EMBEDDED RACK SLIDE-OUT SYSTEM

SERVICE MANUAL

LIPPERT COMPONENTS™

TABLE OF CONTENTS

Safety Information

⚠WARNING

Failure to act in accordance with the following may result in death or serious personal injury.

The Lippert Embedded Rack Slide-out System is intended for the sole purpose of extending and retracting the slide-out room. Its function should not be used for any other purpose or reason than to actuate the slide-out room. To use the system for any reason other than what it is designed for may result in death, serious injury, or damage to the coach.

Before actuating the system, please keep these things in mind:

1. Parking locations should be clear of obstructions that may cause damage when the slide-out room is actuated.
2. Be sure all persons are clear of the coach prior to the slide-out room actuation.
3. Keep hands and other body parts away from slide-out mechanisms during actuation. Death or severe injury may result.
4. To optimize slide-out actuation, park coach on solid and level ground.

Product Information

The Lippert Embedded Rack Slide-out System is a rack and pinion style slide system. Utilizing a bi-directional electric motor to actuate the drive shaft, the slide-out room is extended and retracted from the same source. The actuator has a built-in automatic clutching feature. The Lippert Embedded Rack Slide-out System is designed as a negative or positive ground system.

NOTE: There are no serviceable parts within the electric motor. If the motor fails, it **MUST** be replaced.

NOTE: Disassembly of the motor voids the warranty.

NOTE: Mechanical portions of the slide-out system are replaceable. Contact Lippert Components, Inc. to obtain replacement parts.

Operation

⚠WARNING

Failure to act in accordance with the following may result in death or serious personal injury.

Always make sure that the slide-out room path is clear of people and objects before and during operation of the slide-out 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 slide-out room during storage and transportation.

Extending Slide-Out 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. Press and hold the IN/OUT switch (Fig. 1) in the OUT position (Fig. 1B) until the room is fully extended and stops moving.
5. Release the switch, which will lock the room into position.

NOTE: If the slide-out switch is held after the room in fully extended, the control will sense that the room has stopped and will shut off the motor after a few seconds.

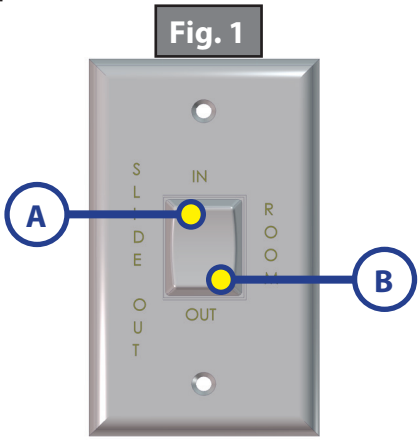
Retracting Slide-Out Room

1. Verify the battery is fully charged and hooked-up to the electrical system.
2. Press and hold the IN/OUT switch (Fig. 1) in the IN position (Fig. 1A) until the room is fully retracted and stops moving.
3. Release the switch, which will lock the room into position.

NOTE: If the slide-out switch is held after the room in fully retracted, the control will sense that the room has stopped and will shut off the motor after a few seconds.

4. Install the transit bars (if so equipped).

Fig. 1



Instructions For Adjustment Of Room

The Lippert Embedded Rack Slide-out System can be timed and fine-tuned for optimum performance. In the event the travel of either side of this two-rail system should be out of time, follow this process for re-timing the slide-out room.

NOTE: When addressing issues regarding your slide-out room, remember to relay the information from the OUTSIDE of the coach. This note will help to standardize the information needed to be relayed to a service station or technical service at LCI.

Timing Adapter - (Fig. 2A, next page)

1. Turn off engine (Class A and C motorhomes).
2. Disconnect battery or slide-out motor wire leads. (Only one of the motor leads need be disconnected.)
3. Remove nut (Fig. 2D) from bolt (Fig. 2B).
4. Remove bolt from Timing Adapter. This frees the Timing Adapter from the gear assembly drive shaft.
5. Rotate drive shaft towards outside of coach until the next set of holes on the Timing Adapter line-up.
6. Return bolt to Timing Adapter assembly in new location.
7. Return nut to bolt and snug firmly.
8. Reconnect motor wire or battery.
9. Draw room into coach.
10. Repeat process as needed.

