

# Technical Service Bulletin

Mazda North American Operations  
Irvine, CA 92618-2922



<b>Subject:</b>  <b>HARD SHIFTING/SHIFT LEVER VIBRATION</b>	<b>Bulletin No.:</b> 05-005/19
	<b>Last Issued:</b> 06/06/2019

## BULLETIN NOTES

This bulletin supersedes the previously issued bulletin(s) listed below. The changes are noted below in Red.

Previous TSBs:	Date(s) Issued:
05/002/17	07/06/17 and 06/12/17
05-001/15	11/30/15, 11/15/15 and 01/05/15
05-008/14	11/26/14 and 07/14/14

## APPLICABLE MODEL(S)/VINS

- 2012-2013 Mazda3 (SKYACTIV 6 M/T)
- 2014-15 Mazda3 (Japan built 6 M/T) with VINs lower than JM1BM\*\*\*\*\*276367 (produced before July 1, 2015)
- 2014-16 Mazda3 (Mexico built 6 M/T) with VINs lower than 3MZBM\*\*\*\*\*253322 (produced before August 31, 2015)
- 2013-2016 CX-5 (6 M/T) with VINs lower than JM3KE\*\*\*\*\*686295 (produced before July 1, 2015)
- 2014-2016 Mazda6 (6 M/T) with VINs lower than JM1GJ\*\*\*\*\*440069 (produced before July 1, 2015)

## DESCRIPTION

Some vehicles may exhibit one of the following concerns:

- Sometimes the shifter may jump out of 3rd gear over a road bump when accelerating after deceleration at 25-40 mph (40-65 km/h)
- Hard to shift into 3rd, 4th, 5th, and/or 6th gear
- Shift lever vibrates when driving in 3rd or 4th gear

This is caused by inappropriate transmission internal parts.

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## MASS PRODUCTION CHANGES:

Modification	Subject Part	Changes	Subject Concern
A	3-4 Clutch Hub	Surface Treatment	Jumping out of gear
B	3-4 Clutch Hub 5-6 Clutch Hub	Shape	Hard shifting into 3rd, 4th, 5th and/or 6th gear
C	3rd and 4th Gears	Tolerance	Shift lever vibration
D	3rd and 4th Gears 3rd and 4th Synchronizer Rings	Shape	Hard shifting into 3rd and/or 4th gear (additional improvement)

Customers having this concern should have their vehicle repaired using the following repair procedure.

**REPAIR PROCEDURE**

1. Verify customer concern.
2. Remove the transaxle. Refer to MGSS online instructions (MANUAL TRANSAXLE REMOVAL/INSTALLATION).
3. **Replace the specified parts in the below tables with modified ones.** Refer to the C66M-R 6-speed SKYACTIV Manual Transaxle Workshop Manual.

**NOTE:** For non-warranty repair: Customer can either replace the transaxle or replace the specified parts in the below tables with modified ones according to the verified symptom(s) and the VIN in the repair.

**NOTE:** Bearing Puller part number 4907-10-520A is used for this repair.

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## BEGINNING VIN AND DATE OF MODIFICATION:

Vehicle	Modification			
	A	B	C	D
2012-2013 Mazda3	All VINs are before modification			
2014-2015 Mazda3 JM1BM*****	-200302 Apr 3, 2014	-228314 Aug 8, 2014	-240521 Oct 24, 2014	-276367 Jul 1, 2015
2014-16 Mazda3 3MZBM*****	-117653 Jun 2, 2014	-157427 Oct 6, 2014	-180516 Dec 22, 2014	-253322 Aug 31, 2015
2013-16 CX-5 JM3KE*****	-466787 Apr 3, 2014	-517027 Aug 8, 2014	-545332 Oct 24, 2014	-686295 Jul 1, 2015
2014-16 Mazda6 JM1GJ*****	-179581 Apr 3, 2014	-203425 Aug 8, 2014	-216951 Oct 24, 2014	-440069 Jul 1, 2015

