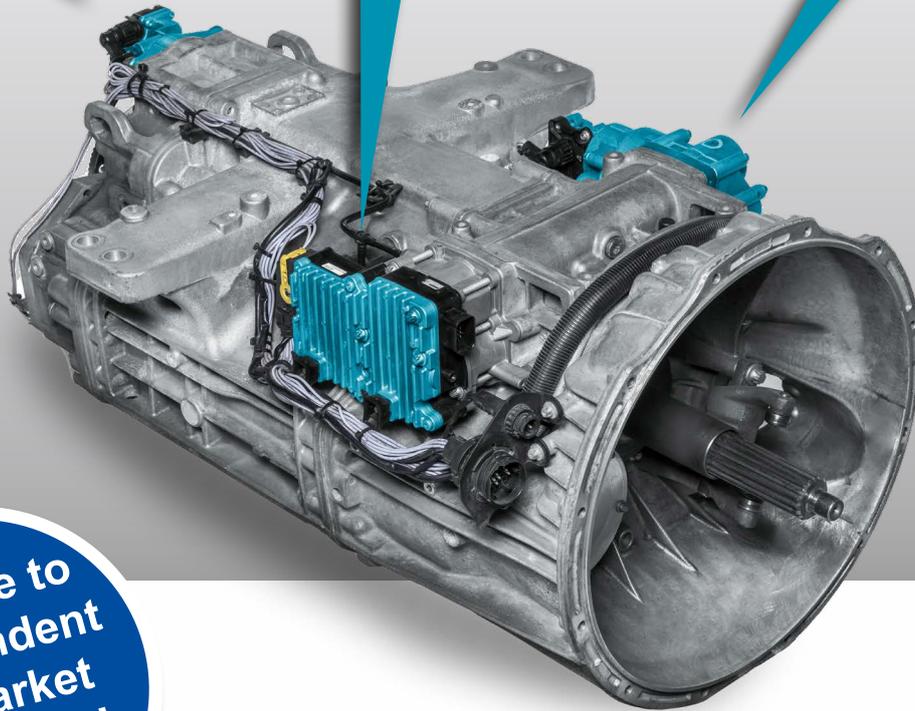


WABCO AUTOMATED MANUAL TRANSMISSION (AMT)

Aftermarket solutions for gearbox control units
for Daimler applications



Available to
independent
aftermarket
workshops!

WABCO

WABCO AUTOMATED MANUAL TRANSMISSION (AMT) AFTERMARKET REPLACE AND REPAIR SOLUTIONS

GROW YOUR BUSINESS WITH WABCO

WABCO's AMT solutions increase fuel savings through optimized gear shifting. Additionally, they help vehicle operators to significantly reduce mechanical wear and to decrease vehicle downtime. Our AMT technology for the 3rd generation Daimler automated manual transmission (AMT) was launched in series in 2002. Since then, it has been fitted in 600.000 trucks (in serial production).. Most of these trucks are already out of warranty and now form a giant opportunity for your workshop... So be sure you're fully equipped to service them!

ORIGINAL PARTS MATTER

Keeping your parts genuine, guarantees perfect fitting and smoothless operation; worry-free for your customers, worry-free for you. We offer a wide range of repair kits and complete devices that cover most repair cases and that are easily available through our worldwide distribution network.



EASIER THAN YOU THINK

Even though AMT repair appears to be difficult, the modules of Daimler AMT are mounted on the surface of the transmission. This makes them easily accessible for repair, without any need for special tools or having to disassemble the complete transmission. And WABCO wouldn't be WABCO if we didn't make things even easier for you by providing you with:

■ EASY DIAGNOSTICS

A variety of solutions to easily diagnose the gearbox actuator, offered by WABCO and WABCO Würth allows a fast and precise failure detection

