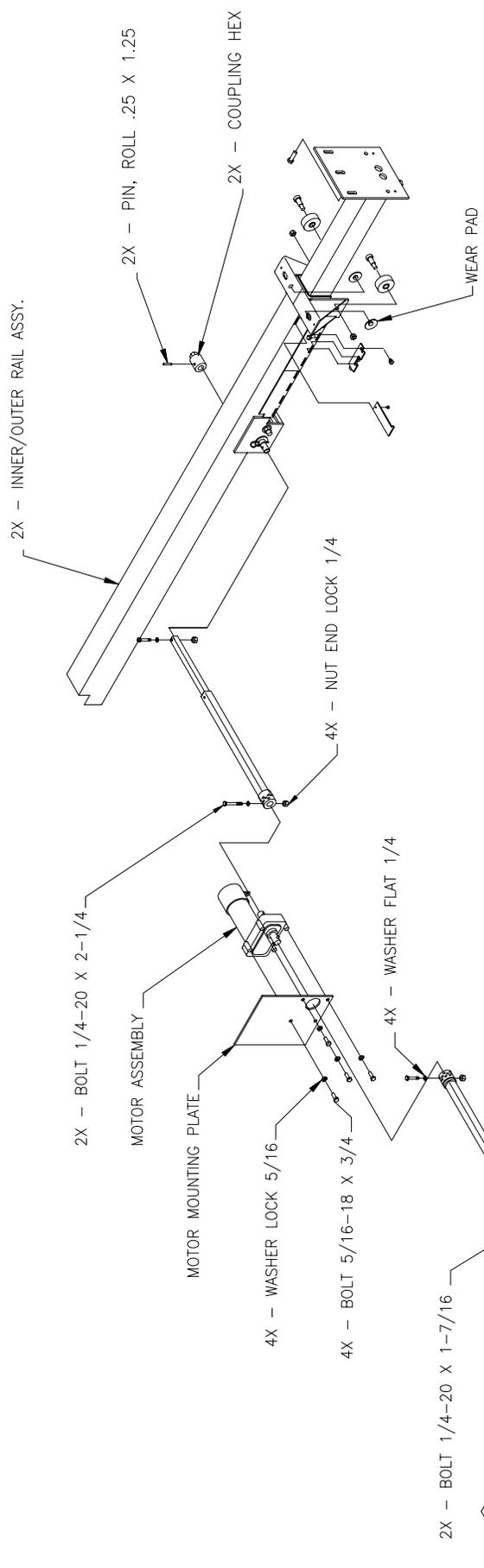


MAIN ROOM SLIDE-OUT SYSTEM FOR NON-FLAT FLOOR SYSTEMS - 522666



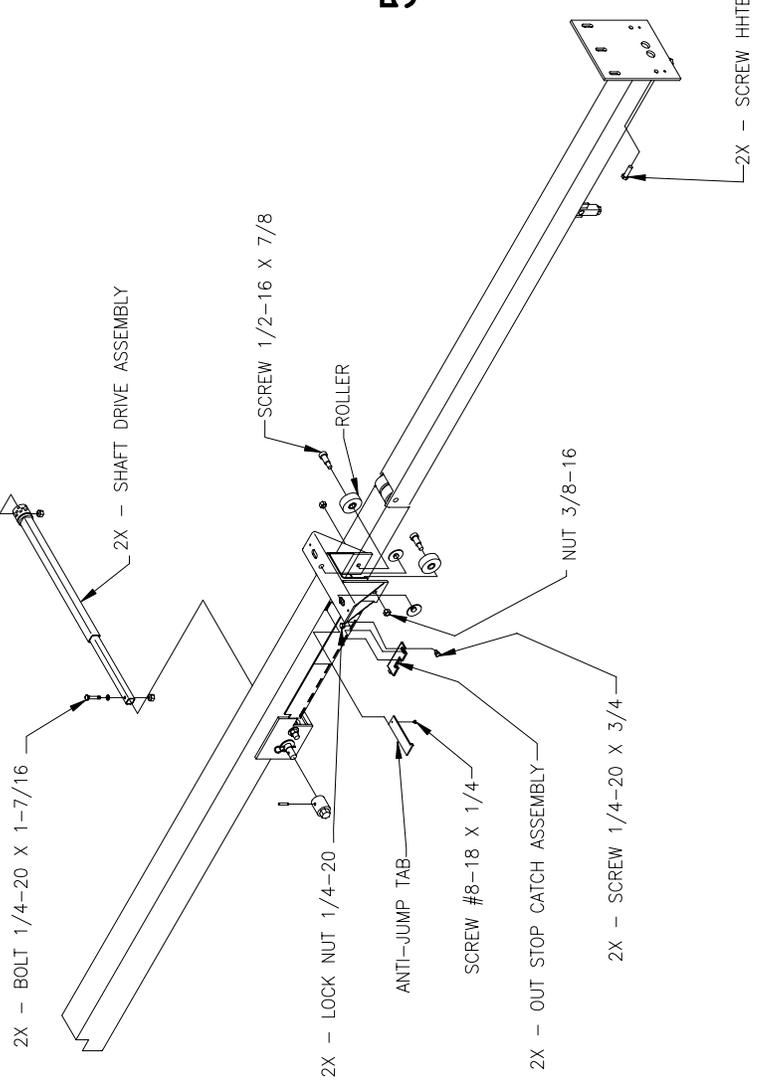
FLAT-FLOOR SLIDE-OUT SYSTEM (BOLT-IN)

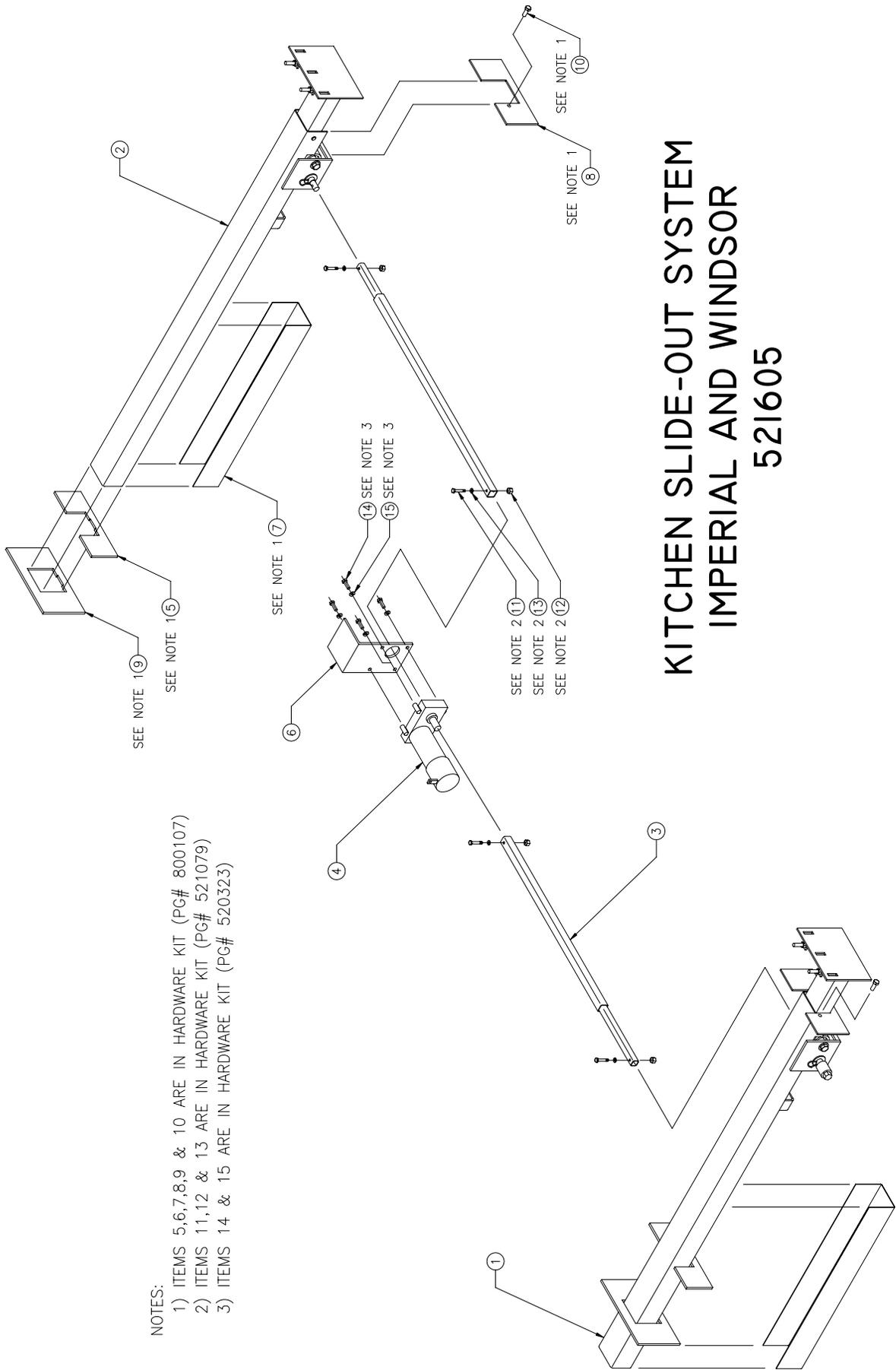
521363 - 521773 - 521776 - 521866
521994 - 522267 - 522412



FLAT FLOOR SLIDE-OUT SYSTEM - LONG STROKE

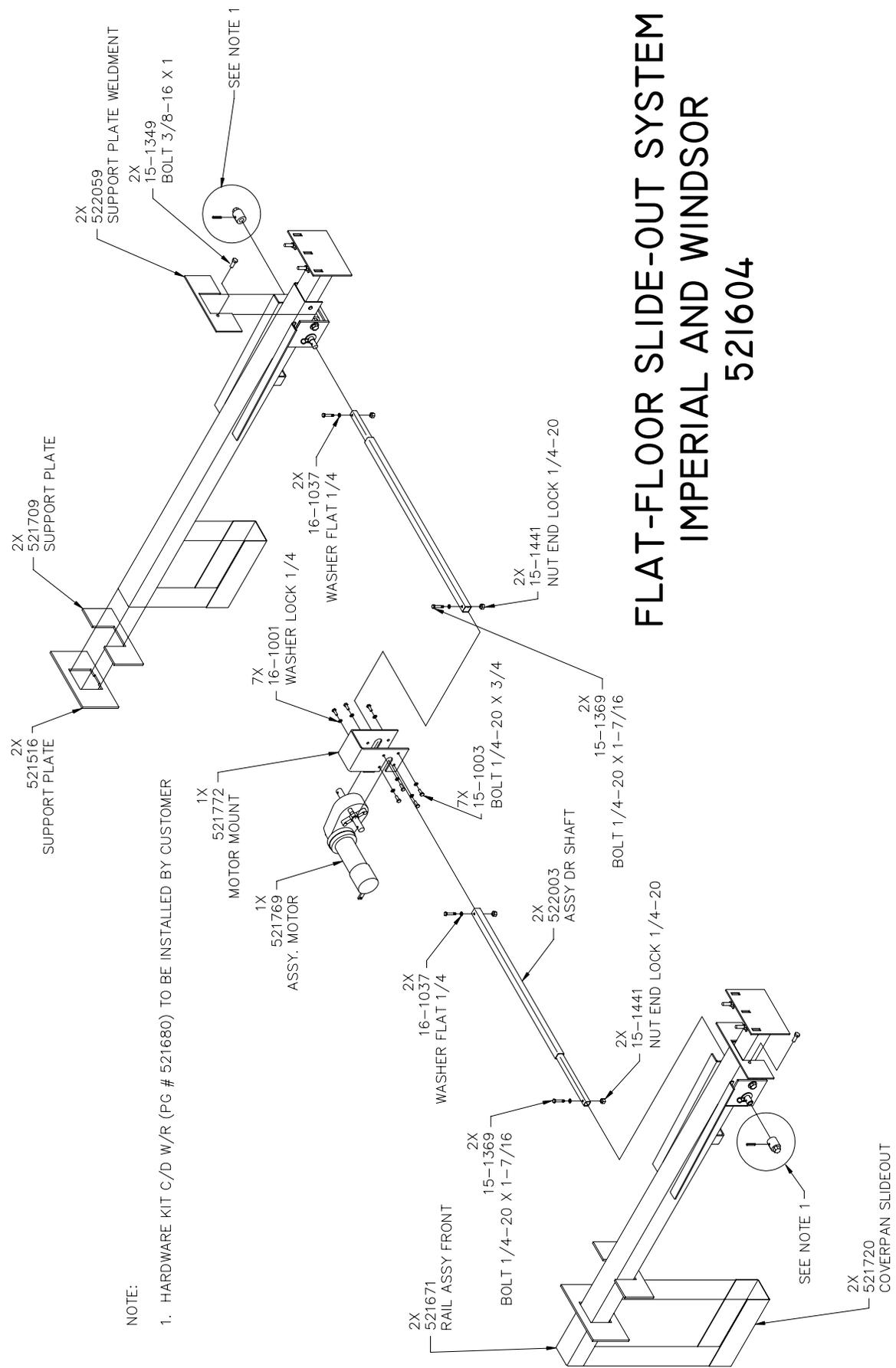
522450 - 523170 - 523291





- NOTES:
- 1) ITEMS 5,6,7,8,9 & 10 ARE IN HARDWARE KIT (PG# 800107)
 - 2) ITEMS 11,12 & 13 ARE IN HARDWARE KIT (PG# 521079)
 - 3) ITEMS 14 & 15 ARE IN HARDWARE KIT (PG# 520323)

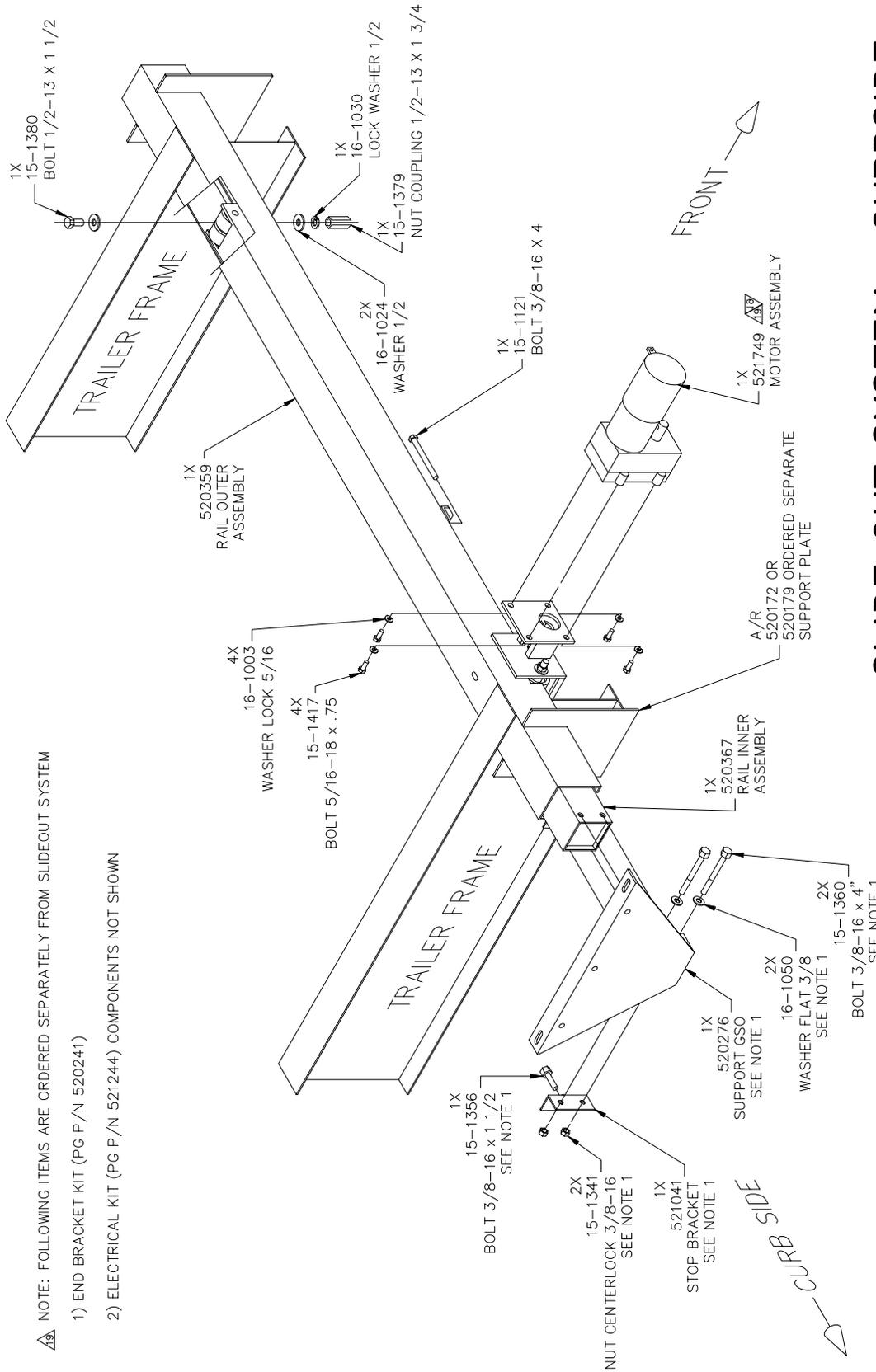
KITCHEN SLIDE-OUT SYSTEM IMPERIAL AND WINDSOR 521605



NOTE:

1. HARDWARE KIT C/D W/R (PG # 521680) TO BE INSTALLED BY CUSTOMER

FLAT-FLOOR SLIDE-OUT SYSTEM IMPERIAL AND WINDSOR 521604

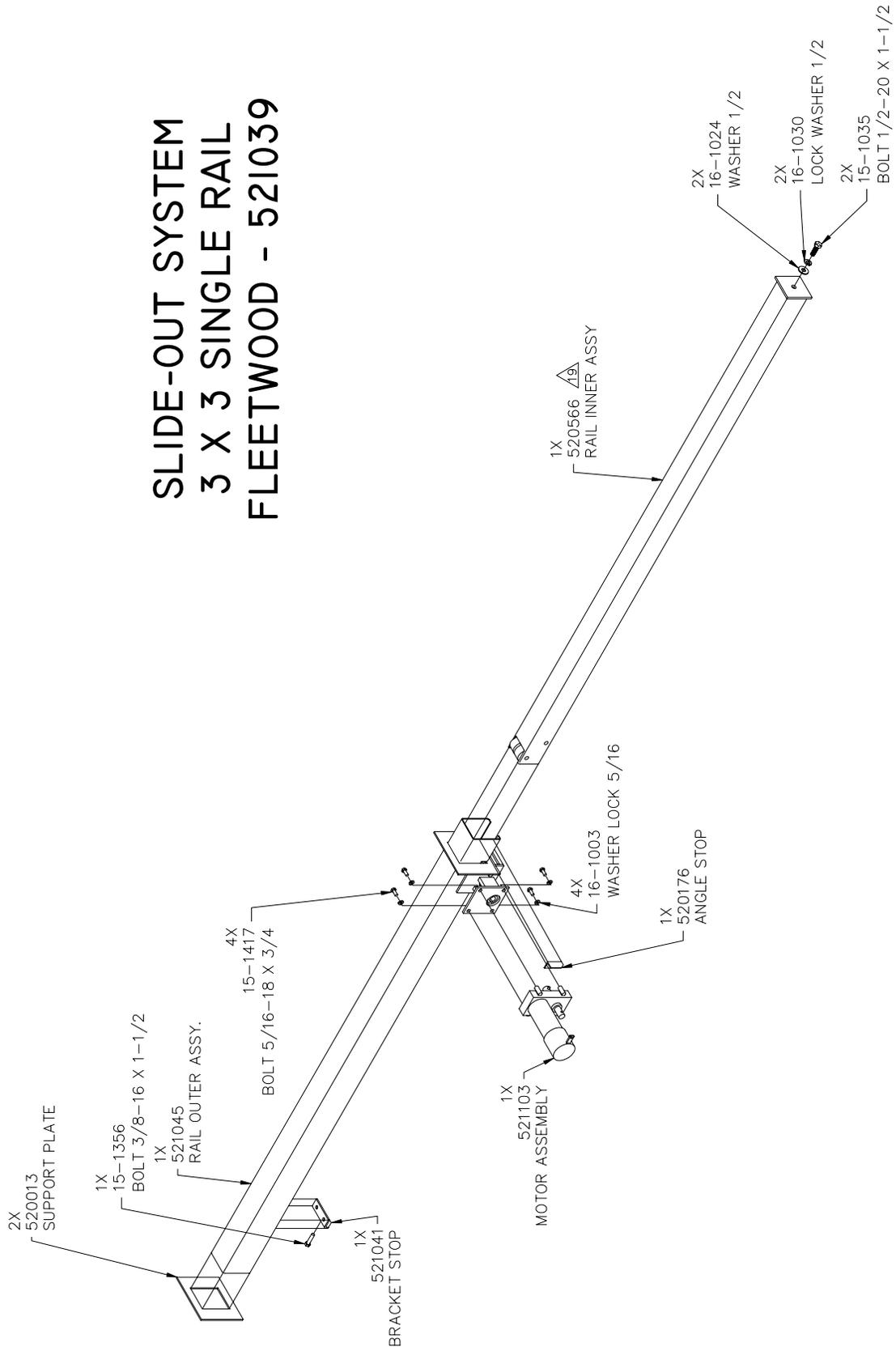


SLIDE-OUT SYSTEM - CURBSIDE SINGLE RAIL W/STOP FLEETWOOD - 520222

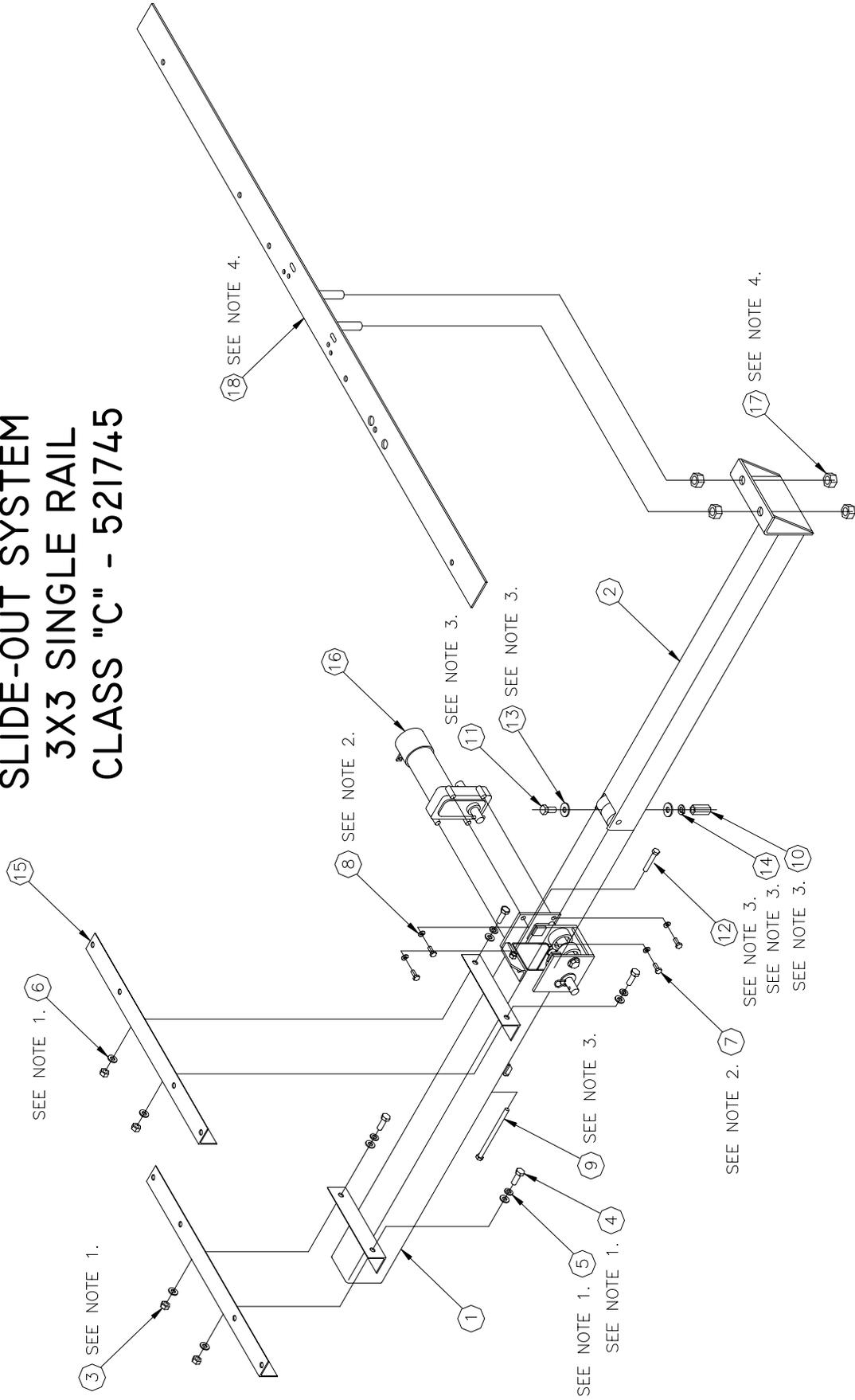
NOTE: FOLLOWING ITEMS ARE ORDERED SEPARATELY FROM SLIDEOUT SYSTEM

- 1) END BRACKET KIT (PG P/N 520241)
- 2) ELECTRICAL KIT (PG P/N 521244) COMPONENTS NOT SHOWN

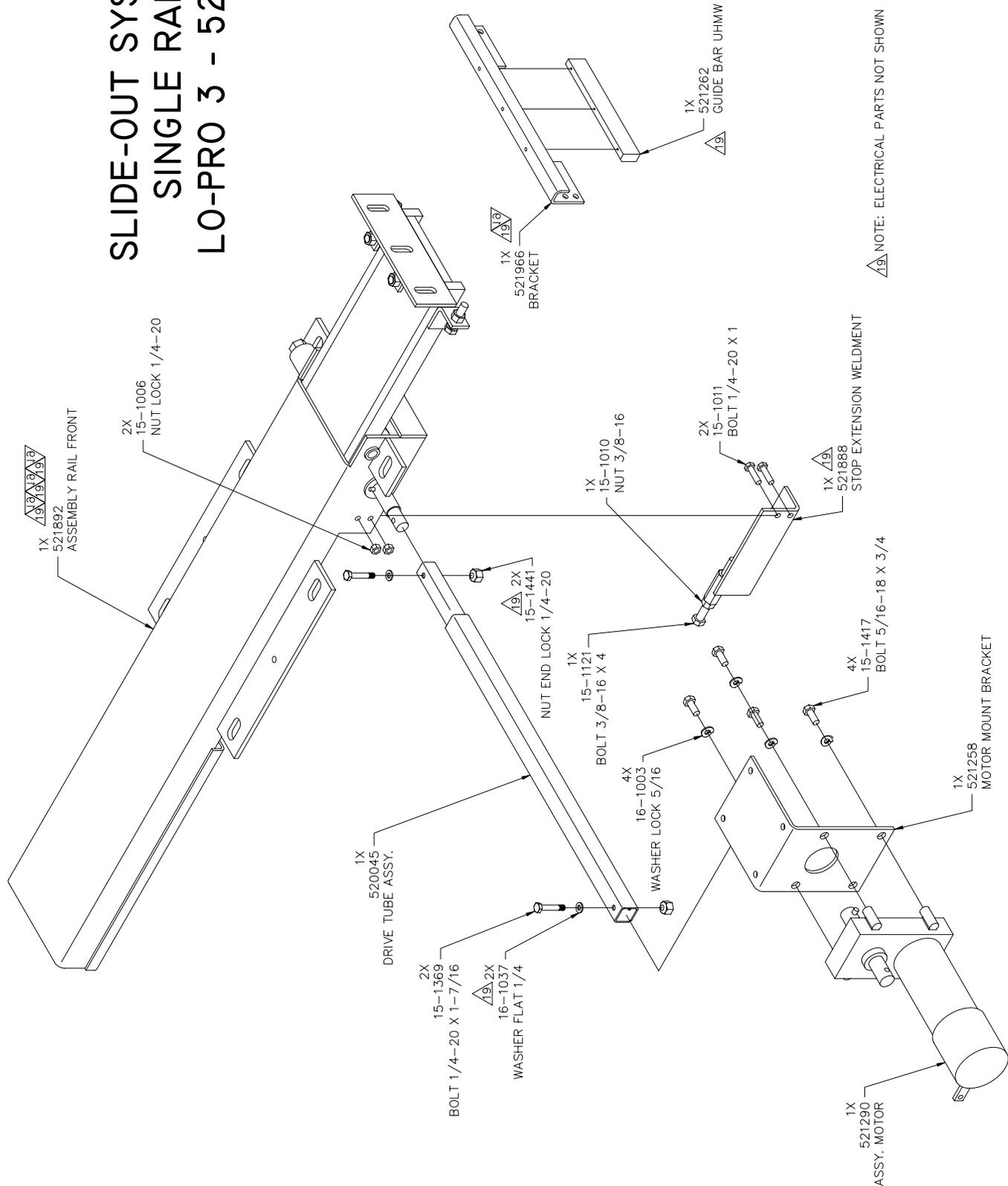
SLIDE-OUT SYSTEM 3 X 3 SINGLE RAIL FLEETWOOD - 52I039

