

# special purpose switches



R

MECHANICAL NEUTRAL SAFETY SWITCHES	R1
NEUTRAL SAFETY & BACK-UP LAMP SWITCHES	R2
BACK-UP SWITCHES	R3
OVERDRIVE KICKDOWN SWITCHES	R4
EXTRA HEAVY-DUTY WEATHER-RESISTANT SWITCHES	R5
VOLTAGE REDUCERS	R6
FOOT-OPERATED TURN SWITCHES	R7

## special purpose switches

### R1 MECHANICAL NEUTRAL SAFETY SWITCHES

Heavy-duty switches for applications to 36V DC.

#### Normally Off Ball Switches

SPST. On with ball depressed, spring return to Off. Silver contacts. 35A at 12V DC, 20A at 24V DC, except where noted. Moisture-resistant insulators, corrosion-resistant metal housings.

9242 ★



Two screw terminals. Mounting stem 9/16" -18 UNF-2A thread, 5/16" (7.9mm) long.  
Replaces: International 863187-R91.

9242-01

Same as 9242, but with brass gasket/washer.

9242-07\* self-grounding



Same as 9242 except one terminal is grounded to the switch housing and terminal insulator is sealed against moisture and dirt.  
Replaces: John Deere AT71501.

9242-04 with Delphi (Packard) connector



22" (559mm) harness includes 2-pole Delphi (Packard) connector 2984855, with two female blade terminals 6288106. Mounting stem 9/16" -18 UNF-2A thread, 5/16" (7.9mm) long. Plasticized housing provides protection against moisture and dirt. Internal gasket seal.  
Replaces: GMC 702733.

92102



15A at 12V DC. Two-button head accepts standard female blade terminals, and will mate with Delphi (Packard) 2-pole connector 2962679, or equivalent. Mounting stem 9/16" -18 UNF-2A thread, 21/32" (16.7mm) long.

92102-03\*

Same as 92102, but with aluminum gasket/washer.

CONTINUED **R1**

92107-04



20A at 12V DC. Two-screw terminals. Mounting stem 3/4" -16 UNF-2A thread, 31/64" (12.3mm) long.

9162



35A at 12V DC. Two female bullet terminals. Mounting stem 3/4" -16 UNF-2A thread, 31/64" (12.3mm) long. Replaces: Chrysler 1527835, Clark 73631.

9162-03

Same as 9162, except with gasket on the mounting stem. Replaces: Massey 181140M94.

## Normally On Ball Switches

*SPST. Off with ball depressed. Spring return to On. Silver contacts. 5A at 12V DC, 3A at 24V DC, except where noted. Moisture-resistant insulators, corrosion-resistant metal housings.*

9224 ★



Two screw terminals. Mounting stem 3/4" -16 UNF-2A thread, 31/64" (12.3mm) long, with aluminum gasket/washer. Replaces: Clark 224620

9224-07



Two screw terminals. Mounting stem 9/16" -18 UNF-2A thread.

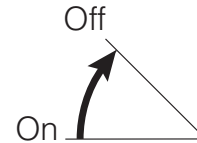
92105



Two female bullet terminals. Mounting stem 3/4" -16 UNF-2A thread, 31/64" (12.3mm) long, with aluminum gasket/washer.

## Lever-actuated Switch

8486-05



10A at 12V DC. SPST, Normally Off, contacts Open. Lever-actuated to On, spring return to Off. Two bullet terminals. Two 10-32 tapped mounting holes, 5/8" (15.9mm) on centers. 2 7/8" (73.0mm) long lever.

Replaces: John Deere AM38713

## Vacuum Neutral Safety Switches

### Normally On, SPST

*Contacts open at rising vacuum, contacts close at falling vacuum. Mounting stem: 1/8" -27 dryseal thread. Operating range: 9 - 12 inches of mercury, break (30.5 - 40.6 kPa).*

8641 Self-grounding



Replaces AMC 3157693, 3202448, International 196198-R91.

