



COACHSTEP®
OWNER'S MANUAL

L I P P E R T
C O M P O N E N T S®

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System and Safety Information

WARNING

With power switch "ON", door open, and steps extended, it is possible to drive off. Death, serious personal bodily injury, or damage to steps and/or vehicle may occur.

WARNING

Due to the fact that the step detects obstacles by sensing excessive current draw, it is imperative that the step be tested with a fully charged battery and test wires be at least 12 GA. Do not attempt to test the steps using a battery charger or bench type power supply. Even though they may supply a full 12V DC, a momentary drop in the supply may fool the module into thinking that the steps have encountered an obstacle. If using a battery to test the steps, care should be taken to connect jumpers to the battery first and then to the steps. Battery acid can cause injury and automotive type batteries under load can produce hydrogen gas. They may explode if shorted out or if a spark ignites the hydrogen gas when the battery is connected to a load. If proper precautions are not taken, death, serious personal bodily injury, or damage to steps and/or vehicle may occur.

CAUTION

Steps must always be operated with a fully charged battery. Because the steps can detect obstacles in the way of operation by sensing excessive amperage, a fully charged battery is imperative. Any drop in voltage will cause the steps to malfunction. Serious personal bodily injury may occur.

Operation

CAUTION

Look downwards toward the steps prior to exiting the coach. It is possible to lock the steps in the retracted position. Prior to exiting the coach, passengers must be sure steps are fully deployed.

Serious personal bodily injury may occur.

1. Turn Power Switch to "ON" position.
2. Open door.
3. Steps will extend and lock when in the fully extended position.
4. Amber entry lamp will illuminate automatically.
5. Close door.
6. Entry light will shut off and steps will retract.

Maintenance

How to Adjust Cams

It is not recommended that the tightness of the step be adjusted in the field. Some minor movement of the step is considered normal. Excessive movement could be an indication of a more serious problem and the bottom cover should be removed and a thorough visual inspection should be made before any attempt is made to repair the problem by adjusting the cams. The cams are located on the inside of each side plate. Should it be deemed desirable to adjust the cams, they can be adjusted by loosening the nut on the outside of the side plate, and rotating the cam and bolt so that they bear more heavily against the step arm. Care should be taken so that both cams are adjusted approximately the same amount. After adjustment, the steps should be operated several times to insure that they are still locking over center. This can be determined by watching the steps as they complete their deployment. If the steps are locking over center, they will deploy fully and then retract approximately $\frac{1}{8}$ " as they lock in place.

Lubrication

Steps are equipped with self-lubricating bushings on the drive assembly and all step joints. No lubrication is necessary. If in extreme conditions lubrication is deemed necessary a silicon based grease or spray will not harm the bushing material. If any difficulty is encountered either in the use, installation or service of the steps that is not covered in the service instructions, please call the following number for service or warranty information. The manufacturer takes no responsibility for unauthorized service or installation procedures. 1-574-537-8900.

Coachstep Gear Plate and Bolt Replacement

1. When replacing the gear plate or the gear plate bolt, the Coachstep® assembly must be removed from the coach.
2. Check the bolt location to determine the condition of the gear plate bolt.

NOTE: (Fig. 1) shows the gear plate bolt securely installed in the threaded column without a tack weld.

3. From the opposite side of the step, using an Allen wrench or hex head bit in a drill, remove the gear plate bolt.

NOTE: The bolt is installed with Loctite™ and may need a small amount of heat applied to the bolt to free it.

NOTE: If the gear plate bolt is installed with a tack weld, (Fig. 2), the tack weld will need to be ground off prior to removing the bolt.

4. Place a small line of Loctite™ across the gear plate bolt threads.
5. Line the gear plate up and install the gear plate bolt.
6. Place a tack weld on the end of the gear plate bolt and the threaded column (Fig. 2).
7. Reinstall Coachstep® assembly.