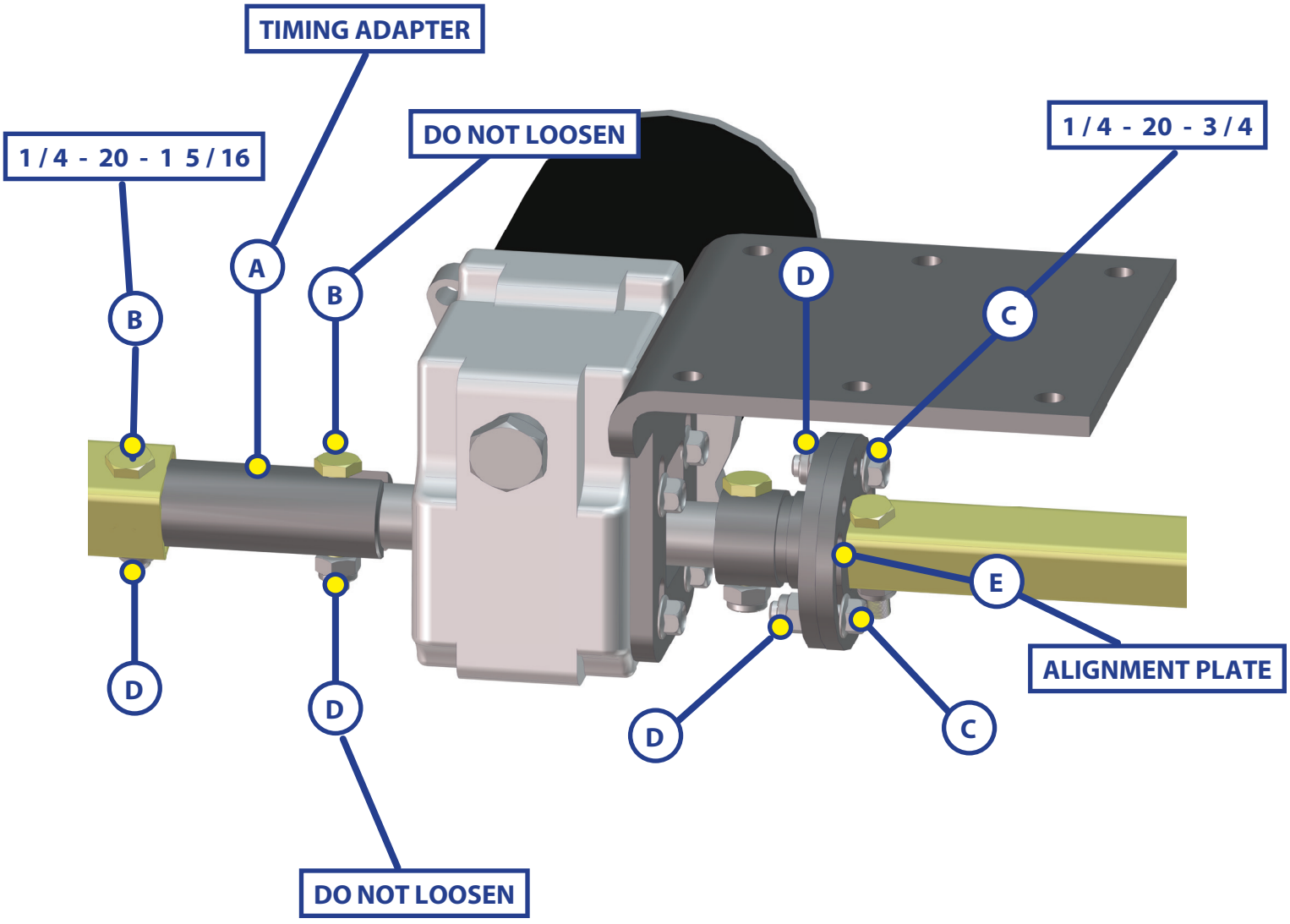
Alignment Plate – (Fig. 2E, next page)

1. Turn off engine (Class A and C motorhomes).
2. Disconnect battery or slide-out motor wire leads. (Only one of the motor leads need be disconnected.)
3. Loosen both nuts (Fig. 2D) from both bolts (Fig. 2C) on Alignment Plate.
4. This allows for a free rotation of Alignment Plate.
5. Rotate drive shaft towards inside of coach until room is in alignment from right to left.
6. Tighten nuts on bolts on Alignment Plate assembly in new location.
7. Reconnect motor wire or battery.
8. Draw room into coach.
9. Repeat process as needed.

During troubleshooting, remember that by changing, altering or adjusting one thing, it may affect something else. Be sure any changes do not create a new problem.

Slide-Out Adjustment Diagram

Fig. 2



Maintenance

Preventative Maintenance

The Lippert Embedded Rack Slide-out System has been designed to require very little maintenance. To ensure the long life of your slide-out system, read and follow these few simple procedures.