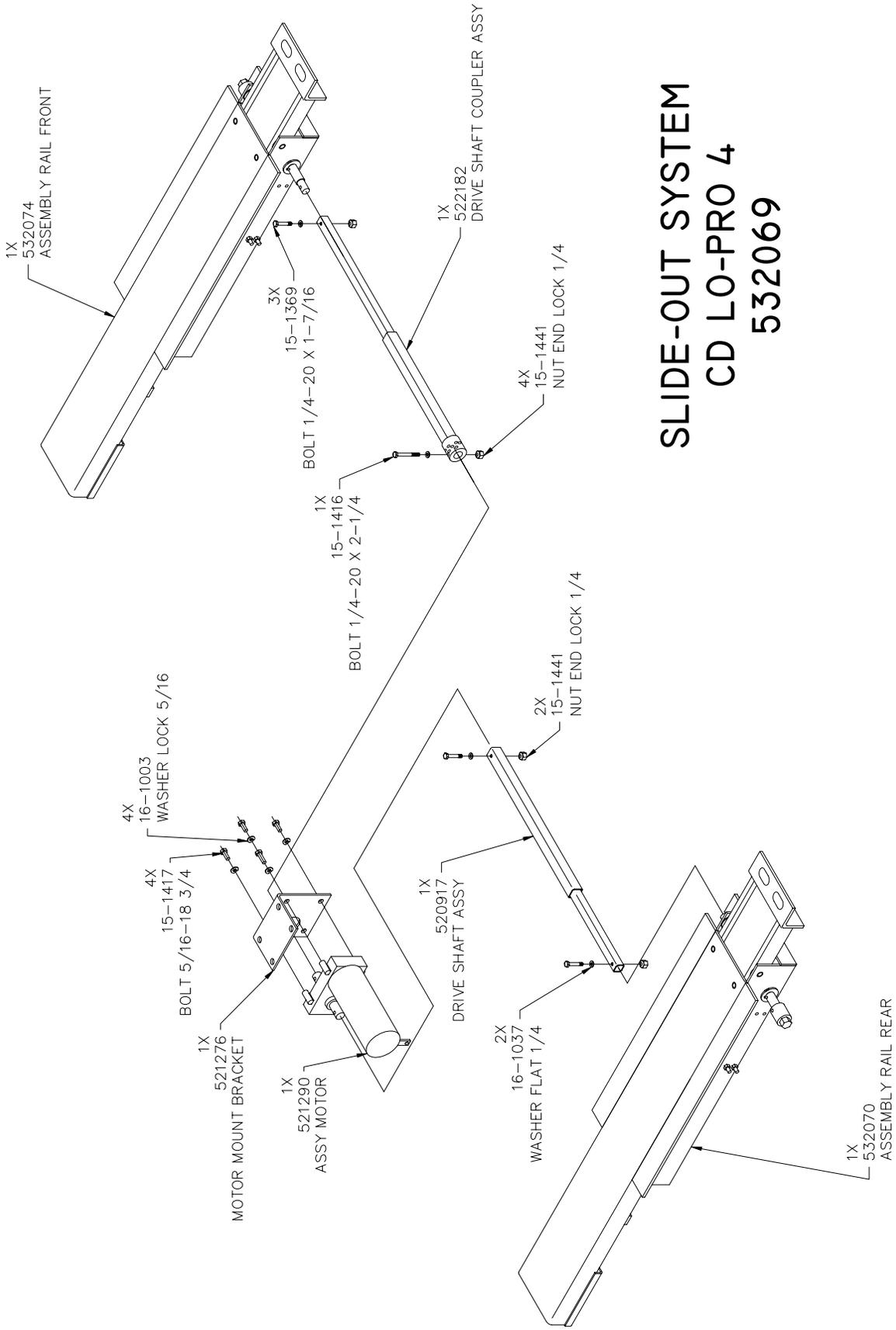


SLIDE-OUT SYSTEM 3X3 SINGLE RAIL CLASS "C" - 521745



SLIDE-OUT SYSTEM SINGLE RAIL LO-PRO 3 - 521777

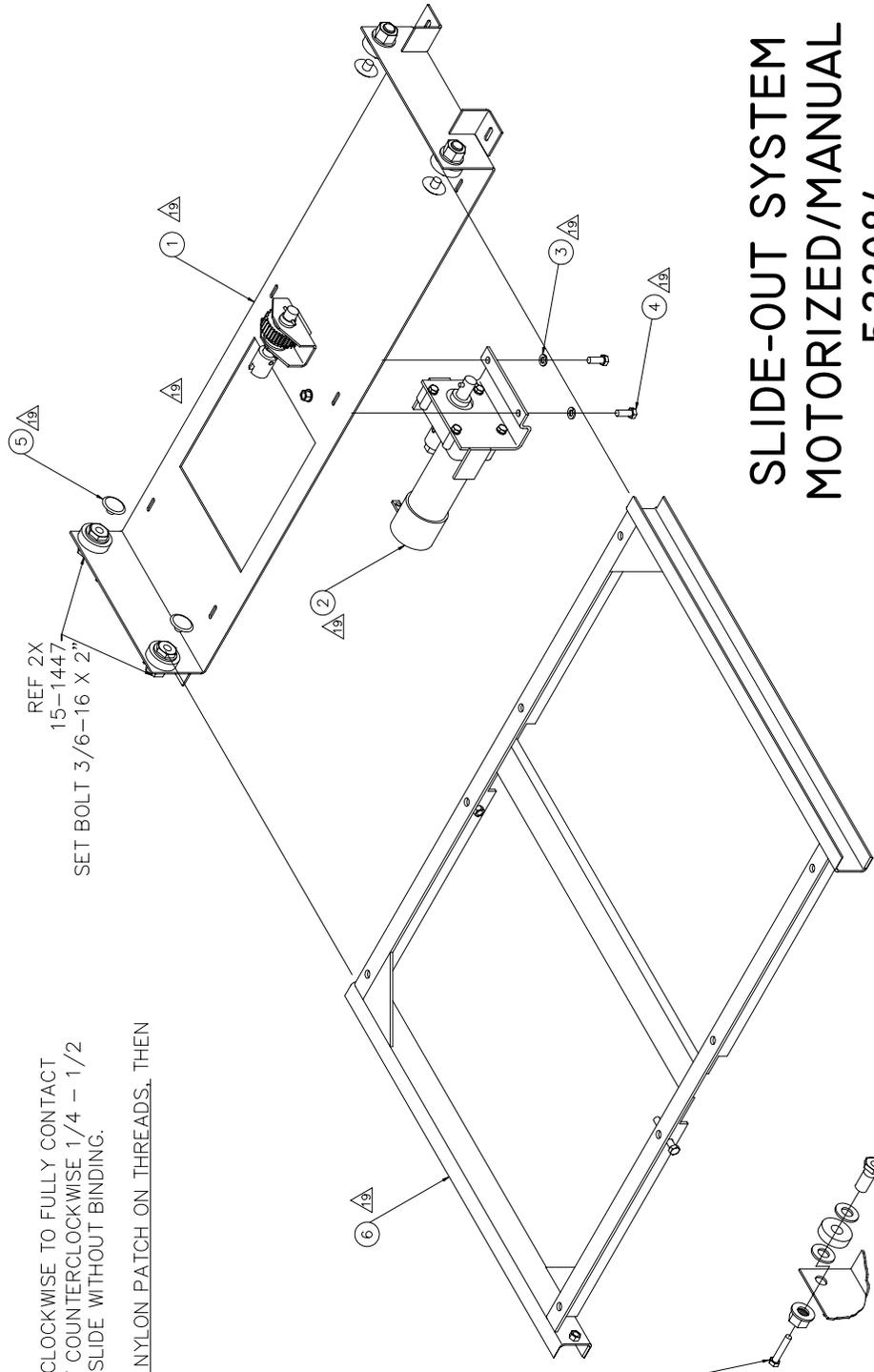




SLIDE-OUT SYSTEM MOTORIZED/MANUAL 522084

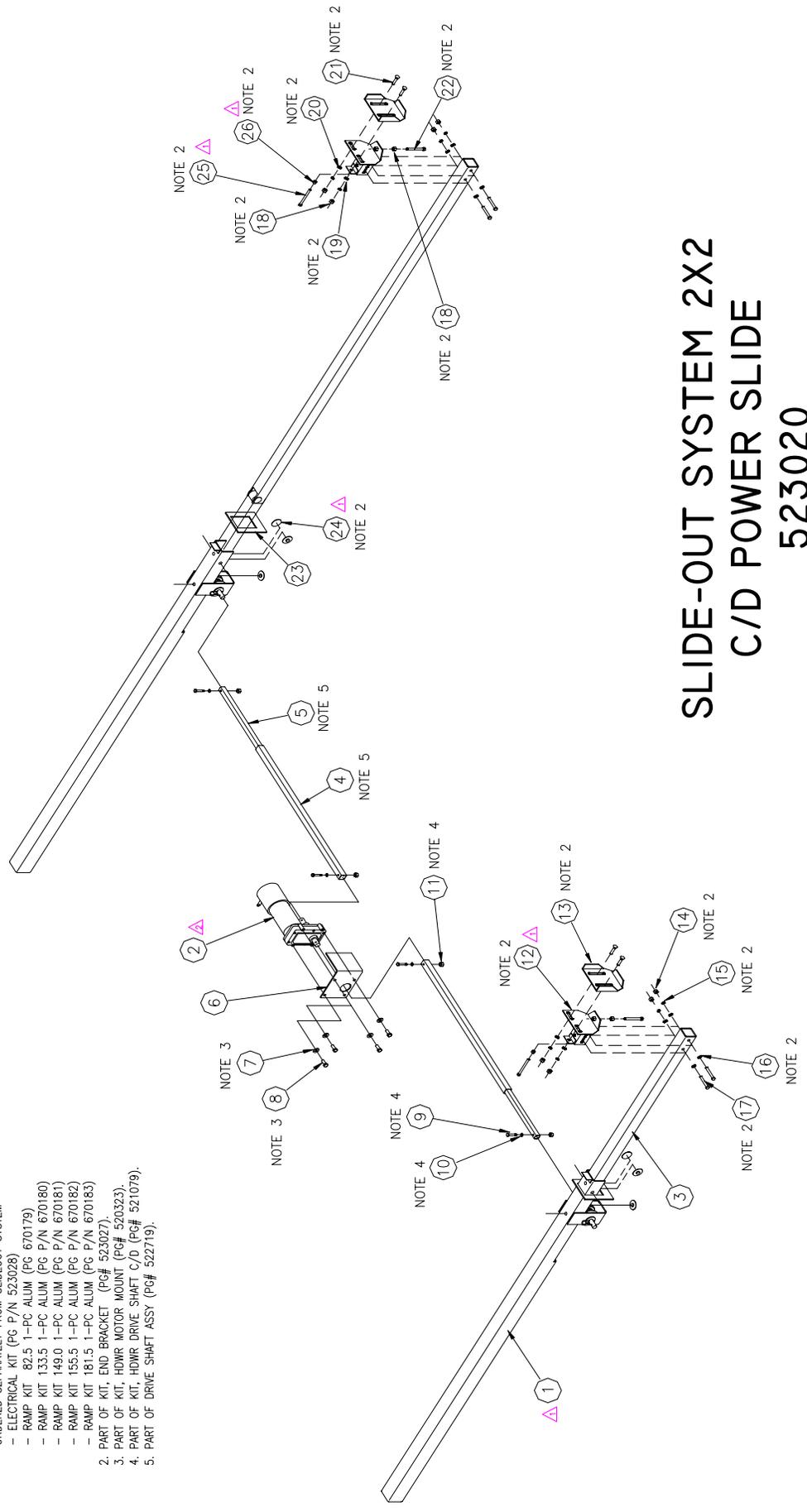
ASSEMBLY NOTES:

1. SCREW SET BOLT (15-1447) CLOCKWISE TO FULLY CONTACT RAIL. THEN BACK OFF SET BOLT COUNTERCLOCKWISE 1/4 - 1/2 TURN. CHECK TRAVEL, SHOULD SLIDE WITHOUT BINDING.
2. IF SET BOLT DOES NOT HAVE NYLON PATCH ON THREADS, THEN USE HERON 423 (BLUE)



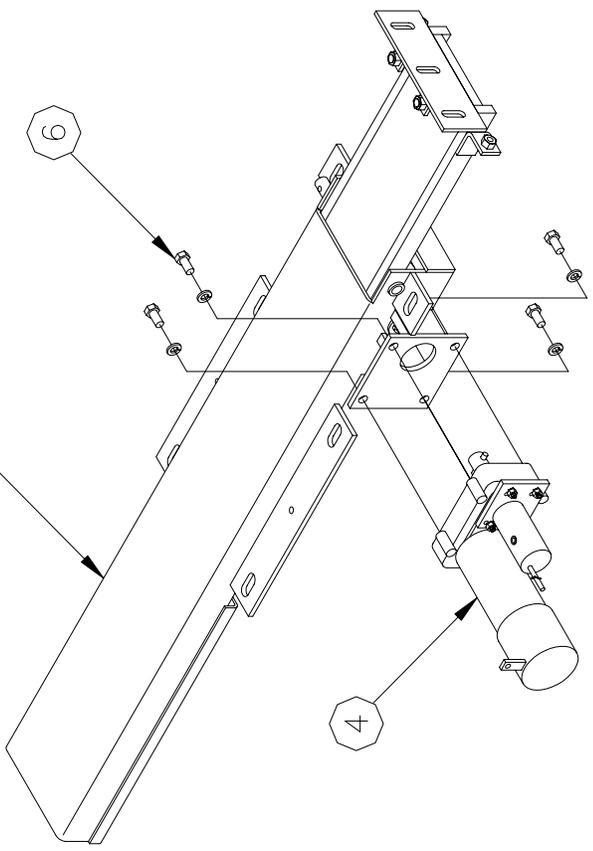
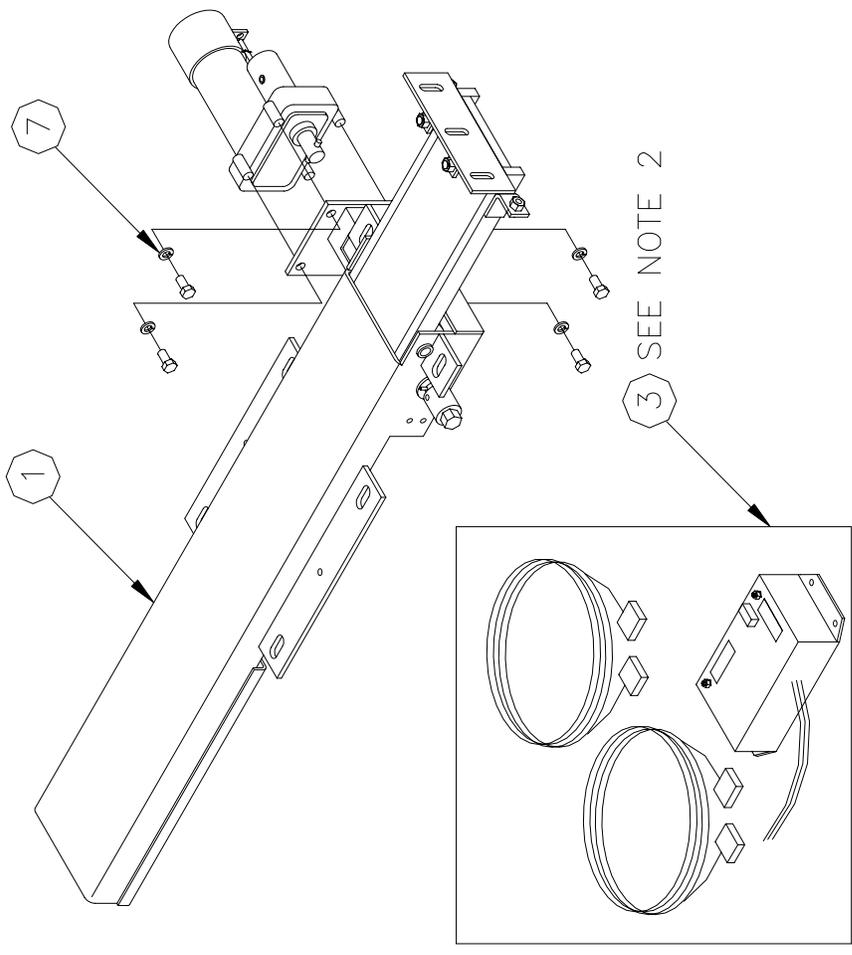
EXPLODED VIEW OF ROLLERS
WITH SET BOLT

- NOTES:
1. ONE ELECTRICAL KIT AND ONE RAMP KIT SHOULD BE ORDERED SEPARATELY FROM SLIDEOUT SYSTEM
 - ELECTRICAL KIT (PG P/N 523028)
 - RAMP KIT 82.5 1-PC ALUM (PG 670179)
 - RAMP KIT 133.5 1-PC ALUM (PG P/N 670180)
 - RAMP KIT 149.0 1-PC ALUM (PG P/N 670181)
 - RAMP KIT 155.5 1-PC ALUM (PG P/N 670182)
 - RAMP KIT 181.5 1-PC ALUM (PG P/N 670183)
 2. PART OF KIT, END BRACKET (PG# 523027).
 3. PART OF KIT, HDWR MOTOR MOUNT (PG# 520323).
 4. PART OF KIT, HDWR DRIVE SHAFT C/D (PG# 521079).
 5. PART OF DRIVE SHAFT ASSY (PG# 522719).



SLIDE-OUT SYSTEM 2X2 C/D POWER SLIDE 523020

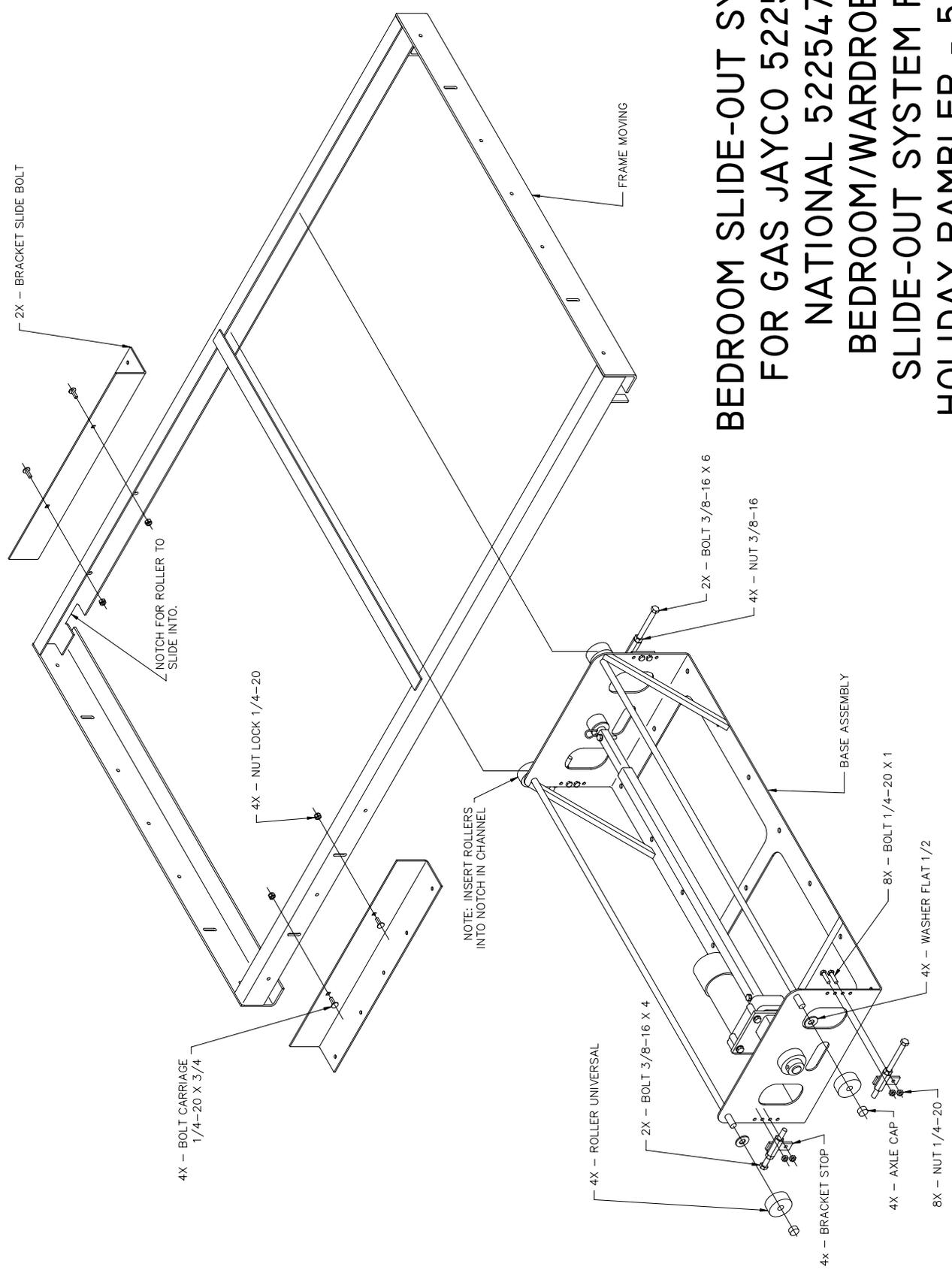
- NOTES:
1. 140-1143 CALIBRATION SWITCH BOX FOR REMOTE SYNCING RAILS SOLD SEPARATELY TO OEMS, DEALERSHIPS AND SERVICE SHOPS.
 2. KIT ELECTRICAL (PG# 800165 QTY 1) CONTAINS THE FOLLOWING:
 1X 140-1140 CONTROL BOX DUAL ASSM.
 2X 140-AZ168 HARNESS CONTROL BOX
 3. ITEM #4 MOTORS SENT SEPARATE; NOT ASSEMBLED TO RAILS.
 4. ITEMS #6 & 7 INCLUDED IN ITEM #5 KIT HARDWARE.

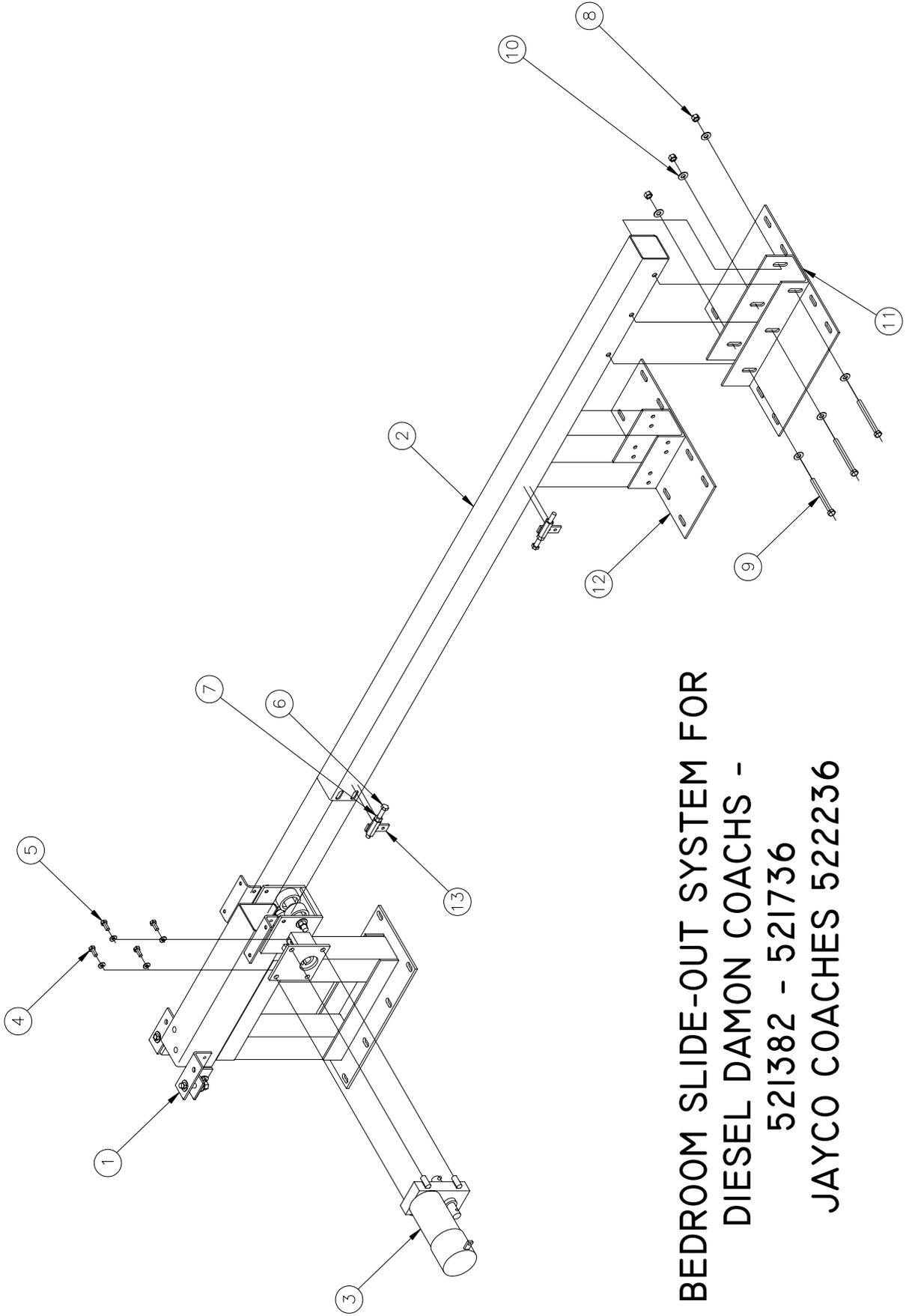


SLIDE-OUT SYSTEM
LO-PRO 3
E-SYNC - 532100 - 532103

Electric Slide-out Systems Bedroom

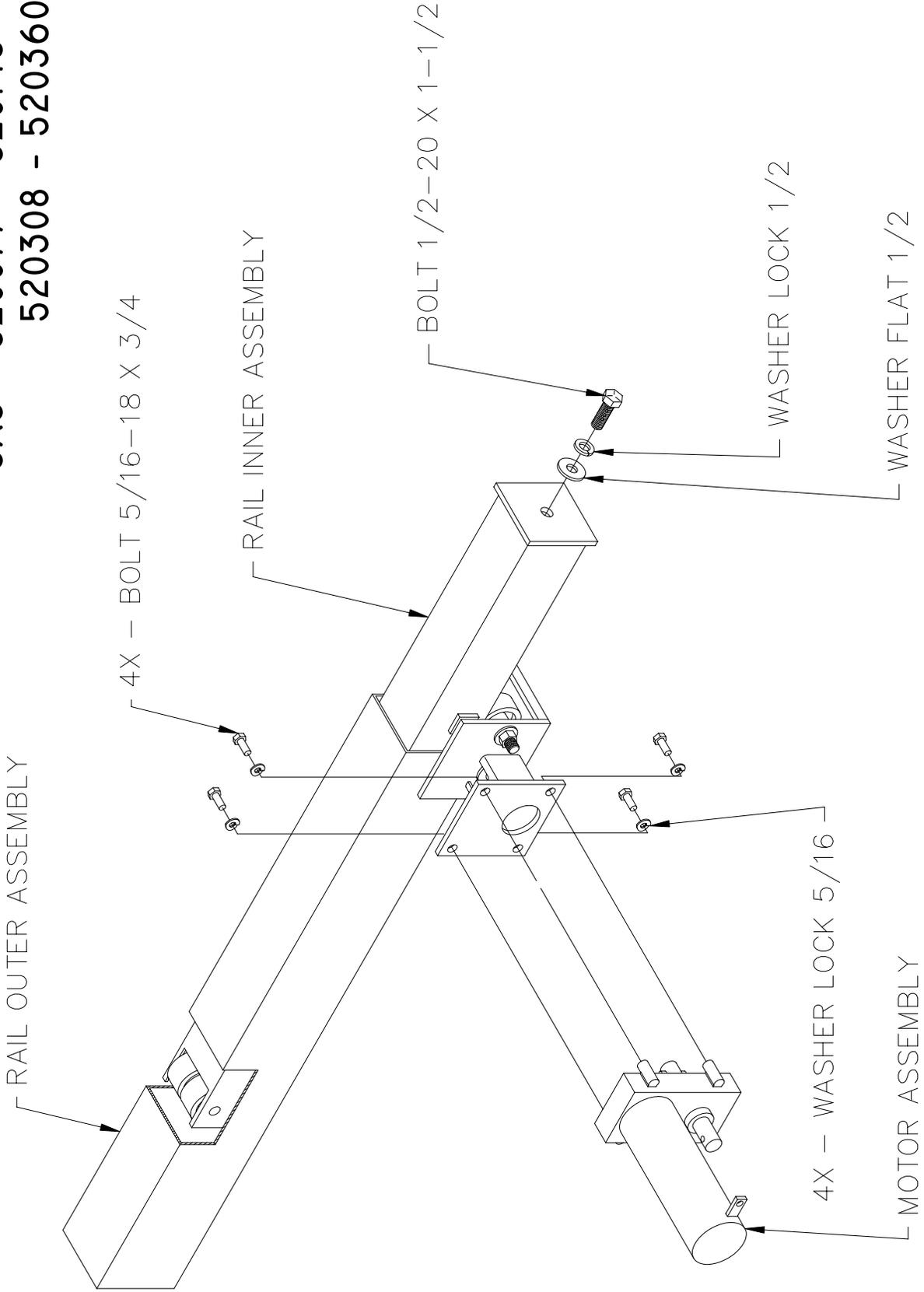
BEDROOM SLIDE-OUT SYSTEM FOR GAS JAYCO 522549 NATIONAL 522547 BEDROOM/WARDROBE SLIDE-OUT SYSTEM FOR HOLIDAY RAMBLER - 521455



