



# ELECTRONICS INSTALLATION INSTRUCTION MANUAL



ATS SWAP CUMMINS TO ALLISON CONVERSION KIT



2007½-2021 RAM 6.7L CUMMINS COMMON RAIL



ATS  
**TRANSLator**  
C-A-N DATA TRANSMISSION CONTROLLER  
68RFE BRIDGE





**Installation Manual v1.1:  
ATS Swap Cummins to Allison Conversion - Electronics Installation  
Fitment: 2007½-2021 Ram 6.7L Cummins Common Rail**



**Please read all instructions before attempting installation.**

Thank you for purchasing the ATS Swap Cummins to Allison Electronics Upgrade for 2007½-2021 Ram 6.7L Cummins. Backed by our proprietary TRANSLator® technology, this kit enables the Allison transmission to operate under complete factory functionality from your late model Ram; from push button start to tow/haul mode, electronic range select and electronic transfer case functionality.



**NOTE:** Vehicle will need to have ECM flashed to an Aisin® calibration; you will need to ensure that this procedure can be completed before proceeding with installation.

**Bill of Materials**

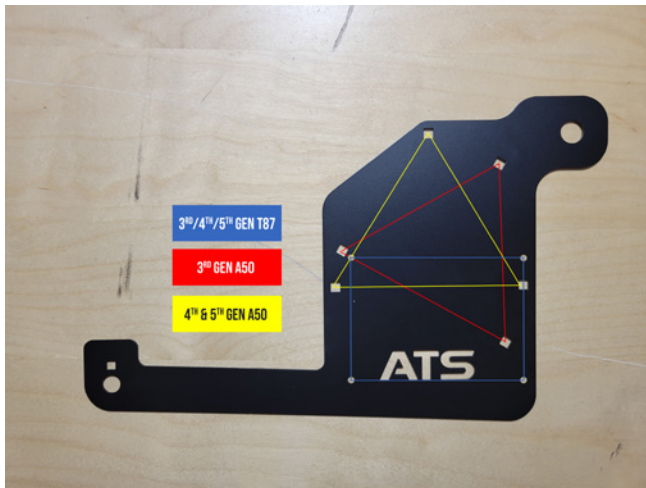
2007½-2009 68RFE to Allison	Page 15
2007½-2012 Aisin AS68RC to Allison	Page 16
2010-2012 68RFE to Allison	Page 17
2013-2014 68RFE to Allison	Page 18
2015+ 68RFE to Allison	Page 19
2013+ Aisin AS69RC to Allison	Page 20

**WIRING DIAGRAMS can be downloaded from Page 21**

## ELECTRONICS INSTALLATION INSTRUCTIONS

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1. Remove driver's side inner fender liner.
2. Remove bolt holding horn bracket (If horn is located under fender), front bolt securing hood support bracket to inner fender.
3. Install TCM onto TCM bracket using supplied nuts and bolts.
4. Install TCM and Bracket assembly into vehicle using bolts removed in step 2. (If horn was not located under fender a self-tapping screw should be used to secure last location of TCM bracket)



5. Some vehicles may need to have inner fender trimmed to allow sufficient space for harness routing.



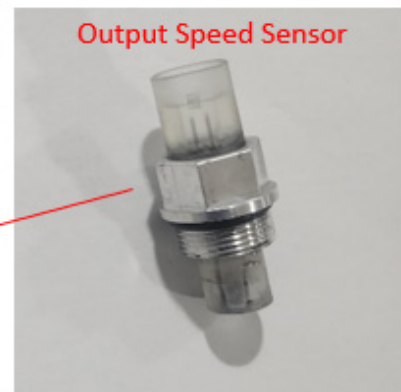
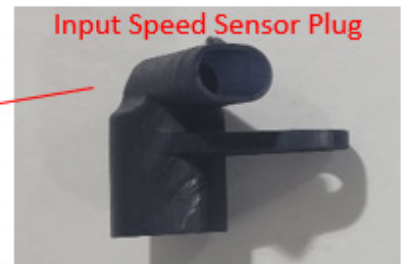
6. Route transmission harness down firewall towards transmission.





