



SENTINEL

EXHAUST BRAKE SYSTEM

**INSTALLATION
INSTRUCTIONS**

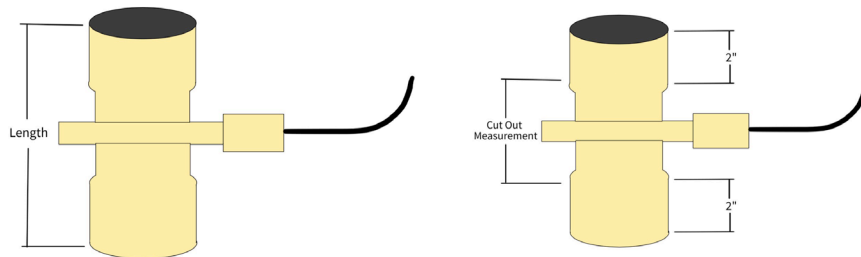


CHECK CONTENTS FOR THE FOLLOWING ITEMS:

- Bundy Exhaust Brake Assembly
- Main Harness with Control Box
- Secondary Jumper Harness
- Switch
- 2 – Band Clamps
- Zip Ties

INSTALLATION INSTRUCTIONS

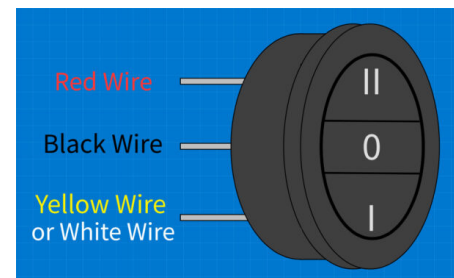
- Measure the overall length of your Bundy Exhaust Brake and subtract 4” (2” on each end) to get the measurement you will cut out of your exhaust pipe. (E.g., If the Bundy Exhaust brake is 11” in length you will cut out 7” out of your exhaust pipe.)



- Locate a suitable place on your exhaust pipe to install the Bundy Exhaust Brake. (The closer to engine the better. The bottom of the down pipe is recommended.) Mark your exhaust pipe and cut out exhaust pipe section. (Grind or file the ends of the cut pipe so the Bundy Exhaust Brake will slide on easily.)
- Slide the Bundy Exhaust Brake into the cut-out section. (Ensure that your exhaust pipe on each end is fully slid into the Bundy Exhaust Brake.)
- Clamp or weld both ends of the Bundy Exhaust Brake to the exhaust pipes. (If clamping, retorque clamps after exhaust system has been hot at least once.) Note: The Bundy Exhaust Brake will NOT build optimal back pressure if exhaust leaks are present. Make sure clamps are tight and no leaks between the exhaust brake and the engine exist (welding is recommended if capable).
- Connect jumper harness to brake connector and safely route jumper harness up the frame rail and across the firewall in the engine compartment. (Ensure

that jumper harness will not burn or chafe on any components.)

- Route the remaining jumper harness through the driver side firewall into the cab. (Usually, the jumper harness can be slipped through an existing harness grommet without too much hassle.)
- Secure jumper harness with zip ties and tape connector with electrical tape to ensure it does not come apart. (Ensure that jumper harness will not burn or chafe on any components.)
- Connect main harness to jumper harness and tape connectors with electrical tape.
- Connect the red wire on main harness to 12-volt power. Connect black wire on main harness to a solid ground. **WARNING: Do not connect any of the switch wires to 12-volt power, this will damage the switch controller and the exhaust brake motor.** (The exhaust brake motor and controller are powered by a 5-volt reference.)
- Drill a 13/16 or 20mm hole in dash for switch. (Make sure the switch will be located in an accessible location.) Note: Another type of dash switch can be used as long as it is a ON/OFF/ON stationary switch.
- Feed main harness switch wire through switch hole and connect the switch wires using the diagram below. **NOTE: The switch wires can easily be removed from switch by pressing the metal tabs on the connectors. DO NOT tug or forcibly pull the wires off of the switch.**
- Install switch in hole with the (I) line at the top.
- Secure main harness and control box using zip ties. (Ensure the main harness will not rub or chafe on any other components.)
- With the key on/vehicle off, toggle the switch to the (I) position and wait 5 seconds, then toggle the switch to the (II) position and wait 5 seconds. Finally, toggle the switch to the (0) position. Shut key off.
- The GREEN or WHITE wire coming from the main harness is only needed if you are installing a Torque Convertor Lock-up Harness.



OPERATION INSTRUCTION

- When going downhill or coming to a long stop, toggle the Bundy Exhaust Brake switch to the (I) This will close the valve engaging the exhaust brake. (Note: The controller on the main harness will ensure the exhaust brake fully closes and will only allow you to disengage the brake after 5 seconds.) DO

NOT toggle the switch back and forth quickly.

