

# Repair Instruction C12PXP , Expander

Place 6 grams (.2 ounces) of grease in this area of Gearcase Assembly behind the Cam and Shaft Assembly.

Apply grease to both ends of Cam Shaft and lightly coat the entire exterior of Cam. Approx. 2 grams of grease

## LUBRICATION NOTES:

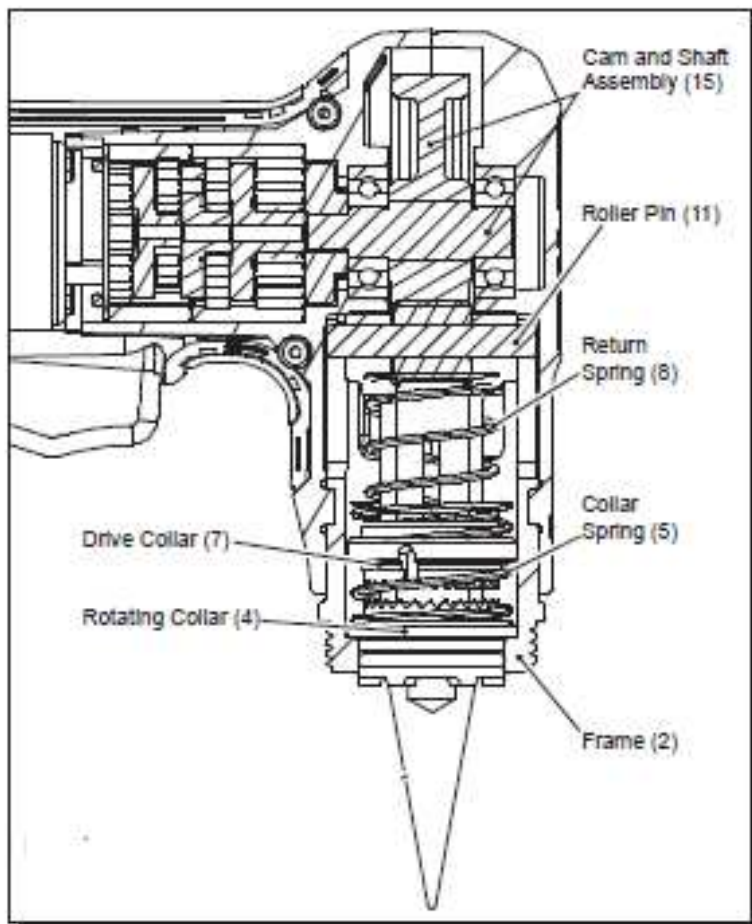
Use Type 'L' Grease, No. 49-08-4175  
Total amount approx. 12 grams (.4 ounces)

When servicing, remove 90-95% of the existing grease prior to installing Type 'L'. Original grease maybe similar in color but not compatible with 'L'.

Lightly coat Pin with grease.

Lightly coat Roller Pin with grease.

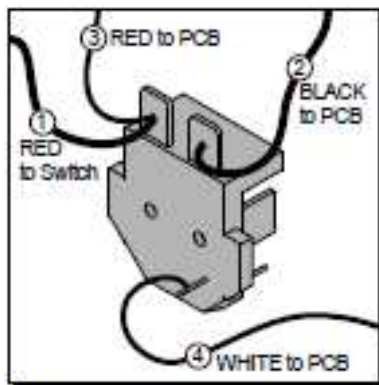
Apply a light coating of grease to the cylindrical portion (not the cone) of the Spindle. Lightly coat all surfaces of the Collar Spring and the Return Spring. Approx. 1 gram.