■ TAILORED REPLACE AND REPAIR SOLUTIONS

A selection of complete replacement units and repair kits meets any repair need

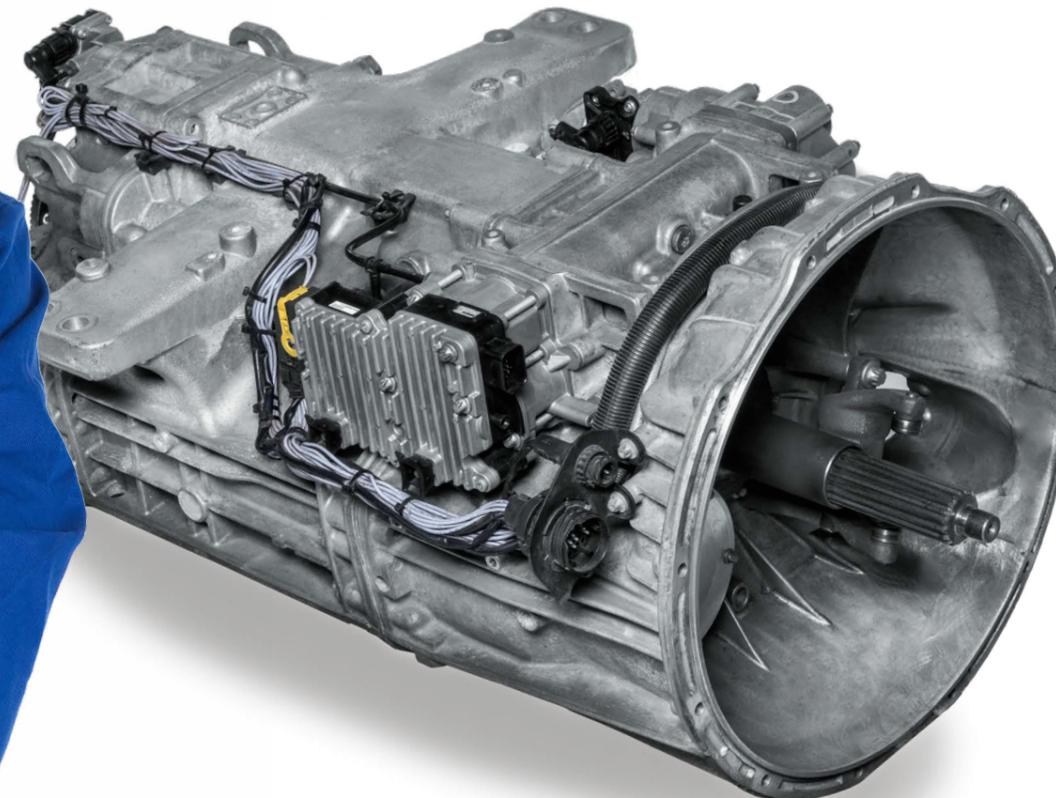
■ SIMPLE TEACH-IN PROCEDURE

An easy teach-in procedure to be conducted after repair, ensures the vehicle is up and running again

■ FREE ONLINE TUTORIAL

A free tutorial shows repair with all available repair kits step-by-step

Find out more detailed information on the following pages.



EASIER THAN YOU THINK

■ EASY DIAGNOSTICS

The 3rd generation Daimler AMT can be diagnosed with multibrand solutions available for IAM workshops. Both WABCO and WABCO Würth (W.EASY®) Diagnostics can be used for Daimler applications. They are competitively priced and they are tailored to the WABCO products, resulting in the highest reliability and accuracy when used with these quality products.



The graphic user interface of the WABCO diagnostics software for the gearbox control unit for Daimler applications is clearly structured and easy to operate. It covers all the diagnostic functions that are required to maintain the system and bring it back to life:

- Failure Scan
- Reading out / deleting error codes
- Broad range of measurements (which can be selected for recording)
- Actuation
- Parameter setting
- Teach-in function



The WABCO diagnostics do not require any special hardware. A standard PC with a free USB port and a Windows XP operating system (or higher) is all you need. We can recommend the WABCO Laptop "Toughbook", a suitable workshop solution which is shock-proof and dirt-resistant. Via the On-Board Diagnostics (OBD) interface in the driver cabin, the PC and the ECU in the truck can be easily connected. WABCO offers matching cables for Daimler vehicles.



HOW TO ORDER DIAGNOSTIC SOFTWARE

- **WABCO Diagnostic Software** can be ordered and downloaded from the MyWABCO Web page:

<http://www.wabco-auto.com/mywabco> (If you already have a user account, simply log in with your user name and password. If you don't have a user account for MyWABCO yet, you must register first.) To order Diagnostic Software, please find Order Diagnostic Software in the Quick Access Links area on the left. Diagnostic Software can be ordered as:

- part of the **Full Package** order number 246 301 900 0
- part of the **Bus Package** order number 246 301 902 0
- part of the **Towing Vehicle Package** order number 246 301 904 0
- single **Software**

You can find the current Diagnostic Software overview at <http://www.wabco.info/i/852>

- **W.EASY** can be ordered via the WABCO Würth distribution network.

For more details, see <http://www.wabcowuerth.com>

Each W.EASY diagnostic solution (including WABCO system diagnostics) consists of a basic package, to which individual software/hardware can be added.