- When exhaust braking is no longer desired, toggle the switch to the (II) This will open the valve and disengage the exhaust brake.
- To shut the exhaust brake and controller off, toggle the switch to the (0) (Note: toggling the switch to the (0) position when the exhaust brake is engaged will not disengage the exhaust brake, you must toggle the switch to the (II) position to disengage the brake.)
- With automatic transmissions the Bundy Exhaust Brake performs optimally ONLY in Tow/Haul mode. (Tow/Haul mode locks up the torque converter on your automatic transmission so down-shifting is similar to a manual transmission, causing your exhaust brake to slow you down using the powertrain.

NOTICES

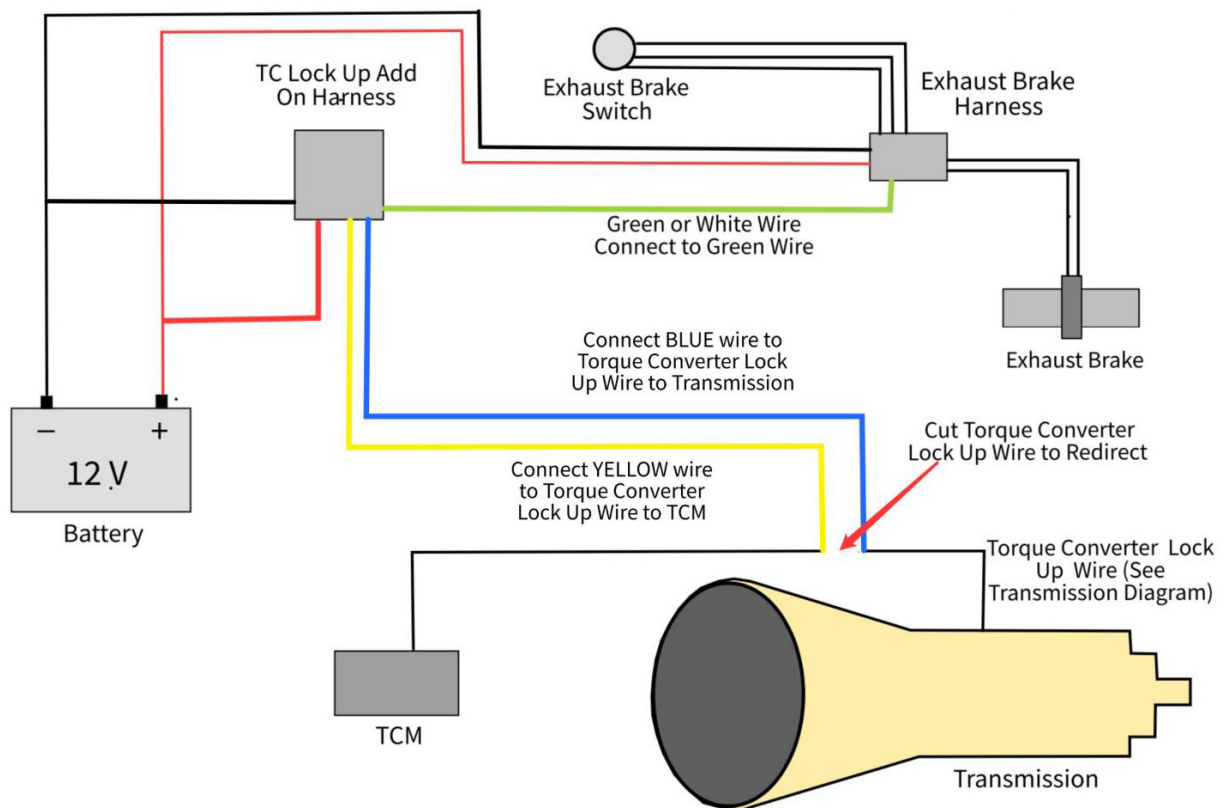
- The Bundy Exhaust Brake is manually controlled and will not disengage without using the control switch. Do not accelerate for more than 5 seconds with the exhaust brake engaged. It is never good to brake and accelerate at the same time.
- If you have an older vehicle with an automatic transmission and no Tow/Haul mode, you will need to install a torque convertor lock up harness to get the optimal performance out of any exhaust brake. To purchase the Bundy Exhaust Brake Torque Converter Lock Up Harness go to: <https://bundyexhaustbrake.com>
- To become an affiliate and earn \$100 per brake sold, contact us at arden@bundyexhaustbrake.com.
- For any other installation or operational question go to <https://bundyexhaustbrake.com> to chat, email us at arden@bundyexhaustbrake.com or call us at 435-260-4002.

