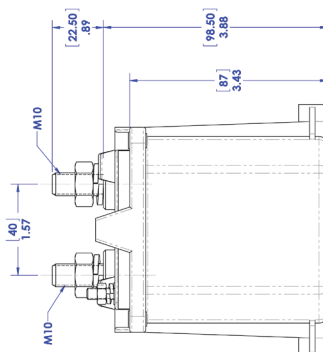
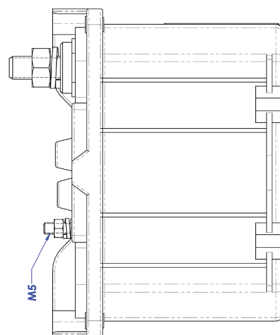




***Electro WizardTM
Battery Disconnect Switch***



GROUNDING SOLENOID (power supply coil negative)



FR1051 -
ASM, SWITCH 12V GROUNDED SOLENOID
This drawing is for reference only and is
the property of Flaming River Industries

* = KEY CHARACTERISTIC IDENTIFIER

THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN IS THE PROPERTY OF FLAMING RIVER INDUSTRIES AND IS ISSUED IN CONFIDENCE FOR THE PARTICIPANTS ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEMS WITHOUT PERMISSION IN WRITING FROM FLAMING RIVER INDUSTRIES. NO PART OF THIS DOCUMENT IS TO BE LOANED, REPRODUCED, COPIED, EITHER WHOLLY OR IN PART, OR OTHERWISE DISCLOSED TO OTHERS. DELIVERY OF THIS DOCUMENT BY FLAMING RIVER INDUSTRIES CONSTITUTES NO WARRANTY, REPRESENTATION NOR IN ANY MANNER

RIVER INDUSTRIES

NO SHARP EDGES OR BURRS ALLOWED

CLEARANCES:

DECIMALS: $x \pm 1$
 $xx \pm .01$

REACTIONS: 11/64
 3000=2.005

UNLESS OTHERWISE SPECIFIED

DO NOT SCALE DRAWING

99/ASME-Y14.5M-1994

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES

FR 1051 Technical Specifications

Positive disconnection, 12V

GROUNDING SOLENOID (power supply coil negative)

CHARACTERISTICS	FR1051
Nominal tension	Max 12V
Max. continuous current on main contacts	250 A (23°C / 73.4°F)
Max. short time current on main contacts	2500 A x 3 sec.
Recommended wire section	>75mm² / 0.116 sq in
Protection degree	IP 65
Tightening torque M10 nuts	20 Nm / 14.75ft lb
Tightening torque M5 nuts	1.6 Nm / 1.18 ft lb
Operating temperature range	-40°C/+85°C -40°F/+185°F
Contacts	Silver plated copper
Contact terminals	M10 tin-plated brass
Nuts for contacts	Brass
Peak current coil rated input	4.4 A
Max. retaining coil	3.2 A
Holding coil rated input	0.4 A

FITTING INSTRUCTIONS:	ELECTRICAL DIAGRAM
· The battery isolator switch must be placed as close as possible to the batteries. To avoid corrosion to wires and terminals, mount in a protected location. · It can be fixed to the frame according to the fitting diagram shown in the drawing, using M 8 TCEI (cylindrical head – encased hexagon) screws UNI 5931: 1984, and plain washers 8,4x1.7 UNI 6592:1969. · The inversion of the power supply to the coil causes serious damage to the internal diode.	

FR1051

Positive disconnection, 12V

GROUNDING SOLENOID (power supply coil negative)

The Flaming River FR1051 Disconnect Switch is designed to disconnect a vehicle electrical system using a toggle switch(Not Included). The disconnect switch should be located as close as possible to the battery. The toggle switch can be located in any convenient location for ease of operator use.

1. Positive battery cable is connected to terminal 30 (POS.BATT.)
2. Vehicle load is connected to terminal 30A (POS.TEL.)
3. From terminal 85 (NEG.BOB.), connect a wire to one side of the toggle switch. (Any style of "maintained" switch is acceptable, 10 amp or greater).
4. Connect the other side of the toggle switch to chassis ground.

When the operator closes the toggle switch, the solenoid in the disconnect switch is activated. The switch will remain closed (on) as long as terminal 85 is grounded.

- Always use proper wiring techniques.
- Wire size should be determined using industry standards based upon load requirements and length of cable needed.
- Activation solenoid has a max draw of 4.4 amps, 0.4 amps continuous.
- Main terminals are rated for 250 amps continuous, 2500 amps peak.
- We always recommend the use of Battery Terminal Covers FR1003TM.