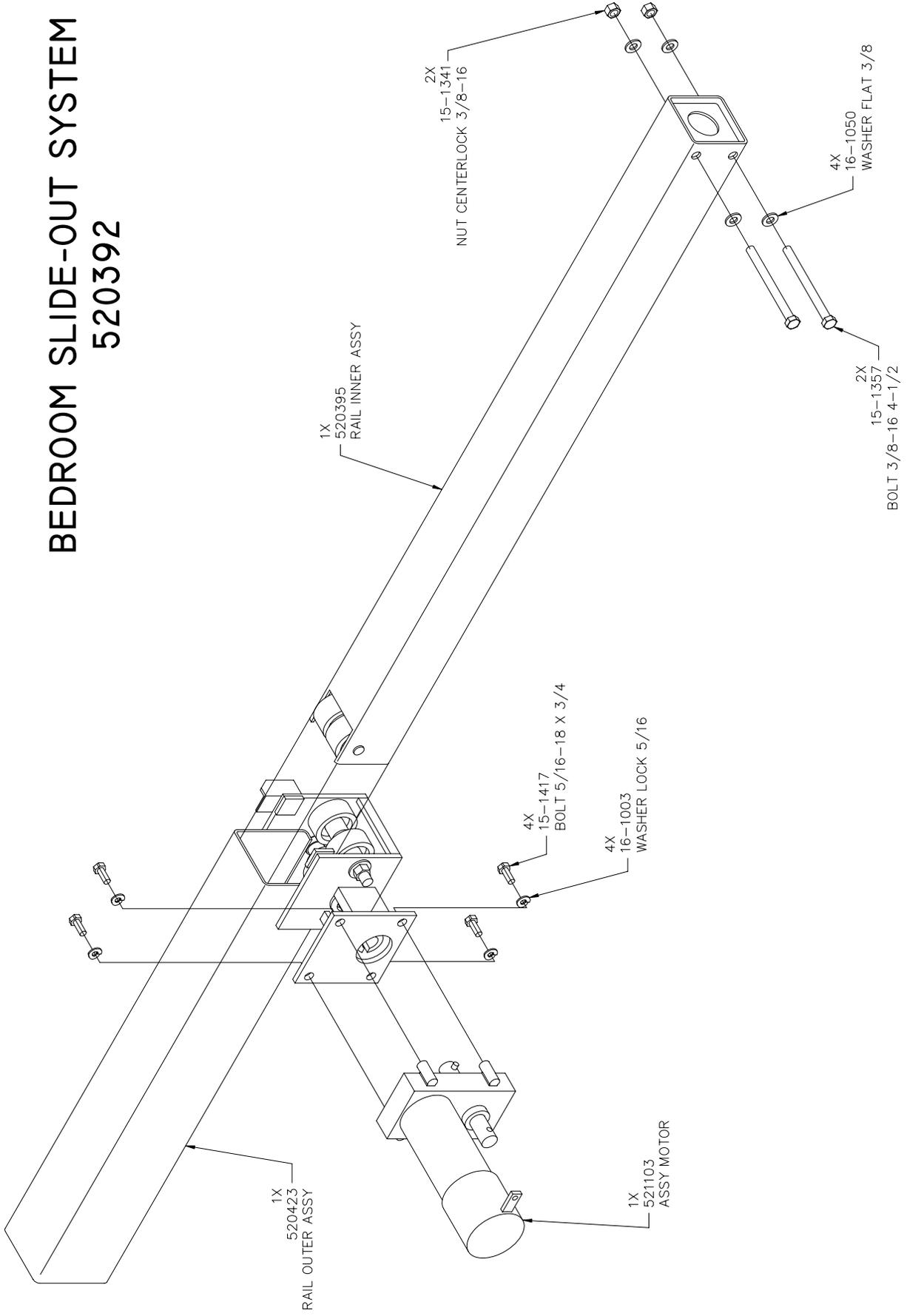


**BEDROOM SLIDE-OUT SYSTEM FOR
DIESEL DAMON COACHS -
521382 - 521736
JAYCO COACHES 522236**

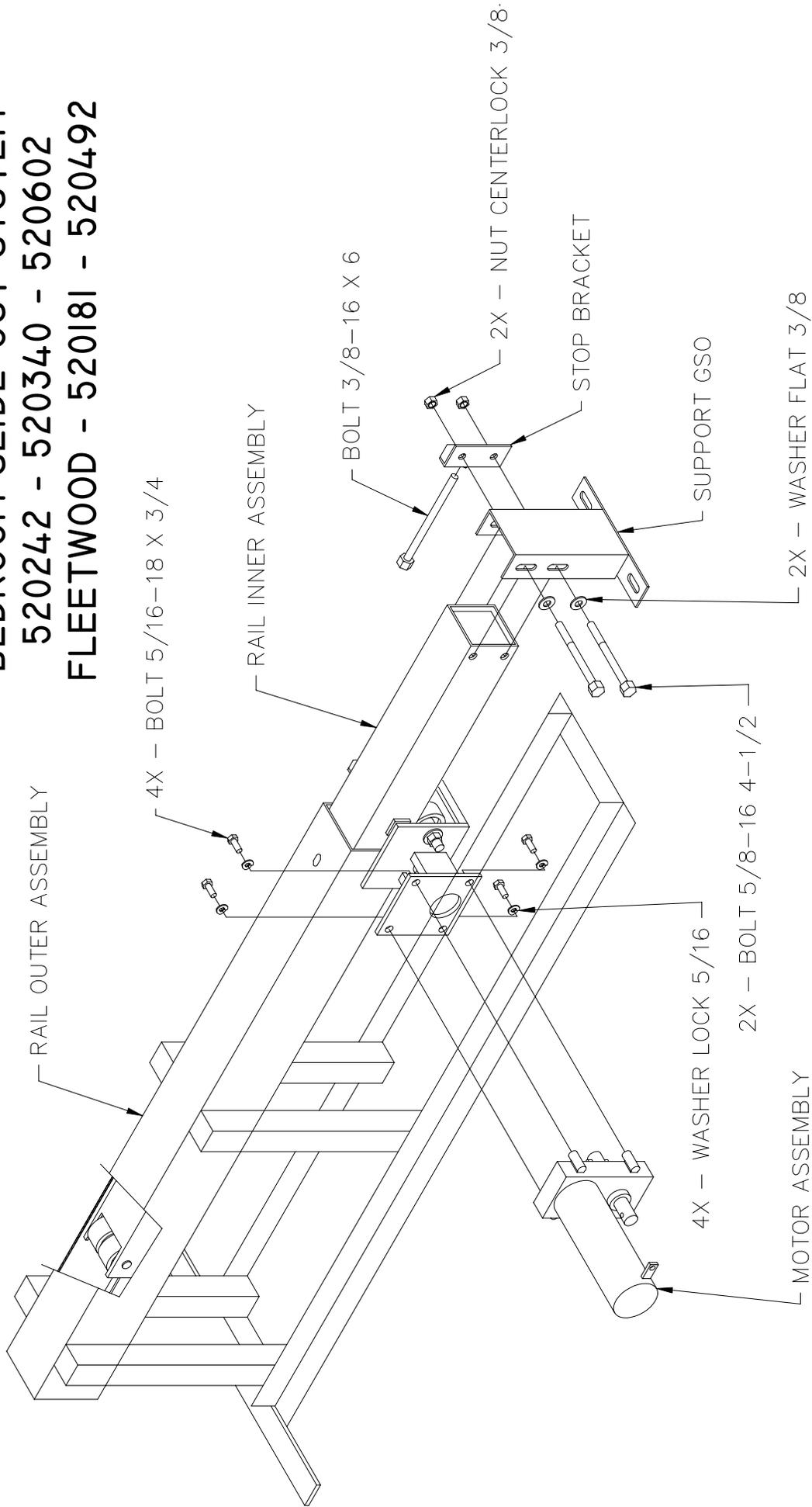
BEDROOM SLIDE-OUT SYSTEM
3X3 - 520077 - 520143 - 520204
520308 - 520360

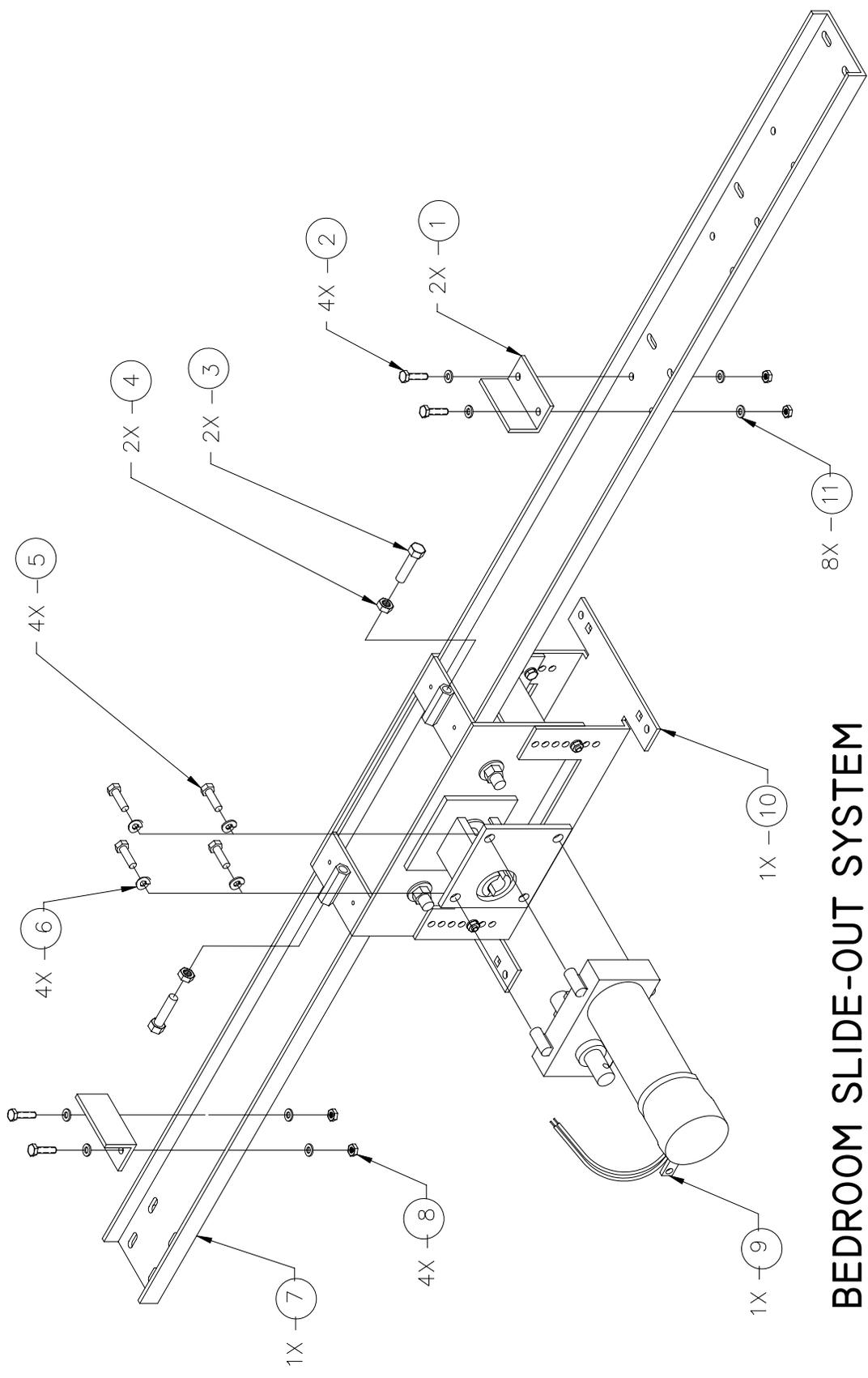


BEDROOM SLIDE-OUT SYSTEM 520392

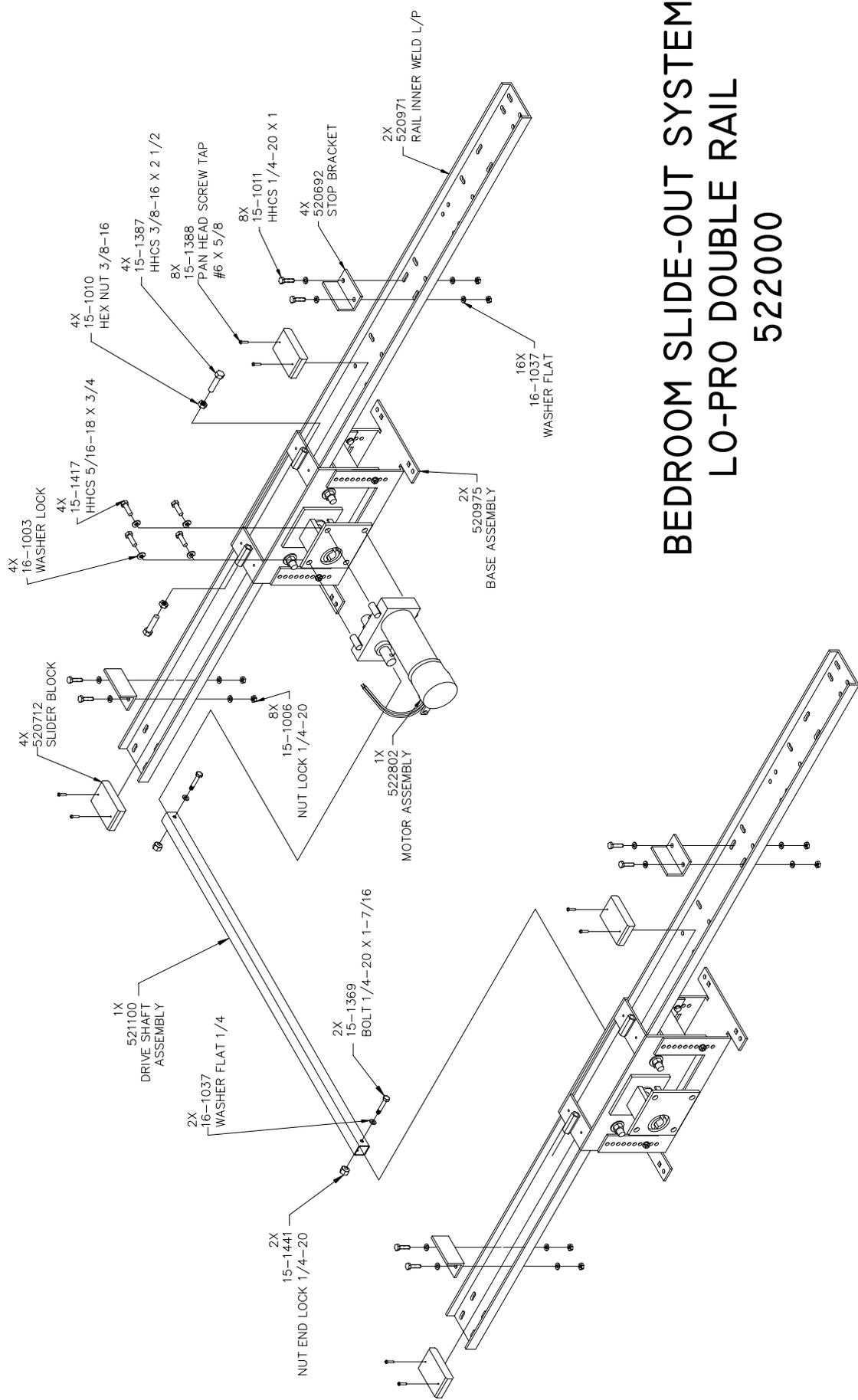


BEDROOM SLIDE-OUT SYSTEM
520242 - 520340 - 520602
FLEETWOOD - 520181 - 520492

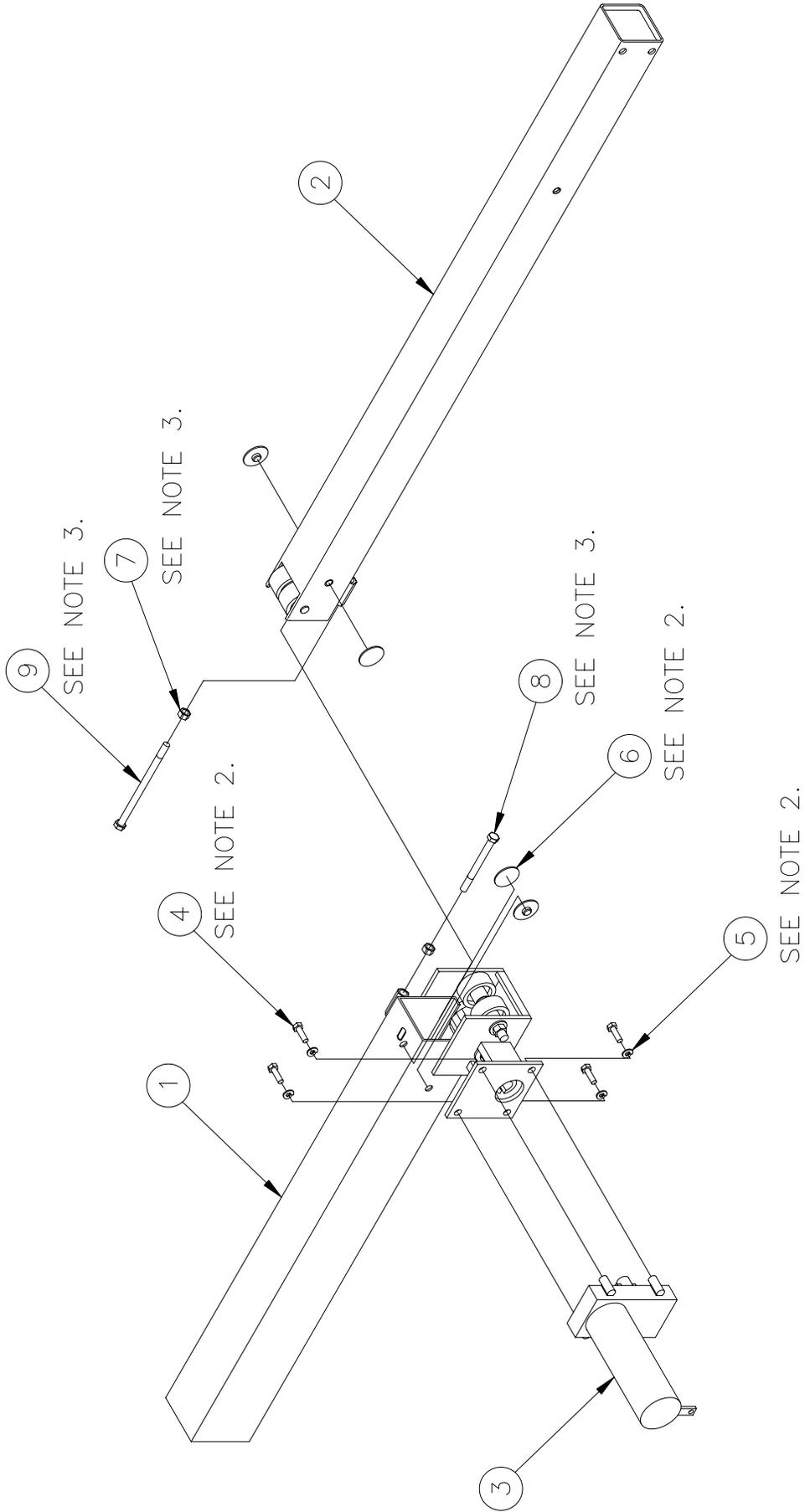




BEDROOM SLIDE-OUT SYSTEM
LO-PRO - 520695 - 520719 - 520969
520974 - 521341 - 521384 - 521388
521688 - 521784 - 521787 - 522339

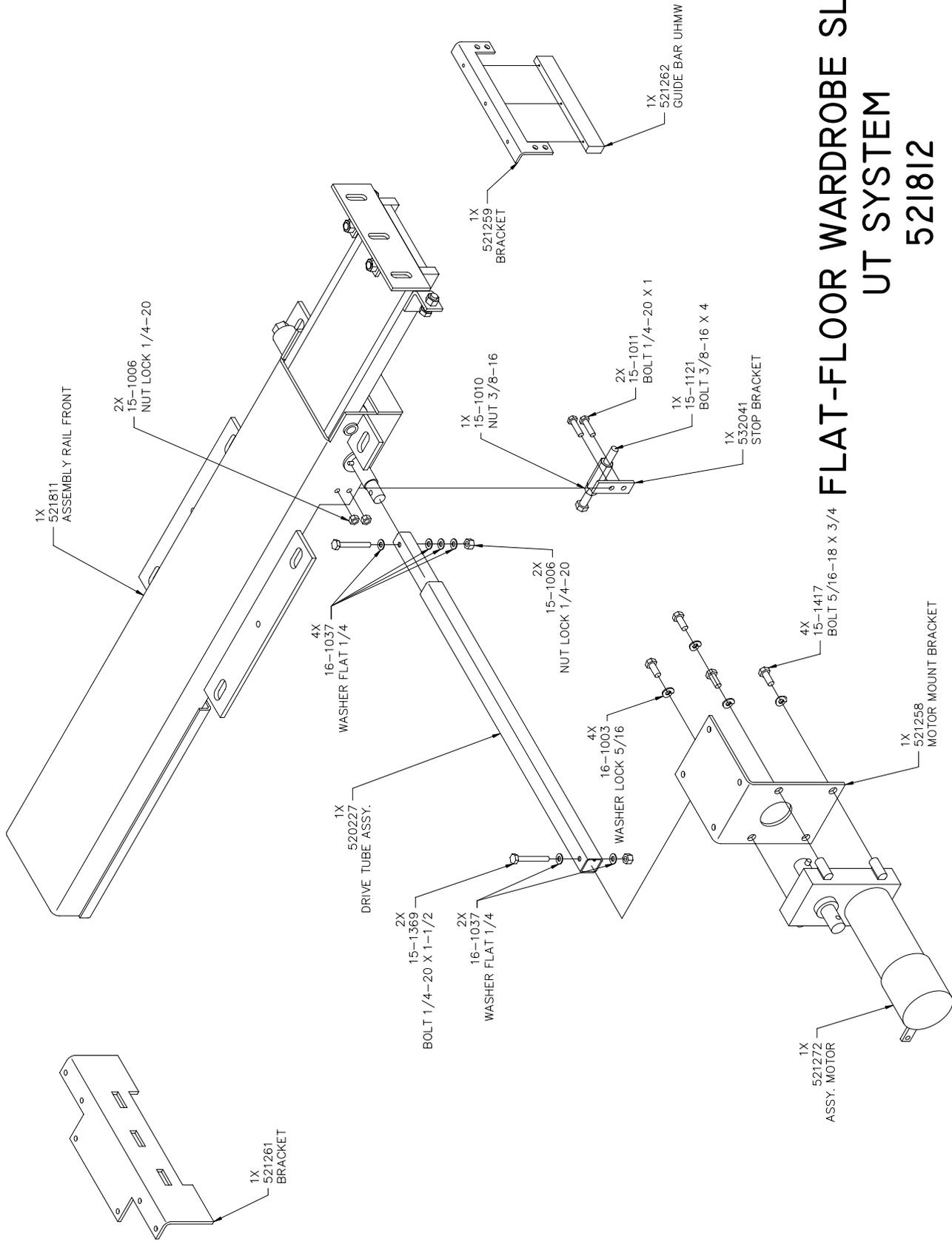


BEDROOM SLIDE-OUT SYSTEM LO-PRO DOUBLE RAIL 522000



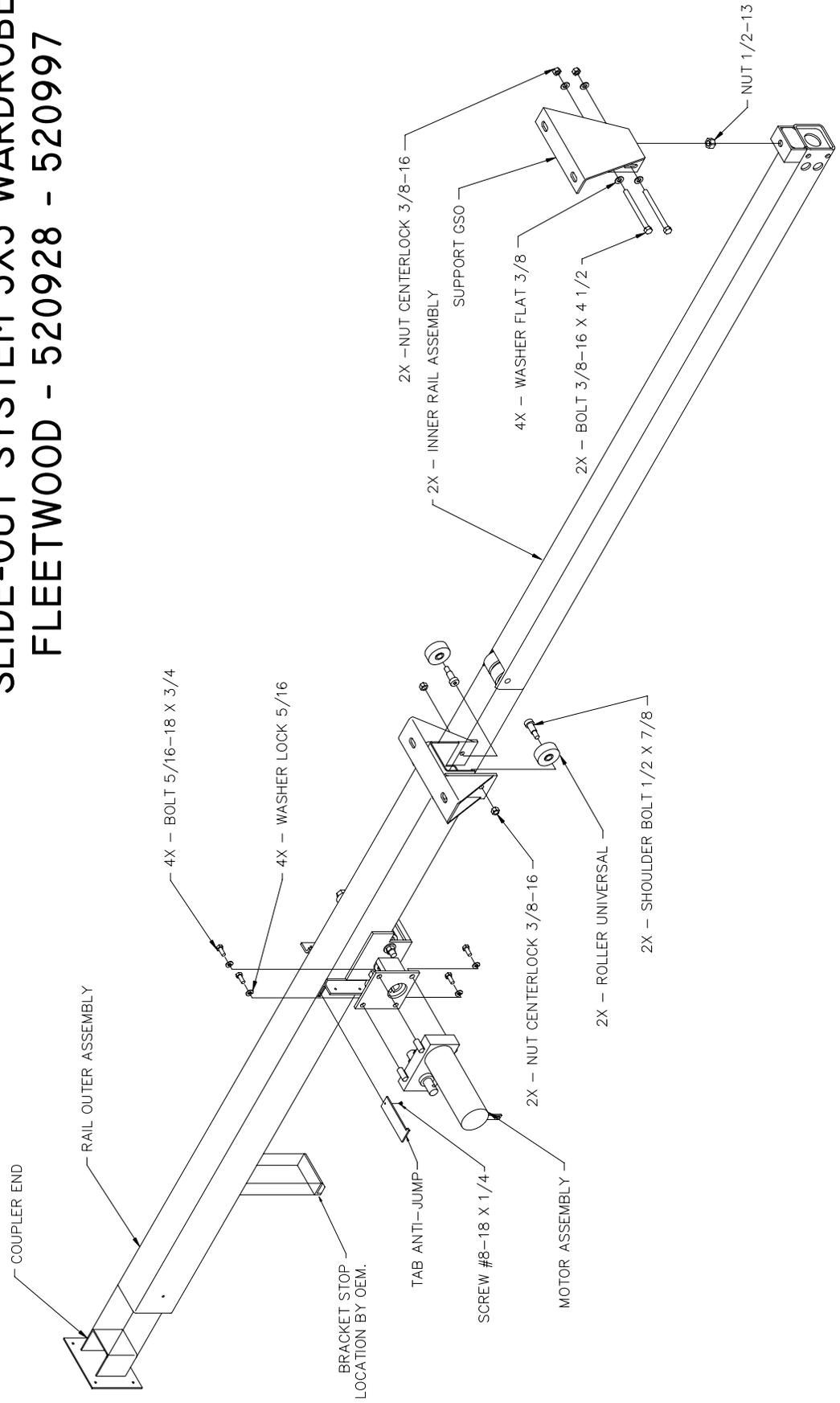
SLIDE-OUT SYSTEM – BEDROOM 3 X 3
521620 – 521641 – 521931

