

**Eaton  
Fuller  
Roadranger  
Gen 1  
Service  
Manual**

**AutoShift  
Transmission  
Driver Training -**

*Page 1/95*

# **Eaton**

Eaton Fuller®

UltraShift®

PLUS, UltraShift®  
and AutoShift® Gen

III Automated

Transmissions Gen

III Automated

Transmission

Service Manual

12/17/2019 24.7 MB

TRSM0930 EN-US:

UltraShift PLUS

*Page 2/95*

Troubleshooting  
Guide  
Troubleshooting  
guide for UltraShift  
PLUS  
Transmissions  
11/11/2019 76.1 MB  
TRTS0940 EN-US

At Eaton, it is  
important that we  
not only provide  
industry-leading  
products, but also

*Page 3/95*

the best support in the industry. Our customer and sales support organization is dedicated to providing our customers and partners with the information they need.

## **Eaton Fuller Roadranger Gen 1**

*Page 4/95*

**Eaton Fuller  
Roadranger Gen 1**  
Eaton transmissions  
and clutches  
empower fleets to  
run more fuel  
efficient, reliable  
and profitable  
businesses. ...  
Discover the new  
Aggressive  
Performance  
calibration for

*Page 5/95*

UltraShift® PLUS  
and Fuller  
Advantage®  
automated manual  
transmissions.  
READ THE FULL  
STORY. ...  
Roadranger  
Academy  
ServiceRanger  
Dealer Locator. For  
information ...

**Eaton: Backed by  
Roadranger  
Support**

Eaton Fuller®  
UltraShift®  
PLUS, UltraShift®  
and AutoShift® Gen  
III Automated  
Transmissions Gen  
III Automated  
Transmission  
Service Manual

12/17/2019 24.7 MB

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TRSM0930 EN-US:

UltraShift PLUS

Troubleshooting

Guide

Troubleshooting

guide for UltraShift

PLUS

Transmissions

11/11/2019 76.1 MB

TRTS0940 EN-US

**Literature Center -**

**Eaton: Backed by**

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# Roadranger

## Support

on-highway applications – covers all Eaton mechanical and electronic components • Fuller Solo Clutch covered by standard OEM and/or extended Roadranger warranties: 1/100K

*Page 9/95*

or 3/350K •  
AutoShift 18-Speed  
• Standard OEM  
warranty (typically  
3/300K) or extended  
Roadranger  
warranty up to  
5/750K in approved  
applications

**Eaton Automation**  
**- AutoShift**  
Fleets and owner-

*Page 10/95*

operators may purchase extended warranties on Eaton drivetrain components. The Roadranger Extended Protection Plans are available for one or two years of additional protection and cover all Fuller® medium- and heavy-duty

*Page 11/95*

manual , Eaton  
AutoShift and  
UltraShift  
transmissions, and  
Eaton medium- and  
heavy-duty clutches.

**Roadranger -  
eaton.com**

Fuller Automated  
Transmissions  
TRIG0050 EN-US  
October 2007

*Page 12/95*

RTAO-11710B-AC

RTAO-11710C-AC

RTAO-12710B-AC

RTAO-12710C-AC

... Transmission Oil

- Eaton Roadranger

CD50 or equivalent

synthetic as

specified in Eaton

publication

TCMT-0019. 7.

Power ... 1. Eaton

supplied tower

*Page 13/95*

assembly is required. 2. Sealed bulkhead style harness connectors must be ...

## **Fuller Automated Transmissions TRIG0050 EN-US**

How do I reset the computer on a gen 1 eaton fuller ten speed autoshift? It

*Page 14/95*

is in a 1998  
freightliner with a  
red top - Answered  
by a verified  
Technician

**How do I reset the  
computer on a gen  
1 eaton fuller ten ...**  
EATON FULLER  
TRANSMISSIONS L  
H D N R Shift  
Control ECU

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Legend. 5 10-Speed  
AutoShift Wiring  
Diagram 10-Speed  
AutoShift Wiring  
Diagram A B A B  
Rail select sensor  
Gear select sensor  
Input shaft speed  
sensor Output shaft  
speed sensor A B  
30 AMP fuse A1 A2  
A3 B1 B2 B3 J1 K1  
D1 D2 H1 H2 C1 C2