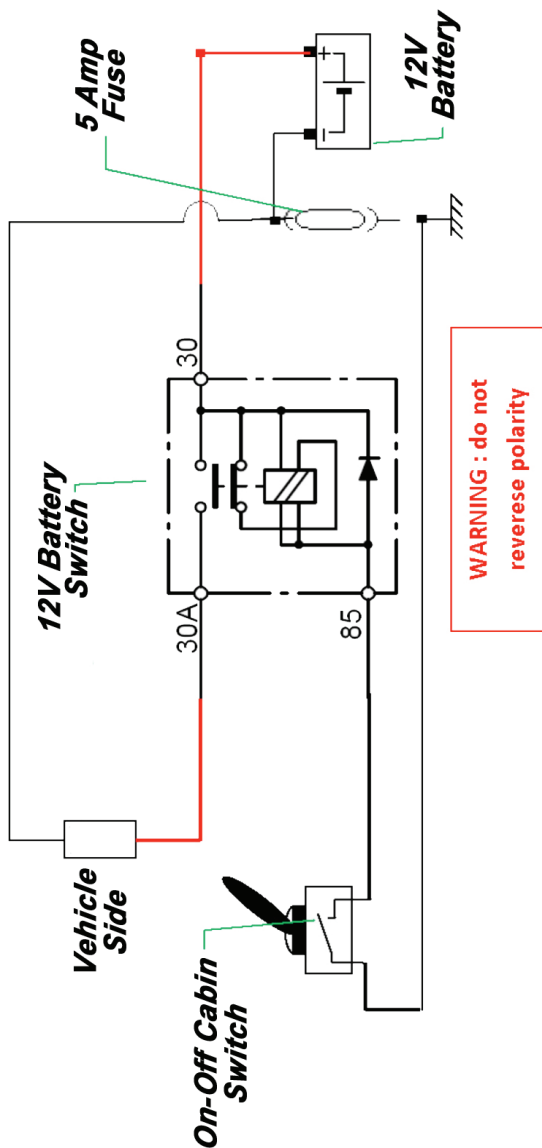
FR1051 Wiring Diagram

Positive disconnection, 12V

GROUNDED SOLENOID (power supply coil negative)

SUGGESTED WIRING:

- Battery plus (+) disconnect by ON-OFF cabin switch.

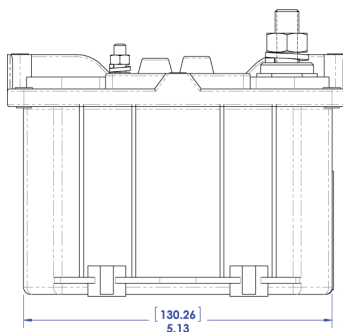
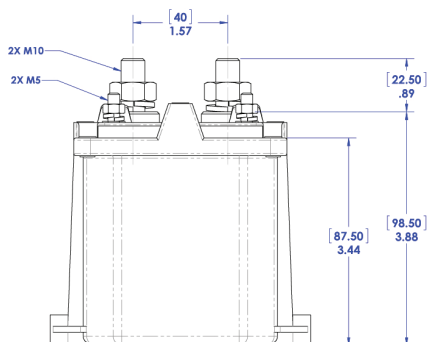
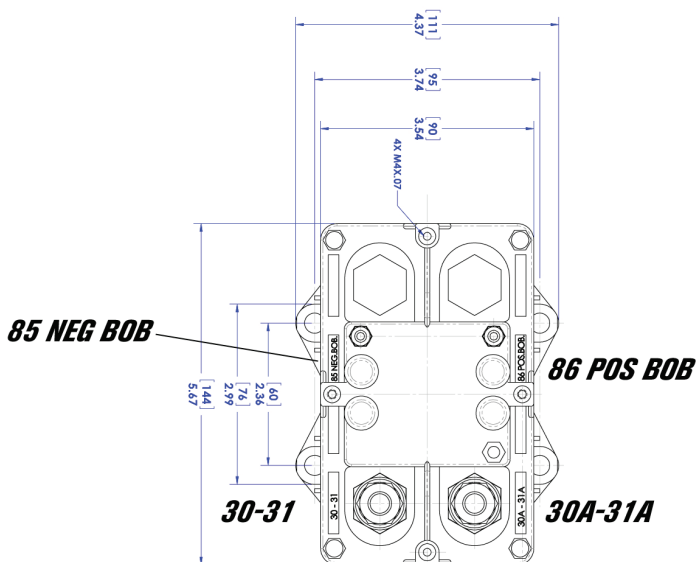