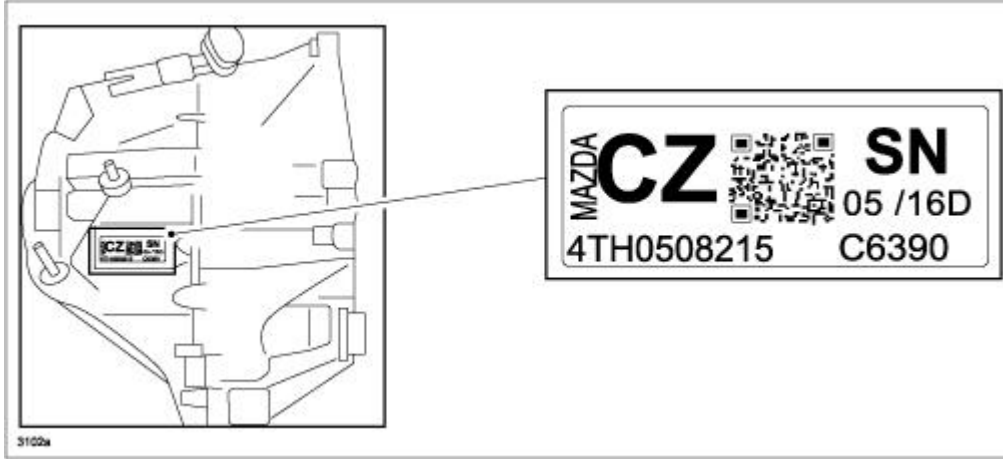
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REPLACEMENT PARTS BY SYMPTOM AND VIN:

VINs	Symptom			
	Gear Jumping Out (3rd Gear)	Hard Shifting (5th or 6th Gear)	Hard Shifting (3rd or 4th Gear)	Shift Lever Vibration (3rd or 4th Gear)
VINs before Modification A	Replace: 1) 3/4 Clutch Hub 2) 3rd Gear and Synch. Ring	Replace: 1) 5/6 Clutch Hub	Replace: 1) 3/4 Clutch Hub 2) 3rd Gear and Synch. Ring 3) 4th Gear and Synch. Ring	Replace: 1) 3rd Gear and Synch. Ring 2) 4th Gear and Synch. Ring
VINs between Modification A and B				
VINs between Modification B and C			Replace: 1) 3rd Gear and Synch. Ring 2) 4th Gear and Synch. Ring	
VINs between Modification C and D				

**NOTE:** The modification(s) applied to the transaxle can also be found from the transaxle number. The transaxle number is printed on the label attached on the top side of the transaxle case. Refer to the below table for the beginning transaxle numbers of each modification.

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Modification	Transaxle Number			
	Year	Production Line	Month	Sequence No.
A	4 (2014)	TH	03 (Mar)	17951
B	4 (2014)	TH	04 (Apr)	01626
C	4 (2014)	TH	10 (Oct)	13178
D	5 (2015)	TH	06 (Jun)	23676

4. Install the transaxle. Refer to MGSS online instructions (MANUAL TRANSAXLE REMOVAL/INSTALLATION).
5. Verify repair.

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## PARTS INFORMATION

**NOTE:** Refer to the following illustrations for the parts location. Confirm the part numbers in the GEPC for the subject VIN and place an order for the corresponding (modified) service part.

Parts Number	Description	Qty.	Notes
C602-17-240B	3-4 Clutch Hub Assembly	1	
C602-17-26YB	Synchronizer Ring	2	
C602-17-620C	5-6 Clutch Hub Assembly	1	Combination 1: Only when C602-17-620C is available (Use current Synchronizer Ring C604-17-26YB)
-	Synchronizer Ring	0	
C602-17-620D	5-6 Clutch Hub Assembly	1	Combination 2: Only when C602-17-620D is available
C614-17-26YA	Synchronizer Ring	2	
C601-17-230D	3rd Gear	1	Part numbers of gears are different depending on the variation of the gear ratio. Check EPC for the correct part number for the repair VIN.
C610-17-230C			
C601-17-210E	Gear, Main Drive (See note below)	1	
C603-17-210B			
C613-17-210B			
F401-17-313	Reamer Bolt	6	
C601-17-435B	Retaining Ring	1	
C604-17-435B	Retaining Ring	1	
D602-17-435B	Retaining Ring	1	
C602-17-206	Ball Bearing	1	
C601-17-339	"O" Ring	1	
C601-17-335	Oil Seal	1	
9956-21-400	Washer	2	
9956-21-600	Washer	1	
9956-41-800	Washer	2	
0000-77-5W80-QT	Manual Transaxle Oil	3	Specification: 2.6 - 2.7 US qt

