

TP-9789

Carriers, Transmissions and Clutch Core Inspection Deduction Examples

Revised 10-05



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Carrier Core Evaluation

1. Clean and drain the oil from the core. Failure to completely drain the oil from the carrier will result in a core deduction of one hundred (\$100) dollars.
2. Check the model number on the carrier and match it to the core groups below. If the core model is not on list it is not acceptable for return.
3. Cores are to be visually inspected for the items listed below. Do not disassemble the cores. Meritor's core evaluation for credit is a visual check. Twenty-five (25) percent deduction will apply to cores received complete but disassembled.
4. Inspect the exterior of the core for any cracks, bulges, missing surface material, broken mounting holes, damaged two-speed support cases, damaged/blown out adjusting rings (damage to mounting leg caps), and excessive welds (see Core Deduction Notes).
5. Inspect the interior of the core using a flashlight for any cracked, broken, or spiked spigot bores. Also inspect for missing ring and pinion gears, shafts, inner axle differential nests, helical gears or housing covers. Deductions will be taken for parts missing due to disassembly and removal. Parts missing due to carrier failures will not be deducted.
6. During the interior inspection check the ring and pinion gears and mounting for signs of burn-ups due to over heating. Old style carriers (models QD100, QR100, QP100, SHDA, SHDB, SHRA, SHRB, QHD, QHP, QHR, QAR, R155, R170, QRR100, QRD100, and QRP100) that have been burned-up will receive a maximum of twenty-five (25) percent core credit. World Axle carriers (carriers starting with RR, RD, RP, RS, RRL, RDL, and RPL) that are burned-up will receive a maximum of fifty (50) percent core credit.
7. Fill out and complete the Core Evaluation form. The Core Evaluation forms are included with every Remanufactured Carrier. No core credit will be given unless the Core Evaluation form and the core are received. The serial number on the core evaluation form can not be altered. (Note: Core bank customers do not need to supply the Core Evaluation form).

Carrier Core Group Listing

New Carrier Core Group	Old Carrier Core Group	Models Included
CA010	A	QD100/QRD
CA020	B	SHDA/SHDB
CA030	C	QHD
CA040	D	QR100/QRR100
CA050	E	QHR
CA060	F	QAR
CA070	G	SHRA/SHRB-R155A/R155B
CA080	H	R170
CA090	I	59722A/59722B/59732
CA100	J	QHP/QP100/QRP100
CA110	K	RD20145/RD17145/RDL20145/RPL20145//RP20145/ RDL22145/RPL22145/RD22145/RP22145
CA120	L	RDL23160/RPL23160/RD23160/RP23160
CA130	M	RR20140/RR17145/RR20145/RRL20145/RR22145/RRL22145
CA140	N	RR23160/RRL23160
CA150	O	RR23180/RRL23180/RR26185/RRL26185
CA160	P	RS15120/RSL15120
CA170	Q	RS15210/RS17220/RS21230/RS23240
CA180	R	RP23180/26185

Carrier Core Deductions

Description	Percentage Deduction of Full Core Value
Cracked, Bulging, Broken Carrier or Power Divider Cover	50%
Aluminum Core.	50%
Damaged Spigot Bore Area	50%
Missing Parts due to physical removal	50%
Burned Up Core – Old Style	75%
Burned Up Core – World Axle	50%
Coarse Splined SSHD	100%
Excessive Weld	50%
Disassembled Core - complete	25%
Core Not Drained of Oil	\$100 Deduction

Core Deduction Notes:

Cracks, bulges, broken carrier or helical gear cover (power divider cover) includes any damage to:

- Carrier mounting, leg caps, adjusting rings (including looking for blown/pushed out rings), spigot bore area (see following note), case/housing, helical gear cover, mounting holes, threads, two-speed support case.

Note: The definition of a damaged spigot bore area that would result in a deduction includes:

- Cracked, welded and spiked bores.
- No deduction will be taken for a wallowed or sleeved bore.

Missing parts include:

- Ring and pinion gears, shafts, inner axle diff nests, helical gears, leg caps, leg cap bolts, and any cast housing cover.