EASIER THAN YOU THINK

■ TAILORED REPLACE AND REPAIR SOLUTIONS

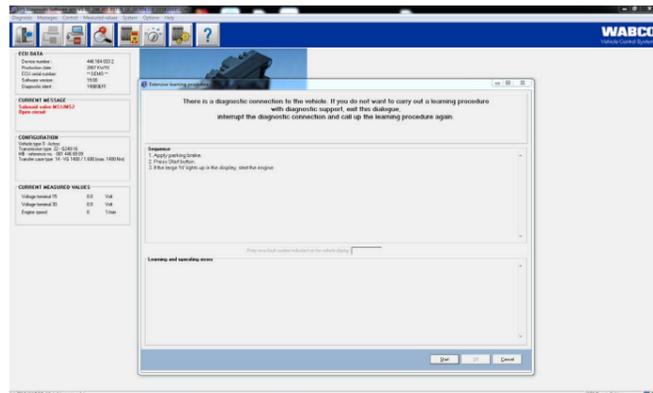
WABCO offers tailored replace and repair solutions for each specific need:

- original replacement parts, with a perfect fit and Original Equipment (OE) performance
- repair kits with original parts, for easy cost-efficient repairs

WABCO makes AMT repair as straightforward as possible by offering clear and detailed drawings for each repair kit, helping you to understand what's inside the package and where which component is located. WABCO OE quality also means that each individual part will fit perfectly, without any need for further modifications, like drilling or adding brackets.

■ SIMPLE TEACH-IN PROCEDURE

Following the repair, you can conduct an easy teach-in via one of the procedures described below, to re-adjust transmission settings, and get the vehicle back on the road. No OE key is required to start the truck again.

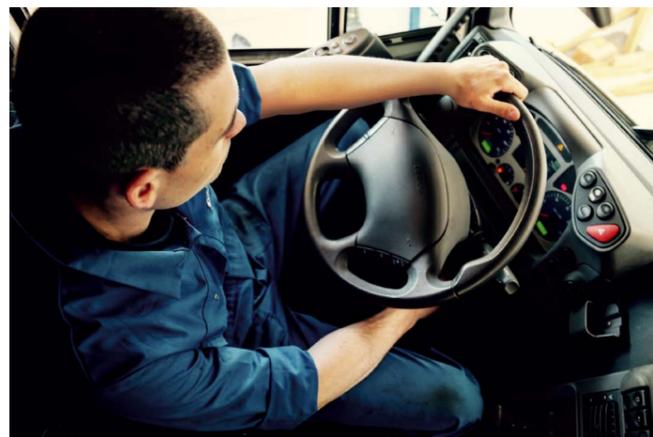


Via the WABCO diagnostics software:

1. Simply connect the system via the OBD (Onboard diagnostics) Interface.
2. Start the teach-in procedure via the WABCO diagnostics software.
3. Follow the instructions given by the software.

Via a manual start in the truck cabin:

1. Press both buttons on the lever unit and turn the ignition key.
2. Start the engine and keep both buttons pressed. (All gears are then shifted up and down automatically.)
3. The teach-in procedure is finalized when the neutral position is reached, which is indicated by the 'N' popping up in the display.



<http://www.wabco.info/951>

■ FREE ONLINE TUTORIAL

To make sure that you can easily perform repairs & replacements on the AMT, WABCO offers a free online tutorial on gearbox control unit repair for Daimler applications. You can find all the necessary repair information, including a handy instruction video, on the WABCO Corporate YouTube channel:



<http://www.wabco.info/948>



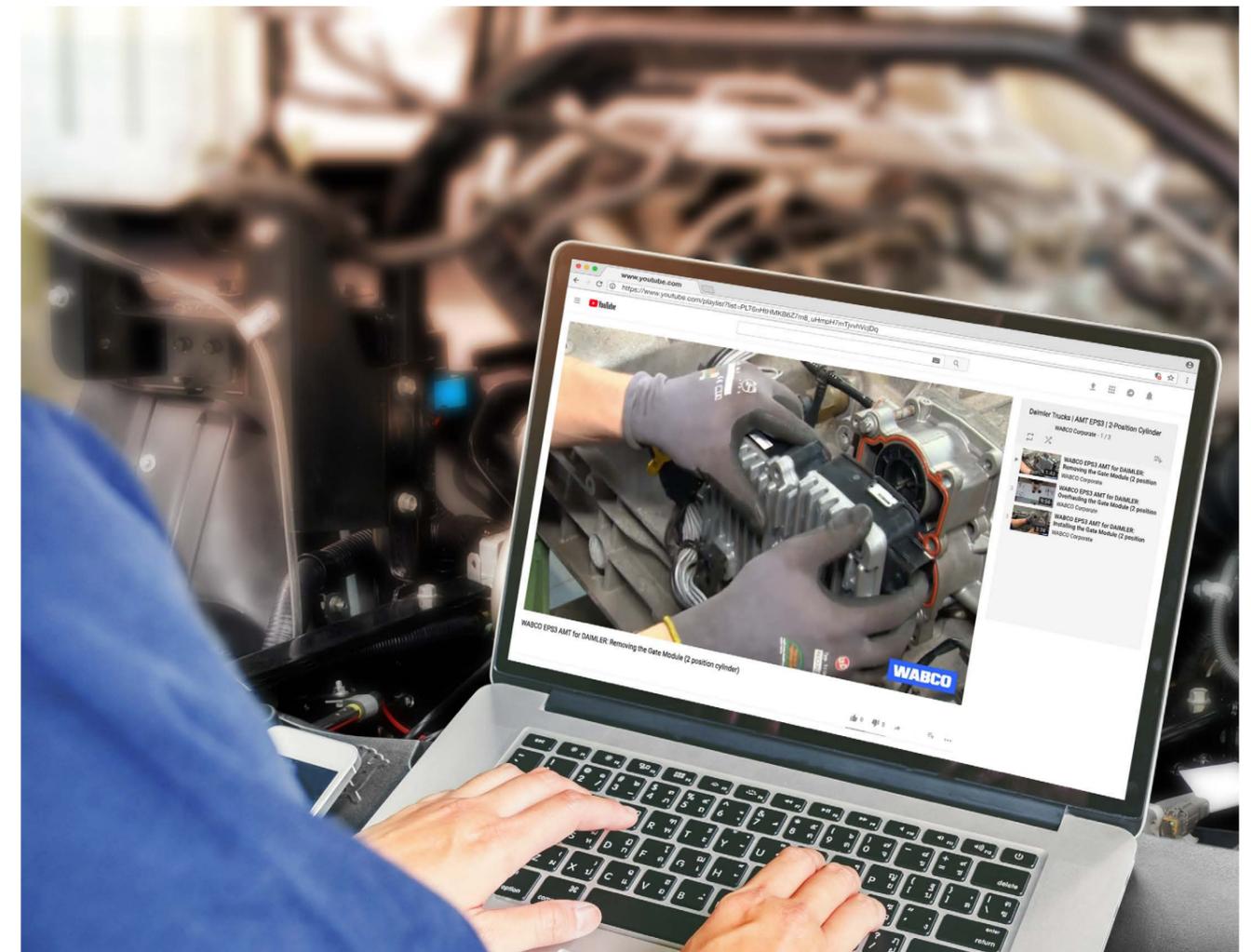
<http://www.wabco.info/949>



<http://www.wabco.info/950>



<http://www.wabco.info/951>



TRANSMISSION COMPONENTS FOR DAIMLER APPLICATIONS

The 3rd generation of AMT for Daimler applications is an electro-pneumatic shifting system, applied in commercial vehicles. The gearbox actuator is used for the operation of max. 16-speed commercial vehicle gearboxes. Its task consists in performing the gear shift operations fast, in a manner adapted to the individual driving situation.

The system is modularly built, with three main elements:

1. **2-Position Cylinder (SELECT)**
2. **3-Position Cylinder (GEAR SHIFT)**
3. **GP-Cylinder (RANGE)**

For each of these three main elements, WABCO offers specific OE quality replace and/or repair solutions. And for every single one of them, you will find all the specific information you need on the following pages.

