ALFA TCT Transmission

MTO

SUMMARY

This supplement describes all the main characteristics of the Alfa TCT 6-speed dual clutch dry automatic transmission installed on the car.

In order to be able to use the transmission correctly, this Supplement should be read carefully and completely in order to understand the correct, permitted operations from the outset.

For all other information, comply with the instructions of the Owner Handbook.

USING THE TRANSMISSION

INTRODUCTION

The car is equipped with an electronically-managed Alfa TCT 6-speed automatic transmission where gearshifting takes place automatically depending on the instantaneous car usage parameters (vehicle speed, road gradient and accelerator pedal position).

The new transmission is an absolute innovation as it matches the Start&Stop system with the most recent alternative to traditional automatic transmissions with built-in torque converter.

Manual gearshifting can still occur thanks to the sequential mode position of the gear lever.

SELECTOR LEVER fig. 1

P = Parking

R = Reverse

N = Neutral

D = Drive, automatic forward gear

+ = Sequential upshifting

– = Sequential downshifting.

If the lever is used in sequential mode, moving the latter from D to the left, the positions towards + or – are unstable.

The gear lever has a button A, that must be pressed to move the lever to the positions P or R (fig. 2 for right-hand drive versions).

DISPLAY

The display can show the following:

– in automatic driving mode, the speed selected (P, R, N or D), fig. 3;
– in sequential driving mode the manual engagement of a higher or lower gear, respectively, with the relevant number fig. 4.

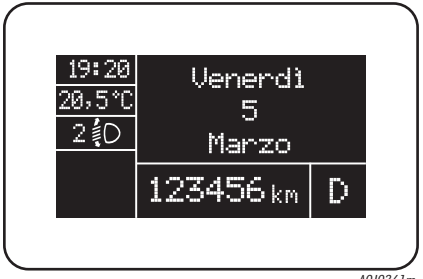

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fig. 3

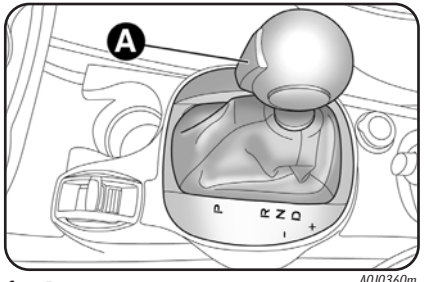

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fig. 1

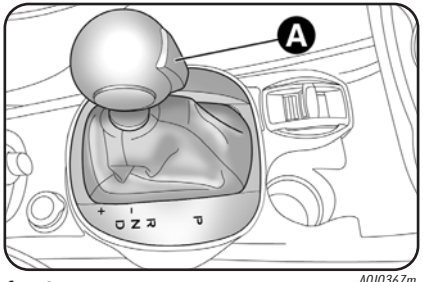

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fig. 2

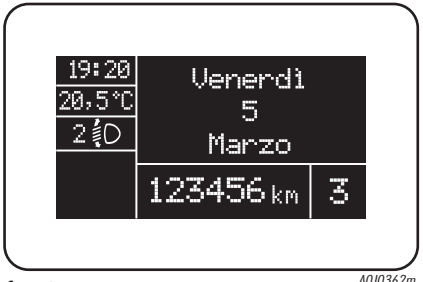

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fig. 4

POSITIONS OF THE LEVER

Parking (P)

Position P corresponds to the neutral position of the transmission and locks drive wheels mechanically. It should only be engaged with the car stationary and the handbrake should be applied, if necessary.

With the ignition key in MAR or with engine running, or when the engine switches off, if the gear lever is not correctly positioned in P, the gear lever trim starts flashing next to letter P. In this case, position the lever correctly in P.

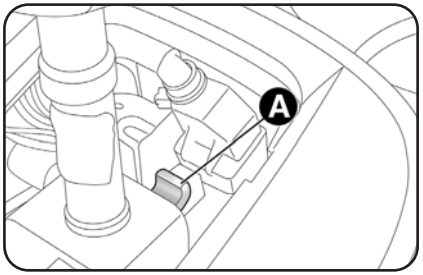

fig. 5

If the car is on a gradient, always pull the handbrake BEFORE placing the brake lever in P.

The ignition key can be removed only when the lever is in position P. Moving the lever from P to D must be performed only when the car is stationary and the engine at idling speed.