*Page 16/95*

C3 A1 A3 B1 E2 B3  
E1 Terminating  
resistor J1 J2 J3 A  
B C A B C

**gen2 wiring  
schematics - Road  
Ranger**

Eaton Fuller Gen II  
Autoshift Troubles  
Discussion in 'Volvo  
Forum' started by  
bransonrocks, Dec

*Page 17/95*

23, 2015. Page 1 of  
2 1 2 Next > ... I am  
from south Africa,  
we have a 2003  
freightliner Argosy,  
gen 2, Eaton fuller  
autoshift. Truck had  
been acting up for  
the past 2 months.

## **Eaton Fuller Gen II Autoshift Troubles | TruckersReport ...**

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At Eaton, it is important that we not only provide industry-leading products, but also the best support in the industry. Our customer and sales support organization is dedicated to providing our customers and partners with the

*Page 19/95*

information they need.

## **Support - Eaton**

1. Place the vehicle in neutral. 2. Set the parking brake. 3. Block the wheels. Do not operate the vehicle if the alternator lamp is lit or if the gauges indicate low voltage.

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Suggested Tools  
Related Publications  
For more  
information call  
1-800-826-HELP  
(4357) in the U.S.,  
Canada, and  
Mexico. For Europe,  
contact your OE  
dealer. SPX Kent-  
Moore 1 ...

## **Troubleshooting**

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## **Guide - eaton.com**

For the most current information, visit the Roadranger web site at [www.roadranger.com](http://www.roadranger.com) AutoShift Gen II Models Eaton® Fuller® Automated Transmissions Quick Reference Guide TRMT-0062 March 2000

## **Eaton Fuller Automated Transmissions**

1. Inspect ECA  
OEM Power Supply  
Connector,  
reference image  
below. † If equipped  
with a Gen1 ECA,  
Go to Step B. † If  
equipped with a  
Gen2 ECA,  
troubleshoot active

*Page 23/95*

codes, refer to the appropriate Troubleshooting Guide on Roadranger.com. This Warranty Pre-Authorization DOES NOT apply to a Gen 2 ECA part. † 1.

**Roadranger  
Warranty Repair  
Guideline**

*Page 24/95*

## **RWRG006 - Eaton**

AutoShift

Transmission Driver

Training. 14:49.

Driving the Heavy

Duty AutoShift

transmission. 2017

NACV Show Recap.

... Georgia? Here's

a quick look back at

some of the cool

products we saw.

Cummins and Eaton

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SmartAdvantage™

Powertrain

Package. 3:28.

Cummins and Eaton  
powertrain package  
deliver power and  
fuel efficiency like  
never before ...

**AutoShift  
Transmission  
Driver Training -  
Eaton**

*Page 26/95*

Eaton requires these instructions be followed to avoid any additional freight costs incurred by using non-Eaton approved carriers or a denied acceptance of a shipment. Part return procedures and requirements are documented in

*Page 27/95*

the Eaton Warranty  
Manual  
(TCWY0600)  
available on  
Roadranger.com;  
found under the  
Customer Support  
tab, then select ...

**Literature Center**  
Eaton Clutches  
(limited) Eaton  
Fuller

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Transmissions; To view parts for the above, select a model and group from the left drop-down menus. For information related to ServiceRanger, please see the ServiceRanger website at [roadranger.com](http://roadranger.com).  
The Electronic Parts

*Page 29/95*

Catalog utilizes a graphics viewer to display all illustrations.

## **Eaton Inforanger**

To order by telephone, call the Fulfillment Services Center at 1-888-386-4636.

Critical Resources  
Eaton Transmission

*Page 30/95*

Guide (Specification  
Guide) Interchange  
Manual - Heavy-  
Duty Manual  
Transmissions  
(XLS, 725KB)  
Interchange Manual  
- Fuller Automated  
Transmissions  
(PDF, 1MB) Engine  
Configuration  
Settings -  
Automated

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Transmissions  
(PDF, 2MB)

**Literature Center -  
Eaton: Backed by  
Roadranger  
Support**

For the most current  
information, visit the  
Roadranger web  
site at [www.roadranger.com](http://www.roadranger.com) CEEMAT  
1X109 Series Eaton

*Page 32/95*

Fuller Automated  
Transmissions® ...  
For ordering in U.S.  
and Canada call  
1-800-533-0492. (In  
Minnesota call  
507-455-7010.)  
MPSI Micro  
Processor Systems,  
Inc.