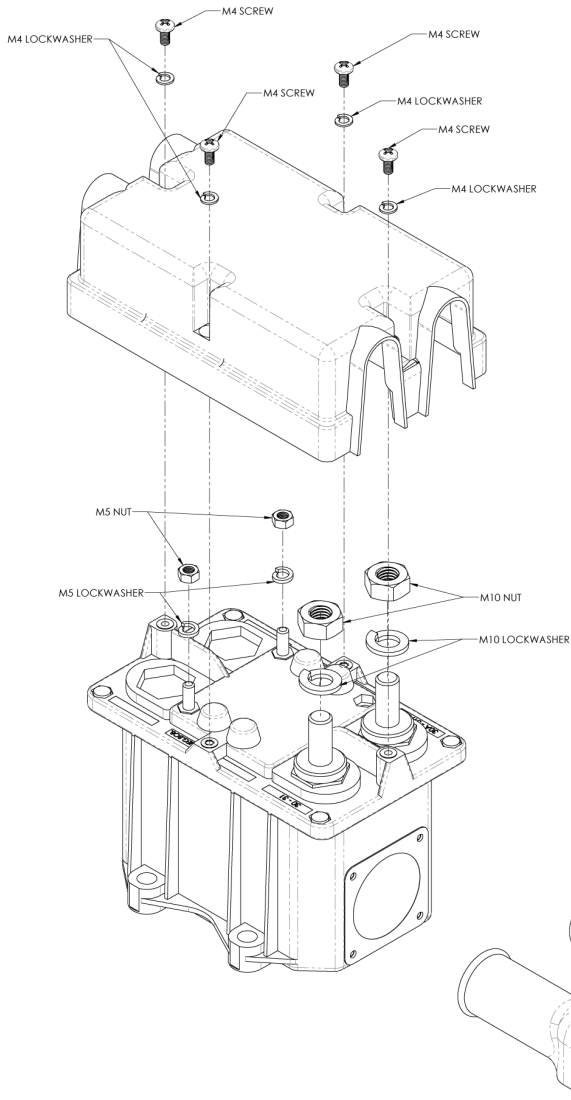
FR1052 Mounting Diagram

Positive disconnection 12V
INSULATED SOLENOID (power supply coil from battery)

FR1052-

ASM, SWITCH 12V INSULATED SOLENOID
 This drawing is for reference only and is
 the property of Flaming River Industries





☞ = KEY CHARACTERISTIC IDENTIFIER

THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN IS THE PROPERTY OF FLAMING RIVER INDUSTRIES AND IS ISSUED IN CONFIDENCE FOR THE PURPOSE OF AIDING THE TRANSACTION OF BUSINESS BETWEEN FLAMING RIVER INDUSTRIES AND SUPPLIER. DOCUMENT AND SPECIFICATIONS ARE NOT TO BE DISCLOSED TO OTHERS, REPRODUCED IN PART OR WHOLE, OR USED FOR MANUFACTURE FOR OTHERS. DELIVERY OF THIS DOCUMENT BY FLAMING RIVER INDUSTRIES CONVEYS NO PROPERTY RIGHTS THEREIN NOR IN ANY MATTER DISCLOSED THEREIN.



ASME Y14.5-1994
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES

NO SHARP EDGES OR BURRS ALLOWED
TOLERANCES:
DECIMALS: .XX±.1
 .XXX±.01
FRACTIONS: .XXX±.005
ANGLES: ±1°
UNLESS OTHERWISE SPECIFIED

DO NOT SCALE DRAWING

FLAMING RIVER INDUSTRIES
8000 RIDGEVIEW DRIVE
BEREA, OHIO
44017
DESCRIPTION: **ASM SWITCH 12V
INSULATED SOLENOID**
PART NO: **FR1052**

SCALE: 1:1

SHEET 2 OF 2

D

FR 1052 Technical Specifications

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

CHARACTERISTICS	FR 1052
Nominal tension	Max 12V
Max. continuous current on main contacts	250 A (23°C / 73.4°F)
Max. short time current on main contacts	2500 A x 3 sec.
Recommended wire section	>75mm² / 0.116 sq in
Protection degree	IP 65
Tightening torque M10 nuts	20 Nm / 14.75ft lb
Tightening torque M5 nuts	1.6 Nm / 1.18 ft lb
Operating temperature range	-40°C/+85°C -40°F/+185°F
Contacts	Silver plated copper
Contact terminals	M10 tin-plated brass
Nuts for contacts	Brass
Peak current coil rated input	4.4 A
Max. retaining coil	3.2 A
Holding coil rated input	0.4 A