Burned-up units will be evaluated and credited per the following:

- Burned-up units can be identified by checking for the following items: ring gear blackened due to burned oil; bluing of the ring and pinion gears and the mounting from over heating; melted pinion bearings; melted gear teeth; burnt tin cover; paint burned off outside of unit.
- Old style carrier cores (models QD100, QR100, QP100, SHDA, SHDB, SHRA, SHRB, QHD, QHP, QHR, QAR, R155, R170, QRR100, QRD100, and QRP100) run in a low or no lube conditions will be processed for a credit with a maximum possible value of twenty-five (25) percent of the full core value. This is provided no major components (ring and pinion gears, differential cases, shafts, etc...) are missing.
- World Axle cores (carriers starting with RR, RD, RP, RS, RRL, RDL, and RPL) will be processed for credit with a maximum possible value of fifty (50) percent of the core value. This is provided no major components (ring and pinion gears, differential cases, shafts, etc.) are missing.

Aluminum cores:

- Acceptable with a fifty (50) percent deduction taken for the aluminum core due to the mounting not being reusable. No further deductions will be taken for mounting damage, but the core will be evaluated for all other damage criteria.

Coarse splined SSHD cores are not acceptable for core credit:

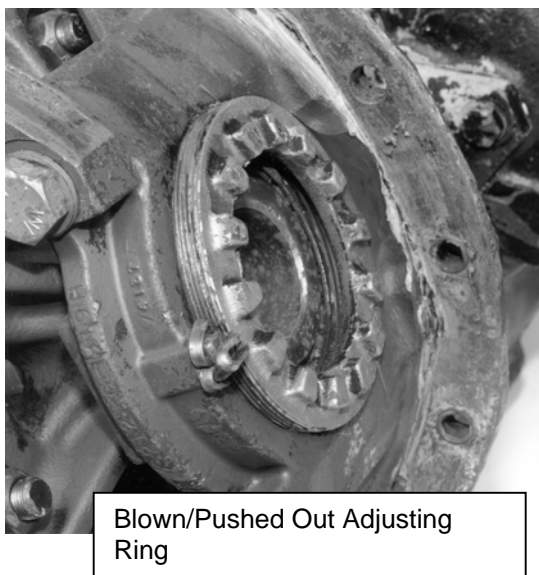
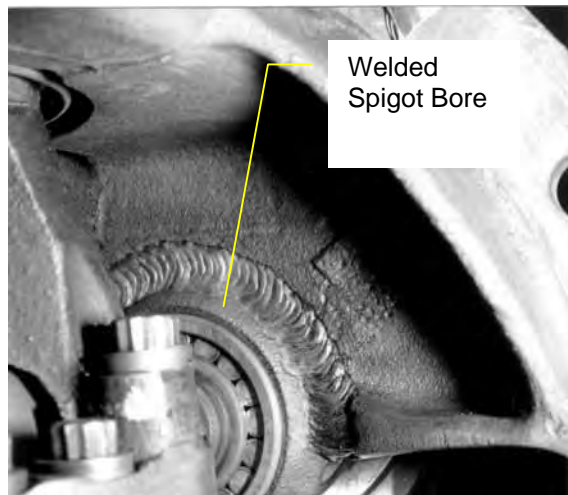
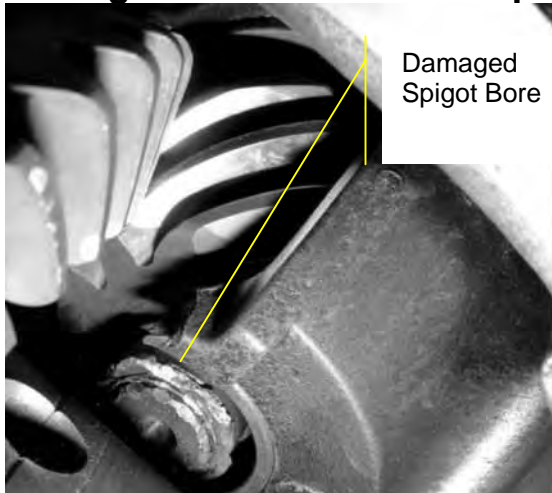
- The models affected are the SHDA, SHDB, SHRA, and SHRB. The number of teeth on the shafts can identify the old design SSHD's. The old design has ten (10) teeth and the newer designs have forty-five (45) splines. SSHD cores with fine toothed splines and casting numbers 3200 R 1162 and 3200 P 1420 are acceptable for core credit.