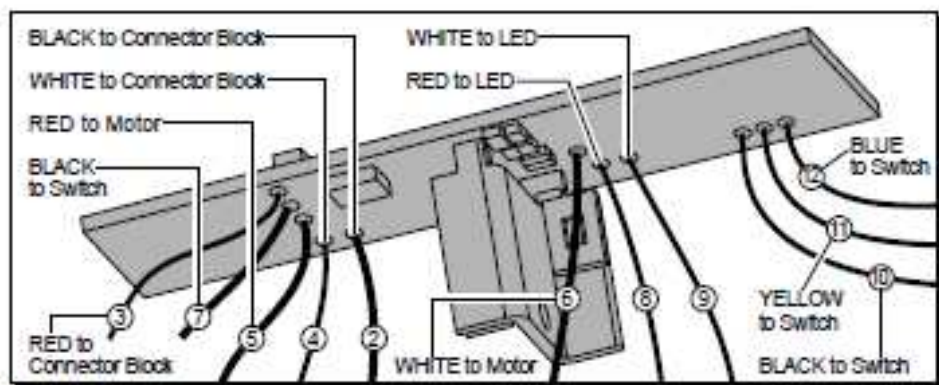
Place grease on the entire surface of the Rotating Collar and Drive Collar, being sure to apply heavier amounts on the teeth. Lightly coat the O-Ring before installing on the Rotating Collar. Approx. 1.8 grams.

Coat with grease both sides of the legs of the Frame. Coat the interior of the Frame prior to installing the Rotating Collar, Drive Collar, Springs and O-Ring.

Lightly grease the exterior surface of the Frame with the two triangle features.