**WARNING! STEP 7 IS FOR T87 ONLY.  
A50 PLEASE SKIP STEP 7 AND PROCEEDS TO STEP 8.**

7. Locate input speed sensor connector and accompanying mounting tab, remove hold down bolt for input speed sensor and install it through mounting tab on harness and reinstall into bellhousing and plug in input speed sensor.



8. Locate input speed sensor connector and accompanying mounting tab, remove hold down bolt for input speed sensor and install it through mounting tab on harness and reinstall into bellhousing and plug in input speed sensor.



9. Plug in TURBINE speed sensor.





10. Locate mounting tab in harness behind turbine speed sensor, this will mount onto transmission case using supplied M8-1.25x16mm bolt.



11. Route output speed plug over the top side of the transmission's extension housing and plug in output speed sensor.



12. Route rest of harness down and around the back of the transmission mount and plug in Valve Body connector.

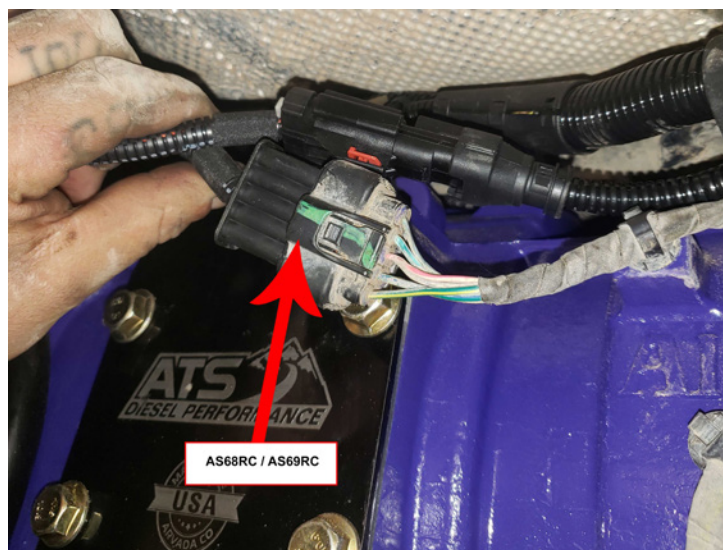


13. Locate mounting tab in harness near transmission mount to crossmember adapter and install remaining M12-1.75x30mm bolt through tab and into crossmember and secure with M12-1.75 nut.





14. Locate supplied TRS41 adapter harness, plug valve body connector into adapter and then the adapter into Allison Transmission Harness.



15. Plug in factory transfer case connector.
16. Install supplied dummy plugs into remaining unused connectors to prevent corrosion.



17. From inside cab locate and remove 2 15mm nuts holding clutch master cylinder block off plate into firewall and remove plate and modify as shown.



18. Locate secondary transmission harness and route OBD2 connector and Deutsch connector through hole in firewall.
19. Route harness towards driver's side fender and plug in connector going to TCM.
20. **IMPORTANT! (2010+ 68RFE ONLY)**  
Route fuse/relay box up to cowl behind battery and mount using self tapping screws or zip ties.
21. **IMPORTANT! (2010+ 68RFE ONLY)**  
Route Red, and Black/White wires along fender. Connect Black/White wire to battery ground. Connect Red wire to battery positive.
22. Mount Translator® controller to bracket with supplied hardware. Plug Deutsch connector, previously routed through firewall, into Translator.



23. Install clutch master cylinder block off plate back into firewall, install translator bracket onto upper stud of block off plate and install 15mm nuts.
24. **IMPORTANT! (2010+ 68RFE ONLY)** Locate the supplied CAN harness. Install larger plug into the left connector of the Translator<sup>®</sup> Controller



25. **IMPORTANT! (2013+ AS69RC ONLY)** Connect both factory harness TCM connectors into the translator.