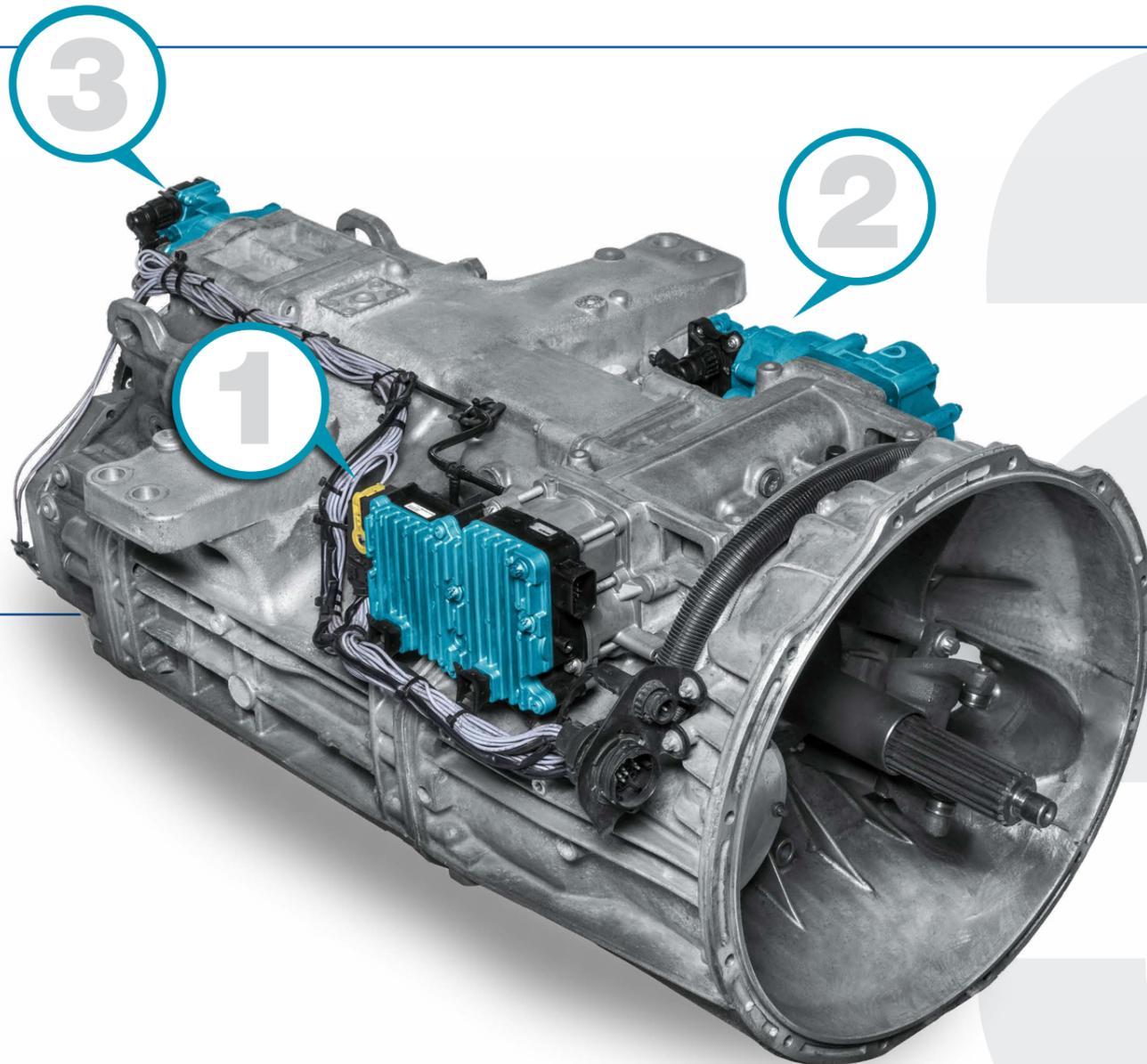
2-POSITION CYLINDER (SELECT)



3-POSITION CYLINDER (GEAR SHIFT)



GP-CYLINDER (RANGE)

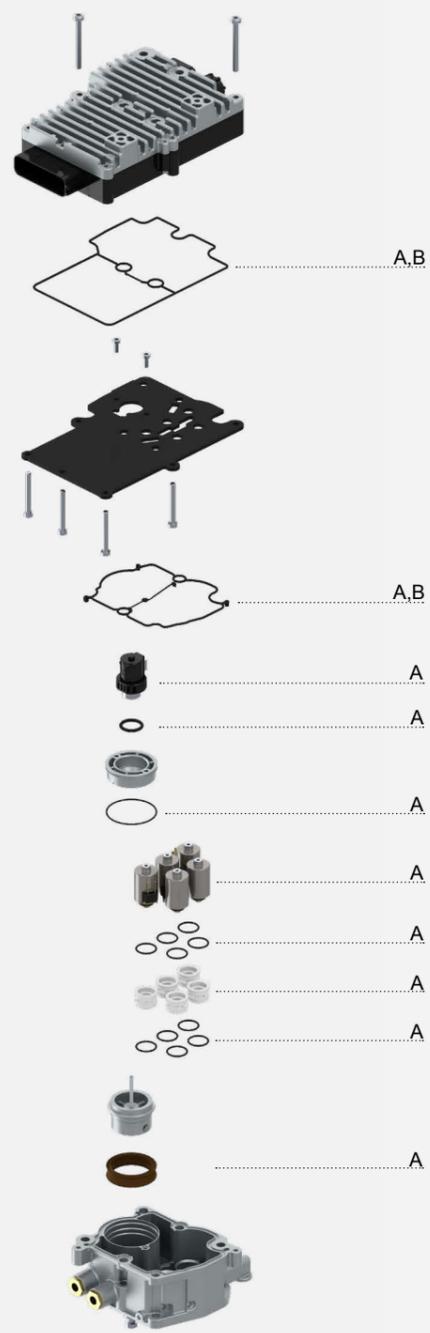


2-POSITION CYLINDER (SELECT)

FUNCTION

There are two variants of the 2-Position Cylinder (Select); one for the constant-mesh and one for the synchronized transmission. In both variants the actuation is performed by four solenoid valves to push and pull the piston (select position). The major difference between both variants is the software. Additionally, in contrast to the synchro-mesh variant, the countershaft brake of the constant-mesh variant is activated by an additional solenoid valve.