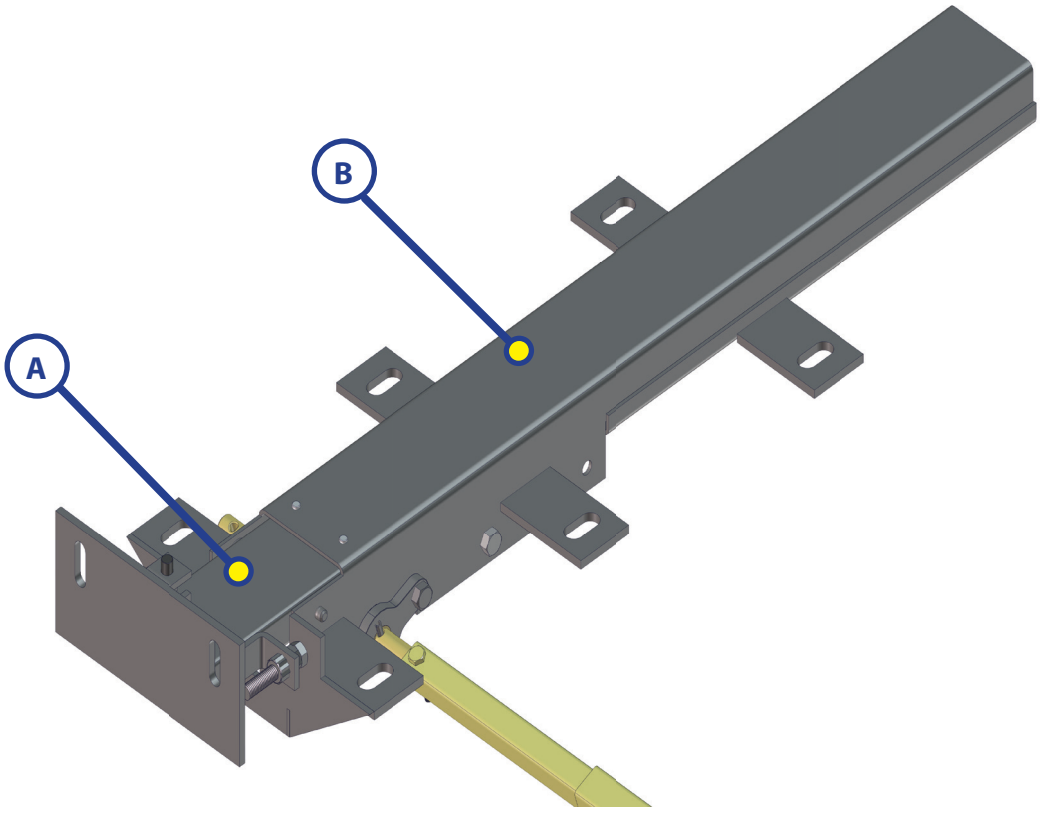
⚠WARNING

Do not work on your slide-out system unless the battery is disconnected. Failure to act in accordance with the following may result in death or serious personal injury.

1. When the room is out, visually inspect the Inner (Fig. 3A) and Outer (Fig. 3B) Rail Assemblies. Check for excess build-up of dirt or other foreign material; remove any debris that may be present.
2. If the system squeaks or makes any noises it is permissible to apply a coat of lightweight 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 LIPPERT AT: (866) 524-7821.

Fig. 3



Troubleshooting

The Lippert Embedded Rack Slide-out System is only one of four inter-related slide-out room system components. These four components are as follows: chassis, slide-out room, coach and Lippert Embedded Rack Slide-out System. Each one needs to function correctly with the others or misalignment problems will occur.

Every coach has its own personality and what may work to fix one coach may not work on another, even if the symptoms appear to be the same.

When something restricts room travel, system performances will be unpredictable. It is very important that slide rails, inner and outer, be free of contamination and allowed to travel freely the full distance. Ice or mud build-up during travel is an example of some types of contamination that may occur.

When beginning to troubleshoot the system, make sure the battery is fully charged, there are no visible signs of external damage to the actuator, motor or rails, and that the motor is wired properly and all connections are secure.