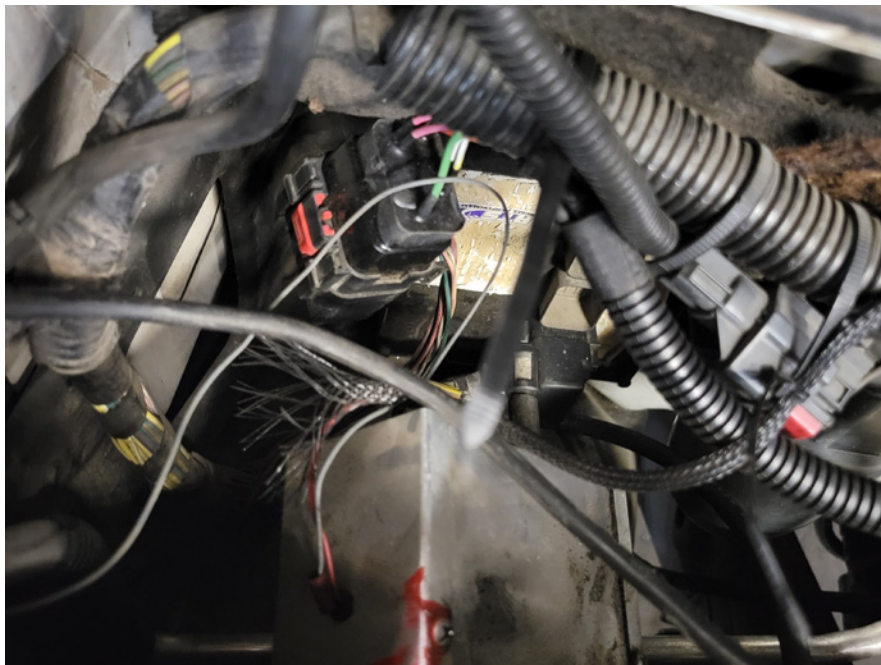
26. **IMPORTANT! (2007½-2012 AS68RC ONLY)**

Using factory TCM connector, connect to ATS transparent connector on adapter harness.



27. **IMPORTANT! (2007½-2009 68RFE ONLY)**

Connect adapter harness to factory TCM upper connector (located passenger side in engine bay near firewall).



28. **IMPORTANT! (2007½-2009 68RFE ONLY)**

Route adapter harness along fire wall, connect black wire with ring terminal to battery negative. Route remaining connectors back through the clutch master cylinder hole in firewall (previously used to run Deutsch connector to translator).



29. **IMPORTANT! (2007½-2012 AS68RC & 2007½-2009 68RFE ONLY)**

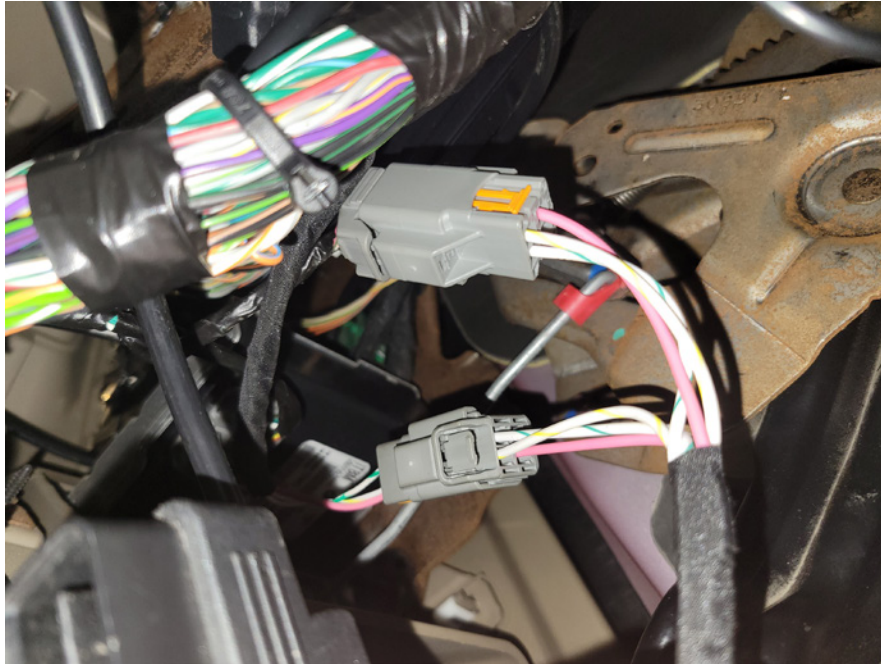
Locate the supplied adapter harness and connect both connectors into the translator. Larger connector goes into the left header on the TRANSlator® and the smaller will go into the right side. (Color of TRANSlator might vary between clear or purple)