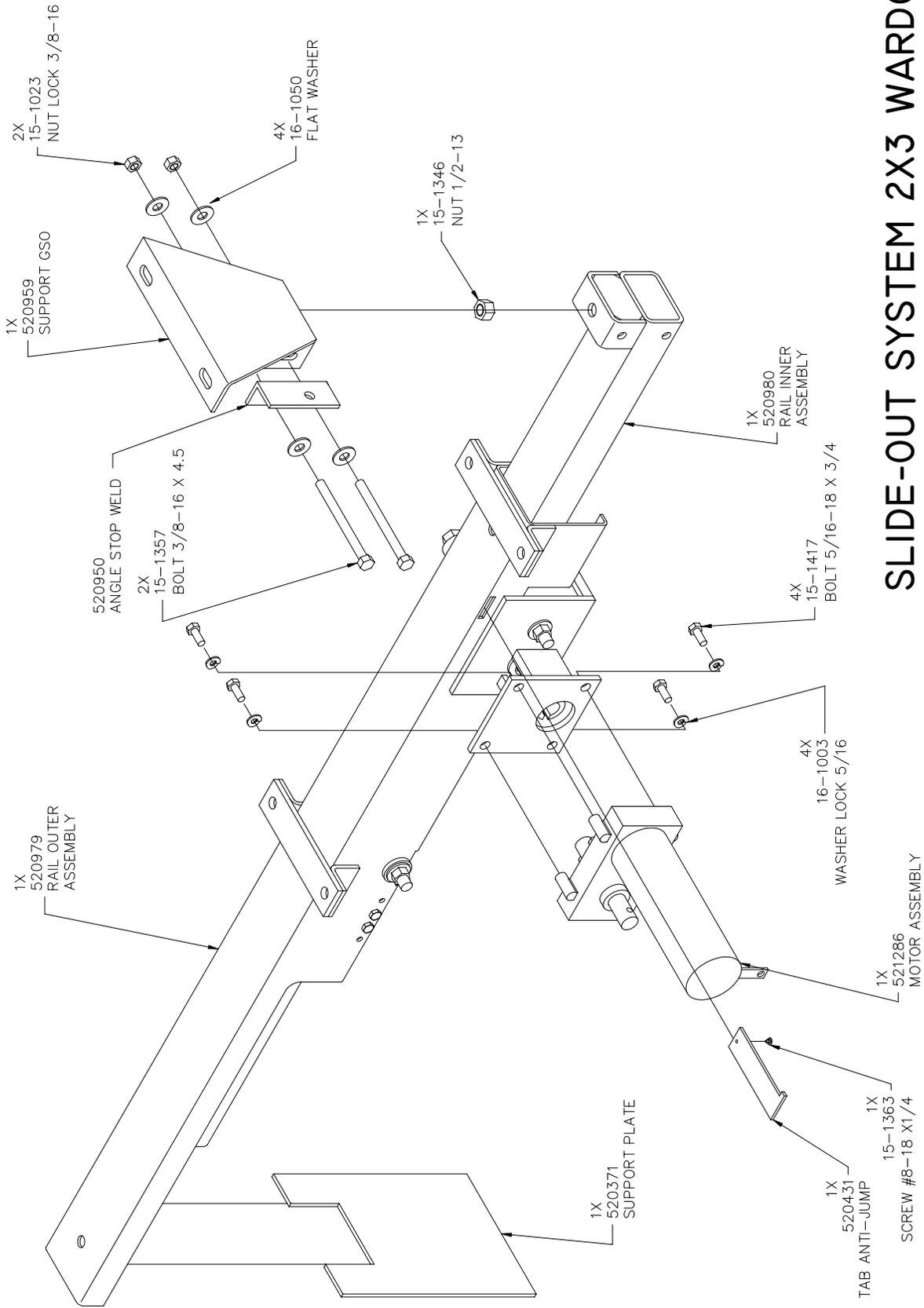
Electric Slide-out Systems Wardrobe



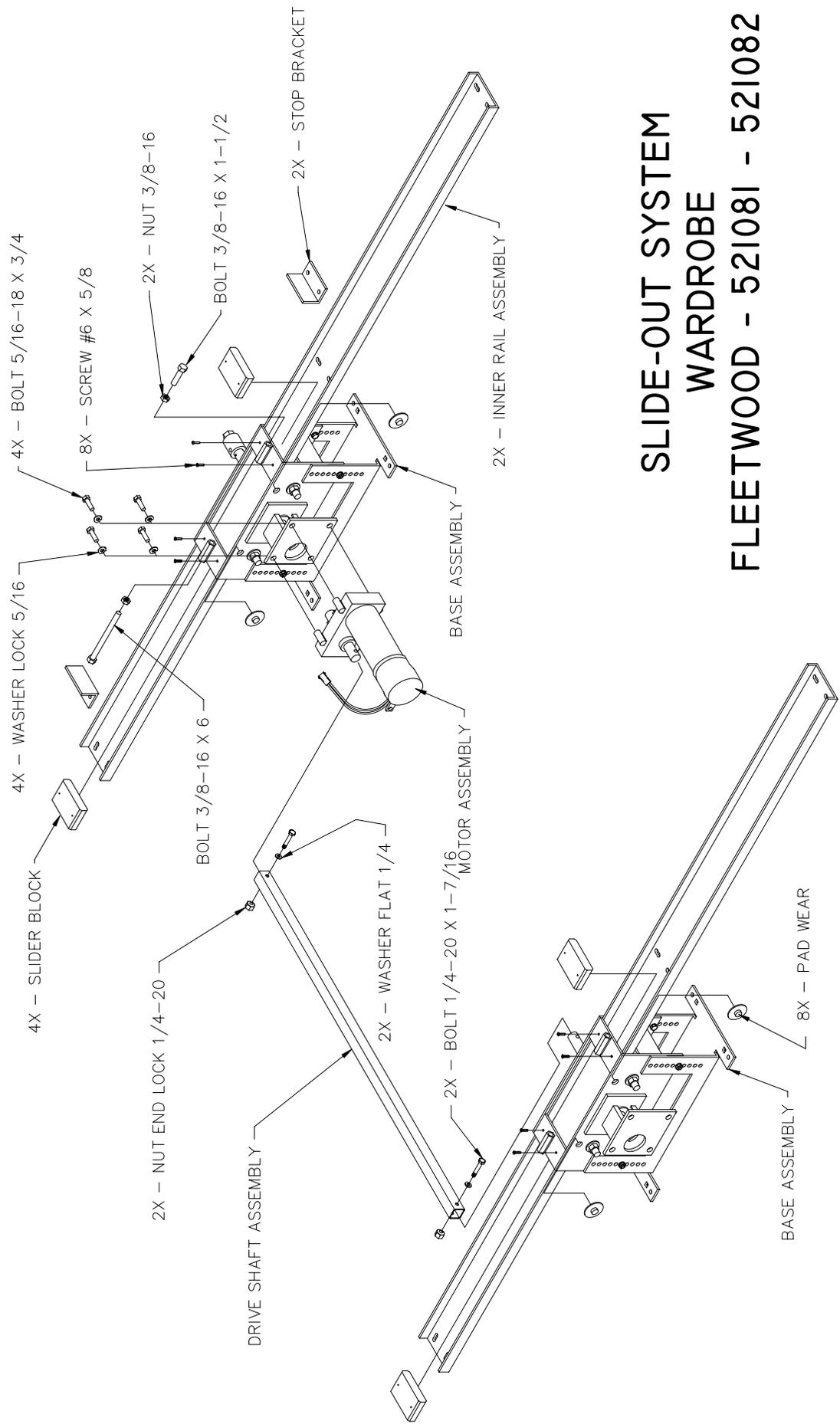
FLAT-FLOOR WARDROBE SLIDE-0 UT SYSTEM 521812

SLIDE-OUT SYSTEM 3X3 WARDROBE FLEETWOOD - 520928 - 520997



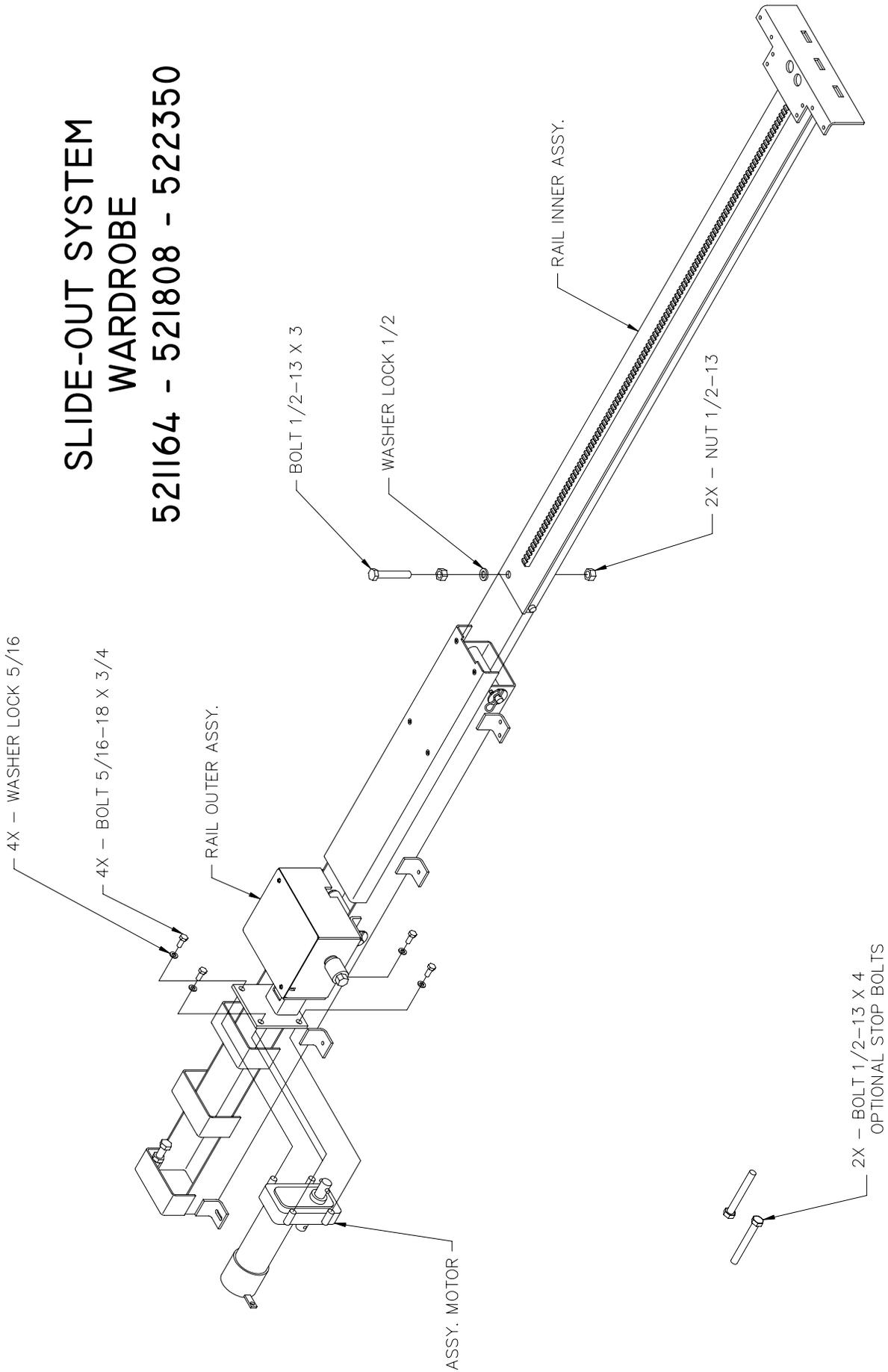


SLIDE-OUT SYSTEM 2X3 WARDROBE FLEETWOOD - 52I028



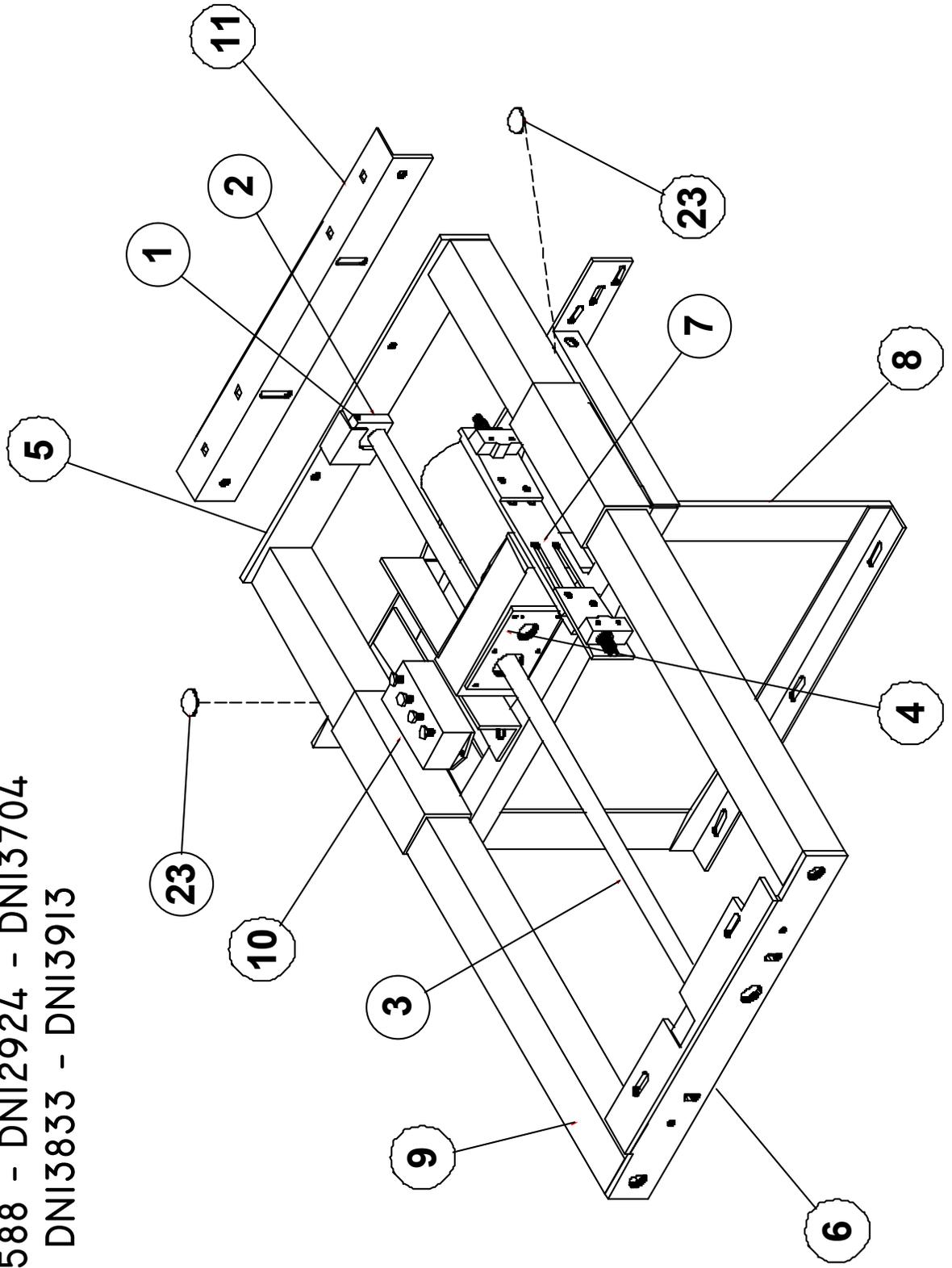
**SLIDE-OUT SYSTEM
WARDROBE
FLEETWOOD - 521081 - 521082**

SLIDE-OUT SYSTEM WARDROBE 521164 - 521808 - 522350



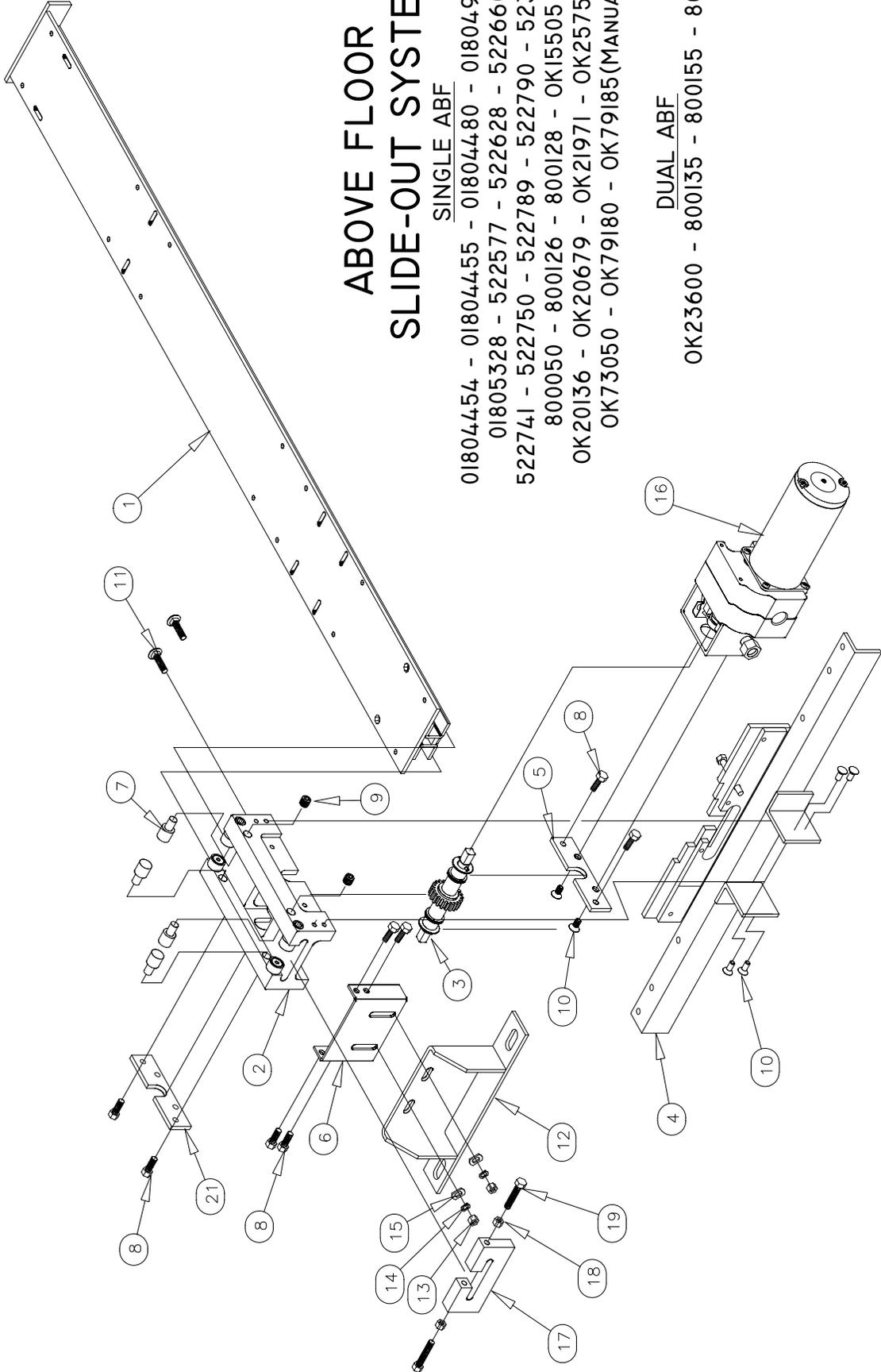
Electric Slide-out Systems Dewald Manufacturing Inc.

ELECTRIC SOFA SLIDE
DNI1967 - DNI2419 - DNI2545
DNI5588 - DNI2924 - DNI3704
DNI3833 - DNI3913



ELECTRIC SOFA SLIDE - TREADED ROD CHART

PART #	LENGTH	OEM
DN12017	34 1/4"	FOREST RIVER KEYSTONE SKYLINE
DN13031	26 1/8"	KEYSTONE FOREST RIVER
DN13835	30 1/2"	GULFSTREAM
DN12172	36 1/4"	
DN12434	30 1/2"	HOLIDAY RAMBLER MONACO
DN12547	28"	HOLIDAY RAMBLER MONACO



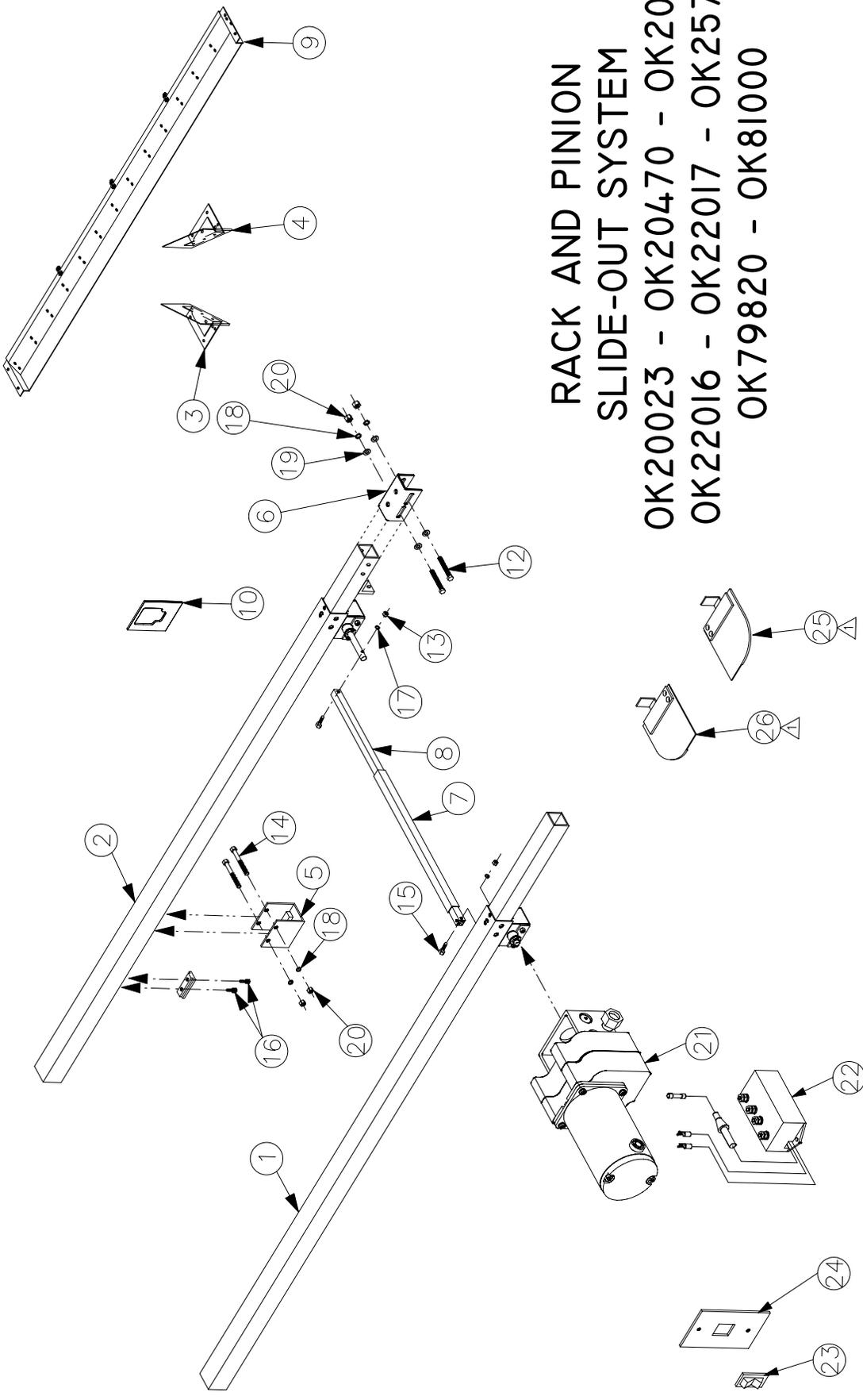
ABOVE FLOOR SLIDE-OUT SYSTEM

SINGLE ABF

- 01804454 - 01804455 - 01804480 - 01804979 - 01805327
- 01805328 - 522577 - 522628 - 522660 - 522680
- 522741 - 522750 - 522789 - 522790 - 523165 - 800005
- 800050 - 800126 - 800128 - OK1505 - OK20134
- OK20136 - OK20679 - OK21971 - OK25750 - OK44290
- OK73050 - OK79180 - OK79185(MANUAL SYSTEM)

DUAL ABF

- OK23600 - 800135 - 800155 - 800156



RACK AND PINION
SLIDE-OUT SYSTEM
OK20023 - OK20470 - OK20014
OK22016 - OK22017 - OK25757
OK79820 - OK81000

APPENDIX A

BILL OF MATERIALS

KIT	BOM	DESCRIPTION	PAGE
520077	520073	RAIL OUTER ASSY B-ROOM	47
	520079	RAIL INNER ASSY B-ROOM	
520143	14-1090	CIRCUIT BREAKER-15 AMP	47
	520073	RAIL OUTER ASSY B-ROOM	
	520078	KIT HARDWARE 3X3	
	520079	RAIL INNER ASSY B-ROOM	
	520089	KIT, ELECTRONICS-RELAY CO	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521282	KIT, PIGTAIL FUSED 15A	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
520181	520239	KIT ELEC CPT DS/BDRM	49
	520243	KIT S/O BDRM	
	520492	KIT CHASSIS F/W TT BDRM	
520204	520077	KIT BASE BEDROOM	47
	520078	KIT HARDWARE 3X3	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521415	KIT ELECTRONICS	
520222	520358	KIT CHASSIS DS/SGL RM W/S	36
520242	520189	ASSY RAIL OUTER BR-F/W	49
	520193	ASSY RAIL INNER BR	
	520323	KIT MOTOR MOUNT HARDWARE	
	521286	ASSY MOTOR DS MT W/PIN &	
520308	520073	RAIL OUTER ASSY B-ROOM	47
	520193	ASSY RAIL INNER BR	
	520304	SINGLE RAIL HDWR KIT	
	520305	ROOM MOUNTING KIT	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521280	KIT, ELEC. CPTS W/O SWITC	
520340	520079	RAIL INNER ASSY B-ROOM	49
	520189	ASSY RAIL OUTER BR-F/W	
	520323	KIT MOTOR MOUNT HARDWARE	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521244	KIT ELEC. CPTS 15A	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
520360	520073	RAIL OUTER ASSY B-ROOM	47
	520078	KIT HARDWARE 3X3	
	520239	KIT ELEC CPT DS/BDRM	
	520506	RAIL INNER ASSEMBLY-BR 76	
	521103	ASSY MOTOR DS MT W/PIN-K	
520392	520305	ROOM MOUNTING KIT	48
	520323	KIT MOTOR MOUNT HARDWARE	
	520395	RAIL INNER ASSY	
	520423	RAIL OUTER DR ASSY 25"	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521244	KIT ELEC. CPTS 15A	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
520492	520189	ASSY RAIL OUTER BR-F/W	49
	520193	ASSY RAIL INNER BR	
	520323	KIT MOTOR MOUNT HARDWARE	
	521103	ASSY MOTOR DS MT W/PIN-K	