Torque Converter Lock Up Harness INSTALLATION INSTRUCTIONS

With and without Sentinel Exhaust Brake System

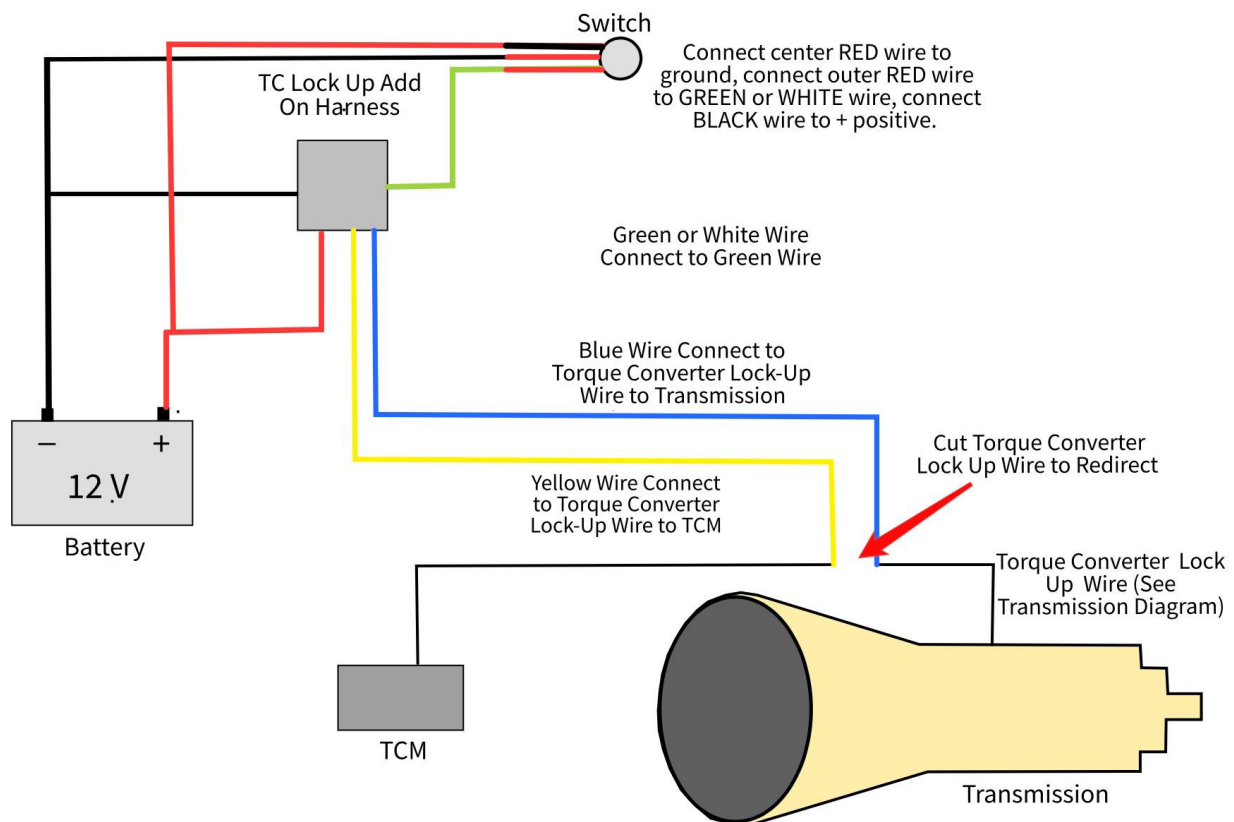
TORQUE CONVERTER LOCKUP HARNESS ADD-ON

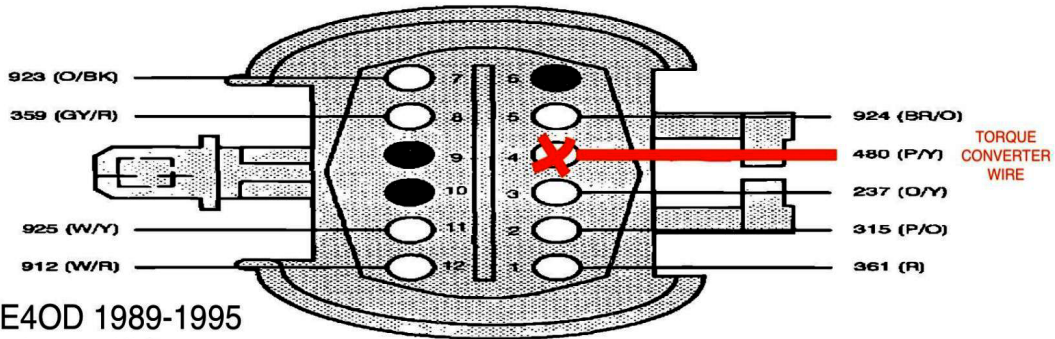
- Connect RED wire to +12v (can be the same as the Exhaust Brake Harness). Connect BLACK wire to ground (—).
- Connect the GREEN or WHITE wire to the GREEN or WHITE wire coming from the Exhaust Brake Harness. (If you have an older harness connect GREEN or WHITE wire to the Exhaust Brake Switch - RED wire.)
- Cut the Torque Converter Lock Up wire connect transmission to BLUE wire. (See transmission diagram.)
- Connect TCM end to Yellow wire.
- Congratulations, your automatic transmission torque converter will lock up when the Sentinel Exhaust Brake System is on. Happy Braking Power!
- REMEMBER: with the torque converter locked up you will need to turn the exhaust brake off when coming to a full stop. If not, the truck will stall.