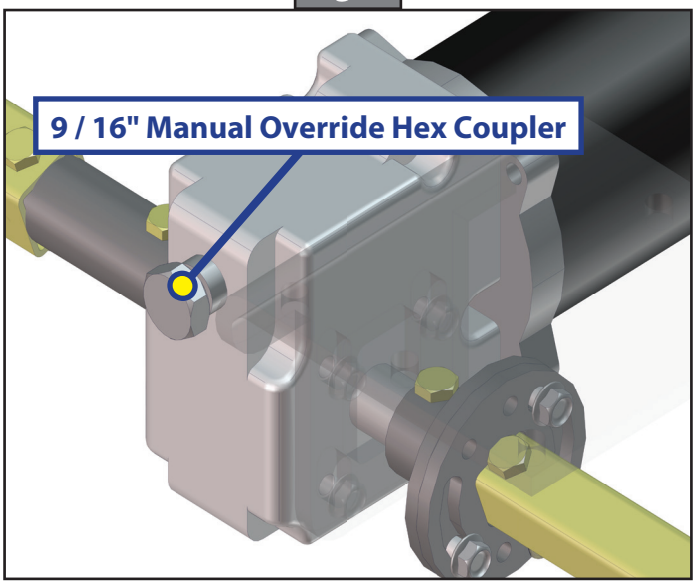
If you have any problems or questions consult your local authorized dealer or call lippert at: (866) 524-7821.

Manual Operation

⚠ CAUTION

The gears can be stripped out if the room is manually retracted/extended to its fullest extent and the operator continues to rotate manual override. Any damage due to misuse of the manual override feature will disqualify any and all claims to the Limited Warranty.

Fig. 4



1. Prior to Manual Operation, be sure to clear any obstruction from the slide-out area that may impede the extension or retraction of the slide-out room, including any transit bars.
2. Locate Slide-out Motor under coach.
3. Fit a 9⁄16" socket and ratchet, 9⁄16" open end wrench or a 9⁄16" nut driver and power drill, on the manual drive coupler (Fig. 4).
4. By rotating coupler in a clockwise direction, the slide-out room can be retracted. By rotating the coupler in a counter-clockwise direction, the slide-out room can be extended.

NOTE: Remember to replace transit bars (if equipped) before moving the coach.

Troubleshooting Chart

What Is Happening?	Why?	What Should Be Done?
Room doesn't move when switch is pressed.	Restriction or obstruction inside or outside of unit.	Check for and clear obstruction.
	Low battery voltage, blown fuse, defective wiring.	Check battery voltage and charge if needed.
		Find and check fuse and replace if blown.
		Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
	Excessive room drag.	Check that transit bars are removed.
Power unit runs but room does not move.	Motor turns, room does not move.	Gear key is broken or lost. Replace gear drive assembly.
	Broken gear on drive shaft.	Replace gear drive assembly.
	Broken gear in gear box.	Replace motor/gearbox assembly.
	Bad motor or gearbox.	Replace motor/gearbox assembly.
Power unit runs but room moves slowly.	Low battery, poor ground, extremely low temperature.	Charge battery, check ground wire.
	Room in bind.	Adjust to proper room setting.
	Incorrect height adjustment.	Check for proper room height.
Room starts to move and stops.	Low battery voltage, blown fuse, defective wiring.	Check battery voltage and charge if needed.
		Find and check fuse, replace if blown.
		Check battery terminals and wiring. Look for loose, disconnected or corroded connectors.
	Obstruction of room inside or outside.	Check for and remove any obstruction.
	Dirt or corrosion build up on mechanism.	Clean dirt or corrosion and coat LIGHTLY with oil.
Room chatters during operation.	Teeth on gear drive broken or worn.	Replace gear drive assembly.
	Teeth on inner rail broken.	Replace inner rail assembly.

NOTE: If the slide-out room will not retract, there is a manual override that is located on the motor. Once you have the room in the closed position take your unit to the closest dealer. See page 8 for Manual Overide Instructions.

Troubleshooting - Switch

1. If room moves opposite from what the switch plate indicates, reverse the motor wires on the back of the switch (refer to the wiring diagram page 11). Wire size **MUST** be 10ga. min.
2. If a gear is stripped, the entire gearbox **MUST** be replaced.
3. If the room does not seal fully, refer to the Troubleshooting Chart.

Troubleshooting - Power Unit

Before attempting to troubleshoot the Power Unit, make sure an adequate power source is available. The unit batteries should be fully charged or the unit should be plugged into to A/C service with batteries installed. Do not attempt to troubleshoot the Power Unit without assuring a full 12V DC charge.

The following tests require only a DC voltmeter (or DC test light) and a jumper lead.