520602	15-1359	SCREW HHTB .375-16X6 GR 5	49
	15-1417	SCREW HHC .312-18 .75 GR5	
	16-1003	WASHER LOCK .312	
	520189	ASSY RAIL OUTER BR-F/W	
	520193	ASSY RAIL INNER BR	
	520239	KIT ELEC CPT DS/BDRM	
	520305	ROOM MOUNTING KIT	
	521041	BRACKET STOP WELD.EZ-STOR	
	521103	ASSY MOTOR DS MT W/PIN-K	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
520695	15-1006	NUT LOCK .25-20	50
	15-1007	SCREW HHC .375-16 1.5 GR	
	15-1010	NUT HEX 3/8-16 UNC Z	
	15-1011	SCREW HHC .25-20 1 GR 8	
	15-1417	SCREW HHC .312-18 .75 GR5	
	16-1003	WASHER LOCK .312	
	16-1037	WASHER FLAT .25 SAE	
	520239	KIT ELEC CPT DS/BDRM	
	520692	STOP BRACKET LP B/R	
	520694	ASSY BASE W/MOUNT LP B/R	
	520971	RAIL INNER WELD LO PRO (J	
	521103	ASSY MOTOR DS MT W/PIN-K	
520719	510113	KIT ELECTRONICS	50
	520323	KIT MOTOR MOUNT HARDWARE	
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	
	521390	KIT STOPS LO PRO BEDROOM	
	522802	MOTOR ASSM DSMT W/PIN-B	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
520928	520996	KIT S/O WARDROBE CP F/W	55
	520997	KIT CHASSIS WARDROBE CP F	
	521801	KIT ELEC CPTS W/O SWITCH	
	82-S0010-01	MANUAL OPERATION S/O MH (
520969	520323	KIT MOTOR MOUNT HARDWARE	50
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	
	521390	KIT STOPS LO PRO BEDROOM	
	521391	KIT BLOCK SLIDER LO PRO B	
	522248	KIT ELEC CPTS 15A BKR 20A	
	522802	MOTOR ASSM DSMT W/PIN-B	
520974	520323	KIT MOTOR MOUNT HARDWARE	50
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	
	521403	KIT HARDWARE LO PRO BED	
	522802	MOTOR ASSM DSMT W/PIN-B	
520997	520995	RAIL INNER ASSY 3x3 64" W	55
	521077	RAIL OUTER DRIVE ASSY 3X3	
	521286	ASSY MOTOR DS MT W/PIN &	
	521446	HARDWARE KIT	
521028	520977	KIT S/O ROOM WARDROBE DIE	56
	520978	KIT CHASSIS WARDROBE DIES	
	521801	KIT ELEC CPTS W/O SWITCH	
	82-S0010-01	MANUAL OPERATION S/O MH (

521039	520283	KIT STOP ANGLE INWARD	37
	520566	RAIL INNER ASSEMBLY 77.5	
	521044	KIT HARDWARE-MTR & BRKT	
	521045	RAIL OUTER DRIVE ASSY 3X3	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521245	ELECT KIT CPTS 20A	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521081	520323	KIT MOTOR MOUNT HARDWARE	57
	521099	RAIL INNER B/R LO PRO WEL	
	521253	ASSY, BASE W/MOUNT LP B/R	
	521271	ASSY MOTOR DS HT W/PIN &	
	521401	KIT HARDWARE LO PRO BED/W	
	522058	ASSY BASE W/MOUNT LP B/R	
	800102	KIT RLY CTRL 25A BRK 25A	
521082	520323	KIT MOTOR MOUNT HARDWARE	57
	521099	RAIL INNER B/R LO PRO WEL	
	521651	KIT HARDWARE	
	521715	KIT RLY CTRL 15A BKR 20A	
	522058	ASSY BASE W/MOUNT LP B/R	
	522895	ASSY MOTOR DS MT W/PIN &	
521164	521161	ASSY INNER RAIL WARDROBE	58
	521162	ASSY OUTER RAIL WARDROBE	
	521163	KIT HARDWARE WARDROBE	
	521342	ASSY MTR DSMT W/CON-K & P	
521341	520971	RAIL INNER WELD LO PRO (J	50
	520975	ASSY.BASE W/MT. LP B/R	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521440	HARDWARE KIT	
	521637	KIT ELEC. CPTS 15A	
521363	520323	KIT MOTOR MOUNT HARDWARE	32
	520917	SHAFT DRV ASSY 39.5 TO 45	
	521079	KIT HARDWARE DRIVESHAFT C	
	521272	ASSY MTR DSMT W/CON-K, W/	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521366	KIT	
	521453	RAIL OUTER IDLER ASSY REA	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521382	520323	KIT MOTOR MOUNT HARDWARE	46
	521244	KIT ELEC. CPTS 15A	
	521292	ASSY MOTOR DS HT W/PIN-K	
	521381	RAIL OUTER ASSEMBLY	
	521405	KIT HARDWARE	
	521691	RAIL INNER 68" S/O ASSM.	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521384	520323	KIT MOTOR MOUNT HARDWARE	50
	520742	KIT STOP LP BDRM REPAIR	
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	
	521391	KIT BLOCK SLIDER LO PRO B	
	522802	MOTOR ASSM DSMT W/PIN-B	
521388	520239	KIT ELEC CPT DS/BDRM	50
	520323	KIT MOTOR MOUNT HARDWARE	
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	

521455	521426	FRAME MOVING WELD	45
	521456	BASE ASSEMBLY	
	521460	KIT BRACKET	
521604	520323	KIT MOTOR MOUNT HARDWARE	35
	521079	KIT HARDWARE DRIVESHAFT C	
	521671	RAIL ASSEMBLY FRONT	
	521672	RAIL ASSEMBLY REAR	
	522003	ASSY DR SHAFT 13/16X30 1X	
	522176	GEARMOTOR ASSY DS W/O PIN	
	800006	KIT HARDWARE BRACKETS	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521605	520323	KIT MOTOR MOUNT HARDWARE	34
	521079	KIT HARDWARE DRIVESHAFT C	
	521673	RAIL ASSEMBLY FRONT	
	521674	RAIL ASSEMBLY REAR	
	522003	ASSY DR SHAFT 13/16X30 1X	
	522176	GEARMOTOR ASSY DS W/O PIN	
	800107	KIT HARDWARE BRACKET	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521620	521443	HARDWARE KIT	52
	521621	RAIL OUTER ASSY BDRM	
	521642	ASSY RAIL INNER BR	
	522151	KIT CONTROL SWITCH/CURREN	
	522895	ASSY MOTOR DS MT W/PIN &	
	800020	KIT HARDWARE STOP BOLT BR	
	82-S0300-01	MANUAL BEDROOM S/O A.C.	
521688	101550	DECAL PART NUMBER DATE	50
	520971	RAIL INNER WELD LO PRO (J	
	99-1054	DECAL PATENT # S/O SYS	
521736	520323	KIT MOTOR MOUNT HARDWARE	46
	521244	KIT ELEC. CPTS 15A	
	521292	ASSY MOTOR DS HT W/PIN-K	
	521405	KIT HARDWARE	
	521691	RAIL INNER 68" S/O ASSM.	
	521735	RAIL OUTER ASSY HIGH PLAT	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521745	520201	ASSY, INNER RAIL, MINI MH	38
	520211	KIT, HARDWARE, MOUNTING	
	520323	KIT MOTOR MOUNT HARDWARE	
	520543	KIT STOPS IN/OUT MINI MH	
	521248	KIT PLATE MOUNTING ROOM	
	521746	RAIL OUTER DR ASSY 40"	
	522802	MOTOR ASSM DSMT W/PIN-B	
521773	520045	SHAFT DRV ASSY 21.5 TO 33	32
	520323	KIT MOTOR MOUNT HARDWARE	
	521079	KIT HARDWARE DRIVESHAFT C	
	521272	ASSY MTR DSMT W/CON-K, W/	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521366	KIT	
	521453	RAIL OUTER IDLER ASSY REA	
	522395	SHAFT DRV ASSY 31.5 TO 37	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	

521776	520227	ASSY DRIVESHAFT - DS/DBL	32
	520323	KIT MOTOR MOUNT HARDWARE	
	520917	SHAFT DRV ASSY 39.5 TO 45	
	521079	KIT HARDWARE DRIVESHAFT C	
	521272	ASSY MTR DSMT W/CON-K, W/	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521366	KIT	
	521453	RAIL OUTER IDLER ASSY REA	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
521777	510113	KIT ELECTRONICS	39
	520045	SHAFT DRV ASSY 21.5 TO 33	
	520323	KIT MOTOR MOUNT HARDWARE	
	521106	KIT HDWR DR SHAFT	
	521290	MOTOR ASSY DS MT W/O PIN&	
	521802	KIT HARDWARE BRACKET	
	521892	ASSEMBLY RAIL FRONT	
	521916	KIT STOP IN/OUT SGL RAIL	
521784	520323	KIT MOTOR MOUNT HARDWARE	50
	520971	RAIL INNER WELD LO PRO (J	
	521103	ASSY MOTOR DS MT W/PIN-K	
	521403	KIT HARDWARE LO PRO BED	
	521783	KIT COUPLING	
	521785	ASSEMBLY BASE W/MT L/P B/	
521787	520323	KIT MOTOR MOUNT HARDWARE	50
	520971	RAIL INNER WELD LO PRO (J	
	521390	KIT STOPS LO PRO BEDROOM	
	521391	KIT BLOCK SLIDER LO PRO B	
	521788	ASSEMBLY BASE W/MT L/P B/	
	522248	KIT ELEC CPTS 15A BKR 20A	
	522802	MOTOR ASSM DSMT W/PIN-B	
521808	521103	ASSY MOTOR DS MT W/PIN-K	58
	521161	ASSY INNER RAIL WARDROBE	
	521162	ASSY OUTER RAIL WARDROBE	
	521163	KIT HARDWARE WARDROBE	
521812	520227	ASSY DRIVESHAFT - DS/DBL	54
	520323	KIT MOTOR MOUNT HARDWARE	
	521104	KIT STOP IN/OUT SGL RAIL	
	521106	KIT HDWR DR SHAFT	
	521272	ASSY MTR DSMT W/CON-K, W/	
	521454	KIT HARDWARE / BRACKET	
	521811	ASSEMBLY RAIL FRONT	
521866	520045	SHAFT DRV ASSY 21.5 TO 33	32
	520323	KIT MOTOR MOUNT HARDWARE	
	521079	KIT HARDWARE DRIVESHAFT C	
	521272	ASSY MTR DSMT W/CON-K, W/	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521366	KIT	
	521453	RAIL OUTER IDLER ASSY REA	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	

521931	521443	HARDWARE KIT	52
	521621	RAIL OUTER ASSY BDRM	
	521642	ASSY RAIL INNER BR	
	521715	KIT RLY CTRL 15A BKR 20A	
	522895	ASSY MOTOR DS MT W/PIN &	
	800020	KIT HARDWARE STOP BOLT BR	
	82-S0010-01	MANUAL OPERATION S/O MH (
521994	520323	KIT MOTOR MOUNT HARDWARE	32
	521079	KIT HARDWARE DRIVESHAFT C	
	521272	ASSY MTR DSMT W/CON-K, W/	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521366	KIT	
	521453	RAIL OUTER IDLER ASSY REA	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
522000	520323	KIT MOTOR MOUNT HARDWARE	51
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	
	522001	KIT HARDWARE BED/WARD L/P	
	522802	MOTOR ASSM DSMT W/PIN-B	
522084	522248	KIT ELEC CPTS 15A BKR 20A	41
	522261	BASE PLATE ASSEMBLY M/S	
	522262	FRAME ASSEMBLY M/S	
	522263	MOTOR/BRACKET ASSEMBLY M/	
	522264	KIT HARDWARE MOTOR SLIDE	
522236	520323	KIT MOTOR MOUNT HARDWARE	46
	521691	RAIL INNER 68" S/O ASSM.	
	522237	RAIL OUTER ASSY HIGH PLAT	
	522279	KIT U MOUNTING PLATE	
	522802	MOTOR ASSM DSMT W/PIN-B	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
522267	520323	KIT MOTOR MOUNT HARDWARE	32
	521079	KIT HARDWARE DRIVESHAFT C	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521453	RAIL OUTER IDLER ASSY REA	
	522176	GEARMOTOR ASSY DS W/O PIN	
	522275	KIT BRACKET	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
522339	520323	KIT MOTOR MOUNT HARDWARE	50
	520971	RAIL INNER WELD LO PRO (J	
	520975	ASSY.BASE W/MT. LP B/R	
	521390	KIT STOPS LO PRO BEDROOM	
	521391	KIT BLOCK SLIDER LO PRO B	
	522248	KIT ELEC CPTS 15A BKR 20A	
	522802	MOTOR ASSM DSMT W/PIN-B	
522350	521162	ASSY OUTER RAIL WARDROBE	58
	521163	KIT HARDWARE WARDROBE	
	522351	RAIL INNER ASSY WARDROBE	
	522355	KIT, MOUNTING BRACKET	
	523091	MOTOR ASSY DS MT W/PIN&CO	

522412	520323	KIT MOTOR MOUNT HARDWARE	32
	521079	KIT HARDWARE DRIVESHAFT C	
	521364	RAIL INNER ASSEMBLY 3X2	
	521365	RAIL OUTER IDLER ASSY FRN	
	521453	RAIL OUTER IDLER ASSY REA	
	522176	GEARMOTOR ASSY DS W/O PIN	
	522275	KIT BRACKET	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
522450	522176	GEARMOTOR ASSY DS W/O PIN	33
	522456	KIT HARDWARE MOUNTING	
	522500	INNER/OUTER RAIL ASSEMBLY	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
522547	521426	FRAME MOVING WELD	45
	521460	KIT BRACKET	
	522548	BASE ASSEMBLY	
522549	521426	FRAME MOVING WELD	45
	521460	KIT BRACKET	
	522550	BASE ASSEMBLY	
522559	520323	KIT MOTOR MOUNT HARDWARE	30
	521079	KIT HARDWARE DRIVESHAFT C	
	521976	GEARMOTOR ASSY DS W/O PIN	
	522375	SHAFT DRV ASSY 46.5 TO 64	
	522558	RAIL OUTER/INNER ASSEMBLY	
	522565	KIT MOTOR BRACKET	
	522626	BRACKET ANGLE	
	82-S0340-00	MANUAL S/O JAYCO CLASS A	
522577	522578	TUBE MOUNTING 1 X 1 X 34.	61
	522579	SYS S/O ABF 29.25 ASSM SG	
	522584	ABF SYS S/O 29.25 MAN ASS	
	522591	TUBE DRIVE ASSM 30 X 70	
	522601	KIT HDWR DR SHFT SLDER AR	
522628	DN12960	ROLLER ASSY BRKT ADJUSTAB	61
	522662	ABF SYS S/O 37.00 ASSM SG	
	522723	ROLLER ASSY BRKT	
522660	522591	TUBE DRIVE ASSM 30 X 70	61
	522601	KIT HDWR DR SHFT SLDER AR	
	522653	SYS S/O ABF 31.00 ASSM SG	
	522654	SYS S/O ABF 31.00 MAN ASS	
	522671	ELECT KIT ABF S/O (TRM)	
522666	520323	KIT MOTOR MOUNT HARDWARE	31
	521079	KIT HARDWARE DRIVESHAFT C	
	521680	KIT HARDWARE C/D W/R	
	521976	GEARMOTOR ASSY DS W/O PIN	
	522375	SHAFT DRV ASSY 46.5 TO 64	
	522667	RAIL OUTER/INNER ASSEMBLY	
	522693	KIT MOTOR BRACKET	
	82-S0340-00	MANUAL S/O JAYCO CLASS A	
522680	521290	MOTOR ASSY DS MT W/O PIN&	61
	522654	SYS S/O ABF 31.00 MAN ASS	
	522678	SHFT DRV ASSY 46.5TO64.0	
	522679	SHFT DRV CPLR ASSY 33.0TO	
	522685	KIT HDWR MTG DR TUBE & MT	
	800068	ELECT KIT ABF S/O (TRm)	
522741	522578	TUBE MOUNTING 1 X 1 X 34.	61
	522579	SYS S/O ABF 29.25 ASSM SG	

522750	522748	ABF SYS S/O 30.25 W/MOTOR	61
	522761	BRACKET ANGLE MTG 1.25X1.	
	800068	ELECT KIT ABF S/O (TRm)	
522789	DN12960	ROLLER ASSY BRKT ADJUSTAB	61
	DN13827	ROLLER ASSY (MOM)	
	522779	ABF SLIDE ASSY #79 W/QUIC	
522790	DN12960	ROLLER ASSY BRKT ADJUSTAB	61
	DN13827	ROLLER ASSY (MOM)	
	522778	ABF SLIDE ASSY #80 W/QUIC	
523020	520323	KIT MOTOR MOUNT HARDWARE	42
	521079	KIT HARDWARE DRIVESHAFT C	
	522717	MOTOR MOUNT BRACKET	
	522719	SHAFT DRV ASSY 30.5 TO 47	
	523017	RAIL INNER/OUTER ASSY 2x2	
	523018	RAIL INNER ASSY 2X2 75.5	
	523025	TRIM PLATE, ENTRY LEVEL	
	523027	KIT END BRACKET POWER SLI	
	523143	MOTOR ASSY DS HT W/O PIN&	
523165	522761	BRACKET ANGLE MTG 1.25X1.	61
	523166	ASSY SLIDE ABF 30.25	
	800068	ELECT KIT ABF S/O (TRm)	
523170	520323	KIT MOTOR MOUNT HARDWARE	33
	521468	DRIVE SHAFT HARDWARE KIT	
	521976	GEARMOTOR ASSY DS W/O PIN	
	522500	INNER/OUTER RAIL ASSEMBLY	
	800154	KIT HARDWARE MOUNTING	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
523291	522456	KIT HARDWARE MOUNTING	33
	522500	INNER/OUTER RAIL ASSEMBLY	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
523209	520045	SHAFT DRV ASSY 21.5 TO 33	40
	521447	KIT MOTOR MOUNT	
	521468	DRIVE SHAFT HARDWARE KIT	
	521546	SHFT DRV CPLR ASSY 23.5TO	
	521976	GEARMOTOR ASSY DS W/O PIN	
	532070	RAIL REAR ASSY END CONDIT	
	532074	RAIL FRONT ASSY END CONDI	
	532079	KIT BRACKET STUD	
	82-S0140-00	MANUAL OWNERS S/O-GENERIC	
532100	520323	KIT MOTOR MOUNT HARDWARE	43
	522609	MOTOR ASSY DS MT E-SYNCH	
	532096	RAIL IN/OUT FRT ASSM E-SY	
	532097	RAIL IN/OUT REAR ASSM E-S	
	800165	KIT ELECTRICAL 168 E-SYNC	
532103	520323	KIT MOTOR MOUNT HARDWARE	43
	522609	MOTOR ASSY DS MT E-SYNCH	
	532096	RAIL IN/OUT FRT ASSM E-SY	
	800165	KIT ELECTRICAL 168 E-SYNC	
800005	DN13819	RELAY PACK NON-WATER PROO	61
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
	522627	ABF SYS S/O 35.25 ASSY SG	
800050	DN13819	RELAY PACK NON-WATER PROO	61
	DN14357	STATIONARY ROLLER ASSY	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	

800126	DN13736 DN13762 DN13769 DN14370 150-1468 522671 82-S0352-T	PLATE MTG DISENGAGEMENT B SHAFT ASSY ABF 5/16"-18 X 5/8" CAP SCREW DISENGAGE BOX W/CAST BOX/ BOLT FLANGE 5/16-18x3/4 H ELECT KIT ABF S/O (TRM) TIP SHEET 174 MAN.TO ELEC	61
800128	DN12960 IP10260 IP10265 14-1138 140-1154 523127	ROLLER ASSY BRKT ADJUSTAB SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36 HARNESS WIRING RELAY CTRL CONTROL, SENSING ABOVE FLOOR SLIDE ASSM 32	61
800135	DN12960 IP10260 IP10265 14-1138 140-1154 523159	ROLLER ASSY BRKT ADJUSTAB SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36 HARNESS WIRING RELAY CTRL CONTROL, SENSING DUAL ABV FLR ASSY 29.0	61
800155	DN12960 IP10260 IP10265 14-1138 140-1154 523183	ROLLER ASSY BRKT ADJUSTAB SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36 HARNESS WIRING RELAY CTRL CONTROL, SENSING DUAL ABV FLR ASSY 33.25	61
800156	DN12960 IP10260 IP10265 14-1138 140-1154 523184	ROLLER ASSY BRKT ADJUSTAB SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36 HARNESS WIRING RELAY CTRL CONTROL, SENSING DUAL ABV FLR ASSY 32.0	61
01804454	DN13455 DN13692 IP10260 IP10265	ABF SYS S/O 44.00 ASSY SG RELAY PAK W/ AMP CONNECTO SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36	61
01804455	DN13692 DN13738 IP10260 IP10265	RELAY PAK W/ AMP CONNECTO ABF SYS S/O 44.00 ASSY SG SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36	61
01804480	DN12960 DN13793 DN13827	ROLLER ASSY BRKT ADJUSTAB ABF SYS S/O 37.00 ASSY SG ROLLER ASSY (MOM)	61
01804979	DN12960 DN13827 DN14278	ROLLER ASSY BRKT ADJUSTAB ROLLER ASSY (MOM) ABF SYS S/O 37.00 ASSY SG	61
01805327	DN12960 DN13692 DN14998 IP10260 IP10265	ROLLER ASSY BRKT ADJUSTAB RELAY PAK W/ AMP CONNECTO ABF SYS S/O 30.75 ASSY SG SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36	61
01805328	DN12960 DN13692 DN14992 IP10260 IP10265	ROLLER ASSY BRKT ADJUSTAB RELAY PAK W/ AMP CONNECTO ABF SYS S/O 32.00 ASSY SG SWITCH COVER WHITE SWITCH ROCKER WHITE S4-36	61

OK15505	DN13819	RELAY PACK NON-WATER PROO	61
	DN13827	ROLLER ASSY (MOM)	
	DN14565	ABF SYS S/O 30.75 ASSY SG	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK20014		OBSOLETE	62
OK20023	DN13819	RELAY PACK NON-WATER PROO	62
	DN14115	DISENGAGE.BOX, CAST BOX,M	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK20134	DN13819	RELAY PACK NON-WATER PROO	61
	DN14791	ABF SYS S/O 33.25 ASSY SG	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK20136	DN13819	RELAY PACK NON-WATER PROO	61
	DN14949	ABF SYS S/O 33.25 ASSY SG	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK20470	DN10832	NUT HEX 1/2-13	62
	DN10912	WASHER LOCK .5	
	DN11383	3/8" USS FLAT WASHER	
	DN11823	5/16"-24 X 1" SOCKET HEAD	
	DN11833	.188" X 4.375" X 5" SINGL	
	DN12148	VERTICAL ADJUSTMENT HEAD	
	DN12351	HHCS 3/8-16x3 2A FULL THD	
	DN12367	1/2"-13 X 4" FULLY THREAD	
	DN13322	SHAFT CROSS W/HOLES 14GAX	
	DN13331	1/4"-20 X 1-1/2" GRADE 8,	
	DN13412	MECHANICAL STOP "OUT" ASS	
	DN13438	CROSS SHAFT SECTION ASSY	
	DN13481	.5" X 1.25" X 3" MECHANIC	
	DN13633	PASSIVE RH R&P ASS'Y (DN1	
	DN13673	HEAD FOR RAB ASS'Y FOR R&	
	DN13819	RELAY PACK NON-WATER PROO	
	DN13832	3/8"-16 X 3-1/2" CAP SCRE	
	DN13946	ACTIVE LH R&P ASS'Y (DN13	
	DN13967	1/2"-13 X 1" CARRIAGE BOL	
	DN14115	DISENGAGE.BOX, CAST BOX,M	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
	VF10300	WASHER LOCK 1/4	
	VF10400	3/8" PLATED SPLIT LOCK WA	
	VF10900	NUT HEX 1/4-20	
	VF11200	3/8"-16 HEX NUT	
	VF11400	WASHER,FLT,1/2" I.D. X 1" O	
OK20679	DN11288	CRANK HANDLE ASSY	61
	DN14848	ABF SYS S/O 44.25 MAN ASS	
	DN14849	CRANK EXT ROD HEX 36.00 A	
OK21971	DN13819	RELAY PACK NON-WATER PROO	61
	DN14258	ABF SYS S/O 35.25 ASSY SG	
	DN14357	STATIONARY ROLLER ASS'Y	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	

OK22016	DN11383	3/8" USS FLAT WASHER
	DN11823	5/16"-24 X 1" SOCKET HEAD
	DN11833	.188" X 4.375" X 5" SINGL
	DN11963	RIGHT SIDE WING ASS'Y
	DN11964	LEFT SIDE WING ASS'Y
	DN12351	HHCS 3/8-16x3 2A FULL THD
	DN13251	RAB SLOTTED STEEL BRACKET
	DN13322	SHAFT CROSS W/HOLES 14GAX
	DN13331	1/4"-20 X 1-1/2" GRADE 8,
	DN13412	MECHANICAL STOP "OUT" ASS
	DN13438	CROSS SHAFT SECTION ASSY
	DN13481	.5" X 1.25" X 3" MECHANIC
	DN13633	PASSIVE RH R&P ASS'Y (DN1
	DN13819	RELAY PACK NON-WATER PROO
	DN13832	3/8"-16 X 3-1/2" CAP SCRE
	DN14070	147" FORMED RAMP ASSY W/
	DN14115	DISENGAGE.BOX, CAST BOX,M
	DN14572	LEFT HAND ELECTRIC R&P IN
	IP10260	SWITCH COVER WHITE
	IP10265	SWITCH ROCKER WHITE S4-36
	VF10300	WASHER LOCK 1/4
	VF10400	3/8" PLATED SPLIT LOCK WA
	VF10900	NUT HEX 1/4-20
	VF11200	3/8"-16 HEX NUT
	670112	WIPER ASSY W/DRAIN RH FF
	670113	WIPER ASSY W/DRAIN LH FF

OK22017	DN11383	3/8" USS FLAT WASHER
	DN11823	5/16"-24 X 1" SOCKET HEAD
	DN11833	.188" X 4.375" X 5" SINGL
	DN11963	RIGHT SIDE WING ASS'Y
	DN11964	LEFT SIDE WING ASS'Y
	DN12351	HHCS 3/8-16x3 2A FULL THD
	DN12383	RAMP ASSY 154.5 HOt
	DN13251	RAB SLOTTED STEEL BRACKET
	DN13322	SHAFT CROSS W/HOLES 14GAX
	DN13331	1/4"-20 X 1-1/2" GRADE 8,
	DN13412	MECHANICAL STOP "OUT" ASS
	DN13438	CROSS SHAFT SECTION ASSY
	DN13481	.5" X 1.25" X 3" MECHANIC
	DN13633	PASSIVE RH R&P ASS'Y (DN1
	DN13819	RELAY PACK NON-WATER PROO
	DN13832	3/8"-16 X 3-1/2" CAP SCRE
	DN14115	DISENGAGE.BOX, CAST BOX,M
	DN14572	LEFT HAND ELECTRIC R&P IN
	IP10260	SWITCH COVER WHITE
	IP10265	SWITCH ROCKER WHITE S4-36
	VF10300	WASHER LOCK 1/4
	VF10400	3/8" PLATED SPLIT LOCK WA
	VF10900	NUT HEX 1/4-20
	VF11200	3/8"-16 HEX NUT
	670112	WIPER ASSY W/DRAIN RH FF
	670113	WIPER ASSY W/DRAIN LH FF

OK23600	DN12960	ROLLER ASSY BRKT ADJUSTAB	61
	DN14397	ABF SYS S/O 35.25 DBL ASS	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
	14-1138	HARNESS WIRING RELAY CTRL	
	140-1154	CONTROL, SENSING	
OK25750	DN13819	RELAY PACK NON-WATER PROO	61
	DN14329	ABF SYS S/O 37.00 ASSY SG	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK25757	DN13819	RELAY PACK NON-WATER PROO	62
	DN14098	RAMP ASSY 83.25 W/ FLT	
	DN14115	DISENGAGE.BOX, CAST BOX,M	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK44290	DN11318	POLY .375X1.5X82.5 UHMW N	61
	DN12404	1/4"-20 X 1-1/4" HEX HEAD	
	DN13819	RELAY PACK NON-WATER PROO	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
	VF10300	WASHER LOCK 1/4	
	VF10900	NUT HEX 1/4-20	
	VF12000	1/4" I.D. X 1/2" O.D. SAE	
	522672	ABF SYS S/O 36.25 ASSY SG	
	522675	BRKT MTG WELD 26.63 SLIDE	
OK73050	DN13819	RELAY PACK NON-WATER PROO	61
	DN14964	ABF SYS S/O 30.75 ASSY SG	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK79180	DN13819	RELAY PACK NON-WATER PROO	61
	DN14329	ABF SYS S/O 37.00 ASSY SG	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	
OK79185	DN14695	ABF SYS S/O 37.00 MAN ASS (MANUAL SYSTEM)	61
OK79820		OBSOLETE	62
OK81000	DN12869	RAMP FORMED ASSY 151 W/ F	62
	DN13279	WIPER ASSY FF RAMP RH	
	DN13280	WIPER ASSY FF RAMP LH	
	DN13819	RELAY PACK NON-WATER PROO	
	DN14115	DISENGAGE.BOX, CAST BOX,M	
	IP10260	SWITCH COVER WHITE	
	IP10265	SWITCH ROCKER WHITE S4-36	

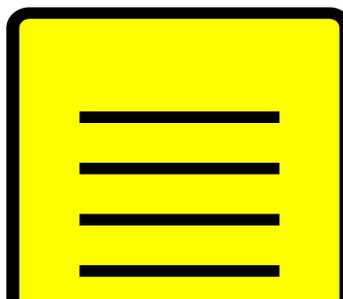
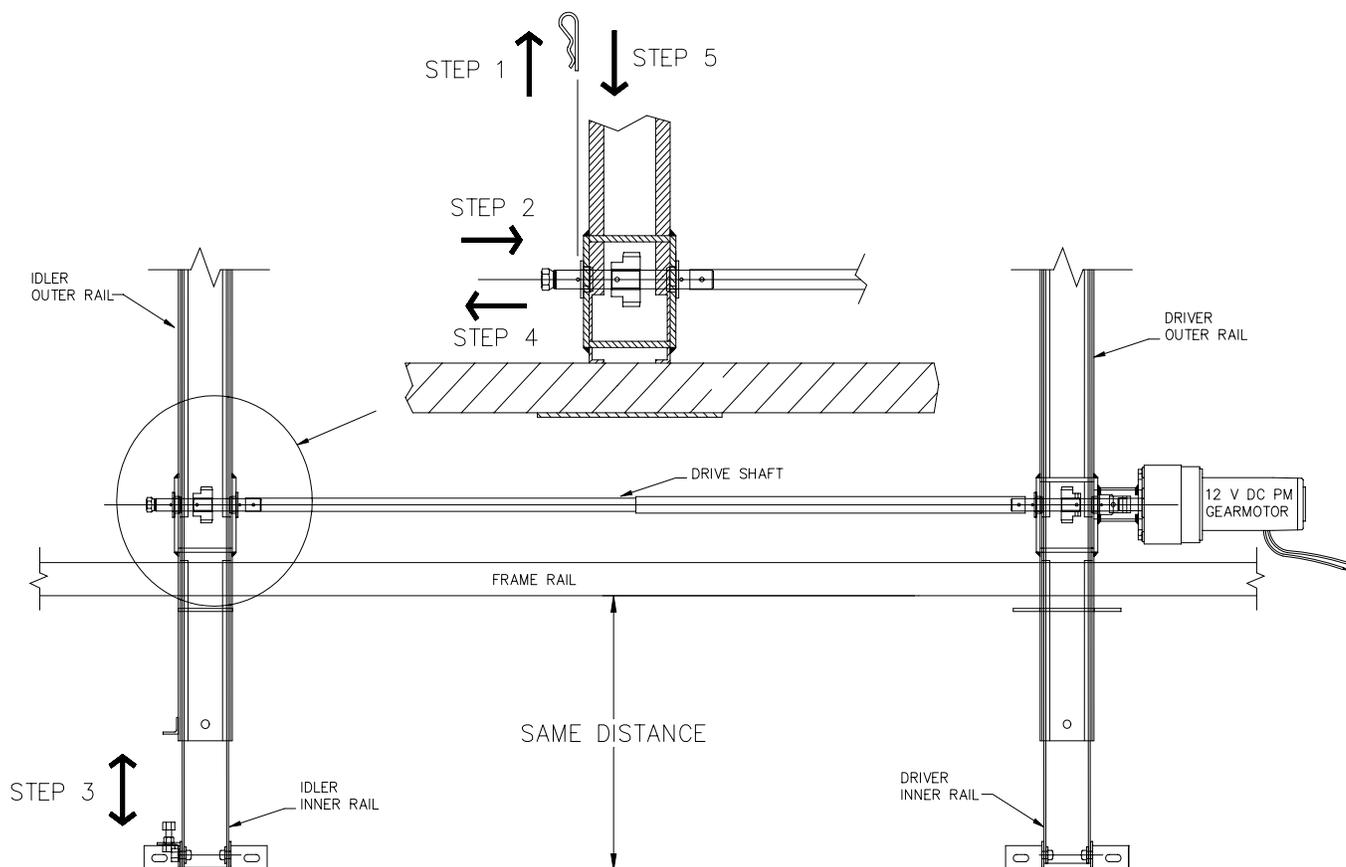
APPENDIX B
TIP SHEETS



T.I.P. Troubleshooting Information on Power Gear

Inner Rail Realignment

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. room is not aligned properly, repeat steps 1 thru 6.