Fig. 1

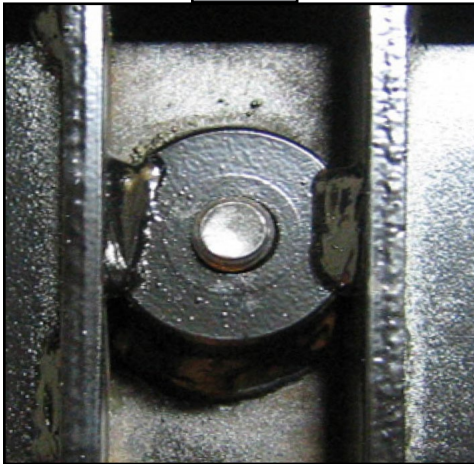


Fig. 2

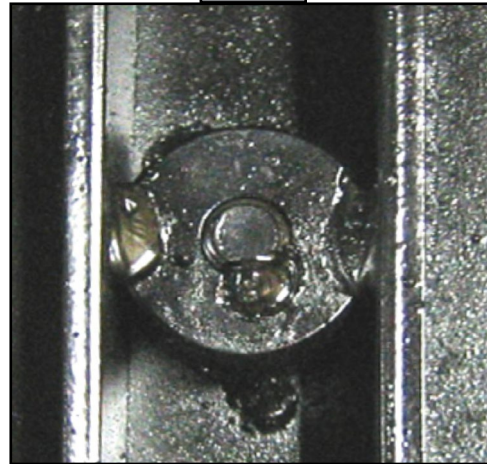
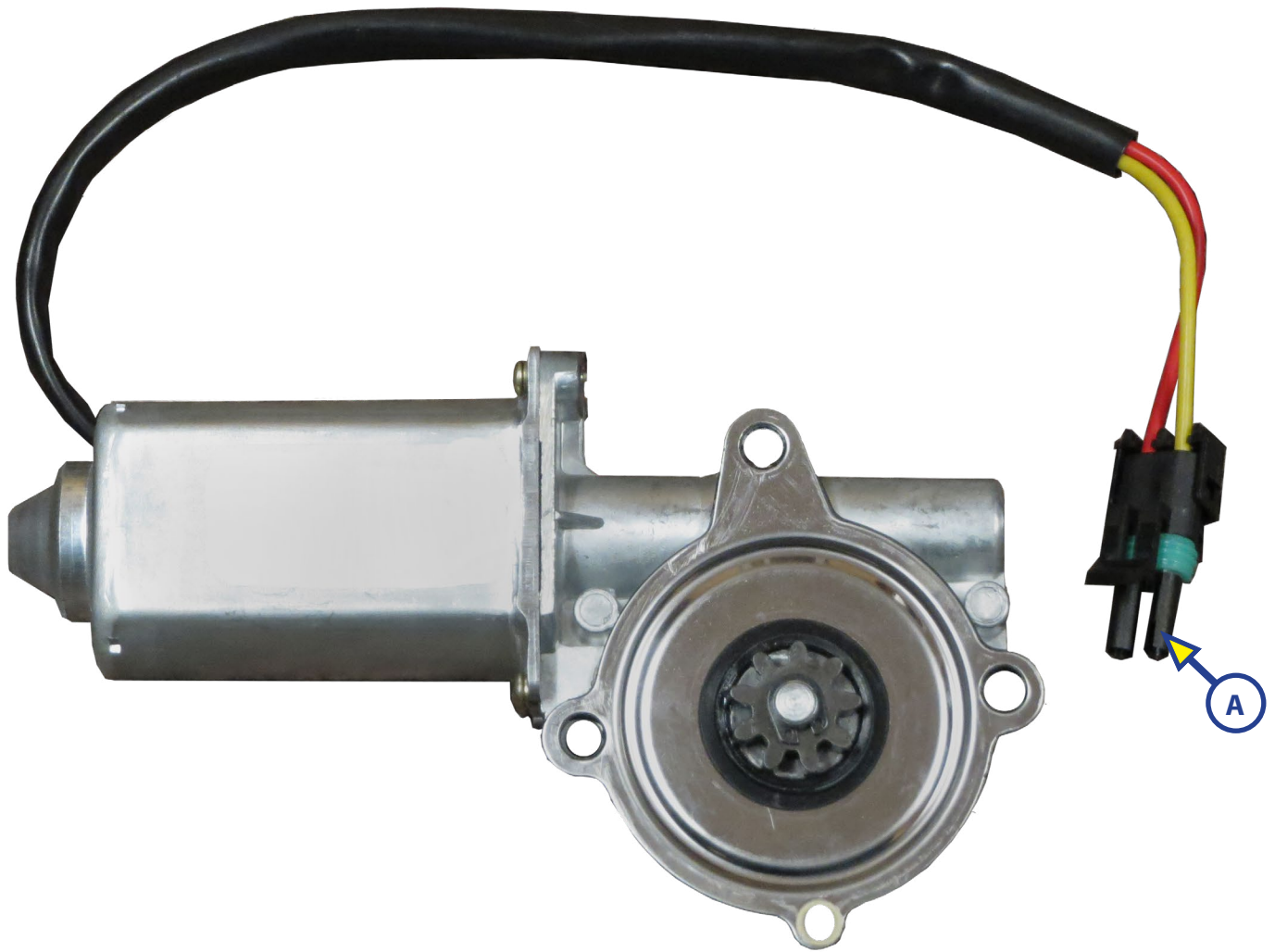