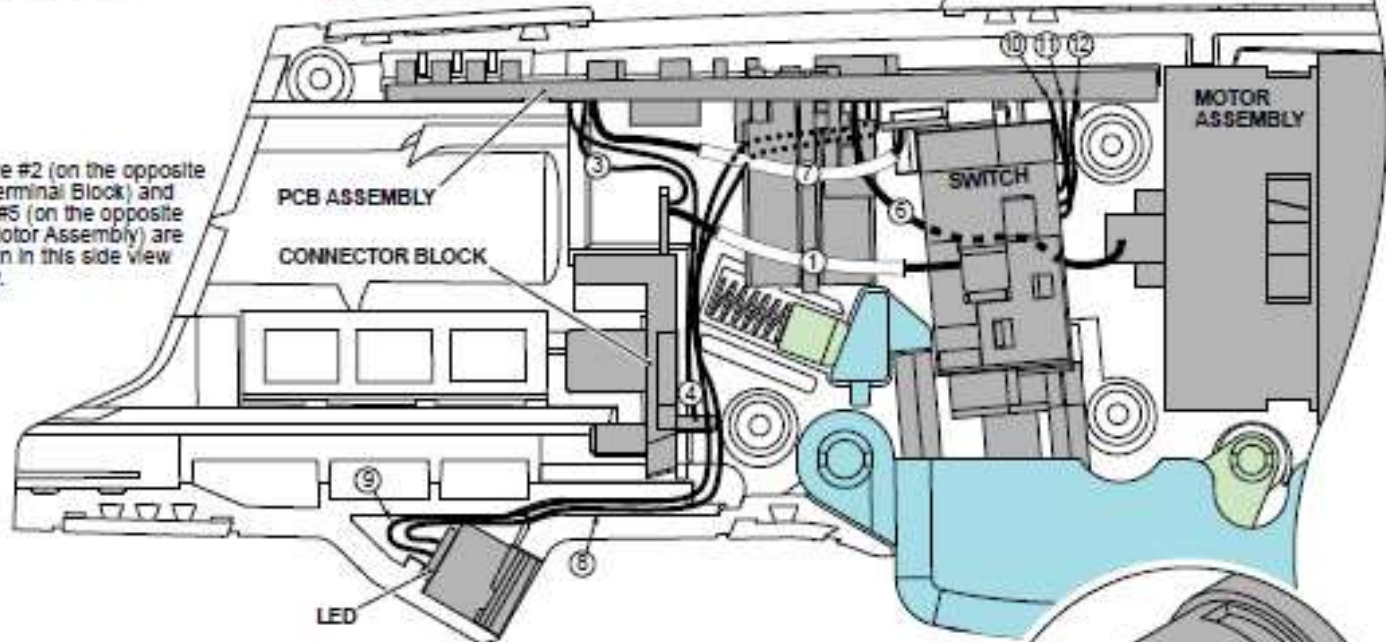


CONNECTOR BLOCK



PCB ASSEMBLY

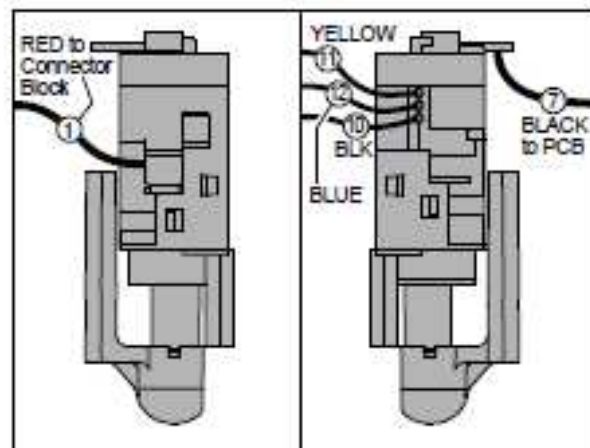
**NOTE:**  
Black wire #2 (on the opposite side of Terminal Block) and red wire #5 (on the opposite side of Motor Assembly) are not shown in this side view for clarity.



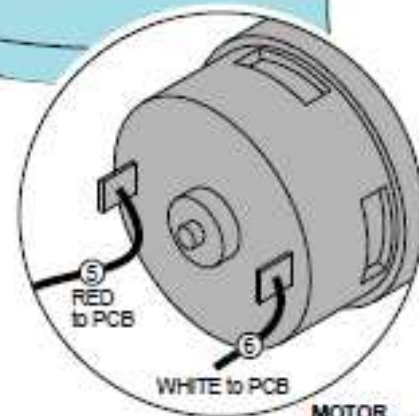
AS AN AID TO REASSEMBLY, TAKE NOTICE OF WIRE ROUTING AND POSITION IN WIRE GUIDES AND TRAPS WHILE DISMANTLING TOOL.

BE CAREFUL AND AVOID PINCHING WIRES BETWEEN HANDLE HALVES WHEN ASSEMBLING.