**30. IMPORTANT! (2010-2012 68RFE ONLY)**

Locate factory Brake Control Module (above e-brake pedal behind kick panel). Disconnect factory connectors and use adapter jumper connected to translator to reconnect both.



**31. IMPORTANT! (2013-2014 68RFE ONLY)**

Locate Brake Control Module (located behind kick panel above driver's right knee). Disconnect factory 4 wire connector and connect to adapter jumper. Connect adapter jumper into factory location on Brake Control Module.



32. **IMPORTANT! (2015+ 68RFE ONLY)**

Locate Brake Control Module (located behind kick panel above driver's right knee). Disconnect factory 10 wire connector and connect to adapter jumper. Connect adapter jumper into factory location on Brake Control Module.



33. **IMPORTANT! (2013-2014 68RFE ONLY)**

Locate the STAR connector (above e-brake pedal behind kick panel) and plug in smaller connector of the Adapter harness into any open space in connector.

*NOTE: If truck will not start this connector should be moved to another open location in the STAR connector.*





34. Route OBD2 connector to a suitable location and mount plug to supplied bracket with self-tapping screws and attach bracket in a convenient location. (Recommended location shown)



35. Secure all harnesses away from any moving parts or sharp edges using provided zip ties.

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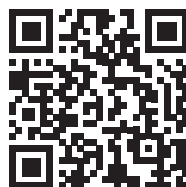
## **END OF ELECTRONICS INSTALLATION.**

See page 21 for **Associated Electrical Wiring Diagrams.**

For transmission install instructions refer to the **TRANSMISSION INSTALLATION MANUAL.**

For shifter modification instructions, refer to the **SHIFTER MODIFICATION INSTRUCTION MANUAL.**

If you need to order either/both of these instructions, please call (800) 949-6002, or you can download them by scanning the QR code below.



Scan the QR code above to download installation instructions. Installation instructions are in Adobe PDF format.

## 2007<sup>1</sup>/<sub>2</sub>-2009 68RFE to Allison ELECTRONICS ONLY Bill of Materials

1. 309-3: Allison Conversion Electronics 6.7L Cummins Kit
  - 1x 601-950-1000: ATS TRANSlator Box
  - 1x 300-298: Allison TCM
  - 1x 600-140: OBD2 Bracket
  - 1x 300-41: TRANSlator Bracket
  - 1x 601-21: Allison Conversion TCM Bracket
  - 5x 001-6: Steel Square-Neck Carriage Bolts, Zinc Plated m6x1mm, 20mm Long
  - 5x 001-147: Zinc Yellow-Chromate Plated Nylon-Insert Flange Locknut, M6x1mm
  - 2x 001-151: Zinc Yellow-Chromate Plated Flanged, M8x1.25mm, 16mm long Screw
  - 2x 101-170: External Hex Head Drilling Screw, Number 10, 3/4" Long
  - 2x 101-169: External Hex Head Drilling Screw, Number 10, 1/2" Long
  - 10x 001-80: 6" Zip Ties Black
  
2. 309-8: Allison Conversion 6.7L Cummins 6-speed Kit
  - 1x 29541895: Solenoid, PCS 1-4 th Gen. LCT1000
  - 1x 303-49: 6 Speed Allison EPC Solenoid Block
  - 1x 601-56: Allison Conversion 6 Speed EPC Block Harness
  - 1x 001-19: Zinc-Plated 1050-1095 Steel Slotted Spring Pins, 3/32" Diameter, 1/2" long
  