TORQUE CONVERTER LOCKUP HARNESS ONLY

- SWITCH - Connect center RED wire to (—) Ground, connect outer RED wire to GREEN or WHITE wire, connect BLACK wire to +12v power.
- HARNESS - Connect RED wire to +12v power.
- Connect the GREEN wire to switch (outer RED wire).
- Connect BLACK wire to (—) Ground.
- Cut the Torque Converter Lock Up wire and connect transmission end to BLUE wire. (See Transmission diagram.)
- Connect TCM end to YELLOW wire.
- CONGRATULATIONS, your automatic transmission torque converter will lock up when the switch is on.
- REMEMBER: you will need to turn the torque converter locked up off when coming to a full stop. If not, the truck will stall.



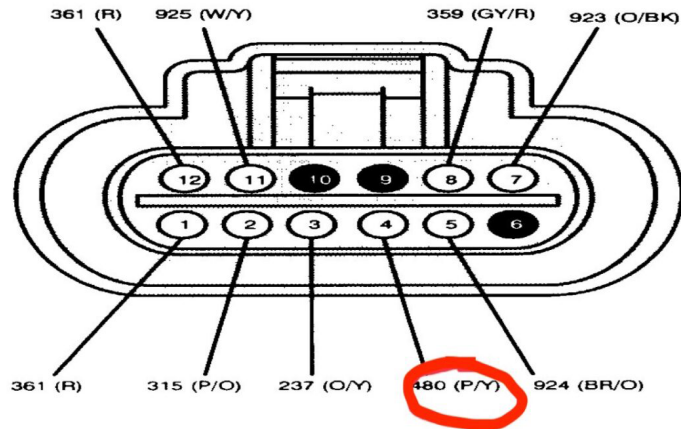


Ford E4OD 1989-1995
Pin#4 TCC

C1048
E4OD TRANSMISSION

PIN NUMBER	CIRCUIT	CIRCUIT FUNCTION
1	361 (R)	Power from PCM Relay
2	315 (P/O)	Solenoid #2 Shift Signal
3	237 (O/Y)	Solenoid #1 Shift Signal
4	480 (P/Y)	Torque Converter Clutch Control Solenoid
5	924 (BR/O)	Coast Clutch Solenoid
6	—	NOT USED
7	923 (O/BK)	Transmission Oil Temperature
8	359 (GY/R)	Sensor Signal Return
9	—	NOT USED
10	—	NOT USED
11	925 (W/Y)	Electronic Pressure Control
12	912 (W/R)	Electronic Pressure Control Power

Ford 1995-2003
E4OD-4R100
F250,350,450,550
Torque converter
lock up pin#4



C1048 (GRAY)
E4OD TRANSMISSION

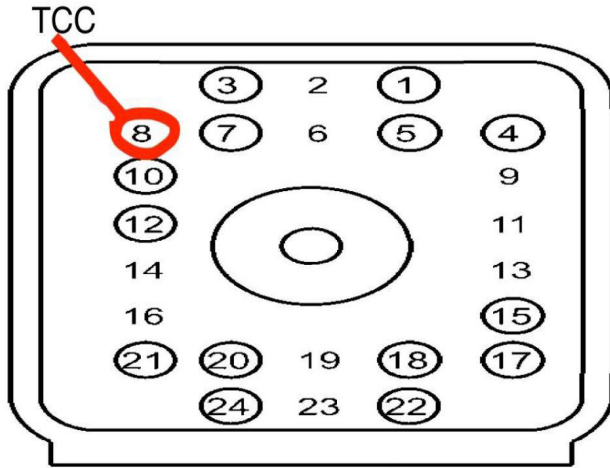
PIN	CIRCUIT	CIRCUIT FUNCTION
1	361 (R)	Power from PCM Relay
2	315 (P/O)	Shift Solenoid #2
3	237 (O/Y)	Shift Solenoid #1
4	480 (P/Y)	Torque Converter Clutch Solenoid
5	924 (BR/O)	Coast Clutch Solenoid
6	—	NOT USED
7	923 (O/BK)	Transmission Fluid Temperature
8	359 (GY/R)	Sensor Signal Return
9	—	NOT USED
10	—	NOT USED
11	925 (W/Y)	Electronic Pressure Control Power
12	361 (R)	Electronic Pressure Control