PART STRUCTURE



How-To Video on 2-Position Cylinder



<http://www.wabco.info/i/948>

AVAILABLE WABCO SOLUTIONS

To prevent the ECU from damage and avoid costly repair, we highly recommend a periodic inspection of seals and mechanical elements. The available WABCO repair kits allow you to keep all parts in good shape at all times.

WABCO REPAIR KITS AVAILABLE FOR THE 3RD GENERATION OF GEARBOX CONTROL UNITS IN DAIMLER APPLICATIONS

Basic device WABCO Part Number	Basic device OE Part Number	Type of transmission	SYMBOL ON DRAWING	
			A	B
			MAIN COMPONENTS	
			Solenoid kit	Sealing kit
			OE REPAIR KIT PRODUCT NUMBER	
			Aftermarket only	Aftermarket only
			WABCO ORDER NUMBER	
			421 351 007 2	421 351 008 2
421 351 135 0	A0022606463	constant-mesh	X	X
421 351 136 0	A0022606263	synchro-mesh	X	X
421 351 137 0	A0022606163	synchro-mesh	X	X
421 351 138 0	A0022606363	synchro-mesh	X	X
421 351 140 0	A0022606663	constant-mesh	X	X
421 351 144 0	A0022607063	constant-mesh Fuso		X
421 351 151 0	A0022609063	synchro-mesh	X	X
421 351 152 0	A0022608963	synchro-mesh	X	X
421 351 153 0	A0022609163	synchro-mesh	X	X
421 351 154 0	A0022609463	constant-mesh Fuso	X	X
421 351 155 0	A0022609363	constant-mesh	X	X
421 351 156 0	A0022608363	constant-mesh	X	X
421 351 165 0	A0032600163	constant-mesh	X	X
421 351 167 0	A0032600463	constant-mesh	X	X
421 351 171 0	A0032600963	synchro-mesh	X	X
421 351 172 0	A0032600863	synchro-mesh	X	X
421 351 173 0	A0032601063	synchro-mesh	X	X
421 351 174 0	A0032601463	constant-mesh	X	X
421 351 175 0	A0032601163	constant-mesh	X	X
421 351 176 0	A0032601363	constant-mesh	X	X
421 351 177 0	A0032601263	constant-mesh	X	X
421 351 178 0	A0032602263	constant-mesh	X	X
421 351 179 0	A0032604163	constant-mesh	X	X
421 351 184 0	A0032605863	constant-mesh	X	X
421 351 186 0	A0032605063	constant-mesh	X	X
421 351 187 0	A0032605963	constant-mesh	X	X
421 351 188 0	A0032607463	constant-mesh	X	X
472 405 001 0	A0024461309	Evobus ECU	X	X
472 405 003 0	A0024467509	Evobus ECU	X	X
472 405 004 0	A0034460509	Evobus ECU		X

3-POSITION CYLINDER (GEAR SHIFT)