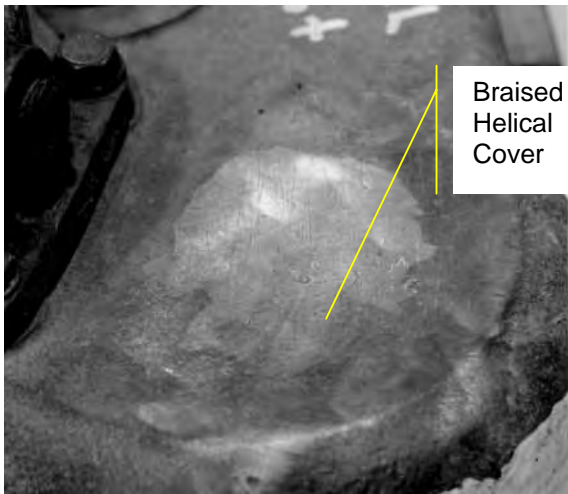
Welding on the carrier and cap assembly and/or the helical gear cover (where applicable) will result in a core deduction, except as follows:

- Any weld on the exterior of the carrier must be only for the purpose of attaching a lifting device such as an eyelet, hook or nut. Even for this purpose the weld must not be excessive.

Cores returned must be from the same core group as that purchased.

Damaged Carrier Core Examples





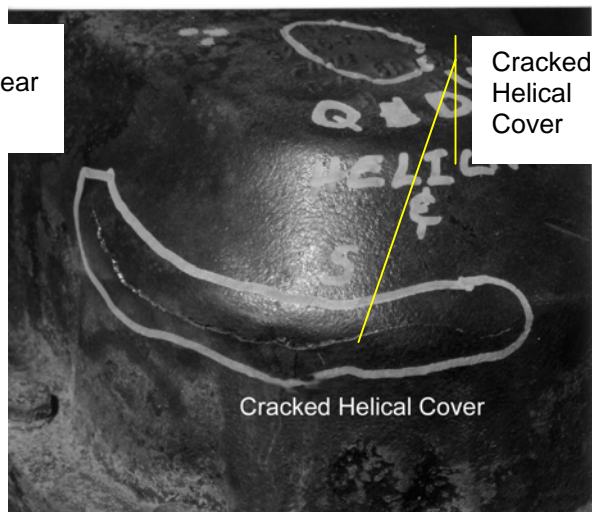
Braised
Helical
Cover



Bulge in
Housing

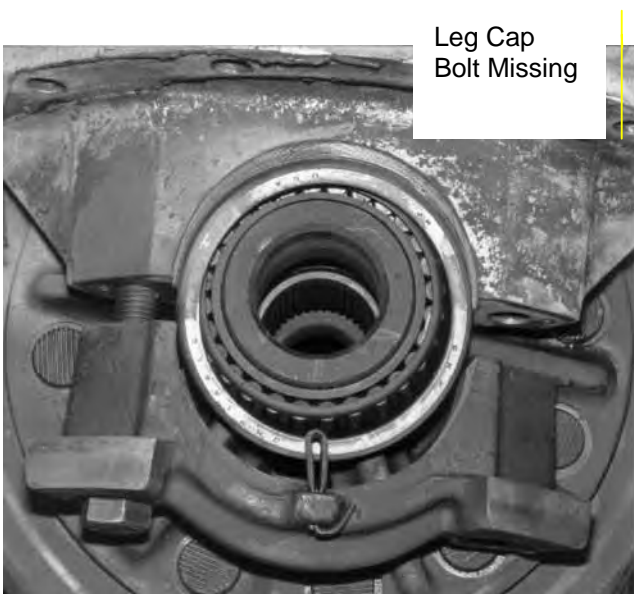


Cracked
Helical Gear



Cracked
Helical
Cover

Cracked Helical Cover



Leg Cap
Bolt Missing



Coarse Splined SSHD (Old
Style)



Please refer to Carrier Core Evaluation Wall Chart (WC-97108) for further information.