FITTING INSTRUCTIONS:	ELECTRICAL DIAGRAM
· The battery isolator switch must be placed as close as possible to the batteries. To avoid corrosion to wires and terminals, mount in a protected location. · It can be fixed to the frame according to the fitting diagram shown in the drawing, using M 8 TCEI (cylindrical head – encased hexagon) screws UNI 5931: 1984, and plain washers 8,4x1.7 UNI 6592:1969. · The inversion of the power supply to the coil causes serious damage to the internal diode.	

FR1052

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

The versatility of Flaming River's FR1052 Disconnect Switch allows for multiple installation options based upon user need and vehicle application.

Options:

- A Include positive or negative electrical disconnection**
- B Positive or negative switching.**
- C Continuous operator controlled remote "on", and Passive disconnect via vehicle ignition off.**
- E The addition of the FR1053 Time Delay Relay makes the switch suitable for vehicles requiring a Selective Catalytic Reduction cleaning cycle or other custom features.**

The disconnect switch should be located as close as possible to the battery.

Common Installations:

Operator controlled ON-OFF (+/- disconnect and switching)

- 1. Positive or negative battery cable is connected to terminal 30-31.**
- 2. Vehicle load (+/-) is connected to terminal 30A-31A**
- 3. User determines +/- switching. Term. 85 switched for negative, Term. 86 switched for positive. Un-switched side: 85 chassis ground, 86 positive. (Any style of "maintained" switch is acceptable, 10 amp or greater)**

FR1052

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

Passive Disconnect (Ignition OFF Battery Disconnection)

This installation uses a momentary switch (Not Included) to energize the vehicles electrical system, then uses the ignition system to maintain the disconnect switch in the closed (on) position. When the ignition is turned off, the disconnect switch automatically opens (off) and the electrical system is disconnected.

1. Positive battery cable is connected to terminal 30-31
 2. Vehicle load is connected to terminal 30A-31A
 3. Terminal 85 (NEG.BOB.) is connected to chassis ground.
 4. Terminal 86 (POS.BOB.) is connected to one side of momentary switch and is connected to an "ignition on" circuit (i.e. Switch "IGN/RUN" terminal)
 5. Other side of momentary switch is connected to constant positive.
(Any style of momentary switch is acceptable, 10 amp or greater).
- Always use proper wiring techniques.
 - Wire size should be determined using industry standards based upon load requirements and length of cable needed.
 - Activation solenoid has a max draw of 4.4 amps, 0.4 amps continuous.
 - Main terminals are rated for 250 amps continuous, 2500 amps peak.
 - We always recommend the use of Battery Terminal Covers FR1003TM.

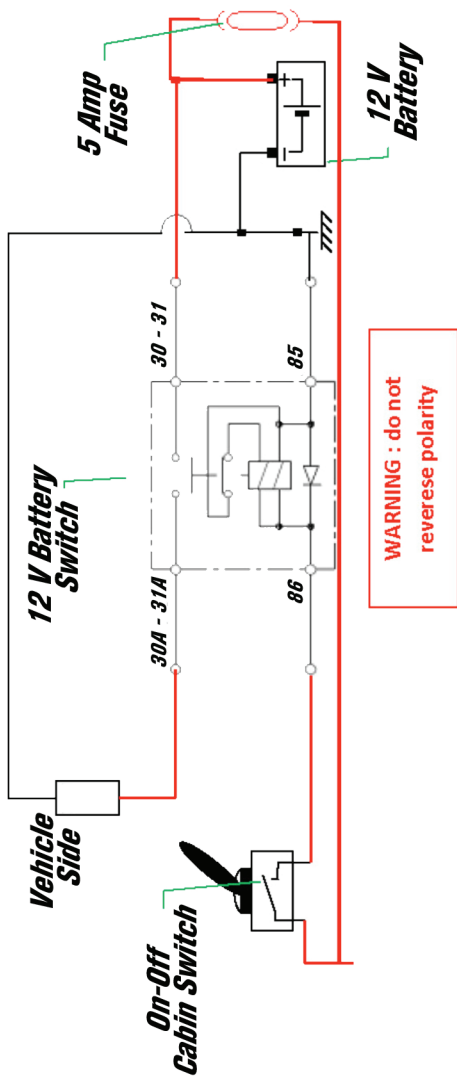
FR1052 Wiring Diagram

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

SUGGESTED WIRING 1:

- **Battery plus (+) disconnect by ON-OFF cabin switch.**



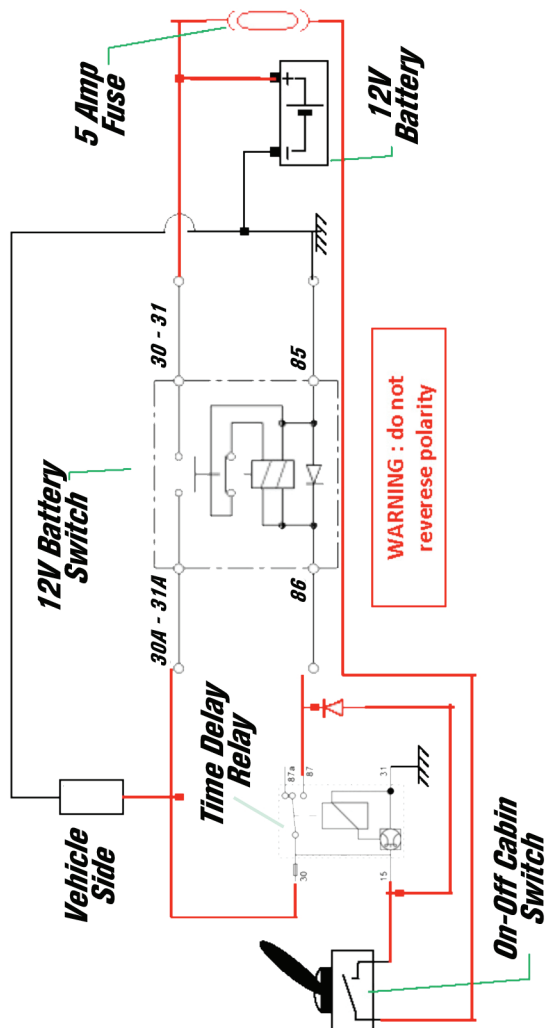
FR1052 Wiring Diagram

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

SUGGESTED WIRING 2:

- Battery plus (+) disconnect by ON-OFF cabin switch. Delay-off timer relay (vehicles with SCR: Selective Catalytic Reduction) for DEF system needs a cleaning cycle.



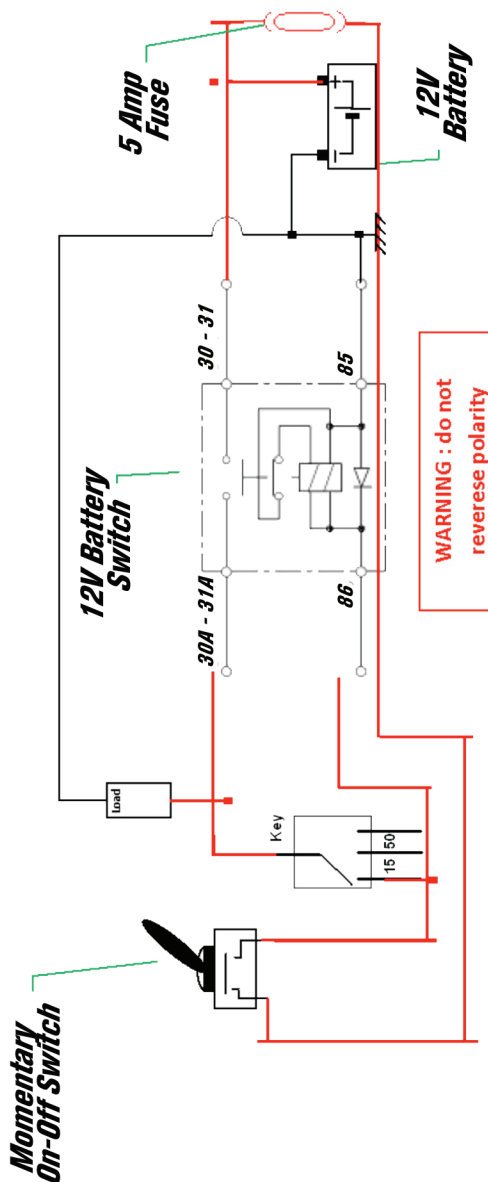
FR1052 Wiring Diagram

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

SUGGESTED WIRING 3:

- Battery plus (+) disconnect by ignition key and OFF-ON cabin momentary switch.
- To close circuit : turn key ON, push momentary switch to connect battery
- To open circuit : turn key OFF.