3. 601-33: Harness Kit- ATS Allison Conversion 2013-2014 68RFE
  - 1x 601-11: ATS Allison Conversion Main Harness
  - 1x 601-14: ATS Allison Conversion Adapter, Wiring 2007.5-202#, 68RFE, TRS41
  - 1x 601-35: ATS Allison Conversion Adapter, Wiring 2007.5-2009, 68RFE
  - 1x 601-15: ATS Allison Conversion Adapter, Wiring, 2007.5-202# AS68RC & AS69RC, 7.5-9 68RFE
  - 1x 601-57: 7.5-202# 68RFE, Allison Conversion Wiring Plug Kit
    - i. 2x 600-207: 2-Position SSC Connector Female Key A - 2POS. CAP HSG. KEY A
    - ii. 1x 600-206: 4-Pin Male Automotive Connector - 2X2 CAP ASY KEY A C4
    - iii. 1x T-Loom Cover
    - iv. 1x 001-81: Rubber Grommet



## 2007½-2012 AS68RC to Allison ELECTRONICS ONLY Bill of Materials

1. 309-3: Allison Conversion Electronics 6.7L Cummins Kit
  - 1x 601-950-1000: ATS TRANSlator Box
  - 1x 300-298: Allison TCM
  - 1x 600-140: OBD2 Bracket
  - 1x 300-41: TRANSlator Bracket
  - 1x 601-21: Allison Conversion TCM Bracket
  - 5x 001-6: Steel Square-Neck Carriage Bolts, Zinc Plated m6x1mm, 20mm Long
  - 5x 001-147: Zinc Yellow-Chromate Plated Nylon-Insert Flange Locknut, M6x1mm
  - 2x 001-151: Zinc Yellow-Chromate Plated Flanged, M8x1.25mm, 16mm long Screw
  - 2x 2x 101-170: External Hex Head Drilling Screw, Number 10, ¾" Long
  - 2x 101-169: External Hex Head Drilling Screw, Number 10, ½" Long
  - 10x 001-80: 6" Zip Ties Black
  
2. 601-32: Harness Kit- ATS Allison Conversion 2007.5-2009 68RFE
  - 1x 601-11: ATS Allison Conversion Main Harness
  - 1x 601-13: ATS Allison Conversion Adapter, Wiring, 2007.5-202#, AS68RC & AS69RC TRS41
  - 1x 601-28: ATS Allison Conversion Adapter, Wiring 2007.5-2012, AS68RC
  - 1x 601-15: ATS Allison Conversion Adapter, Wiring, 2007.5-202# AS68RC & AS69RC, 7.5-9 68RFE
  - 1x 601-57: 7.5-2012 68RFE, Allison Conversion Wiring Plug Kit
    - i. 2x 601-63: AS68RC Speedometer 3D Printed Plug
    - ii. 1x 601-62: AS68RC Temperature Sensor 3D Printed Plug
    - iii. 1x 601-64: AS68RC Valve Body 3D Printed Plug
    - iv. 1x 601-65: AS68RC TRS41 3D Printed Plug
    - v. 1x T-Loom Cover
    - vi. 1x 001-81: Rubber Grommet



## 2010-2012 68RFE to Allison ELECTRONICS ONLY Bill of Materials

1. 309-3: Allison Conversion Electronics 6.7L Cummins Kit
  - 1x 601-950-1000: ATS TRANSlator Box
  - 1x 300-298: Allison TCM
  - 1x 600-140: OBD2 Bracket
  - 1x 300-41: TRANSlator Bracket
  - 1x 601-21: Allison Conversion TCM Bracket
  - 5x 001-6: Steel Square-Neck Carriage Bolts, Zinc Plated m6x1mm, 20mm Long
  - 5x 001-147: Zinc Yellow-Chromate Plated Nylon-Insert Flange Locknut, M6x1mm
  - 2x 001-151: Zinc Yellow-Chromate Plated Flanged, M8x1.25mm, 16mm long Screw
  - 2x 101-170: External Hex Head Drilling Screw, Number 10, 3/4" Long
  - 2x 101-169: External Hex Head Drilling Screw, Number 10, 1/2" Long
  - 10x 001-80: 6" Zip Ties Black
  