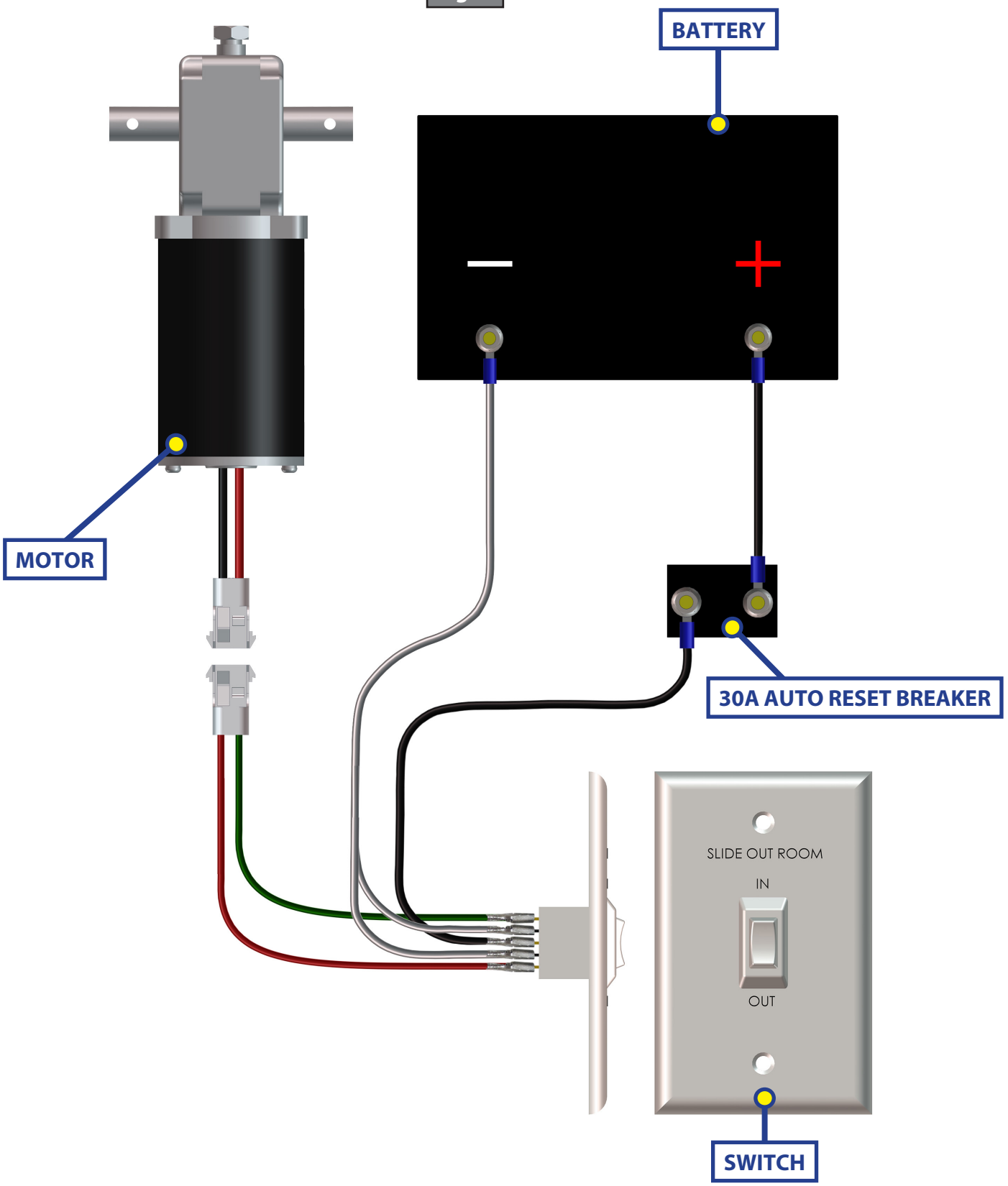
Step 1. Attach voltmeter (or test light) leads to the negative and positive switch terminals on back of wall switch (See Fig. 5). Does the meter indicate 12V DC? If YES, see Step 2; if NO, see Step 3.

Step 2. If YES, at the motor, check the incoming leads to 12V DC (if necessary, disconnect leads at wire splices). Does meter indicate 12V DC? If YES, Power Unit needs to be replaced. The motor is not field serviceable. DO NOT ATTEMPT TO REPAIR. If NO, inspect all wires and connections between the wall switch and the motor. Repair connections as necessary. Recheck as in Step 1.

Step 3. If NO, inspect all connections between battery and switch. Inspect 30A Auto-reset Circuit Breaker (See Fig. 5 for location). Recheck as above in Step 1.