**NOTE:**  
Switch Assembly ( 201622013 ) consists of: switch, PCB assembly, connector block and LED assembly.



SWITCH

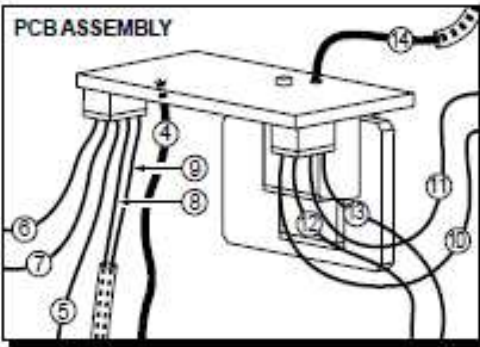


MOTOR ASSEMBLY

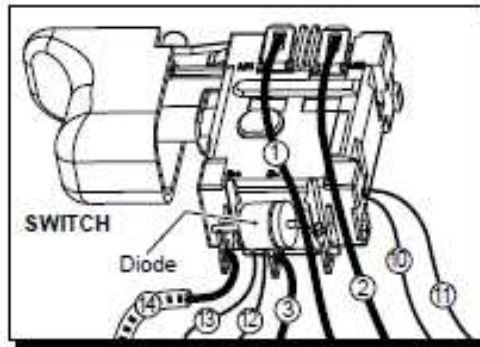
### WIRING SPECIFICATIONS

Wire No.	Wire Color	Terminals, Connectors and 1 or 2 End Wire Preparation
1	Red	Component of switch assembly. Soldered to switch and connector block as shown.
2	Black	Component of switch assembly. Soldered to connector block and PCB assembly as shown.
3	Black	Component of switch assembly. Soldered to connector block and PCB assembly as shown.
4	White	Component of switch assembly. Soldered to connector block and PCB assembly as shown.
5	Red	Component of switch assembly. Soldered to motor assembly and PCB assembly as shown.
6	White	Component of switch assembly. Soldered to motor assembly and PCB assembly as shown.
7	Black	Component of switch assembly. Soldered to switch and PCB assembly as shown.
8	Red	Component of switch assembly. Routed from LED and soldered to PCB assembly as shown.
9	White	Component of switch assembly. Routed from LED and soldered to PCB assembly as shown.
10	Black	Component of switch assembly. Route from switch and soldered to PCB assembly as shown.
11	Yellow	Component of switch assembly. Route from switch and soldered to PCB assembly as shown.
12	Blue	Component of switch assembly. Route from switch and soldered to PCB assembly as shown.