2. 601-29: Harness Kit- ATS Allison Conversion 2010-2012 68RFE
  - 1x 601-11: ATS Allison Conversion Main Harness
  - 1x 601-14: ATS Allison Conversion Adapter, Wiring 2007.5-202#, 68RFE, TRS41
  - 1x 601-23: ATS Allison Conversion Adapter, Wiring, 2010-2012, 68RFE
  - 1x 601-25: ATS Allison Conversion Adapter, Wiring, 2010-202#, 68RFE
  - 1x 601-57: 7.5-202# 68RFE, Allison Conversion Wiring Plug Kit
    - i. 2x 600-207: 2-Position SSC Connector Female Key A - 2POS. CAP HSG. KEY A
    - ii 1x 600-206: 4-Pin Male Automotive Connector - 2X2 CAP ASY KEY A C4
    - iii. 1x T-Loom Cover
    - iv. 1x 001-81: Rubber Grommet



## 2013-2014 68RFE to Allison ELECTRONICS ONLY Bill of Materials

1. 309-3: Allison Conversion Electronics 6.7L Cummins Kit
  - 1x 601-950-1000: ATS TRANSlator Box
  - 1x 300-298: Allison TCM
  - 1x 600-140: OBD2 Bracket
  - 1x 300-41: TRANSlator Bracket
  - 1x 601-21: Allison Conversion TCM Bracket
  - 5x 001-6: Steel Square-Neck Carriage Bolts, Zinc Plated m6x1mm, 20mm Long
  - 5x 001-147: Zinc Yellow-Chromate Plated Nylon-Insert Flange Locknut, M6x1mm
  - 2x 001-151: Zinc Yellow-Chromate Plated Flanged, M8x1.25mm, 16mm long Screw
  - 2x 101-170: External Hex Head Drilling Screw, Number 10, ¾" Long
  - 2x 101-169: External Hex Head Drilling Screw, Number 10, ½" Long
  - 10x 001-80: 6" Zip Ties Black
  
2. 601-30: Harness Kit- ATS Allison Conversion 2013-2014 68RFE
  - 1x 601-11: ATS Allison Conversion Main Harness
  - 1x 601-14: ATS Allison Conversion Adapter, Wiring 2007.5-202#, 68RFE, TRS41
  - 1x 601-17: ATS Allison Conversion Adapter, Wiring, 2013-2014, 68RFE
  - 1x 601-25: ATS Allison Conversion Adapter, Wiring, 2010-202#, 68RFE
  - 1x 601-57: 7.5-202# 68RFE, Allison Conversion Wiring Plug Kit
    - i. 2x 600-207: 2-Position SSC Connector Female Key A - 2POS. CAP HSG. KEY A
    - ii. 1x 600-206: 4-Pin Male Automotive Connector - 2X2 CAP ASY KEY A C4
    - iii. 1x T-Loom Cover
    - iv. 1x 001-81: Rubber Grommet



## **2015+ 68RFE to Allison ELECTRONICS ONLY Bill of Materials**

1. 309-3: Allison Conversion Electronics 6.7L Cummins Kit
  - 1x 601-950-1000: ATS TRANSlator Box
  - 1x 300-298: Allison TCM
  - 1x 600-140: OBD2 Bracket
  - 1x 300-41: TRANSlator Bracket
  - 1x 601-21: Allison Conversion TCM Bracket
  - 5x 001-6: Steel Square-Neck Carriage Bolts, Zinc Plated m6x1mm, 20mm Long
  - 5x 001-147: Zinc Yellow-Chromate Plated Nylon-Insert Flange Locknut, M6x1mm
  - 2x 001-151: Zinc Yellow-Chromate Plated Flanged, M8x1.25mm, 16mm long Screw
  - 2x 101-170: External Hex Head Drilling Screw, Number 10, 3/4" Long
  - 2x 101-169: External Hex Head Drilling Screw, Number 10, 1/2" Long
  - 10x 001-80: 6" Zip Ties Black
  