Connector: C1385

Description:
TORQSHIFT
TRANSMISSION

Harness:
15525

Base Part #:
PIA



Ford 5R110 6.0&6.4
F250,350,450,550
Torque converter lock up
Pin#8 TCC

Pin	Circuit	Gauge	Circuit Function	Qualifier
1	CET09 (YE-VT)	20	CTRL MOD. - POWERTRAIN # SOLENOID PRESSURE CONTROL SSPC-E (L/R)	
2	*	*	not used	
3	CET06 (GN-BN)	20	CTRL MOD. - POWERTRAIN # SOLENOID PRESSURE CONTROL SSPC-B (O.D.)	
4	CET08 (BN-WH)	20	CTRL MOD. - POWERTRAIN # SOLENOID PRESSURE CONTROL SSPC-D (DIR)	
5	CET07 (GY-OG)	20	CTRL MOD. - POWERTRAIN # SOLENOID PRESSURE CONTROL SSPC-C (INT)	
6	*	*	not used	
7	CET25 (BU-GN)	18	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL (TSPC)	
8	CET49 (BN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL TCC	
9	*	*	not used	
10	CET50 (WH-OG)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION LINE PRESSURE CONTROL (LPC)	
11	*	*	not used	
12	CET05 (BU-GN)	20	CTRL MOD. - POWERTRAIN # SOLENOID PRESSURE CONTROL SSPC-A (COAST)	
13	*	*	not used	
14	*	*	not used	
15	CET22 (GY-BN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION RANGE OUTPUT PARK (TRO-P)	
16	*	*	not used	
17	RET24 (BN-BU)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION RANGE SIGNAL RETURN (TRGND)	
18	VET27 (BN-YE)	20	SENSOR - TRANSMISSION FLUID TEMPERATURE (TFT)	
19	*	*	not used	
20	CET25 (BU-GN)	18	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL (TSPC)	
21	LE111 (VT-GN)	18	CTRL MOD. - POWERTRAIN # BUFFERED POWER SUPPLY SENSORS (VBPWR)	
22	RE406 (GY-VT)	18	CTRL MOD. - POWERTRAIN # SIGNAL RETURN TRANSMISSION (T-SIGRTN) (SIGRTN-B)	
23	*	*	not used	
24	CET25 (BU-GN)	18	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL (TSPC)	

Connector:
C1623

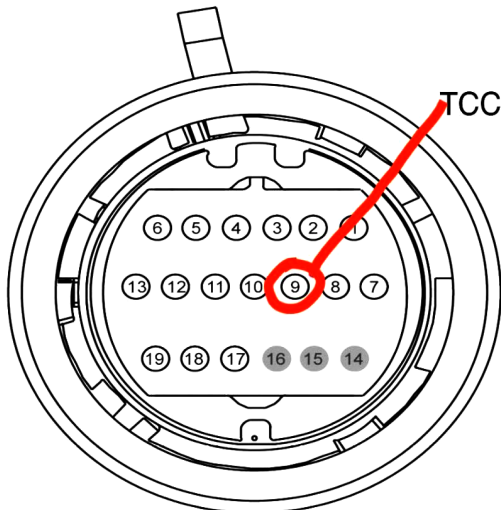
Description
TORQSHIFT 6
TRANSMISSION

Color
BK

Harness
15525

Base Part #
part# N/A

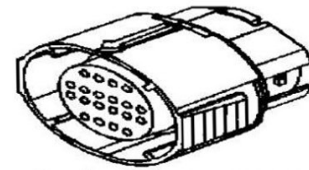
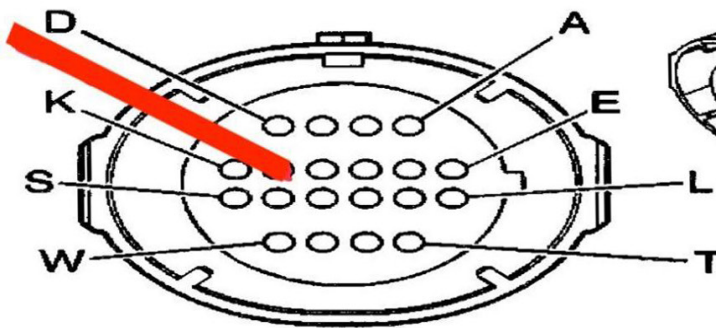
Service Pigtail