**Eaton Fuller**  
**Automated**

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## **Transmissions**

1 (LATEST  
DESIGN) FULLER  
LOGO ONLY:  
A-6909,A-6913: 1:  
5586113: SHIFT  
DIAGRAM  
MEDALLION: 1:  
RTLO - W/SHIFT  
PATTERN: ...  
ROADRANGER  
VALVE ASSY: A -  
4900: 1: STANDAR

*Page 34/95*

D-W/LOGO: 999:  
S-2578: ... For  
Information &  
Assistance, Call  
1-800-826-4357:  
@2014 Eaton

## **Eaton Inforanger**

I have a three pedal  
Eaton-Fuller, auto  
shift coupled to a  
12.7 DD-60  
430-470hp engine

*Page 35/95*

with a 3.55-1 rear  
axle, in my  
Freightliner  
Columbia, I like the  
fact that you can  
ease the clutch in  
and out as your  
backing up. ... At  
least this is how it  
works in our 2001  
Gen 1 Volvo  
Autoshift  
RoadRanger Driver

*Page 36/95*

instructions. See  
page 3 for startup ...

## **3 pedal eaton/fuller 10 speed autoshift - HDT - Escapees**

...

Eaton Cummins  
Joint Venture

Introduction. 1:01.

Eaton and Cummins  
have combined the  
technical strengths

*Page 37/95*

and experience of  
two industry leaders  
with long histories  
and deep  
knowledge to  
provide superior  
automated  
transmission  
technology for our  
global customers.

**Eaton Clutches**

*Page 38/95*

(limited) Eaton Fuller Transmissions; To view parts for the above, select a model and group from the left drop-down menus. For information related to ServiceRanger, please see the ServiceRanger website at [roadranger.com](http://roadranger.com). The Electronic Parts

*Page 39/95*

Catalog utilizes a graphics viewer to display all illustrations.  
Support - Eaton

AutoShift  
Transmission Driver  
Training. 14:49.  
Driving the Heavy  
Duty AutoShift  
transmission. 2017  
NACV Show Recap.  
... Georgia? Here's a

*Page 40/95*

quick look back at  
some of the cool  
products we saw.  
Cummins and Eaton  
SmartAdvantage™  
Powertrain Package.  
3:28. Cummins and  
Eaton powertrain  
package deliver power  
and fuel efficiency like  
never before ...

How do I reset

*Page 41/95*

the computer on  
a gen 1 eaton  
fuller ten speed  
autoshift? It is in  
a 1998  
freightliner with  
a red top -  
Answered by a  
verified  
Technician  
How do I reset  
the computer on

*Page 42/95*

a gen 1 eaton  
fuller ten ...  
Fuller Automated  
Transmissions  
TRIG0050 EN-  
US  
Eaton requires  
these  
instructions be  
followed to avoid  
any additional  
freight costs

*Page 43/95*

incurred by  
using non-Eaton  
approved  
carriers or a  
denied  
acceptance of a  
shipment. Part  
return  
procedures and  
requirements are  
documented in  
the Eaton

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Warranty Manual  
(TCWY0600)  
available on  
Roadranger.com;  
found under the  
Customer  
Support tab, then  
select ...

**3 pedal eaton/fuller  
10 speed autoshift -  
HDT - Escapees ...**

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## **Roadranger - eaton.com**

1. Place the vehicle in neutral. 2. Set the parking brake. 3. Block the wheels. Do not operate the vehicle if the alternator lamp is lit or if the gauges indicate low voltage.

**Suggested Tools**

**Related Publications**

**For more information**

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call 1-800-826-HELP  
(4357) in the U.S.,  
Canada, and Mexico.  
For Europe, contact  
your OE dealer. SPX  
Kent-Moore 1 ...  
Eaton Fuller Gen II  
Autoshift Troubles  
Discussion in 'Volvo  
Forum' started by  
bransonrocks, Dec 23,  
2015. Page 1 of 2 1 2  
Next > ... I am from  
*Page 47/95*

south Africa, we have a 2003 freightliner Argosy, gen 2, Eaton fuller autoshift. Truck had been acting up for the past 2 months.