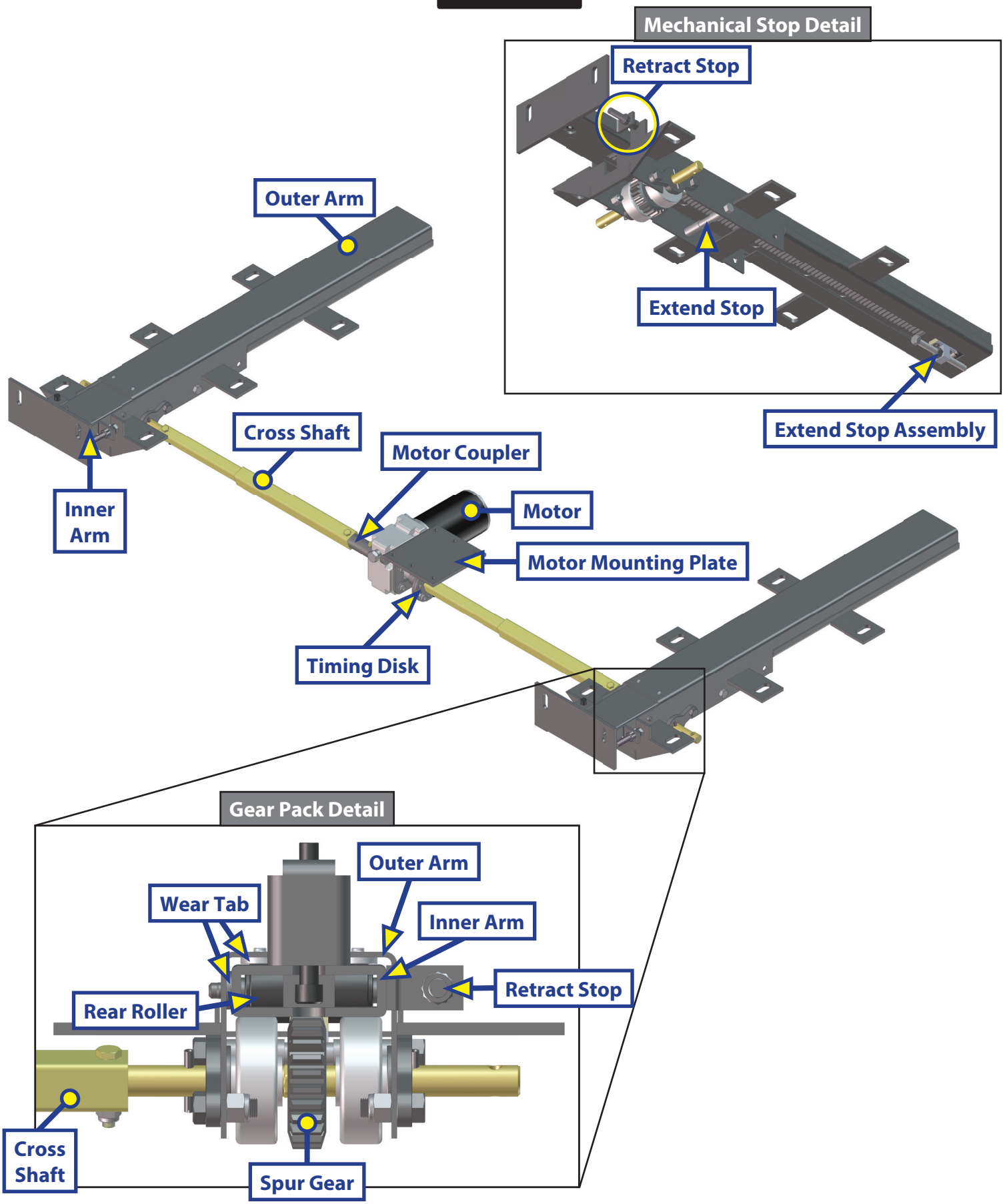
Since there are no field serviceable parts in the motor of the Power Unit, electrical troubleshooting and service is limited to replacing only those components as previously outlined. Thorough inspection of wiring and connections is the only other electrical service that can be performed.