## R2 NEUTRAL SAFETY & BACK-UP LAMP SWITCHES

SPST, normally Off. On with plunger depressed, spring return to Off. For use with automatic transmissions.

### 91105 Back-up Lamp Switch



10A at 12V DC. Plasticized housing protects against moisture and dirt. Two 18AWG wire leads, 7" long. Button-head actuator, 3/8" (9.5mm) long. 7/16" -20 (7.9mm) diameter mounting stem with two flats for mounting in double-D holes. Replaces: AMC 3171244.

### 83377 Protective Boot



For Neutral Safety and Back-up Lamp Switches.

Molded of durable PVC to resist moisture and dirt. Internal ring forms a seal with the groove around the switch housing.

Fits Cole Hersee switches with a 1 1/8" (28.6mm) hex housing: 9134, 9162, 9224, 9242, 9242-07, 92102, 92103, 92105, 92107-04.

### 92001\* Neutral Safety and Back-up Lamp Switch



Replaces: Delco D2200, GMC 1993556, 613, 618, 619, 658, 659, 669, 1998677, Motorcraft SW-496.

# special purpose switches

## R3 BACK-UP SWITCHES

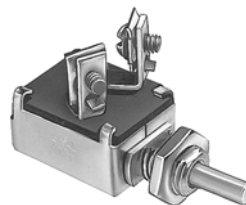
SPST, normally Off. On with plunger depressed, spring return to Off.

### 9134



35A at 12V DC. Silver contacts. Transmission-mounted, extra heavy-duty. Compact design for mounting in areas where space is limited. Two female bullet terminals. 9/16" -18 thread mounting stem, 5/16" (7.9mm) long. Replaces: Chrysler 1343998, 2198779, Motorcraft SW-410

### 9025\*



10A at 12V DC. Two screw terminals. 7/16" (7.9mm) diameter mounting stem, 7/16" -20 (7.9mm) long, with two flats for mounting in double-D hole. 1/2" (12.7mm) long plunger. Replaces: Superior School Bus B67176.

### 91113 ★



20A at 12V DC. Silver contacts. Transmission-mounted, extra heavy-duty. Compact design for mounting in areas where space is limited. Two screw terminals. 9/16" -18 thread mounting stem, 5/16" (7.9mm) long. Replaces: Autocar 8E-01360, Brockway 128537, Diamond Reo 560-65, Kenworth AT-91-69 Mack 1MR-1320, Oshkosh 13320-F1, White 1743529.

### 75125 Back-up Alarm Switch

SPST. Normally Off. Spring lever actuated to On, spring return to Off. Two screw terminals. Two 13/64" (5.2mm) diameter mounting holes, 1/2" (12.7mm) on centers. 5" (127mm) lever.

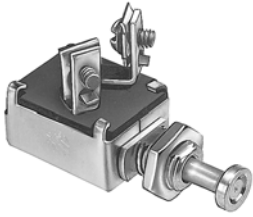


CONTINUED R4

★ Rapid ship item. BP Available in retail clamshell pack. ★ Minimum order quantity may apply.

## R3 BACK-UP SWITCHES

9052

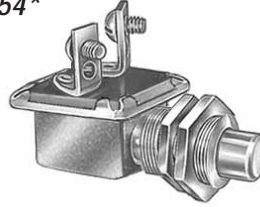


10A at 12V DC. Two screw terminals. 7/16" (7.9mm) diameter mounting stem, 7/16" -20 (7.9mm) long, with two flats for mounting in double-D hole. 1/2" (12.7mm) long button-head plunger. *Replaces: Ford B9AF, COAF, 51-A15520A, Jeep 710412, 721028, Motorcraft SW-410.*