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11-98



T.I.P. Troubleshooting Information on Power Gear

Torque Specification for Slide Out Drive shaft Bolts

For proper operation of the slide out system, the drive shaft hardware is specially designed from **Grade 8** material and needs to be properly torqued. The proper torque value of the drive shaft bolts is **168±12 in-lbs. (14±1 ft-lbs)**. Torquing the drive shaft bolts to the proper value will ensure longer life of components and proper operation of the slide out system.

Refer to figures below for proper assembly of the drive shaft hardware. Only (1) washer used on the head side of bolt is needed.

NOTE: Systems produced before July 2001 have more than one washer and a different type of nut on the bolt / nut assembly. Replace old hardware with new hardware as shown below.

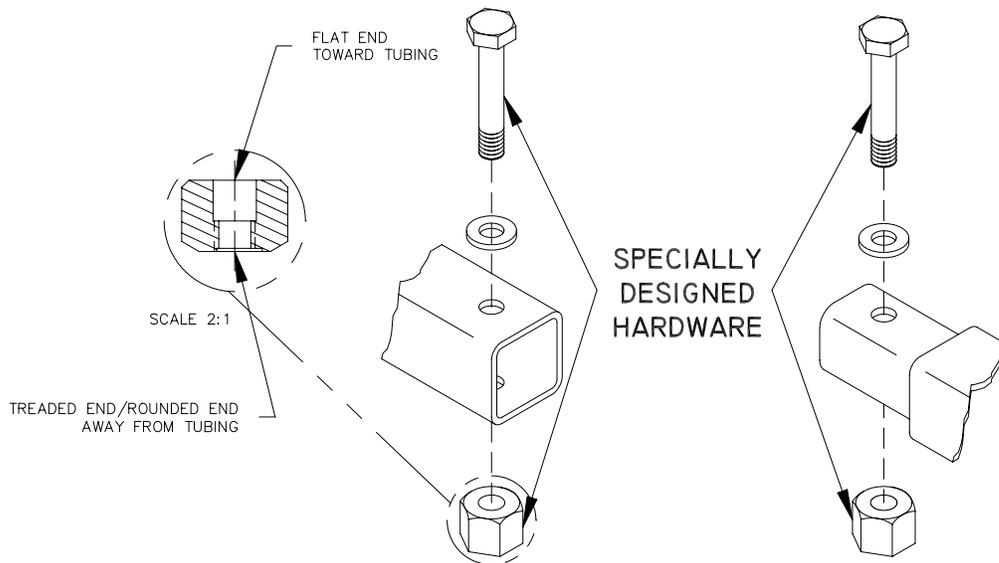


Fig. #1
1" Square Tubing End
(Drive End)

Fig. #2
13/16" Square Tubing End
(Idler End)

NOTE:

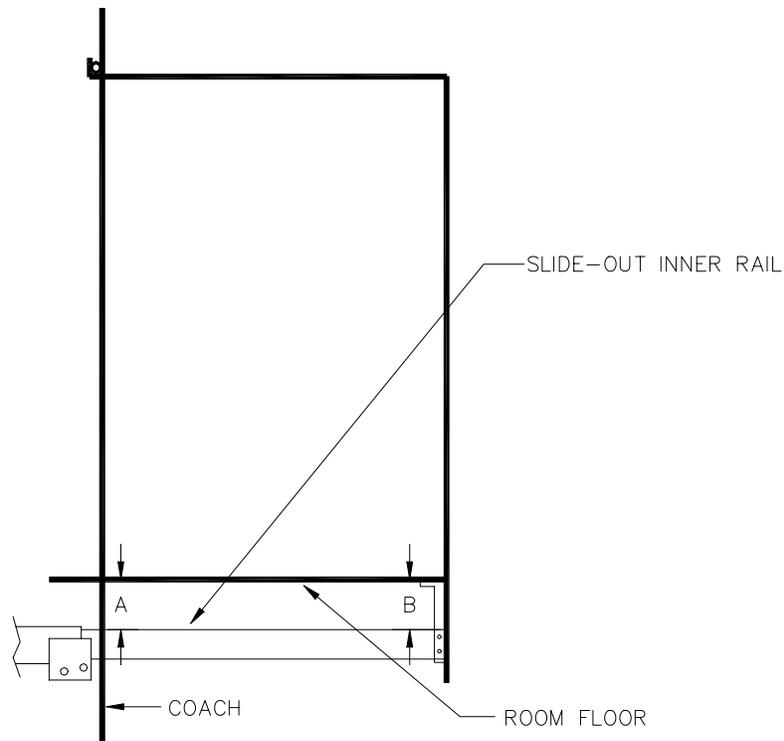
Failure to use specially designed hardware and improper torque of hardware will result in improper operation or failure of slideout system.



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.



$$B = A + \frac{1}{8}''$$

-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 ($B=A+1/8''$).

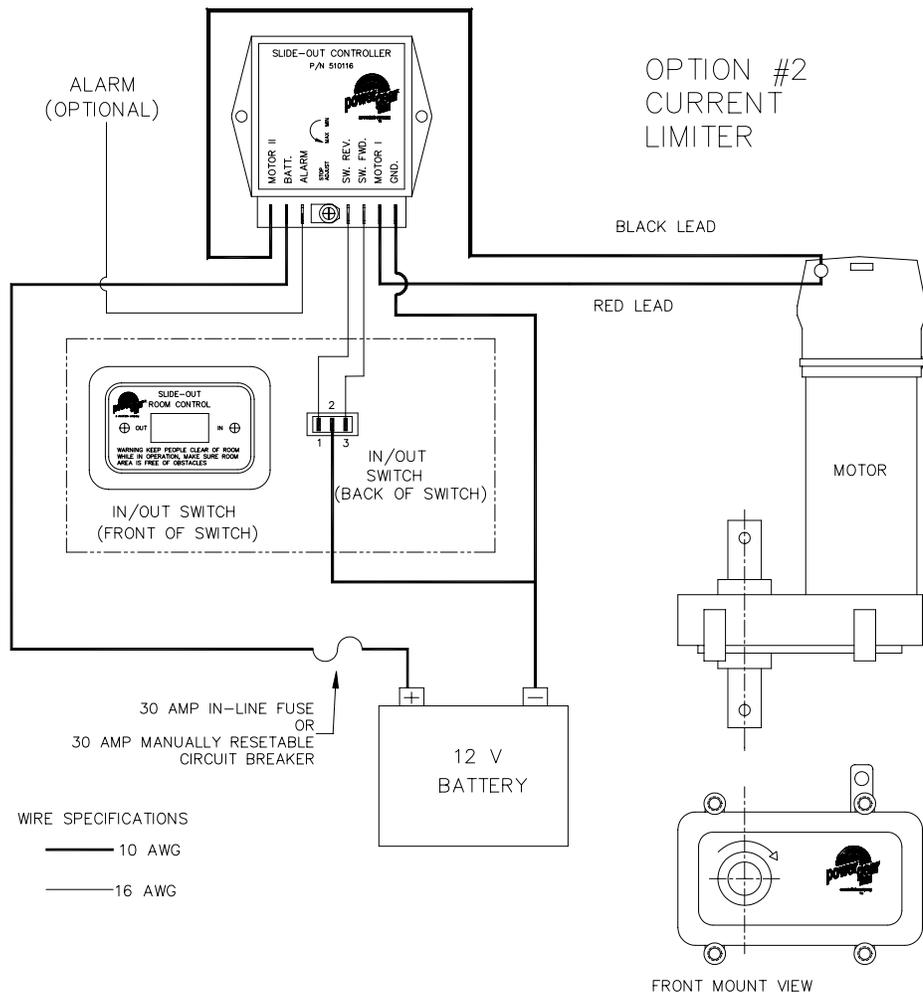


T.I.P. *Troubleshooting Information on Power Gear*

ELECTRICAL WIRING INFORMATION

The wiring for the slide-out should be completed per the following wiring diagram. The current limiter control will be preset by Power Gear, but may require adjustment at time of installation.

The switch wires, motor wires and ground wire can be connected to the control at any time during installation prior to the power being connected. The battery line must be connected to the control **BEFORE** the battery is connected, but cannot be connected until after the system has been high potted. **CAUTION:** The control box **WILL** be damaged if any of the leads are grounded or touched together when power is connected to the system.





T.I.P. Troubleshooting Information on Power Gear

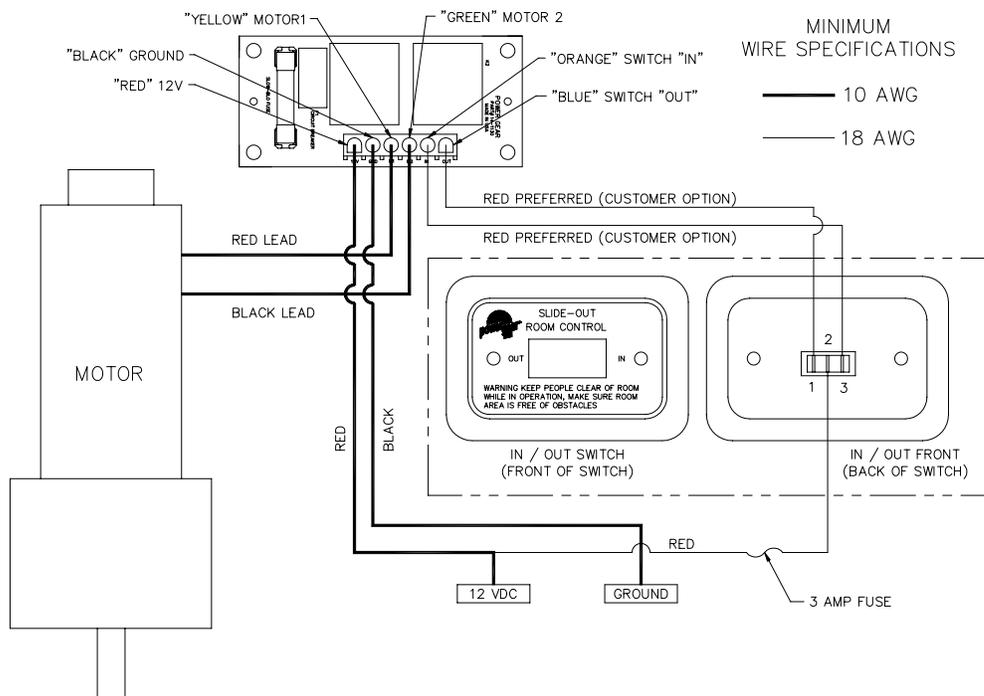
INSTALLATION INSTRUCTIONS FOR A 521244S AND 1245S REPLACEMENT KITS

1. Locate and disconnect the batteries and any power source to the unit.
2. Refer to original manufacturer service department for location of the slideout relay control module.
3. Remove the 6-pin harness from the relay control by squeezing together the top of the plastic tabs on each side and pulling up from the control.
4. Remove the mounting screws and the old control. Reference the circuit breaker amperage for proper control replacement.
5. Remount the replacement control and connect the 6-pin connector to the control module.

Note: The wire harness connector is directional and may need rotating 180° for proper mating.

6. Reconnect batteries and/or power sources then test slideout operation.

Note: For fuse installs or replacement, use Slo-Blo fuse **only** of the same amp rating as the circuit breaker. Call 1-800-334-4712 for fuse kit replacements



T.I.P. Troubleshooting Information on Power Gear

REPLACEMENT INSTRUCTIONS FROM 14-1098 (OLD RELAY) TO 14-1130 (NEW RELAY).

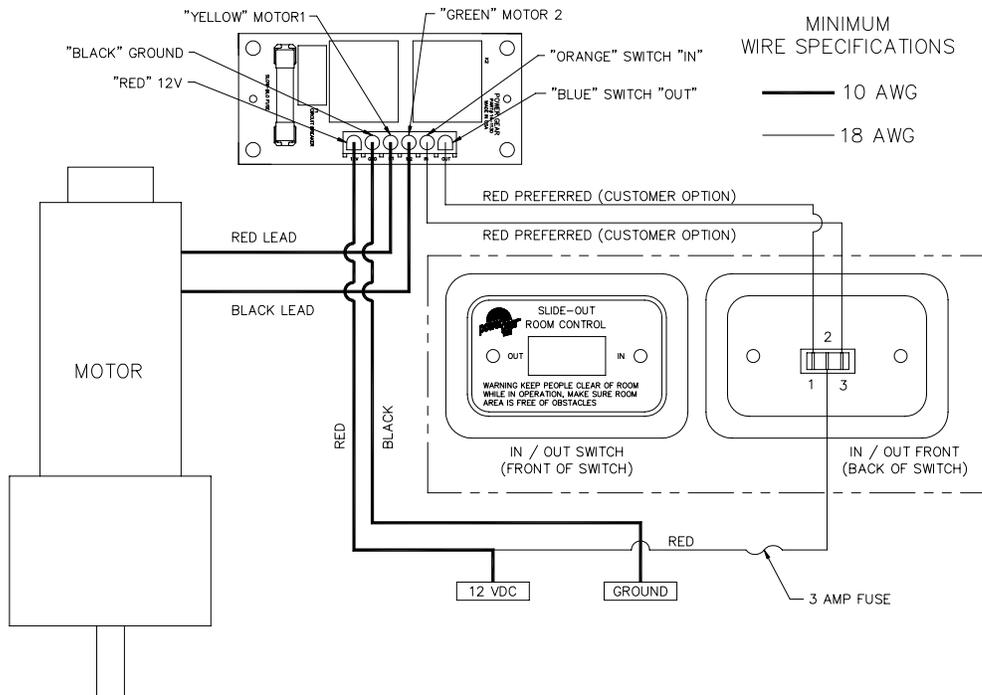
1. Locate and disconnect the batteries and any power source to the unit.
2. Refer to original manufacturer service department for location of the slideout relay control module.
3. Remove the 6-pin harness from the relay control by squeezing together the top of the plastic tabs on each side and pulling up from the control.
4. Remove the mounting screws and the old control. Reference the circuit breaker amperage for proper control replacement.
5. Locate and move the center wire on the slide-out switch from ground to 12 VDC source through a 3 amp (preferred) fast acting standard automotive fuse. **See drawing below.**
6. Remount the replacement control and reconnect the 6-pin connector to the control module.

Note: The wire harness connector is directional and may need rotating 180° for proper mating.

7. Reconnect batteries and/or power sources then test slideout operation.

Note: For fuse installs or replacement, use Slo-Blo fuse **only** of the same amp rating as the circuit breaker. Call 1-800-334-4712 for fuse kit replacements.

NEW SLIDEOUT RELAY CONTROL (14-1130) SCHEMATIC





T.I.P. Troubleshooting Information on Power Gear

FLAT FLOOR ROOM HEIGHT ADJUSTMENT

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:

$$\text{"B" (end bracket height setting)} = \text{"A"} + (\text{slideout room floor thickness}) + \frac{1}{4}''.$$

EXAMPLE:

$\text{"B" (end bracket height setting)} = \text{"A"} + (\text{slideout room floor thickness}) + \frac{1}{4}''.$

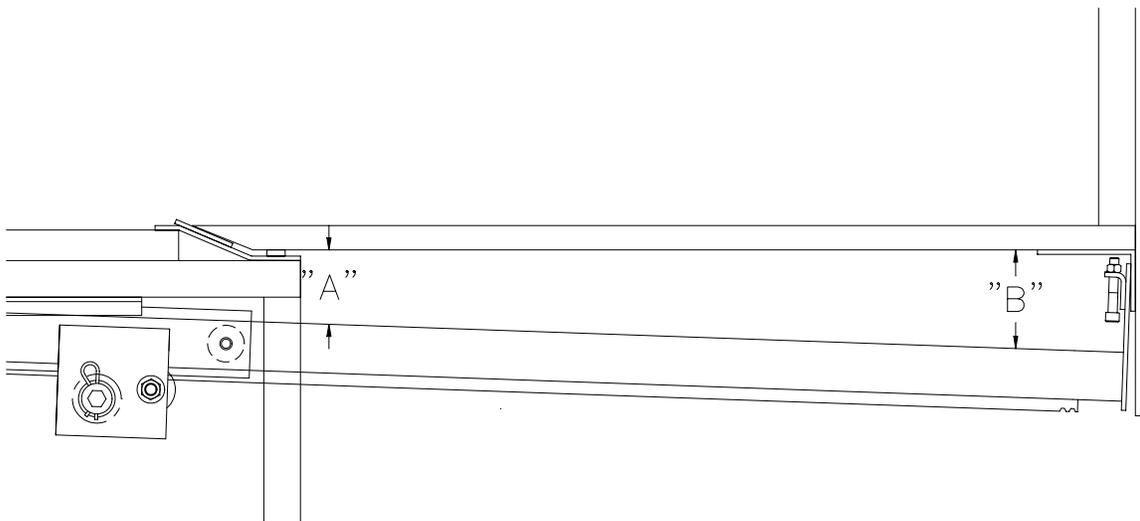
If $\text{"A"} = 3\text{-}1/4''$

Then $\text{"B"} = 3\text{-}1/4'' + 1'' + 1/4'' = 4\text{-}1/2''$

- 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.



T.I.P. Troubleshooting Information on Power Gear

SLIDEOUT GEAR SHAFT REPLACEMENT FOR 520258S AND 520259S SERVICE KITS

520258S KIT SHAFT DRIVE

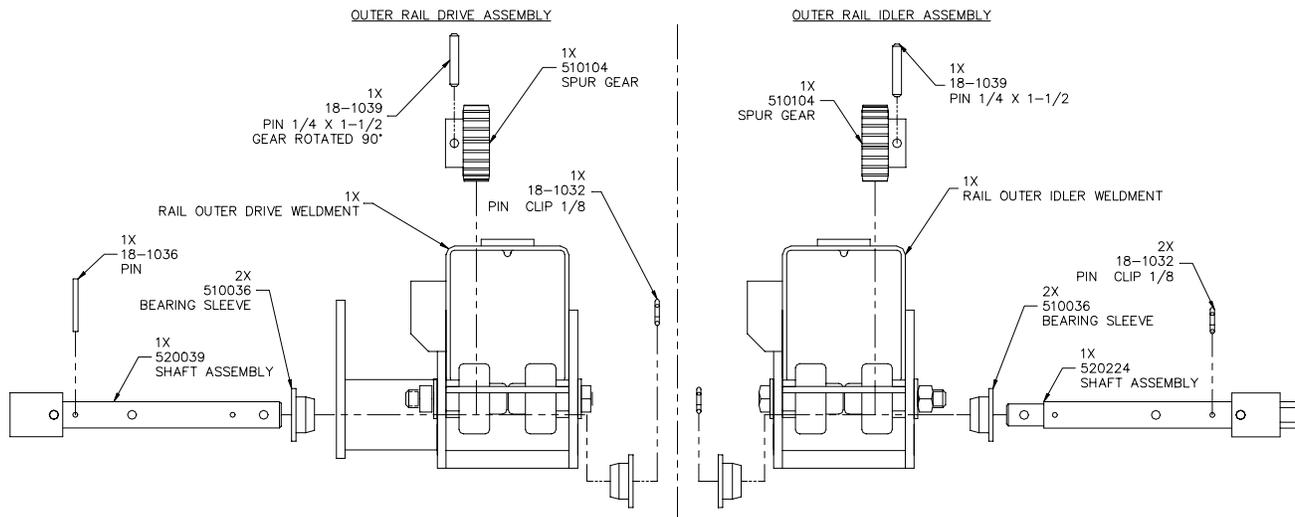
520259S KIT SHAFT IDLER

QTY. P/N DESC.

1	520104	- SPUR GEAR
1	18-1032	- PIN CLIP .125
1	5200039	- SHAFT ASSY.
1	18-1039	- PIN 1/4 X 1-1/2
2	510036	- BEARING SLEEVE
1	18-1036	- PIN

QTY. P/N DESC.

1	520104	- SPUR GEAR
2	18-1032	- PIN CLIP .125
1	520224	- SHAFT ASSY.
1	18-1039	- PIN 1/4 X 1-1/2
2	510036	- BEARING SLEEVE
1	18-1036	- PI



1. Disconnect battery.
2. Remove all items necessary to access outer rail gear assembly.
3. If motor is mounted to rail, remove the motor mounting bolts and remove the gearmotor.
4. Remove the drive shaft bolt and slide the drive shaft away from the outer rail assembly.
5. Remove the cotter hair pin from the gear shaft.
6. Slide the gear shaft to disengage the gear from the rack and rotate the gear shaft until the spur gear shear pin is visible.
7. Remove the shear pin.
8. Pull the gear shaft out of the outer rail assembly, removing the spur gear from the shaft.
9. Remove the bushings from the shaft plate. Insert the new bushings into the shaft plate. Slide the new gear shaft back into the outer rail assembly through the first bearing sleeve.
10. Slide the new spur gear onto the gear shaft.

Align the spur gear hole to the hole in the shaft and slide the gear shaft through the second bearing sleeve. **Note: orientation of hub on gear when fully assembled gear teeth on gear and rack must line up If not, gear must be removed from shaft and rotated 180°.**

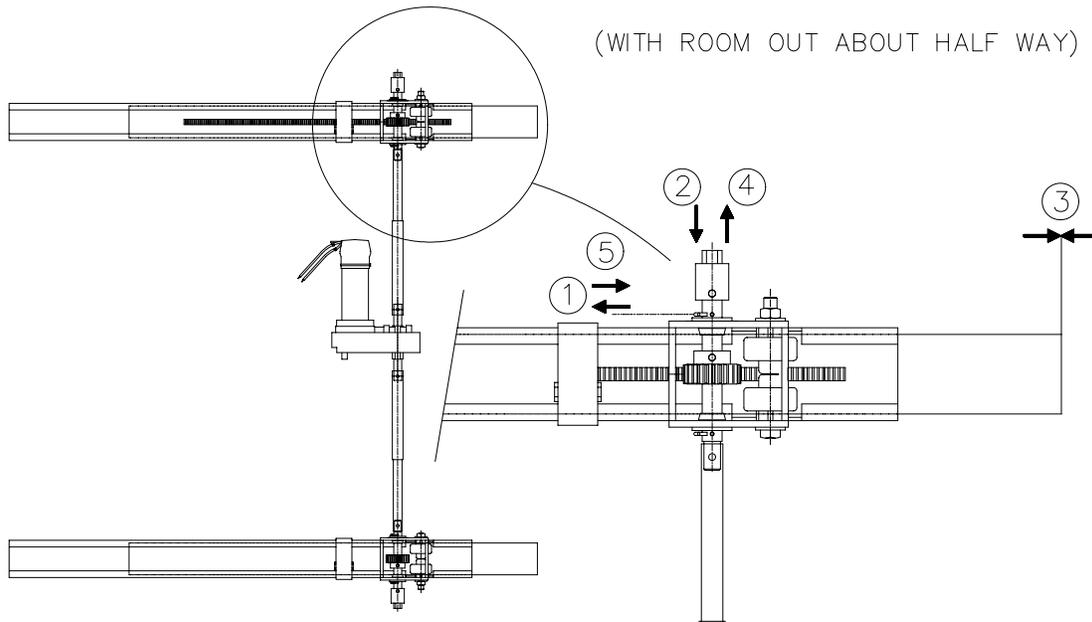
11. Verify the hole alignment and insert a new shear pin, making sure that the shear pin is inserted completely.
12. Disengage the gear from the rack and rotate the gear shaft until the gear shaft hole and drive shaft hole line up.
13. Engage the gear and rack by sliding the gear shaft back through the second bearing sleeve.
14. Replace the cotter hairpin in the gear shaft.
15. Slide the driveshaft back into position over the gear shaft and replace the driveshaft bolt with the correct number of washers and lock nut. **Refer to TIP Sheet #73 “Torque specification for Slideout Drive Shaft Bolts”** for proper assembly of the driveshaft bolt, washer and nut.
16. Reinstall the gearmotor (if applicable) and bolt and nut into place.
17. Check to verify both inner rails are aligned by measuring the distance from the unit wall to the wall of the slideout room (both sides of the room). If the (2) measurements vary more the 1/8”, refer to **“TIP Sheet #70 “Inner rail realignment”** to realign the rails.
18. Replace all items that were removed to access the outer rail assembly.
Reconnect the battery and test the system operation.

T.I.P. Troubleshooting Information on Power Gear

SYNCHRONIZING A 2 RAIL SLIDE-OUT ROOM

Should the slide-out room go out of synchronization this procedure will allow you to retime the room. Measure room synchronization from common solid points at each end of the room.

TIMING SLIDE-OUT RAILS



NOTE- This Tip Sheet does cover standard and flat floor slide-out systems.

To synchronize the room please refer to the Figure below.

With room about half way out release slide-out motor brake.

1. Pull the clip pin out.
 2. Slide the drive shaft assembly in to disengage gear from gear rack.
 3. Moved slide-out inner rail in/out to desired location.
 4. Slide drive shaft assembly back into position.
 5. Push clip pin back into shaft.
- Before proceeding put slide-out motor brake lever back into “Engaged” position.