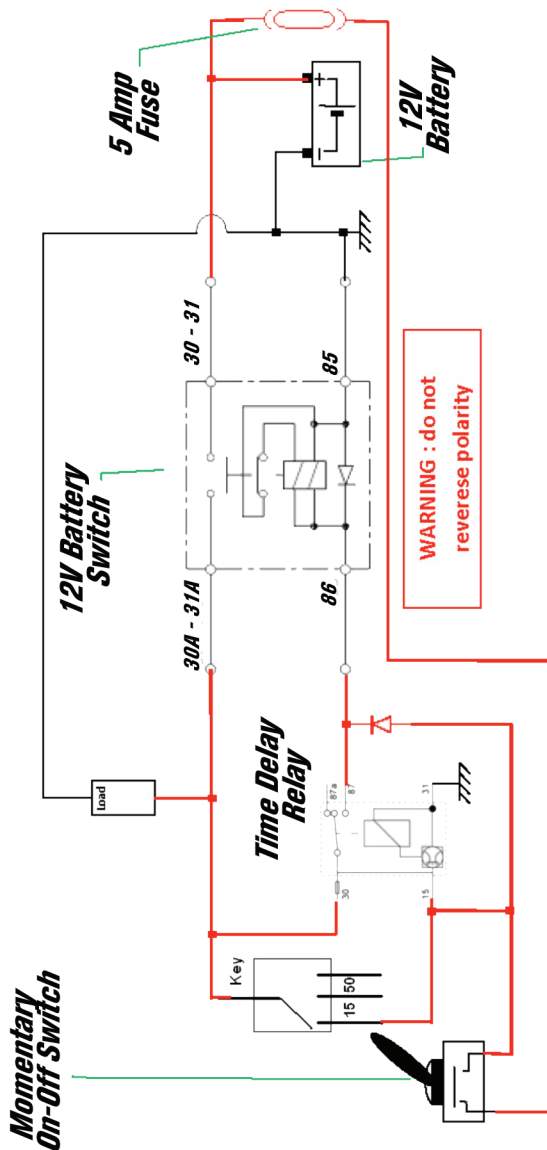
FR1052 Wiring Diagram

Positive disconnection 12V

INSULATED SOLENOID (power supply coil from battery)

SUGGESTED WIRING 4:

- Battery plus (+) disconnect by ignition key and OFF-ON cabin momentary switch.
- To close circuit : turn key ON, push momentary switch to connect battery
- To open circuit : turn key OFF, circuit opens after 3 minutes.



WARRANTY DISCLAIMER: Flaming River's Limited Warranty
Flaming River warrants its products to be free from defects in material and workmanship for a period of one (1) year after the date of purchase, except that: All steering columns are warranted for a period of three (3) years from the date of purchase. The Big Switch (part number FR1005) is warranted for a period of three (3) years from the date of purchase, provided that it is not mounted with a steel bracket and provided further that it is adequately protected from environmental conditions. All electrical products other than the Big Switch are warranted for a period of ninety (90) days from the date of purchase. Flaming River's warranty liability is limited to the replacement of defective products. Flaming River is not liable for any labor costs associated with any warranty claim, or for any incidental or consequential damages. Improper installation, abuse, racing, and/or modification of the products voids this warranty. No warranty of merchantability or fitness for a particular purpose is made by Flaming River with respect to any of its products.

Warnings and Recommendations

It is the customer's responsibility to determine the suitability of a given Flaming River product for the customer's uses. Likewise, it is the customer's responsibility to install a Flaming River product. Contact the vehicle manufacturer whenever installing a switch to confirm the appropriateness of using such a switch and the recommended placement of the switch on the vehicle. Use qualified chassis specialists for the installation of all steering related components. Be aware that the installation of certain Flaming River products may adversely impact a manufacturer's warranty with respect to certain vehicles and other manufactured goods. Flaming River will repair or replace any product found to be defective in material or workmanship. Improper installation, abuse, racing and/or modification VOID WARRANTY. Flaming River is not responsible for any labor costs associated with any warranty.



Flaming River Industries, Inc.
800 Poertner Dr. Berea, Ohio 44017
1-800-648-8022 • www.flamingriver.com