**NOTE:** For transmissions equipped with the main drive gear with the following part numbers, the modified part CANNOT be used in place of them.

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- C612-17-210A
- C601-17-210A

Confirm the part number of the main drive gear in the GEPC for the subject VIN. If the part number is one of those listed above, this TSB is not applicable. In this case, replace the transmission assembly with a new one.

Other parts that need to be replaced (Obtain the part numbers from the GEPC).

Description	Qty.	Notes
Bolt (for Intermediate Shaft)	1	For 2WD and 4WD
Clip (for Drive Shaft)	1	
Clip (for Tie-rod End)	2	
Nut (Wheel Hub)	2	
Gasket (for Exhaust Manifold)	1	For 4WD only
Gasket (for Exhaust Pipe)	2	
Flange Nut (for Exhaust Pipe)	4	

#### Location of Transmission Related Parts

A: 3rd Gear

B: 3rd Synchronizer Ring

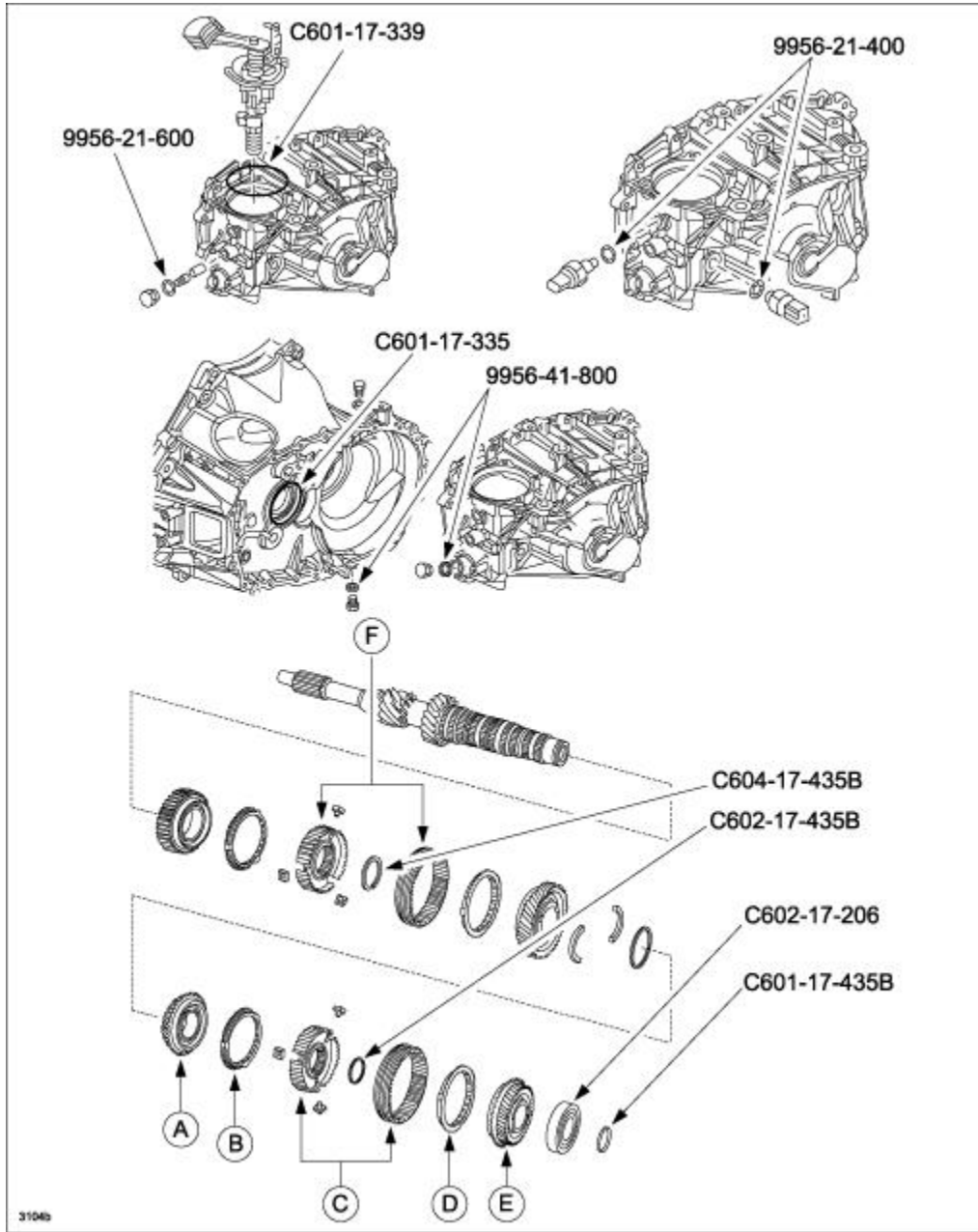
C: 3/4 Clutch Hub Assembly

D: 4th Synchronizer Ring

E: 4th Gear

F: 5/6 Clutch Hub Assembly

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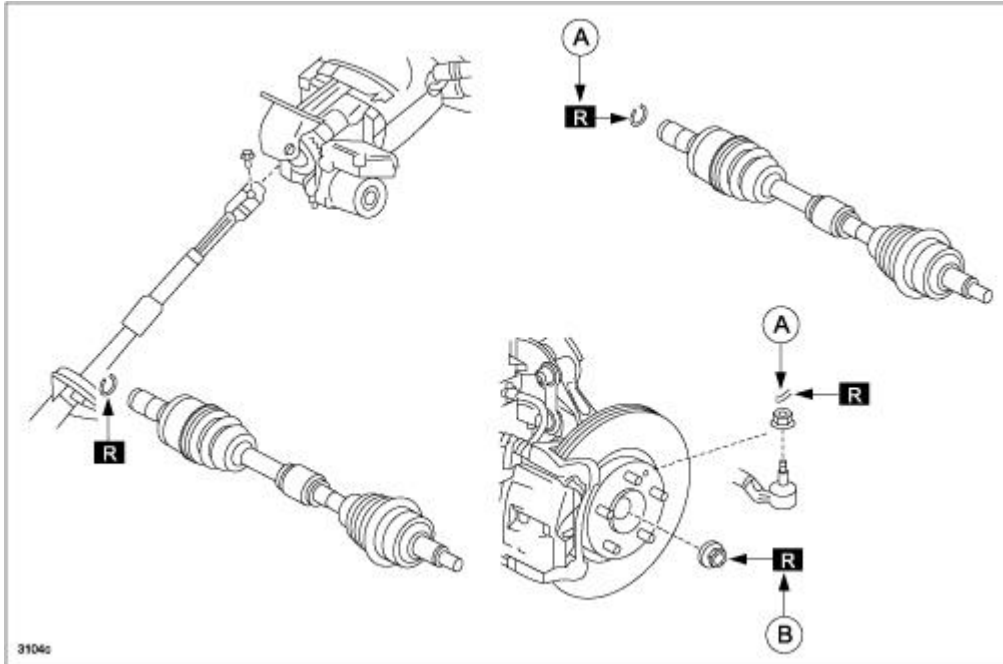