2. 601-49: Harness Kit - ATS Allison Conversion 2015-202# 68RFE
  - 1x 601-11: ATS Allison Conversion Main Harness
  - 1x 601-14: ATS Allison Conversion Adapter, Wiring 2007.5-202#, 68RFE, TRS41
  - 1x 601-48: ATS Allison Conversion Adapter, Wiring, 2015-202#, 68RFE
  - 1x 601-25: ATS Allison Conversion Adapter, Wiring, 2010-202#, 68RFE
  - 1x 601-57: 7.5-202# 68RFE, Allison Conversion Wiring Plug Kit
    - i. 2x 600-207: 2-Position SSC Connector Female Key A - 2POS. CAP HSG. KEY A
    - ii. 1x 600-206: 4-Pin Male Automotive Connector - 2X2 CAP ASY KEY A C4
    - iii. 1x T-Loom Cover
    - iv. 1x 001-81: Rubber Grommet



## 2013+ AS69RC to Allison ELECTRONICS ONLY Bill of Materials

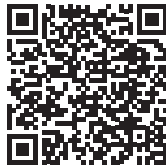
1. 309-3: Allison Conversion Electronics 6.7L Cummins Kit
  - 1x 601-950-1000: ATS TRANSlator Box
  - 1x 300-298: Allison TCM
  - 1x 600-140: OBD2 Bracket
  - 1x 300-41: TRANSlator Bracket
  - 1x 601-21: Allison Conversion TCM Bracket
  - 5x 001-6: Steel Square-Neck Carriage Bolts, Zinc Plated m6x1mm, 20mm Long
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  - 2x 001-151: Zinc Yellow-Chromate Plated Flanged, M8x1.25mm, 16mm long Screw
  - 2x 101-170: External Hex Head Drilling Screw, Number 10, ¾" Long
  - 2x 101-169: External Hex Head Drilling Screw, Number 10, ½" Long
  - 10x 001-80: 6" Zip Ties Black
  
2. 601-31: Harness Kit- ATS Allison Conversion 2013-202# AS69RC
  - 1x 601-11: ATS Allison Conversion Main Harness
  - 1x 601-13: ATS Allison Conversion Adapter, Wiring, 2007.5-202#, AS68RC & AS69RC TRS41
  - 1x 601-15: ATS Allison Conversion Adapter, Wiring, 2007.5-202# AS68RC & AS69RC, 7.5-9 68RFE
  - 1x 601-59: 2013-202# AS69RC, Allison Conversion Wiring Plug Kit
    - i. 2x 601-61: AS69RC Speedometer 3D Printed Plugs
    - ii. 1x 601-60: AS69RC TRS41 3D Printed Plug
    - iii. 1x T-Loom Cover
    - iv. 1x 001-81: Rubber Grommet

## Associated Electrical Wiring Diagrams

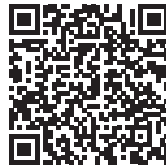
Scan the following QR codes to view the associated wiring diagrams. The number below each QR code is a part number associated with a wiring harness or wiring assembly found in the bills of materials (BOM) on the preceding pages. If you find that any of the links in these QR codes is broken, or if you are unable to download them for any reason, please call ATS Diesel Performance at (800) 949-6002 Monday-Friday 7:30 am-6:00 pm (MST)



**601-11**



**601-13**



**601-14**



**601-15**



**601-17**



**601-23**



**601-25**



**601-28**



**601-35**



**601-48**









### LIMITED WARRANTY STATEMENT:

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ATS Diesel Performance warrants the original purchaser that any parts purchased shall be free from defects in material and workmanship. ATS Diesel Performance is the warrantor of this product, in the event this product is purchased from a distributor or retailer other than ATS Diesel Performance, the customer must contact ATS Diesel Performance for any warranty concerns, not the purchasing dealer. A defect is defined as a condition that would render the product inoperable. This warranty does not cover deteriorating of plating, paint or any other coating. ATS liability is limited to the repair or replacement, at ATS's option, of any warrantable product returned prepaid with a complete service history and proof of purchase to the factory. A valid proof of purchase is a dated bill of sale. Repaired or replaced, product will be returned to the customer, freight collect on a like-for-like part number basis. Accepted warranty units, which have been replaced, become the sole property of ATS.