9176\*

Same as 9052, except with blade terminals.  
*Replaces: AMC 3147682.*

9054\*



20A at 12V DC. O-ring seal in stem, and gasket under the terminal insulator. Two screw terminals. 5/8 -32 thread mounting stem, 5/8" (15.9mm) long.  
*Replaces: Ward School Bus 009 31 014-00.*

## special purpose switches

## R4 OVERDRIVE KICKDOWN SWITCHES

## SPST, normally On

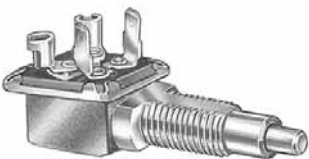
*Off with plunger depressed, spring return to On.*

9096-02



15A at 12V DC. With special diaphragm/mounting bracket, sealed to protect the mounting shaft. Plasticized body protects against moisture and dirt. Two 16AWG wire leads, 3" (76.2mm) long with female bullet terminals. Insulator sleeves protect the connections. 13/64" (5.2mm) diameter mounting holes, 1 1/2" (38.1mm) on centers. 1/4" (6.4mm) long plunger.

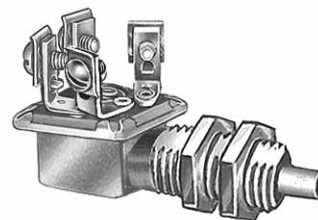
9208\*



10A at 12V DC. Gasket-sealed terminal insulator. Two blade and two female terminals. 7/16" (7.9mm) diameter mounting stem, 5/8" (15.9mm) long with two flats on the stem for mounting in double-D hole.  
*Replaces: AMC 3146726.*

## SPST, On - Momentary On

9106-02\*



10A at 12V DC per circuit. Two circuits: No.1 normally On, No.2 On with plunger depressed, spring return to No.1. Four screw terminals. 7/16" -20 (7.9mm) diameter mounting stem, 7/8" (22.2mm) long with flat on stem for mounting in D-shaped hole. Gasket-sealed terminal insulator. Plunger: 7/32" (5.6mm) long.  
*Replaces: Chrysler 1479527, Jeep 717589.*



## pilot lights

See Section N2.

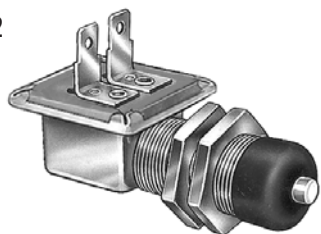
**R5 EXTRA HEAVY-DUTY WEATHER-RESISTANT SWITCHES**

Universal application. Suitable for Back-up Lamp, Neutral Safety, Overdrive Switches.

### SPST Normally On

Off with plunger depressed, spring return to On.

91042



10A at 12V DC. Rubber cap/seal snaps into grooves in the plunger and mounting stem to protect the operating shaft from moisture and dirt. Two blade terminals mate with two-pole Delphi (Packard) connector 2977647 or equivalent. 5/8" -32 (15.9mm) diameter mounting stem, 11/16" (17.5mm) long. Gasket-sealed terminal insulator. 3/8" (9.5mm) long plunger, protrudes through the cap.

**91042-05\***

Same as 91042, except with two screw terminals.  
Replaces: Fiat Allis 7307175501.

90043 ★

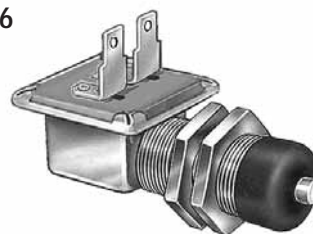


20A at 12V DC, 10A at 24V DC. Silver contacts. Rubber cap snaps into special groove and is secured to the mounting stem by a deep-threaded nut for a positive seal. Two blade terminals mate with two-pole Delphi (Packard) connector 2977647 or equivalent. 5/8" -32 thread mounting stem, .625" (15.9mm) long. Gasket-sealed case. Steel plunger protrudes through the cap.

### SPST Normally Off

On with plunger depressed, spring return to Off.