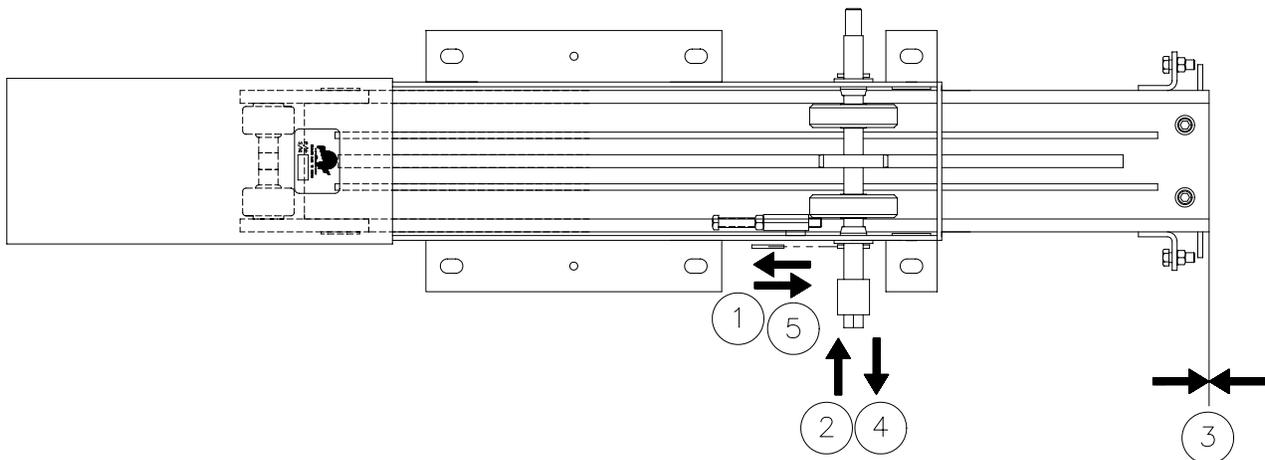
T.I.P. Troubleshooting Information on Power Gear

SYNCHRONIZING A 2 RAIL SLIDE-OUT ROOM

Should the slide-out room go out of synchronization this procedure will allow you to retime the room. Measure room synchronization from common solid points at each end of the room.

NOTE- This Tip Sheet covers low profile slide-out systems.

To synchronize the room please refer to the Figure below.



With room about half way out release slide-out motor brake.

1. Use a drift punch to tap the roll pin out.
2. Tap the drive shaft assembly in to disengage gear from gear rack.
3. Moved slide-out inner rail in/out to desired location.
4. Tap drive shaft assembly back into position.
5. Use a drift punch to tap roll pin back into shaft.

Before proceeding put slide-out motor brake lever back into "Engaged" position.

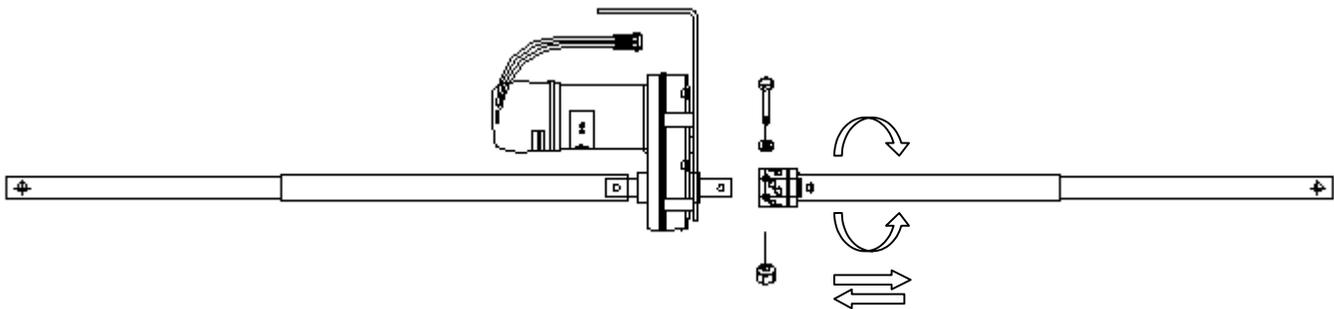
T.I.P. Troubleshooting Information on Power Gear

SYNCHRONISING A 2 RAIL SLIDE-OUT ROOM WITH A COLLARED DRIVE SHAFT ASSEMBLY

Should the slide-out room go out of synchronization this procedure will allow you to retime the room. Measure room synchronization from common solid points at each end of the room.

NOTE- This Tip Sheet covers low profile slide-out systems with a collared drive shaft assembly.

To synchronize the room please refer to the Figure below.

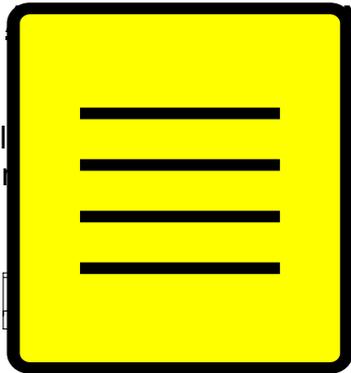


With room about half way out, release slide-out motor brake.

1. Unbolt the nut / bolt / washer assembly on the collared drive shaft
2. Using an adjustable wrench, turn the collared drive shaft clockwise or counterclockwise to move that end of the room to the desired location.
3. Check the timing of the room for accuracy.
4. While rotating the collared shaft move it in or out to align the closest collar hole with the motor shaft hole.
5. Re-install the nut / bolt / washer assembly and torque per specifications in appropriate TIP sheet.
6. Check timing. Room should be within 1/4" of even. If not repeat steps 2 through 6 .
7. Move motor brake to "Engaged" position.

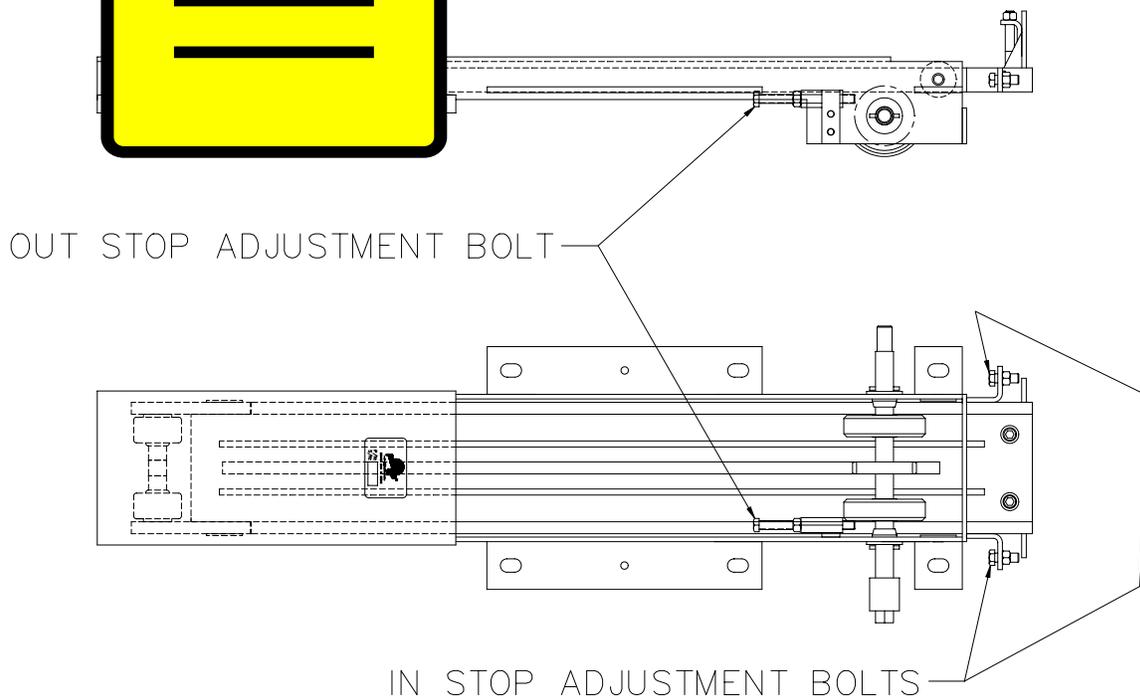


T.I.P. Troubleshooting Information on Power Gear



ADJUSTING “IN” AND “OUT” STOPS ON LOW PROFILE SLIDE-OUT SYSTEM

Each rail has individual “IN” and “OUT” stops. These stops can easily be adjusted using the following steps below.



For the “OUT” stop.

1. Extend the room out to the desired position.
2. Loosen the jam nut (9/16”) on the adjustable stop bolt.
3. Screw the adjustable stop bolt out until it contacts the inner rail.
4. Tighten the jam nut to secure the bolt in the proper position.
5. Test the stop location by running the room. Repeat steps 1 – 4 to re-adjust.

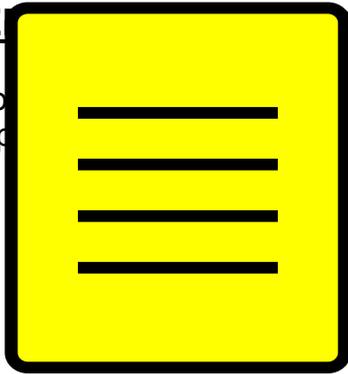
For the “IN” stop.

1. Check the seal of the room prior to adjusting the stops.
2. Using a 9/16” wrench or ratchet adjust the “IN” stop bolts (there are 2) in or out to the desired location (note the locking nut does not require a jam nut).
3. Test the seal. If more adjustment is needed repeat steps 1 – 2.

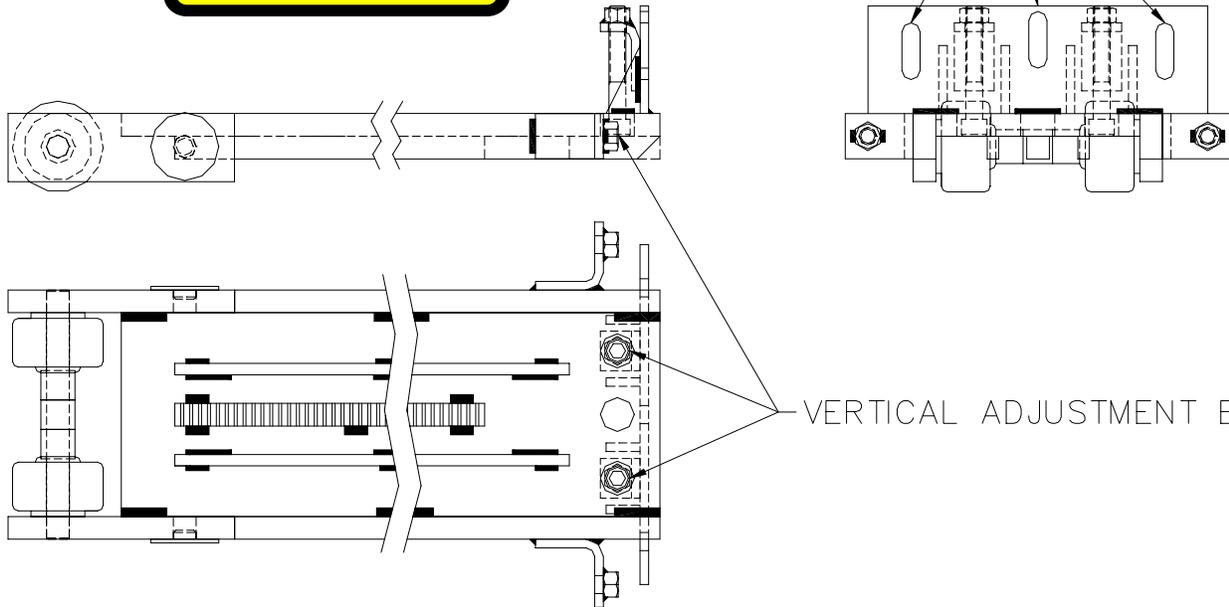
T.I.P. Troubleshooting Information on Power Gear

VERTICAL ADJUSTMENT ON SLIDE-OUT SYSTEM

Each rail of the slide-out system has individual vertical height adjustment. Set the vertical height using the procedure below.



VERTICAL ADJUSTMENT SLOTS



With the room extended completely adjust room height by-

1. Loosening the 3 bolts in the vertical adjustment slots.
2. Using the appropriate sized Allen head wrench, turn the vertical adjustment bolts either clockwise or counter-clockwise to raise or lower room (depending on the need).
3. Check room height setting. Repeat step 2 until height is set to proper location.
4. Tighten the 3 bolts in the vertical adjustment slots.



T.I.P. Troubleshooting Information on Power Gear

FLEETWOOD SERVICE KIT-SHAFT ASSEMBLY-A/C WARDROBE

SERVICE KIT CONTENTS:

1. 15-1412 – SCREW SET #10-24 UNC X 3/8 (2)
2. 18-1032 – PIN CLIP .125 (1)
3. 18-1036 – PIN ROLL .140 X 1.25 (1)
4. 510036 – BEARING SLEEVE .75 (2)
5. 520788 – SPACER, OUTER, SHAFT (2)
6. 520789 – SPACER, SHAFT, INNER (1)
7. 521336 – KEY WOODRUFF #606 (1)
8. 521337 – GEAR SPUR KEYED W/HUB (1)
9. 521435 – SHAFT DR., IDLER (1)
10. 530042 – ROLLER

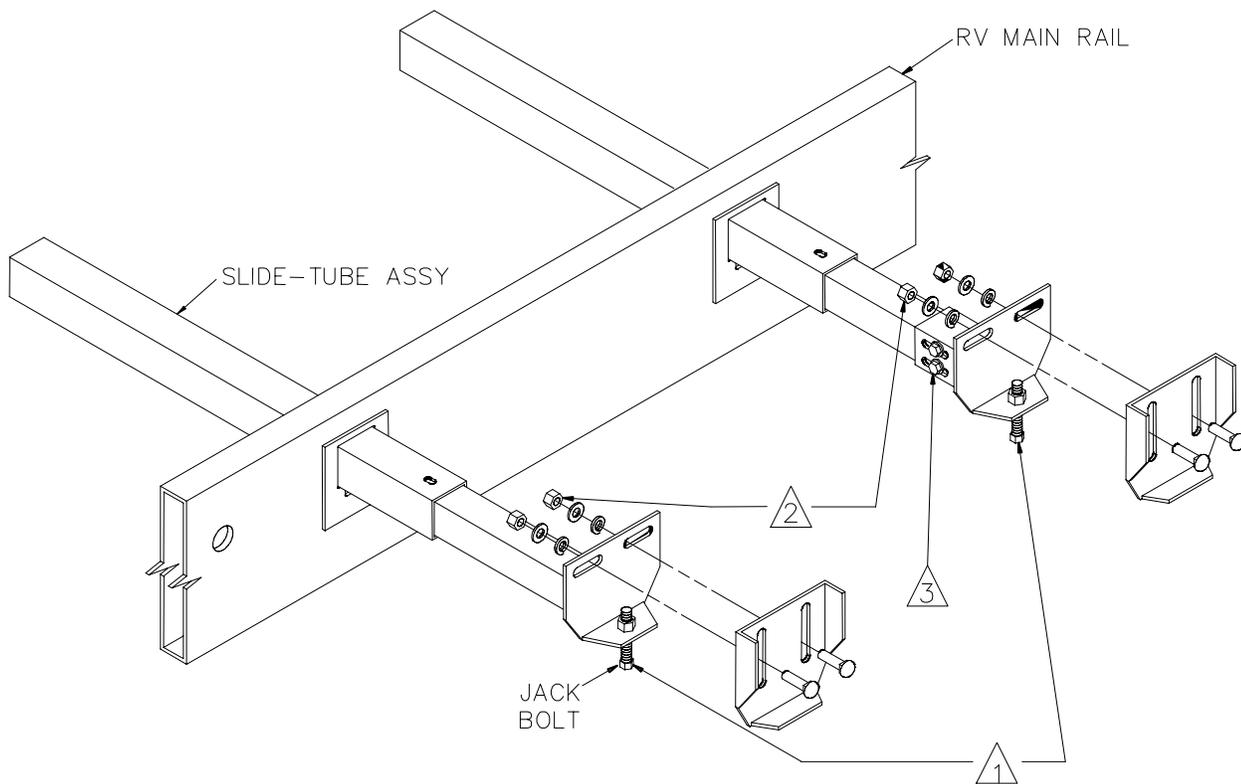
SHAFT ASSEMBLY

1. Remove parts from old assembly.
2. Insert new sleeve bearing (510036) into weldment. Making sure the larger end of the sleeve bearing is on the outside of the of the weldment.
3. Screw set screws (15-1412) part way into spur gear.
4. Insert drive shaft (521435) with the small end of the shaft on the right side of weldment.
5. Place one short spacer (520788) on the large end of shaft.
6. Followed by, one roller (530042) on the large end of shaft.
7. Followed by the spur gear (521337) on the large end of shaft.
8. Followed by the long spacer (520789) on the large end of shaft.
9. Followed by the second roller (530042) on the large end of the shaft.
10. Followed by the second short spacer (520788) on the large end of the shaft.
11. Insert the large end of the shaft though the other side of the weldment.
12. Push in the hair pin clip (18-1032) in the small hole, on the small end of the shaft.
13. Insert the key (521336) under the spur gear, and in the slot in the middle of the drive shaft.
14. Tighten down both set screws on spur gear.
15. Insert pin (18-1036) into the small hole on the larger in of shaft.
16. Assembly should turn freely after assembly has been completed.

T.I.P. Troubleshooting Information on Power Gear

RV Manufacturer's Bracket Instruction For Horizontal and Vertical Adjustments

- 1.) Loosen nuts on carriage bolts (item 2 below). Turn jack bolts (item 1 below) clockwise to adjust the slide room position upward. Turn the jack bolt counterclockwise to adjust the slide room position downward.
- 2.) Loosen nuts and slide heads left or right to adjust the slide room position horizontally.
- 3.) Loosen bolts (item 3 below) and slide head in or out to adjust the side-to-side room seal compression or to adjust the out-position of the slide room.





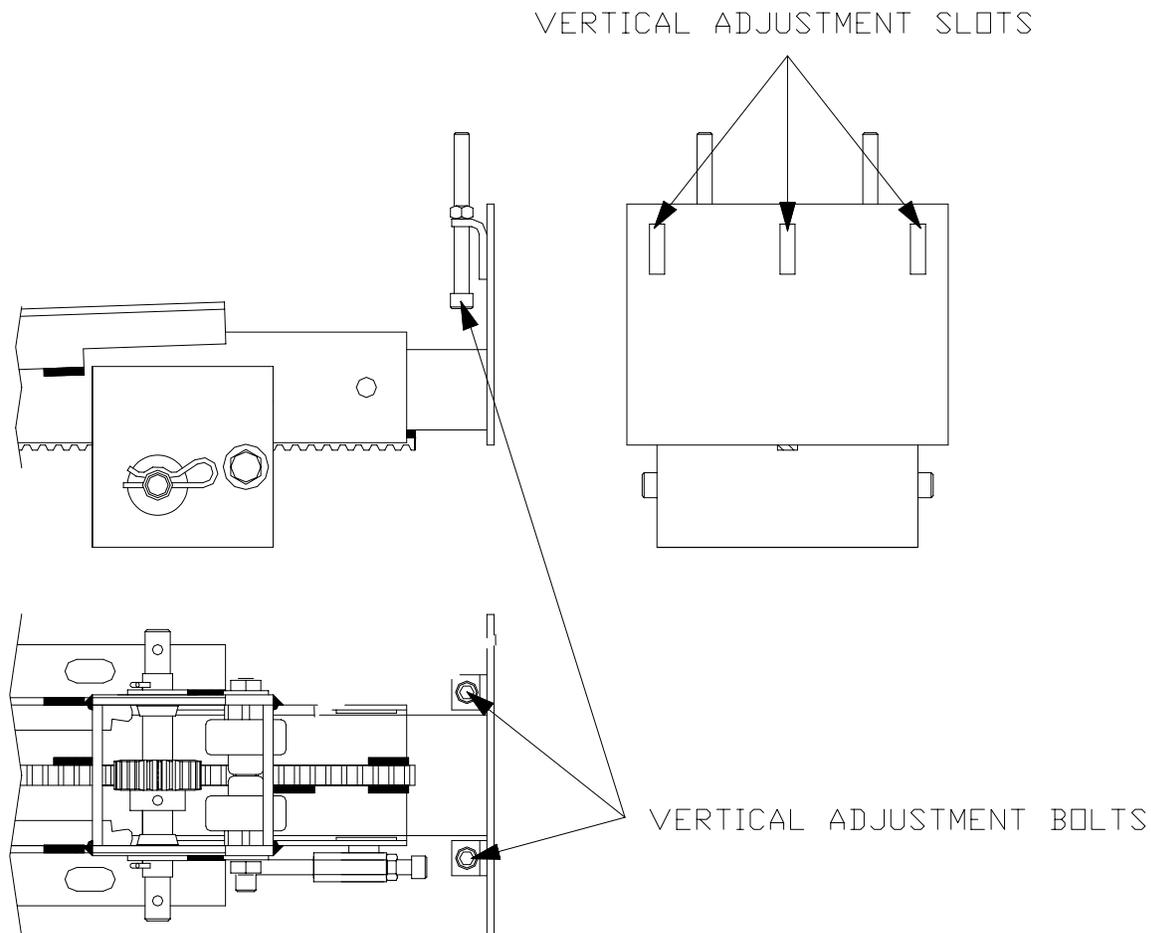
T.I.P. Troubleshooting Information on Power Gear

VERTICAL HEIGHT ADJUSTMENT ON SLIDE-OUT SYSTEM

Each rail of the slide-out system has individual vertical height adjustment. Set the vertical height using the procedure shown below.

With the room extended completely adjust room height by-

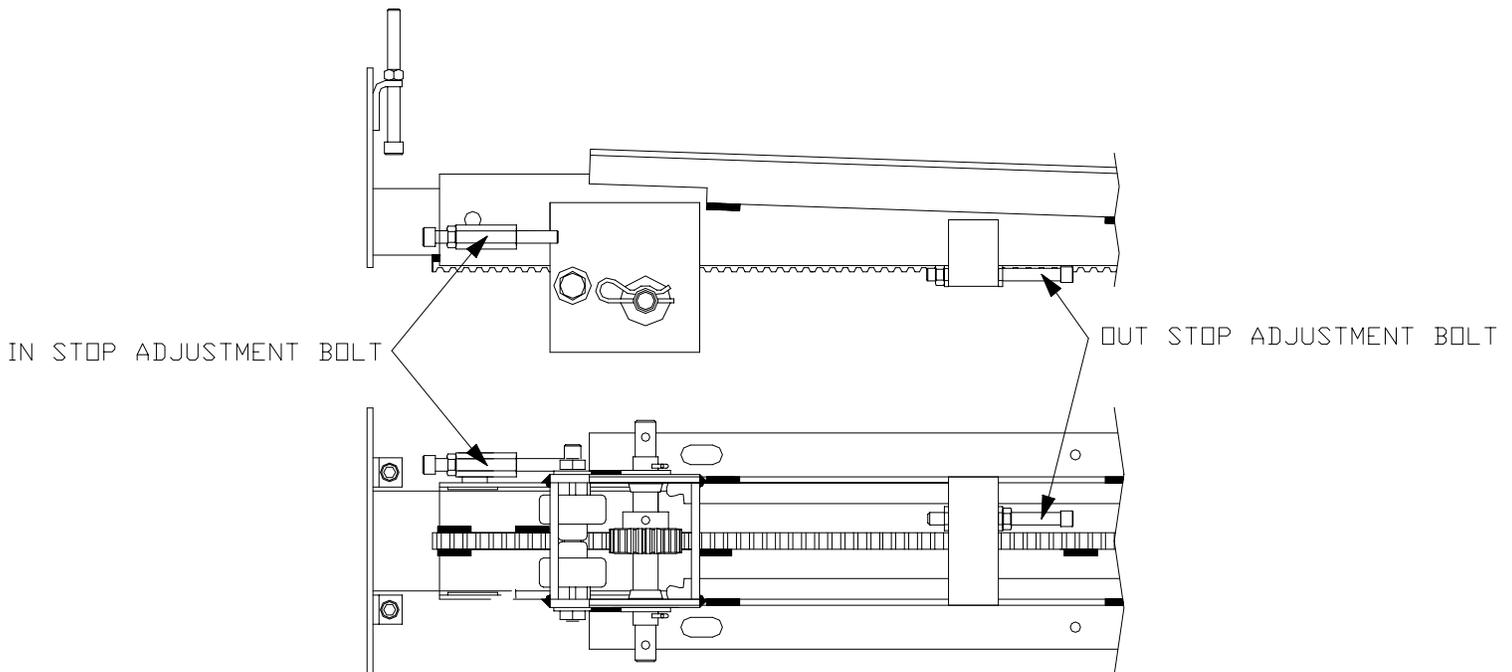
1. Loosening the 3 bolts in the vertical adjustment slots.
2. Using the appropriate sized Allen head wrench, turn the vertical adjustment bolts either clockwise or counter-clockwise to raise or lower room (depending on the need).
3. Check room height setting. Repeat step 2 until height is set to proper location.
4. Tighten the 3 bolts in the vertical adjustment slots.



T.I.P. Troubleshooting Information on Power Gear

ADJUSTING “IN” AND “OUT” STOPS ON LOW PROFILE SLIDE-OUT SYSTEM

Each rail of the slide-out system has individual “IN” and “OUT” stops.



These stops can easily be adjusted using the procedure shown below.

For the “OUT” stop.

1. Extend the room out to the desired position.
2. Loosen the jam nut (9/16”) on the adjustable stop bolt.
3. Screw the adjustable stop bolt out until it contacts the inner rail.
4. Tighten the jam nut to secure the bolt in the proper position.
5. Test the stop location by running the room. Repeat steps 1 – 4 to re-adjust.

For the “IN” stop.

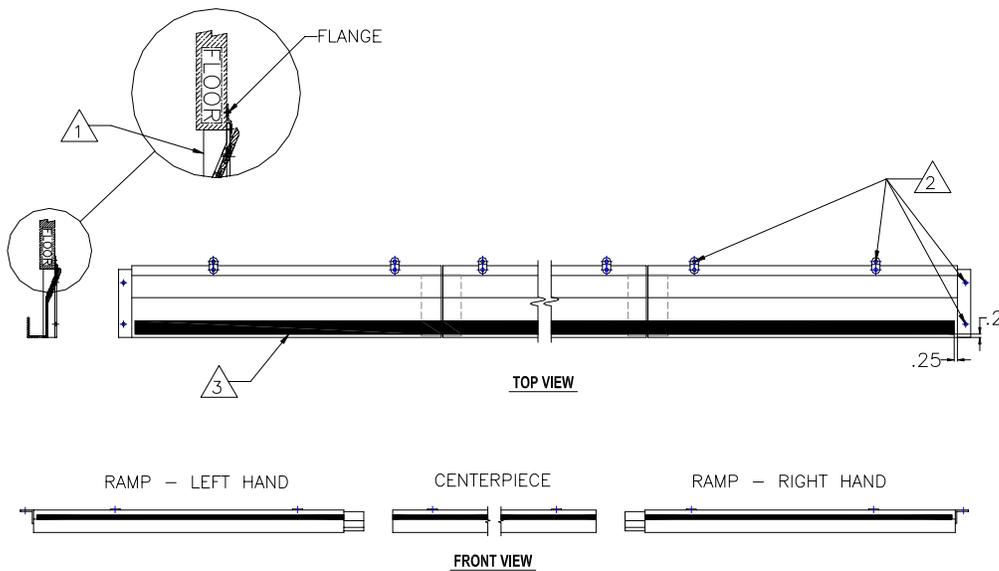
1. Check the seal of the room prior to adjusting the stops.
2. Using a 9/16” wrench or ratchet adjust the “IN” stop bolts in or out to the desired location (note the locking nut does not require a jam nut).
3. Test the seal. If more adjustment is needed repeat steps 1 – 2.