Shifting from P to any other position of the selector lever, with ignition key in MAR position, must be made pressing the brake pedal and using the button on the gear lever (A-fig. 1).

If the battery is flat, to release the lever you need to remove the gaiter and operate the lever A-fig. 5.

IMPORTANT Never leave the car before having positioned the selector lever in P.

Reverse (R)

The engine cannot be started with the lever in position R.

Engage reverse only with the car stationary, engine at idling speed and accelerator fully released.

Shifting from R to N or D is free, while shifting from R to P can only be made by the button on the gear lever, with engine at idling speed.

Neutral (N)

It corresponds to neutral for a standard, manual gearbox.

The engine can be started with the lever in position N.

Engage N in case of prolonged stops.

To move the lever from position N, release the accelerator and make sure the engine is stable at idling speed.

Shifting from N to D is free, while shifting from N to R or P can only be made by the button on the gear lever.

D (D – automatic forward gear)

It is the lever position in standard running conditions.

Shifting from D to N is free, while shifting from D to R or P can only be made by the button on the gear lever.

Sequential mode (+/–)

Shifting the lever from position D, to the left, to use the transmission in sequential mode, the lever is used in unstable position + or – for up/downshifting.

Summarising

All movements of the gear lever must be performed with car stationary and engine idling only.

– The drive wheels are mechanically locked in position P;

– Shifting from P → R is possible with brake pedal pressed and button on gear lever pressed;

– Shifting from R → N is free;

– Shifting from N → D is free;

– Shifting from D → sequential mode is free;

– Shifting from sequential mode → D is free;

– Shifting from D → N is free;

– Shifting from N → R is possible with button on gear lever pressed;

– Shifting from R → P is possible with button on gear lever pressed.

ENGINE STARTING

The car is provided with an electronic engine lock device. In case of failed starting, refer to the paragraph "Alfa Romeo CODE system", chapter "Getting to know your car", on the Owner Handbook to which this Supplement is attached.

Starting is only permitted with gear lever in position P or N (with or without brake pedal pressed). At starting, the system is in N or P (the latter corresponds to transmission neutral, but the car's wheels are mechanically locked).

START&STOP SYSTEM

With car at a standstill and Start&Stop system activated (see Owner Handbook to which this Supplement is attached), the engine switches off if the gear lever is in a position other than R.

The Start&Stop system does not operate when the gear lever is in R, for making parking manoeuvres easier.

In the event of stops uphills, the engine switching off is disabled to activate the "HILL HOLDER" function, that works with running engine only, as described in the chapter "Getting to know your car", on the Owner Handbook to which this Supplement is attached.

The engine automatic restarting occurs if:

– the brake pedal is released and the lever is not in N or P;

– the lever is shifted to an unstable position, +, – or R;

– the lever is moved from D to the left, sequentially;

– by the levers + or – on the steering wheel (for versions/markets where provided).

During the car switching off and on, the system passes through the automatic engagement of neutral and the display shows N.

IMPORTANT In some conditions (for example with reduced gradients and brake pedal not fully pressed), the engine switching off is not deactivated. In this event, fully press the brake pedal to make the "HILL HOLDER" function available and restart the engine, using the gear lever or the levers on the steering wheel (for versions/markets where provided) as above described.

ENGINE SWITCHING OFF

Engine can be switched off in any position of the gear lever.

Ignition key removal

The ignition key can be removed only if the gear lever is in position P:

- ❒ if the engine is switched off with the gear lever in position P the ignition key can be removed within 30 seconds;
- ❒ if the engine is switched off with the gear lever in a position other than P, the P letter on the instrument panel display and on the gear lever trim flashes for 5 seconds. At the same time there is also a sound signal. Move the lever to P within 5 seconds; then it will be possible to remove the ignition key for 30 seconds.

In both cases, if the described conditions and times are not respected, the ignition key will be automatically locked. To remove the key, turn it to MAR and then to STOP.

If the battery is flat and the ignition key is engaged, the latter is locked in position. To remove the key mechanically, proceed as follows: pull the handbrake and fit the supplied screwdriver in the hole under the dashboard (A-fig. 6), slightly pressing, until the ignition key can be removed.