Transmission Core Evaluation

- 1) Clean and drain the oil from the core. Failure to completely drain the oil from the transmission will result in a core deduction of one hundred (\$100) dollars.
- 2) Confirm the model number of the core you are returning. (See attached sheets for part number breakdowns)
 - Model 1 design transmissions are not acceptable for return. The model 1 design level is determined by finding the design level number in the part number (see following pages).
- 3) Make a thorough inspection for visible cracks, especially in the high stress areas of the transmission.
- 4) We recommend removing the top cover/shift-bar housing to inspect the internal components. ArvinMeritor will remove the top cover during their inspection. To avoid the deduction for disassembly, the top cover should be securely banded to the unit, do not reattach.
- 5) Make sure the unit is complete with the main case, auxiliary section, shift-bar housing and internal components.
- 6) Make sure to remove and transfer to the replacement unit, all other external equipment not supplied (i.e. yokes, shift-tower, PTO's, bellhousings, etc.).
- 7) Complete the original core evaluation forms and tags supplied with the replacement unit for each transmission being returned.
- 8) Only models shown in the Transmission Core Group Listing, are acceptable for return (the list will be updated as new models are released for reman).

Model 1 versus Model 2 Comparison



Model 1 Snap Ring



Model 2 Bolt in Ring

Transmission Core Deductions

Description	Percentage Deduction of Full Core Value
Core Returned in Unusable Condition. See Core Deduction Notes below.	100%
One or Two Broken, Cracked, Bulging or Welded Housings	20%
Missing Top Cover/Shift-Bar Housing	20%
More Than Three (3) Broken Gearsets. A Single Gearset Consists of the Mainshaft Gear and the Two Mating Counter Shaft Gears.	20%
Disassembled Core – Complete	25%
Missing Auxiliary Box	45%
Missing or Broken Slave Valve	3%
Missing or Broken Air Cylinders (Except ESS Models)	3%
Missing or Broken Output Speed Sensor (ESS Models Only)	3%
Missing or Broken Neutral Position Switch (ESS Models and “G” Platform Models Only)	3%
Missing or Broken High Range Solenoid (ESS Models and “G” Platform Models Only)	3%
Missing or Broken Low Range Solenoid (ESS Models and “G” Platform Models Only)	3%
Missing or Broken Wiring Harness (ESS Models and “G” Platform Models Only)	3%
Failure to Completely Drain Oil	\$100 deduction

Core Deduction Notes:

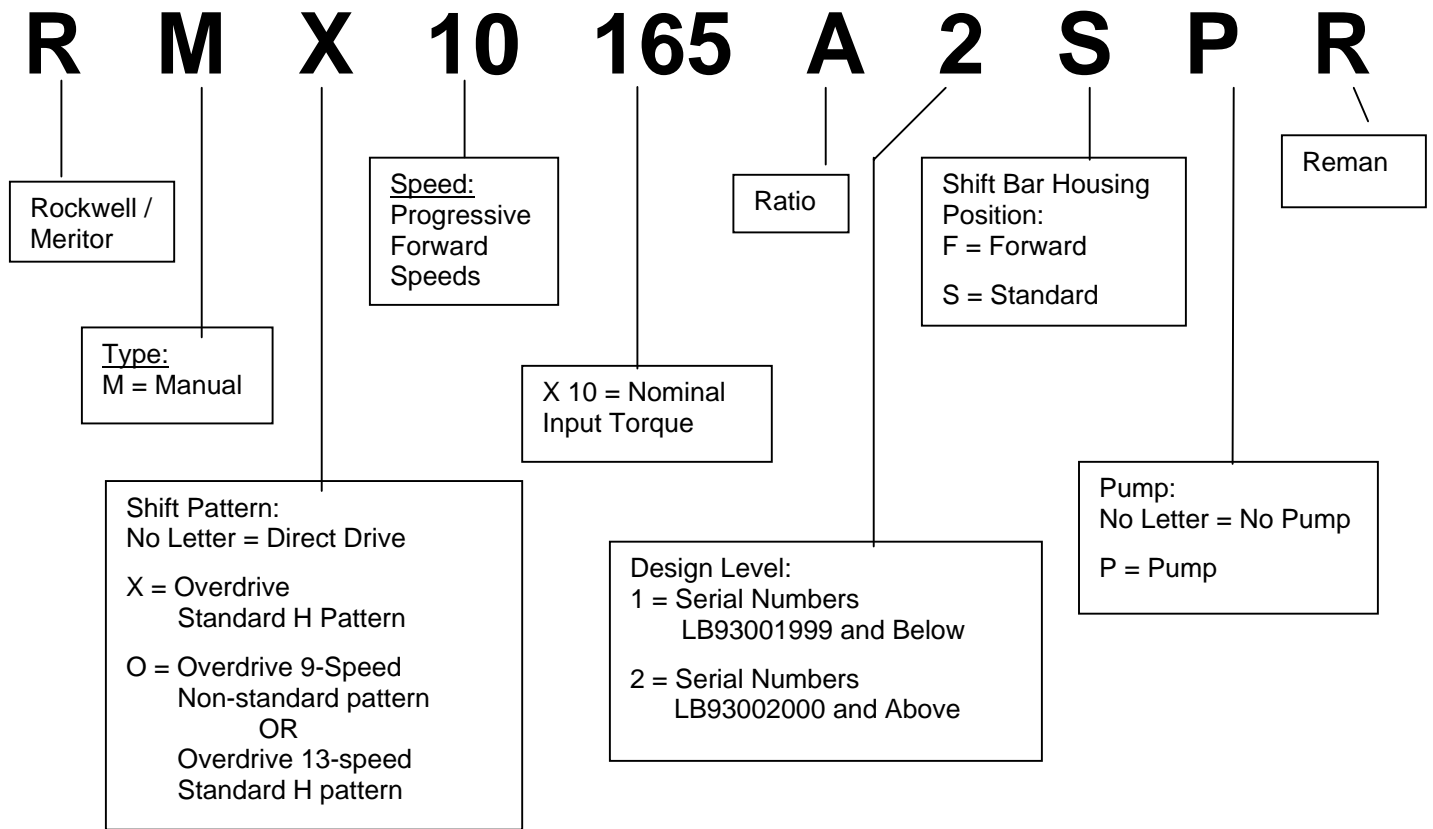
Cores that are returned in an unusable condition will not be accepted or processed for credit. By not processing for credit, the customer does not lose return eligibility. However, the dealers will be responsible for freight charges associated with the return of an unusable core. The following are examples of unusable conditions:

- Model 1 transmissions are no longer eligible for core return
- Full of tar
- Gears, shafts that are blue or burned due to over-heating
- Excessive rust that causes pitting and damage
- Missing internal parts (due to physical removal, not failures)
- Three or more cases or housings that are cracked, broken or bulging
- A disassembled core with missing parts
- Missing main case

Transmission Core Group Listing

New Group	Old Group	Models
TR010	A	RMO-RMX-RM-SR-FR 9115-9125-10115-10125-A-B-R MODEL 2
TR020	B	RMO-RMX-RM-SR-FR 9135-9155-10145-10155-10165-A-B-C-R MODEL 2
TR030	C	RMO-SR-FR 13145-A MODEL 2
TR010	D	RMO-RMX-RM-SPR-FPR 9115-9125-10115-10125-A-B-R MODEL 2
TR020	E	RMO-RMX-RM-SPR-FPR 9135-9155-10145-10155-10165-A-B-C-R MODEL 2
TR030	F	RMO-SPR-FPR 13145-A MODEL 2
TR060	G	RS-RSX-SR-FR 9115-9125-10115-10155-10165-A-B-C MODEL 2 (INCLUDES "G" PLATFORM)
TR060	H	RS-RSX-SR-FR 9135-9155-10145-10155-10165-A-B-C MODEL 2 (INCLUDES "G" PLATFORM)
TR060	J	RS-RSX-SOR-FPR 9115-9125-10115-10125-A-B MODEL 2 (INCLUDES "G" PLATFORM)
TR060	K	RS-RSX-SPR-FPR 9135-9155-10145-10155-10165-A-B-B MODEL S (INCLUDES "G" PLATFORM)
TR060	M	M-MO-SPR-FPR ("G" PLATFORM) 1150-1650 LB-FT-9 & 10 SPEED – A-B-C RATIO
TR060	N	M-MO-SR-FR ("G" PLATFORM) 1150-1650- LB-FT- 9 & 10 SPEED – A-B-C RATIO
TR070	P	M-MO SURESHIFT (SMART SHIFT) WITH PUMP
TR070	Q	M-MO SURESHIFT (SMART SHIFT) WITHOUT PUMP