Fig. 3

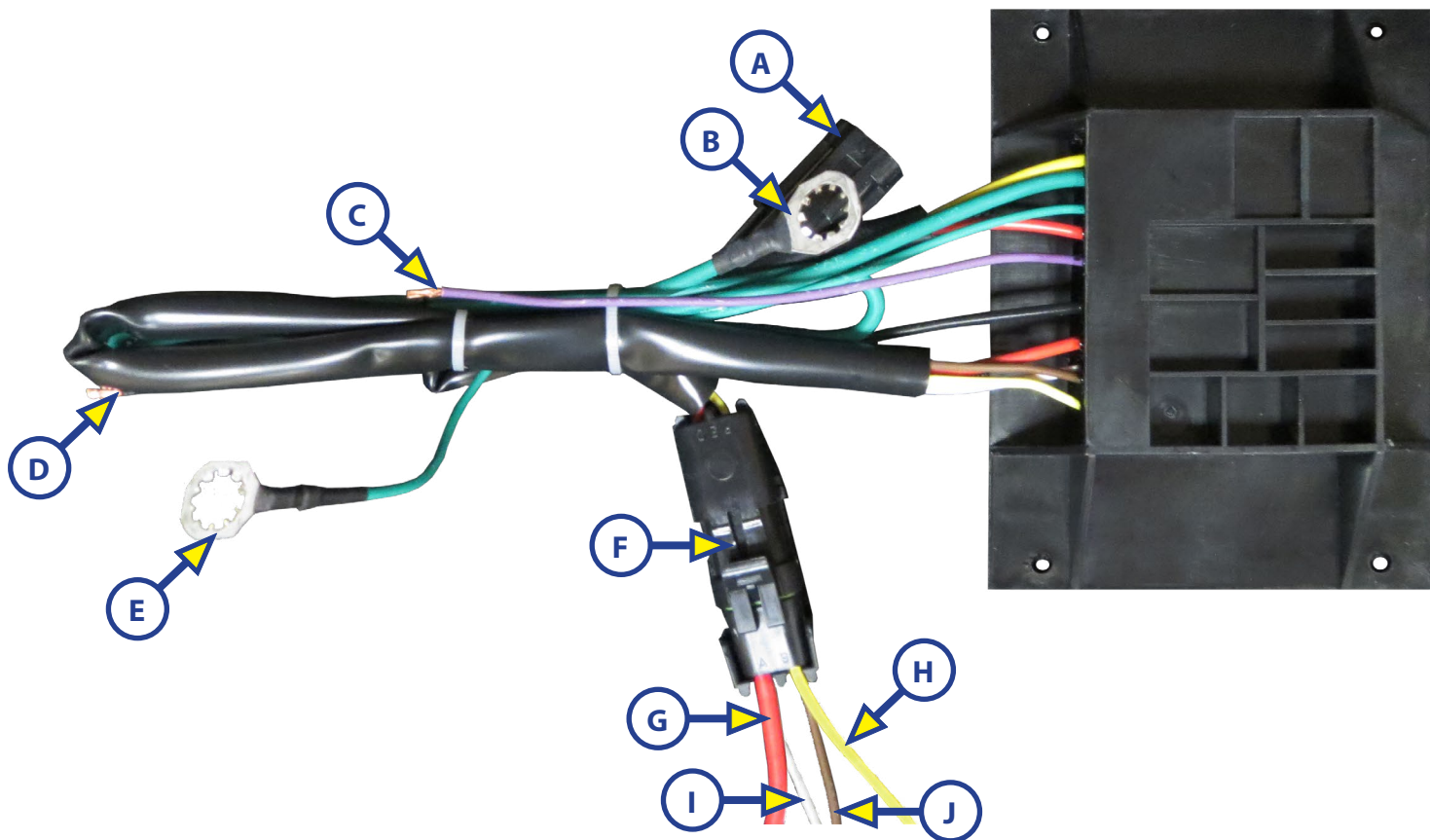


Coachstep Motor Replacement

1. The motor/gear assembly can be replaced by disconnecting the 2-pin connector (Fig. 3A) from the module to the motor.
2. Remove the "P" clamp holding the wire harness to the motor mount.
3. Remove the ball joint linkage from the gear.
4. Remove the self-tapping screw that holds the ground wire.
5. Remove the 3 bolts that hold the motor mount to the step base.
6. Care should be taken not to disturb the adjustment in the length of the ball joint linkage.
7. Install new motor using above steps in reverse order.