Fig. 5

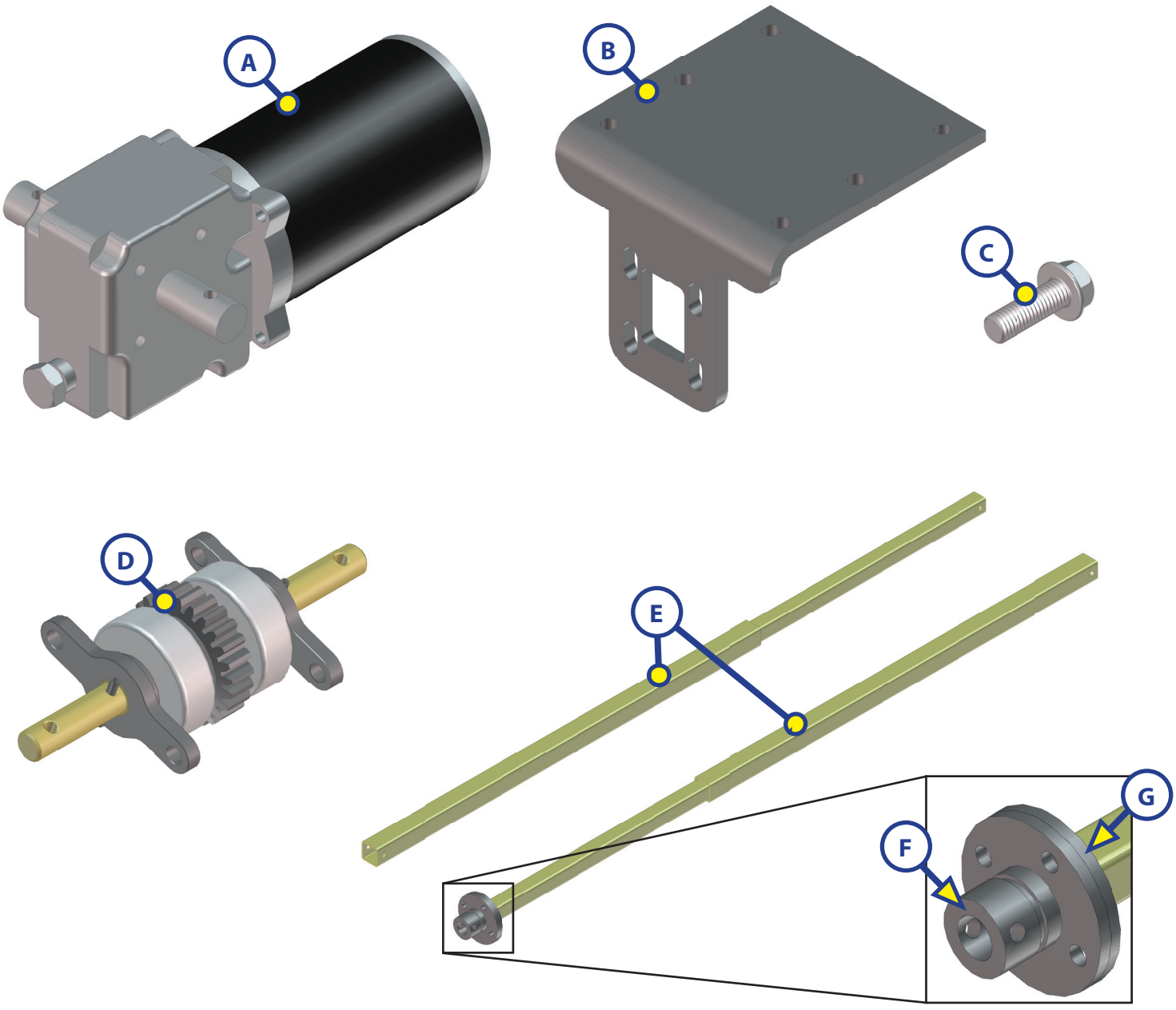


NOTE: 10 GAUGE WIRE MINIMUM

EMBEDDED RACK SLIDE-OUT ASSEMBLY



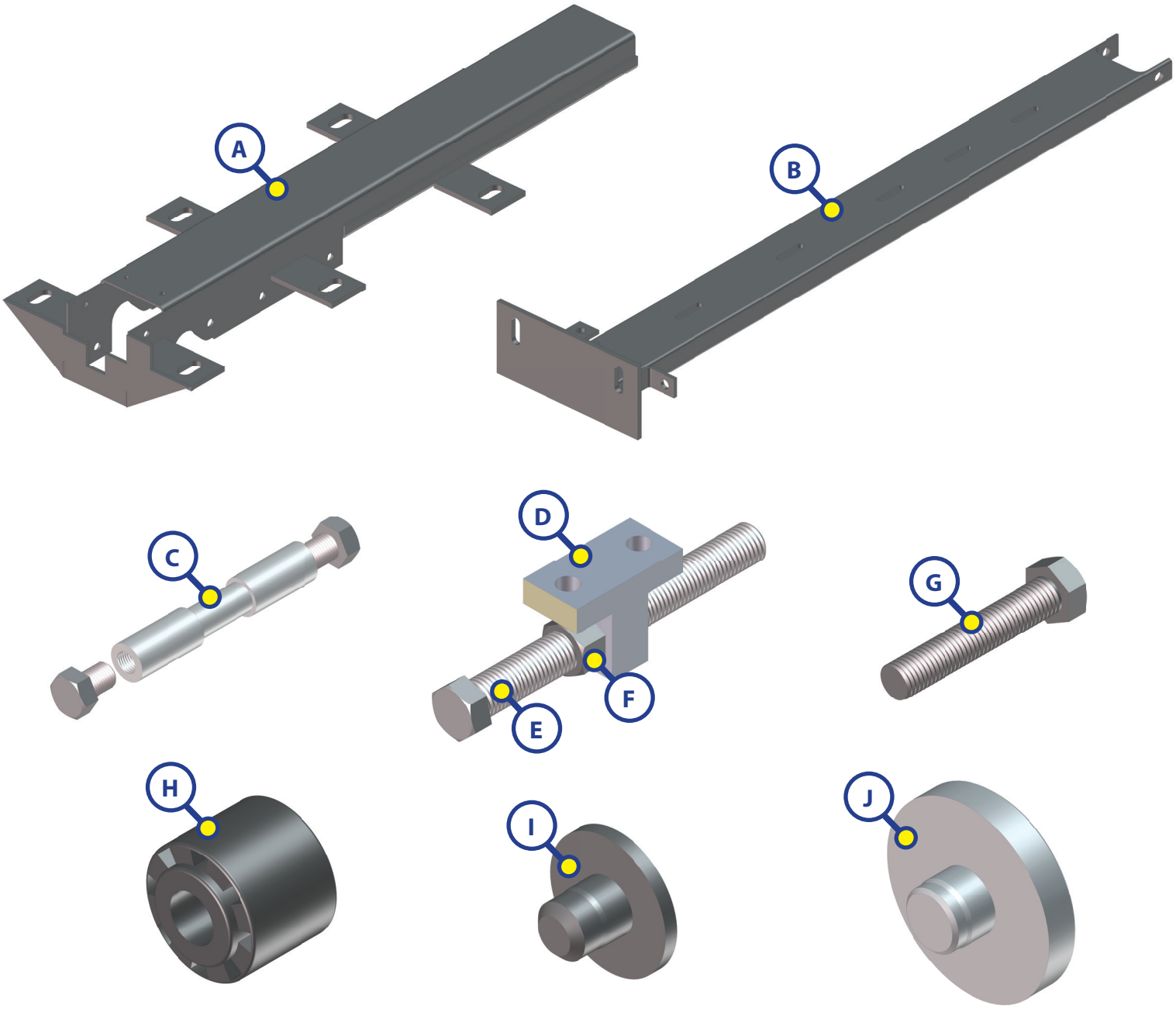
EMBEDDED RACK SLIDE-OUT DRIVE COMPONENTS



Callout	Part #	Description
A	173068	Venture Motor M-9600A
B	101258	Motor Mounting Plate
C	117916	¼" - 20 x ¾" Hex Flange Bolt (for Motor Mounting Plate)
D	140418	Gear Pack Assembly
E	166045	Cross Shaft Kit 35" / 32" (Includes F and G)
	166046	Cross Shaft Kit 40" / 38" (Includes F and G)
F	115512	Timing Adjustment Coupler
G	105481	Timing Adjustment Disk

EMBEDDED RACK SLIDE-OUT MECHANICAL COMPONENTS

SLIDE-OUTS



Callout	Part #	Description
A	157649	Outer Arm
B	157650	Inner Arm with Gear Rack
C	115634	Extend Stop
D	100154	Stop Block
E	118151	Stop Bolt (⅜" - 16 x 4")
F	119125	Stop Nut (⅜" - 16) (Also used with Front Stop Bolt)
G	118647	Front Stop Bolt (⅜" - 16 x 2")
H	104469	Rear Roller
I	103480	Wear Tab
J	100831	Wear Tab

LIPPERT COMPONENTS™

Please recycle all obsolete materials.

For all concerns or questions, please contact
Lippert Components, Inc.
Ph: (574) 537-8900 | Web: www.lci1.com | Email: warranty@lci1.com