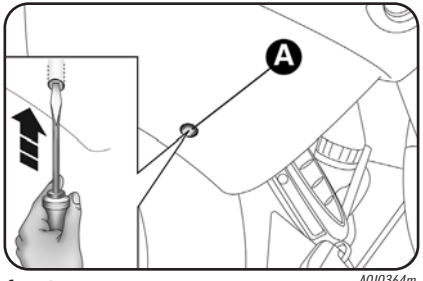

fig. 6

MOVING THE CAR

To move the car, from P press the brake pedal and, using the button on the gear lever, move the lever to the wished position (D, R or sequential).

The display shows the speed engaged.

Releasing the brake pedal, the cart starts moving forwards or backwards, as soon as the manoeuvre is activated (creeping effect). The accelerator should not be pressed.

IMPORTANT The inconsistency between the speed actually engaged in the transmission, shown on the display of the control panel, and the position taken by the gear lever is signalled by the flashing, on the trim, of the letter corresponding to the position of the lever itself accompanied by an acoustic signal.

This condition should not be interpreted as an operational failure, but simply as a request by the system to repeat the manoeuvre.

IMPORTANT With engine running and car at a standstill, in sequentially mode, the request for engaging the 2nd speed is not accepted by the system (pressing the brake pedal or not).

If, with engaged 1st speed or reverse (R), the following conditions occur:

— road slope over 5%;

— clutch overheated;

— engine torque steady for a given time interval (for example, if the car hits the pavement or is parked downhills/uphills);

the car movement is obtained by pressing the accelerator pedal.

IMPORTANT With handbrake released and brake pedal released, engine at idling speed and gear lever in position D, R or sequential, pay the utmost care because the car can move also without pressing the accelerator pedal.

This condition can be used with the car on a level surface during tight parking manoeuvres using the brake pedal only.

AUTOMATIC DRIVING MODE

D can be selected from sequential operation in any driving conditions.

In automatic driving mode, the best ratio is selected by the transmission electronic control unit depending on speed, engine load (accelerator pedal position) and gradient of the road.

To resume speed quickly, when the accelerator pedal is pressed fully, the transmission control system downshifts (kick-down function).

IMPORTANT When driving on roads with poor grip conditions (snow, ice, etc.) avoid activating the kick-down device.

Integration with DNA

Operating the "Alfa DNA" system fig. 7, three different driving modes can be selected:

– "Normal": gearshifting at low engine speeds, enhancing comfort and reducing consumption;

– "Dynamic": gearshifting at higher engine speeds, enhancing sporty driving;

– "All Weather": driving programme on roads with poor grip (example snow, ice, mud, etc.).

Gearshifting suggestion

While driving with the transmission in automatic mode (selector lever in position D), when gearshifting is required by the levers (fig. 8) on the steering wheel, the system shifts to fully manual mode, with relevant displaying of the gear engaged, for about 5 seconds; then, if the levers are not operated anymore, the system goes back to the automatic mode (D), with following displaying.

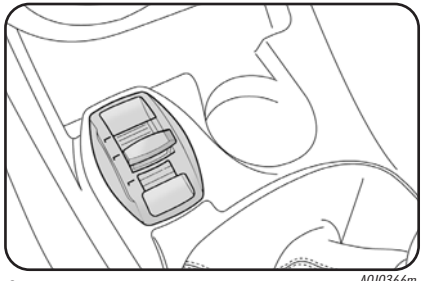

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fig. 7

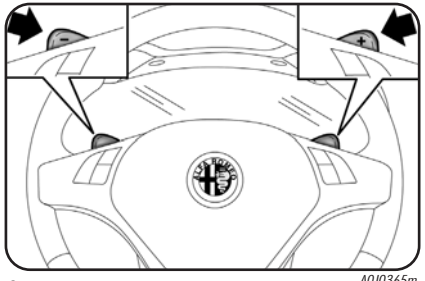

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fig. 8

SEQUENTIAL DRIVING MODE

In sequential driving mode, the transmission works like a manual gearbox.

Gearshifting through gear lever

Move the lever sideways (to the left) manually from position D to the sequential position:

— lever towards +: upshifting

— lever towards –: downshifting.

The lever correct position in Sequential Mode is signalled when the symbols + and – switch on and the symbol D switches off.

The gear engaged is displayed.

Gearshifting through steering wheel controls

(for versions/markets where provided)

On some versions, gearshifting can occur by the controls on the steering wheel fig. 9.

To use the controls on the steering wheel, the gear lever must be in a sequential position:

— moving the lever + on the steering wheel: upshifting;

— moving the lever – on the steering wheel: downshifting.