NOTE: No adjustment is required.

Fig. 4



Module Replacement

1. Remove the self-tapping screw holding the ground wires.
2. Disconnect the 4-pin connector (Fig. 4F) to the motor home wiring harness.
3. Disconnect the 2-pin connector (Fig. 4A) to the motor.
4. Remove the self tapping screws holding the module in place.
5. Install the new module in the reverse order.

Callout	Wire Color	Description
A	-	2 pin connection to motor
B	Green	Ground to chassis
C	Purple	Step Light Switch
D	Black	Step Light
E	Green	Ground to steps
F	-	4 pin connector to wire harness
G	Red	Connect to power for motor
H	Yellow	Connect to power source
I	White	Connect to power switch
J	Brown	Connect to door switch

NOTE: Yellow wire (Fig. 4H) must be connected to power source that is only "hot" when ignition is ON.

Basic Troubleshooting

Disconnect the plug between the chassis and the steps. Using a voltmeter, measure the voltage on the large red wire at the chassis connector with the step switch in the "ON" position. The meter should indicate more than 12VDC. Turn the step switch to the "OFF" position and the meter should not indicate voltage.

What Is Happening?	Why?	What Should Be Done?
Meter indicated no voltage with the switch "ON".	Break in the circuit.	Check the circuit and the circuit protectors.
If it indicates less than 12VDC with the switch "ON".	Low Battery.	Charge the battery.
If 12VDC are indicated on the red wire with the switch "OFF".	Faulty Switch.	Replace the switch.

With the voltmeter, set to measure resistance, measure the resistance between the green wire in the plug and the frame of the vehicle.

What Is Happening?	Why?	What Should Be Done?
There is more than one ohm of resistance.	Ground lug may be dirty or corroded.	Clean the ground eye (ground lug) or relocate the ground wire.

With a voltmeter, check for 12VDC on the yellow wire with the ignition switch in the "ON" position and no voltage with the switch in the "OFF" position.

What Is Happening?	Why?	What Should Be Done?
If there is no voltage with the switch in the "ON" position.	Break in the circuit.	Trace the circuit and repair.

Reconnect the steps to the chassis and proceed to test as follows. With step switch "ON" and the ignition key "OFF" open the entry door and the steps should extend and the light should come on. If the light comes on, but the steps do not deploy, remove the step assembly from the motor home. If the light comes on, but the steps do not deploy, remove the step assembly from the motor home.