1. Inspect ECA OEM Power Supply Connector, reference image below. † If equipped with a Gen1 ECA, Go to Step B. † If

equipped with a Gen2  
ECA, troubleshoot active codes, refer to the appropriate  
Troubleshooting Guide on Roadranger.com.  
This Warranty Pre-Authorization DOES NOT apply to a Gen 2 ECA part. † 1.  
Roadranger Warranty Repair Guideline  
RWRG006 - Eaton  
Eaton Fuller Gen II

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Autoshift Troubles |  
TruckersReport ...  
Eaton Automation -  
AutoShift

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Eaton Inforanger  
Eaton: Backed by  
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Center at  
1-888-386-4636.  
Critical Resources  
Eaton Transmission  
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Guide) Interchange  
Manual - Heavy-  
Duty Manual  
Transmissions (XLS,  
725KB) Interchange

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Manual - Fuller  
Automated  
Transmissions (PDF,  
1MB) Engine  
Configuration  
Settings - Automated  
Transmissions (PDF,  
2MB)

Eaton Cummins Joint  
Venture Introduction.  
1:01. Eaton and

*Page 52/95*

Cummins have combined the technical strengths and experience of two industry leaders with long histories and deep knowledge to provide superior automated transmission technology for our global customers.

Eaton Fuller Automated Transmissions

I have a three pedal

Eaton-Fuller, auto shift

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coupled to a 12.7 DD-60  
430-470hp engine with a  
3.55-1 rear axle, in my  
Freightliner Columbia, I  
like the fact that you can  
ease the clutch in and out  
as your backing up. ... At  
least this is how it works  
in our 2001 Gen 1 Volvo  
Autoshift RoadRanger  
Driver instructions. See  
page 3 for startup ...  
Fuller Automated  
Transmissions TRIG0050

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EN-US October 2007

RTAO-11710B-AC

RTAO-11710C-AC

RTAO-12710B-AC

RTAO-12710C-AC ...

Transmission Oil - Eaton

Roadranger CD50 or

equivalent synthetic as

specified in Eaton

publication TCMT-0019.

7. Power ... 1. Eaton

supplied tower assembly

is required. 2. Sealed

bulkhead style harness

*Page 55/95*

connectors must be ...

Eaton Fuller  
Roadranger Gen 1  
Eaton transmissions  
and clutches empower  
fleets to run more fuel  
efficient, reliable and  
profitable businesses. ...  
Discover the new  
Aggressive  
Performance

*Page 56/95*

calibration for  
UltraShift® PLUS and  
Fuller Advantage®  
automated manual  
transmissions. READ  
THE FULL STORY. ...  
Roadranger Academy  
ServiceRanger Dealer  
Locator. For  
information ...

Eaton: Backed by  
Roadranger Support

*Page 57/95*

Eaton Fuller®  
UltraShift®  
PLUS, UltraShift® and  
AutoShift® Gen III  
Automated  
Transmissions Gen III  
Automated  
Transmission Service  
Manual 12/17/2019  
24.7 MB TRSM0930  
EN-US: UltraShift  
PLUS Troubleshooting  
Guide

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Troubleshooting guide  
for UltraShift PLUS  
Transmissions  
11/11/2019 76.1 MB  
TRTS0940 EN-US

Literature Center -  
Eaton: Backed by  
Roadranger Support  
on-highway  
applications – covers  
all Eaton mechanical  
and electronic

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components • Fuller Solo Clutch covered by standard OEM and/or extended Roadranger warranties: 1/100K or 3/350K • AutoShift 18-Speed • Standard OEM warranty (typically 3/300K) or extended Roadranger warranty up to 5/750K in approved applications

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Eaton Automation -  
AutoShift  
Fleets and owner-  
operators may  
purchase extended  
warranties on Eaton  
drivetrain components.  
The Roadranger  
Extended Protection  
Plans are available for  
one or two years of  
additional protection

*Page 61/95*

and cover all Fuller®  
medium- and heavy-  
duty manual , Eaton  
AutoShift and  
UltraShift  
transmissions, and  
Eaton medium- and  
heavy-duty clutches.