Ford 2011-2019 6R140
Torque converter lock up
Pin#9 TCC

Pin	Circuit	Gauge	Circuit Function	Qualifier
1	CET25 (BU-GN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL (TSPC)	
2	CET49 (BN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL 2 (TSPC2)	diesel
2	CET25 (BU-GN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION SOLENOID POWER CONTROL (TSPC)	gasoline
3	CET05 (BU-GN)	20	CTRL MOD. - POWERTRAIN # SHIFT SOLENOID A (SSA)	
4	CET06 (GN-BN)	20	CTRL MOD. - POWERTRAIN # SHIFT SOLENOID B (SSB)	
5	CET07 (GY-OG)	20	CTRL MOD. - POWERTRAIN # SHIFT SOLENOID C (SSC)	
6	CET08 (BN-WH)	20	CTRL MOD. - POWERTRAIN # SHIFT SOLENOID D (SSD)	
7	CET09 (YE-VT)	20	CTRL MOD. - POWERTRAIN # SHIFT SOLENOID E (SSE)	
8	CET49 (BN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION LINE PRESSURE CONTROL (LPC)	
9	CET50 (WH-OG)	20	CTRL MOD. - POWERTRAIN # TORQUE CONVERTER CLUTCH CONTROL ON/OFF (TCC)	
10	RET24 (BN-BU)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION RANGE SIGNAL RETURN (TRGND)	
11	VET33 (WH-OG)	20	SENSOR - TURBINE/TRANSMISSION SHAFT SPEED (TSS)	
12	LE111 (VT-GN)	20	CTRL MOD. - POWERTRAIN # BUFFERED POWER SUPPLY SENSORS (VBPWR)	
13	CET22 (GY-BN)	20	CTRL MOD. - POWERTRAIN # TRANSMISSION RANGE OUTPUT PARK (TRO-P)	
14	-	-	Not Used	
15	-	-	Not Used	
16	-	-	Not Used	
17	RET04 (YE-OG)	20	CTRL MOD. - POWERTRAIN # SENSOR OUTPUT SHAFT SPEED (OSS)	
18	VET27 (BN-YE)	20	SENSOR - TRANSMISSION FLUID TEMPERATURE (TFT)	
19	RE406 (GY-VT)	20	CTRL MOD. - POWERTRAIN # SIGNAL RETURN TRANSMISSION (T-SIGRTN) (SIGRTN-B)	