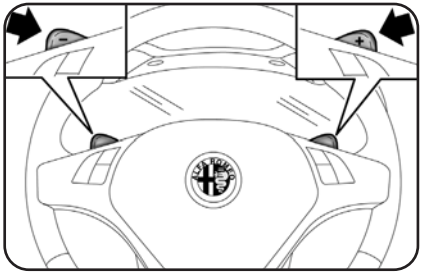

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fig. 9

The upshifting/downshifting is only permitted if the engine revs allow it.

If the car is stopped with a higher gear than 1st speed engaged, the transmission will automatically engage 1st gear.

ACOUSTIC WARNING

For safety reasons, an acoustic signal is heard when:

– the driver's side door is opened with engine running and the gear lever is in a position other than P;

– if engine is switched off with gear lever in a position other than P.

With the car stationary, the engine started and (1), (D) or (R) engaged, the system activates the acoustic signal and automatically places the transmission in neutral (N) when:

– the accelerator/brake pedals are not pressed for at least 3 minutes with creeping deactivated (for example with handbrake engaged);

– the brake pedal is pressed for longer than 10 minutes;

– the driver's door is opened with creeping deactivated (for example with handbrake engaged) without pressing brake and/or accelerator pedals;

– a fault has been detected in the transmission.

IMPORTANT Shifting to neutral (N) – operated by the system – involves a situation of inconsistency between gear lever position and speed engaged in the transmission. The manoeuvre is accompanied by an acoustic inconsistency signal. The acoustic signal continues until the gear lever is placed in P or N, to restore consistency.

PARKING THE CAR

To park safely, keeping the foot on the brake pedal, first P must be engaged and, in case of parking uphills/downhills, the handbrake must be engaged. Before releasing the brake pedal, wait until P on the display appears.

IMPORTANT NEVER leave the car before having positioned the lever in P.

TOWING THE CAR

Make sure that the transmission is in neutral (N), checking that the car moves off and proceed in the same way as for towing a normal car with a manual gearbox (see description in Owner Handbook).

IMPORTANT If the transmission cannot be placed in neutral (N), do not tow the car, rather contact an Alfa Romeo Authorized Service and, should the lever be in P, see the release procedure on page 3 before towing it.

GENERAL WARNINGS

With the car stationary and a gear engaged, always keep the brake pedal pressed until you decide to set off, then release the brake and accelerate slowly. During prolonged stops with the engine running, it is advisable to keep the transmission in neutral (N).

To protect the clutch, never use the accelerator to keep the car stationary (for example when stopped uphills/downhills): clutch overheating could damage it. Use the brake pedal instead or the handbrake and only press the accelerator pedal when you wish to set off.

If reverse (R) is engaged, only engage the 1st gear or vice versa when the car is completely stopped.

Never leave children unattended in the car. Always remove the ignition key when leaving the car and take the key with you.

Although it is strongly unadvisable, if you are driving downhill and, for unexpected reasons, you let the car move forward with the transmission in neutral (N), when there is a request to engage a speed, depending on the actual speed of the car, the system will automatically engage the best speed for the correct transmission of drive torque to the wheels.

WARNING LIGHTS AND MESSAGES

Automatic transmission failure

When the ignition key is turned to MAR, the warning light switches on but should switch off after a few seconds.

The warning light flashes (together with a message in the display and an acoustic signal) when it is detected that the transmission is faulty.

The messages that can be displayed on the control panel together with the warning light switching on are:

Check transmission

Gear unavailable

Manual method unavailable

In this case sequential driving mode is not available and the transmission switches to automatic operating mode.

Automatic method unavailable

In this case it is necessary to move the control lever to sequential driving mode and continue to drive by engaging the speeds manually.

In the event of transmission failure, contact Alfa Romeo Authorized Services as soon as possible to have the system checked.

The following messages can also be displayed on the control panel without the warning light switching on and therefore cannot be considered as failures, but as simple driving suggestions:

Operation not admissible

The message is displayed when a manoeuvre not compatible with correct system operation is carried out. (For example, if the reverse gear is requested while the vehicle is moving).

The message on the display is accompanied by an acoustic signal.

Clutch overtemperature

In this case it is necessary to limit the gear changes and/or change the condition of use, until normal operating conditions are restored.

REPLACING FUSES

The automatic transmission components are protected by specific fuses. Contact an Alfa Romeo Authorized Service to have them replaced.