T.I.P. Troubleshooting Information on Power Gear

RAMP INSTALLATION

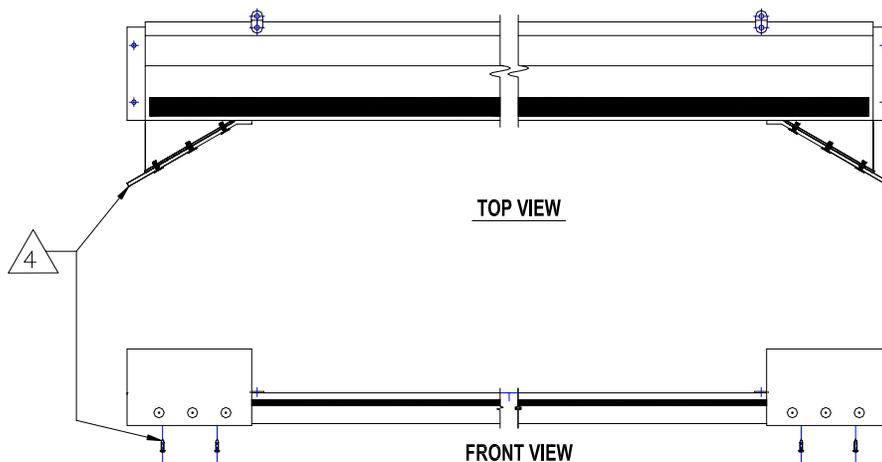
1. Put the ramp into position. This is done by sliding the flange of the ramp over the floor for at least 1/8". In case of a 3-piece ramp first install the cornerparts, and then slide the centerpiece in between. Make sure that the tree pieces are aligned.
2. Mount the screws through the corresponding holes in the ramp, to the floor.
3. Install the felt. The correct position of the felt is 1/4" from the edge. Do not use felt 1/4" from the corners of the ramp.



OPTIONAL CORNERSEALS:

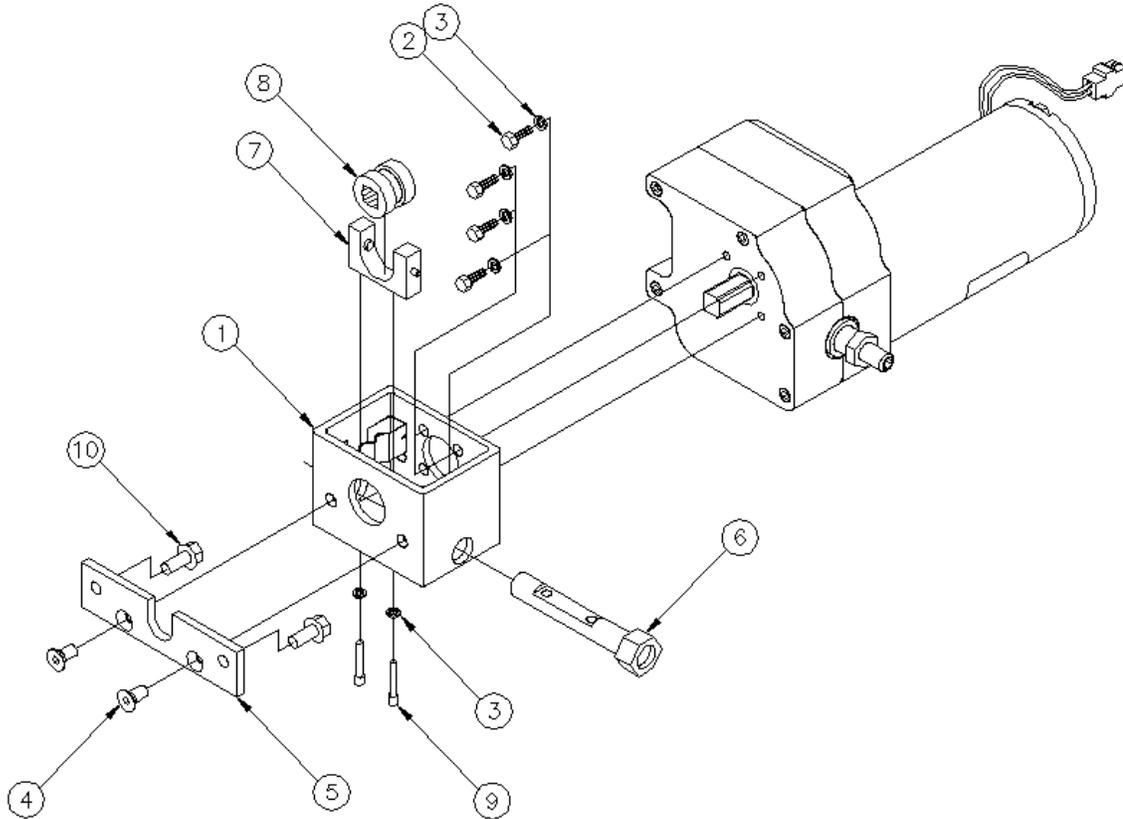
Follow the next instructions if the ramp is equipped with optional cornerseals.

4. Screw both the cornerseals to the ramp as shown in the drawing.



T.I.P. Troubleshooting Information on Power Gear

SERVICE KIT CHANGING 4-BOLT OVER-RIDE TO QUICK DISCONNECT



SERVICE KIT CONTENTS: P/N 800066

P/N	DESCRIPTION	QTY	BALLOON #
DN14368	HOUSING ADJUSTER ASSY	1	1
DN12403	SCREW HHC 1/4-20 X 3/4	4	2
VF10300	LOCKWASHER 1/4" SPLIT	6	3
DN13769	SCREW FHC 5/16-18 X 5/8	2	4
DN13736	DISENGAGEMENT BOX MTG PLATE	1	5
DN13596	MOTOR DISENGAGEMENT SHAFT ASS'Y	1	6
DN13591	MOTOR ENGAGEMENT YOKE ASS'Y	1	7
DN13597	1" MOTOR DISENGAGEMENT COLLAR	1	8
DN13816	SCREW SHC 1/4-28 X 1	2	9
150-1468	FLANGE BOLT 5/16-18 X 3/4	2	10

TOOLS NEEDED:

- 1/2" Wrench
- 7/16" Wrench
- 3/16" Hex Key (ALLEN TYPE)
- Loc-tite
- 15/16" Wrench

TO REMOVE OLD DISENGAGEMENT BOX:

1. Locate and remove access panel to slide-out mechanism.
2. Disconnect slide-out motor electrical connection.
3. Using a 1/2" wrench, loosen the (4) 5/16-18 x 3/4 hex head cap screws on the drive shaft coupler inside the disengagement box.
4. Using a 1/2" wrench, remove the (2) 5/16-18 x 3/4 flange bolts, same as Item #10 on diagram, and now the motor is free to be moved to a better workspace.
5. At this point, the coupler is free to be removed and may be discarded.
6. Using a 3/16" hex key, remove the (2) 5/16-18 x 5/8 flat head cap screws, same as Item #4, to remove the disengagement box mounting plate, and these parts may be discarded. *Note: These screws may be difficult to remove because Loc-tite may have been used when assembled at the factory.*
7. Using a 7/16" wrench, remove the (4) 1/4-20 x 3/4 hex head cap screws with lockwashers, same as Items #2 and #3, that mount the disengagement box to the motor gearbox, and these parts may be discarded.
8. At this point, only the motor with the gearbox, as shown on the right side of the diagram, is the only part needed for the re-assembly.

TO REASSEMBLE MOTOR WITH QUICK DISCONNECT ASSEMBLY:

1. Mount the housing adjuster assembly (Item #1) to the motor gearbox using a 7/16" wrench, (4) 1/4-20 x 3/4 hex head cap screws (Item #2), and (4) 1/4" split lockwashers (Item #3). *Note: The diagram shows the proper orientation of the housing adjuster assembly to the motor and gearbox.*
2. Mount the disengagement box mounting plate (Item #5) to the housing adjuster assembly (Item #1) using a 3/16" hex key and the (2) 5/16-18 x 5/8 flat head cap screws (Item #4). *Note: Applying Loc-tite to the threads of the screws will assure that they will not back out due to vibrations.*
3. Next, insert the motor disengagement shaft assembly (Item #6) into the housing adjuster assembly (Item #1) as shown in the diagram. *Note: It is possible, but not recommended, to assemble backwards.*
4. Insert 1" motor disengagement collar (Item #8) into the Motor engagement yoke assembly (Item #7).
5. Insert the collar and yoke assembly into the housing adjuster assembly (Item #1) as shown in the diagram.
6. Using a 3/16" hex key, the (2) 1/4-28 x 1 socket head cap screws (Item #9), and (2) 1/4" split lockwashers (Item #3), attach the 1" motor disengagement collar (Item #8) and the motor engagement yoke assembly (Item #7) to the motor disengagement shaft assembly (Item #6).
7. At this point, the functioning can be checked before reinstalling the assembly by using a 15/16" wrench on the hex nut on the motor disengagement shaft assembly (Item #6). *Note: The functioning will not be that easy due to the force that is applied by the spring in the housing adjuster assembly to keep the collar engaged during travel and operation.*
8. Using a 1/2" wrench and the (2) 5/16-18 x 3/4 flange bolts (Item #10), attach the new disengagement box and motor assembly to the slide-out mechanism.
9. Using a 15/16" wrench, turn the hex nut on the motor disengagement shaft assembly (Item #6) to reengage the gear driveshaft. *Note: The collar should slide right on if the motor has not been energized since being removed and the slide-out has not be moved in or out. If it does not line up correctly, the motor needs to be energized or the slide-out moved in or out until the driveshafts and the collar all match up.*
10. Reconnect slide-out motor electrical connection.
11. Replace the slide-out access panel.
12. Slide-out should now function normally.



T.I.P. Troubleshooting Information on Power Gear

ELECTRICAL WIRING INFORMATION FOR S/O SENSING CONTROLLER

CAUTION: The sensing controller is designed to provide different trip settings for the extend and retract strokes of the slideout.

CAUTION: The wiring for the slide-out should be completed per the following wiring diagram or the motor home may be damaged.

CAUTION: The switch wires, motor wires and ground wire can be connected to the control at any time during installation prior to the power being connected. The battery line must be connected to the control **BEFORE** the battery is connected, but cannot be connected until after the system has been high potted.

CAUTION: The control box **WILL** be damaged if any of the leads are grounded or touched together when power is connected to the system.

CAUTION: Modification of wiring schematic *other than reversal of motor leads* **WILL** cause improper operation of the sensing controller and the slide-out, and may cause damage to the RV.

NOTE: Prior to power hookup, verification of switch wire connections may be accomplished by checking continuity. Verify continuity between the wire to be connected to the "SW.IN" and chassis ground when the switch is depressed to the "IN" position. Also, verify continuity between the wire to be connected to the "SW.OUT" and chassis ground when the switch is depressed to the "OUT" position.

NOTE: Provided the previous note has been followed, if the red wire is connected to the +12V source, the motor will turn clockwise, viewed from face mount when the switch is depressed to the "IN" position.

NOTE: If motor runs in reverse direction, verify switch connections are correct and reverse **motor leads**. (Do not reverse switch leads)

NOTE: If this is a new installation of controller or if service is performed on Slide Out unit, extend room out to half way, and then do a full retract to reset the controller.

NOTE: Maximum motor amperage draw during room extension should be less than Maximum motor amperage during room retraction.

NOTE: For troubleshooting information, see Power Gear Tip Sheet #173.

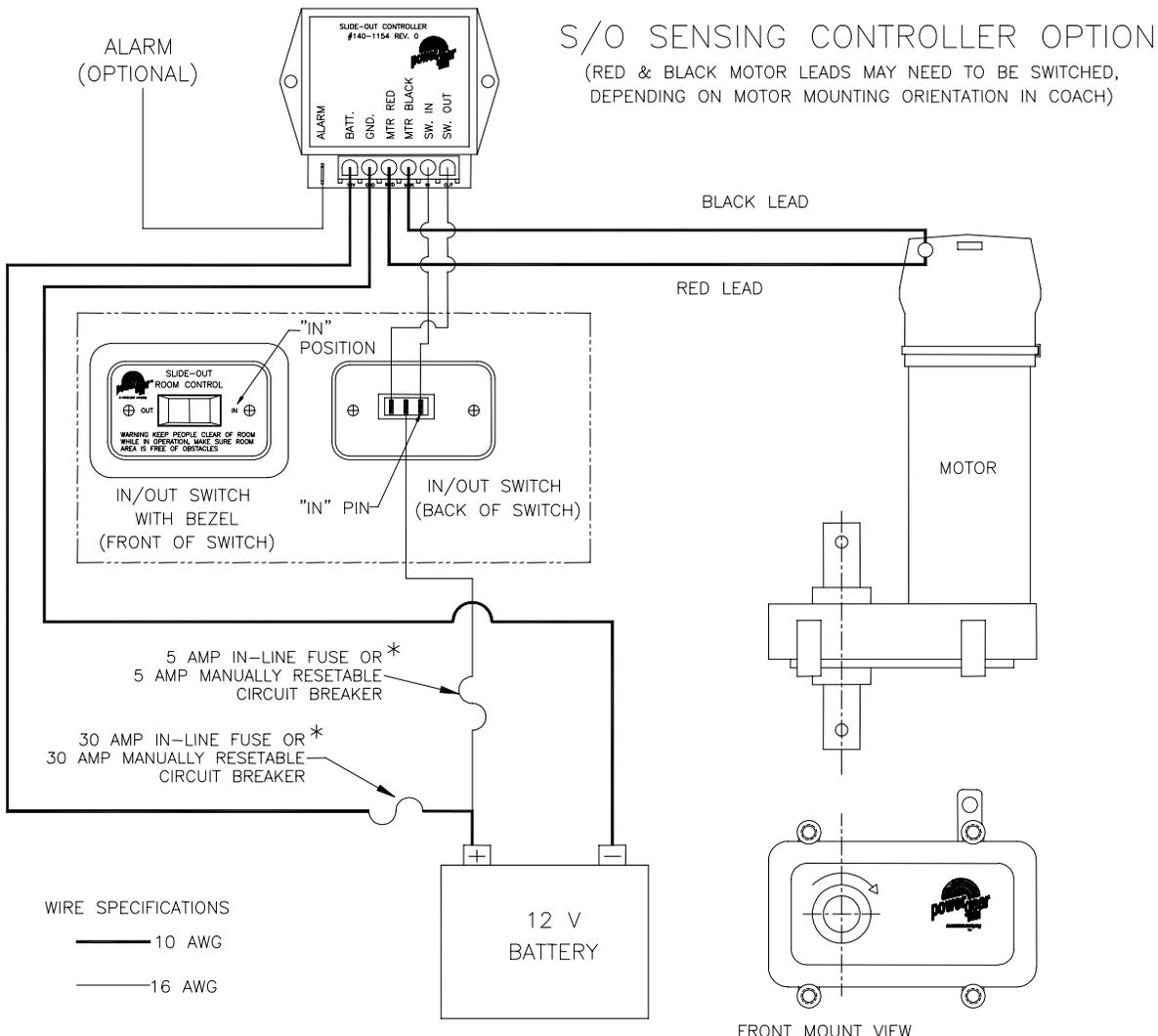
Hookup instructions S/O Sensing Controller:

	POWER GEAR COMPONENTS	SENSING CONTROLLER WIRING CONNECTIONS AND MOTOR OPERATING CONDITIONS	
operation	MOTOR	CW	CCW
connection	MOTOR RED	MTR RED	MTR BLACK
connection	MOTOR BLACK	MTR BLACK	MTR RED
connection	SWITCH OUT	SW. OUT	SW. OUT
connection	SWITCH IN	SW. IN	SW. IN
connection	+12 VDC	BATT.	BATT.
connection	GROUND	GND.	GND.

Operation assumes the switch is being pushed to the "IN" position.

Connections assume the "SWITCH IN PIN" refers to the pin directly below the "OUT" position on the switch and "SWITCH OUT PIN" refers to the pin directly below the "IN" position on the switch.

Note: "SWITCH IN PIN" refers to the pin directly below the "OUT" position on the switch and "SWITCH OUT PIN" refers to the pin directly below the "IN" position on the switch.



WIRE SPECIFICATIONS
 ——— 10 AWG
 ——— 16 AWG

* FUSED PER ANSI/RVIA STANDARD FOR LOW VOLTAGE SYSTEMS IN CONVERSION AND RECREATIONAL VEHICLES 2000 EDITION CHAPTER 3 CIRCUIT PROTECTION SECTIONS 3-1 & 3-2

Diagram B



T.I.P. Troubleshooting Information on Power Gear

SERVICE KIT (PG# 800126S) ABF MANUAL TO ELECTRIC

Instructions for removal of manual actuator:

1. Refer to Diagram A.
2. Remove socket head screws (1A) and washers (2A) to release spring tension (3A).
3. Remove hex head bolts (4A) and mounting plate (5A). **Note: Save these parts for re-assembly.**
4. Remove nuts (6A), washers (7A), and cover plate (8A).
5. Remove hex head bolts (9A), and manual actuator (10A) and gear shaft assembly (11A) should be free to be removed.

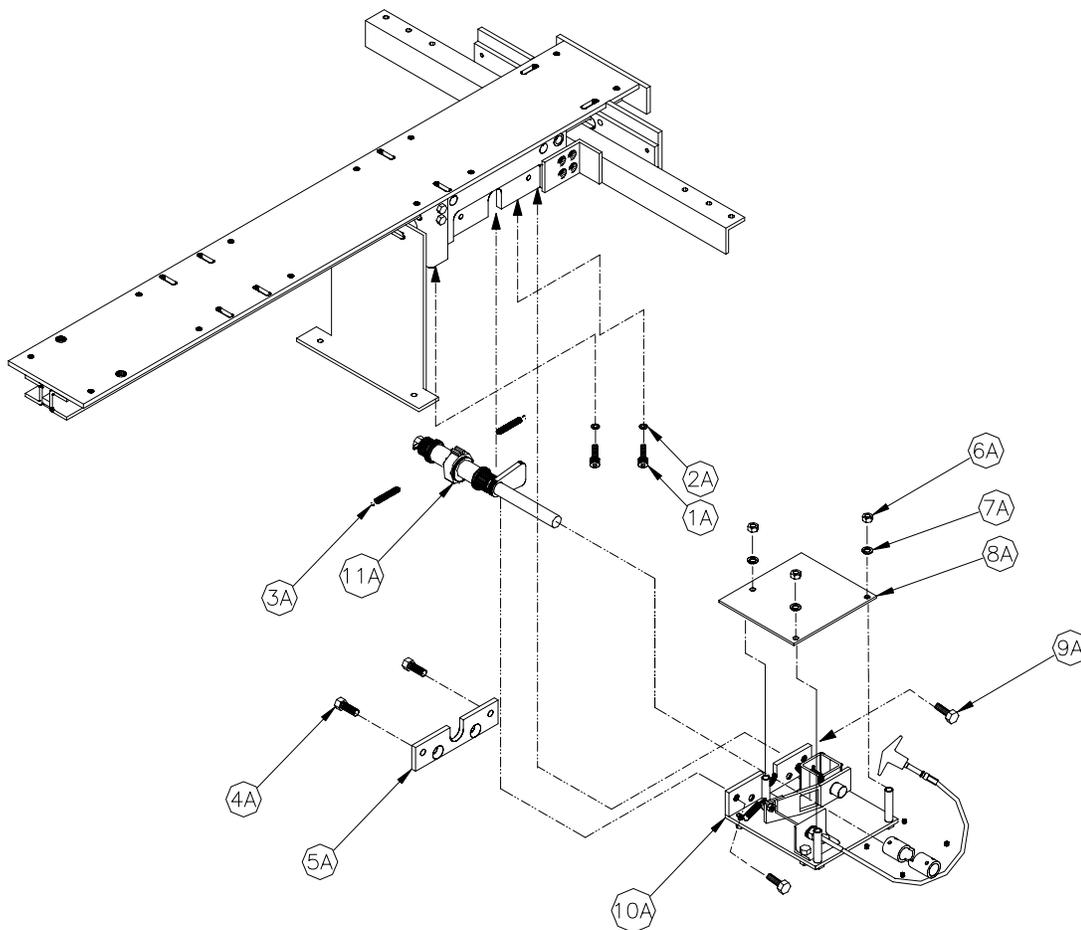


Diagram A

Instructions for re-assembly of electric actuation:

1. Refer to Diagram B.
2. Install gear shaft (2B) into motor with disengagement box (1A).
3. Install mounting plate (3B) onto disengagement box using cap screws (4B).
4. Install motor and gear shaft assembly into roller rack using flange bolts (6B).
5. Install mounting plate (5A) with bolts (4A).
6. Wire motor to 12V power supply using switch and relay supplied. **Note: See wiring diagram.**

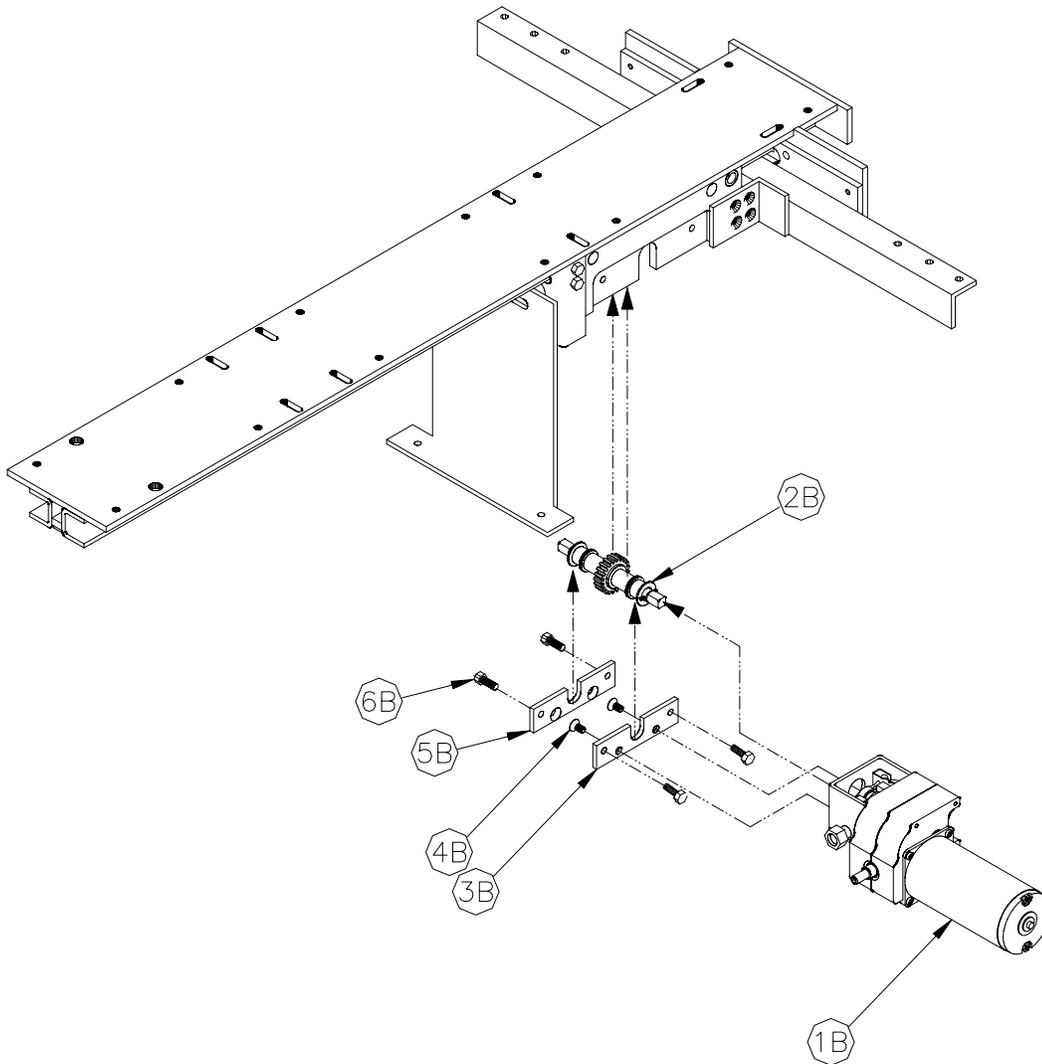


Diagram B

Bill of Materials:

	Item #	P/N	Description	Qty
3B	DN13736		DISENGAGEMENT BOX MTG PLT	1
2B	DN13762		SHAFT ASSY ABF	1
4B	DN13769		5/16"-18 X 5/8" CAP SCREW	2
1B	DN14370		DISENGAGE BOX W/CAST BOX/	1
6B	150-1468		BOLT FLANGE 5/16-18x3/4 H	2

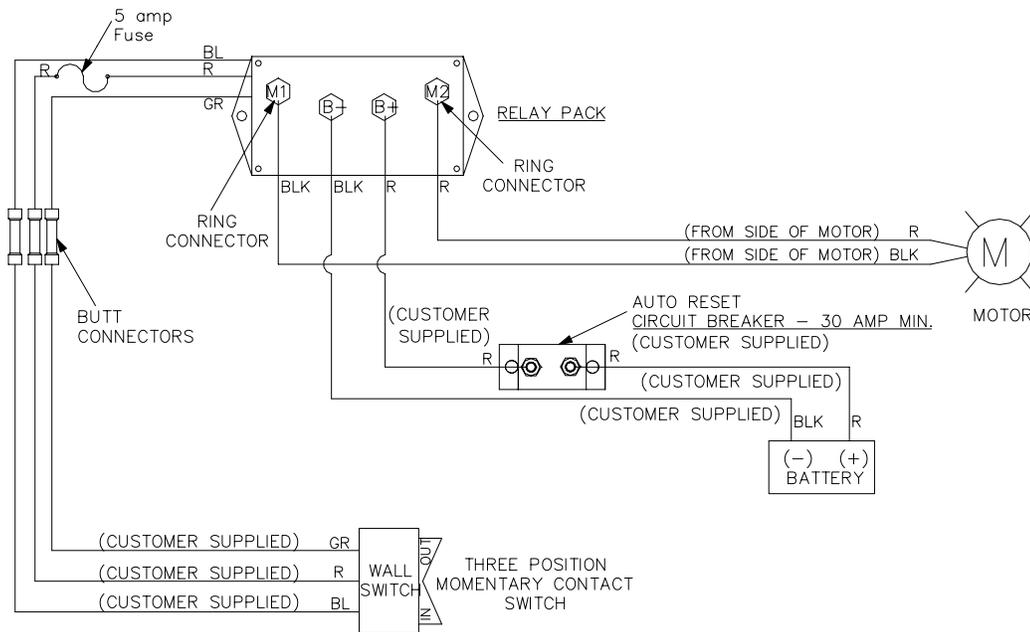
Not Shown:

522671		ELECT KIT ABF S/O (TRM)	1
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Electric Kit Includes:

DN13819		RELAY PACK NON-WATER PROO	1
IP10260		SWITCH COVER WHITE	1
IP10265		SWITCH ROCKER WHITE S4-36	1

Wiring Diagram





T.I.P. Troubleshooting Information on Power Gear

VERIFICATION AND/OR ADJUSTMENT OF THE AMPERAGE SETTING ON THE TWO STAGE S/O CONTROL

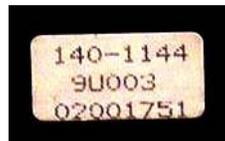
The following information pertains only to the Two Stage S/O control, PG part number 522765, pictured here:



The two-stage S/O control can be adjusted to three settings – Low, Medium and High. For optimum slide-out operation, the control should be set at the High setting.

Step 1) Verify the wiring of slide out switch/motor/control is correct per Power Gear Tip Sheet #171
(82-S0350-T Rev.2)

Step 2) Verify that the controller is an adjustable version. To do so, look at the back of the controller. There is a sticker that looks like this:



If the second number is “9U003”, it is an adjustable controller. Proceed to step 3. If it is “9U006”, it is not adjustable. It is preset to the maximum Amperage setting already. Double-check the wiring (see Step 1).

Step 3) Disconnect the controller leads from the coach. Label all leads to ensure proper wiring when complete. Open the cover by removing the four screws in the corners, and peel back the label. If the label gets cut or damaged because of this service operation, the warranty will not be void on the controller. The inside of the control box looks like this:



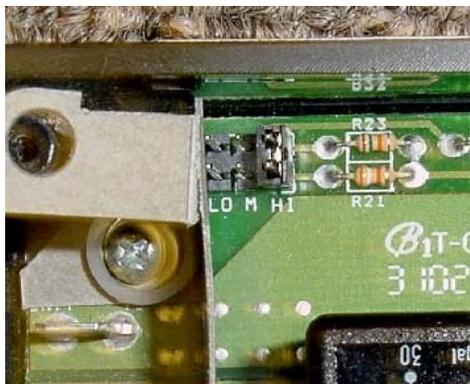
What we are interested in is the area circled above.

A closer look is provided here:



There is a black jumper with three possible settings. LO, M and HI.

Step 4) Using a small screwdriver, needle-nose pliers, or the like, *carefully* pry the jumper off of the M setting and replace it on the HI setting. It should come off easily. Be careful not to damage any circuit components. It should now look like this:



Step 5) Replace the cover, the four screws and the label. Re-attach the wiring, again per Power Gear Tip Sheet #171 (82-S0350-T Rev.2).

Step 6) Verify the coach S/O is operating properly. If it is not, contact a Lippert Components, Inc customer service representative at (574) 537-8900