TORQUE
CONVERTER
LOCK UP
WIRE

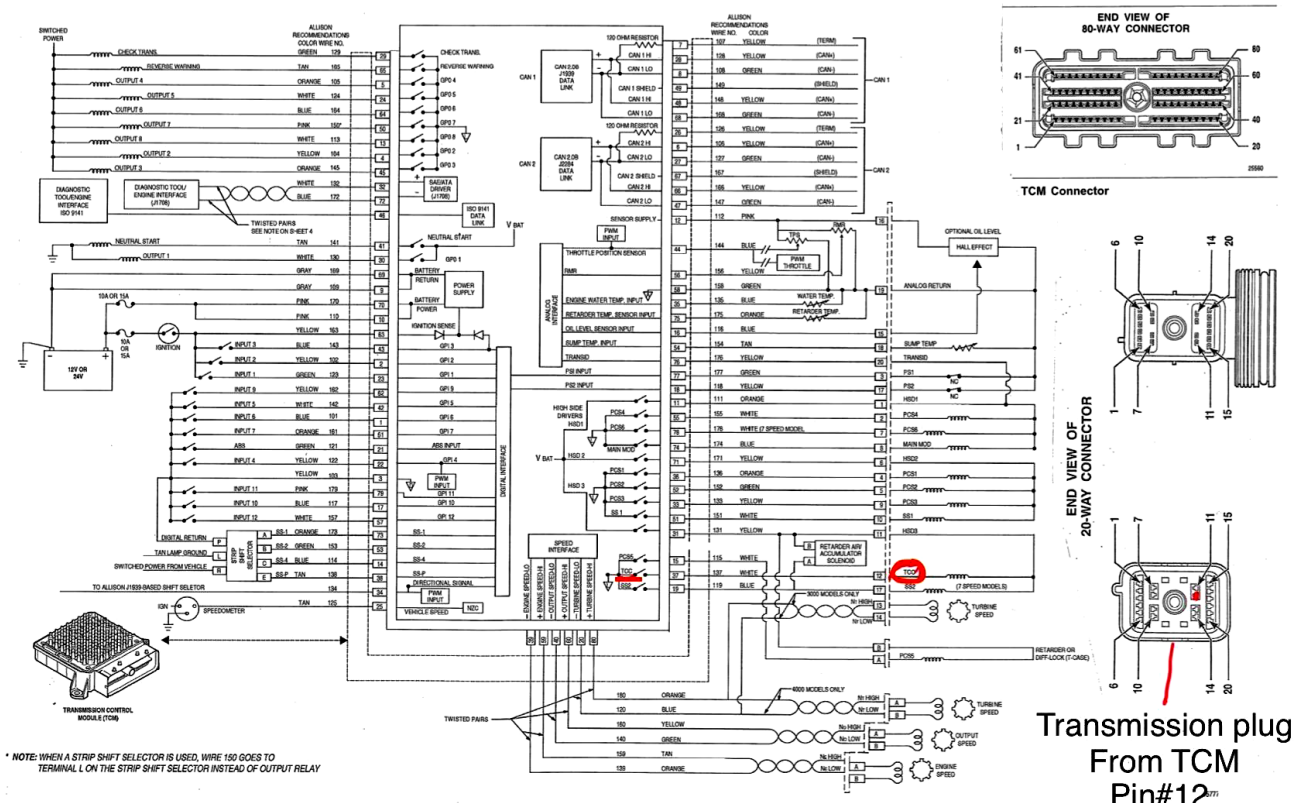


2001-2019 Allison
Pin (J)TCC

655729

Connector Part Information		<ul style="list-style-type: none"> • 12160782 • 20-Way M ASM MIC/P 100W (GRY) 	
Pin	Wire Color	Circuit No.	Function
A	LT GRN	1222	(1-2 Shift Solenoid or Shift Solenoid A) Valve Control
B	YEL/BLK	1223	(2-3 Shift Solenoid or Shift Solenoid B) Valve Control
C	BRN	323	Solenoid Supply Voltage
D	PNK	1224	Transmission Fluid Pressure Switch Signal A
E	RED	1226	Transmission Fluid Pressure Switch Signal C
F	DK BLU	1225	Transmission Fluid Pressure Switch Signal B
G	YEL/BLK	1227	TFT Sensor Signal
H	BLK	2762	Low Reference
J	BRN	418	TCC PWM Solenoid Valve Control
K	LT GRN LBLK	2529	Transmission Fluid Pressure Switch Signal R
L	LT BLU/ WHT	1229	PC Solenoid Valve Low Control (Sol. A)
M	RED/BLK	1228	PC Solenoid Valve High Control (Sol. A)
N	PNK/BLK	2468	PC Solenoid Valve High Control (Sol. B)
P	BRN/WHT	2469	PC Solenoid Valve Low Control (Sol. B)
R	—	—	Not Used
S	DK GRN/ WHT	2528	TCC PWM Solenoid Valve Signal
T	PPL	2471	Transmission ID
W	ORN/WHT	2527	Shift Solenoid C Valve Control

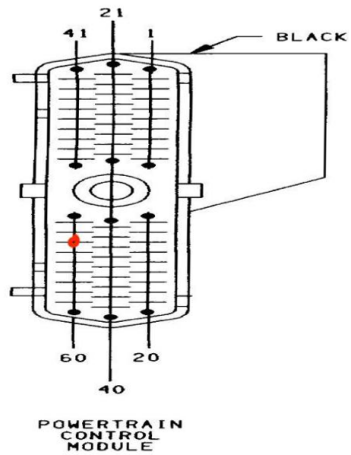
TORQUE
CONVERTER
LOCK UP
WIRE



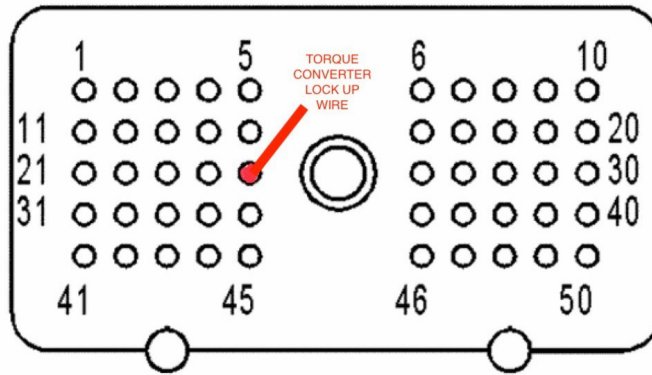
* NOTE: WHEN A STRIP SHIFT SELECTOR IS USED, WIRE 150 GOES TO TERMINAL L ON THE STRIP SHIFT SELECTOR INSTEAD OF OUTPUT RAY