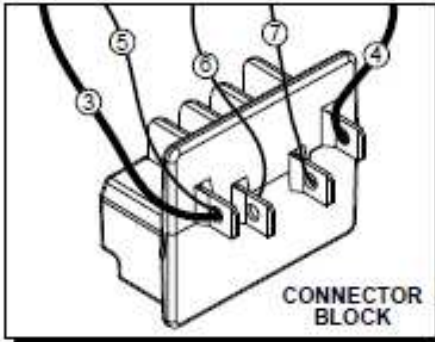


Blue wire #14 and LED wires #8 & #9 are captured within insulating sleeves

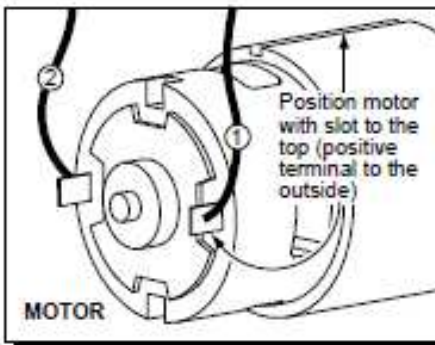


AS AN AID TO REASSEMBLY, TAKE NOTICE OF WIRE ROUTING AND POSITION IN WIRE GUIDES AND TRAPS WHILE DISMANTLING TOOL

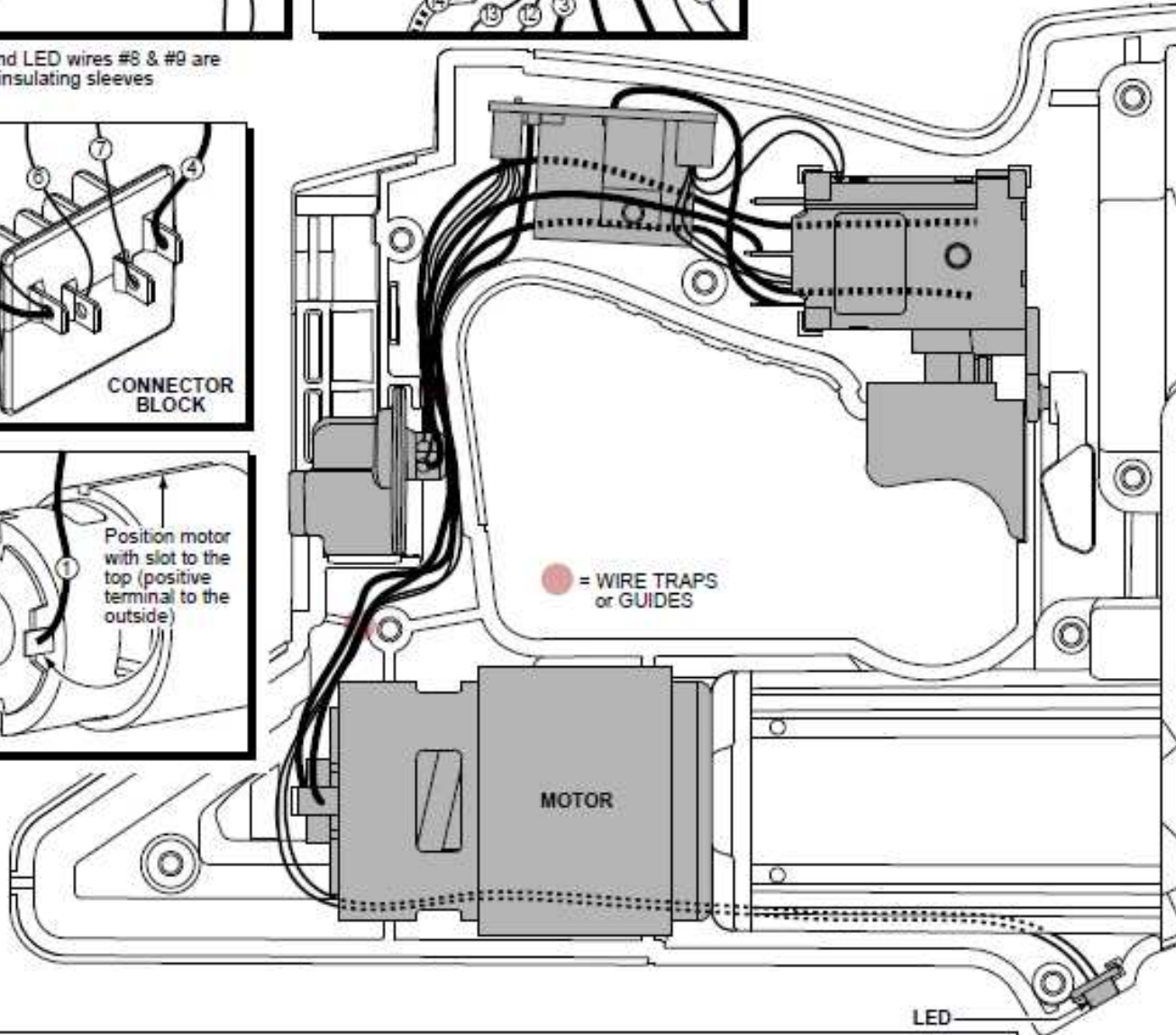
BE CAREFUL AND AVOID PINCHING WIRES BETWEEN HANDLE HALVES! WHEN ASSEMBLING.



CONNECTOR BLOCK



MOTOR



MOTOR

LED

### WIRING SPECIFICATIONS

Wire No.	Wire Color	Terminals, Connectors and 1 or 2 End Wire Preparation
1	Red	Connect to the positive terminal on motor and 'M1' on switch.
2	Black	Connect to the negative terminal on motor and 'M2' on switch.
3	Red	Component of the switch assembly. Attached to connector block and switch.
4	Black	Component of the switch assembly. Attached to connector block and PCB assembly.
5	Red	Part of the switch assy. One of a 5 wire harness that plugs into PCB assy. Other end soldered with #3 to connector block.
6	Blue	Part of the switch assy. One of a 5 wire harness that plugs into PCB assy. Other end soldered to connector block.
7	Black	Part of the switch assy. One of a 5 wire harness that plugs into PCB assy. Other end soldered to connector block.
8	Blue	Component of the switch assy. Wires #8 and #9 are part of a 5 wire harness that plugs into the PCB assy.
9	Yellow	#8 and #9 are sleeved together and connect to the LED at the other end.
10	Orange	Part of the switch assy. One of a 4 wire harness that plugs into PCB assy. Other end attached to the switch.
11	White	Part of the switch assy. One of a 4 wire harness that plugs into PCB assy. Other end attached to the switch.
12	Green	Part of the switch assy. One of a 4 wire harness that plugs into PCB assy. Other end attached to the switch.
13	Brown	Part of the switch assy. One of a 4 wire harness that plugs into PCB assy. Other end attached to the switch.
14	Blue	Component of the switch assembly. Attached to switch and PCB assembly.