“F” Platform Reman Transmission Part Numbering



“G” Platform Reman Transmission Part Numbering

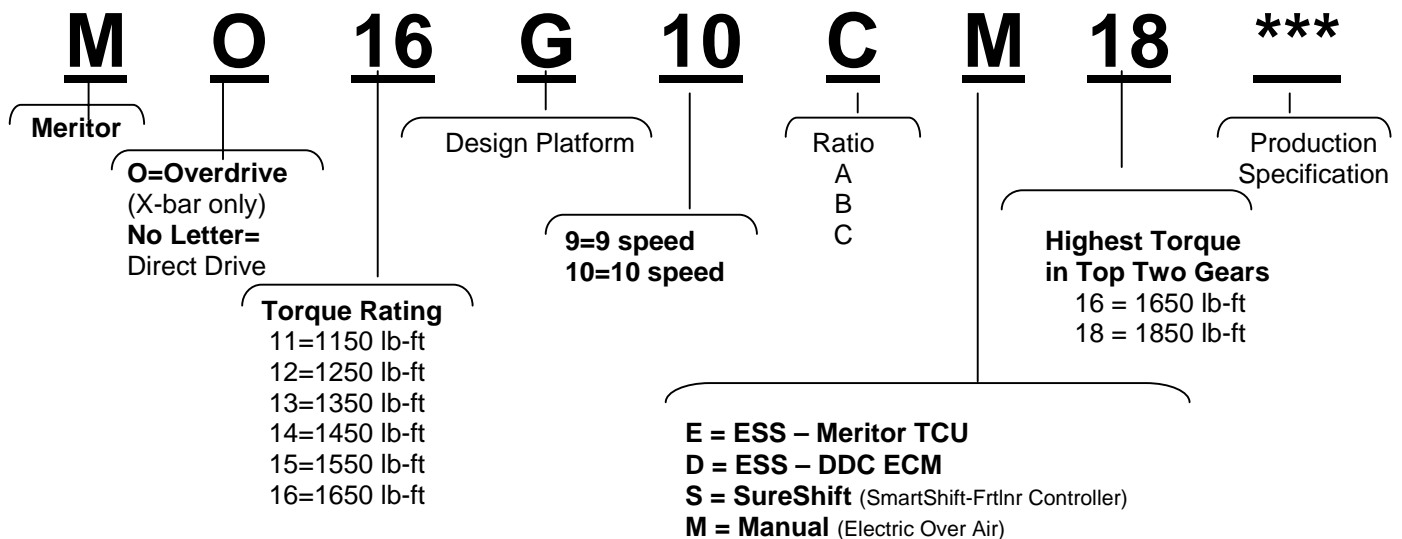
- All “G” platform transmissions are either direct drive or ‘X’ bar overdrive, 9 and 10 speed only (no 13 speeds), electric over air, and 2.75” 10 spline output shaft.

- The complete model number is required to determine the shift tower position and if it has a pump or not.

For all input torque’s 1350 and higher use the reman with a pump, for 1150 and 1250 torque’s, the pump is optional.

For the remanufactured part numbers, use the guide below.

Production Model Number



Service Reman Model Number

M O G 10 C M ***

SR = Std Shift Tower Position (no pump)-Reman
FR = Fwd Shift Tower Position (no pump)-Reman
SPR = Std Shift Tower Position (with pump)-Reman
FPR = Fwd Shift Tower Position (with pump)-Reman
XR = Sure shift (no pump) – Reman
XPR = Sure Shift (with pump) - Reman

Serialized Carrier and Transmission Return Instructions

Core Bank Customers

Must follow their OEM's core return instruction policy.

For Non-Core Bank Customers

Use the following instructions

All remanufactured carriers and transmissions contain a packet that includes a warranty registration, core evaluation form, and core tag. It is important that the dealer fills out each of these documents completely. Dealers are advised to make sure they include their OEM dealer code. This number should be consistent with the OEM that the remanufactured unit was purchased from. The serial number cannot be changed or altered in any way. No credit will be issued without an original Meritor carrier or transmission core evaluation form.

Please follow the instructions below.