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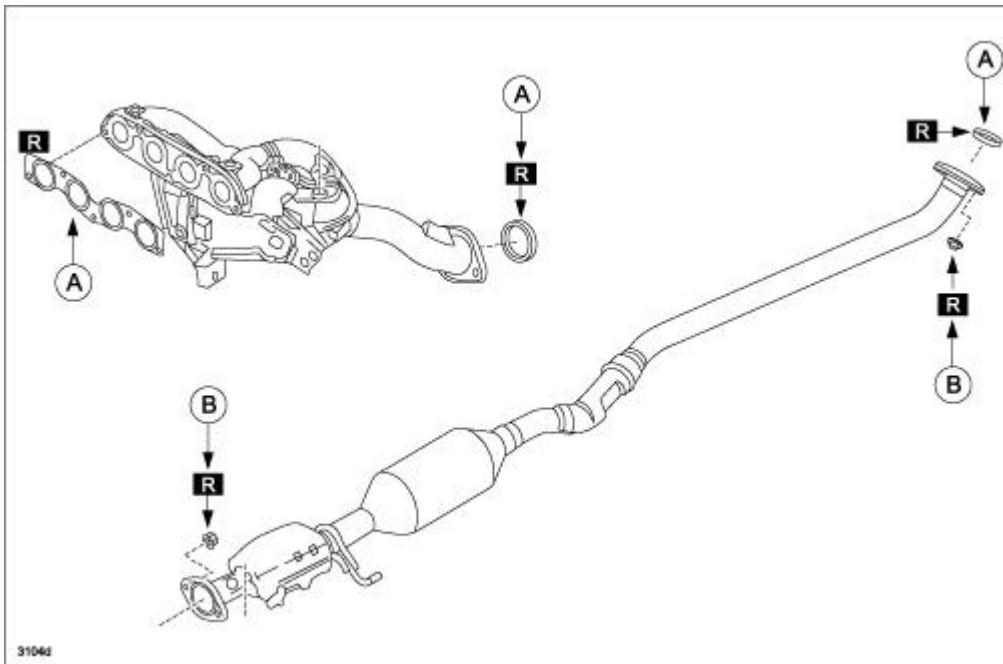
A: Clip

B: Nut



A: Gasket

B: Nut



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**WARRANTY INFORMATION****NOTE:**

- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair.
- This repair will be covered under Mazda's Powertrain Limited Warranty.
- Additional diagnostic time cannot be claimed for this repair.
- The "before" and "after" alignment measurements must be attached to the warranty claim.

Warranty Type	A	
Symptom Code	24	
Damage Code	9M	
Part Number Main Cause (Choose one part number applicable to the symptom)	Casual Part No.	Symptom
	C602-17-240B (3/4 Clutch Hub)	Gear jumping out (3rd Gear)
	C602-17-620B (5/6 Clutch Hub)	Hard shifting (5th or 6th Gear)
	C602-17-26YB (3rd Synchronizer Ring)	Hard shifting (3rd or 4th Gear)
	C601-17-230D/C610-17-230C (3rd Gear)	Shift Lever vibration (3rd or 4th Gear)
Quantity	1	
Operation Number / Labor Hours: NOTE: If the wheel alignment check and adjust was performed by an outside shop, claim the actual cost using the sublet code "Z9".	XXL67ARX (Primary shaft gear and/or primary shaft gear related parts, R and R)	5.4 Hrs (2012-13 Mazda3) 5.3 Hrs (2014-16 Mazda3) 5.2 Hrs (2014-16 Mazda6) 5.5 Hrs (2013-16 CX-5 2WD)
	XXL67BRX (Primary shaft gear and/or primary shaft gear related parts, R and R)	7.6 Hrs (2013-16 CX-5 4WD)
	A0109AAX (Front and/or rear wheel alignment - check and adjust using 4-wheel alignment machine)	1.2 Hrs (2012-13 Mazda3) 1.1 Hrs (2014-16 Mazda3)

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		1.1 Hrs (2014-16 Mazda6) 1.1 Hrs (2013-16 CX-5)
	XXL67CRX (If 4-wheel alignment machine with wireless type is used - check and adjust using 4-wheel alignment machine)	0.7 Hrs (All models)

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