Roadranger -  
eaton.com  
Fuller Automated  
Transmissions

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TRIG0050 EN-US

October 2007

RTAO-11710B-AC

RTAO-11710C-AC

RTAO-12710B-AC

RTAO-12710C-AC ...

Transmission Oil -

Eaton Roadranger

CD50 or equivalent

synthetic as specified in

Eaton publication

TCMT-0019. 7. Power

... 1. Eaton supplied

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tower assembly is required. 2. Sealed bulkhead style harness connectors must be ...

Fuller Automated  
Transmissions  
TRIG0050 EN-US  
How do I reset the  
computer on a gen 1  
eaton fuller ten speed  
autoshift? It is in a 1998  
freightliner with a red

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top - Answered by a  
verified Technician

How do I reset the  
computer on a gen 1  
eaton fuller ten ...

EATON FULLER  
TRANSMISSIONS L  
H D N R Shift Control  
ECU Legend. 5  
10-Speed AutoShift  
Wiring Diagram  
10-Speed AutoShift

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Wiring Diagram A B A  
B Rail select sensor  
Gear select sensor  
Input shaft speed  
sensor Output shaft  
speed sensor A B 30  
AMP fuse A1 A2 A3 B1  
B2 B3 J1 K1 D1 D2 H1  
H2 C1 C2 C3 A1 A3  
B1 E2 B3 E1  
Terminating resistor J1  
J2 J3 A B C A B C

gen2 wiring schematics  
- Road Ranger  
Eaton Fuller Gen II  
Autoshift Troubles  
Discussion in 'Volvo  
Forum' started by  
bransonrocks, Dec 23,  
2015. Page 1 of 2 1 2  
Next > ... I am from  
south Africa, we have a  
2003 freightliner  
Argosy, gen 2, Eaton  
fuller autoshift. Truck

*Page 67/95*

had been acting up for the past 2 months.

Eaton Fuller Gen II  
Autoshift Troubles |  
TruckersReport ...

At Eaton, it is important that we not only provide industry-leading products, but also the best support in the industry. Our customer and sales

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support organization is dedicated to providing our customers and partners with the information they need.

## Support - Eaton

1. Place the vehicle in neutral.
2. Set the parking brake.
3. Block the wheels. Do not operate the vehicle if the alternator lamp is lit

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or if the gauges indicate low voltage. Suggested Tools Related Publications For more information call 1-800-826-HELP (4357) in the U.S., Canada, and Mexico. For Europe, contact your OE dealer. SPX Kent-Moore 1 ...

Troubleshooting

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Guide - [eaton.com](http://eaton.com)  
For the most current  
information, visit the  
Roadranger web site at  
[www.roadranger.com](http://www.roadranger.com)  
AutoShift Gen II  
Models Eaton  
® Fuller® Automated  
Transmissions Quick  
Reference Guide  
TRMT-0062 March  
2000

Eaton Fuller  
Automated  
Transmissions  
1. Inspect ECA OEM  
Power Supply  
Connector, reference  
image below. † If  
equipped with a Gen1  
ECA, Go to Step B. †  
If equipped with a  
Gen2 ECA,  
troubleshoot active  
codes, refer to the

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appropriate  
Troubleshooting  
Guide on  
Roadranger.com. This  
Warranty Pre-  
Authorization DOES  
NOT apply to a Gen 2  
ECA part. † 1.

Roadranger Warranty  
Repair Guideline  
RWRG006 - Eaton  
AutoShift

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Transmission Driver  
Training. 14:49.  
Driving the Heavy  
Duty AutoShift  
transmission. 2017  
NACV Show Recap. ...  
Georgia? Here's a  
quick look back at  
some of the cool  
products we saw.  
Cummins and Eaton  
SmartAdvantage™  
Powertrain Package.

*Page 74/95*

3:28. Cummins and Eaton powertrain package deliver power and fuel efficiency like never before ...