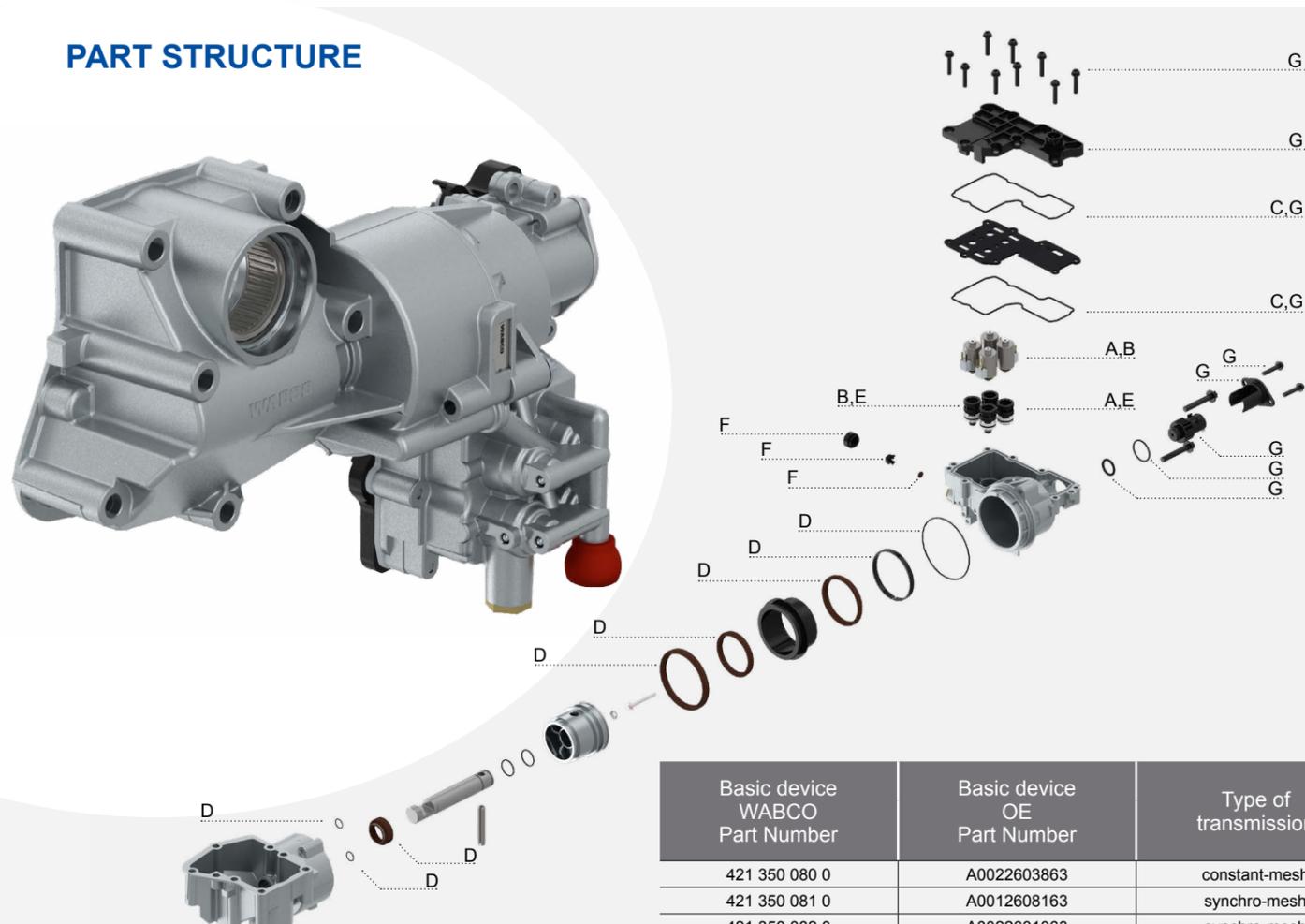
FUNCTION

The function of the 3-Position Cylinder (Gear shift) is to actuate the gear shift rod in the gearbox via a lever. A local ECU, integrated in the 2-Position Cylinder, triggers the activation of the solenoid valves and controls them.

There are two different variants; one for the constant-mesh and one for the synchronized transmission. In the constant-mesh variant, the gear shift rod reaches the gearbox without intermediate steps. The actuation is performed by two solenoid valves only.

In case of the synchro-mesh variant the gearshift rod reaches stops within the gearbox in several intermediate steps. The actuation is controlled pneumatically by four solenoid valves.

PART STRUCTURE



Basic device WABCO Part Number	Basic device OE Part Number	Type of transmission
421 350 080 0	A0022603863	constant-mesh
421 350 081 0	A0012608163	synchro-mesh
421 350 082 0	A0022601063	synchro-mesh
421 350 083 0	A0022608663	constant-mesh
421 350 084 0	A0022608563	synchro-mesh
421 350 085 0	A0032602163	constant-mesh
421 350 086 0	A0032602063	synchro-mesh
421 350 087 0	A9302600163 A0022608663 A0032602163	constant-mesh
421 350 088 0	A9452603163 A0012608163 A0022601063 A0022608563 A0032602063	synchro-mesh
421 350 992 0	A0022608763	synchro-mesh
421 350 993 0	A0022608863	constant-mesh

AVAILABLE WABCO SOLUTIONS

WABCO offers a wide range of repair kits for the 3-position cylinder, covering most of repair cases. When a repair is very complex and time consuming, we recommend to exchange the complete unit.

SAVE TIME AND MONEY

BY ORDERING A COMPLETE REPLACEMENT UNIT OR BY ORDERING ONE OF THE WABCO REPAIR KITS

Complete replacement units

Basic device WABCO IAM Part Number	Basic device WABCO OE Part Number	Basic device OE Part Number	Type of transmission	Description	WABCO ORDER NUMBER
421 350 087 0	421 350 083 0	A0022608663	constant-mesh	complete unit	421 350 087 0
	421 350 085 0	A0032602163			
	421 350 087 0	A9302600163			
421 350 088 0	421 350 081 0	A0012608163	synchro-mesh	complete unit	421 350 088 0
	421 350 082 0	A0022601063			
	421 350 084 0	A0022608563			
	421 350 086 0	A0032602063			
	421 350 088 0	A9452603163			