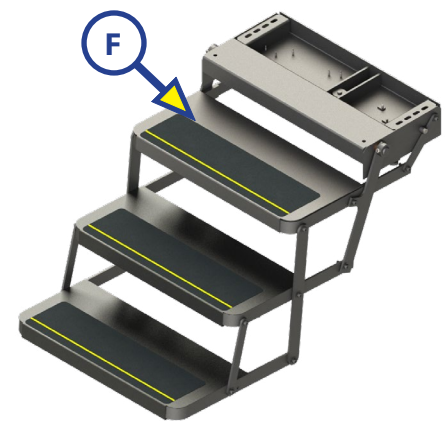
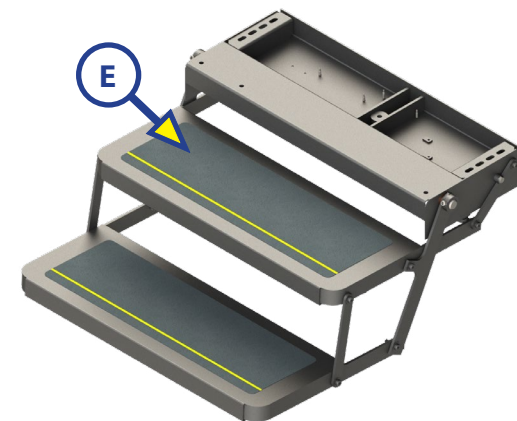
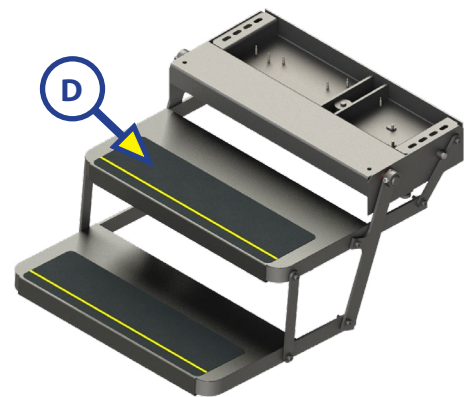
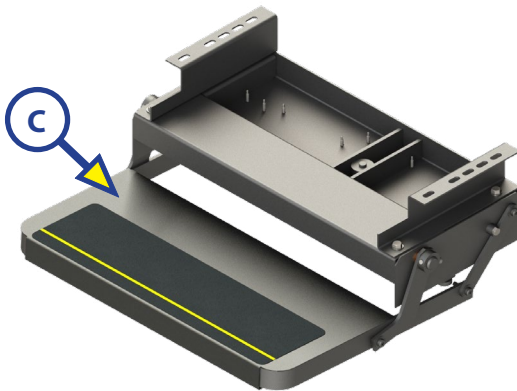
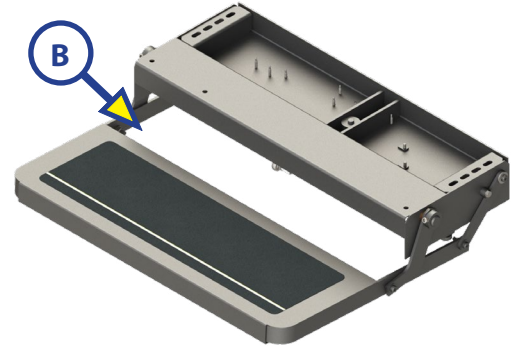
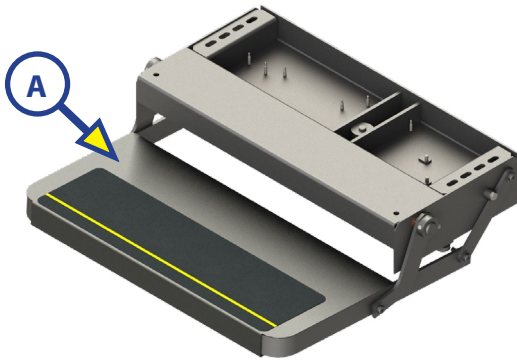
Remove the two bolts that hold the step arm collars to the drive shaft. This will allow you to operate the steps manually.

What Is Happening?	Why?	What Should Be Done?
Steps do not operate freely.	Damaged arms or joints.	Visually inspect for bent arms or tight joints. Repair or replace as needed.

If the step moves freely, unplug the module from the motor assembly at the two pin connector. Connect 12VDC from the battery to the yellow wire going to the motor and ground the red wire. The gear should rotate in the deployment direction until it goes over center and comes to rest against the stop.

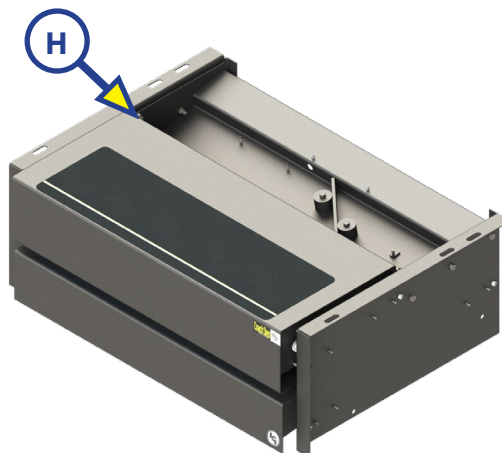
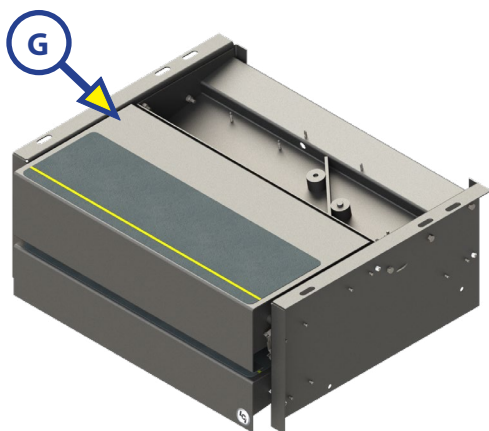
What Is Happening?	Why?	What Should Be Done?
The gear and motor assembly will not function normally.	Faulty gear and motor assembly.	Replace the gear and motor assembly.
The module assembly will not function normally.	Faulty module assembly.	Replace the module assembly.