AutoShift  
Transmission Driver  
Training - Eaton  
Eaton requires these instructions be followed to avoid any additional freight costs

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incurred by using non-Eaton approved carriers or a denied acceptance of a shipment. Part return procedures and requirements are documented in the Eaton Warranty Manual (TCWY0600) available on Roadranger.com; found under the

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Customer Support tab,  
then select ...

Literature Center  
Eaton Clutches  
(limited) Eaton Fuller  
Transmissions; To view  
parts for the above,  
select a model and  
group from the left  
drop-down menus. For  
information related to  
ServiceRanger, please

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see the ServiceRanger website at [roadranger.com](http://roadranger.com). The Electronic Parts Catalog utilizes a graphics viewer to display all illustrations.

Eaton Inforanger  
To order by telephone,  
call the Fulfillment  
Services Center at  
1-888-386-4636.

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Critical Resources  
Eaton Transmission  
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Guide) Interchange  
Manual - Heavy-Duty  
Manual Transmissions  
(XLS, 725KB)  
Interchange Manual -  
Fuller Automated  
Transmissions (PDF,  
1MB) Engine  
Configuration Settings  
- Automated

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Transmissions (PDF,  
2MB)

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information, visit the  
Roadranger web site at  
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CEEMAT 1X109 Series  
Eaton Fuller  
Automated

*Page 80/95*

Transmissions® ... For  
ordering in U.S. and  
Canada call  
1-800-533-0492. (In  
Minnesota call  
507-455-7010.) MPSI  
Micro Processor  
Systems, Inc.

Eaton Fuller  
Automated  
Transmissions  
1 (LATEST DESIGN)

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FULLER LOGO  
ONLY:  
A-6909,A-6913: 1:  
5586113: SHIFT  
DIAGRAM  
MEDALLION: 1:  
RTLO - W/SHIFT  
PATTERN: ...  
ROADRANGER  
VALVE ASSY: A -  
4900: 1: STANDARD-  
W/LOGO: 999:  
S-2578: ... For

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Information &  
Assistance, Call  
1-800-826-4357:  
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Eaton Inforanger  
I have a three pedal  
Eaton-Fuller, auto shift  
coupled to a 12.7  
DD-60 430-470hp  
engine with a 3.55-1  
rear axle, in my  
Freightliner Columbia,

*Page 83/95*

I like the fact that you can ease the clutch in and out as your backing up. ... At least this is how it works in our 2001 Gen 1 Volvo Autoshift RoadRanger Driver instructions. See page 3 for startup ...

3 pedal eaton/fuller 10 speed autoshift - HDT  
- Escapees ...

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Eaton Cummins Joint  
Venture Introduction.  
1:01. Eaton and  
Cummins have  
combined the technical  
strengths and  
experience of two  
industry leaders with  
long histories and deep  
knowledge to provide  
superior automated  
transmission  
technology for our

*Page 85/95*

global customers.

gen2 wiring schematics  
- Road Ranger

1 (LATEST DESIGN)

FULLER LOGO

ONLY:

A-6909,A-6913: 1:

5586113: SHIFT

DIAGRAM

MEDALLION: 1:

RTLO - W/SHIFT

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PATTERN: ...  
ROADRANGER  
VALVE ASSY: A -  
4900: 1: STANDARD-  
W/LOGO: 999:  
S-2578: ... For  
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Assistance, Call  
1-800-826-4357:  
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Eaton transmissions  
and clutches empower  
fleets to run more fuel

*Page 87/95*

efficient, reliable and  
profitable businesses. ...  
Discover the new  
Aggressive  
Performance  
calibration for  
UltraShift® PLUS and  
Fuller Advantage®  
automated manual  
transmissions. READ  
THE FULL STORY. ...  
Roadranger Academy  
ServiceRanger Dealer

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Locator. For  
information ...

Fleets and owner-  
operators may  
purchase extended  
warranties on Eaton  
drivetrain components.  
The Roadranger  
Extended Protection  
Plans are available for  
one or two years of

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additional protection  
and cover all Fuller®  
medium- and heavy-  
duty manual , Eaton  
AutoShift and  
UltraShift  
transmissions, and  
Eaton medium- and  
heavy-duty clutches.  
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information, visit the  
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