- 1) Dealer must complete the Meritor Remanufactured Carrier or Transmission Warranty Registration Form.
 - Copy 1 = Mail to ArvinMeritor Inc., 7975 Dixie Highway, Florence, KY 41042-2754
Attn: Reman Coordinator.
 - Copy 2 = Dealer's Copy
 - Copy 3 = Purchaser
- 2) Dealer must complete the Meritor Remanufactured Core Evaluation Form.
 - Copy 1 = Mail to ArvinMeritor Inc., 7975 Dixie Highway, Florence, KY 41042-2754
Attn: Reman Coordinator
 - Copy 2 = Dealer's Copy
 - Copy 3 = Attach to the carrier or transmission core. Include the return address, Dealer name, Dealer code, contact name, phone number, and fax number on the tag.
- 3) Prepare the core for shipment
 - Completely drain oil from each core to avoid a handling deduction.
 - Clean and wipe down each core
 - Band core to the pallet.
 - Reference replacement unit serial number(s) on bill of lading or packing slip.
 - Do not disassemble the unit. Units that are received disassembled will result in a deduction.
- 4) If you receive a Meritor Remanufactured Carrier or Transmission without a Core Evaluation Form or Warranty Registration Form, you need to contact your OEM to request duplicates. You may also call ArvinMeritor and ask for the Reman Coordinator (859-525-3539).

Reman Clutch Core Program

Part Numbers / Core Groups :

Meritor Brand Part Number	Core Number
R141101RM	CR14
R151406RM	CR15
R152725RM	CR15
R153705RM	CR15
R152705RM	CR15
R153755RM	CR15

Core Return Criteria:

Acceptable Cores:

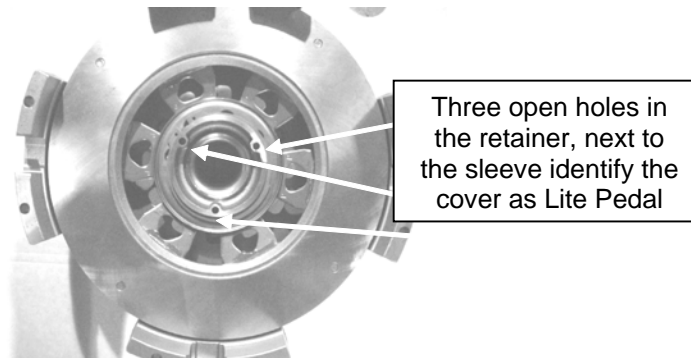
- **Only** Lite Pedal™ cores will be accepted. No competitor's cores.

The following Clutch defects will be deducted 100% of core value:

1. Clutch cover with any visible cracks, or welding marks.
2. Missing clutch cover.
3. Non Lite Pedal™ Pedal core returned.

Core Identification:

Lite Pedal Cover Assembly



Shipment Preparation:

- Cores will be shipped to our reman facility in Plainfield, IN.
- Complete clutch cores can be shipped with five per skid, banded to the skid.
- A piece of plywood should be put between the layers and do not stack more than five high.
- Disassembled clutch cores should be put into a Gaylord box for shipping, maximum weight 2500 lbs per 48" x 48" x 48" Gaylord box.

Core Banks:

- Customers may return one core for each reman clutch of like size purchased
- Cores returned in excess of purchases will be banked for use against future purchase of like sized reman clutch. If banked unit is not purchased against within 12 months it will expire.
- New clutches will continue to be sold outright – no core.

Core Return Shipping Instructions

MINIMUM RETURNS: ANY COMBINATION OF CLUTCH, CARRIER, AND TRANSMISSION CORES WITH A TOTAL WEIGHT OF 1,200 LBS. OR MORE.

If these minimum return requirements are not met in one month, you may ship your current core inventory. When a shipment of cores is ready to ship:

- To return over 1200 lbs, ship cores "Collect" by ArvinMeritor's specified freight carrier. To determine the carrier for your region, contact ArvinMeritor's Aftermarket Logistic Team at (859) 525-3562 or (859) 525-3490.
- For returns fewer than 1200 lbs, ship cores "Prepaid" using the freight carrier of your choice.
- Collect shipments will not be accepted unless the minimum requirements are met.
- The core should be returned properly secured to a pallet. Any damage to the core during shipping due to poor packaging will be reflected in ArvinMeritor's deductions for that unit.
- Bill of Lading must be marked as Class 50 material with the description: "Used Truck Parts for Reconditioning Only"
- (Serialized Customers Only) Attach the serialized tag to the carrier/transmission core after completing the information requested on the tag.
- Core shipments which arrive in an unstable or unsafe condition will be unloaded at the expense of the buyer. In these cases digital photographs detailing the condition will be provided via email and expenses will be documented in detail.