Figure L-1. 3000 and 4000 Product Families Connector Diagram—TCM

C135
 Dodge 1995 only
 Pin#54 TCC



CAV	CIRCUIT	FUNCTION
1	K1 20DG/RD	WATER-IN-FUEL
2	---	---
3	A14 16RD/WT	FUSED B+
4	K4 20BK/LB	SENSOR GROUND
5	---	---
6	K6 20VT/WT	5V OUTPUT
7	K7 20OR	8V SUPPLY
8	---	---
9	F18 18LG/BK	FUSED IGN SW OUTPUT (START/RUN)
10	T6 20OR/WT	TRANS OD SWITCH OUTPUT
11	Z12 16BK/TN	GROUND
12	Z12 16BK/TN	GROUND
13	---	---
14	---	---
15	S22 20OR/BK	HEATED INTAKE AIR RELAY 2
16	S21 20YL/BK	HEATED INTAKE AIR RELAY 1
17	---	---
18	---	---
19	---	---
20	K20 18DG	GENERATOR FIELD CONTROL
21	K21 16BK/RD	INTAKE AIR TEMPERATURE SENSOR
22	K22 20OR/DB	THROTTLE POSITION SENSOR
23	---	---
24	K24 20GY/BK	ENGINE SPEED SENSOR
25	D21 20PK	SCI TRANSMIT
26	---	---
27	C20 18BR	A/C REQUST SIGNAL
28	---	---
29	V40 20WT/PK	STOP LAMP SWITCH OUTPUT
30	T41 20BK/WT	PARK/NEUTRAL POSITION SW SENSE
30	Z12 20BK/TN	GROUND
31	G14 18PK/BK	TRANSMISSION TEMP LAMP DRIVER
32	G3 20BK/PK	MAJFUNCTION INDICATOR LAMP
33	V36 20TN/RD	VEHICLE SPEED CONTROL-VACUUM SIG
34	C13 20DB/OR	A/C COMPRESSOR CLUTCH RLY CONTROL
35	G86 18TN/OR	WATER-IN-FUEL
36	G85 18OR/BK	WAIT-TO-START
37	T18 20LG/OR	TRANSMISSION CONTROL MODULE
38	---	---
39	---	---
40	---	---
41	---	---
42	T54 16VT	TRANSMISSION TEMPERATURE SENSOR
43	G21 20GY/LB	TACHOMETER SIGNAL
44	---	---
45	D20 20LG	SCI RECEIVE
46	---	---
47	G7 20WT/OR	VEHICLE SPEED SENSOR SIGNAL
48	V31 20BR/RD	VSC SWITCH - SET
49	V32 20YL/RD	VSC SWITCH OUTPUT (ON)
50	V33 20WT/LG	VSC SWITCH RESUME/ACCEL
51	K51 20DB/YL	ASD/FUEL PUMP RELAY CONTROL
52	---	---
53	V35 20LG/RD	VEHICLE SPEED CONTROL VENT SIGNAL
54	K54 20OR/BK	TCC SOLENOID CONTROL
55	T60 20BR	OVERDRIVE SOLENOID CONTROL
56	---	---
57	A142 16DG/OR	ASD RELAY OUTPUT
58	---	---
59	---	---
60	---	---



Dodge 47RE 2004-2007
 Plug closest to the firewall
 Plug#2 Pin#25

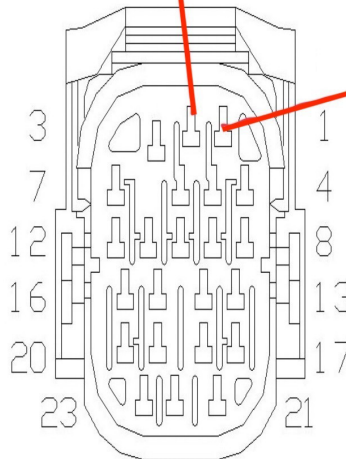
ENGINE CONTROL MODULE C2 (DIESEL)

ECM is on driver side
 On the engine block

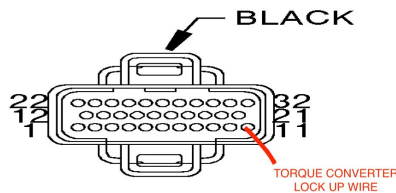
Dodge 68RFE
 2007-2018 pin#2 TCC
 2019-2024 pin#1 TCC

2007-2018
 TORQUE
 CONVERTER
 LOCK UP
 WIRE

2019-2024
 TORQUE
 CONVERTER
 LOCK UP
 WIRE



Dodge 1996-2003 pcm on passenger side firewall
 Middle plug pin#11



POWERTRAIN CONTROL MODULE - C2 (DIESEL)