SLIDE-OUTS



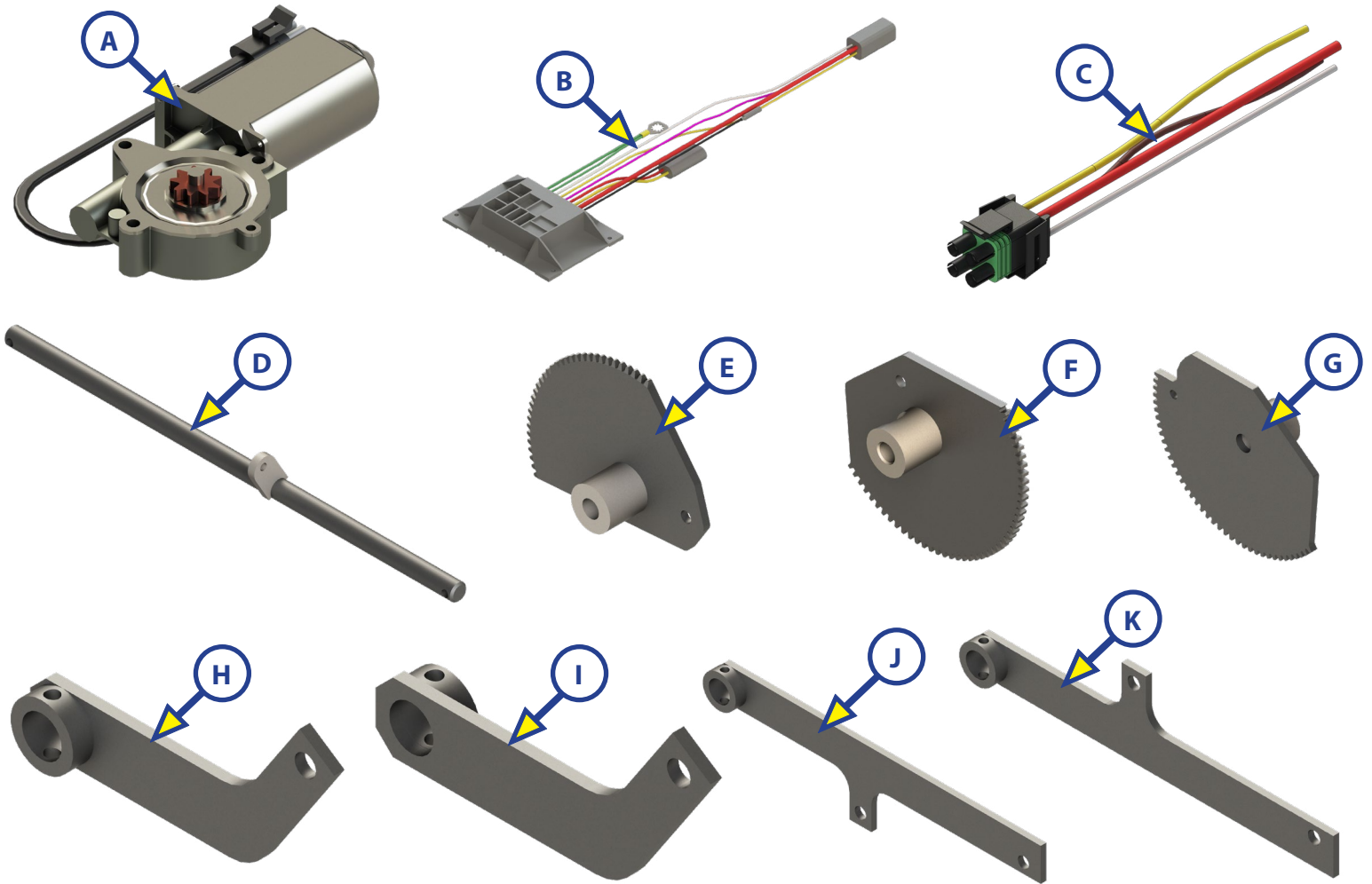
Callout	Part #	Description
A	163033	Single Retractable Step
B	181174	30" Single Step with Extended Throw
C	233509	Single Retractable Step (3" Spacers)
	233703	Single Retractable Step (4" Spacers)
D	171317	Double Retractable Step
	128980	
E	168367	29" Double Retractable Step
F	164194	Triple Retractable Step