For all other fuses, consult the Owner Handbook to which this Supplement is attached.

MAINTENANCE AND CARE

SCHEDULED SERVICING PLAN

In addition to all the operations described above (see the Owner Handbook, chapter "Care and Maintenance"), the Scheduled Servicing Plan also includes the check and, if necessary, top-up of the electro-hydraulic actuator oil level every 120,000 km.

LEVEL CHECK

ALFA TCT TRANSMISSION ACTUATION SYSTEM OIL

To check the transmission control oil level, contact exclusively Alfa Romeo Authorized Services.

Used transmission oil contains substances that may be dangerous for the environment. We advise contacting Alfa Romeo Authorized Services to change the oil as they are equipped to dispose of the used oil in accordance with legislation and without harming the environment.

TECHNICAL SPECIFICATIONS

ENGINE CODE – BODYWORK VERSIONS

	Engine code	Bodywork versions
1.4 Turbo Multi Air 135HP TCT	955A7000	955AXR11 12 (*) 955AXR11 12B (**)

(*) 4-seater version
(**) 5-seater version

TRANSMISSION

	1.4 Turbo Multi Air 135HP TCT
Gearbox	Automatic, dual clutch and 6 speeds
Drive	Front

ENGINE

GENERAL INFORMATION		1.4 Turbo Multi Air 135HP TCT	
Type code		955A7000	
Cycle		Otto	
Number and arrangement of cylinders		4 in line	
Piston bore and stroke	mm	72.0 x 84.0	
Total displacement	cm^3	1368	
Compression ratio		9.8	
Max power (EEC)	kW HP	99 135	
corresponding speed	rpm	5000	
		NORMAL	DYNAMIC
Max. EEC torque	Nm kgm	190 19.4	230 2.4
corresponding speed	rpm	4500	1750
Spark plugs		NGK IKR9F8	
Fuel		Unleaded petrol 95 RON or 98 RON (EN228 specifications)	

PERFORMANCE

Versions	Top speed (km/h)	Acceleration 0-100 km/h (s)
1.4 Turbo Multi Air 135HP TCT	207	8.2

WEIGHTS (kg)

	1.4 Multi Air 135HP TCT	
	4 seats	**5 seats**
Unladen weight (with all fluids, fuel tank filled to 90% and without optional equipment):	1170	1170
Payload (*) including the driver:	480	560
Maximum permitted loads (**) – front axle: – rear axle: – total:	 950 850 1650	 950 850 1730
Towable loads: – braked trailer: – non braked trailer:	 500 400	 500 400
Maximum load on roof:	40	40
Maximum load on the ball joint (braked trailer):	60	60

(*) If special equipment is fitted (sunroof, tow hitch, etc.) the unladen car weight increases, thus reducing the specified payload with respect to the maximum permitted load.
(**) Loads not to be exceeded. The driver is responsible for arranging the loads in the boot and/or on the roof so that they comply with these limits.

FLUIDS AND LUBRICANTS

RECOMMENDED PRODUCTS AND SPECIFICATIONS

Use	Fluid and lubricant features for a correct use of the car	Genuine fluids and lubricants	Replacement frequency
Automatic transmission lubricant	Synthetic lubricant, SAE 75W-85 grade, for automatic transmissions **FIAT 9.55550-MZ3 specifications**	TUTELA CAR GEARTECH Contractual Technical Reference No. F704.C08	As per the Scheduled Servicing Plan
Lubricant for electrohydraulic actuator	Special fluid for electrohydraulic ratio selector actuators **FIAT 9.55550-SA1 specifications**	TUTELA CAR CS SPEED Contractual Technical Reference No. F005.F98	As per the Scheduled Servicing Plan

FUEL CONSUMPTION

FUEL CONSUMPTION ACCORDING TO EUROPEAN DIRECTIVE IN FORCE (litres/100 km)

	1.4 Turbo Multi Air 135HP TCT
Urban cycle	7.1
Extra urban cycle	4.5
Combined consumption	5.5

CO_2 EMISSIONS

The CO_2 emission figures refer to combined consumption.

CO_2 EMISSIONS ACCORDING TO EUROPEAN DIRECTIVE IN FORCE

1.4 Turbo Multi Air 135HP TCT: 126 g/km

SERVICE

CUSTOMER SERVICES
TECHNICAL SERVICES – SERVICE ENGINEERING
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ENGLISH

Alfa Services