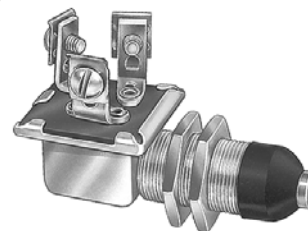
92116



20A at 12V DC, 10A at 24V DC. Silver contacts. Rubber cap/seal snaps into grooves in the plunger and mounting stem to protect the operating shaft from moisture and dirt. Two blade terminals mate with two-pole Delphi (Packard) connector 2977647 or equivalent. 5/8" -32 (15.9mm) diameter mounting stem, 11/16" (17.5mm) long. Gasket-sealed terminal insulator. 3/8" (9.5mm) long plunger, protrudes through the cap.

### SPDT On - Momentary On

91127



10A at 12V DC per circuit. Two circuits: No.1 normally On, No.2 On with plunger depressed, spring return to No.1. Three screw terminals. Rubber cap/seal snaps into grooves in the plunger and mounting stem to protect the operating shaft from moisture and dirt. Gasket-sealed terminal insulator. 5/8" -32 (15.9mm) diameter mounting stem.

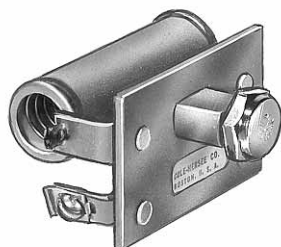
# special purpose switches

**R6 VOLTAGE REDUCERS**

Allow the use of 6V accessories in 12V electrical systems. The resistor coil is embedded into the ceramic insulator for effective heat dissipation. Voltage reducers can be wired singly in series or in parallel. For use with low amperage load accessories. Two screw terminals with lockwashers. 7/16" -28 thread mounting stem. Size: 2" x 2 9/16" x 1 1/2."

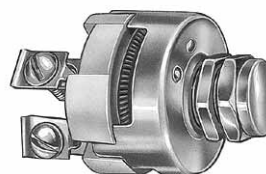
### 68068 for 6A maximum load

1.0 Ohm resistance, 35W.



### 68003 for 4A maximum load

1.5 Ohm resistance, 25W.



FOOT OPERATED **R8**

★ Rapid ship item. BP Available in retail clamshell pack. ★ Minimum order quantity may apply.

## R7 FOOT-OPERATED TURN SWITCHES

Through-floorboard mounting. Depress to On, spring return to Off. Two switches are needed for left and right turn signals. Sealed switches are plastic coated, providing protection against moisture dust and roadsplash. 7/8" (9.5mm) diameter stem. Three 1/4" -20 tapped mounting holes, 3/4" (19.0mm) and 1 3/4" (44.4mm) on centers. 12A at 12V DC.

7792-01 with screw terminals



7792 sealed, with screw terminals



7785 sealed, with wire leads



## relays

40A at 12V DC and 70A at 12V DC, Form A, Form C and Form 2A  
See Section H5



## types of thread

Information on most threads can be found in the ANSI standards, the SAE Handbook, and the National Institute of Standards and Technology Handbook H-28.

**UNC** is the most commonly used thread on general-purpose fasteners. UNC threads are deeper than UNF threads and are easier to assemble without cross threading. Manufacturing tolerances can be larger than for finer threads, allowing for higher plating tolerances. Because of their looser fit, UNC threads are usually easier to remove when corroded.

**UNF** thread has a larger minor diameter than UNC thread, which gives UNF fasteners slightly higher load-carrying and better torque-locking capabilities than UNC fasteners of the same material and OD. UNF threads have a smaller lead angle that allows for finer tension adjustment. They also have more stringent manufacturing tolerances than UNC threads.

**The most common thread systems in the US are:**

- UNC – Unified National Coarse
- UNF – Unified National Fine
- UNEF – Unified National Extra Fine
- NC – American National Coarse
- NF – American National Fine
- NEF – American National Extra Fine