SLIDE-OUTS



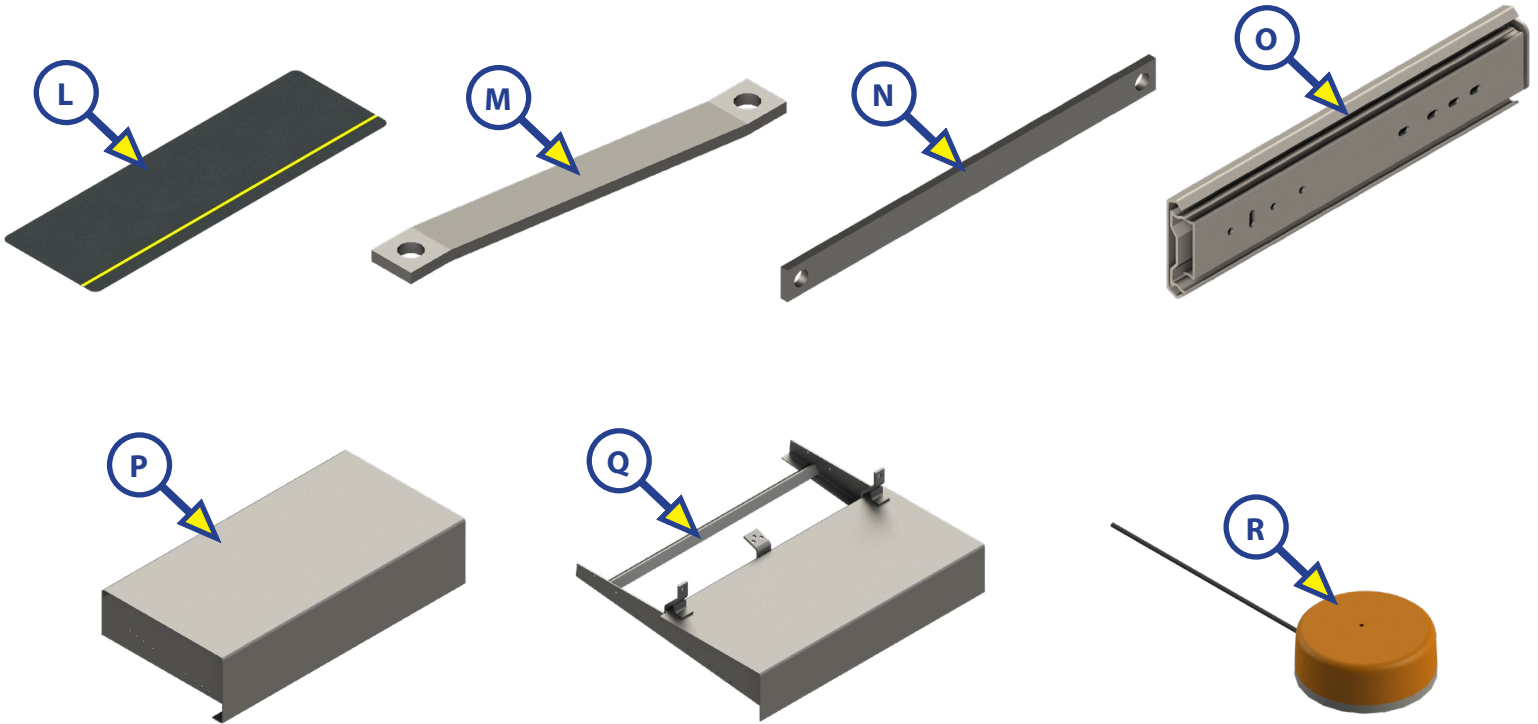
Callout	Part #	Description
G	165046	26" Slide Step
H	165049	30" Slide Step