FAILURE TO FOLLOW THIS SHIPPING INSTRUCTION WILL RESULT IN A PENALTY FOR EACH CORE RETURNED IMPROPERLY.

U.S. Locations Ship to:

**ArvinMeritor Inc.
849 Whitaker Road
Plainfield, IN 46168**

Canadian Locations Ship to:

**ArvinMeritor Inc.
Remanufactured Core Program
350 First Gulf Blvd.
Brampton, Ontario L6W 4T5**

Information contained in this publication was in effect at the time the publication was approved for printing and is subject to change without notice or liability. ArvinMeritor reserves the right to revise the information presented or discontinue the production of parts at any time.

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Meritor Core Inspection Criteria

CORE ACCEPTANCE GUIDELINES

Cores with the following conditions will be deducted by the percentage or dollar amount shown below.

Product	% Deduct	Product	% Deduct
All Products		Hydraulic - Calipers/Lucas A2LS	
1. Fire Damage/Excessive Rust	100%	1. One Damaged/Missing Lucas Piston	75%
2. Part Not In Program	100%	2. Two Damaged/Missing Lucas Pistons	100%
3. Welded/Brazed Casting (see carrier core deduct exception)	100%	3. Lucas Core with 1-5/8" Bore Diameter	100%
		4. Lucas Assembly with 1 Piston Missing	25%
		5. Lucas Assembly with 2 Pistons Missing	50%
		6. Lucas Assembly with 3-4 Pistons Missing	75%
		7. Damaged/Missing Caliper Piston(s)	50%
		8. Excessive Caliper Wear or Pitted Rails/V-Ways	15%
		9. Caliper Scored by Rotor	100%
		10. Damaged Threads	100%
		11. Housing Broken/Cracked	100%
Brake Shoes		Transmissions	
1. Broken Welds at Table to Web Point	100%	1. Four or More Broken Gear Sets	20%
2. Deformed or Bent Web	100%	2. One Broken/Cracked/Bulging/Welded Housings	20%
3. Worn, Elongated or Mushroomed Roller Socket/Anchor Pin Eyes	100%	3. Two or More Broken/Cracked/Bulging/Welded Housings	50%
4. Excessive Corrosion on Table/Web	100%	4. Missing Top Cover/Shift-Bar Housing	20%
5. Torch Damage	100%	5. Disassembled Unit with All Parts	20%
6. Broken, Cracked or Excessively Bent Casting (cast shoes)	100%	6. Missing Auxiliary Box	45%
		7. Missing/Broken Slave Valve (Except ESS/G Platform)	3%
		8. Missing/Broken Air Cylinder (Except ESS/G Platform)	3%
		9. Missing/Broken Output Speed Sensor (ESS)	3%
		10. Missing/Broken Neutral POS Switch (ESS/G Platform)	3%
		11. Missing/Broken High Range Solenoid (ESS/G Platform)	3%
		12. Missing/Broken Low Range Solenoid (ESS/G Platform)	3%
		13. Missing/Broken Wiring Harness (ESS/G Platform)	3%
		14. Improper Freight Routing	\$100
		15. Failure To Drain	\$100
Carriers			
1. Adjusting Ring/Leg Cap Thread Damage	50%		
2. Welded/Cracked Spigot Bore	50%		
3. Spiked Spigot Bore	50%		
4. Damage to Helical Gear Cover, Power Divider Case or Mounting Holes	50%		
5. Excessive weld	50%		
6. Aluminum core	50%		
7. Disassembled/Components Missing - Including Ring & Pinion, Input Shaft, IAD, or Helical Gear Cover	50%		
8. Burned Up Core (World Axle)	50%		
9. Burned Up Core (Old Style)	75%		
10. Improper Freight Routing	\$50		
11. Failure to Drain	\$100		
Clutches			
1. Damaged Casting or Welds in Casting	100%		
2. Cover Assy only (Missing Discs or Plates)	25%		
3. Non-Lite Pedal Clutch	100%		

For questions on this policy or core return instructions, please contact Meritor's Core Administrator at (859) 525-3539.