A Return Product Authorization number obtained in advanced from an ATS customer service representative must accompany products returned for warranty determination. ATS will be the final authority on all warranty decisions.

This warranty shall not apply to any unit which has been improperly stored or installed, subjected to misapplication, improper operating conditions, accidents, or neglect; or which has been improperly repaired, altered or otherwise mistreated by the owner or his agent.

This warranty shall terminate at the end of 12 months in service with the original user. Labor cost incurred by the removal and replacement of an ATS product, while performing warranty work, will be the responsibility of the vehicle owner; in no case does the obligation of ATS Diesel Performance exceed the original purchase price of the product as indicated on the original bill of sale.

Except as set forth in this warranty, ATS disclaims any implied warranty, including implied warranties of merchantability and fitness for a particular purpose. ATS also disclaims any liability for incidental or consequential damages including, but not limited to, repair labor, rental vehicles, hotel costs or any other inconvenience costs. This warranty is in lieu of all warranties or guarantees, either expressed or implied, and shall not extend to any customer or to any person other than the original purchaser residing within the boundaries of the continental US or Canada.



**NOTE:** We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction. We encourage you to visit our Technical Support Webpage (<https://www.atsdiesel.com/instructions>) to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at: [suggestions@atsdiesel.com](mailto:suggestions@atsdiesel.com)



### CONTACT US

**ATS Diesel Performance, Inc.**  
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Arvada, CO 80002

Toll Free: (800) 949-6002  
Local: (303) 431-7973  
Fax: (303) 431-0135  
Website: [www.atsdiesel.com](http://www.atsdiesel.com)  
Email: [info@atsdiesel.com](mailto:info@atsdiesel.com)



### TROUBLESHOOTING:

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Thank you for purchasing the ATS Swap Cummins to Allison Conversion Kiot Electronics Upgrade. This manual is to assist you with your installation and operation of the unit. Please use the contact information to the left for assistance with any troubleshooting or questions regarding this installation. If you are installing the unit for a customer, please pass this manual on to your customer for future reference.



# PATENTED INNOVATION MEANS MORE POWER TO THE GROUND.

ATS WARRANTY  
**5yr/500k**



**ATS DIESEL PERFORMANCE**  
**ATS DIESEL PERFORMANCE PATENTED FIVE STAR TORQUE CONVERTER**

- PATENTED VISKUS CLUTCH DRIVE SYSTEM FOR INCREASED EFFICIENCY
- BILLET COVER WITH PATENTED SQUARE-TAB DRIVE
- SQUARE-TAB CONSTRUCTION (NOT ROUND)
- VISKUS PISC CNC LASER CUT CLUTCH PLATES
- BILLET PISTON WITH PATENTED FLANK DRIVE TAB DESIGN
- PROPRIETARY ATS EXCLUSIVE CLUTCH FORMULATION W/ UNIQUE BONDING TECHNOLOGY
- REDESIGNED SPRING DAMPENER SUPPORTS INCREASED TORQUE LOADS
- 4340 HARDENED TURBINE SPLINES PROVIDE LONGEVITY AND RELIABILITY
- FULLY WELDED TURBINE AND IMPELLER VALVES
- CNC STATOR WITH HIGH-FLOW WINDOWS INCREASE OIL FLOW PROVIDING INCREASED EFFICIENCY
- FULL ROLLER BEARING CONSTRUCTION BETWEEN HIGH-LOAD AREAS
- 4340 CNC CUT PUMP DRIVE HUB LOCKED INTO IMPELLER HOUSING
- PLASMA WELDED FOR UNSURPASSED STRENGTH

**ATS DIESEL PERFORMANCE**  
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