SLIDE-OUTS



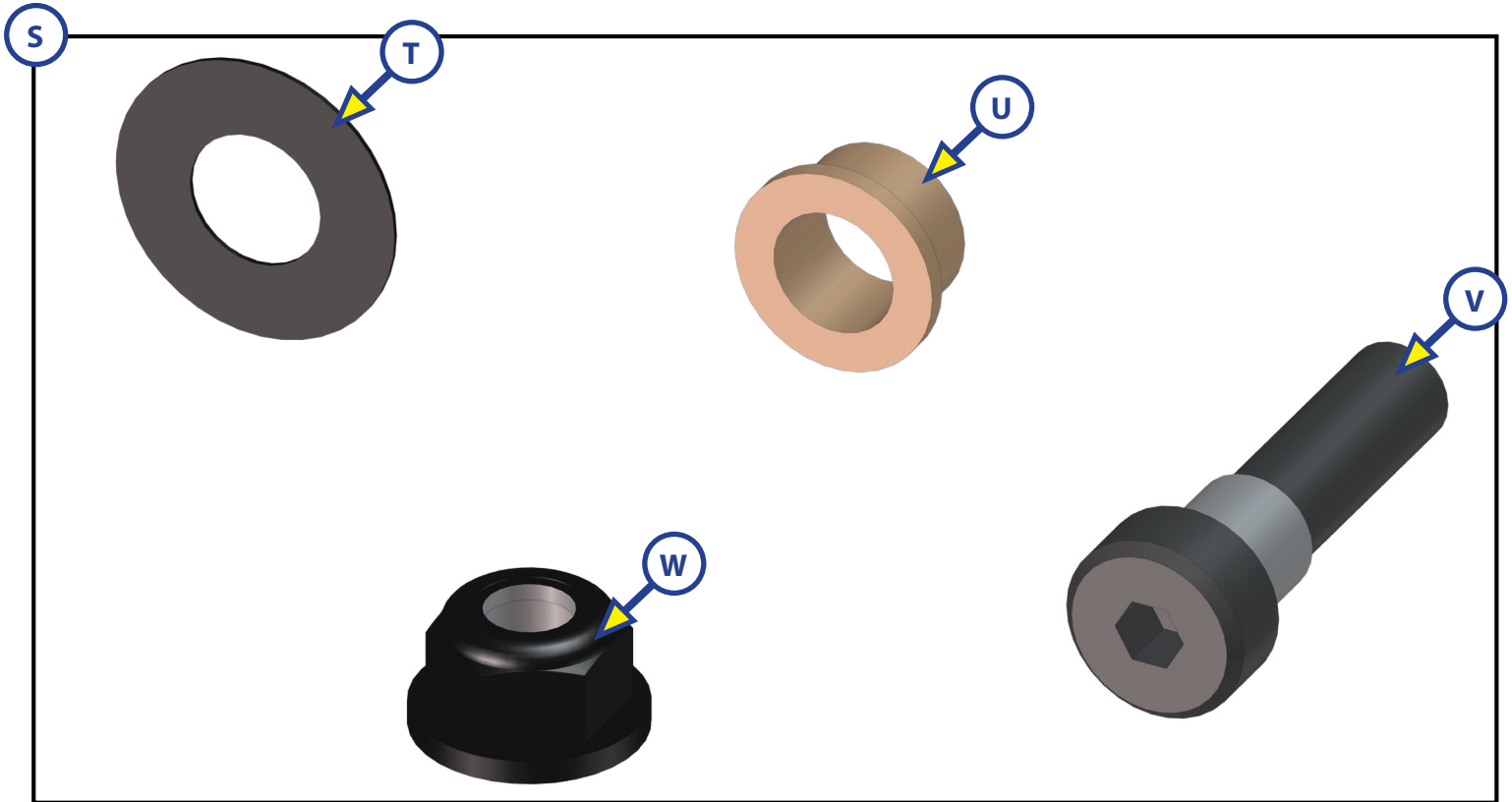
Callout	Part #	Description
A	301695	Coachstep® Motor
B	301702	Coachstep® Module
C	301692	Coachstep® Pigtail Wire Harness
D	162986	Drive Shaft 25.75"
	168389	Drive Shaft 30"
E	301696	Single/Double Gear Plate Assembly
F	164348	Triple Gear Plate Assembly NOTE: This version is no longer available. If you have this gear plate on your coachsteps and it is damaged, you will need to replace the entire step assembly.
G	165983	Slide Step Gear Plate Assembly
H	163001	Left Hand First Step Drive Arm
I	163002	Right Hand First Step Drive Arm
J	163500	Left Hand Double Step Drive Arm
K	163502	Right Hand Double Step Drive Arm

SLIDE-OUTS



Callout	Part #	Description
L	165221	Anti-Skid Tape (25" x 8")
M	165667	Top Step Link Plate
N	165959	Bottom Step Link Plate
O	166187	Step Slide Rail 12"
	166186	Step Slide Rail 22"
P	165910	Top Step 26"
	171812	Top Step 30"
Q	165880	Bottom Step 26"
	171811	Bottom Step 30"
R	165048	Step Light

SLIDE-OUTS



Callout	Part #	Description
S	216567	Wet Bolt Kit
T	165218	Washer, .875 O.D. x .410 I.D. x .015
U	116531	Bronze Bushing
V	128952	Bolt - $\frac{5}{16}$ - 18 x 1 $\frac{1}{4}$
W	181440	Nut - $\frac{5}{16}$ - 18



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