Repair kits

SYMBOL ON DRAWING						
A	B	C	D	E	F	G
MAIN COMPONENTS						
Solenoid valve, disc-shaped	Solenoid valve, nose-shaped	Gasket set	Cylinder shaft seals	Valve heads: 2x disc-shaped, 2x nose-shaped	Exhaust cap	Distance sensor, circuit board, gasket set
OE REPAIR KIT PRODUCT NUMBER						
A0025404997	A0025405097	A0002606968	A0002607068	A0002690444	A0002610982	A9455422518
WABCO ORDER NUMBER						
421 350 927 2	421 350 928 2	421 350 930 2	421 350 931 2	421 350 932 2	421 350 934 2	421 350 935 2
X		X	X		X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X		X	X		X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X		X	X		X	X
X	X	X	X	X	X	X
X		X	X		X	X
X		X				

How-To Video on 3-Position Cylinder



<http://www.wabco.info/949>

GP-CYLINDER (RANGE)

FUNCTION

The GP-Cylinder (Range) is positioned on the side of the gearbox and activates the gear shift rod in the gearbox with the help of two solenoid valves which are integrated in the cover of the housing. A local ECU, integrated in the 2-Position Cylinder, triggers the activation of the valves and controls them.

PART STRUCTURE



A
A
A

A

A

A

How-To
Video on
GP
Cylinder



<http://www.wabco.info/950>

AVAILABLE WABCO SOLUTIONS

WABCO offers repair kits covering most of repair cases, which can be used for both the old and the new version of the range cylinder. In addition, a complete unit is available to Independent Aftermarket workshops

SAVE TIME AND MONEY

BY ORDERING A COMPLETE REPLACEMENT UNIT OR BY ORDERING ONE OF THE WABCO REPAIR KITS

Complete replacement units

Basic device WABCO Part Number	Basic device OE Part Number	Type of transmission	Description	WABCO ORDER NUMBER
421 352 082 0	A0022609563	all	complete unit	421 352 082 0

Repair kits

Basic device WABCO Part Number	Basic device OE Part Number	Type of transmission	WABCO ORDER NUMBER
421 352 080 0	A0012608463	all	X
421 352 082 0	A0022609563	all	X

SYMBOL ON DRAWING
A
MAIN COMPONENTS
circuit board, exhaust cap, gasket set
OE REPAIR KIT PRODUCT NUMBER
A0045407481
WABCO ORDER NUMBER
421 352 920 2

COMPONENTS FOR OLDER DAIMLER AMT GENERATIONS

SERVING OLDER VEHICLES

Since many older trucks are still on the road, and therefore may still need repairs, WABCO continues to offer parts and repair kits for the older Daimler AMT generations as well. There are two older Daimler AMT generations, which both can still be fully serviced by WABCO:

- 1st generation of Daimler AMT launched in 1985
- 2nd generation of Daimler AMT launched in 1996

WABCO REPAIR KITS AVAILABLE FOR the 1ST AND 2ND AMT GENERATION FOR DAIMLER APPLICATIONS

Basic device WABCO Part Number	Basic device OE Part Number	Type of transmission	WABCO ORDER NUMBER	Repair kit OE Part Number	Main components
3-position cylinder					
421 322 003 0	8633147000	synchro-mesh	421 322 003 0	8633147000	3-position cylinder complete unit
421 322 005 0	8633149000	synchro-mesh	421 322 005 0	8633149000	3-position cylinder complete unit
421 350 001 0	A0002608863	synchro-mesh	421 350 920 2	A0015409497	solenoid valve
			421 350 001 0	A0002608863	3-position cylinder complete unit
421 350 061 0	A0012600163	synchro-mesh	421 350 920 2	A0015409497	solenoid valve
			421 350 922 2	A0025401197	solenoid valve
			421 350 061 0	A0012600163	3-position cylinder complete unit
421 350 070 0	A0022601963	synchro-mesh	421 350 006 2	A0012603763	solenoid valves, sealings, orings
			421 350 923 2	A0025403797	double solenoid valve, sealings, orings
			421 350 924 2	A0025403897	double solenoid valve, sealing, oring
421 351 101 0	A0002607263	synchro-mesh	421 351 000 2	A0002604468	sealings, orings
421 350 072 0	A0022604063	synchro-mesh	421 350 072 0	A0022604063	3-position cylinder complete unit
2-position cylinder					
421 351 000 0	A0002607463	synchro-mesh	421 351 001 2	A0002605468	sealings, orings
421 351 001 0	A0002609563	synchro-mesh	421 351 001 0	A0002609563	2-position cylinder complete unit
421 351 051 0	A0012600063	synchro-mesh	421 351 004 2	A0012600463	armature, sealings, orings
			421 351 051 0	A0012600063	2-position cylinder complete unit

FURTHER INFORMATION

Information on WABCO products can be found in our INFORM product catalogue (inform.wabco-auto.com) by entering the product number in the "Product Number" search field.

PLEASE CONTACT YOUR WABCO PARTNER FOR FURTHER INFORMATION:

www.wabco-auto.com/findwabco



WABCO